



# **Eclipse Power Release Notes**

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Thanks for choosing **Elipse Software** products! We are proud to offer the best solution for your needs.

**Elipse Power**'s new version **6.5** presents new tools and resources that focus on the development of control and supervisory applications for power networks. This document contains information about these resources.

For any additional information, please contact us by phone at **(+55 51) 3346-4699** in **Brazil** or at **(+886 7) 323-8468** in **Taiwan**. You can also contact us by e-mail at *suporte-br@elipse.com.br*.

This section contains updates of version **6.5** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 2.1 Version 6.5 Build 150

This section contains updates of version **6.5.150** of **Elipse Power** relative to version **6.1.101**.

### 2.1.1 New Features

This section contains new implementations of version **6.5.150** of **Elipse Power**.

#### 2.1.1.1 Alarm Server and Alarm Configuration

- Added an option to copy and paste User Fields in objects in **Elipse Power Studio**.
- Implemented the suppression of alarms by design, according to ANSI ISA 18.2 standard.
- Implemented counters for suppressed alarms.
- Added a Field that stores a sequential index of the moment of an Alarm Event, only on the database.

#### 2.1.1.2 CFR21

- Registration of user events now indicates on all messages in which computer that event occurred.

#### 2.1.1.3 Database

- **Elipse Power** now has native support for MySQL databases.
- **Elipse Power** now has native support for PostgreSQL databases.

#### 2.1.1.4 Documentation

- Added more information about the behavior of OPC UA Driver's **MaxNodesPerClientCall** property on **Elipse Power Reference and Scripts Manual**.

#### 2.1.1.5 Domain, E3 Server, and Hot-Standby

- Log messages from an **EPM** connection of Automatic Pens were improved to differentiate communication errors about Interface names not found.
- Created a `[?Server].Domain.Files` object in **E3 Server**, in which users can access information about project, library, and package files that compose a Domain.

#### 2.1.1.6 Drivers and I/O Server

- Updated the Elipse Tools library (files `et32b.dll` and `et64b.dll`) to version 4.0.

#### 2.1.1.7 E3 Admin

- Added an option to test the connection with an **EPM** server on the configuration of Automatic Pens of a Domain.

#### 2.1.1.8 E3 Tweak

- Implemented support for periodical profiling statistics of processes of **Elipse Power** in **E3 Tweak**.
- Implemented an option to force the capture of handled exceptions.

#### 2.1.1.9 E3Chart

- Searching for Automatic Pens with data from an **EPM** server is now performed asynchronously.
- Now requests for Tags from Remote Domains are handled first on the local Domain.

## 2.1.1.10 Installation

- Integrated **Elipse Event Log** version 4.5.209.
- Added an installation option for ODBC MySQL Driver on the **Full** installer of **Elipse Power** and also performed an update of Visual C++ Redistributable Package, when needed.
- Added an installation option for ODBC PostgreSQL Driver on the **Full** installer of **Elipse Power**.
- Now the installers of **Elipse Power** and **Elipse Power Viewer** suggest the installation of Microsoft Edge WebView2 Runtime, if not installed.

## 2.1.1.11 OPC UA Driver and OPC UA Client

- Allowed writing in OPC UA Client of items that cannot be registered for reading.
- Implemented the security profiles **Aes128\_Sha256\_RsaOaep** and **Aes256\_Sha256\_RsaPss** in the OPC UA Driver's **SecurityPolicy** property.

## 2.1.1.12 Other Implementations

- Implemented an option for periodical profiling statistics of processes in **Elipse Power**.
- The recommended operating systems for **Elipse Power** are **Windows 10** or later and **Windows Server 2012 R2** or later.

## 2.1.1.13 PowerEngine and Electrical Studies

- Added the **CandidatesStrategy** property to the Self-Healing Electrical Study to allow selecting the new search algorithm for candidate Switches used to solve a trigger.
- Created a Bay object for Feeders, analogous to the Bay object for Substations.

## 2.1.1.14 Query

- Sending asynchronous queries now have a better performance, specially when sending multiple simultaneous queries.

## 2.1.1.15 Studio

- Added a shortcut to **Elipse Power Reference and Scripts Manual** on the **Help** menu of **Elipse Power Studio**.

## 2.1.1.16 TrendAnalysis

- Data columns from the **Displays** tab of Tasks View now have a smaller default size.
- The **Displays** tab of Tasks View now have more column options for displaying data.
- Now TrendAnalysis lists Tags from remote historics.

## 2.1.1.17 Users

- Administrators now have all permissions enabled and this cannot be changed.
- The User Administration window of **Elipse Power Viewer** can now be opened by all users having a **Configure users/groups** permission enabled.
- Removing the last administrator of a Domain or turning them into non-administrators is not possible anymore. Administrators are not blocked from executing a login due to a disabled or blocked account and they can always change their password when expired. If there is no administrator configured in a Domain, when trying to edit users, an administrator must be created first.
- Non-administrator users cannot edit administrators or promote other users or themselves to administrator.
- Changed the interface of the User Permissions window of **Elipse Power Studio** and the Users Administration window of **Elipse Power Viewer**. Now users can also configure groups in **Elipse Power Viewer**.
- The text of security properties now always show the value used. If this value is inherited from a group to which the user belongs, or from the Domain configuration, the text "(inherited)" is displayed near the value. If the property's default value is used, the text "(by default)" is displayed near the value.
- Added the **Security** node to the **?Server** object. This node contains a collection of groups, **Groups**, and a collection of users, **Users**. Users have the properties **Name**, **FullName**, **IsAdministrator**, **Password**, and **Type**. Groups have the properties **Name** and **Type**. Both have the methods **AddToGroup** and **RemoveFromGroup**.

### 2.1.1.18 Viewer

- Integrated WebView2 control as the new rendering engine of Web content.

## 2.1.2 Fixed Bugs

This section contains bugs fixed in version **6.5.150** of **Elipse Power**.

### 2.1.2.1 CFR21

- Fixed the handling of login on the window displayed by Viewer's **ESign** method. *This bug occurred since v1.20.450.*

### 2.1.2.2 Database

- Now users can create tables and fields using all characters allowed by Oracle databases. *This bug occurred since v2.0.27.*
- Now users are allowed to use the closing bracket (]) character on identifiers of SQL Server databases. *This bug occurred since v2.0.25.*

### 2.1.2.3 Domain, E3 Server, and Hot-Standby

- Removed from the log unneeded messages of *unmarshaling failed* with code 80004005 (E\_FAIL). *This bug occurred since v6.0.121.*
- Fixed a possible GPF or unexpected close of **E3 Server** while opening a Domain. *This bug occurred since v6.1.53.*

### 2.1.2.4 Drivers and I/O Server

- Fixed a failure in **E3Run** or **Elipse Power Studio** that could occur when stopping an I/O Driver. *This bug occurred since v1.19.145.*

### 2.1.2.5 E3 Tweak

- **E3 Tweak User's Manual** in **CHM** format now opens when using the F1 key on **E3 Tweak**'s main window. *This bug occurred since v4.0.229.*

### 2.1.2.6 E3Chart

- Fixed the update of automatic scales after applying a vertical fit. *This bug occurred since v5.0.191.*
- Changes in properties of Automatic Pens are now applied with the Domain executing. *This bug occurred since v5.0.270.*
- Fixed the behavior of the Automatic Query of a Historical Pen when defining the title for the **E3TimeStamp** Field. *This bug occurred since v5.1.0.*

### 2.1.2.7 Frame

- Now users can write to the **SplitValue** property of Splitters using different measurement units at run time, as it has been already allowed in **Elipse Power Studio**.

### 2.1.2.8 OPC UA Driver and OPC UA Client

- Fixed the concatenation of the **ItemID** property of OPC UA Tags during the import process. *This bug occurred since v4.5.166.*
- Fixed a GPF in the OPC UA Client when a user's password is too long and cryptography is enabled. *This bug occurred since v4.5.176.*

### 2.1.2.9 Other Implementations

- Fixed a problem when generating dump (.dmp) files when two or more simultaneous exceptions occurred in different threads. *This bug occurred since v6.0.73.*
- The interface to edit Event Recordings now validates and instructs about the usage of macros. *This bug occurred since v3.0.456.*
- Changed the notification of **E3 Server** clients to support reentrant calls.

- Fixed the name of the Windows Registry Key from where the configuration of logs **ProcessInfo.<process>**, **HeapLog.<process>**, and **Profile.<process>** is read. Now, there is no need to add an **x64** suffix to 64-bit processes. *This bug occurred since v4.6.114.*

### 2.1.2.10 PowerCAD and Electrical Modeler

- Fixed the access by scripts to some properties of Electrical Modeler objects. *This bug occurred since v5.0.122.*

### 2.1.2.11 Query

- Fixed the display of the **Help** column on the **Variables** tab of the configuration window of Queries. *This bug occurred since v6.0.146.*
- The generator of SQL code of Queries now correctly delimits names of fields and tables containing special characters. *This bug occurred since v1.21.142.*

### 2.1.2.12 Screen Objects

- Fixed the resizing or moving of XControls and groups in **Elipse Power Studio**. *This bug occurred since v6.0.215.*
- Fixed a GPF in **Elipse Power Studio** or **Elipse Power Viewer** due to Links that combine both **X** and **Width** properties of an object. *This bug occurred since v6.0.43.*
- Fixed the behavior of **Elipse Power Studio** when resizing an XControl or group using the mouse. *This bug occurred since v6.0.43.*
- Fixed the redrawing of a Screen when using the **MaximizeFrame** method on the **OnShow** event of that Screen. *This bug occurred since v5.0.416.*

### 2.1.2.13 Studio

- Now **Frame**-type objects are opened on the **Design** tab. *This bug occurred since v5.0.204.*

### 2.1.2.14 TrendAnalysis

- Implemented a correction to prevent a TrendAnalysis' data source to send more data than needed to perform a drawing. *This bug occurred since v6.0.91.*
- Displays do not show anymore the value "-(nan)ind" for average, maximum, and minimum values in case there is no points. *This bug occurred since v6.1.80.*
- Points generated by interpolation are no longer considered for calculating average, maximum, and minimum values of a Pen. *This bug occurred since v6.0.197.*
- Implemented a correction in the update of data and drawing of a Pen when the source is asynchronous and with a lot of historical data. *This bug occurred since v6.0.197.*
- Columns persisted on a Display, saved in a language, and then opened in an **Elipse Power** with a different language are no longer displayed. *This bug occurred since v6.0.187.*
- Removed the **Include Begin and End Period** option from the **Export to CSV** window. *This bug occurred since v6.0.197.*
- The manager of Automatic Pens must route remote Tags to their respective Domain. *This bug occurred since v6.0.197.*

### 2.1.2.15 Users

- Errors occurred when applying changes to the Users window in **Elipse Power Studio** and to the dialog box of Viewer's **UserAdministration** method are now correctly informed to users. *This bug occurred since v6.0.45.*
- Fixed the communication to sessions about all name changes of the logged-on user. *This bug occurred since v6.0.14.*
- Fixed the error message for a password not complying to requirements when number values are the standard. *This bug occurred since v6.0.109.*
- Fixed a problem of user recognition when changing their password, which prevented using permissions in this condition. When users change their password, a logout is performed in all sessions, except in the session that performed this change. *This bug occurred since v4.5.252.*
- The operation to change a security property now fails on the server if it generates a conflict, for users and groups and for Domain options. The operation to add a user or group to a group fails on the server if it generates a conflict on the security properties. The order of groups to which a user or group belongs now reflects the priority order of the inheritance of properties. *This bug occurred since v3.0.115.*

## 2.1.2.16 Viewer

- Fixed the information about the list of servers on the help window of Viewer's command prompt. *This bug occurred since v3.1.110.*

This section contains updates of version **6.1** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 3.1 Version 6.1 Build 101

This section contains updates of version **6.1.101** of **Elipse Power** relative to version **6.1.98**.

### 3.1.1 Fixed Bugs

This section contains bugs fixed in version **6.1.101** of **Elipse Power**.

#### 3.1.1.1 OPC UA Driver and OPC UA Client

- Fixed the connection of the OPC UA Client using the **Basic256Sha256** security policy. *This bug occurred since v4.8.5.*

## 3.2 Version 6.1 Build 98

This section contains updates of version **6.1.98** of **Elipse Power** relative to version **6.1.90**.

### 3.2.1 New Features

This section contains new implementations of version **6.1.98** of **Elipse Power**.

#### 3.2.1.1 E3Alarm

- Created the **ShowIcon** property in E3Alarm, which allows hiding the icon on the first column of events.

#### 3.2.1.2 Installation

- Updated the installer of HKCustomer to version 6.0.73.

#### 3.2.1.3 PowerEngine and Electrical Studies

- Implemented the **RemoteControlType** property in the Switch Fuse and Distribution Transformer objects.

#### 3.2.1.4 Protection Device

- Updated the installer of HASP drivers (haspdinst) to version 8.43.

## 3.3 Version 6.1 Build 90

This section contains updates of version **6.1.90** of **Elipse Power** relative to version **6.0.215**.

### 3.3.1 New Features

This section contains new implementations of version **6.1.90** of **Elipse Power**.

#### 3.3.1.1 Database

- Added the **AccessSetDBPassword** method and the properties **OracleUseADODrivers**, **OracleEnableTimestamp**, **MsSQLNetworkLibrary**, **MsSQLProvider**, **UseCustomConnectionString**, and **CustomConnectionString** to the Database object for configuring a Database via script.

#### 3.3.1.2 Domain, E3 Server, and Hot-Standby

- Changed the behavior of **Elipse Power**'s Hot-Standby mechanism, so that a single **ping** failure does not consider the network as out of operation immediately.
- Implemented a stop logic for a standby server when the Hot-Standby mechanism is turned off *hot*.
- Created the **Refresh** and **Stop** methods in the ?Server.Domain object.
- Implemented writing on the **Disabled** property of objects ?Server.Domain.Servers.LocalServer and ?Server.Domain.Servers.RemoteServer.

### 3.3.1.3 E3 Admin

- Added the **EnableProjects** and **DisableProjects** options to enable and disable, respectively, projects via command line in **E3 Admin**.
- The **E3 Admin**'s contextual menu on Windows Notification Area received icons on most commands and options, as well as icons on the respective windows of these commands and options.
- Added the **EnableServer** and **DisableServer** options to enable and disable, respectively, servers via command line in **E3 Admin**.

### 3.3.1.4 E3 Tweak

- Implemented an option to register *MiniDumpFlags* in exception capture.

### 3.3.1.5 Installation

- Updated the installer of HKCustomer to version 6.0.68.
- Updated the installer of Microsoft OLE DB Driver for SQL Server to version 18.6.3.
- Integrated **Elipse Event Log** v4.5.190.
- The **Elipse Power** installer now informs whether the installation failed due to the need to restart the computer to install **Elipse Event Log**.

### 3.3.1.6 Other Implementations

- Standardized the spelling of the word "Domain" in **Elipse Power** logs and console messages.
- Added a key in Windows Registry to allow customizing information contained in minidump files.

### 3.3.1.7 PowerEngine and Electrical Studies

- Added the **MaximumReclosingInterval** property to the Electrical Study of type **Self-Healing**.

### 3.3.1.8 Protection Device

- Updated the installer of HASP drivers (haspdinst) to version 8.31.

### 3.3.1.9 Studio

- Added the **Defragment All Files** option to Organizer's contextual menu to defragment all files from a Domain.
- The defragmentation tool now can be applied to files open in **Elipse Power Studio**.
- Created a command to refresh a Domain in **Elipse Power Studio**'s toolbar.
- Changed the command to execute a Screen on **Elipse Power Viewer** to save and refresh an application.

### 3.3.1.10 TrendAnalysis

- Improved TrendAnalysis support for displays with scale levels greater than 100%.
- Tags are now retrieved automatically after leaving an error situation.
- Implemented horizontal scroll bars on the **Connections** and **Bookmarks** tabs.
- Added support for more quality values from OPC standard.
- Now users can remove Plot Areas in any order via contextual menu of a Display.
- Error messages when loading files in TrendAnalysis' **XML** format are now more detailed.
- TrendAnalysis now allows users to select a scale of size for visual elements.
- Standardized the display of values and qualities in search modes.
- The file in **CSV** format exported by TrendAnalysis now indicates fields in more details.
- Added methods **AddPen**, **AddDisplay**, and **AddPlotArea** to the TrendAnalysis object.
- Added a column with the average value of a Pen on the Pens area of the **Displays** tab.
- Now users can add horizontal and vertical guide lines in TrendAnalysis.

## 3.3.2 Fixed Bugs

This section contains bugs fixed in version **6.1.90** of **Elipse Power**.

### 3.3.2.1 Alarm Server and Alarm Configuration

- Reviewed the infrastructure of alarms in the server for more robustness. *This bug occurred since v1.20.240.*

### 3.3.2.2 Documentation

- Fixed the code examples of Viewer's **ESign** and **TrackEvent** methods on **Elipse Power Reference and Scripts Manual**.
- Updated the topic about Digital Links on **Elipse Power User's Manual** and updated several figures and texts about Links on several documents of **Elipse Power**. *This bug occurred since v1.20.312.*
- Added the **Critical** option in the description of the *Severity* parameter of the **AddSubCondition** method of the Collection of Subconditions of a Discrete Alarm Source on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v5.5.100.*
- Fixed the description of TrendAnalysis' **Load** method on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v6.0.133.*
- Fixed the description of Viewer's **ShowTrendAnalysis** method on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v6.0.182.*
- Fixed the initial text of topic **E3DataAccess Library** on **Elipse Power User's Manual** to remove the information that this library uses a Viewer license. *This bug occurred since v4.5.211.*
- Fixed the name of the **Keep Last Search Point** option on the **Available options on the Search mode** table of topic **TrendAnalysis - Display Area** on **Elipse Power User's Manual**. *This bug occurred since v6.0.177.*

### 3.3.2.3 Domain, E3 Server, and Hot-Standby

- Fixed the possibility of an **E3Run** deadlock when closed with Viewers still connected.
- Fixed the behavior when removing the only project from a Domain while it is still executing. *This bug occurred since v1.20.303.*
- Fixed a performance issue when reactivating destination objects with many Links, or when deactivating objects with disconnected Links. *This bug occurred since v0.1.24 (Beta).*

### 3.3.2.4 Drivers and I/O Server

- Fixed a problem that could cause a GPF (*General Protection Failure*) in **E3Run** when deactivating a Driver. *This bug occurred since v4.5.81.*

### 3.3.2.5 E3Chart

- Automatic Pens from Tags that do not show variation now keep the value and quality regarding the last variation. *This bug occurred since v5.6.31.*

### 3.3.2.6 Import and Sync Elipse Power Objects

- Fixed the positioning of vertical Busbars on the Screen Importer. *This bug occurred since v6.0.215.*

### 3.3.2.7 Installation

- In case of failure during the installation of Microsoft OLE DB Driver for SQL Server, a message is logged and displayed to users, informing that a problem occurred during this module's installation, but the installation of **Elipse Power** continues normally. *This bug occurred since v6.0.134.*

### 3.3.2.8 Other Corrections

- Fixed the comparison between NAN (*Not A Number*) values and other values.

### 3.3.2.9 Studio

- Added an option to defragment protected files to Organizer's contextual menu. *This bug occurred since v4.0.197.*
- Fixed a GPF in **Elipse Power Studio** when canceling the closing of a library package. *This bug occurred since v5.1.38.*
- Removed invalid options from the **Window** menu in **Elipse Power Studio**. *This bug occurred since v3.0.456.*

### 3.3.2.10 TrendAnalysis

- Fixed a memory leak that could occur when closing an instance of TrendAnalysis. *This bug occurred since v6.0.187.*
- TrendAnalysis now correctly indicates if there is an error when loading a file in **XML** format. *This bug occurred since v6.0.197.*
- The option to export to **CSV** format now works correctly. *This bug occurred since v6.0.197.*
- Fixed a GPF (*General Protection Failure*) that could occur when removing pens via keyboard. *This bug occurred since v6.0.197.*
- Fixed a possible failure when browsing Tags of a connection. *This bug occurred since v6.0.197.*
- The drawing of the column with the name of a Pen does not overlap anymore the other columns of the Penas area on the **Displays** tab. *This bug occurred since v6.0.197.*

This section contains updates of version **6.0** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 4.1 Version 6.0 Build 215

This section contains updates of version **6.0.215** of **Elipse Power** relative to version **6.0.213**.

### 4.1.1 Fixed Bugs

This section contains bugs fixed in version **6.0.215** of **Elipse Power**.

#### 4.1.1.1 Screen Objects

- Fixed the behavior of groups and XControls with Links in the **X**, **Y**, **Width**, and **Height** properties. *This bug occurred since v6.0.43.*

#### 4.1.1.2 Viewer

- Fixed an unexpected close of **Elipse Power Viewer** when trying to open a Screen on the **OnStartRunning** event of another Screen. *This bug occurred since v5.5.7.*

## 4.2 Version 6.0 Build 213

This section contains updates of version **6.0.213** of **Elipse Power** relative to version **6.0.200**.

### 4.2.1 New Features

This section contains new implementations of version **6.0.213** of **Elipse Power**.

#### 4.2.1.1 Alarm Server and Alarm Configuration

- Improved the performance of the initialization of Domains with many alarms.
- Improved the performance when restarting applications with many alarms.

#### 4.2.1.2 Installation

- Updated HKCustomer to version 6.0.55.

### 4.2.2 Fixed Bugs

This section contains bugs fixed in version **6.0.213** of **Elipse Power**.

#### 4.2.2.1 Alarm Server and Alarm Configuration

- Fixed a GPF when executing a Domain containing an Alarm Filter. *This bug occurred since v6.0.130.*
- Fixed a problem in which User Fields are not updated when an alarm condition happens. *This bug occurred since v6.0.130.*

#### 4.2.2.2 Studio

- Fixed a GPF in **Elipse Power Studio** when deleting, copying, pasting, or cutting objects containing Connectors. *This bug occurred since v6.0.11.*

#### 4.2.2.3 Viewer

- Fixed a behavior of scroll bars on lists of a TrendAnalysis object, so that they do not hide the last item. *This bug occurred since v6.0.187.*
- Fixed a memory leak that could occur when closing a TrendAnalysis object. *This bug occurred since v6.0.187.*

#### 4.2.2.4 WebViewer

- Fixed an 800700B6 error in the ElipseChartd.dll library when trying to open a TrendAnalysis object in **WebViewer**. *This bug occurred since v6.0.187.*

### 4.3 Version 6.0 Build 200

This section contains updates of version **6.0.200** of **Elipse Power** relative to version **6.0.199**.

#### 4.3.1 New Features

This section contains new implementations of version **6.0.200** of **Elipse Power**.

##### 4.3.1.1 Installation

- Updated HKCustomer to version 6.0.44.

##### 4.3.2 Fixed Bugs

This section contains bugs fixed in version **6.0.200** of **Elipse Power**.

##### 4.3.2.1 PowerCAD and Electrical Modeler

- Fixed a GPF in the Topological Processor of colors or voltages of the Electrical Modeler when moving Link Nodes connected to large network portions. *This bug occurred since v5.1.129.*

### 4.4 Version 6.0 Build 199

This section contains updates of version **6.0.199** of **Elipse Power** relative to version **5.6.74**.

#### 4.4.1 New Features

This section contains new implementations of version **6.0.199** of **Elipse Power**.

##### 4.4.1.1 ActiveX

- Added protections on **Elipse Power** to circumvent a GPF caused by VLC's ActiveX when switching or closing a Screen.

##### 4.4.1.2 Alarm Server and Alarm Configuration

- Now users can configure the size of Alarm Fields of type **Text** on the database.
- Improved performance of Alarm Filters with sorting by fields enabled.
- Improved CPU usage of **E3Run** process in situations with many alarms.
- Added the **ExcludeSuppressedOnAreaCounter** and **ExcludeSuppressedOnCounters** properties to Alarm Sources and to the Alarm Server, respectively. These properties allow suppressed alarms to be excluded from alarm counters.
- Added the **SuppressedAlarmsConfigured** property to Alarm Sources. This property indicates that the source or sub-condition is configured to allow shelving alarms.

##### 4.4.1.3 Database

- Added an option to use the new provider for SQL Server databases, **MSOLEDBSQL**.

##### 4.4.1.4 Documentation

- Updated the **Elipse Power Tutorial: Self-Healing Module**.

##### 4.4.1.5 Domain, E3 Server, and Hot-Standby

- Created the **ErrorMessage** property in the ?Server.License object, which displays the error message of the current license.
- Implemented a functionality that displays important warnings from **E3 Server** on **Elipse Power Viewers**, such as license problems.
- Processes in the **SYSTEM** account of **Elipse Power** now create a separate desktop, with a heap larger than Windows default.

### 4.4.1.6 E3 Admin

- Added the **Address** column on the table of connections of **E3 Admin**'s Statistics window.
- Added the **Restart E3 Server** option on **E3 Admin** contextual menu on Windows Notification Area.

### 4.4.1.7 E3 Tweak

- Implemented the options **HASP service name** (registry key **HaspServiceName**), **(Re)start HASP service** (registry key **HaspRestartEnabled**), and **Recover HASP service** (registry key **HaspRecoverEnabled**) on Section **E3 Server**.
- Removed the option to disable capturing **Elipse Power** exceptions by Windows.
- Implemented the **Disable process termination** option (registry key **DisableTerminate**) to enable or disable terminating processes when detecting exceptions.
- Implemented the **DesktopHeap** size option (registry key **DesktopHeap**) to configure the size of **E3 Server DesktopHeap**.

### 4.4.1.8 E3Alarm

- Added the **Visible** property to Fields of an E3Alarm's Collection of Fields, to allow showing or hiding a Field at run time.
- Added the **IgnoreDiacritics** property in the Alarm Filter, which turns the expression of the **CustomFilter** property accent-insensitive.
- Added the **MoveAlarmField** method to the Collection of Alarm Fields, which allows changing the order of E3Alarm columns at run time.

### 4.4.1.9 Find and Replace

- Added support for regular expressions on **Elipse Power Studio**'s search tool.

### 4.4.1.10 Installation

- Now **Elipse Power** installer, after installing the protection device driver, also configures the service to restart immediately in case of failure.
- Now the **Full** installer of **E3** and **Elipse Power** also installs **Microsoft OLE DB Driver for SQL Server**.
- Updated HKCustomer to version 6.0.31.

### 4.4.1.11 Interface

- Standardized the term *hardkey* to *product key* in **Elipse Power**'s graphical interface.
- Standardized the texts of the **Properties** tab on **E3 Admin**'s Domain configuration window, as well as the equivalent texts on the users and groups settings in **Elipse Power Studio** or **Elipse Power Viewer**.

### 4.4.1.12 OPC UA Driver and OPC UA Client

- Updated the OpenSSL library, used on the OPC UA Client, of **Elipse Power** to version 1.1.1i.
- Added the **OverrideEndPointURLHost** property, which fixes a problem with servers that provide endpoints with a network address different from the one used to connect to that server.

### 4.4.1.13 Other Implementations

- Improved the security of REC channel's cryptography.
- **Elipse Power** processes now generate *minidump* files on the **logs** folder whenever an unhandled error or exception is found.
- Updated the detection of the Warsaw security module by Diebold Nixdorf.
- Now **Elipse Power** generates a minidump file with code E3000006 (Stalled) when there is a need to terminate a process in a forced way.
- Added logs for all DCOM's marshalling or unmarshalling failures.
- Now **Elipse Power** processes are always closed in case of major failures, even if they are in DCOM calls.

#### 4.4.1.14 Protection Device

- Updated the installer of HASP drivers to version 8.23.
- The license window of **E3 Admin** and **Elipse Power** logs now inform the version of the license access service (HASPLMS).
- Implemented a functionality to automatically recover the HASPLMS service to access licenses.
- Created the **TrendAnalysisAvailable** property in the [?Server].License object.
- Implemented a mechanism that temporarily keeps the last valid license in **E3 Server**, even if it is restarted.

#### 4.4.1.15 PowerEngine and Electrical Studies

- Reduced the time needed to initialize applications using the External Reader Electrical Study.
- Improved the performance of the Self-Healing Module on distribution networks.

#### 4.4.1.16 Screen Objects

- Created the **Points** property in the Polygon object, which allows modifying this object's points.
- Created the **Points** property in the Connector object, which allows modifying this object's Connection Points.

#### 4.4.1.17 Scripts

- Now users can add user events via script.

#### 4.4.1.18 Studio

- Added support for writings on the column of property values on WatchWindow window.

#### 4.4.1.19 Translation

- Removed the usage of his/her and he/she expressions on UI texts.

#### 4.4.1.20 Users

- Added the permission **Write to runtime properties from Studio** to use WatchWindow in writing mode.
- Created a property that allows users to change an expired password.

#### 4.4.1.21 Viewer

- Integrated the TrendAnalysis component in **Elipse Power**.

### 4.4.2 Fixed Bugs

This section contains bugs fixed in version **6.0.199** of **Elipse Power**.

#### 4.4.2.1 ActiveX

- Now all ActiveX controls inside a group must respect the visibility or the layer of that group. *This bug occurred since v1.18.147.*

#### 4.4.2.2 Alarm Server and Alarm Configuration

- Fixed a problem during the counting of active alarms in Alarm Areas when an alarm is bound again to an Alarm Source. *This bug occurred since v4.0.129.*
- Now users can select again the sort order by fields using the Properties Window of an Alarm Filter. *This bug occurred since v5.5.3.*
- The properties **NumberOfTables**, **NumberOfTimeUnits**, and **TimeUnit** of the Alarm Server are now always hidden. *This bug occurred since v3.5.264.*

#### 4.4.2.3 AppBrowser

- Fixed the list of non-public properties of XControls in an AppBrowser opened by a scripts View in the context of the class of an object. *This bug occurred since v4.0.199.*

#### 4.4.2.4 Database

- Now the connection to an SQL Server server handles several errors as requesting a pause on consuming the operation queue, in addition to other errors of detecting a disconnection with a server.

#### 4.4.2.5 Documentation

- Updated the text of topic **Fixed Bugs - Studio** in version **5.6.74** of **Elipse Power Release Notes**. *This bug occurred since v5.6.74.*
- Updated the text of topic **Fixed Bugs - Other Corrections** in version **5.5.192** of **Elipse Power Release Notes**. *This bug occurred since v5.5.192.*
- Updated the text of topic **Fixed Bugs - Scripts Editor** in version **5.5.192** of **Elipse Power Release Notes**. *This bug occurred since v5.5.192.*
- Updated the text of topic **Fixed Bugs - AppBrowser** in version **5.0.428** of **Elipse Power Release Notes**. *This bug occurred since v5.0.428.*

#### 4.4.2.6 Domain, E3 Server, and Hot-Standby

- Fixed a behavior that prevented starting a Domain with an OPC client already communicating with an **E3 Server**. *This bug occurred since v3.5.275.*
- Fixed an error in **E3 Server** that prevented the connection of new clients when lacking resources at least one time. *This bug occurred since v1.20.85.*
- Fixed the log of general statistics for processes or computers of **E3 Server** to support more than 1024 processes.
- During the initialization of a Domain, the texts relative to progress bars when loading projects and objects are now updated to **Finished** when the respective loading finishes. *This bug occurred since v4.7.71.*

#### 4.4.2.7 E3 Admin

- Fixed the **Compact libraries** option on the **Properties** tab of Domain's configuration window, which was not saved on a new Domain. *This bug occurred since v5.5.133.*
- Fixed the resizing of fields **Call timeout** and **Security mode** on the **Automatic Pens** tab of the Domain Configuration window. *This bug occurred since v5.6.16.*

#### 4.4.2.8 E3Alarm

- An Alarm now does not have the need for acknowledgment after transitioning to a sub-condition that does not need acknowledgment. *This bug occurred since v4.0.100.*
- The archiving count is now restarted when an Alarm leaves the Summary and it is unarchived. *This bug occurred since v5.5.87.*

#### 4.4.2.9 E3Chart

- Fixed the redrawing of the default vertical scale of an E3Chart when removing the last Automatic Pen. *This bug occurred since v5.0.228.*
- E3Chart's **ResetConfig** method now correctly redefines information on the source of this object. *This bug occurred since v5.0.104.*
- Fixed a possible GPF when using a Pen saved on an Internal Tag after deleting an E3Chart. *This bug occurred since v2.0.15.*
- Fixed an error in which an Automatic Pen stopped being drawn. *This bug occurred since v5.0.270.*

#### 4.4.2.10 Find and Replace

- The **Replace** option is not enabled when the focus on the Results Window is over a group of results. *This bug occurred since v5.0.360.*

#### 4.4.2.11 Interface

- Fixed the update of scroll bars on Drivers View when activating or deactivating communication. *This bug occurred since v5.5.26.*
- The **Apply** button on the User Administration window of **Elipse Power Viewer** is now enabled when performing changes. An **Apply** button was also added to the User Permissions window of **Elipse Power Studio**. *This bug occurred since v4.0.167.*

- Standardized and fixed some window titles of modules E3Server.exe, Viewer.exe, and E3Viewer.ocx.

#### 4.4.2.12 OPC UA Driver and OPC UA Client

- Fixed the communication of the OPC UA Driver when there is still no import process of Tags. *This bug occurred since v4.5.166.*
- Fixed a failure on OPC UA Client when the **Username** option is filled but the **Password** option is empty. *This bug occurred since v4.5.166.*

#### 4.4.2.13 PowerCAD and Electrical Modeler

- Electrical Modeler's object creation and connection via script in **Elipse Power Studio** now have the same existing restrictions on Electrical Modeler's graphical interface. *This bug occurred since v5.0.297.*

#### 4.4.2.14 Protection Device

- Fixed the counting of time to restart **E3 Server** when changing licenses and increased the limit of this time from 1 (one) minute to 2 (two) hours.

#### 4.4.2.15 Screen Objects

- Fixed the possibility of repositioning the rotation center of Screen objects after undoing a rotation operation. *This bug occurred since v1.0.16.*
- Removed the objects Viewer Folder and Counter, Demo, Internal, and Timer Tags from the contextual menu of the **Design** tab of Screens. *This bug occurred since v4.7.59.*
- Forced the immediate update of **X**, **Y**, **Width**, and **Height** properties of Screen objects when these properties are accessed by script.

#### 4.4.2.16 Scripts

- Fixed the behavior of methods **Application.GetObject** and **Application.Verify** for objects inside Folders. *This bug occurred since v4.8.50.*
- Fixed an **E3Run**'s unexpected close, which could occur when using the **Application.GetObject** method passing a path that ended in a property with a **Nothing** value. *This bug occurred since v5.0.259.*

#### 4.4.2.17 SetPoint

- Fixed the behavior of the SetPoint, so that users cannot edit this object when the **IsSetPoint** and **Enable** properties are changed to False. *This bug occurred since v1.18.54.*

#### 4.4.2.18 Storage

- Optimized the operation of generating and updating Storage tables on the database.

#### 4.4.2.19 Studio

- **Elipse Power Studio** now always keeps on the title bar information about license, version, and the open Domain.
- Fixed the behavior of **Elipse Power Studio** when deleting or cutting objects in edition mode.
- Fixed an unexpected closing of **Elipse Power Studio** when trying to change combo boxes on Historic or Storage Views. *This bug occurred since v5.5.23.*
- Fixed the behavior of the WatchWindow window for objects with children and properties with the same name, such as Historic and Storage. *This bug occurred since v5.0.261.*
- The contextual menu is not incorrectly displayed anymore when right-clicking spin options of values of properties on the List of Properties. *This bug occurred since v2.0.10.*
- The contextual menu is not incorrectly displayed anymore when right-clicking the WatchWindow window. *This bug occurred since v5.6.30.*
- Fixed the path of library resources added from the Gallery window. *This bug occurred since v3.0.21.*
- Fixed the update of the Properties List on **Elipse Power Studio** when changing properties of Report objects.
- Fixed a GPF that occurred when an object that can be inserted on Screens, but is not drawn, such as Alarm Filters and Line Printers, was rotated or mirrored. *This bug occurred since v4.7.63.*

## 4.4.2.20 Undo Command

- Fixed the behavior of the **Undo** command on groups inside XControls with connection points. *This bug occurred since v3.5.175.*

## 4.4.2.21 Users

- Default values of a Domain's security properties were fixed in **E3 Server**. *This bug occurred since v5.5.49.*
- Recovered the information about blocked or disabled account or password expired for correct login tries. Changed the automatic unblocking of accounts so that it only happens with a valid login. *This bug occurred since v5.6.45.*

## 4.4.2.22 Viewer

- Fixed the update of the **HasFocus** property of controls to allow opening Screens. *This bug occurred since v1.21.41.*
- Fixed the mechanism of detecting **Viewer** and **WebViewer** inactivity to not lock mouse and keyboard messages when enabled. *This bug occurred since v1.20.322.*

This section contains updates of version **5.6** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 5.1 Version 5.6 Build 74

This section contains updates of version **5.6.74** of **Elipse Power** relative to version **5.5.205**.

### 5.1.1 New Features

This section contains new implementations of version **5.6.74** of **Elipse Power**.

#### 5.1.1.1 Documentation

- Added an item about correcting the behavior of the *zoom* of a Frame's **OpenScreen** method on the topic about fixed bugs of Frames on **Elipse Power Release Notes** of version **5.5.192**.
- Added a note on **Elipse Power User's Manual** warning that Domain's security options do not apply to Windows users.

#### 5.1.1.2 Domain, E3 Server, and Hot-Standby

- Now users can configure more than one **EPM** interface to retrieve historical data from Automatic Pens.

#### 5.1.1.3 Drivers and I/O Server

- Implemented support for grouping asynchronous writings and changes to items on a Driver.
- Standardized in **Elipse Power Studio** the contextual menus of all types of Drivers.

#### 5.1.1.4 E3 Tweak

- Implemented in **E3 Tweak** the cryptography option for the REC protocol.

#### 5.1.1.5 E3Alarm

- Added the **Severity** property to the object returned by E3Alarm's **ColorActiveAlarm**, **ColorAckedAlarm**, **ColorNackAlarm**, and **ColorActiveEvent** properties.
- The **E3TimeStamp** field is now available on the E3Alarm and on Alarm Filters, and it displays the timestamp of the computer at the moment of an event.

#### 5.1.1.6 E3Browser

- Added the **AllowHeaderSort** property to the E3Browser, which allows enabling or disabling sorting the columns by clicking a column's header.

#### 5.1.1.7 E3Chart

- Improved the performance of Automatic Pens on Reports by paralleling the requests to a server.

#### 5.1.1.8 Elipse Power

- Removed support for electrical models in **XPD** format.

#### 5.1.1.9 Installation

- Updated HKCustomer to version 5.5.81.
- Integrated eeLogs version 4.5.162.

#### 5.1.1.10 Other Implementations

- Added the cryptography (AES-128) option on the communication among an E3 Server and clients.

### 5.1.1.11 PowerEngine and Electrical Studies

- Decreased time needed to analyze triggers from the Self-Healing Module.

### 5.1.1.12 Protection Device

- Updated the installer of HASP drivers to version 8.13.

### 5.1.1.13 Screen Objects

- Optimized the redrawing time of complex Screens and guides or dotted lines that appear when moving objects in **Elipse Power Studio**.

### 5.1.1.14 Scripts

- Created the **RunEvent** and **RunProcedure** methods, which allow executing object scripts arbitrarily.

### 5.1.1.15 Studio

- The WatchWindow Window was changed from modal to dockable.

### 5.1.1.16 Users

- Added the possibility of registering groups of Windows users as **Elipse Power** groups.
- The minimum accepted value in the **Days to expire** and **Minimum age in days** options of a user's password was changed to 0 (zero).

## 5.1.2 Fixed Bugs

This section contains bugs fixed in version **5.6.74** of **Elipse Power**.

### 5.1.2.1 Alarm Server and Alarm Configuration

- Now User Fields have their values updated before the initial notification of an Alarm Source. *This bug occurred since v4.5.114.*

### 5.1.2.2 CFR21

- Suppressed the inappropriate generation of logs when clicking **OK** or **Apply** for the first time on Domain's options window. *This bug occurred since v5.5.43.*

### 5.1.2.3 Data Server

- Fixed the functionality of the INSERT key on the Data Server, on the Data Folder, and on Viewer. *This bug occurred since v5.0.384.*

### 5.1.2.4 Documentation

- Added all fields that can be used on a custom alarm filter of an Alarm Filter's **CustomFilter** property on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v5.5.145.*
- Normalized the description of properties **ItemID** and **UaNodeid** of objects OPC UA Tag and OPC UA Block Tag on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.8.161.*

### 5.1.2.5 Domain, E3 Server, and Hot-Standby

- Fixed the update of the **User** property of E3 Server's ViewerSessionNode object, which was not updated if the session type was **Viewer Only**. *This bug occurred since v5.5.153.*

### 5.1.2.6 E3 Admin

- Removed the error message repeatedly displayed on the login window of Windows users on E3 Admin. *This bug occurred since v5.1.88.*

### 5.1.2.7 E3 Tweak

- Fixed all texts displaying the abbreviated form of measurement units in milliseconds. *This bug occurred since v5.0.132.*

### 5.1.2.8 E3Alarm

- Improved the performance of the operations to acknowledge alarms and remove unbound alarms.

### 5.1.2.9 E3Browser

- Fixed a problem that undid E3Browser's column sorting. *This bug occurred since v5.5.90.*
- Fixed the behavior of the SHIFT key in E3Browser. *This bug occurred since v2.0.87.*
- Fixed the sort order of records of an E3Browser after using the **Deactivate** and **Activate** methods in a Database object. *This bug occurred since v5.5.90.*

### 5.1.2.10 E3Chart

- Fixed a problem that prevented drawing E3Chart's Pens in Reports when the Query's name contained special characters. *This bug occurred since v3.5.1.*
- Fixed a problem that prevented plotting Automatic Pens linked to Tags without variation. *This bug occurred since v5.0.270.*

### 5.1.2.11 Interface

- Fixed a problem when updating a Query table and the selected fields were changed. *This bug occurred since v5.5.50.*
- Fixed the format of some messages displaying error messages to users.

### 5.1.2.12 OPC UA Driver and OPC UA Client

- An OPC UA Driver is now allowed to communicate OPC UA Tags where only the **UaNodeID** property was filled.

### 5.1.2.13 Other Corrections

- Suppressed the inappropriate generation of logs when trying to load resources in **E3Run** and in **Elipse Power Studio**. *This bug occurred since v4.7.115.*
- Tags added by script in **Elipse Power Studio** using the **AddObject** method now respect the activation parameter if communication is activated in **Elipse Power Studio**.

### 5.1.2.14 PowerCAD and Electrical Modeler

- Fixed a connectivity problem in Schematic Views generated by a filter that includes *InPath* elements. *This bug occurred since v4.7.159.*

### 5.1.2.15 PowerEngine and Electrical Studies

- Fixed a behavior of the Self-Healing Module where triggers without a path to Generators with good quality tripped with success. *This bug occurred since v5.0.361.*
- Fixed an incorrect error code returned by the Self-Healing Module when there is no solution for a trigger. *This bug occurred since v5.5.108.*
- Fixed the mechanism that aborts a trigger analysis if the time passed is greater than the value of the **TriggerAnalysisTimeout** property of the Self-Healing Module. *This bug occurred since v5.0.431.*

### 5.1.2.16 Screen Objects

- Fixed the ungroup command in **Elipse Power Studio** when there are several groups selected. *This bug occurred since v4.8.165.*

### 5.1.2.17 Studio

- Formula and Report objects now have their Views opened initially on the **Design** tab again. *This bug occurred since v5.0.204.*
- Fixed, on the Properties List, the visibility of properties **NextExecTime** from Timer Tag object, **IsHTML** from Splitter object, and **User**, **IsReadOnly**, and **Params** from Viewer object.

This section contains updates of version **5.5** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 6.1 Version 5.5 Build 205

This section contains updates of version **5.5.205** of **Elipse Power** relative to version **5.5.192**.

### 6.1.1 New Features

This section contains new implementations of version **5.5.205** of **Elipse Power**.

- **PowerEngine and Electrical Studies**
- **Viewer**

#### 6.1.1.1 PowerEngine and Electrical Studies

- Improved the handling of simultaneous triggers on the Self-Healing Module.
- Added the **SelfHealingExpectedCurrentProfile** Measurement, which indicates the expected current profile for each Switch.
- Added two new Measurements, **SelfHealingAboveNormalCurrentLimit** and **SelfHealingActualCurrentProfile**, to help choosing the limit of current of Switches on the Self-Healing Module.
- Decreased the loading time of the Self-Healing Module.

#### 6.1.1.2 Viewer

- Implemented a status indicator for the CAPS LOCK key on Elipse Key Pad.

### 6.1.2 Fixed Bugs

This section contains bugs fixed in version **5.5.205** of **Elipse Power**.

#### 6.1.2.1 Interface

- Fixed the behavior of the miniwindow on the **Links** tab, which could not open immediately. *This bug occurred since v5.5.50.*
- Fixed a problem on the **Links** tab, which became active if the tab was switched while source edition was still open. *This bug occurred since v5.5.79.*
- Fixed the behavior of clicking buttons of cell grids of **Elipse Power Studio** when the column cell is larger than the window. *This bug occurred since v4.5.252.*

## 6.2 Version 5.5 Build 192

This section contains updates of version **5.5.192** of **Elipse Power** relative to version **5.1.195**.

### 6.2.1 New Features

This section contains new implementations of version **5.5.192** of **Elipse Power**.

#### 6.2.1.1 Alarm Server and Alarm Configuration

- Added a critical severity to alarms.
- Added an option to persist the alarm summary of E3 Server.

#### 6.2.1.2 AppBrowser

- Added a keyboard shortcut to load an object in AppBrowser by using the space key.

### 6.2.1.3 Database

- Oracle connections now suggest the names of connections found on the local computer.
- Improved the performance of AutoHistory tool during the initialization of an application.

### 6.2.1.4 Documentation

- Updated the headquarters address of **Elipse Software** on the last page of documents in **PDF** format of **Elipse Power**.
- The areas of **New Features** and **Fixed Bugs** sections of **Elipse Power Release Notes** were changed into topics to make search easy.
- Added a minimum value to E3Browser's **RefreshTime** property on **Elipse Power Reference and Scripts Manual**.
- Updated the descriptions of alarm fields on the configuration of Alarm Servers on **Elipse Power User's Manual**.
- Updated the description of the filter option of Storage columns on **Elipse Power User's Manual**.
- Added a chapter about support channels of **Elipse Software** on **Elipse Power HMI Tutorial**, **Elipse Power Gateway Tutorial**, **Elipse Power Tutorial: Self-Healing Module**, and **Elipse Power Tutorial: Load Shedding Module**.
- Updated the **Elipse Power Gateway Tutorial** with information about the protocols used and updated the corresponding exercises.
- Removed the exercises relative to receiving commands of chapter **Gateway** on **Elipse Power HMI Tutorial**.
- Added information about the default value of base power on the properties referring to reactance and resistance of a Two-Winding Transformer on **Elipse Power Reference and Scripts Manual**.

### 6.2.1.5 Domain Verifier

- Now users can export a list of errors found on the Domain Verifier window.

### 6.2.1.6 Domain, E3 Server, and Hot-Standby

- Now when a client's address does not allow connections, a different error is returned by the server. A **Elipse Power Viewer** from a newer version formats this error and indicates the reason for a denied connection in case of a **Elipse Power Viewer** from an older version.
- Improved the log of the **Elipse Power Viewer's** license request server.
- Now E3 Server by default does not allow a computer to enter sleep mode when there is a Domain executing.
- Optimized the destruction of multiple Links in E3 Server, improving the performance of this operation in Remote Domains and **Elipse Power Viewers**.
- Created in E3 Server a Domain Information ([?Server].Domain) object, which allows accessing information about the loaded Domain and its servers.
- Created an option on the configurations of a Domain to specify a friendly name or title.
- Created in E3 Server a Client Information ([?Server].Clients) object, which allows accessing information about client connections (**Elipse Power Viewers**, **Elipse Power Studios**, and Remote Domains) of an E3 Server.
- Created in E3 Server a Server Information ([?Server]) object, which can be accessed by Links and scripts.

### 6.2.1.7 E3 Admin

- The Domain options window got a new style, with a side tree, and the security options were moved to the **Properties** item.

### 6.2.1.8 E3 Tweak

- Implemented a limit value of 10000 for the **PingTimeout** option and reduced the limit value of the **PingRetries** option from 50 to 10.
- Removed the **Track** section and its modules.
- Removed the **FullREC** section and added the **RECApartment**, **RECChannel**, **VideoRecorder**, **PowerCADWarmUp**, **PowerHubReceive2**, and **PowerHubSend2** modules to the **Full** section.
- Added the **Prevent Windows from entering sleep/hibernate state** option on the **E3 Server** section.

### 6.2.1.9 E3Alarm

- The **UserField** method, which returns an alarm's user fields, now also accepts the name of a user field, in addition to its index.
- Added a Collection of Fields to E3Alarm. Each item of this Collection contains the **Name** and **Width** properties, which can be read and changed.
- Added the **UseFormat**, **Format**, **AllowBlink**, **AckOnClick**, and **FieldId** properties to the elements of E3Alarm's Collection of Fields.
- Implemented the alarm archiving in E3Alarm.

### 6.2.1.10 ElipseX Libraries

- Now users can copy definitions of ElipseX libraries.

### 6.2.1.11 Frames

- Create in Frame (FrameSet) the **NavigateBack**, **NavigateForward**, and **NavigateHistReset** methods and the **NavigateHistCount**, **NavigateCanGoBack**, and **NavigateCanGoForward** properties, used to navigate and manage the history of open Screens on a Frame.

### 6.2.1.12 Importing and Syncing Elipse Power Objects

- Optimized the execution time of syncing and exporting objects from the Electrical Modeler.

### 6.2.1.13 Importing and Syncing External EDBs

- The report on changes during the syncing of external databases now shows the changed names after that operation, and not before.
- The move operation during the importing and syncing of external databases now contains a Path property, which informs the original container of the element and to which container it was moved.
- The report on syncing external databases now shows all devices removed from the EDB file, not only the parent elements of the removed devices.
- Improved detection of changes on parent branches when syncing external databases..

### 6.2.1.14 Installation

- Integrated **Elipse Event Log** v4.5.150 to **Elipse Power**. This version adds command prompt options to **Elipse Event Log Collector** and also a command prompt option to prevent displaying the progress window of **Elipse Event Log Exporter**.

### 6.2.1.15 Interface

- The **Source** columns of the **Links** tab and the Edit Links window now have an automatic width.

### 6.2.1.16 OPC UA Driver and OPC UA Client

- Now the OPC UA client of **Elipse Power** sends an anonymous identity token even when in the **None** security mode.

### 6.2.1.17 Other Implementations

- Disabled the **Track** section of logs.
- Small improvements in Link managers (**E3Run**, **E3 Server**, and **Viewer**) and in REC package assembling.

### 6.2.1.18 Picks

- The **In Frame** text box on **Open Screen** Pick and the text box of **Print Report** Pick where changed to display insert options via AppBrowser instead of displaying a list.

### 6.2.1.19 PowerEngine and Electrical Studies

- Added the **IgnoreSelfHealingCurrent** property to Breakers and Reclosers of the Electrical Modeler to allow maneuvering Switches without current measurement.
- Added a Measurement for current's reverse limit for Breakers and Reclosers on the Self-Healing Module.

## 6.2.1.20 Protection Device

- Updated the installer of HASP drivers to version 8.11.
- Created in E3 Server a License Information ([?Server].License) object, which allows accessing information about the current license of a product.

## 6.2.1.21 Remote Domains

- Created in E3 Server a Remote Domain Information ([?Server].Domain.RemoteDomains) object, which allows accessing information about the connections of client Remote Domains.
- Improved statistical logs of connection failures of client Remote Domains.

## 6.2.1.22 Screen Object

- The **Show in Editor** option does not move the Screen anymore if the selected object is completely visible. If an object does not fit a Screen, zoom is reduced so that this object can be fully visible.
- The keyboard shortcut CTRL + ALT + V in **Elipse Power Studio** pastes a copy of a Screen object on the same position of the original object.

## 6.2.1.23 Scripts

- Added a **ScaleImage** method to the Picture object, which allows adjusting the size of this object to the image's original size.

## 6.2.1.24 Storage

- Implemented a count on Storage Tags in use on E3 Admin license window.

## 6.2.1.25 Studio

- Improved performance of operations with many items on lists.
- Added a command to execute **Elipse Power Viewer** with the currently viewed Screen in **Elipse Power Studio**.
- Columns of **Elipse Power Studio** tables now correctly restore their width.
- Windows to edit users and groups now use a list of properties for configuration.
- Now unloaded items in Organizer are displayed in a shade of gray.
- Changed the icons of OPC Drivers and Frames.
- Now users can paste items copied using Organizer on specific object sections.
- Now users can copy and paste items between sessions of the same version of **Elipse Power**.

## 6.2.1.26 Users

- Properties with Integer data types now accept that their values can be changed via typing.
- If there are errors during a merge of changes performed on the user database, these errors are displayed to users.

## 6.2.2 Fixed Bugs

This section contains bugs fixed in version **5.5.192** of **Elipse Power**.

### 6.2.2.1 AppBrowser

- AppBrowser now correctly loads documentation when the selected property quickly changes. *This bug occurred since v5.0.246.*
- AppBrowser, when opened from XControls, now correctly loads documentation of methods and properties. *This bug occurred since v5.0.47.*
- AppBrowser now correctly loads documentation of Server (Application) methods. *This bug occurred since v5.0.33.*

### 6.2.2.2 Database

- Fixed a behavior in which only the last active DBServer updated the **ConnectionActive** and **TotalFailedWrites** properties. *This bug occurred since v5.0.53.*

### 6.2.2.3 Documentation

- Fixed the value of Viewer's **ViewerLanguageID** property returned in case of Spanish language on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.5.164.*
- Updated the usage example of Collection of Links' **CreateLink** method on **Elipse Power Reference and Scripts Manual**.
- Fixed the figure **Link with an expression** on the exercise of chapter **Links** on **E3 Tutorial Developer**. *This bug occurred since v5.0.63.*
- Updated the description of shortcut keys CTRL + Up or Down arrows on script Views in **Elipse Power Studio** on **Elipse Power User's Manual**. *This bug occurred since v5.0.293.*
- Fixed the description of the configuration of I/O Driver's **DisableIOServerPool** property on **Elipse Power User's Manual** to indicate that this property must be configured to True so that this Driver executes outside the Pool. *This bug occurred since v4.5.106.*
- Updated the description of Formula's **SetValueData** and **SetUnitData** methods on **Elipse Power Reference and Scripts Manual**.
- Updated the figure **Configuration of a Historic object** of exercise **Application** of chapter **Query** on **E3 Tutorial Advanced**. *This bug occurred since v5.0.63.*

### 6.2.2.4 Domain, E3 Server, and Hot-Standby

- The **ping** command an E3 Server sends to a client that is connecting does not lock other client connections anymore. Also implemented maximum values for **PingTimeout** and **PingRetries** properties. *This bug occurred since v2.5.186.*
- Fixed a delay to close **E3Run** when stopping a Domain after alarm acknowledgment by E3Alarm. *This bug occurred since v5.1.51.*

### 6.2.2.5 E3Browser

- Fixed an error in E3Browser that does not display data if the connection to a database fails during initialization. *This bug occurred since v1.22.1.*
- E3Browser now can reconnect to a database that is deactivated and reactivated. *This bug occurred since v1.22.71.*

### 6.2.2.6 E3Chart

- Fixed a GPF that could occur when keeping a reference to a Legend object after destroying an E3Chart object. *This bug occurred since v0.0.1.*

### 6.2.2.7 ElipseX Libraries

- Added an option to the Domain to compress or not before sending it to an **Elipse Power Viewer**. *This bug occurred since v5.0.338.*

### 6.2.2.8 Expressions

- Fixed the behavior of **TypeName** and **IsObject** methods in Links. *This bug occurred since v1.20.450.*

### 6.2.2.9 Find and Replace

- The value of the **Find** field is checked before performing a replacement, regardless of the type of property to write. *This bug occurred since v3.5.147.*
- Users are now informed about errors during replacement and there is an option to activate or deactivate messages relative to the Find and Replace window. *This bug occurred since v5.0.360.*

### 6.2.2.10 Frames

- Fixed the behavior of the **zoom** parameter when omitted in the **OpenScreen** method, which must be 100%. *This bug occurred since v2.5.194.*

### 6.2.2.11 Interface

- All windows that persist their position are loaded in a normal state when closed while docked on a monitor's edge. Internal Splitters also load their dimensions correctly. *This bug occurred since v2.0.114.*

### 6.2.2.12 Other Corrections

- Fixed an error that demanded a change in focus before pressing the ENTER key to save changes in the options on the **Properties** tab of the Domain's options window. *This bug occurred since v4.5.77.*

### 6.2.2.13 PowerCAD and Electrical Modeler

- Fixed the undo operation when deleting collapsed elements using a Tie Node. *This bug occurred since v5.1.84.*
- Fixed the color of a collapsed Node adjacent to a deleted element. *This bug occurred since v5.1.84.*
- Fixed the display of a combo box after a collapse operation on Schematic Views. *This bug occurred since v5.1.84.*
- Fixed a GPF when trying to locate a collapsed element using a Tie Node on a Schematic View. *This bug occurred since v5.1.84.*
- Fixed an error where PowerCAD's Locate Elements window lost the typed text. *This bug occurred since v4.7.119.*
- Fixed the redrawing of collapsed Connectors when moving their respective Tie Node. *This bug occurred since v5.1.84.*
- Fixed the **Or** condition, which appeared as **And** on the **Filter** column on the Schematic Profiles window on the generation configurations of Schematic Views. *This bug occurred since v4.8.151.*
- Fixed the connection point on Busbars of Schematic Views by script. *This bug occurred since v5.0.122.*
- Fixed an incorrect return of the **Count** method of the Collection of Connections of Substations and Feeders. *This bug occurred since v5.0.122.*

### 6.2.2.14 PowerEngine and Electrical Studies

- Fixed the quality of Measurements of Topological Processor when there is a loop between Generators. *This bug occurred since v5.0.27.*
- The **PowerEngine2** and **EdbSync** modules stop writing error messages to the log while **E3 Tweak** was not yet used. *This bug occurred since v4.7.181.*
- Fixed the error code returned by the Self-Healing Module, which in some situations returned the value -31 (*NoSolutionWithoutOverload*) while it should return the value -15 (*NoSolution*). *This bug occurred since v5.0.431.*
- Fixed the algorithm to select candidate Switches on the Self-Healing Module. *This bug occurred since v5.0.237.*

### 6.2.2.15 PowerExplorer

- Now the window to operate commands is opened as a child window of PowerExplorer window. *This bug occurred since v4.8.190.*

### 6.2.2.16 Remote Domains

- Fixed the reconnection mechanism of client Remote Domains to prevent slowing down access to objects from the remote server. *This bug occurred since v3.0.201.*

### 6.2.2.17 Screen Objects

- Converting from *himetric* to pixel was changed to minimize and avoid stacking Screen repositioning errors during zoom in and zoom out operations. *This bug occurred since v4.0.174.*
- Rotation handlers are no longer displayed for a Screen. *This bug occurred since v1.0.16.*
- Fixed the names of some gradient style values of Screen objects, to match the style drawing. *This bug occurred since v1.18.155.*
- The Query, Line Printer, and Alarm Filter objects do not interfere anymore with the size and position of the Group or XControl they belong. *This bug occurred since v1.19.219.*
- Empty Groups do not interfere anymore with the rectangle of the object they belong, such as XControls or other Groups.

### 6.2.2.18 Scripts

- The menu to select objects must now work correctly after changing events with scripts. *This bug occurred since v5.1.7.*
- Fixed an error on the **Login** method that provoked a failure on the first login attempt of Windows users. *This bug occurred since v5.1.93.*

## 6.2.2.19 Scripts Editor

- Fixed the update of the list to select events on the Scripts Editor when removing an object selected on an inactive Editor. *This bug occurred since v4.8.280.*

## 6.2.2.20 Studio

- Users can no longer hide toolbars from Views on the **Customize** menu.
- Font and font size combo boxes correctly display the values of the selected object. *This bug occurred since v5.1.34.*
- Now users can paste a Link over a property that already contain a Link, then replacing the older one. *This bug occurred since v3.1.142.*
- Position and size of the Manage ActiveX Controls window, as well as the position of its internal splitter, are correctly saved. *This bug occurred since v3.5.120.*
- Fixed an error in **Elipse Power Studio** when a dimensionless object was pasted in a View. *This bug occurred since v5.0.204.*
- Fixed an error that caused a GPF in **Elipse Power Studio** when changing the DLL of an I/O Driver. *This bug occurred since v5.0.34.*
- Optimized Tag Browser performance when a Driver exposes a very large list of Tags. *This bug occurred since v2.0.7.*

## 6.2.2.21 Users

- Fixed a problem when loading the position of internal splitters of windows. *This bug occurred since v4.8.98.*
- The position of splitters of **Users** and **Groups** tabs of the User Permissions window now are correctly saved. *This bug occurred since v4.8.98.*
- **Elipse Power Studio** and **Elipse Power Viewer** sessions periodically check whether the logged in user is valid. *This bug occurred since v3.2.1.*
- Now a logged-in user in **Elipse Power Viewer** or in **Elipse Power Studio** is not affected when the password is changed on another session. *This bug occurred since v1.20.366.*
- The **ChangePassword** method now correctly checks the informed password, by considering the option to ignore case. *This bug occurred since v3.0.320.*
- When trying to save changes on the user database, these changes are applied to the most updated version of the user database, preserving previous changes and logging an error if there is any conflict that cannot be solved automatically. *This bug occurred since v3.0.355.*
- Fixed an error that discarded a password change if a login occurred immediately after. *This bug occurred since v1.20.319.*
- The window to edit users in **Elipse Power Studio** now is closed when a Domain is unloaded. *This bug occurred since v3.0.420.*

## 6.2.2.22 Viewer

- Now users can use the **Frame** property in Links of Screen objects.
- Fixed an error that allowed a window's size to be redefined via Pick or script but remained in maximized mode. *This bug occurred since v2.0.1.*
- Viewer's **ProductVersionMajor**, **ProductVersionMinor**, **ProductVersionBuild**, and **ProductString** properties, were removed from the List of Properties in **Elipse Power Studio**. *This bug occurred since v5.0.103.*
- Opened modal Screens from inside an **OnShow** script now work correctly.

This section contains updates of version **5.1** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 7.1 Version 5.1 Build 195

This section contains updates of version **5.1.195** of **Elipse Power** relative to version **5.1.193**.

### 7.1.1 Fixed Bugs

This section contains bugs fixed in version **5.1.195** of **Elipse Power**.

#### 7.1.1.1 Other Corrections

- Fixed a GPF (*General Protection Failure*) that could occur on **Elipse Power Viewer** if a Text, SetPoint, or Text Box object in edition mode was closed from inside its own script on **KeyDown** or **Validate** (when triggered by the ENTER key) events. *This bug occurred since v5.1.122.*

## 7.2 Version 5.1 Build 193

This section contains updates of version **5.1.193** of **Elipse Power** relative to version **5.1.192**.

### 7.2.1 New Features

This section contains new implementations of version **5.1.193** of **Elipse Power**.

#### 7.2.1.1 Protection Device

- Updated the installer of HASP drivers to version 7.103.

## 7.3 Version 5.1 Build 192

This section contains updates of version **5.1.192** of **Elipse Power** relative to version **5.1.186**.

### 7.3.1 Fixed Bugs

This section contains bugs fixed in version **5.1.192** of **Elipse Power**.

#### 7.3.1.1 Domain, E3 Server, and Hot-Standby

- Fixed a failure in E3 Server, which could occur when clients were closing but still receiving alarm updates. *This bug occurred since v4.5.112.*
- Fixed a possible GPF (*General Protection Failure*) in E3 Server when closing a client, **Elipse Power Viewer** or Remote Domain, with Links. *This bug occurred since v5.0.248.*

#### 7.3.1.2 PowerCAD and Electrical Modeler

- Fixed a GPF (*General Protection Failure*) when syncing Schematic Views. *This bug occurred since v5.1.148.*

## 7.4 Version 5.1 Build 186

This section contains updates of version **5.1.186** of **Elipse Power** relative to version **5.1.175**.

### 7.4.1 New Features

This section contains new implementations of version **5.1.186** of **Elipse Power**.

#### 7.4.1.1 Documentation

- Updated the **Elipse Software's** headquarters address throughout **Elipse Power** documentation.

## 7.4.1.2 Importing and Syncing Elipse Power Objects

- Now the Screen Importer of the Electrical Modeler does not open each one of the imported Screens.

## 7.4.2 Fixed Bugs

This section contains bugs fixed in version **5.1.186** of **Elipse Power**.

### 7.4.2.1 Importing and Syncing Elipse Power Objects

- Decreased memory usage of the Screen Importer of the Electrical Modeler to allow importing a large number of Screens without compromising **Elipse Power Studio** at the end of this operation.
- Fixed the Importer of Schematic Views, which could not set a color link to imported elements. *This bug occurred since v5.1.171.*

### 7.4.2.2 Importing and Syncing External EDBs

- Syncing external databases now supports syncing Feeders with its **SourceBreaker** property configured. *This bug occurred since v5.1.129.*
- Decreased memory consumption of Container-changing operations. *This bug occurred since v5.0.21.*

### 7.4.2.3 Users

- Fixed a lack of registration of password change events. *This bug occurred since v5.1.133.*

## 7.5 Version 5.1 Build 175

This section contains updates of version **5.1.175** of **Elipse Power** relative to version **5.0.439**.

### 7.5.1 New Features

This section contains new implementations of version **5.1.175** of **Elipse Power**.

#### 7.5.1.1 CFR21

- Implemented the **Keep history of last  $n$  passwords used** and **Password minimum duration is  $n$  days** options as part of CFR21 security policies.

#### 7.5.1.2 Documentation

- Added support for **Windows Server 2019** on **Elipse Power** documentation.
- Added changes to **E3 Tutorial Developer** on its on-site and online versions.
- Added a chapter about support channels on **E3 Tutorial Advanced** and on **E3 Tutorial Developer** replacing the chapter about **Elipse Knowledgebase**.
- Added support for **Windows 10 Enterprise LTSB/LTSC** on **Elipse Power** documentation.

#### 7.5.1.3 Domain Verifier

- Now Links in non-existing properties are added to verification errors.
- The list of errors on Domain Verifier now displays a **Solution** column, with suggestions to solve errors.
- Created a **Verify** method in the Application object of **Elipse Power Studio**, which allows exporting a list of errors found to a file in **CSV** format.

#### 7.5.1.4 E3 Tweak

- Added options for script profiling in **E3 Tweak**.
- Added new modules on the **Full** logs section of **E3 Tweak**.

#### 7.5.1.5 E3Browser

- Now users can select an alignment for columns and column headers in an E3Browser.

## 7.5.1.6 E3Chart

- Implemented a shortcut key ALT + . (period) to edit the **Style** column on the **Pens** tab of E3Chart's Properties Window.
- Now, when a requested Tag is not found and the connection to **EPM** is configured, the manager searches and adds Tags found on-demand on **EPM** tree.

## 7.5.1.7 E3DataAccess

- Created a new installer for **E3DataAccess** library, by keeping Windows Registry for the control but with support to SxS (*Side-By-Side*) local and private installation of dependencies.

## 7.5.1.8 Elipse Power Data Objects

- Now users can add Breakers and Reclosers to Photovoltaic Plants.
- The **Config** property of devices now works in scripts executing in **Elipse Power Studio**.
- Removed the counting of licenses of Measurements for fixed **\*TerminalState** Measurements of Direct Current Terminals of devices.
- Created the **StrokeColorDeEnergized** and **StrokeColorDeEnergizedUserDefined** properties in data objects and in the Electrical Modeler that contain a **StrokeColor** property. Now the color of the **StrokeColor** property in its de-energized state does not need to be a darker shade of that color.

## 7.5.1.9 Elipse Power Standard Libraries

- Created a Screen object representing a **VirtualTieNode**, used in the import process of Schematic Views.
- Created a **Flat** view mode in objects representing electrical devices, enabled by the **FlatMode** property.

## 7.5.1.10 ElipseX Libraries

- Created a **Show Class Definition** option on the contextual menu of ElipseX (XControls, XObjects, and XFolders) instances.

## 7.5.1.11 Importing and Syncing External EDBs

- The **Import from External Data Base** option of the Power Configuration object was removed, because the **Synchronize External Data Base** option already meet all use cases.
- Added an option in the Screen Import of Schematic Views to blink transferred Branches.

## 7.5.1.12 Installation

- DLLs ucrtbase.dll and api-ms-win\*.dll are not copied anymore to folder **bin** of **Elipse Power** on **Windows 10** or later.
- Created an installer for **Elipse Power Viewer**.

## 7.5.1.13 Interface

- Screen toolbars now are inside Screen Views.
- Implemented scroll bars on the **Scripts** tab of object Views.

## 7.5.1.14 Links

- Created a log session called **Links**, which lists all propagation via Links of values of object properties, also showing which properties were changed and which scripts were executed as a consequence of changes to a property.

## 7.5.1.15 OPC UA Driver and OPC UA Client

- OPC UA Client's certificate of **Elipse Power** is now generated with a **sha256RSA** signature.
- Updated the OpenSSL library, used by the OPC UA Client of **Elipse Power**, to version 1.0.2t (1.0.2.20).
- Added the **MaxNodesPerClientCall** property to OPC UA Driver to manage the maximum size of arrays of nodes passed by parameter in server requests.
- Implemented splitting operations to register and remove Tags in the server, according to the configuration of OPC UA Driver's **MaxNodesPerClientCall** property.

### 7.5.1.16 Other Implementations

- Created the **IsObjectActive** property, which indicates whether a native **Elipse Power** object is active or not.
- Now the process **PowerEngine2.exe**, which executes Electrical Studies for **EDB** modules, is also monitored by E3 Server, periodically registering its CPU and memory usage.
- Added to log an information of when **Elipse Power**, client or server, is using a non-standard TCP/IP port, that is, other than 6515 on connections.
- Logs of **RECRaw** session were redesigned.
- **Elipse Power Studio** grids now display a tool tip for cell values with hidden or partially hidden text.
- Added in the **Full** log the registry keys **FullLogComCalls**, to enable recording all DCOM calls received, and **FullLogRecCalls**, to enable recording all REC calls sent and received.

### 7.5.1.17 PowerCAD and Electrical Modeler

- Updated cursors of the Electrical Modeler for the **Zoom** and **Pan** operations.
- Created an option to add neighbor Feeders in Schematic Views and changed the Screen Importer to support Views with that feature.
- Created an option to add source Breakers of neighbor Substations in Schematic Views and changed the Screen Importer to support Views with that feature.

### 7.5.1.18 PowerEngine and Electrical Studies

- Created the **TransferenceFeeder** property in Terminals to indicate the transference status of Feeders.
- A Photovoltaic Plant now allows adding Reclosers and Breakers.
- Created the input Measurement **\*OperationStatus** for the Topological Processor.
- Power Flow now accepts the Measurement **\*OperationStatus**.
- Created the Measurement **\*NormalSourceTerminal** in the source **TopologyProcessor**, which informs the Terminal connected to the source inside the device's Feeder.
- Created the Measurement **\*FlowDirection** in the source **TopologyProcessor**, which receives the direction of power flow in each Terminal.
- Topology Processor and Self-Healing module now monitor changes in the Measurement **\*OperationStatus** in **Branch**-type elements.

### 7.5.1.19 Protection Device

- E3 Server now accepts **TimeHasp**-type protection devices with their internal clock battery discharged, as long as the device does not have a programmed expiration date.
- Updated the installer of HASP drivers (**haspdinst.exe**) to version 7.100.

### 7.5.1.20 Remote Domains

- Creating remote Links in E3 Server is now faster, specially in cases where a computer is consuming a lot of memory. Situations that used to take minutes to connect, even closing the connection of the Remote Domain, now take a few seconds.

### 7.5.1.21 Screen Objects

- Implemented shortcut keys to move a Screen inside window's area.
- Now users can add objects to a selection with a combo box.
- Now scrolling a Screen is always allowed in **Elipse Power Studio**, regardless of Windows configuration.
- Implemented shortcut keys for the **Zoom** contextual menu.
- Implemented a command and a shortcut key to fit Screens in **Elipse Power Studio** and in **Elipse Power Viewer**.
- Implemented new options to select Screen alignment in scripts, Picks, and in the **SplitLink** property.
- Implemented an area zoom mode on Screens.
- Added the **PolygonFill** property to Polygons and Curved Polygons to configure the fill mode of these objects.

### 7.5.1.22 Scripts

- Optimized the opening of the window in the **UserAdministration** method by **Elipse Power Viewer** and the Domain's user window by **Elipse Power Studio**, which used to be slow with many users and groups.
- Added an optional **Boolean** parameter *WindowsAutolog* to the **Login** method. A True value autocompletes the user and password fields with information from the current logged-in user, if the Windows authentication option is selected. Otherwise, the user name and password must be entered manually.
- Implemented the **MsgBoxEx** method, which allows opening a message box on a specific position on Screen.

### 7.5.1.23 SetPoint

- Implemented the **MaxCharacters** and **RemainingCharacters** properties in SetPoints.

### 7.5.1.24 Studio

- Font combo boxes of **Elipse Power Studio** now have a more suitable size.
- Toolbars of Views now split when resizing **Elipse Power Studio** window only on splitters of each group.
- The **Edit Grid** option is now also available on **Elipse Power Studio** toolbar as a sub-menu of the **Grid** option.
- Standardized and updated icons and cursors of tools with the same functionality among Screen Views of **Elipse Power Studio**, E3Chart, and Electrical Modeler.
- The buttons of View toolbars are now always visible and the toolbars fit to View size.
- Combo boxes of names of objects on script Views now have a more suitable size.
- The Object Counting window does not open by default anymore on new installations of **Elipse Power Studio**.
- Now users can navigate among items of a Screen using the keyboard.
- The **Show in Editor** option of the contextual menu of objects places the selected object inside the visible area.
- Implemented a system of library packages in **Elipse Power**.
- Added a confirmation message when users try to stop a Domain in **Elipse Power Studio**, which can be disabled on the **Tools - Options** menu.

### 7.5.1.25 Users

- Added an option to request a minimum number of special characters in user's passwords.
- Implemented a confirmation in case users want to change their password inside the range of days until expiration.
- Included optional parameters *PosX* and *PosY* in the **Login** and **UserAdministration** methods, which indicate the position, in pixels, relative to the left and top, respectively, where the dialog box is opened.
- During a password change, if multiple errors related to security policies occur, all those errors are listed on a single message.
- Implemented a modification when registering date and time changes of a password to consider whole days starting at midnight of the day of change.
- Added the **LoginWindowsUser** method, which executes a silent login using a Windows user.
- Implemented the **IsUserMemberOfGroup** method, which checks whether a certain user belongs to a group or not.

### 7.5.1.26 Viewer

- Created the **AllowContextMenu** property, which enables or disables the contextual menu, and the **AllowZoomChange** property, which enables or disables changes in zoom. The **AllowContextMenu** property replaces the **EnableZoomMenu** property, which was deprecated.
- Added the optional parameters *XPos* and *YPos* to the **PasswordConfirm** and **ChangePassword** methods, which are the position, in pixels, relative to the upper left corner where the respective windows are opened.
- Created the optional parameters *OpStatus* and *WarnDaysToExpire* in the **LoginUser** method. The *OpStatus* parameter returns an error code according to the result of the operation and the *WarnDaysToExpire* parameter informs the number of days for a password to expire. A **ChangeUserPassword** method was also created for silent changes of passwords.

## 7.5.2 Fixed Bugs

This section contains bugs fixed in version **5.1.175** of **Elipse Power**.

### 7.5.2.1 ActiveX

- Fixed the behavior of MS Forms objects when activated with their **Enabled** property set to False.

### 7.5.2.2 Documentation

- Updated exercises to configure IIS (*Internet Information Services*) on **Elipse Power** documentation to not create one more virtual directory during configuration.
- Fixed the description text of the *FileClass* parameter of E3StudioApplication's **ListFiles** method on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v5.0.301.*

### 7.5.2.3 Domain, E3 Server, and Hot-Standby

- Added and fixed in **Elipse Power Studio**, E3 Server, and **E3Run** the detection of duplicated files in a Domain.

### 7.5.2.4 Domain Verifier

- Fixed an error where the options **No (All)** and **Yes (All)** did not apply only to the current verification. *This bug occurred since v5.0.117.*
- Domain Verification now indicates when an XControl definition was not found. *This bug occurred since v2.5.39.*
- Improved detection and error messages for future objects of **Elipse Power**, as well as for **Elipse Power** objects when trying to open them in **E3**. *This bug occurred since v1.18.147.*
- Excluded items during a verification should not appear on the list of results anymore. *This bug occurred since v1.20.358.*

### 7.5.2.5 E3 Admin

- Fixed the shortcut keys conflicting with the **Apply** option on Domain's configuration tabs of **E3 Admin**.
- Remapped the shortcut keys of controls on the **Options** and **Automatic Pens** tabs of Domain configuration on **E3 Admin**.

### 7.5.2.6 E3 Tweak

- Added a vertical scroll bar in the **Description** field of **E3 Tweak**'s window. *This bug occurred since v3.2.178.*

### 7.5.2.7 E3Chart

- Fixed a problem preventing plotting Automatic Pens in a Report. *This bug occurred since v5.0.259.*
- Fixed a problem generating multiple error messages after inserting invalid values in E3Chart and E3Browser properties. *This bug occurred since v4.0.197.*

### 7.5.2.8 Elipse Power Data Objects

- Fixed the access to the **GetMeasurement** method in read-only connections in **Elipse Power Viewer** and in Remote Domains. *This bug occurred since v3.5.81.*

### 7.5.2.9 Elipse Power Standard Libraries

- Removed an attempt to automatically configure the active power in Photovoltaic Arrays. *This bug occurred since v5.0.297.*

### 7.5.2.10 ElipseX Libraries

- Now, before registering a library, there is a dialog box asking whether users want to save the changed classes. *This bug occurred since v2.0.141.*

### 7.5.2.11 Expressions

- Implemented support for using indexes for arrays in Link expressions. *This bug occurred since v1.18.147.*

### 7.5.2.12 Find and Replace

- The **Replace** option now works correctly in **VARIANT**-type fields of Picks. *This bug occurred since v5.0.360.*
- The **Look in** field of the Find and Replace window now shows the complete path of an object. *This bug occurred since v5.0.300.*

- The **Replace** option now works correctly in **Variant**-type fields of Digital Links. *This bug occurred since v5.0.360.*
- Now all replacement operations display a progress window. *This bug occurred since v5.0.300.*

### 7.5.2.13 Gallery

- Fixed the behavior of Picture's **VerticalPercentFill** and **HorizontalPercentFill** properties when using an original metafile, that is, not converted to symbol. *This bug occurred since v5.0.378.*
- Fixed an incorrect fill of drawing primitives without fill inside a Picture with shadow or with a partial **PercentFill** property. *This bug occurred since v4.0.185.*

### 7.5.2.14 Importing and Syncing Elipse Power Objects

- Fixed the color link of Link Nodes on Screens imported from Schematic Views. *This bug occurred since v4.7.119.*
- The **Synchronize External Data Base** options now do not write logs when the registry key is not created. *This bug occurred since v5.0.240.*
- Fixed scenarios where Schematic Views imported to Screens may not have their color (the **StrokeColor** property) configured. *This bug occurred since v4.7.132.*

### 7.5.2.15 Interface

- Tip texts of the options on the **Scripts** tab are now displayed correctly. *This bug occurred since v2.0.84.*
- **Elipse Power Viewer** messages do not show the expression "E3 Viewer" anymore. *This bug occurred since v3.5.81.*
- **Elipse Power Studio** messages do not show the expression "E3 Studio" anymore. *This bug occurred since v3.5.81.*
- **Elipse Power** messages do not show the expression "E3" anymore when referring to the product. *This bug occurred since v3.5.110.*

### 7.5.2.16 Links

- Fixed the possibility of a duplicated reconnection of Links from Remote Domains. *This bug occurred since v3.0.201.*

### 7.5.2.17 OPC Client

- Fixed the update of OPC Driver's **ServerStatus** property to not wait for the timer that checks the connection. *This bug occurred since v4.6.73.*

### 7.5.2.18 OPC UA Driver and OPC UA Client

- Fixed the update of OPC UA Driver's **ServerState** property to not wait for the timer that checks the connection. *This bug occurred since v4.8.122.*

### 7.5.2.19 Other Corrections

- Added separators among parameters in the **Full** log. *This bug occurred since v5.0.390.*
- The window to create arrays now closes correctly when clicking **OK**. *This bug occurred since v4.8.62.*

### 7.5.2.20 PowerCAD and Electrical Modeler

- The number of panels on the icon of a Photovoltaic Array is now fixed. *This bug occurred since v5.0.297.*
- When generating Schematic Views, scenarios were fixed where the **StrokeColor** property may not be correctly configured. *This bug occurred since v4.7.169.*
- Implemented support for reading and writing the **Cable** (Branch), **Substation**, and **SourceBreaker** (Feeder) properties via script. *This bug occurred since v5.0.122.*
- Increased the maximum number of elements that can be schematized or synced in a Schematic View. *This bug occurred since v5.0.330.*

### 7.5.2.21 PowerEngine and Electrical Studies

- Fixed the loading log of a child load block of the Load Shedding Electrical Study. *This bug occurred since v4.7.129.*
- The Self-Healing Electrical Study now starts faster in large systems. *This bug occurred since v5.0.237.*
- Fixed an inconsistent behavior of the Self-Healing Electrical Study in which the best maneuver plan was not found in networks with a database of Capacitors. *This bug occurred since v5.0.345.*

## 7.5.2.22 Reports

- Fixed a problem preventing real-time data from being displayed in fields on Report's **Page Footer** Section.

## 7.5.2.23 Screen Objects

- Fixed the zoom when performing a Screen fit in one dimension, specific to the alignment mode **paTopLeft**. *This bug occurred since v1.18.155.*
- Implemented a fix to Screen replacement after adding an object. *This bug occurred since v5.0.424.*
- Implemented a correction involving shortcut keys CTRL + Mouse wheel and SHIFT + Mouse wheel so that they are restricted to this combination, and the mouse wheel only to vertical displacement. *This bug occurred since v5.0.395.*
- Fixed repositioning windowed ActiveX controls on a Screen aligned to center when moved or resized. *This bug occurred since v5.0.351.*
- Fixed repositioning of Screen's visible area when changing zoom levels after finishing the Application Wizard. *This bug occurred since v5.0.414.*
- Fixed the drawing of the selection rectangle, if started from a transition of the **Move** mode. *This bug occurred since v4.8.87.*
- The zoom mode is no longer lost when an object is added or resized on a Screen. *This bug occurred since v5.0.415.*
- The status bar now displays information correctly when a Screen is created and updated when zoom changes, even if focus is not on any object of the **Design** tab. *This bug occurred since v2.0.45.*
- Improved conversion of images of type **EMF** (*Enhanced Metafile*) and **WMF** (*Windows Metafile*) to symbol. *This bug occurred since v1.18.147.*
- Now Screen objects pasted on a group appear correctly in their original position. *This bug occurred since v5.0.337.*

## 7.5.2.24 Scripts Editor

- Fixed resizing the **Scripts** tab on User Events. *This bug occurred since v5.0.271.*
- Fixed side effects when renaming canceled User Events. *This bug occurred since v5.0.289.*

## 7.5.2.25 Studio

- Fixed the update of inactive Screens in **Elipse Power Studio** when the grid is activated or deactivated.
- Combo boxes on the **Format** toolbar are now only enabled when users select an object with a **Font** property. *This bug occurred since v2.0.20.*
- Fixed the behavior of expanding all items in Views that display XObject instances. *This bug occurred since v1.18.30.*
- Menu buttons in **Elipse Power Studio** toolbars are now correctly disabled. *This bug occurred since v1.0.16.*
- Keyboard focus now remains on the Properties List when **Elipse Power Studio** is minimized and maximized. *This bug occurred since v5.0.231.*
- **Elipse Power Studio** now correctly closes when there are floating and sliding windows. *This bug occurred since v5.0.244.*
- Fixed duplicated shortcut keys for the **Apply** option on the data configuration tab of Pens of an E3Chart and on the configuration window for importing Screens of the Electrical Model.
- The contextual menu of Screens now displays again the **Verify** option. *This bug occurred since v5.0.374.*
- Now docked windows correctly pass along focus when changed to sliding mode. *This bug occurred since v2.0.22.*
- Remapped the shortcut keys of controls of **General** and **Visual Reference** tabs of E3Chart Axes.
- The combo box of Scripts View can now be used normally on a floating window. *This bug occurred since v5.0.229.*
- Now users can use the menu in **Elipse Power Studio** window with a floating Organizer. *This bug occurred since v5.0.178.*
- Fixed the behavior of **No for All** and **Yes for All** options when closing **Elipse Power Studio**. *This bug occurred since v4.7.38.*
- The **Explode Symbol** (convert into a group) option was optimized and it is faster in complex objects.
- Fixed a GPF (*General Protection Failure*) that occurred when trying to convert to symbol a metafile containing **EMR\_POLYBEZIERTO16**-type records.
- Sub-items of contextual menus now do not display nonsense messages anymore in **Elipse Power Studio** status bar. *This bug occurred since v4.8.243.*
- Fixed a GPF (*General Protection Failure*) when closing the window to import OPC Tags. *This bug occurred since v1.0.0.*

- Removed an unnecessary message about saving project and library files and fixed the **Save** option in **Eclipse Power Studio** toolbar to fully save folders, projects, and libraries. *This bug occurred since v5.0.363.*
- Fixed a GPF (*General Protection Failure*) in **Eclipse Power Studio** when opening a Domain on the list of Recent Domains. *This bug occurred since v3.0.223.*
- Restored the drawing of Properties List's borders of **Eclipse Power Studio** on **Windows 10**.
- Now **Eclipse Power Studio** is visible on Windows ALT + TAB window even when there is a sub-window of the Properties Window open.

### 7.5.2.26 Translation

- Standardized shortcuts to **Eclipse Software** website on the **Help** menu of **Eclipse Power Studio**. *This bug occurred since v5.0.137.*
- Updated translation of configuration windows of User Events on **Eclipse Power Studio**. *This bug occurred since v5.0.387.*
- Removed a repeated word on the search results window of **Eclipse Power Studio**. *This bug occurred since v5.0.408.*

### 7.5.2.27 Users

- Blocked the creation of users or groups if there is any field with invalid data. *This bug occurred since v1.20.304.*
- Fixed the verification of days to display messages warning users about password expiration. *This bug occurred since v1.20.355.*
- Text boxes on the **Security Policies** area on the windows to edit users and groups and on the **Password General Policies** area on the Domain options now only accept numbers and cannot be left blank. *This bug occurred since v1.20.304.*

This section contains updates of version **5.0** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 8.1 Version 5.0 Build 439

This section contains updates of version **5.0.439** of **Elipse Power** relative to version **5.0.437**.

### 8.1.1 Fixed Bugs

This section contains bugs fixed in version **5.0.439** of **Elipse Power**.

#### 8.1.1.1 Links

- Fixed the possibility of a double reconnection of Links from Remote Domains. *This bug occurred since v3.0.201.*

## 8.2 Version 5.0 Build 437

This section contains updates of version **5.0.437** of **Elipse Power** relative to version **5.0.434**.

### 8.2.1 Fixed Bugs

This section contains bugs fixed in version **5.0.437** of **Elipse Power**.

#### 8.2.1.1 Scripts

- Fixed the access to **Events** properties of E3Alarm and Alarm Filter objects. The **Events** property, common to all objects, was renamed to **ObjectEvents**. *This bug occurred since v5.0.376.*

## 8.3 Version 5.0 Build 434

This section contains updates of version **5.0.434** of **Elipse Power** relative to version **5.0.432**.

### 8.3.1 Fixed Bugs

This section contains bugs fixed in version **5.0.434** of **Elipse Power**.

#### 8.3.1.1 Links

- Fixed a behavior of Links, which could discard a value that changed exactly during the reconnection of that Link. *This bug occurred since v3.0.201.*

## 8.4 Version 5.0 Build 432

This section contains updates of version **5.0.432** of **Elipse Power** relative to version **5.0.428**.

### 8.4.1 New Features

This section contains new implementations of version **5.0.432** of **Elipse Power**.

#### 8.4.1.1 PowerEngine and Electrical Studies

- Created the **FeedbackTimeout** property in the Self-Healing Electrical Study, which allows configuring a time-out to wait for a feedback of this Study's operations.
- Added the Discrete Measurements **SelfHealingLoadOffAtRestoration**, **SelfHealingLoadOffAtOverload**, and **SelfHealingLoadOffAtDeEnergize** to indicate a non-restoration or shutdown of Loads due to overloads when handling triggers in the Self-Healing Electrical Study.
- Added a new availability mode of Switches to allow Switches with local protection (**HotLineFlag**) can receive more Loads or be de-energized in the Self-Healing Electrical Study.
- Added the value **Indication2** to propagate downstream flags in the Self-Healing Electrical Study.
- Added the **ElectricalPhase** field to the access API to an EDB file by the drivers of the External Reader Electrical Study.

- Added a new error code to the Self-Healing Electrical Study to indicate that a solution could not be found without a system overload.

## 8.4.2 Fixed Bugs

This section contains bugs fixed in version **5.0.432** of **Elipse Power**.

### 8.4.2.1 Documentation

- Fixed new implementations that were wrongly added or not added at all on **Elipse Power Release Notes**. *This bug occurred since v5.0.425.*

### 8.4.2.2 Elipse Power Data Objects

- Fixed an unexpected close when loading the Power Configuration object with a default type of Discrete Measurement with more Meanings than the current version. *This bug occurred since v5.0.167.*

### 8.4.2.3 Import and Export

- Fixed the import process of instances of XObjects via CSV (*Comma-Separated Values*) files. *This bug occurred since v5.0.158.*

### 8.4.2.4 Interface

- Fixed the behavior of the ENTER key and the combination of keys SHIFT + ENTER of closing the Properties Window when editing a source of a Link on the **Links** tab. *This bug occurred since v5.0.291.*

### 8.4.2.5 PowerEngine and Electrical Studies

- Fixed the behavior of the Self-Healing Electrical Study that ignored the quality of the Discrete Measurement **\*TerminalState** on de-energized triggers. *This bug occurred since v4.8.289.*
- Fixed the behavior of the Self-Healing Electrical Study, in which recloser cycles were ignored during a search for the first event that resulted in a trigger. *This bug occurred since v4.8.289.*
- Fixed an inconsistency when propagating a flag of the Self-Healing Electrical Study, in which de-energized blocks were not flagged if that flag came from a downstream Switch. *This bug occurred since v4.8.85.*

## 8.5 Version 5.0 Build 428

This section contains updates of version **5.0.428** of **Elipse Power** relative to version **4.8.358**.

### 8.5.1 New Features

This section contains new implementations of version **5.0.428** do **Elipse Power**.

#### 8.5.1.1 Alarm Server and Alarm Configuration

- The **Analog** tab on the Properties Window of Analog Alarms now uses a grid to configure its Subconditions.

#### 8.5.1.2 AppBrowser

- Changed the generic icons of collections and collection items in AppBrowser, which now also shows collections inside collections.
- AppBrowser now shows parameters in properties as well. Properties with known indexes are shown directly in AppBrowser's tree.

#### 8.5.1.3 Database

- Changed the order of error messages from Access, SQL Server, and Oracle databases. The code and description of errors now come before the executed SQL **String**. Standardized all messages with the expression "sql string" and its variations to "SQL String".
- Implemented a verification of objects for the configuration of indexes and primary keys of a Historic.

## 8.5.1.4 Documentation

- Added information on **Elipse Power** documentation about using reserved characters in names of objects.
- Removed a note alerting that users had to change a Digital Link's data type so that the exercise about libraries on **E3 Tutorial Advanced** worked.
- Fixed several texts of **Elipse Power** documentation to replace the expression licensing for product key where it applies. In addition, were added notes on **Elipse Power User's Manual** explaining how licenses work for Tags and Block Tags.
- Updated **Elipse Power User's Manual** with information about Stored Procedures used by a Storage on a database.
- Updated the description of the **EnableTextColor** property of an Axis on E3Chart's Collection of Axes on **Elipse Power Reference and Scripts Manual** to indicate that, when disabled, it uses the color defined in E3Chart's **ForeColor** property.
- Removed the topic about including E3Playback in the Demonstration application on **Elipse Power User's Manual**.
- Added a new topic on chapter **Elipse Power Studio** of **Elipse Power User's Manual** called **Shortcut Keys** with shortcut keys used by several commands in **Elipse Power Studio**.
- Updated the topic with usage examples of SQL Server on **Elipse Power User's Manual** to remove the reference to version 2000, already discontinued.
- Added the corresponding properties on **Elipse Power Reference and Scripts Manual** of the **Calculate statistical data**, **Show average line**, and **Show minimum and maximum** options of the **Statistics** tab of an E3Chart Pen described on **Elipse Power User's Manual**.
- Added the property corresponding to the **Invert scale** property on the **Axis** tab of E3Chart's configuration on **Elipse Power User's Manual**.
- Updated **Elipse Power** documentation to remove **Windows XP**, **Windows Vista**, and **Windows Server 2003** from the list of operating systems supported by **Elipse Power**.
- Updated all figures on **Elipse Power** documentation to show the new controls of Common Controls 6.0 library and **Windows 10** theme.

## 8.5.1.5 Domain, E3 Server, and Hot-Standby

- Optimized the size of libraries sent to a **Elipse Power**.

## 8.5.1.6 Domain Verifier

- Implemented a new interface and a new behavior to perform a Domain verification.
- Domain Verifier now also warns users when there is more than one Alarm Server, more than one Power Configuration object, or more than one Viewer.
- Domain Verifier now warns users if items not supported inside XObjects, such as Power Configuration objects or Alarm Servers, are inside these objects.
- Users can now use Domain Verifier with multiple objects in Views that allow multiple selection.
- Domain verification now warns users if items not supported in XObjects are inside these objects.

## 8.5.1.7 Drivers and I/O Server

- Changed the logic of timers of an I/O Server to allow scans shorter than 100 ms.
- Created the **WriteNullAsEmpty** property for Drivers, which makes it easy to implement Gateways.

## 8.5.1.8 E3 Admin

- Added a **Pending Data** column to E3 Admin's Statistics window, together with **Pending Packets** column.

## 8.5.1.9 E3 Tweak

- Added the **EnableScriptProfiling**, **ScriptProfilingDumpIntervalSec**, **MinScriptDurationMs**, and **MinFragmentDurationMs** options to activate the script profiler tool. It was also added a row on the description field of the options for a better visualization of descriptions that use more than one row.
- Added configurations relative to **EdbSync**, **EdbSync** and **Full.EdbSync** log keys.
- Added the configuration of the profiling tool corresponding to the **DisableMinimizeHeap** option.

### 8.5.1.10 E3Alarm

- An Alarm Filter's Properties Window is now a modal dialog box.
- Implemented a new option to blink alarm colors, which blinks only the text and toggling between the already defined text color and a second color specified only for this blinking option.

### 8.5.1.11 E3Browser

- Created a new **Colors** tab for an E3Browser's Properties Window.
- Created the **HeaderWordWrap** property, which allows displaying the text of column headers on multiple rows.

### 8.5.1.12 E3Chart

- Implemented Automatic Pens on E3Chart.
- Implemented an automatic manager of historical data.
- Added a configuration window on E3 Admin to configure a connection to **EPM**, used by Automatic Pens.
- Implemented an Automatic Axis on E3Chart.
- Changed the interface of E3Chart's **Legend** tab for the configuration of column properties.

### 8.5.1.13 Elipse Power

- Added support for Photovoltaic Power Plants in **Elipse Power**.
- Created the new objects Photovoltaic Power Plant, Photovoltaic Array, Photovoltaic Bay, Junction Box, Direct Current Branch, Photovoltaic String Group, Photovoltaic String, and Inverter, and created a default Analog Measurement **\*DcPower**.
- Added the Screen objects Photovoltaic Array, Inverter, and Junction Box in the PowerControls library.
- The PowerControls library shows the full hierarchy in PowerExplorer when the type of an object is **Photovoltaic Array**.
- Implemented the reading and using the activation of licenses, at run time, of Photovoltaic Array and Inverter objects.

### 8.5.1.14 Elipse Power Data Objects

- Created the **DiscreteTypes** property in the Power Configuration object to allow configuring types of Discrete Measurements by script.
- Created the **AnalogTypes** property in the Power Configuration object to allow configuring types of Analog Measurements by script.
- Created the **CommandTypes** property in the Power Configuration object to allow configuring types of Commands by script.
- Created the **ProtectionTypes** property in the Power Configuration object to allow configuring types of Protections by script.
- Created the **VoltageColors** property in the Power Configuration object to allow configuring colors for base voltages by script.
- Created the **SwitchGearColors** property in the Power Configuration object to allow configuring colors for Switch statuses by script.
- Implemented writing access to the properties of the object returned by Power Configuration's **MeasurementColors** property.
- Added the **EuLow** and **EuHigh** properties in Analog Measurements, which represent minimum and maximum values of a Measurement's engineering unit, respectively.
- Created a **Design** tab on the Power Configuration object, where this object appears and its child objects.

### 8.5.1.15 Elipse Power Standard Libraries

- Created the **InterlockMode** property in the XPowerMenuCreator object, which allows configuring an interlock mode in Commands of this object.
- Created the **MenuType** and **ModalScreenName** properties, which allows configuring new menu options to access Measurements and Commands of objects.

### 8.5.1.16 ElipseX Libraries

- Added a **Register Libraries** option near the **Save All** option on the **Default** toolbar, added a shortcut CTRL + SHIFT + L to register all libraries, and added an icon near the **Register Loaded Libraries** option on the contextual menu, so that users get familiar with that option on the toolbar.
- Added the **ValueMode** property in the definitions of an ElipseX, which informs whether instances of the defined classes contain analog, discrete, or undefined values.
- Now users can insert I/O Tags directly as child objects of an XObject, without the need of a Data Folder.

### 8.5.1.17 Find and Replace

- Implemented finding by categories.
- Implemented a new interface for finding and replacing in **Elipse Power Studio**.
- Now users can use two result windows for finding and replacing. Results are now separated in groups and users can also add the results of a new find or replace operation to existing results.
- The find and replace dialog box now restores the options used by users between sessions.

### 8.5.1.18 Historic

- Created the **Fields** property, which returns the collection of Fields of a Historic.
- Changed the Fields of a Historic to become objects that appear in Organizer.
- Changed the definition of indexes and primary keys of a Historic, now performed with native **Elipse Power** objects.

### 8.5.1.19 Importing and Syncing External EDBs

- Syncing external electrical models can automatically infer the size of devices if the Driver does not send that information.
- Syncing external electrical models can retrieve more organized system diagrams.

### 8.5.1.20 Importing and Syncing Elipse Power Objects

- Users cannot perform a Screen import process anymore if there are major problems in the classes of XControls used for importing.
- Added an option to import an electrical model to a Screen Group and revised the interface to configure the import process.

### 8.5.1.21 Installation

- Integrated eeLogs version 4.5.126.
- Updated HKCustomer to version 5.5.48.

### 8.5.1.22 Interface

- Standardized borders of controls of type **ListControl** and **TreeControl** on dialog boxes.
- Improved support for using a keyboard on **Elipse Power Studio** grids.
- Added shortcut keys F4 and SHIFT + F4 to open lists on the Properties List and ALT + . (period) for  options of fields in general.
- Implemented standard navigation by shortcut keys ENTER or SHIFT + ENTER and TAB or SHIFT + TAB on **Elipse Power** grids.
- The **Rename** option now works more consistently when selecting multiple objects.
- Contextual menus in **Elipse Power Studio** were revised to present a more consistent behavior.
- Changed the term **Viewer Full** by **Viewer Control** on the **Group of Viewers** tab on the Domain's options window of E3 Admin.
- Changed the use of the expressions "license" or "license of use" on **Elipse Power** documentation for the expressions "key" or "product key", respectively.

### 8.5.1.23 OPC UA Driver and OPC UA Client

- Updated the OpenSSL library, used by the OPC UA Client, to version 1.0.2p (1.0.2.16).
- Increased compatibility of OPC UA Client to OPC UA standard by removing the filter for data change in the subscription.

### 8.5.1.24 Other Implementations

- **Elipse Power**, **Elipse Power Viewer**, and **WebViewer** now require **Windows 7 SP1**, **Windows Server 2008 R2 SP1** or later to install.
- Trying to load corrupted files happens only once, until the corresponding project file be updated.
- Optimized the time to open and close very complex objects.
- Added the **DisableMinimizeHeap** option to Windows Registry to control **Elipse Power** memory release to the operating system.
- Added and standardized the Full logs of waiting statuses of **Elipse Power**.
- Now **Elipse Power** logs indicate whether the **Diebold Warsaw** module is installed on the machine where **Elipse Power** is executing.

### 8.5.1.25 PowerCAD and Electrical Modeler

- The function to locate Substations, Feeders, and Wind Power Plants now views these elements at the System level.
- Electrical Modeler's canvas is always adjusted to the diagram's content after an automatic layout organization and after an automatic generation of Schematic Views.
- Feeders and Schematic Views in large electrical models are now removed faster.
- Created the **CAD** property in the Power Configuration object for use in scripts in **Elipse Power Studio** with electrical models in **EDB** format.
- Electrical Modeler now contains the **Back** and **Forward** options.
- Improved the performance to generate and sync Schematic Views and to close the Power Configuration object.
- Added an **Enable organic pre-processing** option to the configuration to generate Schematic Views.

### 8.5.1.26 PowerEngine and Electrical Studies

- Implemented support for tap in Three-Winding Transformers only for models in **EDB** format.
- Created a representation of a tap in Three-Winding Transformers.
- Created two new input Discrete Measurements, **\*Bypass** and **\*Isolation**, for Topological Processor, Power Flow, Self-Healing, Load Shedding, and State Estimator modules.
- Allowed the External Reader module to provide values of **\*Bypass** e **\*Isolation** Discrete Measurements to the Power Flow module.
- The Load Shedding module now shows in the log the reason a **ValidOutput** property contains a False value.
- The PowerEngine2 library now supports Two-Winding Transformers inside Wind Power Plants and their Bays.
- A closed loop blocks the operation of the Self-Healing module only with the involved Feeders, not blocking all Feeders connected to the same Busbars anymore.
- Implemented an overload simulation in the Self-Healing module.
- The Analog Measurement **\*LoadSheddingSpinningReserve** can receive a negative value, which indicates whether a generator must reserve power.

### 8.5.1.27 Protection Device

- Updated the installer of HASP drivers (haspdinst.exe) to version 7.81.

### 8.5.1.28 Screen Objects

- Copying a Screen object by dragging it with the CTRL key pressed now creates a new object over the existing objects.
- Implemented a shortcut key SHIFT + Mouse wheel to scroll a Screen horizontally, as long as the scroll bar is visible.
- Implemented a **FitObject** method for Screens and Screen objects. This method fits a Screen or a Screen object to the center of the window or Screen using a percentage relative to the Screen for filling.

- Implemented a new option for Screen alignment or anchoring as centered in the visible area for editing (in **Elipse Power Studio**) or viewing (in **Elipse Power Viewer**). This option allows new zoom features.

### 8.5.1.29 Scripts

- Implemented the **ProductString**, **ProductVersionMajor**, **ProductVersionMinor**, and **ProductVersionBuild** properties in the Application object and created the **E3ProductString**, **E3ProductVersionMajor**, **E3ProductVersionMinor**, and **E3ProductVersionBuild** methods in the **E3Globals** module, used in Links and scripts.
- Implemented support for objects of the *Viewer* context in Studio's **ListFiles** method.
- The **Application.Trace** method is now also available in **Elipse Power Studio** and in **Elipse Power Viewer** and that message is registered in **Elipse Power** logs. In **E3Run** this method keeps recording messages in Domain's log files, in the format **<DomainName>.txt**, but also registers that message in **Elipse Power** logs.
- Implemented a tool to analyze script performance (profiler), which can be enabled in Windows Registry.
- Created the **Events** property in **Elipse Power** objects, which is a collection of events that allow adding scripts by script in any object.
- **Elipse Power** now can, by enabling it in Windows Registry, declare its script structure for an easy debugging in **E3Run**, **Elipse Power Viewer**, and **Elipse Power Studio**.

### 8.5.1.30 Scripts Editor

- Added shortcut keys in Scripts Editor for AppBrowser, for the Find and Replace tool, and for the command to compile scripts.
- Added shortcut keys for all options on the Scripts Editor's toolbar.
- Implemented a new interface to edit User Events.

### 8.5.1.31 Storage

- Created one more index by default on Storage tables, sorting only by the **E3Timestamp** field.
- Created the **DeleteField** method on the Collection of Storage Fields and allowed a writing in the **Name** property of Fields.
- Changed Storage Fields to become objects that appear in Organizer.

### 8.5.1.32 Studio

- Added shortcut keys in **Elipse Power Studio** for the **Saves and Runs the Domain** (F9), **Run or Stop Domain** (SHIFT + F9), and **Run or Stop Elipse Power Viewer** (CTRL + F9) options.
- Added options to access **Elipse Knowledgebase**, **Elipse Software** channel on YouTube, and **Elipse Software** Driver's download page on **Elipse Power Studio's** **Help** menu.
- When creating or saving an object, a Folder, or a Resource, **Elipse Power** version used to save them is now registered. When executing an application, saved versions of every object are registered on logs.
- **Elipse Power Studio** now displays a warning to users in case they try to add a library copied from an existing one. In addition, the Domain Verifier is now opened when finding errors in a Domain when executing an application.
- **Elipse Power** now uses the Common Controls 6.0 library.
- Standardized the size of text and date and time edition boxes to fit a Spin Button.
- Removed the single tab on WatchWindow window.
- Implemented a new shortcut for the **Show in Editor** command, a double-click or press the ENTER key on an item in Organizer or Explorer.
- Created shortcut keys for **Elipse Power Studio** windows (Organizer, Gallery, Properties List, etc.).
- Changed the terminology for the Domain or Object Verification.
- The configuration window of Digital, Analog, Table, and Multiple Links now allows receiving keyboard focus using shortcut keys CTRL + ENTER and ALT + Down arrow when focus is on Link's row and column.
- Created the **DeleteFile** method to delete objects from project files by script in Studio.
- Implemented new styles or themes for **Elipse Power Studio** and changed the default theme.

### 8.5.1.33 Translation

- Changed the expression from "deleted" to "removed" in the names of removal events of users and groups on the configuration of event registration of a Domain.

### 8.5.1.34 Viewer

- Added logs for the Login window and changed the logs when opening Screens to register failures.
- Added the *CreateNew* parameter to Viewer's **GetFrame** method, which allows returning only existing Splitters.

## 8.5.2 Fixed Bugs

This section contains bugs fixed in version **5.0.428** of **Elipse Power**.

### 8.5.2.1 Alarm Server and Alarm Configuration

- Fixed the behavior of the **Formatted Value** field of a Discrete Alarm when updating a Domain. *This bug occurred since v4.0.62.*
- An Alarm that returns with its **AlarmVerify** property in False now can be re-enabled. *This bug occurred since v4.7.239.*
- The **Remove**  option on the **User Fields** tab of an Alarm Server is now disabled when the selected User Field is not the last one. *This bug occurred since v4.5.167.*

### 8.5.2.2 AppBrowser

- Fixed the behavior of AppBrowser's help for non-native objects of **Elipse Power**, such as collections.
- Fixed in AppBrowser the icon of the **UaNodeId** property of OPC UA Tags. *This bug occurred since v4.8.92.*

### 8.5.2.3 CFR21

- Inserted limit values for number fields for user or group options and Domain security. *This bug occurred since v1.20.304.*

### 8.5.2.4 Database

- SQL Server's connection **String** is not deleted anymore when switching the window with the **Change connection string** option enabled. *This bug occurred since v4.5.56.*
- Oracle databases configured to use the **TIMESTAMP** data type are also forced to use a native ADO Driver, when executing an application and when in **Elipse Power Studio** as well. *This bug occurred since v2.5.21.*
- Fixed an error in the **Test Connection** option on the **Configuration** tab of a Properties Window of a database, which was not updating when switching the type of database. *This bug occurred since v4.6.67.*
- Oracle's reserved words are now surrounded by brackets, thus can be used as names of Fields, Tables, or Indexes, among others.

### 8.5.2.5 Demonstration Application

- 
- Adjusted the width of Connectors relative to the size of objects on the Screen **SE2**. *This bug occurred since v4.5.184.*
- Rebuilt the alignment of the Connector above Breaker **5202** of Screen **SE2** in **4:3** mode. *This bug occurred since v4.8.291.*
- Removed the expression "Tela1" of the **Screen** property of Screens **SE1** and **SE2**. *This bug occurred since v4.7.218.*

### 8.5.2.6 Documentation

- Added a new **E3DBEngine** section on **E3 Tweak User's Manual** with an option to disable thread pool, which was previously documented on **E3Run** section. *This bug occurred since v4.6.118.*
- Fixed several links on **Elipse Power** documentation.
- Fixed the description of the *Shift* parameter on **KeyDown** and **KeyUp** events of Screens and Screen Objects on **Elipse Power Reference and Scripts Manual**, which wrongly indicated a combination of a key with a mouse click. *This bug occurred since v1.20.440.*
- Updated the documentation of methods on **Elipse Power Reference and Scripts Manual** to clearly state the behavior of a method in cases where some of its parameters is omitted. *This bug occurred since v2.5.194.*
- Changed the note on the **IIf** method on **Elipse Power Reference and Scripts Manual** to fix the example expression of its *Condition* parameter. *This bug occurred since v3.5.271.*
- Fixed the description of OPC UA Block Tag's **WriteEx** method on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.8.161.*

- Added descriptions for **AddField** and **RemoveAll** methods of the Collection of Storage Fields on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.0.13.*
- Fixed the description of the **GetTickSpacing** method of the Axis on E3Chart's Collection of Axes on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.20.275.*
- Fixed the call to a Pen's **Connect** method in the description of Pen's **ScaleX** and **ScaleY** properties on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.20.281.*
- Fixed the description of the **MaxGapTime** property of an E3Chart's Pen on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.5.162.*
- Fixed the default value of the **BkColor** property of an E3Chart's Pen on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.19.87.*
- Fixed the links to the **Item** method of E3Chart's Collection of Axes on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.5.119.*
- Fixed the description of **GetTickSpacing** and **SetTickSpacing** methods on **Elipse Power Reference and Scripts Manual** to state that these methods return or configure divisions of an E3Chart's scale, not subdivisions.
- Updated the description of the **ReferenceLineStyle** property on **Elipse Power Reference and Scripts Manual** to state the number values of each one of the options for this property. *This bug occurred since v4.8.53.*
- Fixed the spelling of the **DbClick** event on **Elipse Power Reference and Scripts Manual**.
- Fixed the style of the description of the **RemoveSubCondition** method of a Discrete Alarm's Collection of Subconditions on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.0.192.*
- Updated the description of the **GetAlarm** method, common to all Alarm Sources, to state the Discrete Alarm Source on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.0.192.*
- Updated the **Elipse Power Reference and Scripts Manual** to contain information about the Source object returned by several properties of Screen objects and MS Forms.
- Updated topic **Layer** on **E3 Tutorial Advanced** to fix an information that Screen's **Layer** property, when configured to 0 (zero), hides all Screen objects. *This bug occurred since v4.7.120.*
- Updated topic **Screens and Screen Objects - Screen Objects - General Configurations - Layers** on **Elipse Power User's Manual** with information about the new configuration screen for Screen layers. *This bug occurred since v4.5.61.*
- Fixed the content of topic **Domains - Configuration - Security Tab** on **Elipse Power User's Manual**. *This bug occurred since v4.8.205.*

### 8.5.2.7 Domain, E3 Server, and Hot-Standby

- Implemented mechanisms in E3 Server to disconnect slow or hanged clients.
- Reduced the memory usage of pending packets in REC communication when compression is enabled. *This bug occurred since v2.5.151.*

### 8.5.2.8 Domain Verifier

- Fixed a problem on the progress window, which captured the focus of messages during a verification of objects.

### 8.5.2.9 E3 Admin

- E3 Admin submenus were standardized to follow the same drawing style of the main menu. *This bug occurred since v3.0.348.*
- Fixed the border of tabs on the window with Domain options of E3 Admin. *This bug occurred since v3.5.200.*

### 8.5.2.10 E3 Tweak

- Changed the title of the **Progress indicator window** option to **Hiding of progress indicator window**, for clarity. *This bug occurred since v3.2.184.*

### 8.5.2.11 E3Alarm

- Fixed the logic to enable or disable the option to remove a Connection. *This bug occurred since v4.7.163.*
- Fixed the update of **Filters** and **Connections** tabs when selection changes from an E3Alarm or Alarm Filter to another. *This bug occurred since v4.7.155.*

### 8.5.2.12 E3Browser

- Fixed an error where the tooltip of Field titles may hang over the screen if the shortcut key ALT + TAB is used to switch among windows. *This bug occurred since v1.0.15.*
- Users cannot configure properties of an E3Browser with invalid values anymore. *This bug occurred since v1.19.87.*

### 8.5.2.13 E3Chart

- Fixed E3Chart's **FitPen** method to accept the name of a Pen and also a numeric index. *This bug occurred since v1.20.126.*
- Fixed a problem on the options of the **Legend** tab of the Properties Window, which were not displayed enabled when this window was opened from within a Report. *This bug occurred since v1.19.193.*
- Fixed the default values of the **BackColor**, **TextColor**, and **HeaderTextColor** properties of a Legend. *This bug occurred since v1.20.55.*
- Fixed the behavior of the *ForeColor* parameter of the **ResetConfig** method and also its usage on main Axes. *This bug occurred since v1.20.275.*
- Changed the layout of the **Legend** tab on Properties Window and created a new window with two tabs for additional configurations. *This bug occurred since v4.8.123.*
- Added an option to configure Legend's **ShowBackground** property using the Properties Window. *This bug occurred since v1.20.55.*
- Removed the option to configure a color on the configuration window of the source of a Legend. *This bug occurred since v4.8.231.*
- Fixed a problem with Legend's **ShowBackground** property, which was not saved in **Eclipse Power Studio**. *This bug occurred since v1.20.55.*
- The edition field of a Legend's Source on the More settings window is now read-only. *This bug occurred since v4.8.231.*
- Fixed the effect of the **ResetConfig** method on the visual reference options of Axes. *This bug occurred since v4.8.19.*
- Fixed the effect of the **ResetConfig** method on the sources of Scales. *This bug occurred since v1.19.191.*
- Now the **ResetConfig** method configures the **ShowBorder** property to its default value, which is True. *This bug occurred since v4.8.12.*
- Fixed a problem that prevented configuring negative values for reference lines on the **Visual Reference** tab of a Properties Window. *This bug occurred since v4.8.19.*
- Fixed the keyboard focus on the tabs of a Properties Window, which could not return to the tab when clicking an option on that tab. *This bug occurred since v1.20.280.*

### 8.5.2.14 Elipse Power

- Fixed an empty error message about executing Commands when there are errors in the definition or syntax of Command scripts. *This bug occurred since v4.8.149.*
- Fixed the notification of changes in the Power Configuration object when inserting a Command using the **+** option on the **Commands**. *This bug occurred since v3.5.81.*

### 8.5.2.15 Elipse Power Data Objects

- Fixed a possible GPF when the active Measurement Source is changed in a reentrant way. *This bug occurred since v3.5.81.*
- Fixed a problem on the **Discrete** and **Commands** tabs of the Power Configuration object, which did not allow operating it via keyboard after removing an item. *This bug occurred since v3.5.81.*
- Fixed the behavior of properties that come from types, **Caption** and **Unit**, to remain empty if that type does not exist. This behavior occurred in Analog and Discrete Measurements and also in Commands. *This bug occurred since v3.5.81.*
- Fixed a problem in the Scripts Editor on the **Commands** tab of the Power Configuration, when an event was changed using the mouse wheel with the focus still in the Editor. *This bug occurred since v3.5.81.*

### 8.5.2.16 Elipse Power Standard Libraries

- Fixed the connection point of a Node object in the PowerControls library. *This bug occurred since v3.5.236.*

## 8.5.2.17 ElipseX Libraries

- Users are not allowed to insert Power Configuration objects and Alarm Servers in XObjects anymore. *This bug occurred since v1.18.33.*
- Implemented support for loading in **Elipse Power Studio** instances of XFolders of libraries not found. *This bug occurred since v4.8.36.*
- Suppressed a script error message on the **Insert** contextual menu. *This bug occurred since v4.8.159.*
- Blocked the insertion of Alarm Sources in definitions and instances of XObjects. *This bug occurred since v3.5.248.*

## 8.5.2.18 Expressions

- Fixed the behavior of quality and timestamp in expressions with the **If** method of **E3Globals** module. *This bug occurred since v3.5.164.*
- Implemented a previous validation of the number of parameters on methods of expressions in Links. *This bug occurred since v1.0.16.*

## 8.5.2.19 Find and Replace

- Implemented a feature of finding and replacing in User Events. *This bug occurred since v1.19.124.*
- Changed the option to replace only on the selected results. *This bug occurred since v2.0.88.*
- The find and replace tool now shows the name of the property and not a column's index, which was wrong, for the properties of a Storage Field. *This bug occurred since v3.1.11.*
- Fixed a problem when replacing values in Link fields. *This bug occurred since v3.5.127.*
- Fixed an error in which the **Replace All** option was not working correctly with objects in the same hierarchical level. *This bug occurred since v3.1.1.*
- The **Match case** option is correctly respected when performing a replacement in a **String**. *This bug occurred since v3.5.130.*
- The **Result** column on the results window of finding and replacing now must update correctly according to the executed operation. *This bug occurred since v2.0.88.*
- A Formula View now updates correctly when performing a replacement, and users can now find and replace in the **Type** and **Restriction** fields of Formulas. *This bug occurred since v2.0.88.*
- Script tabs are now updated correctly when performing replacements in Picks or in scripts. *This bug occurred since v2.0.52.*
- Only an Alarm Server now returns results for searches for names of User Fields of Alarm Servers. *This bug occurred since v4.5.108.*
- Now users cannot perform a replacement in names of objects that cannot be renamed. *This bug occurred since v4.7.6.*
- Now users can select correctly results of searches in Filters and Connections of E3Alarm and Alarm Filter objects.
- The selection of search results in User Fields now works correctly. *This bug occurred since v4.5.167.*

## 8.5.2.20 Historic

- Removed the window to edit Historic indexes, also used for primary keys. *This bug occurred since v1.19.87.*

## 8.5.2.21 Import and Export

- Fixed an import error of a Viewer object and implemented exporting and importing **Elipse Power** objects, except for the Power Configuration object. *This bug occurred since v2.5.95.*

## 8.5.2.22 Importing and Syncing Elipse Power Objects

- Removed the **Do not show this warning again** option when selecting an invalid class to import an **Elipse Power** object and added a validation of XControls before each import process. If invalid classes are found, a message with all missing properties and their respective classes is displayed. *This bug occurred since v4.5.73.*
- Added a validation of classes when opening the Preferences window of the screen to import to Screens. Classes with default names and valid are displayed normally. Classes with default names and invalid are displayed in red. Classes with names different from the default and valid are displayed in bold. Classes with names different from the default and invalid are displayed in bold and in red. *This bug occurred since v4.5.73.*
- Removed the error log generated when importing Wind Power Plants with Weather Stations. *This bug occurred since v4.8.161.*

### 8.5.2.23 Importing and Syncing External EDBs

- Syncing external electrical models now supports moving devices from a container to another, preserving its GUID and user-configured properties. *This bug occurred since v4.7.119.*
- Syncing external electrical models without a **System** container does not cause a GPF anymore. *This bug occurred since v4.8.273.*

### 8.5.2.24 Interface

- Fixed the size of several combo boxes in many **Elipse Power** windows.
- Replaced combo boxes for colors by the option , which opens Windows color selection window. *This bug occurred since v1.20.210.*
- Fixed the color used as background for areas of the filling window and for Legend's scroll bar of an E3Chart.
- Standardized the capitalization style of titles of windows presented by **Elipse Power**.
- Standardized window titles of **Power**, **Panel**, **DB**, **IODrv**, **E3Sys**, **Studio**, **E3Chart**, **E3Alarm**, **E3Admin**, and **E3Playback** modules relative to the capitalization of words.
- Fixed a failure when handling mouse's right-click in controls of type **TreeControls**. *This bug occurred since v1.20.33.*
- Fixed problems in shortcut keys on E3Chart, Alarms, and Database windows.
- Fixed duplicated shortcut keys.
- The **Save** option now has a CTRL + S shortcut key and the **Save All** option now has a CTRL + SHIFT + S shortcut key. *This bug occurred since v1.19.87.*
- Fixed the update of  and  options of object Views. *This bug occurred since v2.0.39.*
- Fixed the removal of the asterisk in the name of a project or Folder after saving them. *This bug occurred since v4.7.66.*
- The **Delete** command on contextual menus now works with multiple selections. *This bug occurred since v1.21.115.*

### 8.5.2.25 Links

- Fixed the behavior of Analog Links changed at run time that could not correctly detect whether the associated property is a color or not. *This bug occurred since v1.20.366.*
- Fixed the optimization of communication for remote Links of ElipseX Properties. *This bug occurred since v4.8.184.*

### 8.5.2.26 OPC UA Driver and OPC UA Client

- Fixed the behavior of historical OPC UA queries with less than 200 records, called from within Reports. *This bug occurred since v4.5.176.*
- Disabled the option to select a server on an OPC UA Driver's View. *This bug occurred since v4.8.92.*
- Fixed the way pending historical queries are finished when a connection with an OPC UA server fails. *This bug occurred since v4.5.176.*
- Now the OPC UA Client reconnects when there is an invalid session error. *This bug occurred since v4.5.176.*
- Fixed the categorization of the **Bit00** property of OPC and OPC UA Tags on the Properties List. *This bug occurred since v4.6.99.*
- Fixed the handling of *Node IDs* of type **GUID** in OPC UA Client. *This bug occurred since v4.5.166.*

### 8.5.2.27 Other Corrections

- Fixed the possibility of inserting Alarms in Queries, Alarm Filters, Reports, and Line Printers, where this operation must be blocked. *This bug occurred since v3.5.248.*
- Blocked the insertion of Alarm Sources in definitions of XFolders and instances of XObjects. *This bug occurred since v3.5.248.*
- Users cannot configure properties with invalid values anymore. *This bug occurred since v1.18.124.*
- Fixed a GPF that could occur in **E3Run** after multiple calls to the **TypeName** method in child objects of the Application object. *This bug occurred since v3.1.166.*

### 8.5.2.28 PowerCAD and Electrical Modeler

- Electrical Modeler's viewing area is not changed to the previous view when opening **Elipse Power Studio's** Customize window. *This bug occurred since v3.5.81.*

- Electrical systems with only a large number of Substations do not consume 100% of CPU anymore. *This bug occurred since v4.7.119.*
- Selecting a Container by clicking the viewing area does not clear the selection anymore when pressing mouse's left button. *This bug occurred since v4.7.175.*
- Initializing, closing, and executing a Topological Processor are now faster in large networks. *This bug occurred since v4.7.175.*
- Fixed a failure to regenerate CAD diagrams after zoom operations. *This bug occurred since v4.7.129.*
- Internal hollow areas of Generator, Recloser, Breaker, Distribution Transformer, and Wind Turbine symbols can now be clicked. *This bug occurred since v4.7.119.*
- Reduction of Feeders starts from the Substation configured in the **Substation** property. If a Feeder does not point to any Substation, the former rule is kept. *This bug occurred since v4.7.215.*
- Improvements on the tool to locate elements in the Electrical Modeler to avoid slowness when finding many elements. *This bug occurred since v4.7.119.*
- **Elipse Power Studio** does not hang anymore when minimized while the Power Configuration object is closed. *This bug occurred since v4.8.16.*
- Fixed the position of a connection's target. *This bug occurred since v4.8.207.*
- Shortcut key CTRL + Drag the mouse pointer repositions the selected Vertexes in any situation. *This bug occurred since v4.7.216.*
- Closing the Electrical Modeler in some situations does not hang **Elipse Power Studio** anymore. *This bug occurred since v4.8.16.*
- Added a verification to avoid a GPF when closing the Power Configuration object when the PowerCAD library is not registered. *This bug occurred since v4.7.119.*
- Double-click a device in a Schematic View, leads to the physical device and also selects it. *This bug occurred since v4.7.173.*
- Enabled a consecutive multiple selection by using the selection window with the SHIFT key. *This bug occurred since v3.5.181.*
- Copying and pasting a Busbar Terminal with Terminals does not create disconnected Terminals anymore. *This bug occurred since v3.5.181.*
- Copying and pasting isolated containers with isolated LinkNodes inside Bays does not create invalid containers anymore. Opening invalid containers already created does not cause a GPF in **Elipse Power Studio** anymore. *This bug occurred since v4.8.158.*
- Fixed a preview visualization of CAD objects when switching a container. *This bug occurred since v4.7.119.*
- Implemented shortcut keys on PowerCAD's toolbar also for electrical models in **XPD** format.

### 8.5.2.29 PowerEngine and Electrical Studies

- The Load Shedding module starts even when there are Reactors or Capacitors disconnected from the network. *This bug occurred since v4.7.129.*
- Fixed a behavior in the Self-Healing module where I/O failures in **\*SwitchPosition** Discrete Measurements compromise a search for solutions. *This bug occurred since v4.7.276.*
- Fixed an error in the State Estimator module, which presented different outputs for the same input depending on the previous inputs. *This bug occurred since v4.7.119.*
- Fixed an error in the Self-Healing module, which ignored protection measures in phases other than the ones where devices were connected. *This bug occurred since v4.7.119.*
- Triggers with bad quality now are registered on the events database with a -28 code. *This bug occurred since v4.7.167.*
- The Self-Healing module memorizes values of Measurements disabled or configured with the **StudyInputSource** property equal to **None**. *This bug occurred since v4.7.119.*
- Switches without a **SelfHealing** Source in the **\*SwitchPosition** Discrete Measurement are not considered as a trigger option anymore by the Self-Healing module. *This bug occurred since v4.7.119.*
- Fixed an error in the Self-Healing module, which could find solutions with overload if the trigger plan involved transferring Loads to Switches with different levels of voltage. *This bug occurred since v4.7.119.*
- The Self-Healing module does not generate empty steps anymore for Switches without any output Measurement (**DevicesUpstream**, **DevicesDownstream**, or **ExpectedCurrent**). *This bug occurred since v4.8.89.*

- Fixed an error in the Self-Healing module, which presented a sub-optimal solution due to an incorrect selection of Switches adjacent to the problem. *This bug occurred since v4.7.119.*
- Fixed power and current values in the Terminal three of a Three-Winding Transformer. *This bug occurred since v4.7.156.*
- The Self-Healing module returns the value **SelfHealingResultInconsistentTopologyState** when a Switch with a trigger does not have a good path for the Generator. *This bug occurred since v4.7.119.*
- The log "Trigger upstream switch(es) are" does not show Switches with bad quality anymore. *This bug occurred since v4.7.119.*
- The Self-Healing module returns an error code if the trigger starts in a de-energized Recloser. *This bug occurred since v4.8.277.*
- Fixed the impedance calculation of a Three-Winding Transformer in the State Estimator module. *This bug occurred since v4.7.119.*
- The Self-Healing module returns the error code **SelfHealingResultProtectionDisabled** if the restoration trigger starts in Switches that are isolated, in by-pass, or in switch mode. *This bug occurred since v4.8.163.*
- Closing the PowerEngine2 library with a Topological Processor is now much more faster in large systems. *This bug occurred since v4.7.119.*
- The current injected by a bank of Capacitors does not prevent triggering the Self-Healing module anymore. *This bug occurred since v4.7.119.*
- Fixed a failure when executing a trigger plan of a restoration trigger, which occurred when the solution involved closing that trigger's Switch. *This bug occurred since v4.8.85.*
- Fixed the solution for restoration triggers, where Reclosers in switch mode behave as protection elements if they were not immediately downstream of that trigger. *This bug occurred since v4.7.119.*

### 8.5.2.30 PowerExplorer

- Fixed a problem where Measurement columns are displayed closed when using a high DPI (*Dots Per Inch*). *This bug occurred since v4.5.156.*
- Fixed a redrawing problem of text components of a Command on the **Commands** tab of PowerExplorer and Interlocks windows. In addition, the right border of Interlock's text was reduced. *This bug occurred since v4.0.101.*
- Now on PowerExplorer window the **Timestamp** column of Discrete Measurements displays the timestamp of a Measurement's **Value** property, and not the value of the **ValueCaption** property.
- Fixed the calculation of the size of an Interlock's message window to correctly fit its text. *This bug occurred since v4.8.224.*
- Optimized the sort order of items on Measurement tabs of PowerExplorer window to avoid recreating the list after each change. *This bug occurred since v4.7.79.*
- Fixed an error where the F5 key was not working to update PowerExplorer window. *This bug occurred since v4.8.188.*
- Fixed a GPF when selecting tabs of PowerExplorer window with a disabled project. *This bug occurred since v4.8.188.*

### 8.5.2.31 Query

- Fixed a memory leak when destroying a Query object after accessing the **UaNamespaceArray** property. *This bug occurred since v4.5.160.*

### 8.5.2.32 Screen Objects

- Changed the behavior of cut and copy commands to provide an improved visual feedback for users. *This bug occurred since v1.0.16.*
- Setting an invalid value to the **X**, **Y**, **Width**, or **Height** properties of Screens and Screen Objects now generate a script error.
- Fixed the option to move (*pan*) a Screen object when scroll bars of a Screen are visible and enabled. *This bug occurred since v4.8.87.*
- Fixed the behavior of a Command Button when moved or resized using its own **MouseDown** event.

### 8.5.2.33 Scripts

- Fixed the behavior of Multiple Links created at run time. *This bug occurred since v4.6.98.*
- The prefix "s" was removed from the *Index* parameter of methods of E3Alarm and Alarm Filter objects. *This bug occurred since v4.7.63.*

- Fixed the access to the **Item** method of server objects, which could be blocked on read-only **Elipse Power Viewers** or Remote Domains. *This bug occurred since v4.0.62.*
- Fixed a possible failure of a Domain when using the **Save** command in **Demo** mode. *This bug occurred since v1.17.1.*
- Fixed the usage of **VARIANT** values with **VT\_INT** and **VT\_UINT** data types in properties, such as a Tag's **Value** property. *This bug occurred since v1.20.86.*
- Fixed the behaviour of the **Application.GetObject** method to always check the path passed on the *ObjectPath* parameter to the end, not accepting that it finishes in a property that is not an object. *This bug occurred since v1.18.155.*
- Blocked the creation of definitions of ElipseX objects (XControls, XObjects, and XFolders) in projects or folders using Studio's **CreateFile** method. *This bug occurred since v4.0.102.*

### 8.5.2.34 Scripts Editor

- The option to compile all scripts is enabled if the object contains at least one script, regardless of the user-selected event. *This bug occurred since v2.0.54.*
- Fixed the update of script's toolbar when returning the focus to **Elipse Power Studio**. *This bug occurred since v4.0.10.*
- Fixed a problem during the resizing of **Elipse Power Studio** window that, when showing the scroll bar, hid the comment on the viewing window of scripts. *This bug occurred since v2.0.61.*
- Fixed the focus that could move to Scripts Editor when removing items using Organizer. *This bug occurred since v2.0.147.*
- Focus now remains in the description field of an event if there is no actions in the selected event. *This bug occurred since v2.0.52.*
- Fixed the drawing of Scripts Editor's toolbar when in floating mode. *This bug occurred since v2.0.84.*

### 8.5.2.35 Storage

- Fixed duplicated names in Storage Fields when created in Storage's View. *This bug occurred since v3.5.75.*
- Fixed a behavior of the **Design** tab to show all changes performed by script in the Collection of Fields. *This bug occurred since v3.0.24.*

### 8.5.2.36 Studio

- Focus on child objects of **Elipse Power Studio** (Organizer, Gallery, Properties List, and Object Counting) and on Views (Power Configuration, Scripts Editor, and Screen's **Design** tab) is kept when using the ALT + TAB shortcut key to toggle focus among applications, with the possibility of moving through **Elipse Power Studio** windows using the F6 key. Organizer always receives focus when **Elipse Power Studio** starts, if visible, whether it is docked or floating. When one of the child windows is opened, by using the corresponding option on the **View** menu, that one always receives the focus. In addition, focus is kept when closing windows and Views.
- The title of the warning window for copying and pasting Links was changed to "Existing Links". The question on this window was simplified, as well as the titles of buttons, by using an existing template for windows. *This bug occurred since v2.5.89.*
- Changed the behavior of **Save** and **Save All** commands in **Elipse Power Studio** to always remain available and not change focus during edition. *This bug occurred since v2.0.99.*
- Fixed the loading of ElipseX definitions occurring in **Elipse Power Studio** when saving any ElipseX on the same library. *This bug occurred since v4.6.104.*
- Fixed the edition of **VARIANT** values in Picks and Digital Links to auto-detect the data type of the typed value, instead of rejecting values incompatible with the current data type. *This bug occurred since v1.19.87.*
- Fixed a problem on the file protection window, which did not allow operations via keyboard after adding or removing a protection. *This bug occurred since v3.2.49.*
- Changing a value with the mouse wheel of properties of type **Spin Button** of CAD objects does not cause a GPF in **Elipse Power Studio** anymore. *This bug occurred since v4.8.16.*
- Fixed a failure on Application Wizards and on Script Documentation Wizards using the ALT + C shortcut key to finish the Wizard execution. *This bug occurred since v1.21.42.*
- Adjusted the sizes of Properties Windows for when DPI (*Dots Per Inch*) is different from 96. *This bug occurred since v1.20.15.*
- Fixed the internal border on Picks and on the **Configuration** tab of Database's Properties Window to not cut the text if DPI (*Dots Per Inch*) is greater than 100%. *This bug occurred since v1.19.89.*

- Fixed the drawing of internal buttons of edition boxes, which could be misplaced with a DPI (*Dots Per Inch*) greater than 96 (100%). *This bug occurred since v4.7.145.*
- Fixed an unexpected quit in **Eclipse Power Studio** when registering libraries with definitions that use other definitions.
- Users now cannot trigger some shortcut keys when pressing more keys than needed. *This bug occurred since v4.7.119.*
- Fixed the behavior of the CTRL + A shortcut key to occur on the focused window and not on the last opened View but without focus. *This bug occurred since v3.1.79.*
- Implemented a switch on tabs of the Properties Window by using the keyboard and fixed the keyboard focus when opening that window on a tab that is not the first one.
- Fixed the switch among tabs of a View using shortcut keys CTRL + PAGE UP or PAGE DOWN, which locked on the **Scripts** tab.
- Implemented a handling of **Eclipse Power Studio** shortcut keys on any tab of the Properties Window. *This bug occurred since v0.1.29.*
- Fixed how shortcut keys work on edition boxes. *This bug occurred since v3.2.209.*
- Fixed the behavior of the **Rename** option of the contextual menu of the **Design** tab of objects, which had no effect. *This bug occurred since v1.20.371.*
- Fixed how the CTRL + A shortcut key worked on edition boxes of controls of type **Tree Controls**. *This bug occurred since v2.0.117.*
- The **Cut** and **Copy** options of **Eclipse Power Studio**'s toolbar now are enabled only when these options are allowed. *This bug occurred since v1.22.25.*
- Users cannot open a duplicated Find and Replace window anymore. *This bug occurred since v4.5.36.*
- Fixed how the ALT + F4 shortcut key works when a Screen or XControl Definition is selected. *This bug occurred since v3.0.36.*
- Contextual menus of projects are now equivalent in Organizer and in Explorer. *This bug occurred since v3.0.239.*
- The mini-dialog to edit Links on the **Links** tab of the Properties Window now accepts global shortcut keys. *This bug occurred since v1.0.16.*
- Fixed the behavior when editing the name of an object on the Properties Window and on the Properties List. *This bug occurred since v3.5.81.*
- Focus on the object clicked on Organizer is performed correctly when the object with previous focus is not on Organizer's visible area, whether in floating or sliding mode. *This bug occurred since v1.20.301.*
- Removed inappropriate options from the contextual menu. *This bug occurred since v3.0.242.*
- Removed the **Save** command, which was duplicated in projects. *This bug occurred since v3.0.231.*
- Fixed a GPF when editing Links with multiple selection. *This bug occurred since v1.21.98.*
- Items are not copied duplicated anymore when in multiple selection. The **Copy** option of contextual menus now correctly appears when in multiple selection. *This bug occurred since v1.19.45.*
- Now users cannot select a Query anymore when in edition mode of a Screen. *This bug occurred since v3.0.220.*
- Fixed the focus on the selected object with a single or double mouse click in Organizer when focus comes from another application. *This bug occurred since v5.0.191.*

### 8.5.2.37 Translation

- Fixed a clipped icon on the **Style** tab of E3Browser's Properties Window. *This bug occurred since v3.2.87.*

### 8.5.2.38 Users

- Fixed the information, Domain or server, displayed on login and password change windows. *This bug occurred since v1.18.155.*

This section contains updates of version **4.7** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 9.1 Version 4.8 Build 358

This section contains updates of version **4.8.358** of **Elipse Power** relative to version **4.8 Build 355**.

### 9.1.1 Fixed Bugs

This section contains bugs fixed in version **4.8.358** of **Elipse Power**.

#### 9.1.1.1 Links

- Fixed a behavior of Links, which could discard a value that changed exactly during the reconnection of that Link. *This bug occurred since v3.0.201.*

## 9.2 Version 4.8 Build 355

This section contains updates of version **4.8.355** of **Elipse Power** relative to version **4.8 Build 352**.

### 9.2.1 New Features

This section contains new implementations of version **4.8.355** of **Elipse Power**.

#### 9.2.1.1 E3DataAccess

- E3DataAccess is now declared as **SafeForScripting** and **SafeForInitializing** to avoid warnings when used inside Internet Explorer or inside an ActiveX.

### 9.2.2 Fixed Bugs

This section contains bugs fixed in version **4.8.355** of **Elipse Power**.

#### 9.2.2.1 E3DataAccess

- Fixed a failure in E3DataAccess when unloading inside a **Elipse Power Viewer**. *This bug occurred since v4.5.213.*

## 9.3 Version 4.8 Build 352

This section contains updates of version **4.8.352** of **Elipse Power** relative to version **4.8 Build 336**.

### 9.3.1 New Features

This section contains new implementations of version **4.8.352** of **Elipse Power**.

#### 9.3.1.1 Documentation

- Added a new exercise about Historic objects in the chapter about data storage of **Elipse Power HMI Tutorial**.

#### 9.3.1.2 Elipse Power Data Objects

- Implemented a permission to instantiate Two-Winding Transformers to Wind Power Plants and Wind Power Plant Bays.

#### 9.3.1.3 PowerCAD and Electrical Modeler

- The Electrical Modeler now allows adding Two-Winding Transformers to Wind Power Plants and Wind Power Plant Bays.

#### 9.3.1.4 PowerEngine and Electrical Studies

- The PowerEngine2 module now supports Two-Winding Transformers in Wind Power Plants and Wind Power Plant Bays.

## 9.3.2 Fixed Bugs

This section contains bugs fixed in version **4.8.352** of **Elipse Power**.

### 9.3.2.1 CFR21

- Fixed the message of changing a user's password when editing via **File - Users** menu in **Elipse Power Studio** or when using Viewer's **UserAdministration** method. *This bug occurred since v4.8.324.*

### 9.3.2.2 OPC UA Driver and OPC UA Client

- Fixed the implementation of the **UaNodeId** property of Query Field, OPC UA Tag, and OPC UA Block Tag objects. *This bug occurred since v4.5.166.*

### 9.3.2.3 Other Corrections

- Fixed a GPF that could occur in **E3Run** after multiple calls to VBScript's **TypeName** function in child objects of the Application object. *This bug occurred since v3.1.166.*

### 9.3.2.4 Users

- Implemented a reset mechanism for the number of login failures when auto-unblocking a user by time. *This bug occurred since v1.20.355.*
- Implemented a reset mechanism for the number of login failures when unblocking a user's account. *This bug occurred since v1.20.355.*

### 9.3.2.5 Viewer

- Fixed a memory leak in the GDI library, which occurred on **Elipse Power Viewer** when opening windowed Screens or Frames. *This bug occurred since v3.0.233.*

## 9.4 Version 4.8 Build 336

This section contains updates of version **4.8.336** of **Elipse Power** relative to version **4.8 Build 321**.

### 9.4.1 New Features

This section contains new implementations of version **4.8.336** of **Elipse Power**.

#### 9.4.1.1 CFR21

- Implemented a detailed record of all changes on the user database and additionally of the event record.
- Implemented an option so that the user's name and password cannot be the same on the **Security** tab of E3 Admin's Domain options.

#### 9.4.1.2 Documentation

- Updated the **E3 Tutorial Developer**.
- Updated the **E3 Tutorial Advanced**.

### 9.4.2 Fixed Bugs

This section contains bugs fixed in version **4.8.336** of **Elipse Power**.

#### 9.4.2.1 PowerEngine and Electrical Studies

- Fixed a problem with the Self-Healing module, where the analysis of a trigger was aborted in case any step of the solution had an overload. *This bug occurred since v4.8.220.*

## 9.5 Version 4.8 Build 321

This section contains updates of version **4.8.321** of **Elipse Power** relative to version **4.8 Build 300**.

### 9.5.1 New Features

This section contains new implementations of version **4.8.321** of **Elipse Power**.

### 9.5.1.1 PowerEngine and Electrical Studies

- Created the **Terminal1IslandId**, **Terminal2IslandId**, and **Terminal3IslandId** properties in the Load Shedding Scenario object and created support for Load Shedding Scenarios on all other devices, in addition to Switches and Loads.
- Created the **UsePositiveFlowIn** property in the Load Shedding Electrical Study.

### 9.5.2 Fixed Bugs

This section contains bugs fixed in version **4.8.321** of **Elipse Power**.

#### 9.5.2.1 CFR21

- Fixed the **Domain changed** event, which is now registered by E3 Server's session, also for anonymous users. *This bug occurred since v3.0.310.*

#### 9.5.2.2 Database

- **E3Run** does not lock anymore when finishing a database with many active timers. *This bug occurred since v4.6.108.*

#### 9.5.2.3 Elipse Power Data Objects

- Fixed a possible GPFs when the active Source was changed in a reentrant way. *This bug occurred since v3.5.81.*

#### 9.5.2.4 ElipseX Libraries

- Fixed a GPF that could occur when keeping references to an ElipseX object whose library was updated. *This bug occurred since v4.8.133.*
- Now ElipseXs with syntax errors in scripts or in the configuration of Tag behavior also allow loading instances in **Elipse Power Studio**. *This bug occurred since v4.8.159.*

#### 9.5.2.5 OPC UA Driver and OPC UA Client

- Fixed the import process of OPC UA Tags, because the **DisplayName** and **BrowseName** fields were inverted. *This bug occurred since v4.5.99.*
- Fixed the behavior of OPC UA Historical Queries with less than 200 records, called from inside Reports. *This bug occurred since v4.5.176.*

#### 9.5.2.6 PowerEngine and Electrical Studies

- The quality of the **\*LoadStateOnScenario** Measurement is bad when input qualities are bad. The quality of the **\*TotalLoadToShed** Measurement reflects uncertainties or problems in the calculation when input qualities are uncertain or bad. The **ValidOutput** property of a Load Shedding Scenario is configured to False when input qualities are bad. *This bug occurred since v3.5.304.*
- Forcing a Load shedding does not shed it anymore if that Load is unavailable, and does not shed their adjacent Loads. *This bug occurred since v3.5.340.*
- Fixed a GPF in the Self-Healing module, which occurred when trying to identify closed loops on a network. *This bug occurred since v4.8.277.*

#### 9.5.2.7 Screen Objects

- Fixed a problem with redrawing XControls and Groups when a Screen was resized. *This bug occurred since v1.18.155.*

## 9.6 Version 4.8 Build 300

This section contains updates of version **4.8.300** of **Elipse Power** relative to version **4.8 Build 239**.

### 9.6.1 New Features

This section contains new implementations of version **4.8.300** of **Elipse Power**.

### 9.6.1.1 Documentation

- Added **Windows Server 2016** to the list of supported operating systems throughout **Elipse Power** documentation.
- Updated the description of several properties on **Elipse Power Reference and Scripts Manual** to indicate that these properties can be changed at run time, as long as the object be deactivated and then activated.
- Renamed the **E3 Tutorial Basic** to **E3 Minicourse Tutorial**.
- Changed to full names on topic titles of **Elipse Power Release Notes** the indications of update versions starting with version 4.7.

### 9.6.1.2 E3Alarm

- Implemented a new way of interaction to configure colors for several alarm and severity statuses via scripts.

### 9.6.1.3 Elipse Power Data Objects

- Created the **Comment** property in Substation, Feeder, Transmission Line, and Wind Power Plant objects. This property is synced from the model in **EDB** format.
- Created the **TransferenceStatus** and **TransferenceColor** properties in the Terminal object, to indicate the transference status of Feeders.
- Created the **SourceType** property in Discrete and Analog Measurement Sources, which indicates the type of Measurement Source.

### 9.6.1.4 Importing and Syncing Elipse Power Objects

- Implemented support in **Elipse Power** Screen Importer to represent transferred branches.

### 9.6.1.5 OPC UA Driver and OPC UA Client

- Updated the OpenSSL library, used in **Elipse Power** OPC UA Client, to version 1.0.2k (1.0.2.11).

### 9.6.1.6 PowerCAD and Electrical Modeler

- Added the **Comment** property to Substation, Feeder, Transmission Line and Wind Power Plant objects in the Electrical Model.

### 9.6.1.7 PowerEngine and Electrical Studies

- Improved the algorithm of the Self-Healing Electrical Study that establishes the system status before a trigger. The new property **StabilizationInterval** created in the Electrical Study allows a fine tuning on system dynamics regarding the de-syncing of field devices' clocks.
- Created the **TriggerAnalysisTimeout** property in the Self-Healing Electrical Study, which allows configuring the module so that the analysis of a trigger is aborted in case it lasts longer than the maximum configured time.
- Added a new trigger to the Self-Healing Electrical Study, which allows restoring networks when detecting they are de-energized.

### 9.6.1.8 Protection Device

- Updated the installer of HASP drivers (haspdinst.exe) to version 7.54.

## 9.6.2 Fixed Bugs

This section contains bugs fixed in version **4.8.300** of **Elipse Power**.

### 9.6.2.1 AppBrowser

- Fixed in AppBrowser the assembling of Tag access inside Screens to other items of a Screen, so that they do not use the "Screen" path. *This bug occurred since v4.7.59.*
- Implemented a sort order on items inside AppBrowser's **Tasks** node. *This bug occurred since v2.0.50.*
- Fixed the sort order of items from different projects in AppBrowser. *This bug occurred since v4.8.9.*

### 9.6.2.2 Demonstration Application

- Aligned and normalized the size of objects on the Distribution Screen of the Demonstration application. *This bug occurred since v3.5.166.*

- Fixed the script on the Demonstration application to correctly detect monitor resolution in any operating system. *This bug occurred since v4.5.13.*
- Fixed the usage of the *Wide* version of Alarms Screen on the Demonstration application. *This bug occurred since v4.5.13.*

### 9.6.2.3 Documentation

- Added a note in the **GradientStyle** property, common to Screen objects, indicating that this property is not available for the Picture, Dynamic Move, and Dynamic Rotate objects on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.5.187.*
- Fixed the description of the **fmTextAlignCenter** option of the **TextAlign** property of MS Forms objects Checkbox, Text, and Option Button on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.20.449.*
- Fixed the name of the **Error** event, common to MS Forms Screen objects on **Elipse Power Reference and Scripts Manual**, which was incorrectly identified as **OnError**. *This bug occurred since v3.2.118.*
- Fixed the description of Viewer's **LoadFormulaDlg** method to contain more precise information about its parameters and return value on **Elipse Power Reference and Scripts Manual**.
- Updated the description of columns **MinRecTime**, **MaxRecTime**, **Dead Band**, and **Unit** on topic **Storage - Settings** of **Elipse Power User's Manual**. *This bug occurred since v1.21.1.*
- Updated the picture of AppBrowser on **Elipse Power User's Manual** and on **Elipse Power HMI Tutorial** where it displays the **Tasks** node, and also updated the descriptive text on **Elipse Power User's Manual**. *This bug occurred since v4.5.252.*
- Updated the description of several properties on **Elipse Power Reference and Scripts Manual** to add information that these are read-only properties.
- Removed examples referring to several properties of Screen object Dynamic Move on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.20.1.*
- Fixed the formatting of several styles on **Elipse Power** documentation to avoid orphan lines in **PDF** format. *This bug occurred since v4.8.24.*

### 9.6.2.4 E3Alarm

- Fixed a GPF that occurred when switching Screens in E3Alarm events. *This bug occurred since v3.1.128.*
- Fixed a GPF that occurred when storing E3Alarm's internal objects in an Internal Tag. *This bug occurred since v3.2.161.*

### 9.6.2.5 E3Browser

- E3Browser's **MouseUp** event now also happens for right mouse button, after handled by the control. *This bug occurred since v0.1.3.*
- Fixed a GPF that occurred when storing E3Browser's internal objects in an Internal Tag. *This bug occurred since v1.20.254.*

### 9.6.2.6 E3Chart

- The styles listed on the combo box for configuring the style of legend's column border now match the drawn style. *This bug occurred since v4.8.231.*

### 9.6.2.7 Elipse Power Data Objects

- Fixed a GPF that could occur when a Command Unit is unloaded from inside the script of an action (**Operate**, **Select**, or **Cancel**). *This bug occurred since v3.5.81.*

### 9.6.2.8 Importing and Syncing Elipse Power Objects

- Fixed the message displayed to users when selecting the option to allow resizing a Screen during the process of importing **Elipse Power** objects, but the option for Screens already with objects was not the one to always remove all objects. *This bug occurred since v4.8.41.*

### 9.6.2.9 Interface

- Standardized some messages with names of window fields to end with colons.
- Fixed repeated keyboard shortcuts on configuration windows of E3Chart's Pens and Axes and on Pick **Print Report**. *This bug occurred since v3.2.90.*

- Fixed meaningless error messages when validating number fields on several **Elipse Power** windows. *This bug occurred since v2.5.60.*
- Standardized uppercase writing for Screen and Report, when referring to the type of **Elipse Power** object with the same name.

### 9.6.2.10 OPC UA Driver and OPC UA Client

- Revised the subscription mechanism of the OPC UA Client, specially the way of handling error situations. *This bug occurred since v4.8.92.*

### 9.6.2.11 PowerCAD and Electrical Modeler

- Removed the invalid option **stTerminal3** from the **TapTerminal** property of devices Voltage Regulator, Two-Winding Transformer, and Distribution Transformer on the Electrical Modeler. Models in **EDB** format with invalid values are automatically changed to device's default value on the next edition. *This bug occurred since v4.7.119.*
- The Power Configuration object does not lock **Elipse Power Studio** anymore when opening models in **EDB** format with approximately 600 Feeders. *This bug occurred since v4.7.119.*
- Fixed a GPF during the edition of CAD elements simultaneously to drag and drop operations. *This bug occurred since v4.7.119.*

### 9.6.2.12 PowerEngine and Electrical Studies

- Changed the behavior of the Self-Healing module so that it always wait the time defined in the **StabilizationInterval** property before effectively starts the analysis of a trigger, thus preventing possible data losses due to the asynchronous nature of communication between field devices and the control center. *This bug occurred since v4.7.119.*

### 9.6.2.13 Query

- The **HasFocus**, **MouseOver**, and **MouseOverChild** properties and the **SetFocus** and **GetChildObject** methods were hidden for Query, Alarm Filter, and Line Printer objects. *This bug occurred since v1.19.87.*

### 9.6.2.14 Screen Objects

- Fixed the behavior of Connectors changed on Screen's **OnPreShow** event. *This bug occurred since v3.5.143.*

### 9.6.2.15 Scripts

- Standardized the **Item** method of E3Chart and E3Browser collections that were displayed as properties. *This bug occurred since v0.1.20.*
- Fixed the update of combo boxes on the **Scripts** tab, which could occur when editing another object. *This bug occurred since v4.8.159.*

### 9.6.2.16 Studio

- The **Links** tab on the Properties Window now does not display indexed properties anymore.

### 9.6.2.17 Translation

- Removed an unnecessary space on the message "Unexpected change in topology" of the Self-Healing module. *This bug occurred since v4.8.239.*

### 9.6.2.18 Viewer

- Closed all inactive connections left by **Elipse Power Viewers** trying a connection with several servers and implemented a time limit of 20 seconds in E3 Server for connections without activity. *This bug occurred since v1.21.117.*

## 9.7 Version 4.8 Build 239

This section contains updates of version **4.8.239** of **Elipse Power** relative to version **4.7 Build 308**.

### 9.7.1 New Features

This section contains new implementations of version **4.8.239** of **Elipse Power**.

### 9.7.1.1 CFR21

- Implemented tracking events for auditing the creation, edition, and removal of users and groups.
- Changed the interface to configure the Registration of Events to edit and validate the Events Table before applying user-performed changes.

### 9.7.1.2 Data Server

- Implemented a small reduction (approximately 2%) in the memory usage of Internal Tags with retentivity turned off.

### 9.7.1.3 Documentation

- Updated the note on topic **How E3 Tweak Works** of **E3 Tweak User's Manual** to enforce that a writing privilege on Windows Registry is mandatory for all Windows versions starting with **Windows Vista**.
- Standardized the names of all **Elipse Power** documents and also references to these names throughout the documentation.
- Updated the **IMEMode** property of MS Forms Screen objects Text Box, List Box, and Combo Box on **Elipse Power Reference and Scripts Manual**.
- Updated the **Enum**-type properties of all **Elipse Power** objects so that they contain their default value on **Elipse Power Reference and Scripts Manual**.
- Updated **Elipse Power** Tutorials by including the Taiwan branch and excluding the USA branch.
- Updated **E3 Minicourse Tutorial**.
- Updated the topic about manually creating CSV files to import and export objects on **Elipse Power User's Manual**.
- Added a note on **Elipse Power User's Manual** about the possibility of having an empty source on a Link.
- Several sub-topics were reordered on several **Elipse Power** documents so that these sub-topics are sorted according to their language.
- Added a note on topic **Screens and Screen Objects - General Configurations - Group or Ungroup** of **Elipse Power User's Manual** about the way to leave the edition mode of a group of Screen objects.
- Added on topic **Frequently Asked Questions - Remote Domains** of **Elipse Power User's Manual** information from the *KB about Remote Domains*.

### 9.7.1.4 Domain, E3 Server, and Hot-Standby

- Implemented in **E3Run** a block for re-entrant script events when the process could be terminated by stack overflow.

### 9.7.1.5 E3Alarm

- Created the **EnableSortMarker** property, which enables or disables an indication of the sort order of E3Alarm's column.

### 9.7.1.6 E3Chart

- Implemented an option to draw Pens in high quality by using the GDI+ library. This option can be configured using E3Chart's **RenderQuality** property.
- Added the **ShowBorder** property, which hides or shows E3Chart's external border.
- Added elements for visual reference on E3Chart, **Normal Band** and **Reference Line**.
- Added the **BorderStyle** and **TextColor** properties that configure, respectively, the border style and the text color of an E3Chart's Legend.
- Implemented a visual customization of the header of an E3Chart's Legend. Now users can change Legend's border style (the **HeaderBorderStyle** property), text color (the **HeaderTextColor** property), and column's background color (the **HeaderBackColor** property). Users can also change the text color (the **TitleColor** property) of an E3Chart's title.
- Added the **Font** property, which allows configuring the name, style, and size of the font of an E3Chart's Legend.
- Added the **ScaleYMax** e **ScaleYMin** columns on E3Chart's Legend, which display maximum and minimum values of the vertical scale, respectively, configured in each Pen.

### 9.7.1.7 Elipse Power Data Objects

- Added the **RemoteControlType**, **HasLoadShedding**, and **HasSelfHealingControl** properties to Breaker and Recloser objects, and the **RemoteControlType** property to the Switch object.

- Created the objects Wind Power Plant, Wind Turbine, Wind Weather Station, Bay, Converter, Rotor, Transmission, Transformer, Nacelle, Tower, Yawing, Generator Terminal, Grid Terminal, Generator, Meteorological, Blade, Hub, Generator Rotor, Generator Stator, and Terminal.
- Changed the behavior of the **GetMeasurement** method of Power objects, to allow using **Strings** to specify a Measurement terminal.
- Added the **Retentive** property to Discrete and Analog measurement sources.

### 9.7.1.8 Elipse Power Standard Libraries

- The PowerControls library is now ready to display child objects of a Wind Turbine.
- Created the objects Wind Weather Station and Wind Turbine on Power Controls library for use with the new Power Wind objects.

### 9.7.1.9 ElipseX Libraries

- Added the **IconPath** property, which allows configuring an icon representing the instances of an ElipseX.
- Created a new ElipseX, the **XFolder**, a server object that allows freely inserting children objects only in its instances.
- Implemented in XObject and XControl objects the **InstanceName**, **FriendlyName**, and **Contexts** properties. The **DefaultsAlarmArea** property was added only to XObject definitions.
- Added the **EnableTagBehavior** property on ElipseX definitions (XObject, XFolder, and XControl). When enabled, it turns an object into a Tag, so that the **Value**, **Quality**, and **Timestamp** properties, and optionally **ActiveSource**, are always propagated together.
- Implemented a communication optimization for remote Links for ElipseX properties.

### 9.7.1.10 Formula

- Added the **DataSourceSize** e **ValueSize** properties, which allow configuring the size of fields.

### 9.7.1.11 Importing and Syncing Elipse Power Objects

- Implemented an option allowing to increase or decrease the size of a Screen during the Screen import process.
- Implemented an option to sync data objects individually.
- Power Wind objects (Wind Power Plant, Wind Turbine, and Wind Weather Station) were added to the tools to import Screens and to sync data objects.

### 9.7.1.12 Installation

- Updated the HKCustomer application in **Elipse Power** to v5.5.30 and changed its name to HKCustomer.exe.
- Added the **/NOACP** option, which can be passed as a parameter to **Full**, **Elipse Power Viewer**, and **WebViewer** installers. When this option is used, MS Activex Control Pad is not installed.
- Created the **InstallACP** property on E3Downloader, which allows disabling the installation of MS ActiveX Control Pad if configured to False.

### 9.7.1.13 Interface

- Implemented the opening of contextual menus on E3Alarm and on **Elipse Power Studio** by using the application key or the key combination SHIFT + F10.

### 9.7.1.14 Links

- Now, a Digital Link in a **VARIANT**-type property, such as the **Value** property of a Tag, allows editing the data type of its linked values.

### 9.7.1.15 OPC UA Driver and OPC UA Client

- Implemented the security profile **Basic256Sha256** in the **SecurityPolicy** property.
- Updated OPC UA ANSI C Stack to official version 1.02 Build 336, revision 1.
- Created the OPC UA Subscription, OPC UA Tag, OPC UA Block, and OPC UA Block Element objects for real-time communication via OPC UA.
- Updated OpenSSL library (used by the OPC UA client) on **Elipse Power** to version 1.0.2j (1.0.2.10).
- Now a new **Elipse Power** installation creates an OPC UA client certificate with the name of the computer directly on the name displayed on the certificate.

### 9.7.1.16 Other Implementations

- Names of enums in several properties (**TextAlignment**, **VertTextAlignment**, **FillStyle**, **GradientStyle**, **BackgroundStyle**, and **BorderStyle**) of Screen objects where converted to uppercase.
- **HeapLog** statistics now display in details the number of allocated and free blocks per size.
- Optimized the loading and activation of folders with hierarchies of XFolders and XObjects.
- **Studio** and **E3Run** processes now have a special scheme to allocate memory, which leads to a considerable increase in performance (above 40%) in operations demanding allocation or release of large amounts of memory, such as when loading or unloading an application.
- Scripts of ElipseX instances are now shared, speeding up the activation time of objects and decreasing memory usage.
- Performed a small optimization in memory usage of **Elipse Power** objects (an improvement of approximately 2%).
- Improved the performance of creating Links in applications with many Links (more than 50000).
- Slightly reduced the memory usage of **Elipse Power** objects in general, also improving the loading or starting time of applications.

### 9.7.1.17 PowerCAD and Electrical Modeler

- Implemented a shortcut on the F2 key to edit names of objects in the Electrical Modeler.
- Added a progress bar to the Automatic Generation of Schematic Views of the Electrical Modeler.
- Created an automatic organization tool for the System diagram in electrical models in **EDB** format.
- Implemented tools for editing, syncing, and acknowledging Schematic View layouts.
- Changed the symbols of Recloser, Switch, and Voltage Regulator objects so that the orientation of the "R" indication do not stay upside down.
- Changed the behavior of size and rotation of a new object, to obey the size and rotation of the last object edited. Created the maximum and minimum limits for the size of new objects, to prevent them from being overly small (invisible) or large (exceed the limits of the working area).
- Enabled multiple selection when dragging and dropping on Schematic Views thumbnails to create schematic devices already referenced.
- The color of LinkNode objects in Feeders now reflects the color of the pointed container.
- Added the elements Wind Power Plant, Wind Turbine, and Wind Weather Station to the Electrical Modeler and to Electrical Studies.

### 9.7.1.18 PowerEngine and Electrical Studies

- Created Measurements to inform the expected number of upstream and downstream devices after a maneuver of the Self-Healing module.
- Standardized the descriptions of Measurement Types of Load Shedding and Self-Healing Electrical Studies.
- Implemented new Measurements that allow signaling all downstream devices of a certain device.
- Implemented a Simulation (diagnose) tool on the Self-Healing module.
- Improved the performance of the Self-Healing module, reducing the necessary time to wait for an operator to act if the module did not find a solution.
- The State Estimator module now accepts voltage Measurements in Branches as input.
- The State Estimator module now accepts three-phase power Measurements as input.
- Now users can prevent the operation of the Self-Healing module if the timestamp of the trigger is too different from computer's current time.
- Added persistence of values of **\*SelfHealingDevicesDownstream** and **\*SelfHealingDevicesUpstream** Measurements to the events database of the Self-Healing module.
- Added support for load priority in the Self-Healing module.
- The Self-Healing module now handles Reclosers in **Switch** mode as inactive protection elements, not using them to isolate failed blocks in a restoration trigger.

### 9.7.1.19 PowerExplorer

- The confirmation window of Commands now is displayed centralized on the monitor that contains most of the PowerExplorer window.

- Created the **ShowObjectHierarchy** property in the PowerExplorer object, and the *ShowObjHierarchy* parameter in the **ShowPowerExplorer** method, to indicate whether the hierarchy of children of the object calling PowerExplorer must be displayed or not.

### 9.7.1.20 Protection Device

- Updated HASP drivers installer (haspdinst.exe) to version 7.53.

### 9.7.1.21 Query

- Now the Query object also allows using Database, Storage, or OPC UA Driver objects that are inside XObjects.

### 9.7.1.22 Remote Domains

- Now **Elipse Power** logs and E3 Admin's Statistics window indicate when a Remote Domain connection is in read-only mode.
- Implemented a more detailed log of connection failures of Remote Domain clients.

### 9.7.1.23 Screen Objects

- Implemented a pan feature of Screens on **Elipse Power Studio** and on **Elipse Power Viewer**.
- Implemented the reception of the middle mouse button value on **MouseUp** and **MouseDown** events.
- Added the **Reset Rotation Center** option to remove a modified rotation center of a Screen object.

### 9.7.1.24 Scripts

- Error messages of a script now identify the object and event where the error occurred, as well as the line number already adjusted inside the event code.

### 9.7.1.25 Studio

- Allowed multiple selection on **Elipse Power Studio's File - Open Project** menu.
- Now the **GetObject** method of **Elipse Power Studio's** Application object also returns **Elipse Power Viewer's** context objects.
- Implemented in **Elipse Power Studio** the opening of Properties Window by using the standard shortcuts, ALT + ENTER and ALT + Double-click.
- Implemented the visualization (WatchWindow) and edition (Object Views) of 1D (unidimensional) arrays in **Variant**-type properties.
- Added the **Value** column to Views of Viewer and Data Server objects.
- Standardized the icon for the LinkNode object.

### 9.7.1.26 Translation

- Implemented an information about the real translation language of **Elipse Power** files.

### 9.7.1.27 Users

- Implemented an option to export the list of users directly in E3 Admin.
- Improved the user experience to force a confirmation when editing a password on Users window.
- Improved usability in **Elipse Power Studio's** User Permissions window.

### 9.7.1.28 Viewer

- Windows accessibility features shortcuts now are disabled when the **DisableTaskSwitching** property is enabled.

## 9.7.2 Fixed Bugs

This section contains bugs fixed in version **4.8.239** of **Elipse Power**.

### 9.7.2.1 Alarm Server and Alarm Configuration

- Fixed the behavior of Alarms inserted in OPC Drivers, where users cannot edit anymore the name of the condition nor the delay using OPC Driver View. *This bug occurred since v3.5.41.*

### 9.7.2.2 AppBrowser

- Optimized loading items with many children on the same level in AppBrowser.
- Fixed AppBrowser help for functions of **E3Globals** module in script contexts. *This bug occurred since v3.5.271.*

### 9.7.2.3 Data Server

- The **Value** property of Demo and Counter Tags was removed from Properties List. *This bug occurred since v1.0.9.*
- The Tag Timer's **RepeatInterval** property now is always formatted as h:min:s, in 24-hour format. *This bug occurred since v3.0.122.*

### 9.7.2.4 Documentation

- Removed information about compatibility with E3Chart on Query's **AddField** and **RemoveField** methods and removed a text indicating that Query's **DataSource**, **Fields**, **GroupBy**, **Having**, **OrderBy**, **Table**, and **Where** properties were read-only but could be changed at run time on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.20.1.*
- Fixed the names of Electrical Studies in **ActiveSource** and **StudyInputSource** properties of Analog and Discrete Measurements on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.5.245.*
- Added a link to the **SortMode** property on the initial topic of PowerExplorer properties on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.7.169.*
- Fixed the description of Screen's **FillStyle** property, which is also common to Screen objects on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.7.115.*
- Updated the descriptions of **BackupDiscardInterval**, **BackupDiscardTimeUnit**, **DiscardInterval**, **DiscardTimeUnit**, **EnableBackupTable**, **EnableDiscard**, **VerificationInterval**, and **VerificationUnit** properties, which are common to Alarm Server, Self-Healing Electrical Study, Historic, and Storage objects, so that they indicate to which object they refer on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.0.365.*
- Updated the exercise about expressions on chapter **Links** of **E3 Tutorial Developer**. *This bug occurred since v4.5.250.*
- Fixed the figure of Properties List that appears on chapter **Starting the Application** of **E3 Tutorial Developer**. *This bug occurred since v4.7.292.*
- Fixed a situation where some topics that should not be included on **Elipse Power** documentation in CHM were improperly added. *This bug occurred since v4.5.99.*
- Reintroduced a paragraph about context variables that was removed from **Elipse Power User's Manual** on topic **Links**. *This bug occurred since v4.0.205.*
- Fixed the name of the property defining the line style of a Pen, **PenLineStyle**, on **Elipse Power User's Manual** and on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.5.98.*
- Removed the indication that the **Size** property cannot be changed after activating communication in I/O Block, OPC Block, and OPC UA Block objects on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.20.237.*
- Added the value of the **ClassName** parameter for OPC UA Driver object in E3StudioApplication's **CreateFile** method on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.5.204.*
- Fixed standard values of **GradientStyle** (Screen), **BorderStyle** (Scale), **MatchEntry** (List), **GridLinesType** (E3Browser), **LineStyle** (Report's Picture), and **Alignment** (Report's Text) properties on **Elipse Power Reference and Scripts Manual**.
- Fixed the example script for the **GradientStyle** property of Screen object Scale on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.2.140.*
- Added the description of the Screen property of Feeder and Substation objects on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.6.65.*
- Fixed texts on several topics of **Elipse Power HMI Tutorial**. *This bug occurred since v4.7.301.*
- Fixed the name of the Power Configuration object through all **Elipse Power** documentation. *This bug occurred since v3.5.252.*

### 9.7.2.5 Domain Verifier

- Now the object and Domain checker correctly identifies **Expression**-type Links to warn if there are **Reverse**- or **Bidirectional**-type Links. *This bug occurred since v3.0.110.*

### 9.7.2.6 Drivers and I/O Server

- Implemented support for two new types of **Variants**, **Integer** and **Unsigned Integer**, in I/O Server. *This bug occurred since v0.1.3.*
- Fixed the behavior of the Quality of values of Block Elements to reflect a bad quality (28) when the Element's index is out of the current value of the I/O Block. *This bug occurred since v1.0.9.*
- Changed the term "PLC Tag" by "I/O Tag" on the Tag Count window of I/O Drivers. *This bug occurred since v1.20.332.*

### 9.7.2.7 E3Alarm

- The list of alarms now is correctly updated after the **BannerMode** property changes at run time. *This bug occurred since v4.7.155.*

### 9.7.2.8 E3Chart

- Changed the search for Pen queries of an E3Chart to not display server queries. *This bug occurred since v1.20.105.*

### 9.7.2.9 Elipse Power

- Fixed texts of contextual menus of **Elipse Power** objects to use the standard style of upper and lower case.

### 9.7.2.10 Elipse Power Data Objects

- Fixed the spelling of "Electrical Study" in **Elipse Power Studio** messages, as well as individual names of Studies so that they always start with upper case. *This bug occurred since v3.5.81.*
- Fixed the formatting of GUIDs in object properties so that they do not include a terminator (zero or Nul character). *This bug occurred since v4.7.119.*
- Fixed the saving of voltage colors when there are more than 20 voltage levels defined in the Power Configuration object. *This bug occurred since v4.0.63.*
- Fixed the behavior of the ID of data objects with an electrical model in **XPD** format to be a **Long** data type (signed 32-bit) and not a **DWord** (unsigned 32-bit). *This bug occurred since v4.7.119.*

### 9.7.2.11 Elipse Power Standard Libraries

- Repositioned connection points of device terminals. *This bug occurred since v3.5.187.*

### 9.7.2.12 ElipseX Libraries

- Fixed the behavior of the Screen's **OnShow** event to not prevent repositioning and resizing of XControls. *This bug occurred since v1.18.125.*
- Fixed Links accessing properties that are objects (**Parent**, **Screen**, etc.) in ElipseX instances. *This bug occurred since v1.18.147.*
- Fixed the selection of objects when deleting properties on an ElipseX definition. *This bug occurred since v1.20.75.*
- Improved the performance when loading Data Folders containing hierarchies of XObjects or XFolders. *This bug occurred since v4.5.197.*

### 9.7.2.13 Expressions

- Fixed the sharing of variables inside Link expressions. *This bug occurred since v1.0.16.*
- Changed the **BShI**, **BShr**, **GetBit**, and **SetBit** functions to accept unsigned 32-bit values and created the **LongToDword** e **DwordToLong** functions in scripts and expressions. *This bug occurred since v3.5.164.*

### 9.7.2.14 Gallery

- Fixed a problem with Gallery images that were displayed with a black background. *This bug occurred since v4.7.193.*

### 9.7.2.15 Importing and Syncing Elipse Power Objects

- Created a message to inform that an electrical model file does not contain items to sync. *This bug occurred since v3.5.81.*
- Fixed a warning message to users about an empty electrical model. This message is now an **Information**-type message and its text changed. *This bug occurred since v4.7.132.*

- Fixed a problem when importing Electrical Model Screens, which did not import Branch and Connector objects connecting a Bay to another one. *This bug occurred since v3.5.80.*
- Fixed a problem when importing Screens with **LinkNode**-type objects and data object syncing was enabled. *This bug occurred since v4.7.192.*
- Fixed the syncing of Line Segments added or removed from Transmission Lines. *This bug occurred since v3.5.81.*
- Fixed the messages of a lack of Viewer or Splitter that were not displaying in Electrical Model's Screen Importer. *This bug occurred since v4.7.119.*

### 9.7.2.16 Importing and Syncing External EDBs

- The Syncing of External Electrical Models now removes devices coming from an import Driver from inside Bays or Transmission Lines created in the Electrical Modeler. *This bug occurred since v4.7.119.*
- Created the **ModelDriver64** property in the Power Configuration object to be used in 64-bit **Elipse Power Studio**. Fixed the search for an import Driver file when **Elipse Power Studio**'s current directory changes. *This bug occurred since v4.6.119.*

### 9.7.2.17 Installation

- Fixed the URL fields of **Elipse Software** website and the friendly name of components on digital signatures of **Elipse Power** files. *This bug occurred since v4.6.152.*

### 9.7.2.18 Interface

- Fixed a closing of the properties window of a Link (Analog, Digital, Table, or Discrete) performed by the Edit Links window. *This bug occurred since v1.21.54.*
- Removed a wrong icon from the **Configure Database** item of a Formula object's contextual menu. *This bug occurred since v3.0.158.*

### 9.7.2.19 Links

- Allowed expressions with context (`@(Context).Link`) to return an object when used in ElipseX properties. *This bug occurred since v4.0.106.*

### 9.7.2.20 OPC Client

- Now the import process of OPC Tags correctly suggests the creation of an OPC Group in an OPC Driver without Groups but with alarms. *This bug occurred since v3.5.41.*

### 9.7.2.21 OPC UA Driver and OPC UA Client

- Fixed a GPF on the OPC UA Client, which could occur when the network failed during a connection. *This bug occurred since v4.5.160.*
- Fixed a lock that could occur in OPC UA Client when connection time-out was equal to 1 ms and the client was activated and deactivated quickly. *This bug occurred since v4.5.160.*
- Fixed the conversion of UA status to an **Elipse Power** quality. *This bug occurred since v4.5.192.*
- Adjusted CPU usage of OPC UA Client for a very low connection time-out, such as 1 ms. *This bug occurred since v4.5.166.*
- Fixed a GPF that could occur in OPC UA Client when stopped during a connection or reconnection. *This bug occurred since v4.5.166.*

### 9.7.2.22 Other Corrections

- Fixed a memory leak in E3 Server when connecting or disconnecting clients. *This bug occurred since v4.6.47.*
- Fixed the **ProcessInfo.<process>(x64)** log, which was truncating the value of **PVT**, **WKS**, **PPL**, and **NPP** statistics when they exceeded 4 GB. *This bug occurred since v4.0.29.*

### 9.7.2.23 Playback

- Fixed a GPF when performing a Screen change in **Elipse Power Viewer** while there were E3Playback tool bars floating. *This bug occurred since v3.1.190.*

### 9.7.2.24 PowerCAD and Electrical Modeler

- Fixed an error in which the size of a VirtualTieNode followed the zoom level. *This bug occurred since v4.7.119.*
- Fixed the behavior of the tool Add Line Segment to Transmission Line, which was always creating a new Transmission Line. *This bug occurred since v4.7.119.*
- Fixed the removal of Schematic Views with certain IDs in **EDB** format. *This bug occurred since v4.7.159.*
- Fixed the update of the color of container Displays when changing the **StrokeColor** property. *This bug occurred since v4.7.119.*
- Fixed a problem that prevents the creation and change of devices in very large networks. *This bug occurred since v4.7.238.*
- Fixed the positioning of the target of connections during operations that change the visualization of a diagram. *This bug occurred since v4.7.119.*
- Removed the "System" prefix from the tool Locate of the Electrical Modeler, displayed for some System's child types. Also removed the possibility of locating the System object. *This bug occurred since v4.7.119.*
- Fixed the **ConnectionType** property, which was not displaying in the electrical model in **EDB** format for Reactors. *This bug occurred since v4.7.119.*

### 9.7.2.25 PowerEngine and Electrical Studies

- Fixed the Self-Healing module so that the criteria to choose the solution **Most current left on the worst Switch** ignores Switches with equal currents, ensuring the right choice for the solution. *This bug occurred since v4.7.199.*
- Fixed the return code of the Self-Healing module to **kSelfHealingResultMissingCurrentInformation** when the Switch that triggered the trigger is having a problem referring to its current sample. *This bug occurred since v4.7.119.*
- Fixed a failure in the Self-Healing module that allowed overloading and energizing of defective blocks in scenarios with parallelism enabled. *This bug occurred since v4.7.119.*
- Fixed a failure that occurred when starting an application with any invalid value in at least one of the following Measurements of the Self-Healing module: **SelfHealingRestorationTrigger**, **SelfHealingOverloadTrigger**, **SelfHealingNextStepTrigger**, or **SelfHealingCurrentLimit**. This failure caused a restart of electrical modules. *This bug occurred since v4.7.262.*
- The State Estimator module now correctly loads networks with connectors between devices with different parents. *This bug occurred since v4.7.119.*
- Output three-phase power Measurements of the State Estimator module now can be correctly used. *This bug occurred since v4.7.119.*
- Fixed a failure in the Power Flow module that prevented its functionality when there were islands with only one Busbar and some impedance in short-circuit. *This bug occurred since v3.5.166.*
- Changed Electrical Studies so that Measurements without a change in value or quality are not propagated to data objects. *This bug occurred since v4.7.119.*
- Fixed the current calculation in Switches on certain cases of parallelism of logical devices. *This bug occurred since v3.5.81.*
- Fixed the Power Flow module with wrong values when there are Generators disconnected. *This bug occurred since v4.7.156.*
- Fixed the Self-Healing module, which incorrectly ignored the limit of current in Switches not available and without current samples. *This bug occurred since v4.7.119.*
- The State Estimator module is executed correctly (does not diverge early) if very large system Measurement variations occur. *This bug occurred since v4.7.198.*
- The State Estimator module now uses as input the average of values of voltage Measurements registered in devices with different types (shunt and series) connected on the same Busbar. *This bug occurred since v4.7.198.*
- Fixed the Self-Healing module, which allowed Switches with overloading to accept even more load during the execution of a maneuver plan. *This bug occurred since v4.7.119.*

### 9.7.2.26 PowerExplorer

- PowerExplorer now displays tabs on a single line, with arrows to move through tabs. *This bug occurred since v4.5.39.*

### 9.7.2.27 Remote Domains

- Adjusted messages about writing access failures to a server to only mention "Viewer Only" when blocking is in **Elipse Power Viewer** itself. *This bug occurred since v3.0.201.*

### 9.7.2.28 Screen Objects

- Fixed the procedure of dragging and dropping of the scroll bar cursor when on very large Screens and with maximum zoom.
- Fixed the notification of changes in the **X**, **Y**, **Width**, and **Height** properties of Screen Groups (*DrawGroup*). *This bug occurred since v0.1.33.*

### 9.7.2.29 Script Editor

- Fixed a problem with a block of text opening when typing something at the end of the line. *This bug occurred since v2.0.106.*
- After scrolling text in Scripts Editor, lines do not appear duplicated anymore. *This bug occurred since v3.1.128.*
- Fixed a problem when delimiting text blocks when the script contains text with a space at the end. *This bug occurred since v4.6.12.*

### 9.7.2.30 Studio

- Fixed the behavior of **Elipse Power Studio**'s status bar to display coordinates and size of an object even when it was not edited by the Screen Editor. *This bug occurred since v0.1.33.*
- Fixed a problem with the **Save** button, which was disabled on certain tabs of Power Configuration, Historic, Storage, Formula, Report, and ElipseX objects. *This bug occurred since v3.0.170.*
- Fixed the behavior of check boxes in Scripts Editor when objects are edited by the Organizer after moving the focus from **Elipse Power Studio**. *This bug occurred since v3.2.121.*
- Differentiated **E3** and **Elipse Power** products so that customized menus and tool bars from one product are not displayed on the other product. *This bug occurred since v4.6.85.*
- Fixed in Explorer the behavior of icons from projects that do not belong to a Domain. *This bug occurred since v4.5.86.*

### 9.7.2.31 Translation

- The E3PowerCADReg module messages are now translated. *This bug occurred since v3.5.166.*
- Fixed the translation of the expression "one or more studies". *This bug occurred since v3.5.313.*

### 9.7.2.32 WebViewer

- Fixed the behavior of Screen object tool tips not displaying in **WebViewer**. *This bug occurred since v4.0.174.*

This section contains updates of version **4.7** of **Elipse Power**. To check all updates of this version, please refer to the next topics of all Builds or, to check updates of a Build relative to a previous one, please refer to that specific topic.

## 10.1 Version 4.7 Build 308

This section contains updates of version **4.7.308** of **Elipse Power** relative to version **4.7.307**.

### 10.1.1 Fixed Bugs

This section contains bugs fixed in version **4.7.308** of **Elipse Power**.

#### 10.1.1.1 ActiveX

- Fixed an unexpected quit that could occur when restoring a **Elipse Power Viewer** window with MS Forms objects.  
*This bug occurred since v4.5.119.*

#### 10.1.1.2 Links

- Fixed a GPF that could occur in E3 Server when disconnecting a client (**Elipse Power Viewer** or Remote Domain). *This bug occurred since v3.0.201.*

#### 10.1.1.3 PowerExplorer

- Fixed a problem with the font displayed on edition fields of PowerExplorer window. *This bug occurred since v4.7.145.*

#### 10.1.1.4 Viewer

- Fixed an unexpected quit that could occur when restoring a **Elipse Power Viewer** window with MS Forms objects.  
*This bug occurred since v1.20.221.*

## 10.2 Version 4.7 Build 307

This section contains updates of version **4.7.307** of **Elipse Power** relative to version **4.7.305**.

### 10.2.1 New Features

This section contains new implementations of version **4.7.307** of **Elipse Power**.

#### 10.2.1.1 Viewer

- When the **DisableTaskSwitching** property is active, users cannot switch tasks using the keyboard shortcut CTRL + ALT + TAB. Likewise, the options to turn the computer off or switching users are not available on the logon screen either when using the keyboard shortcut CTRL + ALT + DELETE.

### 10.2.2 Fixed Bugs

This section contains bugs fixed in version **4.7.307** of **Elipse Power**.

#### 10.2.2.1 Viewer

- The **Disable task switching** option on **Elipse Power Viewer** does not remove the option to shut the computer off.  
*This bug occurred since v1.18.138.*

## 10.3 Version 4.7 Build 305

This section contains updates of version **4.7.305** of **Elipse Power** relative to version **4.7.300**.

### 10.3.1 New Features

This section contains new implementations of version **4.7.305** of **Elipse Power**.

### 10.3.1.1 Documentation

- Updated the **Elipse Power HMI Tutorial**.

### 10.3.2 Fixed Bugs

This section contains bugs fixed in version **4.7.305** of **Elipse Power**.

#### 10.3.2.1 Alarm Server and Alarm Configuration

- Now unbound alarms generate events only in signatures and in E3 Server's alarm summary, not as a database record anymore. *This bug occurred since v4.7.239.*

#### 10.3.2.2 Links

- Fixed sending large amounts of notifications about value changes (more than 8192) to **Elipse Power Viewer** and to Remote Domains, which may slow them down. *This bug occurred since v2.5.64.*

#### 10.3.2.3 PowerEngine and Electrical Studies

- Fixed the sending of a large amount of notifications about value changes (more than 8192) to PowerEngine, to **Elipse Power Viewer**, and to Remote Domains, which may slow them down or even not send them if there were no new notifications. *This bug occurred since v3.5.81.*

#### 10.3.2.4 Users

- Fixed the Users window to avoid revealing the saved password when editing a user. *This bug occurred since v1.19.138.*

## 10.4 Version 4.7 Build 300

This section contains updates of version **4.7.300** of **Elipse Power** relative to version **4.7.234**.

### 10.4.1 New Features

This section contains new implementations of version **4.7.300** of **Elipse Power**.

#### 10.4.1.1 Documentation

- Updated CPU requirements on **Elipse Power Installation Guide**.
- Added the Electrical Studies Distribution Load Modelling, Self-Healing, and External Reader as measurement sources in the description of the **ActiveSource**, **StudyInputSource** (Discrete and Analog Measurements), and **CustomFilter** (E3Alarm Filter) properties on **Elipse Power Reference and Scripts Manual**.
- Updated **Elipse Power User's Manual** with two new chapters about the Power Configuration object and about Syncing Data Objects.
- Updated **Elipse Power User's Manual** and **Elipse Power Reference and Scripts Manual** with objects from the new Electrical Modeler in **EDB** format.

#### 10.4.1.2 E3Alarm

- Added options to acknowledge and delete unbounded alarms, as well as identifying them in E3Alarm by the **Unbound** column.

#### 10.4.1.3 Installation

- Changed the digital signature of **Elipse Power** files and installers to use a SHA-2 certificate.

#### 10.4.1.4 OPC UA Driver and OPC UA Client

- Updated OPC UA ANSI C Stack to version 1.02 Build 336 Official.

#### 10.4.1.5 Other Implementations

- Created a Line Printer object, which allows printing directly to dot-matrix printers.

### 10.4.1.6 PowerCAD and Electrical Modeler

- Generated a new GUID when converting a Jumper to a Branch or vice versa.
- Added the **IsMobile** property to the Substation object, which indicates whether a Substation is mobile.

### 10.4.1.7 PowerEngine and Electrical Studies

- Added the **SpinReserveMode** property on Electrical Study Load Shedding, which allows adjusting the load shedding algorithm's functionality.
- Prevented the triggering of Self-Healing module on overloads when the solution found is to open the Switch that started that triggering.
- Fixed the behavior of the Self-Healing module, which was admitting current values with bad quality, if the penultimate sample of current had a good quality, its values were the same, and the timestamp of the penultimate sample was less than 12 hours of the local time.

### 10.4.1.8 Protection Device

- Updated the installer of HASP drivers (haspdinst.exe) to version 7.41.

### 10.4.1.9 Studio

- Created the **ListFiles** method in Studio's Application object.

## 10.4.2 Fixed Bugs

This section contains bugs fixed in version **4.7.300** of **Elipse Power**.

### 10.4.2.1 Alarm Server and Alarm Configuration

- Fixed the behavior of alarm counters on Areas, when there are sources with a single Sub-condition of type **Event**. *This bug occurred since v4.0.36.*
- Fixed the display of User Fields from Remote Domains in AppBrowser. *This bug occurred since v4.5.114.*

### 10.4.2.2 AppBrowser

- Queries now appear on AppBrowser with all methods and properties when selected by E3Chart's **Queries** collection. *This bug occurred since v2.0.62.*

### 10.4.2.3 Domain, E3 Server, and Hot-Standby

- Fixed the update mechanism of project files to re-execute unloaded objects at run time, when a project file is updated.
- Fixed a problem in Hot-Standby when two servers receive the **Activate** command at the same time. *This bug occurred since v1.20.450.*
- Fixed the behavior of **Elipse Power Studio**'s application wizard that could create a new Domain even when a Domain is already executing, without checking stopping permissions. *This bug occurred since v1.19.87.*
- Fixed the Domain update to correctly handle cases where several project or library files are updated on the same step and false name conflicts could be detected among new and old versions of these files. *This bug occurred since v1.18.155.*

### 10.4.2.4 E3Alarm

- The **Enabled** column is not selected by default in E3Alarm anymore. *This bug occurred since v1.0.0.*

### 10.4.2.5 E3Chart

- Fixed the **ResetConfig** method to restart all E3Chart properties, including Axes and Legends. *This bug occurred since v1.19.191.*

### 10.4.2.6 E3DataAccess

- Improved E3DataAccess performance when using only asynchronous accesses (**ReadValue**, **WriteValue**, **GetValue**, or **SetValue** without **RegisterCallback**). This also prevents a memory leak in E3 Server. *This bug occurred since v4.5.92.*

### 10.4.2.7 Elipse Power Data Objects

- Fixed the consumption of Measurement licenses by the Protection object. *This bug occurred since v4.0.51.*

### 10.4.2.8 ElipseX Libraries

- Now **Elipse Power Studio** prevents a child object and a Property when defining an ElipseX from having the same name (this name is auto-incremented).

### 10.4.2.9 Interface

- Fixed the behavior of Link's configuration mini-dialogs to correctly follow Link's position and be closed when the Link is not visible. *This bug occurred since v1.21.54.*
- Fixed the repositioning of Link's mini-dialogs on **Windows 8** or later.

### 10.4.2.10 Links

- Fixed the behavior of Table Link's rows, which did not update Links at run time when modified by script. *This bug occurred since v2.5.41.*

### 10.4.2.11 PowerEngine and Electrical Studies

- Fixed an error in the Load Shedding module where the **ValidOutput** property of the Scenarios displayed the value False when the module was deactivated and the Switch that triggered that Scenario was already open. *This bug occurred since v3.5.341.*
- Fixed the behavior of the Self-Healing module, which was aborted when it found rings on the network and these rings could be ignored. *This bug occurred since v4.7.119.*
- The Self-Healing module now correctly identifies and aborts cases when the triggered Switch is part of any Branch with inconsistent current samples. *This bug occurred since v4.7.119.*

### 10.4.2.12 SetPoint

- Fixed the behavior of SetPoint object's editor to follow object's rectangle, when it is moved with the edition window open.

### 10.4.2.13 Studio

- Fixed the closing of **Elipse Power Viewer**, when it is already disconnected from a server.
- Fixed the mechanism of the button to stop or execute **Elipse Power Viewer** in **Elipse Power Studio**, so that it does not lock if used very quickly. *This bug occurred since v1.19.100.*
- Fixed the behavior of Link's configuration mini-dialogs to correctly follow Link's position and be closed when the Link is not visible.

### 10.4.2.14 WebViewer

- Changed the parent window of Report's views, so that they do not close without **Elipse Power Viewer** being closed. *This bug occurred since v1.19.87.*

## 10.5 Version 4.7 Build 234

This section contains updates of version **4.7.234** of **Elipse Power** relative to version **4.6.162**.

### 10.5.1 New Features

This section contains new implementations of version **4.7.234** of **Elipse Power**.

#### 10.5.1.1 Alarm Server and Alarm Configuration

- Created the Alarm Filter object.
- Implemented the **Events** property, which returns a collection of active events on an E3Alarm and on an Alarm Filter.

#### 10.5.1.2 Demonstration Application

- **Elipse Power's** Demonstration Application now uses the new electrical model format **EDB**.

### 10.5.1.3 Documentation

- Added a minimum version to use **WebViewer** on Internet Explorer on **Elipse Power Installation Guide**.
- Updated the **Elipse Power Installation Guide** with the correct procedures to configure IIS (*Internet Information Services*) on **Windows Server 2003, Windows XP, Windows Vista, Windows 7, Windows 8, and Windows 8.1**.
- Added support to **Windows 10** on **Elipse Power** documentation.
- Removed the citation to **FillStyle** property on the description of Picture's **BackgroundStyle** property on **Elipse Power Reference and Scripts Manual**.
- Updated texts and figures on **E3 Minicourse Tutorial**.
- Added notes on topics about Rotation and Animation of **Elipse Power User's Manual** about the impossibility of rotating and animating bitmaps.
- Updated the text about Storage's data compression on **Elipse Power User's Manual** to remove the reference to percentages.
- Added note on **Elipse Power User's Manual** about average calculation on Pen's data of an E3Chart, on the **E3Chart - Settings - Pens Tab** topic.
- Added information on **Elipse Power User's Manual** about the behavior of the **E3TimeStamp** field of a Historic when linking it to an existing table on a data base.
- Added the description of the **NormalState** property of the Breaker, Recloser, Switch, and Switch Fuse objects on **Elipse Power Reference and Scripts Manual**.
- Added usage examples of the **Abort, Cancel, Operate, and Select** methods of the Command Unit object on **Elipse Power Reference and Scripts Manual**.
- Added an updated version of **Elipse Power HMI Tutorial** on **Elipse Power** documentation.

### 10.5.1.4 E3 Admin

- Changed E3 Admin's Drivers window to allow sorting and filtering by columns.

### 10.5.1.5 E3 Tweak

- Added to **E3 Tweak** configurations related to new log keys of **E3PowerEngine: FullPower.DistLoadModel, FullPower.ExternalReader, FullPower.SelfHealing, FullPower.StateEstimator, FullPower.Workspace, PowerEngine.DistLoadModel, PowerEngine.ExternalReader, PowerEngine.PowerFlow, PowerEngine.SelfHealing, PowerEngine.StateEstimator, PowerEngine.TopologyProcessor, and PowerEngine.Workspace**.

### 10.5.1.6 E3Alarm

- Changed E3Alarm's default font, from **MS Sans Serif** to **Tahoma**, with 12.75 points.
- Added a feature to E3Alarm and Alarm Filter objects to receive and aggregate local alarms and alarms from Remote Domains.

Acked	Area	Source Domain	Source	Quality	Severity	Date
No	RemoteArea2	REMOTE2	Data.DemoTag8.V...Good (192)	Good (192)	High	09/15
No	RemoteArea1	REMOTE1	Data.DemoTag6.V...Good (192)	Good (192)	High	09/15
No	LocalArea	LOCAL	Data.DemoTag1.V...Good (192)	Good (192)	High	09/15
No	RemoteArea1	REMOTE1	Data.DemoTag4.V...Good (192)	Good (192)	High	09/15
No	RemoteArea2	REMOTE2	Data.DemoTag7.V...Good (192)	Good (192)	High	09/15
No	LocalArea	LOCAL	Data.DemoTag2.V...Good (192)	Good (192)	High	09/15
No	LocalArea	LOCAL	Data.DemoTag3.V...Good (192)	Good (192)	High	09/15
No	RemoteArea1	REMOTE1	Data.DemoTag5.V...Good (192)	Good (192)	High	09/15
No	RemoteArea2	REMOTE2	Data.DemoTag9.V...Good (192)	Good (192)	High	09/15

RemoteConnection2: Connected

E3Alarm with the new connections status bar

### 10.5.1.7 Elipse Power

- Implemented an **Add** submenu for **Elipse Power**'s fixed objects.
- Implemented support for three-phase distribution networks and state estimators.
- Implemented support for electrical models in **EDB** format for distribution networks.

- Created the **Import External Data Base** and **Synchronize External Data Base** commands on Power Configuration and the **ModelDriver** property to configure the import and synchronize tools.
- Created a converter for applications with an electrical model in **XPD** format to an electrical model in **EDB** format.
- Updated the **Model Statistics** window of Power Configuration with new devices and electrical studies.

### 10.5.1.8 Elipse Power Data Objects

- Added the **NormalState** property to Switch (*PowerSwitch*), Breaker (*PowerBreaker*), Switch Fuse (*PowerSwitchFuse*), and Recloser (*PowerRecloser*) objects.
- Changed the active Source of the default Load Shedding Measurement for Loads and Distribution Loads and not inserted the *LoadShedding* Source for this Measurement.
- Created support for expressions inside Semantics' descriptions of types of Commands defined in the Power Configuration object (*PowerConfig*).
- Created the **StrokeColor** property on **Elipse Power's** data objects.
- Created the data object *PowerDistTransformer*, which represents a Distribution Transformer.
- Created a 220V voltage level on Power Configuration, with a default blue color.

### 10.5.1.9 Elipse Power Standard Libraries

- Now the returned value of *PowerExplorer* is considered when occurring any failure while opening this object, displaying a message with the failure.
- For a better performance when opening Screens that contain a *PowerDisplay* object, the **Keep all active associations** option was enabled on Multiple Links.
- Added support for **DistLoadModeling**, **SelfHealing**, and **ExternalReader** Sources on *PowerDisplay* library.
- *PowerDisplay* object's tip now displays the description of the Measurement to which this object is linked.
- Added a new functionality to the *LinkNode* object for opening a Screen and representing from where this Screen was called.
- Created the Screen object *DistTransformer*, which represents a Distribution Transformer.
- Created the **ColorMode** property, which defines whether an object points to the **VoltageColor** property or to the **StrokeColor** property of its terminals.

### 10.5.1.10 Importing and Syncing Elipse Power Objects

- The **Elipse Power's** Import Screen Objects tool now allows importing more than one object at a time, automatically creating the Screens, if needed.
- Created a tool for syncing data objects that exist on **Elipse Power** and still exist on the electrical model.
- Standardized the behavior of **Elipse Power's** Screen Importer, Data Object Syncing, and Existing Data Object Syncing tools for when there is an open Domain or not. Now users can only execute these tools if there is an open Domain in **Elipse Power Studio**.
- Created an option for users to inform if they want to resize a Screen, by keeping the size of objects defined in *PowerControls* library, instead of resizing objects to fit that Screen.
- The interface of **Elipse Power's** Import Screen Objects tool, which allows selecting a specific Screen, now allows renaming the folders created.
- The **Elipse Power's** Import Data Objects tool now uses projects already in the Domain, or allows overwriting projects closed outside the Domain.
- Implemented support for inverted axes on **Elipse Power's** Import Screen Objects tool.
- Implemented an option to allow selecting the background color for Screens created during **Elipse Power's** Screen objects import process.
- The Screen's **Caption** property where a Substation or Feeder is being imported, if still has its default value, receives the name of the Substation or Feeder imported.
- Changed the nomenclature of tools available on Power Configuration's **Electrical Model** menu.
- Implemented syncing of new data objects Recloser, Voltage Regulator, and Distribution Transformer.
- Implemented importing of Screen objects Recloser, Voltage Regulator, and Distribution Transformer.
- Implemented the import process of Schematic Views and included new configuration options on **Advanced** window.

### 10.5.1.11 Installation

- Integrated **Elipse Event Logs** version 4.5.120.

### 10.5.1.12 Interface

- Improved descriptions that appear on Properties List for the **DBServer**, **TableName**, **EnableDiscard**, **DiscardInterval**, **DiscartTimeUnit**, **VerificationInterval**, **VerificationUnit**, **EnableBackupTable**, **CacheSize**, **BackupDiscardInterval**, and **BackupDiscardTimeUnit** properties of Storage, Historic, Alarm Server, and Formula objects.
- Implemented the **RGB** formatting on editing fields for selecting a color.

### 10.5.1.13 OPC Server

- Added Full logs to **Elipse Power**'s OPC server services.

### 10.5.1.14 OPC UA Driver and OPC UA Client

- Updated the **OpenSSL** library, used on **Elipse Power**'s OPC UA Client, to version 1.0.1p (1.0.1.16).

### 10.5.1.15 Other Implementations

- Updated the compression library of REC protocol (**zlib** library version 1.2.8).
- Changed **Elipse Power** to use, if possible, the computer's long DNS name. When this is not possible, it keeps using the NetBIOS name, which is limited to 15 characters.

### 10.5.1.16 PowerCAD and Electrical Modeler

- Created the **Generate Schematic View** option on Electrical Modeler.
- Implemented a new Electrical Modeler, with support for the new Recloser, Voltage Regulator, and Distribution Transformer objects.
- Implemented a selection of a parent Substation of a Feeder by **Elipse Power Studio**'s Properties List (this only applies to electrical models in **EDB** format).
- Created the **Locate Element** (CTRL + L) command to locate items on an electrical model (only for **EDB** format).
- The **XMin**, **XMax**, **YMin**, and **YMax** properties of Substations and Feeders on an Electrical Model now are called **CanvasLeft**, **CanvasRight**, **CanvasTop**, and **CanvasBottom**, respectively.

### 10.5.1.17 PowerEngine and Electrical Studies

- Created a new electrical study called State Estimator.
- Created a new electrical study called Distribution Load Modelling.
- Created a new electrical study called Self-Healing.
- Created a new electrical study called External Reader.

### 10.5.1.18 PowerExplorer

- Created the **SortMode** property on PowerExplorer object, which indicates the type of sorting that must be used on that window.

### 10.5.1.19 Protection Device

- Updated HASP drivers installer (haspdinst.exe) to version 7.40.
- A protection device now defines a range of versions of **Elipse Power** that can be executed. Programming this version range is mandatory for Runtime licenses and optional for **Elipse Power Studio** licenses.

### 10.5.1.20 Reports

- Added four new parameters to Report's **PrintPreview** method to allow specifying, optionally, position and size of its Preview window. The **Print Report** Pick was updated to support these new parameters.
- Updated the Report object (*ActiveReports Professional 2*) to version 2.5 build 1322.

### 10.5.1.21 Screen Objects

- Added support to images in **PNG** and **TIFF** format on the DrawString object and also as a background image for Screens.
- Created the possibility of inserting Viewer Folders and Data Server Tags (Demo, Internal, Timer, and Counter Tags) on Screens. Users can also insert Queries on Viewer and on Viewer Folders.

### 10.5.1.22 Scripts

- Created the **GetScreen** method on Viewer and **ShowScreen** on Splitter to open Screens modified at run time.

### 10.5.1.23 Studio

- Added the **Yes (all)** and **No (all)** options on commands for closing and saving objects, folders, projects, and libraries on Organizer and Explorer.
- Updated the properties window of Storage, Historic, Alarm Server, and Self-Healing objects.

## 10.5.2 Fixed Bugs

This section contains bugs fixed in version **4.7.234** of **Elipse Power**.

### 10.5.2.1 Alarms

- Fixed a memory leak on an Alarm Server with event recording to a database turned off and implemented support to alarm statistics with alarm event recording to a database turned off. *This bug occurred since v0.1.26.*
- Fixed the drawing of **Analog** tab of Analog Alarms. *This bug occurred since v4.0.33.*

### 10.5.2.2 AppBrowser

- Now, when pasting script expressions, AppBrowser adds brackets to the names of ElipseX classes, if needed. *This bug occurred since v3.5.44.*
- Fixed the presentation of the Field Collection of E3Browser (the **Fields** property) on AppBrowser.

### 10.5.2.3 Demonstration Application

- Fixed a name conflict with XObject **xoKPICalc** on **Elipse Power** Demonstration Application. *This bug occurred since v4.5.15.*

### 10.5.2.4 Documentation

- Added a note on the description of **KeyUp**, **KeyDown** (Screens and Screen Objects), and **KeyPress** (Microsoft Forms, E3Alarm, and E3Browser) events on **Elipse Power Reference and Scripts Manual** with a link for a full list of key codes available for these events. *This bug occurred since v1.20.385.*
- Updated the description of the **Font** property of Check Box, Option Button, Combo Box, Command Button, Label, List Box, Toggle Button, and Text Box objects of MS Forms on **Elipse Power Reference and Scripts Manual** to remove the indication that this property cannot be used by script.
- Fixed the description of the **Remove** method of E3Chart's Collection of Pens on **Elipse Power Reference and Scripts Manual** to indicate that this method accepts a Pen's index as well as a Pen's name to remove. *This bug occurred since v3.2.267.*
- Removed the example on the description of Splitter's **SplitLink** property on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v2.5.177.*
- Updated the description of Splitter's **SplitValue** property on **Elipse Power Reference and Scripts Manual** to include its behavior also at run time. *This bug occurred since v3.0.168.*
- Updated the **Properties** tab figure on topic **Programming in Elipse Power - Getting References to Objects - Accessing Objects from the ElipseX Itself** of **Elipse Power Reference and Scripts Manual** to match it to topic's text. *This bug occurred since v1.22.34.*
- Updated the description of Viewer's **EnableInactivity** property on **Elipse Power Reference and Scripts Manual** to indicate that this property cannot be changed by script. *This bug occurred since v1.20.325.*
- Updated the example of Viewer's **GetFrame** method on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.0.0.*
- Fixed the name of the field that allows filtering an alarm by area on the description of E3Alarm's **CustomFilter** property on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.5.134.*

- Added information about discrete alarm sources on the description of Event's **ConditionName**, **EventCategory**, and **SubConditionName** properties on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.0.192.*
- Added more information to the description of the **Value used for scan** option on topic **E3Chart - Settings - Pens Tab**, table **Available options for Connection Type tab** on **Elipse Power User's Manual**. *This bug occurred since v3.5.172.*
- Updated topic **Frequently Asked Questions - Remote Domains** on **Elipse Power User's Manual** to describe the procedure to view and acknowledge alarms in Remote Domains. *This bug occurred since v3.1.234.*
- Updated the description of the **Keep data from the last ... <Backup Table>** option of Storage, Historic, and Alarm Server objects on **Elipse Power User's Manual**. *This bug occurred since v1.21.113.*

### 10.5.2.5 Domain, E3 Server, and Hot-Standby

- Fixed a problem when starting a Domain by a server and stopping it by another, where this Domain could start again by itself. *This bug occurred since v1.18.43.*
- Improved performance when updating server objects that contain I/O Drivers and fixed the update mechanism of XObjects for Domains in execution. *This bug occurred since v1.19.281.*
- When renaming objects using **Elipse Power Studio** and applying those changes, now objects are deactivated and then reactivated. *This bug occurred since v1.18.79.*
- E3 Server now releases Domain's directory after being stopped. *This bug occurred since v2.5.46.*
- Fixed a memory leak that occurred in E3 Server at each opening of a Domain. *This bug occurred since v1.18.43.*

### 10.5.2.6 Drivers and I/O Server

- Removed repeated log messages about a watchdog time-out for I/O Server and **E3DBEngine**. *This bug occurred since v4.6.79.*

### 10.5.2.7 E3 Admin

- Changed acronyms for seconds and milliseconds from "sec" and "msec" to "s" and "ms", respectively. *This bug occurred since v1.18.109.*

### 10.5.2.8 E3Chart

- Fixed E3Chart behavior when Queries are removed using the **DeleteObject** method, instead of using the **Remove** method of the collection of Queries. *This bug occurred since v1.20.450.*

### 10.5.2.9 Elipse Power

- Fixed the behavior of Analog or Discrete Measurement Sources with an empty Link that, if they are the active Source, do not update the Measurement they belong. *This bug occurred since v3.5.81.*

### 10.5.2.10 Elipse Power Data Objects

- Fixed a failure that happened in **Elipse Power Studio** when saving an electrical model during a change on the electrical model file. *This bug occurred since v3.5.300.*
- Fixed an abnormal program termination in **Elipse Power Studio**, which could occur when editing the **ModelFile** property of the Power Configuration object. *This bug occurred since v4.6.33.*
- Blocked in **Elipse Power Studio** double-clicking grid columns that are in a read-only status. *This bug occurred since v4.0.63.*
- Fixed a problem with Analog or Discrete Measurement Sources that are configured with an empty Link. *This bug occurred since v3.5.81.*
- Fixed the behavior of the **AddObject** method when used with objects with fixed names. *This bug occurred since v3.5.81.*

### 10.5.2.11 Elipse Power Standard Libraries

- Changed the size of a BusBar object, which nows has the same size of the device. With it, even if there is any Connector on the edge of this object, it is drawn correctly. *This bug occurred since v3.5.85.*
- Centered the figure of a BusBar object inside a device. *This bug occurred since v3.5.85.*

## 10.5.2.12 ElipseX Libraries

- Fixed Link behavior with **Object**-type properties on ElipseX libraries when deactivating these objects. *This bug occurred since v1.18.155.*

## 10.5.2.13 Find and Replace

- Fixed the behavior of Find and Replace tool in cases when the context object is removed. *This bug occurred since v2.0.95.*

## 10.5.2.14 Importing and Syncing Elipse Power Objects

- Fixed the calculation of Connector's width. *This bug occurred since v3.5.200.*
- Fixed a problem on **Elipse Power**'s Data Object Syncing tool, which allowed selecting a project outside the Domain to create a new object when there was an open Domain. *This bug occurred since v3.5.81.*
- Fixed a problem when importing a Substation connected to another one by a Transmission Line, where the created Link's Source in the LinkNode's **SourceObject** property was not being filled. *This bug occurred since v4.5.153.*
- Fixed a problem when importing **Elipse Power**'s Screens from a Screen, which did not respect advanced configurations. *This bug occurred since v4.6.89.*
- Fixed a problem when importing **Elipse Power**'s Screen objects when the Screen's path linked to that object contained Folders. *This bug occurred since v4.6.89.*
- Fixed a problem when importing Screens with LinkNodes when these ones were inside Bays in the electrical model. *This bug occurred since v4.5.153.*
- Fixed a syncing problem with Branches of the electrical model without a defined cable that generated a needless log message. *This bug occurred since v3.5.209.*
- Removed error messages on log when syncing (importing) Electrical Models with Line Segments defined at System level. *This bug occurred since v3.5.81.*
- Fixed the size of Nodes when importing **Elipse Power**'s Screen objects. *This bug occurred since v3.5.228.*
- Fixed the order of items on the Import Screen Objects window to always list Substations first, then Feeders, and then Schematic Views, keeping the alphabetical order on internal items. *This bug occurred since v4.6.89.*

## 10.5.2.15 Installation

- Fixed installers for **Elipse Power** 32-bit and 64-bit versions to include the correct version of file E3Downloader.cab. *This bug occurred since v4.6.97.*

## 10.5.2.16 Interface

- Vertically aligned the text relative to non-availability of **Windows XP** style on the options of **Customize** window of **Elipse Power Studio**.
- Standardized fonts for **Elipse Power** windows to **Tahoma**. *This bug occurred since v3.0.79.*
- Added a period to the phrase referring to the configuration of restrictions by **Absolute Limit** on Formula's restriction configuration. *This bug occurred since v1.18.147.*
- The horizontal line of the **Classes of objects** window of advanced export options for objects now follows this window's width. *This bug occurred since v3.2.46.*
- Fixed the margin for controls on **Frame** tab of properties of Frameset objects. *This bug occurred since v0.1.33.*
- Fixed a problem on Tag Browser window, in which the text box could be misaligned when resizing it. *This bug occurred since v4.0.60.*
- Fixed problems with truncated texts on **Elipse Power**.
- Fixed the size of fonts on **Yes**, **No**, **Yes (All)**, and **No (All)** windows of **Elipse Power**. *This bug occurred since v4.5.61.*
- Fixed the size of texts in **Elipse Power Studio**'s opening windows when using a DPI (*Dots Per Inch*) above 96. *This bug occurred since v2.5.126.*
- Fixed several translation problems on **Elipse Power**.
- Fixed in **E3 Tweak** the translation of texts of type "Module 'XXX'" to "'XXX' Module". *This bug occurred since v4.6.77.*
- Fixed the enabling of controls on **Configuration** tab of the Alarm Server in **Elipse Power Studio**, where options could appear enabled in cases where these options have no effect. *This bug occurred since v1.20.235.*
- Fixed the translation of **Elipse Power**'s Sync Data Objects window title. *This bug occurred since v3.5.137.*
- Fixed the translation of the **Measurements** column on PowerExplorer's window. *This bug occurred since v3.5.137.*

- Fixed the translation of "Sorting" on type-defining columns on Power Configuration object. *This bug occurred since v3.5.95.*

### 10.5.2.17 Links

- Fixed a problem with names considered for copied or renamed objects remained different for their real name, for Link purposes. *This bug occurred since v1.0.16.*

### 10.5.2.18 OPC Client

- Changed the mechanism for **Elipse Power's** OPC Client to allow executing it on an account different from **SYSTEM** on **Windows Vista** or later. *This bug occurred since v4.6.73.*

### 10.5.2.19 OPC UA Driver and OPC UA Client

- Fixed the handling of URLs on **Elipse Power's** UA client, where the scheme part was accepting only "opc.tcp" (lowercase). *This bug occurred since v4.5.160.*

### 10.5.2.20 Other Corrections

- Blocked the usage of control characters (ASCII codes between 0 and 31 and the code 127) in names of objects on **Elipse Power**. *This bug occurred since v1.18.147.*
- In **Elipse Power Studio**, when pasting a text on a grid cell, now this text is truncated up to the first line break. *This bug occurred since v1.18.54.*
- Fixed the reading of the version of a project file changed since its last opening. *This bug occurred since v1.21.111.*

### 10.5.2.21 PowerCAD and Electrical Modeler

- Fixed a failure on Electrical Model when changing the electrical model file using the Properties List. *This bug occurred since v4.0.192.*
- Exposed on Properties List the **DisplayX** and **DisplayY** properties of an Transmission Line Segment object. *This bug occurred since v3.5.81.*

### 10.5.2.22 PowerExplorer

- The PowerExplorer window now rearranges Measurements automatically when their description change. *This bug occurred since v4.5.178.*

### 10.5.2.23 Protection Device

- Fixed an expiration warning that could erroneously appear for each E3 Admin opened after a reprogramming that changed the expiration date of a license. *This bug occurred since v4.0.91.*

### 10.5.2.24 Query

- Fixed the assembling of the **WHERE** clause of Queries when using **Text**-type values on Microsoft SQL Server. *This bug occurred since v3.2.52.*
- Fixed occasional Query locks regardless of the database used (Access, SQL Server, or Oracle). *This bug occurred since v4.5.198.*

### 10.5.2.25 Scripts

- Fixed a GPF when removing child objects from an object when there is a **For Each** loop traversing these child objects.

### 10.5.2.26 Scripts Editor

- Implemented on Scripts Editor support for Picks and scripts, which used to appear only on scripts documentation or on the **Find and Replace** window. *This bug occurred since v1.18.155.*

### 10.5.2.27 Studio

- Fixed a GPF when users change the focus for an item that contains a Table or Multiple Link edits an event using the **Edit Links** window. *This bug occurred since v2.0.116.*
- Removed duplicated messages when trying to configure invalid names (for example, **Null**) for objects on **Elipse Power**. *This bug occurred since v1.19.203.*

- Removed the menu that displays the **Object Counting** option when mouse click happens on an empty area of Organizer. *This bug occurred since v4.6.42.*
- Changed the icon of progress windows of **Elipse Power Studio** from exclamation point (!) to information (i). *This bug occurred since v1.18.145.*
- Fixed performance problems in **Elipse Power Studio** when opening applications with many project files. *This bug occurred since v4.5.86.*
- Fixed the recording on Windows Registry by **Elipse Power Studio** for the **Directories** key, which registers the folder of the last Domain or file opened. *This bug occurred since v4.5.18.*
- Now **Elipse Power Studio** records the last directory where an image was selected, so that this folder is suggested for a new image. *This bug occurred since v3.0.227.*
- Fixed a drawing problem on **Elipse Power** edition windows, where the icon ☐ could not appear when deleting and adding child items in objects. *This bug occurred since v1.18.147.*

### 10.5.2.28 Translation

- Now messages with possible error details on the XPD library were translated. *This bug occurred since v3.5.137.*

### 10.5.2.29 Viewer

- Fixed an error on memory cache of **Elipse Power Viewer** Screens, which could keep a Screen with a wrong version. *This bug occurred since v1.18.79.*
- Changed the cache of **Elipse Power Viewer** Screens to always normalize all received paths, thus preventing the download of the same file more than once. *This bug occurred since v1.18.54.*
- Changed the download of **Elipse Power Viewer** files to validate their type on Server and on **Elipse Power Viewer**. This affects opening Screens or Frames, using the **OpenScreen** method, and opening Reports, using the **LoadReport** method. *This bug occurred since v1.18.54.*

This section contains updates of version **4.6** of **Elipse Power**. Please check the next topics for more information about **new features** and **fixed bugs** in this version.

## 11.1 New Features

This section contains new implementations of version **4.6** of **Elipse Power**.

### 11.1.1 ActiveX

- **Elipse Power** now also considers Windows Registry to determine whether an object is an ActiveX or not (the **HKEY\_CLASSES\_ROOT\CLSID\{classId}\Control** key), which makes it much more easier to use ActiveXs generated in .NET.

### 11.1.2 Documentation

- Updated installation requirements of **Elipse Power**, relative to supported operating systems, throughout the documentation.
- Removed the **Elipse Power Tutorial** from **Elipse Power**'s installation.
- Updated information on **Elipse Power User's Manual** about E3Playback in **Demo** mode and the playback's assembling process.
- Added a note on **Elipse Power User's Manual** about the impossibility of using Reports on 64-bit versions.

### 11.1.3 Domain, E3 Server, and Hot-Standby

- A new process was created, E3DBEngine.exe, which replaces **E3Run** for the execution of all accesses to databases.
- Removed the **EnableLocalCreation** property of the Database Server. **Elipse Power Viewers** cannot access databases directly anymore, and all accesses are performed via server.

### 11.1.4 E3 Admin

- Now Statistics and Licenses windows of E3 Admin differentiate when an **Elipse Power Studio** or **E3 Studio** is connected to an E3 Server.

### 11.1.5 E3 Tweak

- Updated **E3 Tweak** to include new **Full** log keys.

### 11.1.6 E3DataAccess

- Implemented the recycling of links in the **WriteValue** and **ReadValue** methods of E3DataAccessManager.

### 11.1.7 Elipse Power

- Created a new type of Load Shedding Scenario, the Load Relief. This Scenario allows an user to define a fixed amount to shed by electrical island in the system.
- Created a new Discrete Measurement **\*LoadStateOnScenario**, which informs what happens to a Load in each one of the configured Load Shedding or Load Relief Scenario (if the Load is available, available but not selected, or available and selected).
- Implemented new Boolean property **Converged** in the Power Flow Study, which indicates the result of the last calculation of the Study.
- Now in **Elipse Power** installations, the Viewer's **Caption** property by default has the value "Elipse Power Viewer Application".
- Created the **Screen** property for Feeder and Substation objects, which indicates the Screen where the electrical model was imported that refers to the object.
- The LinkNode object now can open the Screen configured in the **Screen** property of the linked data object.

## 11.1.8 EPM

- Implemented asynchronous readings and writings in E3AccessLayer.

## 11.1.9 Expressions

- Changed the timestamp rules of **Elipse Power** expressions to consider the timestamp of constants only if there is no variables in an expression. For expressions that contain variables, the timestamp still is the newest.

## 11.1.10 Installation

- The file !register.bat now can be executed with elevated rights via Windows Explorer.
- Elipse Event Logs version 4.5.91 integrated to **Elipse Power**.
- Installers Full on 64-bit versions now also include 32-bit **Elipse Power Studio**.

## 11.1.11 Links

- Created an option for Multiple Links to keep all their Links always in **Advise** mode (active).

## 11.1.12 OPC Client

- Implemented sorting of server identifiers on the window to select OPC servers.
- Now **Elipse Power** OPC client executes in a separated process. Two new properties were created and implemented time-outs independent of Windows DCOM, thus avoiding locks in any OPC client operation.
- Added to **E3 Tweak** configurations relative to log keys of OPC Client.
- Created detailed logs of communication of **Elipse Power** OPC clients. Logs are registered in file IOData, on section **OpcClient**.

## 11.1.13 Other Implementations

- Added texts identifying the 64-bit versions on several locations of **Elipse Power: Elipse Power Studio's** title bar, on About Elipse Power Studio and About E3 Admin windows, on logs of process statistics, and in the product's name on file details.

## 11.1.14 Protection Device

- Updated the HASP driver (haspdinst.exe) installer to version 6.63.

## 11.1.15 Remote Domains

- Implemented a time limit of synchronous requests to Remote Domain servers.

## 11.1.16 Reports

- Implemented in **Elipse Power** support to identify and inform classes of objects without support on 64-bit versions. Among them there are Reports and occasionally any ActiveX used in the application.
- Improved support for using the keyboard on Domain's or objects' error window.

## 11.1.17 Storage

- Storage licenses are now counted by the amount of active Storage fields in the application, and not by the amount of fields in the database.

## 11.1.18 Studio

- Implemented a tool to count objects in **Elipse Power Studio**.

Class	Counting
DB	1
Database	1
Panel	158
Circle	4
Counter Tag	1
Demo Tag	1
Frame	1
Frame Splitter	4
Group	10
Internal Tag	13
Picture	18
Rectangle	101
<b>Total = 159</b>	

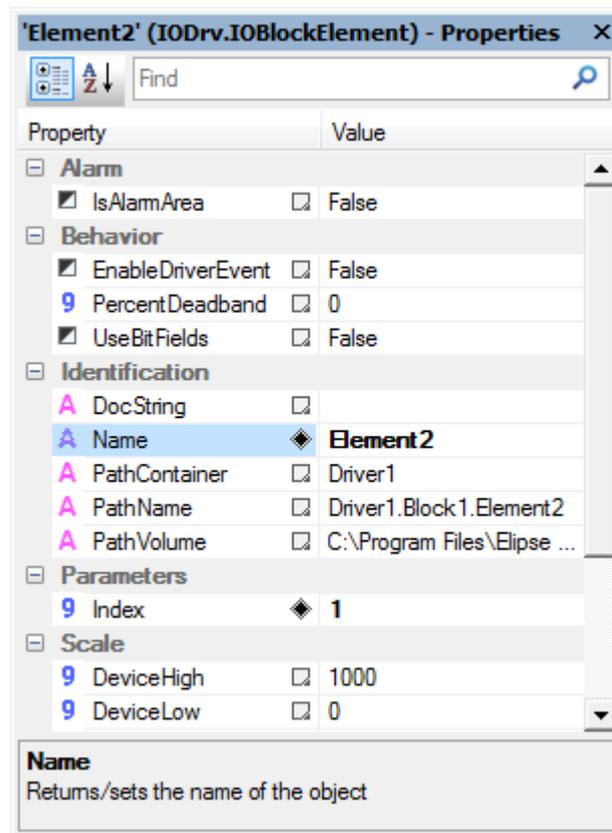
**Object Counting**

- The Properties List of **Elipse Power Studio** now allows grouping properties by categories, and also allows applying filters.

Property	Value
9 DeviceHigh	<input type="checkbox"/> 1000
9 DeviceLow	<input type="checkbox"/> 0
A DocString	<input type="checkbox"/>
EnableDriverEvent	<input type="checkbox"/> False
EnableScaling	<input type="checkbox"/> False
A EU	<input type="checkbox"/>
9 EUHigh	<input type="checkbox"/> 1000
9 EULow	<input type="checkbox"/> 0
9 Index	<input type="checkbox"/> 1
IsAlarmArea	<input type="checkbox"/> False
Name	<input checked="" type="checkbox"/> <b>Element2</b>
A PathContainer	<input type="checkbox"/> Driver1
A PathName	<input type="checkbox"/> Driver1.Block1.Element2
A PathVolume	<input type="checkbox"/> C:\Program Files\Elipse Sof...
9 PercentDeadband	<input type="checkbox"/> 0
UseBitFields	<input type="checkbox"/> False

**Name**  
Returns/sets the name of the object

**Properties List in alphabetical mode**



Properties List in category mode

- Implemented access to Driver DLLs at design time outside **Elipse Power Studio** (via I/O Server process), allowing its usage on 64-bit versions of **Elipse Power Studio**.

## 11.2 Fixed Bugs

This section contains bugs fixed in version 4.6 of **Elipse Power**.

### 11.2.1 Alarm Server and Alarm Configuration

- Fixed a memory leak that occurred in a **Elipse Power Viewer** or in an E3 Server receiving alarm events. *This bug occurred since v3.1.128.*

### 11.2.2 Database

- Fixed the processing of operation queues of **Elipse Power** databases that may generate files .e3o# (.e3o0, .e3o1, .e3o2, etc.) on Domain's folder when processing operations marked as **ImmediateExecute**. *This bug occurred since v3.0.36.*
- The **ConnectionActive** and **TotalFailedWrites** of a Database Server object now work correctly when used in Links. *This bug occurred since v1.21.77.*
- Elipse Power Studio** now creates correctly on a folder relative to the current Domain the files .mdb declared with relative paths. *This bug occurred since v0.1.24.*
- Elipse Power Studio** now applies immediately all changes performed in advanced properties of a Database, such as connection's network library with a SQL Server database. *This bug occurred since v1.18.16.*
- Fixed a possible lock that may occur in **E3Run** when creating a synchronous query to a database. *This bug occurred since v3.1.170.*
- Fixed an Oracle session leak that occurred whenever a connection was finished due to a command time-out. *This bug occurred since v4.0.14.*
- Fixed a problem in Oracle databases which may fail database operations if synchronous operations were executed, such as accessing Formulas or accessing the **E3Query.Execute(True)** method while consuming files .e3i or .e3o (error **ORA-03127**). *This bug occurred since v4.0.14.*

### 11.2.3 Documentation

- Updated links for KB articles on topic about Formula's **SetValueData** method on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.5.76.*

- Fixed the measurement unit on the description of the **Width** property of E3Browser's Field object on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.1.128.*
- Added a table with time units to the description of the **GetRealTimePeriod** method of an E3Chart's Axis on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v2.0.29.*
- Fixed a problem with a corrupted CHM file of **Elipse Power User's Manual**. *This bug occurred since v4.6.133.*

## 11.2.4 Domain, E3 Server, and Hot-Standby

- Changed E3 Admin to detect when UAC (*User Account Control*) is turned off and to fail only if there is a need to elevate user privileges. *This bug occurred since v3.0.348.*
- Fixed a GPF that occurred when attributing an object to the **Value** property of a Block Element with an enabled scale (the **EnableScaling** property). *This bug occurred since v0.1.7.*
- Implemented an immediate release of Driver licenses when finishing the **E3Run** process, thus avoiding a lack of Driver licenses if the Domain is restarted very fast after an **E3Run** failure. *This bug occurred since v3.0.200.*

## 11.2.5 Drivers and I/O Server

- Implemented a protection against using activation and deactivation of objects via scripts (the **Activate** and **Deactivate** methods) while there is an ongoing activation or deactivation operation. *This bug occurred since v2.5.194.*

## 11.2.6 E3Alarm

- Fixed a problem where an E3Alarm lost its User Field configuration when connected to an Alarm Server in a Remote Domain, displaying the value "#WRONG INDEX#" on some columns.

## 11.2.7 E3Browser

- Fixed a GPF that may occur in **Elipse Power Viewer** when performing several queries in a row in an E3Browser object with a database configured with the **EnableLocalCreation** property set to True. The object may also get empty or display a message "DB disconnected". *This bug occurred since v2.5.86.*
- Changed queries in **Elipse Power** to always use brackets when delimiting field names, thus avoiding problems in queries with Oracle databases, which previously used quotation marks. *This bug occurred since v2.0.30.*

## 11.2.8 E3Chart

- Fixed a failure on the connection of a chart line between historical and real-time data, in a Storage database. *This bug occurred since v3.2.70.*
- Fixed a problem in E3Chart that may lock and display a message "Loading" if the database has its **EnableLocalCreation** property set to True. *This bug occurred since v1.22.71.*
- Fixed the automatic query of E3Chart Pens when executed in the server. *This bug occurred since v1.21.100.*
- Fixed a problem when removing queries by script, where Pens referencing another query had their **QueryName** property emptied. *This bug occurred since v4.5.107.*
- Fixed the text color of E3Chart's legend header. *This bug occurred since v4.0.206.*
- Improved automatic formatting of dates in E3Chart, to comply with customized Windows formats. *This bug occurred since v1.20.367.*

## 11.2.9 Elipse Power

- Fixed a problem on the list of classes to use when importing **Elipse Power**'s Screen objects, which may be blank when clearing the selection, in an application generated in version 4.0 build 26 or earlier and then opened in version 4.5 build 159 or later. *This bug occurred since v4.5.159.*
- Fixed the configuration of Command Template **TapPosition** in the demonstration application of **Elipse Power**. *This bug occurred since v4.0.222.*
- Changed the formatting of Analog Measurements with type **Date**, **Boolean**, or **Text**. *This bug occurred since v3.5.80.*
- Fixed the counting of Measurement objects in **Elipse Power**, which did not count Measurements inside Protections nor inside Load Shedding Scenarios. *This bug occurred since v3.5.201.*
- Fixed the Power Flow algorithm, where quality of output measurements was not separated by electrical island. *This bug occurred since v3.5.181.*
- Fixed a problem where Load Shedding Module's load was interrupted when there was one or more Three-Winding Transformers instantiated on an XPD file. *This bug occurred since v3.5.226.*

## 11.2.10 ElipseX Libraries

- Fixed error **8004FFF7**, which may be displayed without a reason during an update of XObject libraries, with a Domain executing. *This bug occurred since v2.0.141.*
- Fixed the load of default values for properties created after ElipseX instances were already saved. *This bug occurred since v1.18.115.*

## 11.2.11 Find and Replace

- Fixed a problem on error window of the Find and Replace tool, which displayed empty parentheses when an object load failed. *This bug occurred since v1.20.236.*

## 11.2.12 Formula

- Fixed a problem that could lead to inserting duplicated records on a database if immediate execution operations interrupted the processing of .e3i or .e3o files. This could occur, for example, when executing in sequence the **CreateValue** and **SetValueData** methods of a Formula object whose **ImmediateExecute** property was configured to False. *This bug occurred since v4.6.95.*

## 11.2.13 Installation

- Now **Elipse Power** installer provides the file ET32B.dll signed digitally. *This bug occurred since v4.5.10.*
- Now **Elipse Power** installer provides the file ET64B.dll signed digitally. *This bug occurred since v4.0.144.*
- Now the file HKCustomer30.exe is signed digitally. *This bug occurred since v3.0.307.*
- Now the file Interop.XPDLib.dll is signed digitally. *This bug occurred since v3.5.80.*

## 11.2.14 Interface

- Fixed the abbreviation for seconds on the screen to start, stop, or update the Domain. *This bug occurred since v0.1.26.*

## 11.2.15 OPC Client

- Changed the window OPC Server Information of OPC Drivers to display server timestamps according to local time. *This bug occurred since v1.0.0.*
- Changed the **Manufacturer** field on window OPC Server Information to display detailed information. *This bug occurred since v1.0.0.*
- Implemented support for reading arrays of **Variant** using OPC DA 1.0a. *This bug occurred since v1.20.406.*
- Now Tags with disabled reading preserve their values even if they loose the connection with an OPC server. *This bug occurred since v1.0.0.*

## 11.2.16 OPC Server

- Hid from OPC server's browsing the **PathContainer**, **PathVolume**, and **IsAlarmArea** properties. *This bug occurred since v3.0.196.*

## 11.2.17 Other Corrections

- In **Elipse Power Studio** now all **Enum**-type properties can have their values removed, if they do not apply to a specific object. In addition, some enum values may appear disabled when they are not supported. *This bug occurred since v1.18.147.*
- Fixed a GPF that occurred when trying to drag and drop an object from one **Elipse Power Studio** to another. *This bug occurred since v4.5.75.*
- Fixed the reading of Windows Registry keys by E3 Admin when UAC (*User Account Control*) is enabled. *This bug occurred since v4.5.18.*
- Objects created at run time in **E3Run** are now automatically reconnected to pre-existing Links. *This bug occurred since v1.18.26.*

## 11.2.18 Query

- Improved handling of results of asynchronous queries, so that an excess of queries do not lock **Elipse Power Viewer**'s nor E3 Server's interface. *This bug occurred since v2.0.92.*

- Fixed the display of items in Explorer and in Organizer that may show as unloaded, even when loaded. *This bug occurred since v4.5.142.*

## 11.2.19 Reports

- Fixed the behavior of Reports loaded in the server, when it was not possible to access server objects via Links. *This bug occurred since v3.0.238.*
- Fixed a memory leak whenever a Report was loaded in a **Eclipse Power Viewer**. *This bug occurred since v4.0.128.*
- Fixed a lock that may occur in the server if an error in a script occurred when generating a Report. *This bug occurred since v1.18.114.*

## 11.2.20 Screen Objects

- Fixed information in the file ElipseKeyPad.dll to match the real version of **Eclipse Power** it belongs. *This bug occurred since v3.1.11.*

## 11.2.21 Studio

- Fixed a problem of reversing the order of Tags when several Tags were dragged to an upper position. *This bug occurred since v1.0.1.*
- Fixed a leak on GDI objects when performing a drag-and-drop of items inside a view with EcoListCtrl. *This bug occurred since v0.1.26.*
- When closing an active tab, **Eclipse Power Studio** now correctly selects the last tab that was active previously. *This bug occurred since v2.0.39.*
- Fixed a GPF that may occur in **Eclipse Power Studio**, **E3Run**, or **Eclipse Power Viewer** x64 when deleting an object and the process uses memory beyond 4 GB. *This bug occurred since v3.1.10.*
- Improved performance of searching in user fields in **Eclipse Power Studio**, which was extremely slow in large applications. *This bug occurred since v4.5.114.*
- On Screen's layer editor, when using the INS key, the new layers added now have an auto-incremented name. *This bug occurred since v4.5.51.*
- Fixed a security vulnerability (ICS-VU-253665) in **Eclipse Power Studio** and in E3 Admin. *This bug occurred since v4.5.232.*

## 11.2.22 Undo Command

- Fixed the update of the Properties List for several common properties of native Screen objects, when **Undo** or **Redo** operations are executed. *This bug occurred since v1.0.0.*
- Fixed the **Undo** option for the **Effect3D**, **Effect3D\_X**, **Effect3D\_Y**, **Effect3D\_ColorBase**, and **Effect3D\_ColorTop** properties of Screen objects. *This bug occurred since v1.0.15.*

## 11.2.23 Users

- Fixed the update of Viewer's **User** property, which may indicate (via Link) a wrong user when a login failed via the **LoginUser** method. *This bug occurred since v4.0.144.*
- Implemented a check for **Eclipse Power Studio** sessions when closing an executing Domain with stop restrictions. *This bug occurred since v1.20.322.*

## 11.2.24 Viewer

- Closing an accessory process (**IOServer**, **E3UAClient**, **E3OpcClient**, or **E3DBEngine**) does not cause a disconnection of the **Eclipse Power Viewer** trying to access that process anymore. *This bug occurred since v1.20.192.*

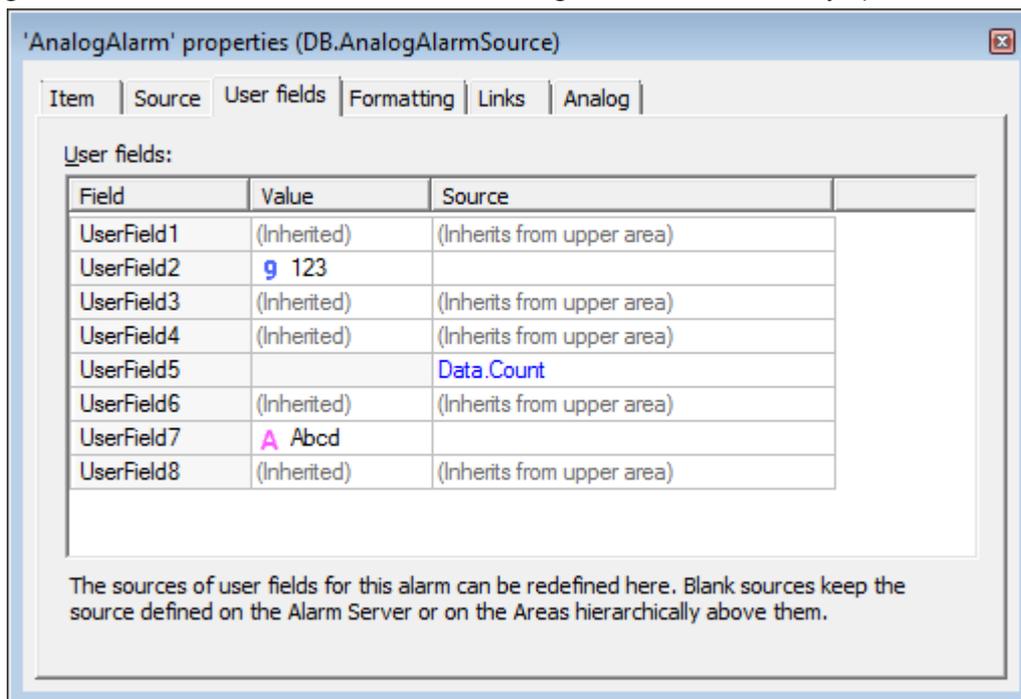
This section contains updates of version **4.5** of **Elipse Power**. Please check the next topics for more information about **new features** and **fixed bugs** in this version.

## 12.1 New Features

This section contains new implementations of version **4.5** of **Elipse Power**.

### 12.1.1 Alarm Server and Alarm Configuration

- Alarm Sources now support User Fields.
- Added the **UserFields** property (collection) in Alarm Sources and Areas, allowing to access and configure User Fields via scripts.
- Alarm's or Area's User Fields now can receive a value or a Link.
- The Alarm Server now allows configuring an unlimited number of User Fields.
- The window with fields to store on the Alarm Server is now resizable, has multiple selection, and the list of fields is sorted alphabetically.
- Added buttons to add and remove User Fields on the Alarm Server's property window.
- Added a statistical log to the AlarmHub.
- User Fields now can be configured to actively propagate their values to children Alarm Sources and Alarm Areas. So, when changing the value of an User Field, all alarms inheriting that value are instantly updated.



**Analog Alarm with new User Fields options**

### 12.1.2 Database

- Now users can edit the SQL Server connection **String**, allowing, for example, connect to a SQL Server with Mirroring enabled.
- Improved server logs to indicate when an object such as the Database Server, Storage, or Alarm Server is searched by **Elipse Power Viewer** but not found, or it is not the expected type.
- When the load of Oracle client DLL (OCI.DLL) fails, the log registers the environment variable *Path*, to improve diagnosis.

### 12.1.3 Documentation

- Updated the minimum requirements to install **Elipse Power** and **Elipse Power Viewer** in **Third-Party Licenses in Elipse Power**.

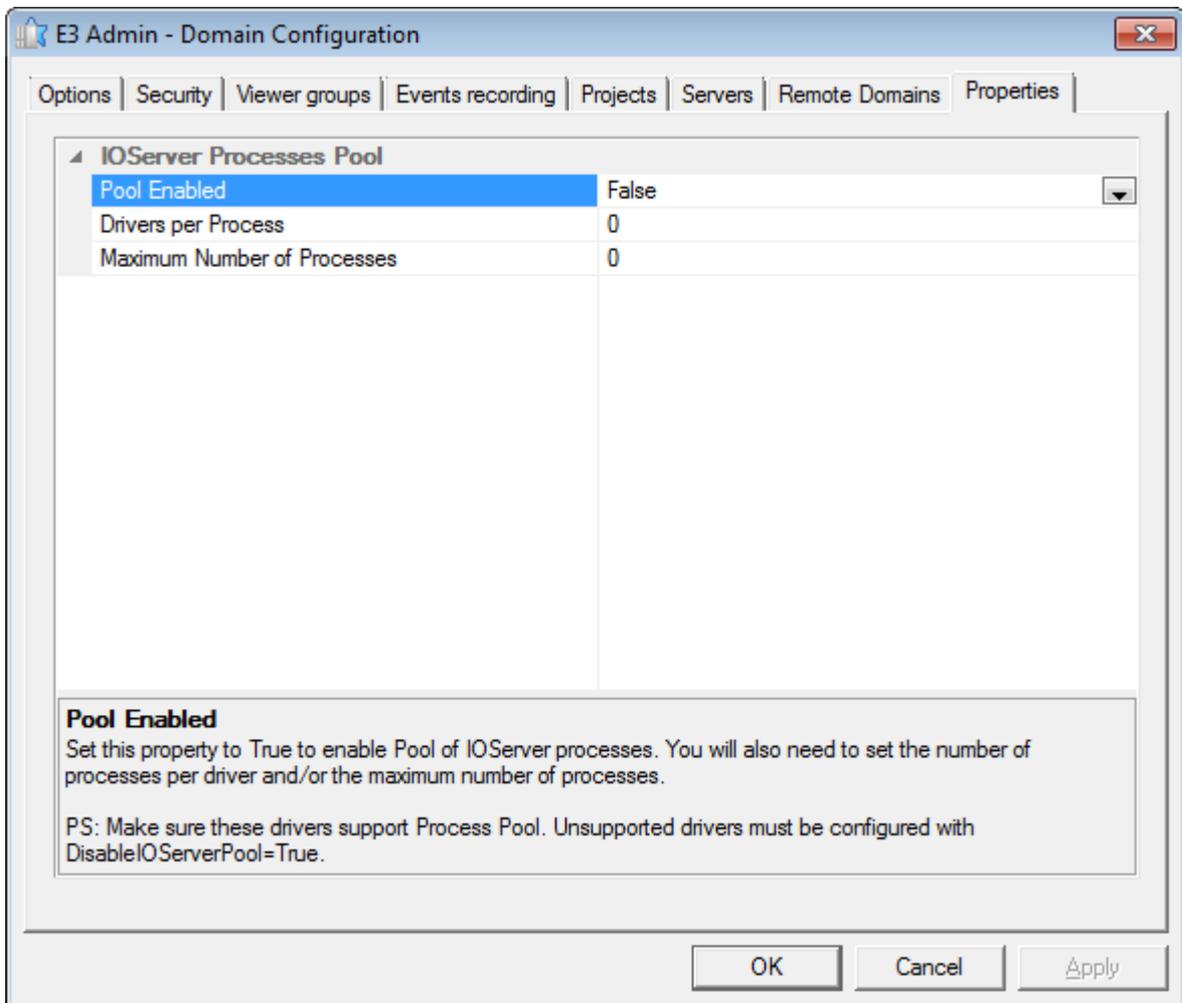
- Updated the Gold Independent Software Vendor logo, USA branch address, and added a link to KB in the final page of **Elipse Power** documentation in PDF format.
- Updated the Microsoft Partner and OPC Member logos of **Elipse Power** documentation in PDF format.
- Added the OPC Foundation MIT license in the license document of **Elipse Power**.
- Updated the table of fields of a Pen's Legend with information about the number and name of each column, in **Elipse Power User's Manual**, as well as in **Elipse Power Reference and Scripts Manual**.
- Updated the description of the **DefaultValue**, **HelpString**, and **Retentive** properties of an ElipseX Property object in **Elipse Power Reference and Scripts Manual**.
- Updated the description of the **SetDisableTaskSwitching** method of the FrameSet object in **Elipse Power Reference and Scripts Manual**.
- Updated all models to generate PDFs for A4 printing format in all documents, except the **Third-Party Licenses in Elipse Power**.
- Added an exercise about the PowerChartFilter object in the **Query** chapter of **Elipse Power Tutorial**. Excluded the exercise about the PenGroup object, in this chapter.
- Added a chapter about Protections in **Elipse Power Tutorial**.
- Added a topic about Discrete Alarms in **E3 Tutorial Developer** and in **Elipse Power Tutorial**.
- The exercise in the **Hot-Standby - Configuring Hot-Standby** chapter of **Elipse Power User's Manual** was changed to remove the explanation about every configuration option and replace them by links to specific topics in the chapter about Domains.
- Removed the topic **List of Events**, of **Drivers** chapter of **Elipse Power User's Manual**, which was replaced by the topic **Tags Reported by Events**.
- Added a note in **Elipse Power User's Manual** explaining the functionality of the **Disable permissions check** on **Elipse Power Studio's Permissions** tab.
- Added a description of Power Configuration object's **OnCommandEx** event to **Elipse Power Reference and Scripts Manual**, as well as the descriptions of PowerCommandInfo's properties used in this event.
- Added information on Voltage Regulator object in **Elipse Power User's Manual** and **Elipse Power Reference and Scripts Manual**.
- Added EQATEC Analytics license to **Third-Party Licenses in Elipse Power**.

### 12.1.4 Domain, E3 Server, and Hot-Standby

- E3 Server now supports unlimited E3DataAccess and E3AccessLayer connections, without consuming **Elipse Power Viewer** licenses or any other type of license.
- E3DataAccess does not consume a **Elipse Power Viewer** license anymore when connecting to an E3 Server, as long as the E3 Server version be 4.5.199 or newer. This type of connection is registered in E3 Server as "E3DataAccess".
- E3AccessLayer, used by **EPM** to collect data from **Elipse Power**, does not consume a **Elipse Power Viewer** license anymore when connecting to an E3 Server, as long as the E3 Server version be 4.5.199 or newer. This type of connection is registered in E3 Server as "E3AccessLayer.EPM".
- E3 Admin's License and Statistics windows now are resizable. They also identify correctly the connections via E3DataAccess and E3AccessLayer, differentiating them from **Elipse Power Viewer** connections. The names of the other connections were standardized on both windows. Added a **Program** column on Statistics window.

### 12.1.5 Drivers and I/O Server

- Implemented the **Pool of IO Server Processes**, which allows several Drivers to run in a single process, allowing applications with hundreds and even thousands of Drivers. This Pool can be configured and enabled in the Domain configuration (the **Properties** tab), and can be controlled in each Driver object using the new **DisableIOServerPool** property.



#### IOServer Process Pool

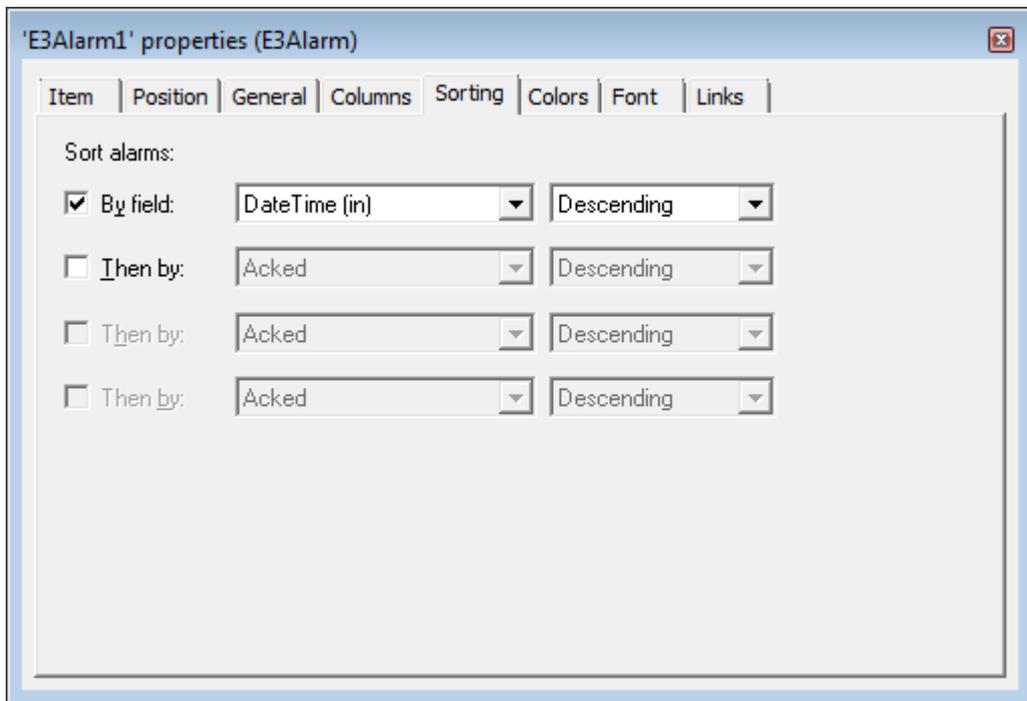
- Added support to Drivers that implement the **drvCreateDriverInstance** service, which allows several Driver instances to run in the same I/O Server.
- The interval of statistical logs of Driver data processing (**IOQueue**) now can be configured via registry on the **HKLM\Software\Elipse Software\E3\Logs\IOQueueStatsSec** key. Four variables were added to the log: **AvgDelay**, **MaxDelay**, **AvgProcess**, and **MaxProcess**.

### 12.1.6 E3 Tweak

- Added the **DisableThreadPool** option in **E3 Tweak**.
- Added the **WindowsExceptionCapture** option in **E3 Tweak**.
- Added the **ProcessInfo.E3UaClient** and **Full.UaClient** options in **E3 Tweak**.

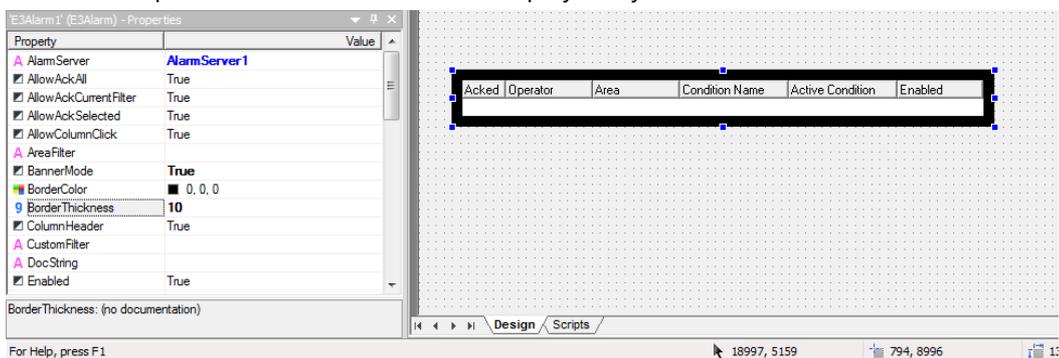
### 12.1.7 E3Alarm

- Added the **CustomFilter** property, which allows editing an expression to filter alarm messages. The **Filter** property was hidden and created the **AreaFilter** property.
- E3Alarm now support four sorting fields. Created four properties to allow configuring the third and fourth sorting level: **ThirdSortField**, **ThirdSortAscending**, **FourthSortField**, and **FourthSortAscending**.



### New sorting options in E3Alarm

- Added two properties in E3Alarm, **BorderColor** and **BorderThickness**. These properties configure, respectively, the color and size of E3Alarm's border.
- Added new counters for inactive and non-acknowledged alarms in E3Alarm, Alarm Server, Areas, and objects with the area behavior enabled (*ExtArea*). The new properties added are **InactiveNACKAlarms**, **InactiveHighNACKAlarms**, **InactiveMedNACKAlarms**, and **InactiveLowNACKAlarms**.
- The **Columns** tab on the E3Alarm's property window is now resizable.
- Added a **Banner Mode** option in E3Alarm. This mode displays only the first alarm of the current filter.



### E3Alarm's BannerMode, BorderThickness, and BorderColor properties

## 12.1.8 E3Chart

- Added the **CursorSearchStyle** property in E3Chart. This property allows the cursor to search for chart points according to the following options: nearest point, interpolated point, and previous point.
- Added the **ClearPenMarks** method in E3Chart, which removes search marks of all Pens.

## 12.1.9 E3DataAccess

- E3DataAccess no longer depends on the E3Sys library and other **Elipse Power** components, and it can be used in systems with a different version of **Elipse Power** installed.
- Added methods to register and unregister callbacks in batch for items or Tags: **RegisterCallback**, **UnregisterCallback**, and **ClearCallbacks**.
- E3DataAccess now manages the connection to a server automatically.

## 12.1.10 Elipse Power

- Now the Electrical Modeler is pre-created in background when the Power.e3 module is loaded in **Elipse Power Studio** to decrease the time the Power Configuration editor takes to load on the first time.
- Changed the default value of the **Value** property of Operator measurement sources to 0 (zero).

- Changed the default background color for all containers, from RGB(180, 180, 180) to RGB(90, 90, 90).
- Created the Failure semantics in the **\*ProtectionMode**-type of the discrete measurement.
- Implemented the compilation of scripts in Power Configuration of command definitions.
- In **Elipse Power Studio**, the **Commands** and **Discret**s tabs of Power Configuration object now allow resizing the list of types, increasing the area to edit the type definition itself.
- In **Elipse Power Studio**, the list of script compilation messages was moved to a separate window, Script Compilation.
- Implemented in substations the conversion from Branch to Jumper and vice versa. Conversion from Branch to Jumper is allowed only if there are Branches (and their respective displays) selected. Conversion from Jumper to Branch is allowed only if there is Jumpers selected.
- Added alignment tools in PowerCAD.
- The Electrical Modeler toolbar was divided into four toolbars: **General**, **Alignment and Grid**, **Elements**, and **Bays and Transmission Lines**.
- Created the **BackgroundImage** property in the System, Substation, and Feeder objects of the electrical model.
- Created new methods in the PowerExplorer object to insert, remove, and manipulate tabs containing Screens: **InsertScreenTab**, **RemoveScreenTab**, and **GetScreenTabFrame**.
- Created a new option on Screen's contextual menu to allow importing objects from the electrical model.
- Created the **CommandConfirm** property in PowerExplorer, which defines whether the confirmation to send commands is requested or not.
- Created the **ActiveTab** property in PowerExplorer, which informs the currently active tab in PowerExplorer.
- Implemented a verification for user-created XControls when configuring the tool to import Screen objects.
- Changed two messages that warn users that the class to import Screen objects was not found.
- Implemented the **GetMeasurement** method also in PowerProtectionDevice objects.
- Created the **BladePosition** property to define the blade position in Switch and Switch Fuse objects in the PowerControls library.
- Implemented Undo and Redo options in the electrical modeler.
- Now it is possible to resize object and Screen areas on the Screen Object Importer.
- Changed the Screen Object Importer window to display Substations and Feeders in a tree, sorted by name.
- Created the **OnCommandEx** event in Power Configuration object.
- Created the **\*ProtectionOperateCurrent**, and **\*ProtectionStartCurrent** default analog measurements, and the **\*TapPositionA**, **\*TapPositionB**, and **\*TapPositionC** default discrete measurements, as well as the **\*TapPositionA**, **\*TapPositionB**, and **\*TapPositionC** discrete commands.
- Added the LinkNode object to the PowerControls library.
- Fixed the import process to use the new LinkNode object in PowerControls library.
- Added the LinkNode object on some Screens in **Elipse Power**'s demonstration application.
- Protection measurements (PowerProtectionDevice) now can be sent to Electrical Studies (PowerEngine).
- Created the Recloser data object.
- Created the Voltage Regulator data object.
- Revised the icons of electrical elements, vertically standardizing terminals.
- Added a progress bar for the **Add Standard Measurements** option.
- Changed the PowerExplorer implementation to use a new data grid component.
- Created two new properties in PowerExplorer, **SelectionColor** and **SelectionColorInactive**, which configure the background color of grid cell on measurement tabs (**Analogs**, **Discret**s, and **Protections**) when the cell is selected or selected and inactive, respectively.
- The title of PowerExplorer window, when opened via LinkNode, now follows the same pattern of other PowerControl objects.
- Changed the Project Wizard to copy and add to the Domain the default Power libraries (PowerControls and PowerDisplay).
- Now the PowerControls and PowerDisplay libraries are also present in **Libraries** folder, created during the installation.
- Created the **AnalogInputMode** property in PowerExplorer.
- In **Elipse Power Studio**, at the end of the application Wizard, if created a standard application, the Electrical Modeler is opened, already with the name of the model file configured.

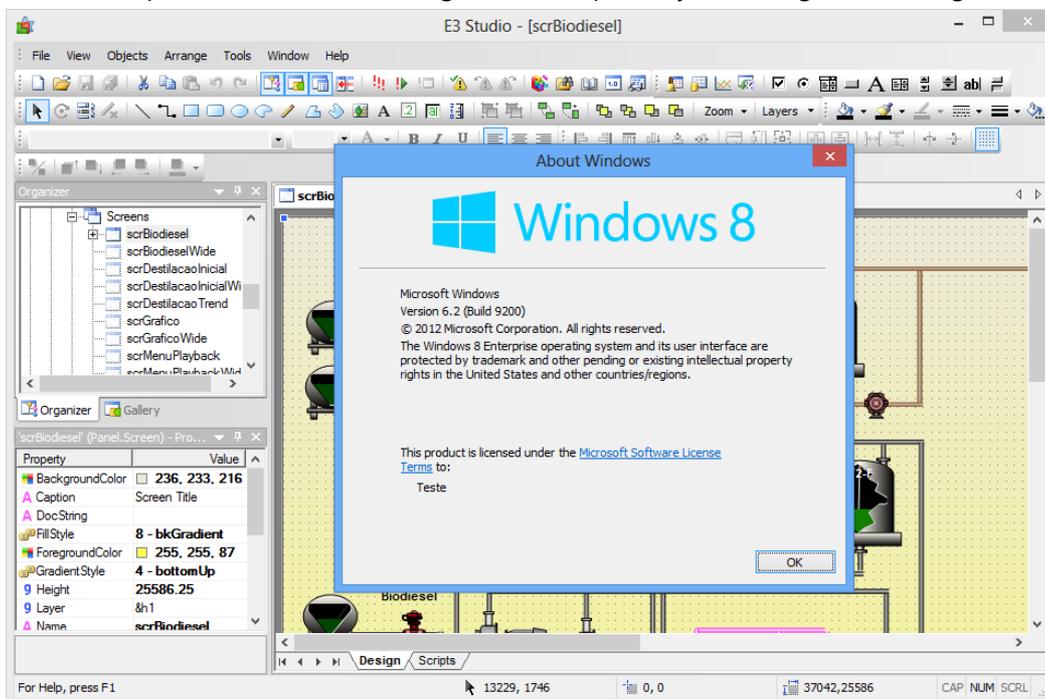
- Created the Voltage Regulator graphical object for use with the Voltage Regulator data object.

### 12.1.11 ElipseX Libraries

- Now users can indicate if an XControl or XObject property is persistent, that is, whether its value is editable in **Elipse Power Studio** and stored in every instance (True) or it is a runtime-only value (False), restarted whenever the application starts.

### 12.1.12 Installation

- Now the **WebViewer** installer detects if there is another **Elipse Software** product already installed, such as **E3, Viewer, or Elipse Power**, and displays a message asking for user confirmation. If the installation is silent, no message is displayed and aborts the installation.
- Updated the **Elipse Power** demonstration application, with new screens and visual improvements. The screens automatically fit to 4:3 or 16:9 proportions, according to the system.
- The log generated during installation is now clearer and objective.
- Added the **ProductVersion** field on **Version** tab of installation file properties.
- Changed the icons of **WebViewer** installer and uninstaller.
- Added support to **Elipse Power** installation on **Windows 8** and **Windows Server 2012**.
- Integrated eeLogs v4.5 Build 75, which ensures support to **Windows 8** and **Windows Server 2012**, in addition to other corrections and improvements on the management of repository, collecting, and viewing events.



**Elipse Power Studio executing on Window 8**

### 12.1.13 OPC Client

- In **Elipse Power Studio**, now the OPC Driver's window for selecting the OPC server allows viewing several domains and groups on the local network, and not only the group (or domain) of the computer executing **Elipse Power Studio**.

### 12.1.14 OPC UA Driver

- Created the OPC UA Driver object, which allows performing historical queries in **EPM** or any OPC UA server implementing them.

### 12.1.15 Other Implementations

- Improved the performance when saving **Elipse Power** objects.
- Added logs to detect and register locks in REC's internal methods, as well as improved several logs to indicate clearly the communication channel that generated a message.

## 12.1.16 Playback

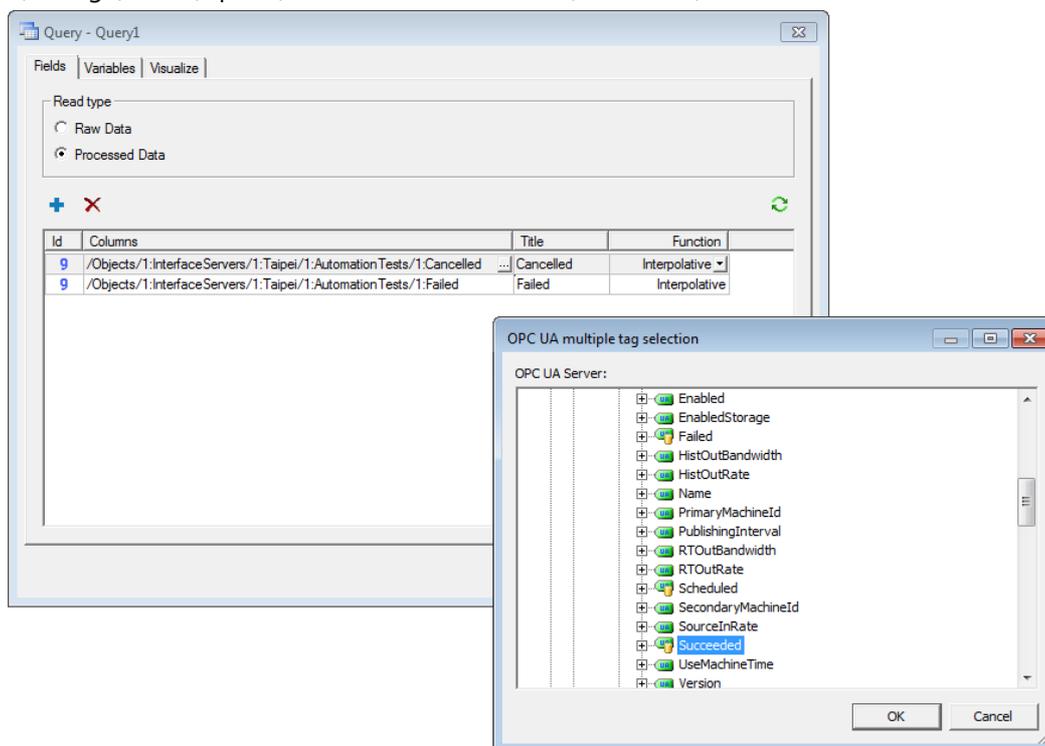
- Changed the way Playback enumerates Database's table fields, improving performance of Playback's database assembling in SQL Server and Oracle.
- Playback, when licensed, now no longer calculates the complete time interval in the database, which makes the initial load (*assembly*) of the database much faster. Users are now free to choose a date and time to start the analysis.

## 12.1.17 Protection Device

- **Elipse Power** log now displays a description of access errors to the protection device.
- Updated the installer of HASP drivers (haspdinst.exe) to version 6.60.

## 12.1.18 Query

- Created the **IgnoreQuality** property in the Query object, default is True, which works as the **Include BAD quality** option of the Storage's query configuration window.
- Created the **QueryType** property in Query objects, which allows indicating the type of query: **-1** (Undefined), **0** (DBServer), **1** (Storage) or **2** (OpcUa). The default value is **-1** (Undefined).



Query using an OPC UA Driver

## 12.1.19 Studio

- On **Elipse Power Studio**'s Property List, implemented support for auto-detection of data types entered in a **VARIANT**-type property.
- Implemented a different icon to indicate, in Organizer, when a project is disabled.
- The **Elipse Power Studio**'s Screen editor now has shortcut keys for **Bring to Front** (ALT + PAGE UP), **Send to Back** (ALT + PAGE DOWN), **Bring Forward** (ALT + HOME), and **Send Backward** (ALT + END).

## 12.1.20 Users

- The **Application.IsUserMemberOfGroup** method now has a second parameter that allows specifying a user. If this parameter is omitted or empty, uses the currently logged-in user.

## 12.2 Fixed Bugs

This section contains bugs fixed in version **4.5** of **Elipse Power**.

### 12.2.1 ActiveX

- On Screen editor, were removed the ARDesigner and ARViewer2 objects (from ActiveReports) from the contextual menu. *This bug occurred since v3.5.69.*

## 12.2.2 AppBrowser

- Fixed a problem on AppBrowser window, which could separate the **Paste** and **Cancel** buttons when resizing it. *This bug occurred since v4.0.60.*

## 12.2.3 Database

- Changed the behavior when renaming and changing the type of columns in Oracle databases. With this, now the minimum required Oracle version supported by **Elipse Power** is 9R2. *This bug occurred since v1.19.87.*
- Fixed the search for Database servers and Storage to ignore brackets in object paths. *This bug occurred since v1.18.147.*
- Fixed race condition situations in asynchronous historical queries (ADO) in **Elipse Power**, which could lead to GPFs, including GPFs in ADO or OLEDB components.
- Fixed a GPF that may occur with Oracle connections when there were operation errors in the execution queue, as well as in immediate operations.

## 12.2.4 Documentation

- Fixed the usage example of the **InsertColumn** method of a Pen's Legend in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.2.140.*
- Added the description of **Source** property of a Multisource Link Row in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.2.175.*
- Added descriptions for **OnRead** events of OPC Block, OPC Block Element, and OPC Tag objects in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.18.147.*
- Added information about the Storage Session object in **Elipse Power Reference and Scripts Manual**, related to the **AddField**, **AddValue**, and **Commit** methods. *This bug occurred since v2.5.128.*
- Created separated topics to enlist events, methods, and properties of Link collections (the **Links** property) and Discrete Alarm Source Subconditions (the **Subconditions** property) in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v4.0.155.*
- Added a usage example for the **ShowPowerExplorer** method of Viewer in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.5.258.*
- Created in **Elipse Power Reference and Scripts Manual** a new topic in common properties of Server Objects, which contains common properties of Server Objects behaving as Alarm Areas. *This bug occurred since v4.0.169.*
- Fixed the description of the *CommandUnit* parameter on Power Configuration object's **OnCommand** event on chapter **Server Objects - Elipse Power - Configuration - Power Configuration - Events** in <DOC\_POWER\_SCRIPT %> to state that this parameter is the Command Unit object itself. *This bug occurred since v3.5.245.*
- Updated the description of the **Write** method of the I/O Driver object in **Elipse Power Reference and Scripts Manual** to remove a mention to an ever-synchronous data writing. *This bug occurred since v3.0.57.*
- Performed corrections in several texts and exercises of **Elipse Power Tutorial**. *This bug occurred since v3.5.310.*
- Added a new topic about Multiple Links in chapter **Links** of Elipse Power Tutorial. *This bug occurred since v3.5.164.*
- Performed corrections in several texts and exercises of the Elipse Power Tutorial. *This bug occurred since v3.5.164.*
- Added a note suggesting a change in the background color of Screens imported on topic **Operation Diagram - Importing Screen Objects** of **Elipse Power Tutorial**. Also fixed the name of the SetPoint object on topic **Report - Alarm Report - Page Numbering**, of this Tutorial. *This bug occurred since v4.0.94.*
- Fixed the description of the **Saves and Runs the Domain** button of **Elipse Power Studio** in **Elipse Power User's Manual** and **Elipse Power Tutorial**. *This bug occurred since v3.5.163.*
- Updated **Elipse Power Tutorial** on the chapters where there are images with the configuration window for Analog Alarms. *This bug occurred since v4.0.187.*
- Removed references to specific versions of **Elipse Power** in documents where this information is not needed.
- Fixed the screen resolution of CHM files to comply with project configuration. Now all files are opened with the resolution of 1024 by 768 pixels. *This bug occurred since v3.5.183.*
- Fixed the example of the topic **Reports - Usage Examples - Capturing a Screen and Generating a Print Preview**, in **Elipse Power User's Manual**. *This bug occurred since v1.19.87.*
- Fixed the item **ActorID** on topic **Alarms - Alarm Server - Configurations for Alarm Table Generation** in **Elipse Power User's Manual**. *This bug occurred since v1.19.383.*

## 12.2.5 Domain, E3 Server, and Hot-Standby

- Fixed the update in executing Domains. When an update in execution was interrupted by another one, some objects could be updated but not active. *This bug occurred since v3.0.23.*
- Now E3 Server restarts in situations of switching or removing the license. In addition, in case it closes due to a license switch with a running Domain, it does not notify the other Hot-Standby server. *This bug occurred since v3.0.456.*
- Fixed the behavior of E3 Server when manually closed during the regressive counting to close or restart by a license switch (it may log the error **E00106** incorrectly). *This bug occurred since v4.0.87.*
- Fixed Alarms Summary syncing in Hot-Standby, which was not propagating the events' **EventCLSID** field. *This bug occurred since v3.0.109.*

## 12.2.6 Drivers and I/O Server

- **Eclipse Power** is not limited to process 2000 values per second from a single Driver anymore. *This bug occurred since v1.18.147.*
- Fixed a double counting on I/O Tag licenses when using the **WriteEx** or **Write** methods of a Driver with the same addressing of an existing Tag in the Driver. *This bug occurred since v2.0.108.*

## 12.2.7 E3Alarm

- E3Alarm now correctly removes messages that changed the status, so that they do not met the display filter. For example, if the filter was only by Alarms, a message that is changed from Alarm to Event would continue to display in E3Alarm. *This bug occurred since v3.2.90.*

## 12.2.8 E3Browser

- Fixed the handling of finishing queries in E3Browser that, for example, never finished if the query returned an empty data set. *This bug occurred since v1.22.5.*
- Fixed the notification of change that occurred in E3Browser whenever its field collection was saved. *This bug occurred since v1.18.147.*

## 12.2.9 E3Chart

- Fixed a problem that lead an E3Chart to not display in a Report footer when a page break appeared inside the footer. *This bug occurred since v1.20.174.*
- Fixed a GPF that could occur in E3Chart when updating queries in a Elipse Power Viewer with slow or unstable communication. This GPF occurred more easily if the application called the **UpdateData** and **FitAll** methods in sequence. *This bug occurred since v4.0.50.*
- Fixed a problem with an E3Chart ignoring non-numerical values, such as **Null**. *This bug occurred since v3.2.105.*
- Now E3Chart's configuration windows put brackets in field names, when needed. *This bug occurred since v2.5.22.*
- Implemented in E3Chart support for child queries with special characters in the name (E3Chart automatically adds brackets when needed). *This bug occurred since v1.20.172.*
- Fixed in E3Chart a problem when evaluating historical Pens with an expression in one of the axes, which could lead a Pen to always get a value of 0 (zero). *This bug occurred since v4.0.168.*
- Changed the E3Chart's drawing forced by Pens with queries, to show error status, even when there is no returned data. *This bug occurred since v4.0.73.*
- Fixed the behavior of editing external queries of E3Chart Pens, which caused the display of invalid values on the combo box to select a query. *This bug occurred since v4.0.107.*
- Fixed a problem in the **CopyConfig** method in E3Chart, which always connected the mark cursor of Pens in the destination E3Chart. *This bug occurred since v3.2.89.*
- Fixed a problem in the **CopyConfig** method, which kept the destination E3Chart redrawing itself and configuring the cursor to search mode. *This bug occurred since v3.2.68.*

## 12.2.10 E3DataAccess

- Implemented event notification support inside an Internet browser in E3DataAccess. *This bug occurred since v3.0.69.*
- Fixed a possible increase in memory consumption (*leak*) when different threads create and destroy E3DataAccess objects. *This bug occurred since v3.0.69.*

- Two new methods were added, **ReadValue** and **WriteValue**, replacing the former **GetValue** and **SetValue** methods, which now should be avoided. These new methods correctly handle *IN* and *OUT* parameters when used in scripting languages. *This bug occurred since v3.0.69.*
- E3DataAccess functions and properties now use data types compatible with VBScript and other typeless languages. *This bug occurred since v3.0.69.*

## 12.2.11 Elipse Power

- Fixed a behavior in Load Shedding, which could shed a load with active power greater than needed if several loads had the same priority. *This bug occurred since v3.5.226.*
- Implemented license lending in **Elipse Power Studio**.
- The **Commands** and **Protections** tabs in PowerExplorer now display a description of the electrical phase near the Protection Acronym. *This bug occurred since v4.0.60.*
- Fixed a problem of not showing the legend of Measurements when the PowerExplorer was opened from a Protection. *This bug occurred since v4.0.77.*
- Fixed a problem in PowerExplorer that did not show units of Analog Measurements the first time the window was opened for **Distribution Load**-type objects. *This bug occurred since v4.0.105.*
- Fixed a problem of not showing the **TimeStamp** column after closing and opening a PowerExplorer object which was kept with a reference by the user. *This bug occurred since v4.0.122.*
- Added warning messages when some Screen object classes are not found during the import of Screen objects. *This bug occurred since v3.5.123.*
- Fixed the alignment of objects in PowerControls library, and now terminals are always centered. *This bug occurred since v3.5.236.*
- It is not allowed to import a Substation of Feeder to a Screen with the same name anymore. *This bug occurred since v3.5.81.*
- Fixed positions of terminals 2 and 3 of the Three-Winding Transformer (they were inverted). *This bug occurred since v4.0.216.*
- Fixed the update in Studio's Property List when a change in the model file fails (the **ModelFile** property) in PowerConfig. *This bug occurred since v3.5.81.*
- Fixed a typing error when selecting the electrical model file in PowerConfig. *This bug occurred since v3.5.81.*
- Fixed a focus problem when editing the **Value** column of a Measurement Source of type **Operator**. *This bug occurred since v3.5.81.*
- Fixed a problem when clicking the **Measurement** column in PowerExplorer, which selected the equivalent field on **Value** column. *This bug occurred since v3.5.81.*
- Change the point of generation of **OnCommand** and **OnCommandEx** events, so that the order of **OnSelect** and **OnOperate** does not invert when using the **Select Before Operate** option in the Command. *This bug occurred since v3.5.81.*
- The **PositiveFlowIn** internal measurements of Terminals are not sent to PowerEngine anymore if the device has a null (zero) ID. *This bug occurred since v4.0.122.*
- Removed the object SE1.Capacitor1 from the demonstration application, as it was not part of the electrical model and was not used anywhere. *This bug occurred since v3.5.141.*
- Fixed the symbol of "kilo" prefix in Analog Measurements in PowerExplorer. *This bug occurred since v3.5.81.*
- Fixed the **String** that identifies the metrical prefix 'kilo' in PowerDisplay library. Now the **String** is identified by 'k' (lowercase). *This bug occurred since v3.5.142.*
- Fixed a problem in PowerExplorer that always used a dot to format measurements with decimal places. It must use the same separator configured by the user in Windows regional configurations. *This bug occurred since v3.5.81.*
- In the electrical model of the demonstration application of **Elipse Power**, the Branch1 connection was replaced by a Jumper to avoid exceeding the limit of 100 measurements of **Demo** mode, if users perform a data syncing. Fixed the Feeder's short names. *This bug occurred since v3.5.141.*

## 12.2.12 ElipseX Libraries

- Changed the generation of ElipseX libraries in **Elipse Power**, to allow libraries generated in a system with a certain language to work correctly in systems using a different language. *This bug occurred since v1.18.147.*

## 12.2.13 Installation

- Removed the installer of Microsoft Visual C++ Redistributable Package from **Elipse Power** and **WebViewer** installers, because it may hang the installer in silent mode. The files of this installer now are moved directly to the **Bin** folder. *This bug occurred since v4.0.37.*

## 12.2.14 Links

- Optimized E3 Server performance when disconnecting a client with many Links. *This bug occurred since v3.0.201.*
- Fixed the handling of discarded remote links, which generated unnecessary remote accesses when they were recycled. *This bug occurred since v4.0.121.*

## 12.2.15 OPC Client

- Now change notifications of OPC Tag's **Quality**, **TimeStamp**, **RawValue**, **Value**, and **Bit00** to **Bit31** properties are generated only after all values have been updated. *This bug occurred since v1.18.147.*
- The **Value** property of OPC Tags now receives *Null* if the scale fails (if the **RawValue** property is a **String**, **Null**, **Nothing**, or **Array** value, or if the scale configuration is invalid). Previously the property only kept its previous value. *This bug occurred since v1.18.147.*
- OPC Block Elements now only generate **OnRead** events for changes sent by the OPC server (the only exception are writings using the **TrustWriteSuccess** mode). *This bug occurred since v1.18.147.*
- Fixed an **Empty** value that occurred in OPC Block Elements that have never communicated. *This bug occurred since v1.18.147.*

## 12.2.16 Other Corrections

- Corrected date, time, and time interval rounding when formatted with tenths or hundredths of seconds. *This bug occurred since v4.0.133.*
- Changed the way the number of threads was calculated in each **Elipse Power** process, used by **ProcessInfo** statistics, which used to nearly crash the system if there were a few hundred Drivers executing with enabled statistics. *This bug occurred since v4.0.31.*
- Changed REC channels sending and receiving logic to better tolerate slow networks situations. Also added **Pending Packets** column on E3 Admin Statistics window.
- Fixed the handling of paths where the dot was not required after a name between brackets. *This bug occurred since v1.18.147.*

## 12.2.17 Protection Device

- E3 Server now tries to start the HASPLMS service before reading the license for the first time.

## 12.2.18 Query

- The Query object does not save the size of the window and the position of the field area splitter in the application anymore. The query's configuration window now has its position and size saved in the computer executing **Elipse Power Studio**, and the position for the field area splitter is not saved anymore. *This bug occurred since v1.21.164.*
- Fixed the return of **TypeName** for Query's Field and Field Collection objects. *This bug occurred since v1.19.137.*
- Changed the behavior of the **SQL** property in Query object, to allow that the empty value return to the behavior of generating the query text automatically. *This bug occurred since v1.19.117.*
- Fixed the internal notification of changes in Queries, when query variables are overwritten with the same values. *This bug occurred since v1.20.237.*
- Fixed the behavior of Storage queries to return, in the **GetADORRecordSet** method, a Recordset positioned at the first record. *This bug occurred since v1.21.76.*
- Now it is allowed to set the value **ftNoFunction** at run time in the **FunctionType** property of the Query. *This bug occurred since v1.21.76.*
- Implemented a notification of change in the **Having**, **SQL**, **Table**, **Fields**, **Where**, **GroupBy**, and **OrderBy** properties of the Query object, when these properties change indirectly. *This bug occurred since v1.19.137.*
- Fixed a memory leak on Query's configuration window. *This bug occurred since v1.21.26.*
- Fixed problems when updating the preview window of Query configurations. *This bug occurred since v3.0.186.*

## 12.2.19 Remote Domains

- Fixed a problem in Links of Remote Domains that started with brackets right after the Domain name. *This bug occurred since v3.0.201.*
- Fixed a problem with simultaneous creation of Links of several Domains, when a failure could lead to failures in other Domains. *This bug occurred since v3.0.201.*

## 12.2.20 Screen Objects

- Fixed a GPF that occurred in **Elipse Power Viewer** when a Screen object with keyboard focus was erased in a script. *This bug occurred since v1.19.87.*

## 12.2.21 Storage

- Fixed a problem when retrieving data in Storage queries with the **CursorLocation** property equal to 1 (**clClient**) in E3Browser. *This bug occurred since v3.0.260.*

## 12.2.22 Studio

- Fixed the border drawing of the active tab of docked windows in **Elipse Power Studio**. *This bug occurred since v4.0.176.*
- Fixed a formatting problem in **Elipse Power** window with a warning to not display the window anymore, when the text was too large. *This bug occurred since v3.5.81.*
- Fixed a problem on the Color Palette window in **Elipse Power Studio**, which locked the properties list window after closing it. *This bug occurred since v2.0.15.*
- Fixed a problem of not closing the active tab with the key combination CTRL + F4 when mouse was over the command buttons in Organizer, with a docked or floating window. *This bug occurred since v2.0.100.*
- Fixed problems in selection and removal of Screen layers. *This bug occurred since v1.18.155.*
- Fixed the update of **Variant**-type values when their types are changed via contextual menu (occurred in several locations in **Elipse Power Studio**). *This bug occurred since v1.18.155.*
- Fixed the position of Text object when inserted on a scrolling Screen. *This bug occurred since v3.2.214.*
- Now the cursor position is correctly updated when using the mouse wheel during the edition of a Text object. *This bug occurred since v1.19.87.*
- Fixed the message when erasing the content of a numerical field (for example, **Feedback Timeout**) of **Commands** tab in PowerConfig. *This bug occurred since v3.5.81.*
- In **Elipse Power Studio**'s Screen editor, when pressing ESC during text edition, this edition is terminated instead of interpreted as an unknown character. *This bug occurred since v1.20.289.*
- The WatchWindow window was changed to display common properties of objects, as well as specific properties of the instance. *This bug occurred since v2.0.16.*
- Fixed unexpected closing (GPF) that occasionally happened in **Elipse Power Studio** when using WatchWindow. *This bug occurred since v4.0.121.*
- Implemented a notification of change on the Screen when moving the Rotation Center, or adding or removing an Anchor point of an object. *This bug occurred since v1.18.155.*

## 12.2.23 Translation

- Fixed the opening text of **Elipse Power**. *This bug occurred since v2.5.122.*
- Fixed the positioning of fields on Add User window. *This bug occurred since v4.0.161.*
- Some messages using the term "connection with" were altered to use "connection to" instead.

## 12.2.24 Viewer

- Fixed a problem that prevented Read-Only **Elipse Power Viewers** from accessing via script properties and methods of Domain objects. **NOTE:** It also requires an update on the remote server if the Remote Domain channel is not read-only. *This bug occurred since v3.0.201.*
- Fixed a retry in the REC connection when resolving the server's name fails. *This bug occurred since v1.21.98.*
- Fixed a memory leak that occurred in **Elipse Power Viewer** during a Screen toggling with **Elipse Power Viewer**'s cache disabled. *This bug occurred since v4.0.128.*

This section contains updates of version **4.0** of **Elipse Power**. Please check the next topics for more information about **new features** and **fixed bugs** in this version.

## 13.1 New Features

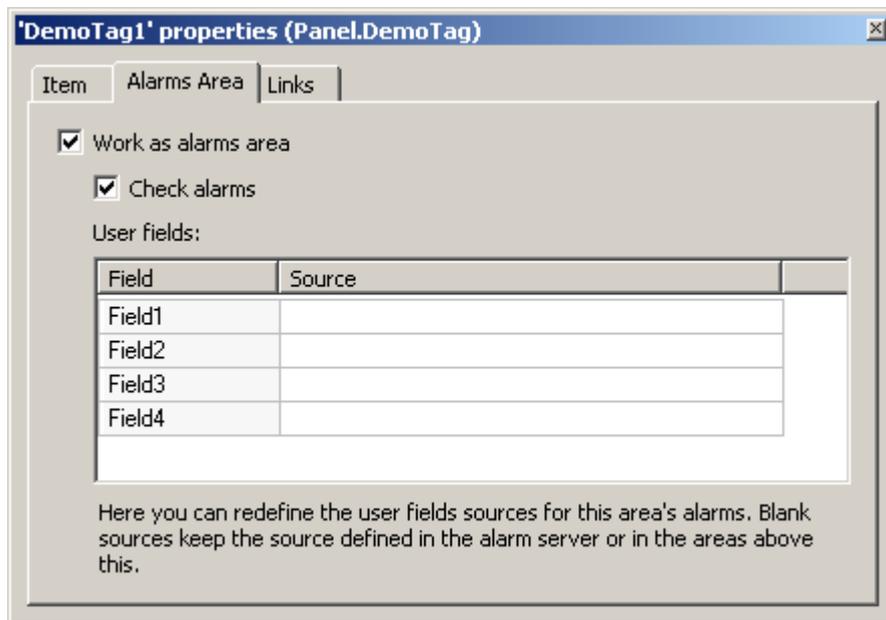
This section contains new implementations of version **4.0** of **Elipse Power**.

### 13.1.1 ActiveX

- **Elipse Power** now install licenses allowing usage of controls of the ActiveX library Microsoft Common Controls 6.0. The DLL still needs to be copied manually.

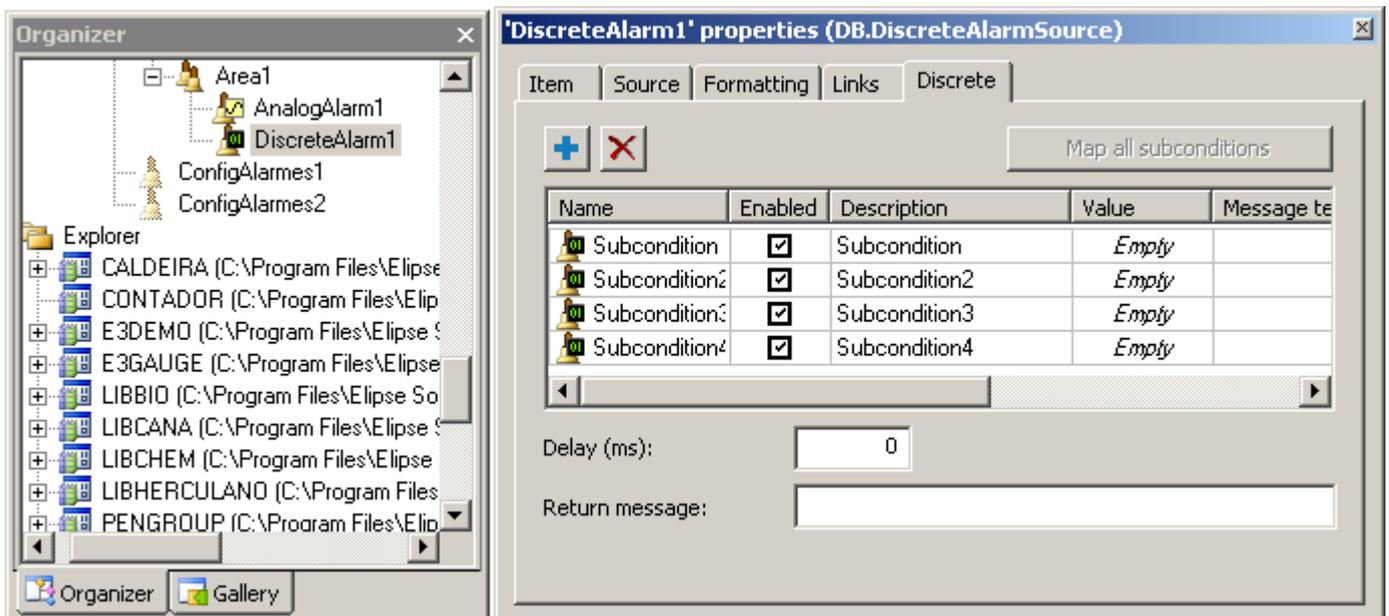
### 13.1.2 Alarms

- Implemented an optional Alarm Area behavior for any server object. This behavior is the default for **Elipse Power** devices.



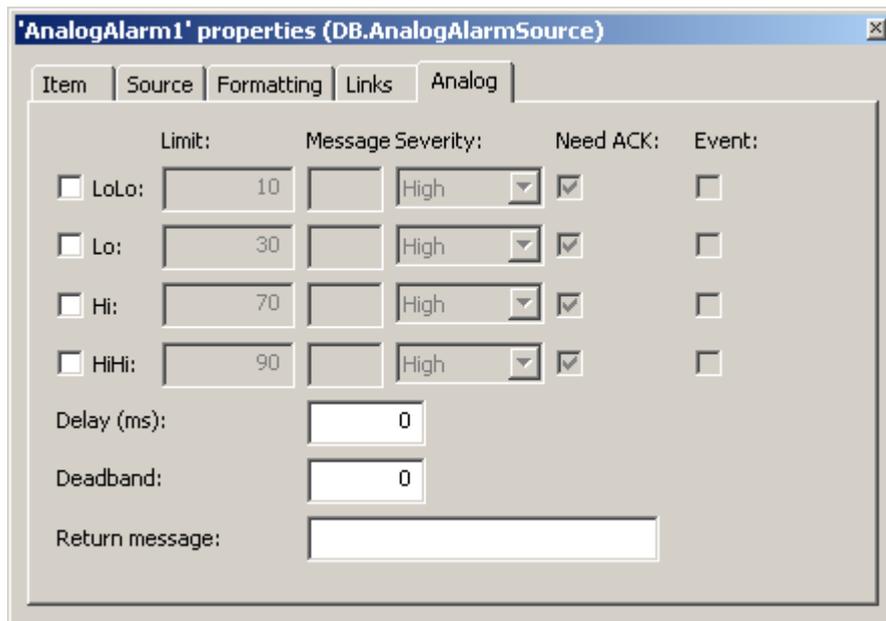
**Server object as an Alarm Area**

- Created the Discrete Alarm, which has a configurable list of subconditions.



**Discrete Alarm**

- Created four new properties for Analog Alarm subconditions, which allow configuring separately whether a subcondition is handled as an event or not. These properties are **LoLoEvent**, **LoEvent**, **HiEvent**, and **HiHiEvent**.



**Analog Alarm**

### 13.1.3 Databases

- Improved log messages regarding connection, closing, and reconnection of the Database Server.
- Improved and standardized logs for data table update operations (Historics, Alarms, and Formulas) kept by **Elipse Power**.

### 13.1.4 Demonstration Application

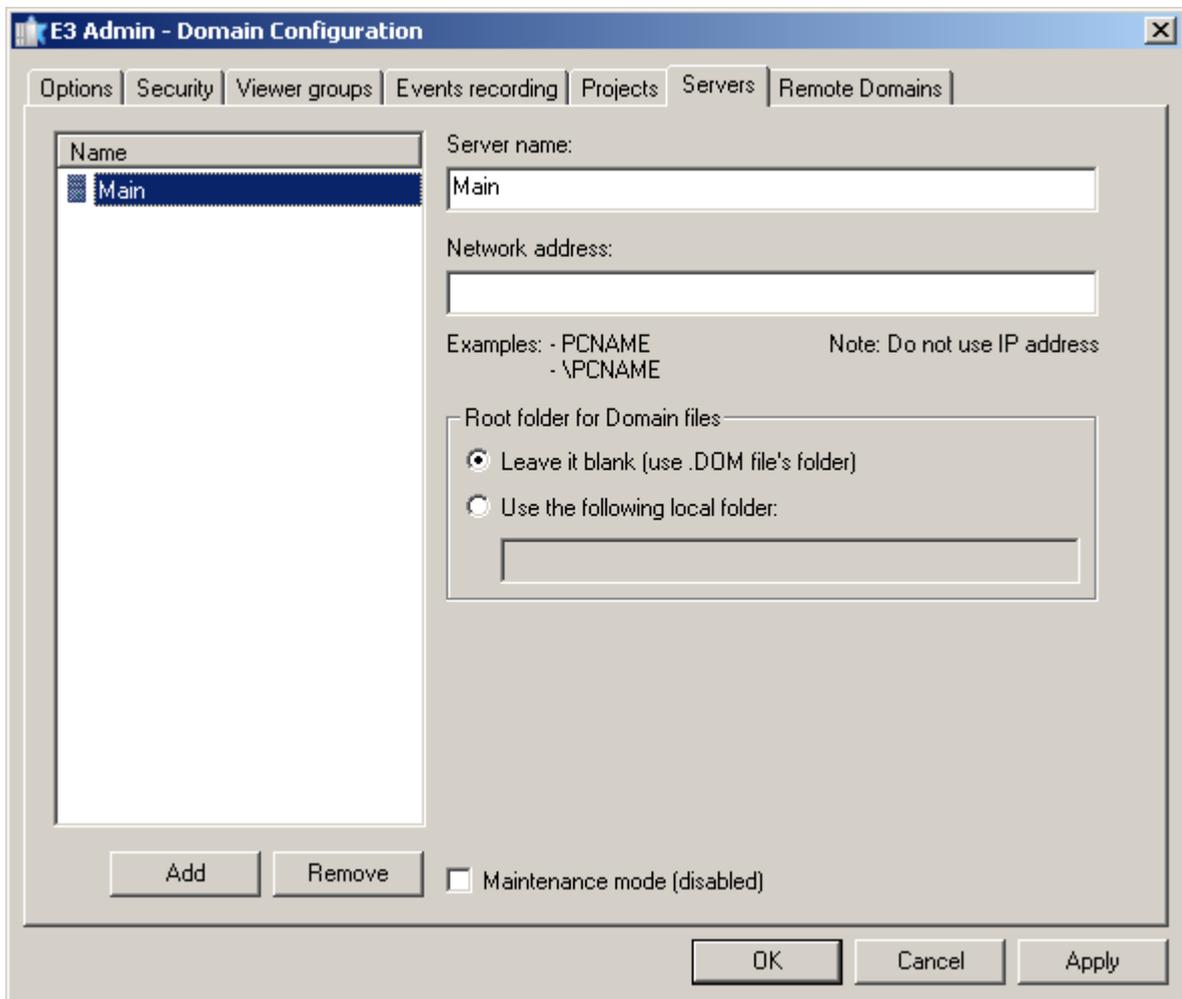
- Added the PenGroup library to the demonstration application, which aims to provide a tool to search for data and display charts, thus creating a faster way of performing application settings, and also allowing a powerful analysis interface for the end user.

### 13.1.5 Documentation

- Added information in **Elipse Power User's Manual** about limitations of the **Demo** mode.
- Added feedback forms on **Elipse Power's** document topics in CHM format.
- Added address and phone numbers of Rio de Janeiro branch on PDF templates for documentation.
- Changed the topic structure of **Elipse Power Reference and Scripts Manual** to reflect the hierarchy of **Elipse Power Studio's** Organizer.
- Added the **E3 Tutorial Developer** in **Elipse Power** installer. Also added the **Elipse Power Tutorial** in **Elipse Power** installer.

### 13.1.6 Domain, E3 Server, and Hot-Standby

- Changed the configuration interface of the local access path to Domain files. Also implemented warnings about common configuration errors for this option.



Configuration interface of the local path

### 13.1.7 Drivers and I/O Server

- Implemented support for relative paths in I/O Driver's **DriverLocation** property.

### 13.1.8 E3 Tweak

- Added the module **OCIThread** to log section **FullIDB** in **E3 Tweak**.
- Added the modules **ServerSubscriptionManager**, **AlarmQueue**, and **RemoteDomainsManager** to log section **Full** in **E3 Tweak**.
- Added log section **PowerEngine** in **E3 Tweak**. This section contains the modules **Input**, **LoadShed**, **Output**, and **PowerEngine**.

### 13.1.9 Elipse Power

- Now it is possible to use other XControl definitions when importing **Elipse Power's** Screen objects.
- The **Elipse Power's** Electrical Modeler now uses the **.NET Framework 4 Client Profile**.
- Created the objects **PowerProtectionGroup** and **PowerProtectionDevice**, and added the **Protections** tab to **Power Configuration** object.
- Created in the **Power Configuration** object the possibility of also configuring non-energized voltage colors.
- Implemented a behavior on **Elipse Power's** Measurement colors to display active alarms, also distinguishing whether there are active and non-acknowledged alarms.
- Changed the **PowerExplorer** window to allow being called by passing as its root object a **Protection**.
- Added the **Type** column to editors of **Feeders**, **Substations**, and **Transmission Lines**. This column allows configuring properties **CommandType**, **ProtectionType**, and **MeasurementType**, where applicable.
- Created the **Commands** tab on **PowerExplorer** window.
- Created a button on **Commands** tab to display the Interlocks of the selected **Command Unit**.
- Implemented a tap indication for **Two-Winding Transformers** in the **Electrical Modeler**.
- Implemented a block for sending commands when **PowerExplorer** is read-only.

- Implemented the **Protections** tab on PowerExplorer.
- Added an input and output log of Power Engine.
- Created the Terminal's **PowerFlowIn** property, for future usage on State Estimator. Also corrected the counting on Busbar's statistics window on Electrical Modeler.
- Created a method in Viewer to return a PowerExplorer's configuration object.
- Created a new property for PowerExplorer's configuration object, to display or hide the column with Measurement's timestamp.
- Created a property to configure the behavior of **Commands** tab, when there are Interlocks.
- Create the **CenterWindow** method to center PowerExplorer's window.
- Added support to Generator isolation via automatic switch of its models at run time, according to the values of GeneratorPriority and GeneratorParticipationFactor Measurements.
- Implemented in **Elipse Power Studio**, for Interlock Units connected to Discrete Measurements, the edition of values of **ComparisonValue** property, by using the description of Semantics.
- Implemented on the PowerExplorer's Interlock window the display of Semantics' text together with its value, in case the target Measurement be Discrete.
- Created the **ComparisonValueCaption** property, only at run time, in Interlock Unit objects.
- Created the **TabsEnabled** property, which allows configuring what PowerExplorer tabs should be displayed.
- Measurement values in **Elipse Power** now propagate with their values an information about the active Measurement Source. This information then goes to Alarm's **ActiveSource** (Measurement Source) field.
- Created the global function **SourceType**, available in Links and scripts, which returns the name linked to the value of Measurement Source type (**PowerSourceType**).
- Created in E3Browser the **OnFormatCell** event, which allows customizing E3Browser's cell text formatting.
- In Electrical Modeler, elements now have their size aligned to grid (in case it is enabled) the first time they are inserted.
- Electrical Modeler elements now have their **BaseVoltage** property set to 0 (zero) in case they are not connected (directly or not) to Transformers or Generators.
- Double-clicking a LinkNode now forces the Electrical Modeler to navigate to the corresponding Substation or Feeder.
- Now it is allowed to edit the Semantics' **Meaning** column of user-defined Discrete Measurement types.
- Blocked the usage of reserved characters ("\\?:[]") for names of **Elipse Power** objects in all item collections of Power Configuration tabs. In addition, default reserved names were also blocked (True, False, Nothing, Empty, Null, and Application).
- Added two new keyboard shortcuts to Electrical Modeler:
  - **SHIFT**: When pressed, allows a consecutive creation of several elements of the same type (the same as the **Lock** function)
  - **CTRL + A**: Selects all elements
- When inserting a Vertex on Electrical Modeler, if the lock is disabled, then the selection tool will be disabled.
- At each topological change on Electrical Modeler's network, the Topological Processor is executed, and the energized and non-energized elements are indicated using transparency.
- Added two new keyboard shortcuts to Electrical Modeler:
  - **R**: Rotates selected elements on 45 degrees steps, clockwise
  - **CTRL + R**: Rotates selected elements on 45 degrees steps, counterclockwise

## 13.1.10 Installation

- Changed the clause 4 of the software license, which deals with protection device's theft or loss.
- Updated basic components of OPC Core Components (x86) in **Elipse Power** installers.
- Integrated EELogs v4.5 Build 37, which corrects problems related to recovery of deleted files on some operating systems, support for installation on **Windows 8**, among other improvements.

## 13.1.11 Links

- Created object contexts, which work as shortcuts to parent objects, and can be used in Links (by using **@(context)**) and scripts (by using **Context("context")**).
- Created support to expressions inside type descriptions on Power Configuration object. Expressions are evaluated on every Measurement, Command, or Protection using that type.

## 13.1.12 Other Implementations

- Created the option **HeapLog.{PROCESS}** in Windows Registry to generated detailed logs about memory usage of **Elipse Power** processes.
- Added the option **OANOCACHE** in **Elipse Power** log configuration in Windows Registry, which allows disabling the BSTR cache of OLE Automation. **NOTE:** It should be enabled only to improve BSTR memory leak diagnosis, because it degrades memory allocation performance for **Strings**.

## 13.1.13 Playback

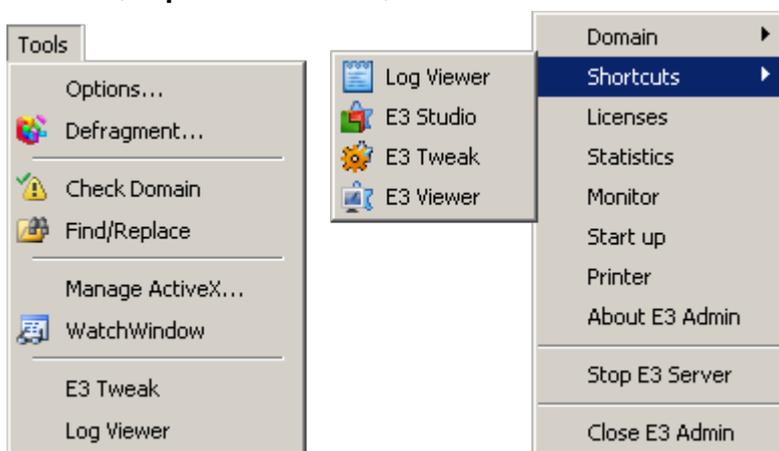
- Playback queries retrieving Storage data were optimized when there are many Tags involved. Now the **In** function is used, instead of **>**, **<**, **AND**, and **OR** operators to indicate field IDs to search for.

## 13.1.14 Protection Device

- E3 Server now allows reprogramming or replacing a protection device on the fly. If licenses are removed, the E3 Server is automatically restarted. If licenses are added, then it may be necessary to restart the Domain to use these additional licenses.
- Updated the installer of HASP drivers (haspdinst.exe) to version 6.22.

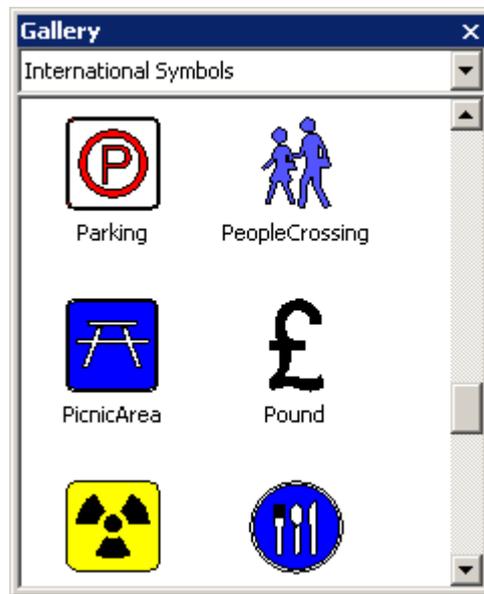
## 13.1.15 Studio

- Improvements on **Elipse Power Studio** interface:
  - Implemented a middle-click to close the tab under mouse pointer
  - Implemented an option to display a button to close the active tab on the tab itself, or on the right side of all tabs. This option can be configured in the **Options** window, on **Tools** menu
- Other improvements in **Options** window of the **Tools** menu:
  - Changed the name of **Studio** tab to **General**, and also changed its position to be the first one
  - Changed the name of **Editor** tab to **Scripts Editor**
  - Adjusted the size of **Studio** tab to conform to the standard
- Created shortcuts to open **Log Viewer** and **E3 Tweak** from inside **Elipse Power Studio**, as well as shortcuts to open **Log Viewer**, **Elipse Power Studio**, **Elipse Power Viewer**, and **E3 Tweak** from **E3 Admin**.



Shortcuts on Elipse Power Studio and on E3 Admin

- Created methods **CreateFile**, **CreateFolder**, and **CreatePRJ** in Studio's Application object.
- Created the method **RenameFolder** to rename a Folder via scripts executing in Studio.
- Removed an unused space on the left side of cells on the first column of all tables in **Elipse Power Studio** that are not hierarchical, such as the **Links** tab.
- Implemented a window for scripts execution errors in **Elipse Power Studio**, the same one appearing in **Elipse Power Viewer**.
- Implemented a cache of images or Metafiles in **Elipse Power Studio**. Thus, if the same image is used several times on the same Screen, or on different Screens, it is loaded on memory only once.
- Gallery does not display error messages relative to Screen or XControl loading anymore.
- The Screen Editor now always adjusts object coordinates to the nearest pixel (a *Snap to Pixel* effect). Also added the shortcut key CTRL + SPACEBAR, which moves the selected objects to the nearest pixel.
- Gallery thumbnails are now drawn using the **High Quality** mode (GDI+).



Gallery

### 13.1.16 Users

- The **Elipse Power** user database now allows integration with Windows users.

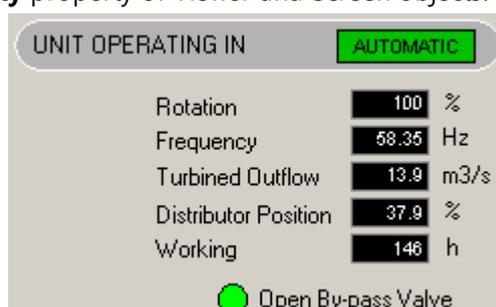


Login integrated to Windows

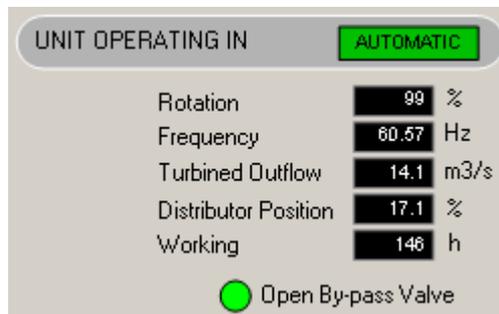
- Names of **Elipse Power** users and groups are not case sensitive anymore. For example, it is not allowed to create an "AAA" user anymore, if there is already an "Aaa" user. When performing a login, case-insensitive typing is now allowed.
- The window for user edition, or the **Application.UserAdministration** method in Viewer, now allows removing and changing the Administrator configuration of the currently logged-in user.

### 13.1.17 Viewer

- Implemented a **High Quality** mode on **Elipse Power** Screens drawing, using GDI+. The quality of screen drawing is controlled by the new **RenderQuality** property of Viewer and Screen objects.

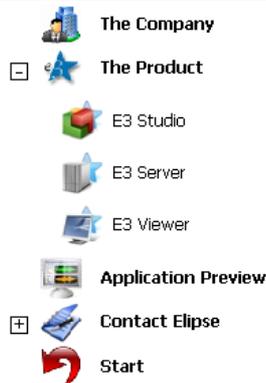


Normal quality mode (GDI)



High quality mode (GDI+)

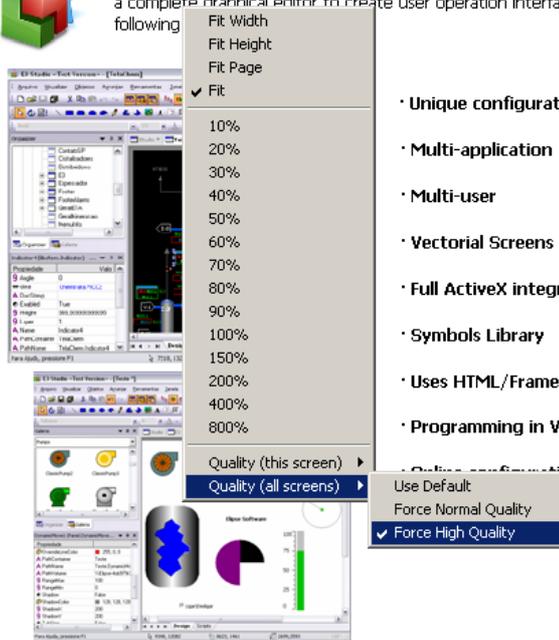
- Added support to multi-touch for screen scrolling and zoom on **Elipse Power Viewer** and **Elipse Power Studio**, in devices accepting that functionality.
- Added zoom control on Screens via keyboard (CTRL + PLUS SIGN, CTRL + MINUS SIGN, and CTRL + ASTERISK) and mouse wheel.
- Added options to **Elipse Power Viewer** Screens' zoom menu to change the drawing quality of the current Screen, and for all **Elipse Power Viewer**'s Screens.



Universal development platform with a friendly, modern environment. It has a complete graphical editor to create user operation interfaces, and also the following:

- Unique configuration platform
- Multi-application
- Multi-user
- Vectorial Screens
- Full ActiveX integration
- Symbols Library
- Uses HTML/Frames
- Programming in VBScript

More ...



Viewer's zoom menu

## 13.2 Fixed Bugs

This section contains bugs fixed in version 4.0 do **Elipse Power**.

### 13.2.1 AppBrowser

- The AppBrowser now correctly lists the **AddObject** and **DeleteObject** methods for all server objects where they can be used. *This bug occurred since v3.5.41.*
- Fixed the AppBrowser to display documentation of Application's **ShowPowerExplorer** and **GetPowerExplorer** methods (Viewer). *This bug occurred since v3.5.156.*

### 13.2.2 Database

- Database Server's **TimeoutConnection** and **TimeoutCommand** parameters were ignored in an OCI Oracle connection, and now they are respected, avoiding a long wait on operations.

- Fixed in log messages the value for how long backup and discard operations on database tables last. *This bug occurred since v3.0.256.*
- **E3Run** now uses a thread pool to handle Database queries. This pool fixes a COM memory leak, which may occur in **E3Run** and in E3 Server.

### 13.2.3 Documentation

- Added more information to Storage Field's **DeadBand**, **DeadBandUnit**, **MaxRecTime**, and **MinRecTime** properties, in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.0.308.*
- Added detailed information about subproperties of Text's, Display's, and Setpoint's **TextFont** property in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.21.17.*
- Changed IIS settings in **Windows Vista** and **Windows 7** in **Elipse Power Installation Guide** to remove the steps to create a new virtual directory. Settings are performed in the default website, created during IIS installation.
- Updated the chapter **Storage - Internal Queries - TagAttribute**, in **E3 Tutorial Developer**, to add the **Integer** data type. *This bug occurred since v3.5.90.*
- Added detailed information about the behavior of E3Chart Pen's **AutoQuery** property, in **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.21.119.*

### 13.2.4 Domain, E3 Server, and Hot-Standby

- Fixed a problem in the procedure that creates or updates **Elipse Power**-handled tables, which stalled **E3Run** or **Elipse Power Studio** in case database table **\_Fields** was corrupted (having two fields with the same FieldID). *This bug occurred since v1.19.87.*
- Fixed a problem in E3 Server's Hot-Standby, where both servers entered a Hot state when one server was removed from Standby mode. For more information, please refer to <https://kb.elipse.com.br/bug0009236-both-servers-activated-when-a-server-leaves-maintenance/>. *This bug occurred since v3.1.1.*

### 13.2.5 Drivers and I/O Server

- Fixed the I/O Server's registration removal to not fail if the I/O Server was not already registered. *This bug occurred since v3.1.1.*
- Blocked reentrant generation of I/O Driver's **OnCommError** and **OnCommErrorEx** events.
- Fixed a problem when propagating quality and timestamp of I/O Tags, which occurred before updating Tag's value.
- The I/O Tag's **Value** property now receives Null on scale failure (if the **RawValue** property has a **String**-, **Null**- or **Array**-type, or if scale configuration is invalid). Previously this property simply retained its previous value.
- Fixed a problem in an I/O Block Element's **RawValue** property, which propagated an 'Empty' value instead of 'Null' when Block was read or deactivated, and the Element's index was invalid (for example, larger than the Block size).

### 13.2.6 E3 Tweak

- Fixed the default value of REC compression. The correct value is 0 (zero), not 6 (six). *This bug occurred since v3.2.209.*

### 13.2.7 E3Chart

- Starting an E3Chart query was unlinked from its drawing and linked to the refresh timer, leading to fast screen opening and lighter automatic queries when dragging the Screen. *This bug occurred since v1.22.71.*

### 13.2.8 E3DataAccess

- Fixed E3DataAccess' **RegisterCallback** method behavior, which did not work when used for the second time. *This bug occurred since v3.2.123.*

### 13.2.9 Elipse Power

- Fixed a problem when normalizing large angles during the import of BusBar objects. *This bug occurred since v3.5.81.*
- Fixed a load shedding occurred when an unbalanced power error of an island was less than 5%. *This bug occurred since v3.5.226.*
- Fixed a problem of losing values from BusBar properties, when some of its Busbar Terminal objects were outside BusBar boundaries. *This bug occurred since v3.5.288.*
- Changed the find and replace behavior of Power Configuration tabs, to not open and activate the editor when replacement is performed with option **Replace All**. *This bug occurred since v3.5.236.*

- Fixed Connector and Branch behavior when moving their Terminals with the SHIFT key pressed. *This bug occurred since v3.5.127.*
- Fixed a non-conformity when using a Connector or Branch when the CTRL key was pressed. *This bug occurred since v3.5.81.*
- Fixed a GPF that occurred when entering a Substation or Feeder, and mouse pointer was over a Connector. *This bug occurred since v3.5.226.*
- Fixed a reconnection problem on PowerExplorer's **Measurement** tabs. *This bug occurred since v3.5.81.*
- Fixed a problem in the Electrical Modeler, which cut a Bay but not its elements. *This bug occurred since v3.5.141.*
- Fixed a problem of not zeroing the reactive power of **ZIP**-type Loads on Power Flow. *This bug occurred since v3.5.81.*
- Fixed a problem in Electrical Modeler, which did not received keyboard focus when its tab was activated. *This bug occurred since v3.5.81.*
- Fixed the behavior of Command Unit's **Interlocked** property when there is Interlocks in objects of its upper hierarchy, before activating the Unit. *This bug occurred since v3.5.81.*
- Created an error window in **Elipse Power Studio** with messages of recording failures on electrical model files. *This bug occurred since v3.5.81.*
- **Elipse Power Studio** now displays an error window when a failure during the reading of an electrical model file occurs. *This bug occurred since v3.5.81.*
- Fixed the handling of changing Discrete Measurements' **MeasurementType** property, at run time. *This bug occurred since v3.5.81.*
- Fixed the behavior of TAB and SHIFT + TAB key combinations, when PowerExplorer is opened inside a **WebViewer**. *This bug occurred since v3.5.81.*
- Fixed synchronicity during import of **Elipse Power**'s Screen objects, which generated wrong Links when the synced data object was inside a Folder. *This bug occurred since v3.5.228.*
- When there is more than one object with the same ID in **Elipse Power**, and one of them is synced, the other ones are zeroed, and are no longer reused during data object syncing. *This bug occurred since v3.5.136.*
- Fixed the validation of values in **Rotation** property of Electrical Modeler objects, which did not converted correctly very high value to a scale between 0 (zero) and 360 degrees. *This bug occurred since v3.5.81.*
- Minimized a problem in Electrical Modeler, which forced the selectable area of an object with high zoom to become larger than the object's real area. *This bug occurred since v3.5.81.*
- Included in Electrical Modeler a Label object on LinkNode symbol, which indicates to which Feeder or Substation it is connected. *This bug occurred since v3.5.81.*
- Fixed a problem in Electrical Modeler, in which the target was displayed when mouse was over a Terminal, even when the selection tool was enabled. *This bug occurred since v3.5.127.*
- The Electrical Modeler now does not allow cutting LinkNodes anymore. *This bug occurred since v3.5.141.*
- Fixed a problem in Electrical Modeler, where **DisplayX** and **DisplayY** properties were not set immediately, in case the object was moved using the keyboard. *This bug occurred since v3.5.141.*
- Fixed a problem in Electrical Modeler, when rotating an object very close to Bay's border, parts of the object remained outside the Bay. *This bug occurred since v3.5.81.*
- Fixed the behavior of Busbar's **Rotation** property in Electrical Modeler, which now converts automatically the value of that property to the interval between 0 (zero) and 360 degrees. *This bug occurred since v3.5.81.*
- Fixed a problem in Electrical Modeler, which displayed an error message when resizing a Busbar using left handles until it finds a Terminal. *This bug occurred since v3.5.288.*
- Fixed a problem in Electrical Modeler, in which an object dragged so that mouse pointer moved outside Modeler's screen, and then returned to screen, a selection box appeared where the object started being dragged. *This bug occurred since v3.5.305.*
- Fixed the behavior of object selection in Electrical Modeler, which remained static when the object was dragged with the CTRL key pressed. *This bug occurred since v3.5.127.*
- Fixed the behavior of Electrical Modeler, which always selected the same Terminal when a Connector or Branch connecting the Terminals of the same object. *This bug occurred since v3.5.290.*
- Fixed a problem in Electrical Modeler, which when moving a handle quickly, mouse pointer and handle lost connection. *This bug occurred since v3.5.81.*
- Fixed a problem in Electrical Modeler, in which it was difficult to rotate a Terminal very near to the Busbar border. *This bug occurred since v3.5.81.*

- Fixed the Electrical Modeler, which did not allow selecting a Connector or Branch placed between two Breaker Terminals, after that Breaker was selected or resized. *This bug occurred since v3.5.81.*
- Fixed a problem in Electrical Modeler when adding Vertexes in a Connector, because sometimes the Vertex was inserted on another location. *This bug occurred since v3.5.81.*
- Fixed the positioning of the text of a Busbar object in Electrical Modeler, which was created superimposed, thus making it hard to read. *This bug occurred since v3.5.142.*
- Fixed a problem in Electrical Modeler when dragging objects outside the edition area, releasing mouse button, and then moving the objects again. Their arrangement was slightly different. *This bug occurred since v3.5.81.*
- Fixed a problem in Electrical Modeler, which allowed to continue to move a Busbar Terminal, even after changing the selection by using the TAB key. *This bug occurred since v3.5.81.*
- Created minimum (approximately 1e-99) and maximum (approximately 1e99) limits for Electrical Modeler's **FontSize** property. It was also fixed the behavior of F7 and F8 keys when these limits were reached. *This bug occurred since v3.5.81.*
- Fixed a decrease in performance during property changes on applications with many objects. *This bug occurred since v3.5.141.*
- The Topology Processor and Voltage Color modules of the Electrical Modeler were optimized to improve performance during edition. *This bug occurred since v3.5.81.*
- Fixed a problem with the Connector tool that remained enabled even after using the TAB key. *This bug occurred since v4.0.192.*

### 13.2.10 ElipseX Libraries

- Fixed a problem with Links pointing to an XObject updated with the Domain still executing. *This bug occurred since v3.0.238.*

### 13.2.11 Expressions

- Fixed a **Elipse Power Viewer**'s memory leak when evaluating Links with expressions, which occurred when objects with Links were activated and then deactivated. *This bug occurred since v3.0.137.*
- Implemented **Strings** usage on second parameter of **String** function on **Elipse Power** Link expressions.

### 13.2.12 Find and Replace

- Fixed the implementation of **Find and Replace** tool to include in the search the properties **DocString**, **Public**, and **Retentive** of an ElipseX's property definitions. *This bug occurred since v1.19.132.*

### 13.2.13 Gallery

- Fixed a problem when generating XControl thumbnails in the Gallery, which could cut their borders, or a cut border on larger borders. *This bug occurred since v2.5.121.*

### 13.2.14 Import and Export

- Fixed the Template Configuration window of the Import and Export tool, that does not list runtime-only properties anymore. *This bug occurred since v3.1.113.*
- Fixed a problem with E3Chart Pens not being imported. *This bug occurred since v3.5.264.*

### 13.2.15 Installation

- All links in installers now point to [www.elipse-software.com](http://www.elipse-software.com). *This bug occurred since v3.0.170.*
- **Elipse Power** installers are now compatible with **Windows XP Embedded**, and they do not need to be restarted after finishing installation. *This bug occurred since v1.20.183.*
- Fixed a bug in **Elipse Power** installers, which prevented installation on hard disks with more than 2TB of free space.
- Fixed a problem with Microsoft Office that prevented it to open files downloaded from internet, or attached to e-mails after installing **E3** or **Elipse Power**. *This bug occurred since v1.19.87.*

### 13.2.16 Links

- Improved performance of Screen switching, or activating objects on server, when using ElipseX objects connected to Remote Domain objects. *This bug occurred since v3.0.201.*

- Fixed a deadlock that could occur between **E3Run** and E3 Server during Link removal. *This bug occurred since v1.19.93.*

### 13.2.17 Other Corrections

- Fixed a failure when decompressing REC packages. In case a package was received fragmented on a specific size, this could cause a disconnection of the REC channel. *This bug occurred since v3.0.9.*
- Fixed a memory leak occurring in **Elipse Power Viewer** or in **E3Run** when a Link containing a **String** or an **Array** was activated or deactivated. *This bug occurred since v3.0.197.*
- Fixed a data and time rounding when milliseconds are not displayed. Also fixed a value rounding when displaying only deciseconds or centiseconds.
- Fixed a GPF when removing an object from a script, triggered by a user-defined event of the object itself. *This bug occurred since v2.0.122.*
- Fixed a memory leak occurring on server, **E3Run**, when an object was removed at run time from scripts of the object itself.
- Fixed a formatting problem of large time intervals in statistical logs (RUN, UTM, and KTM) of **Elipse Power ProcessInfo**. *This bug occurred since v3.5.179.*

### 13.2.18 Protection Device

- Removed license information from **Elipse Power** that appeared when a license borrowing of Studio licenses to an **E3 Demo** occurred. *This bug occurred since v3.5.111.*

### 13.2.19 Remote Domains

- Improved the performance of **Elipse Power** remote Links, by using a cache that keeps remote Links for at least 15 seconds, even when not used. *This bug occurred since v3.2.108.*
- Fixed a memory leak that could occur in an E3 Server when using Remote Domains with asynchronous Link creation. *This bug occurred since v3.2.122.*
- Fixed a memory leak that could occur in an E3 Server when a Remote Domain reconnected. *This bug occurred since v3.0.201.*
- Optimized removal of Remote Domain Links, now performed in blocks. This prevents client-side crashes when disconnecting from a server Remote Domain. *This bug occurred since v3.0.201.*

### 13.2.20 Query

- Fixed a GPF in **Elipse Power Studio**, which occurred when testing a Query (E3Query) with a cache of BSTRs from OLE Automation disabled (**OANOCACHE** equal to 1).

### 13.2.21 Screen Objects and Interface

- Fixed a problem in Text, Display, and SetPoint objects, which did not change their values when receiving an unsupported value.
- The **DrawPicture.Convert** property now only accepts changing its value to 1 (convert to symbol) if the image is a Metafile (a .wmf or .emf file). For other image types (for example, .bmp, .jpg, or .ico), conversion fails and the **Convert** property still gets the value 0 (zero).
- Fixed a problem in the DrawPicture object, which even with a Metafile converted to symbol (the **Convert** property equal to 1) still tried to load the image from disk. In this situation, in case there was a failure during image load, the object was incorrectly drawn.
- Fixed a problem in border drawing of objects with partial fill (the **VerticalPercentFill** or **HorizontalPercentFill** properties less than 100) that are inside a group with the **EnableOverrideLineColor** property set to True, where the border was not drawn with group's color.
- Fixed a problem in DrawPicture objects that contain a Metafile (the **Convert** property equal to 0) with opaque background (the **BackgroundStyle** property equal to 1), and partial horizontal fill (the **HorizontalPercentFill** property less than 100), where the shadow was drawn with the background color (the **BackgroundColor** property) instead of the shadow color (the **ShadowColor** property).
- Fixed a problem in DrawPicture objects that contain a Metafile (the **Convert** property equal to 0) with opaque background (the **BackgroundStyle** property equal to **1 - Opaque**) and in **Wireframe** mode (the **OverrideFillMode** property equal to **1 - Wireframe**), where drawing the background.

- Fixed a problem in DrawPicture objects that contain a Metafile converted to symbol (the **Convert** property equal to 1), and partially filled (the **HorizontalPercentFill** or **VerticalPercentFill** properties less than 100).
- Fixed a problem with drawing of groups of objects (DrawGroup) in **Wireframe** mode (the **OverrideFillMode** property equal to 1 - **Wireframe**), where the non-filled area of opaque child objects was filled with background color (this area should remain transparent in **Wireframe** mode).
- Fixed a problem with drawing of a DrawLine object with a dashed or dotted border, when this object has only two points (a straight line), and fill mode is different from **Hollow**.
- Improved **Elipse Power** consistency with invalid color values (outside the range between &h00000000 and &h00FFFFFF), which could lead objects to be drawn with random colors.

### 13.2.22 Script Editor

- Fixed a problem in the Script Editor when there is a **String** terminated by "\". The rest of the sentence remained colored as if it belonged to that **String**. *This bug occurred since v2.0.52.*
- Fixed a duplication of "%" characters in the list of compilation errors in **Elipse Power Studio**'s script window. *This bug occurred since v1.19.87.*
- Partially fixed problems in Script Editor when coloring lines started by "REM" where, in some cases, the text remained in green.

### 13.2.23 Storage

- Fixed a problem preventing a server with no Storage-recording licenses to perform queries on Storage's database. *This bug occurred since v3.5.285.*
- Improved precision of interpolated data returned by Storage's **SampledData** query. *This bug occurred since v2.0.163.*
- Small performance improvement for Storage's **SampledData** query. *This bug occurred since v3.0.150.*

### 13.2.24 Studio

- Fixed a problem of not showing a button to open the window to search for files in Digital or Analog Link fields with properties expecting a figure's file name, as the Picture's **FileName** property. *This bug occurred since v3.2.137.*
- Now the window Position of Property Window keeps its selection, even when alternating between a Screen and a Screen control. *This bug occurred since v1.19.133.*
- Now users can alternate between uppercase and lowercase (or vice versa) for a root object, Folder, or Resource name without incrementing this name. *This bug occurred since v2.5.32.*
- Fixed the update of the list of recent Files and Domains of the **File** menu in **Elipse Power Studio**, when opening an item fails. *This bug occurred since v3.0.223.*
- Fixed a problem in the **Close** button on the left side of **Elipse Power Studio** tabs, which could lose mouse clicks. *This bug occurred since v3.1.98.*
- Fixed a memory leak in GDI objects of **Elipse Power Studio**'s Screen editor, which occurred during edition of DrawString object's text.
- Fixed a problem in links to **Elipse Power Reference and Scripts Manual** inside **Elipse Power User's Manual** not working when this document was opened inside **Elipse Power Studio**. *This bug occurred since v3.2.118.*
- Fixed a problem in duplicated toolbars when installing a language version different from the previously installed one. *This bug occurred since v1.22.71.*

### 13.2.25 Translation

- Fixed the translation of "licenses not available" for **Elipse Power Viewer** and E3Playback. *This bug occurred since v1.22.71.*
- Fixed the message displayed by E3 Admin when a protection device is disconnected. *This bug occurred since v1.22.24.*

### 13.2.26 Users

- Screen folders now are not repeated in the User Permission window in **Elipse Power Studio**. *This bug occurred since v3.1.150.*

## 13.2.27 Viewer

- Fixed a script error message occurring when a **Elipse Power Viewer** script tried to access a non-existing property or method in a Server object. The script error was displayed empty, instead of indicating "The object does not support this method or property". *This bug occurred since v2.0.118.*
- Fixed the behavior of the **Elipse Power Viewer**'s Login window, which did not stop login retries in case the window was canceled. *This bug occurred since v2.0.118.*
- Fixed a problem when resizing modal windows, when the lower or right corner was displayed on monitor's negative coordinates (or monitors). *This bug occurred since v1.18.155.*
- Fixed a problem when handling keys in **Elipse Power Viewer**'s modal screens, which lead **KeyDown** and **KeyUp** Screen scripts to be executed twice or more on every pressed key. *This bug occurred since v2.0.90.*

## 13.2.28 WebViewer

- Fixed the behavior of keys in windowed screens open in **WebViewer**. *This bug occurred since v1.20.216.*

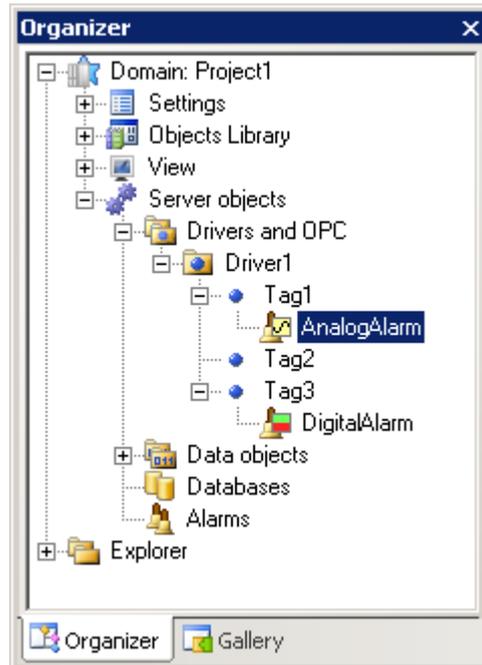
This section contains updates of version 3.5 of **Elipse Power**. Please check the next topics for more information about **new features** and **fixed bugs** in this version.

## 14.1 New Features

This section contains new implementations of version 3.5 of **Elipse Power**.

### 14.1.1 Alarms

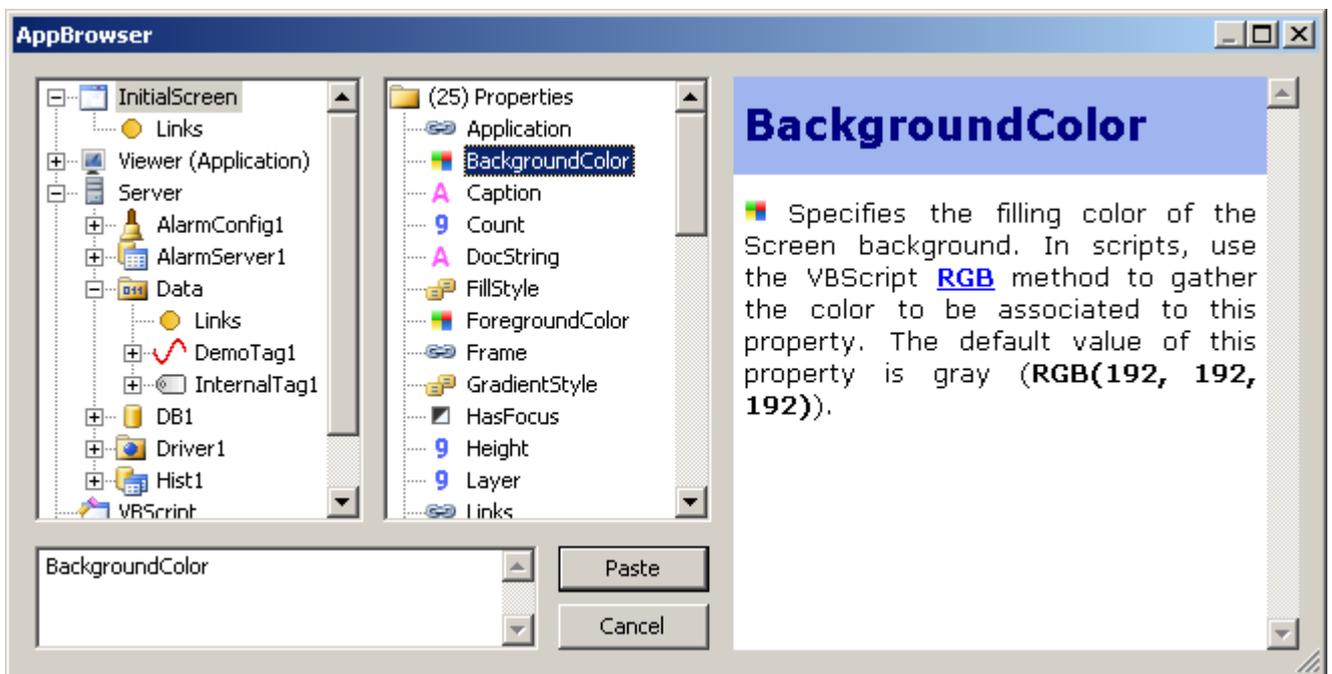
- Now users are allowed to insert Alarm Sources anywhere in an application, as long as they execute in the Server. Added the **AreaNameOverride** property to the Alarm Source object.



Insert Alarm Source

### 14.1.2 AppBrowser

- Added to the AppBrowser window a new area displaying the documentation corresponding to the selected method or property.



AppBrowser window with documentation

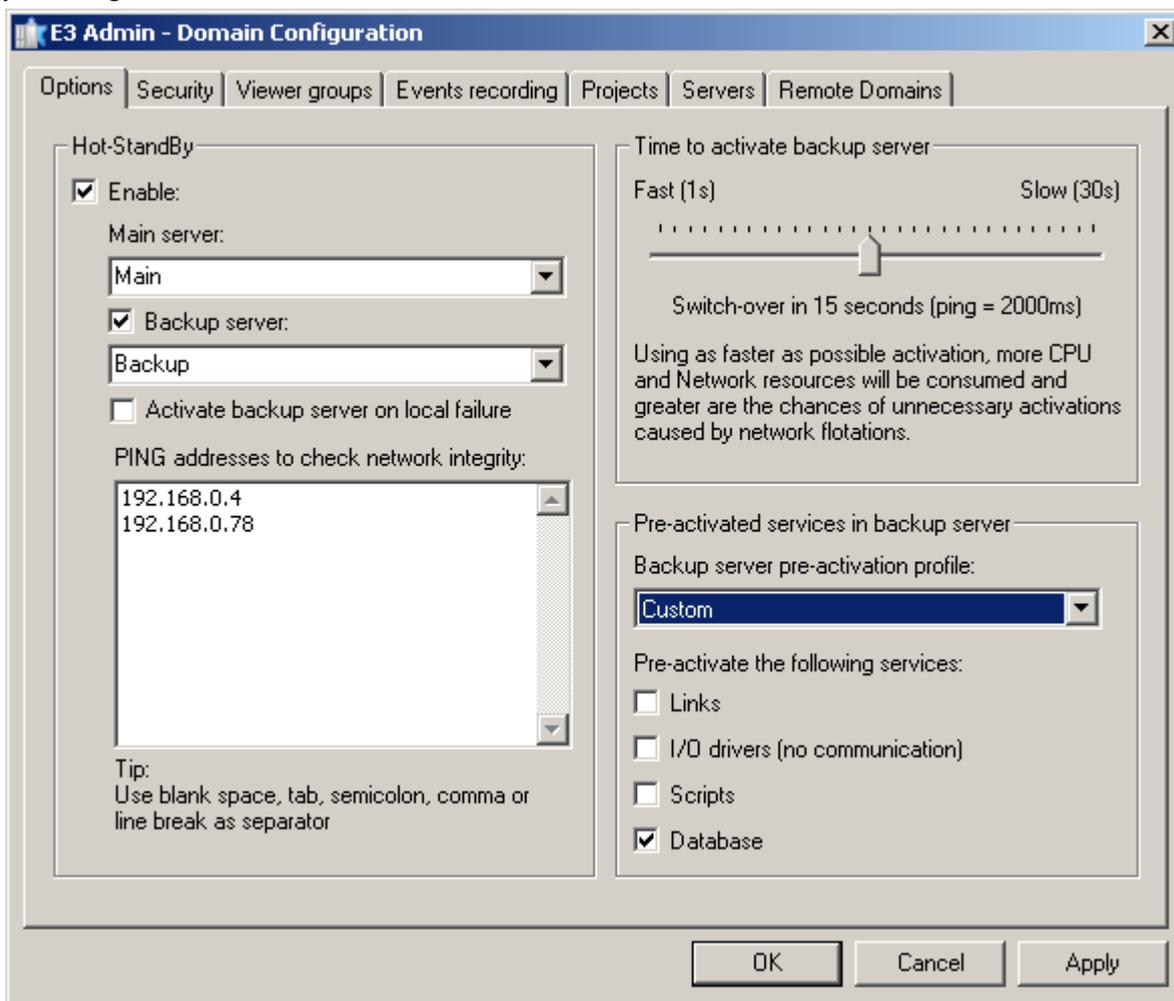
### 14.1.3 Documentation

- Updated the address of Taiwan branch in the templates for generating **Elipse Power** documentation in PDF format.
- Added information on **Elipse Power User's Manual** about the new parameter **URLToLoad**, responsible for loading a web page after installing **WebViewer**.
- Updated the section **E3Chart - Runtime Behavior - Legend State Column**, on **Elipse Power User's Manual**, to include information about new status messages of E3Chart Pens.
- Added the **Previous** and **Next** buttons in the toolbar of the documentation in CHM format, to facilitate navigation among topics.
- **Elipse Power Release Notes** now contain bug fixes and new features added on previous versions, starting with version 3.2, not only the current version.
- Added a link to the official documentation from Microsoft about the ADORecordSet object, returned by the **GetADORecordSet** method of the Query object on **Elipse Power Reference and Scripts Manual**.
- Added links to articles on **Elipse Software's** Knowledgebase website on **Elipse Power Reference and Scripts Manual**, about how the **SetValueData** method of the Formula object works.
- Added information on **Elipse Power User's Manual** and on **Elipse Power Reference and Scripts Manual** about the operation, methods, and properties of the **Elipse KeyPad**.
- Added a description of the **DefaultValue** and **HelpString** properties of the Property object of an XObject on **Elipse Power Reference and Scripts Manual**.
- Modified the topic structure of **Elipse Power Reference and Scripts Manual** to allow the documentation integration with AppBrowser.
- Generated an **Elipse Power Tutorial** in Spanish, available on installations of that language.
- Added the **Basic Tutorial** in CHM to the installer. The shortcut to the CHM is available in the documentation folder.
- The topic **Tab Order among Objects** of the chapter **Screens and Screen Objects - General Configurations** of the **Elipse Power User's Manual** was rewritten, adding more information and a link to the topic **Object Overlaying**. Besides, the example of the topic **Tab Order** of the chapter **Frequently Asked Questions** was moved to that topic.
- Added a note in the chapter **ActiveX** of the **Elipse Power User's Manual**, alerting for the need to install ActiveX objects not automatically registered by **Elipse Power**, in case these objects have a need to be accessed in several computers, specially Remote **Elipse Power Viewers**.
- Added in the FAQ about Alarms of **Elipse Power User's Manual** a question about how to display textual expressions for numerical values of the **Severity** field of an Alarm.

### 14.1.4 Domain, E3 Server, and Hot-Standby

- The time for opening applications with many Tags has been optimized due to improvements in the I/O license management system.

- The configuration of the Hot-Standby integrity IP now accepts multiple IP values, increasing the reliability of the integrity checking.



**Checking multiple IP addresses**

- In **Elipse Power Studio**, the option for creating several objects at the same time was optimized. For example, the time to create 10000 Demo Tags was reduced from 95 to 4 (four) seconds.

## 14.1.5 Drivers and I/O Server

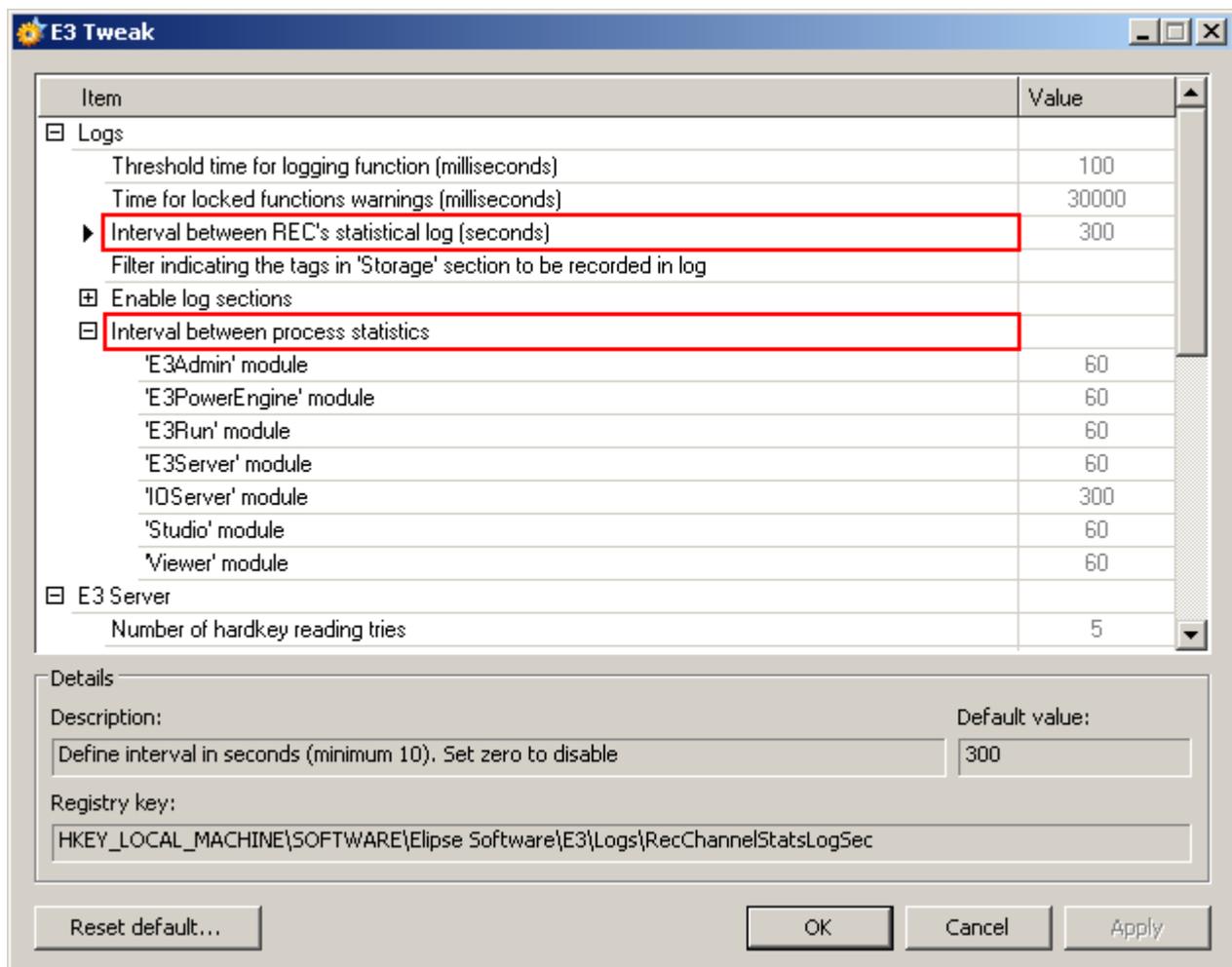
- The **E3Run** process does not load or unload Driver DLLs anymore, then decreasing a little the memory consumption of the process and avoiding memory leaks caused by DLL unloading.

## 14.1.6 E3Chart

- The **MaxGapTime** property was added to the Pen object of the E3Chart. This property allows specifying the limit time to be considered to create a visual connection between the historical and real time part in the Historical & Real Time Pen.
- Added new properties to the Axe and Legend of an E3Chart, which allow more color customization: **Axis.EnableTextColor**, **Legend.EnableTextColor**, and **Legend.BackColor**.
- Created the **HighlightMaxGapTime**, **MaxGapTimeStyle**, and **MaxGapTimeColor** properties to allow highlighting, if desired, the line which connects historic to real time in the Historical & Real Time Pen, when this connection depends on the value of the **MaxGapTime** property.
- Improved the Pen's status message to help diagnose configuration problems.

## 14.1.7 E3 Tweak

- Added two new configuration options in **E3 Tweak**, **PingRetries** and **PingRequired**.
- Added the log section **Storage** in **E3 Tweak** and its modules **Input**, **Stored**, and **Dropped**. Added also a new item which allows filtering Tags from the section **Storage** which are stored in the log.
- Added an option in **E3 Tweak** to configure the frequency of statistical logs of the REC.
- Added items in **E3 Tweak** to configure statistical logs of processes for modules **E3Admin**, **E3PowerEngine**, **E3Run**, **E3Server**, **IOServer**, **Studio**, and **Viewer**.



**New log configuration items in E3 Tweak**

## 14.1.8 Elipse Power

**Elipse Power** integrates into a single environment all necessary information for the operation process in Power Networks with maximized cost-effectiveness and reliability. Through real-time data acquisition, corporate systems integration, analysis tools and management reports, power operators are able to take the right decisions in a fast and reliable way, promoting network efficiency and minimizing economical and environmental impacts.

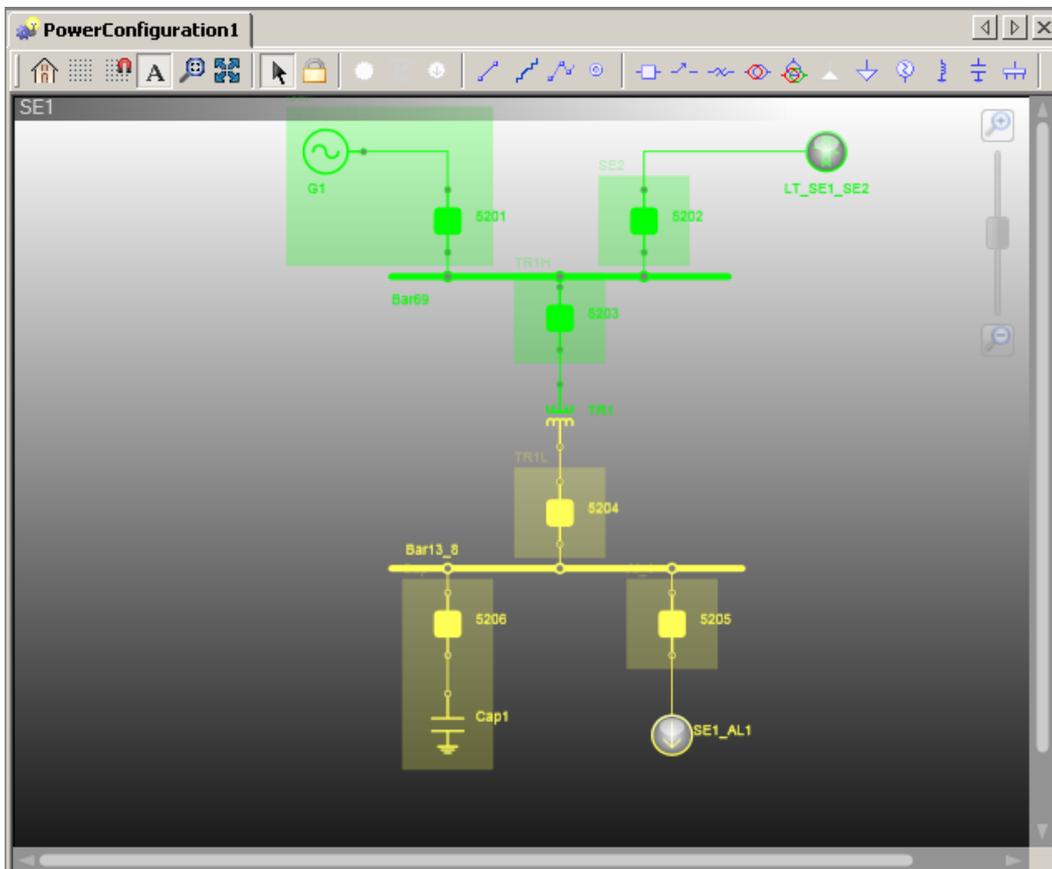
In an ever-growing power network complexity, with market deregulation and other constraints, Elipse Power was built with the always-changing paradigm in mind, where SmartGrid applications can be a reality.

**Elipse Power** is based on **E3** framework, thus users can work with **E3** applications, as well as using any previous tool knowledge of that software.

### Elipse Power Components

#### Electrical Modeler

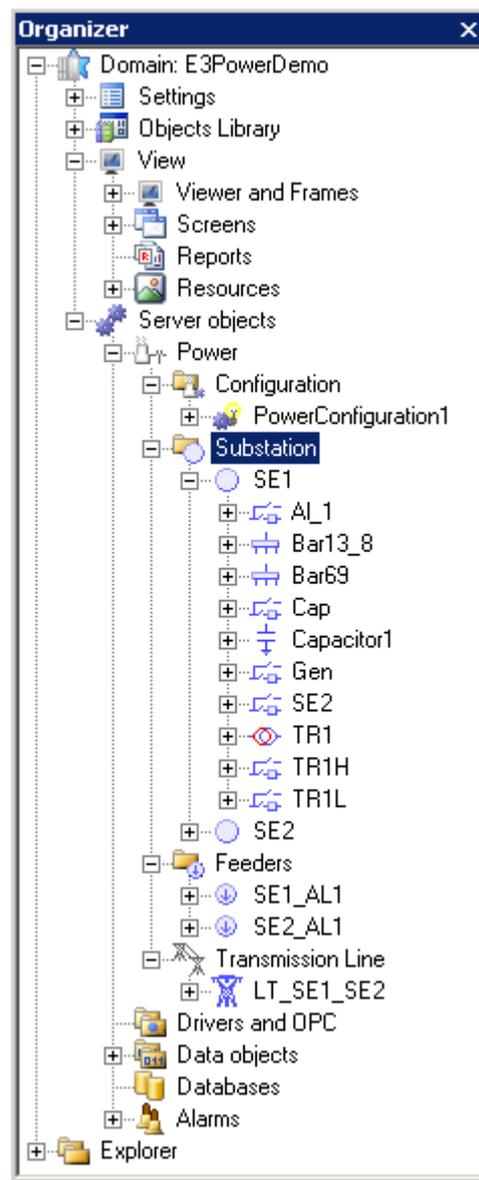
- Defines a network connectivity and parameters, generating a database with all electrical information necessary to execute analysis algorithms.



**Electrical Modeler**

### Data Model Objects

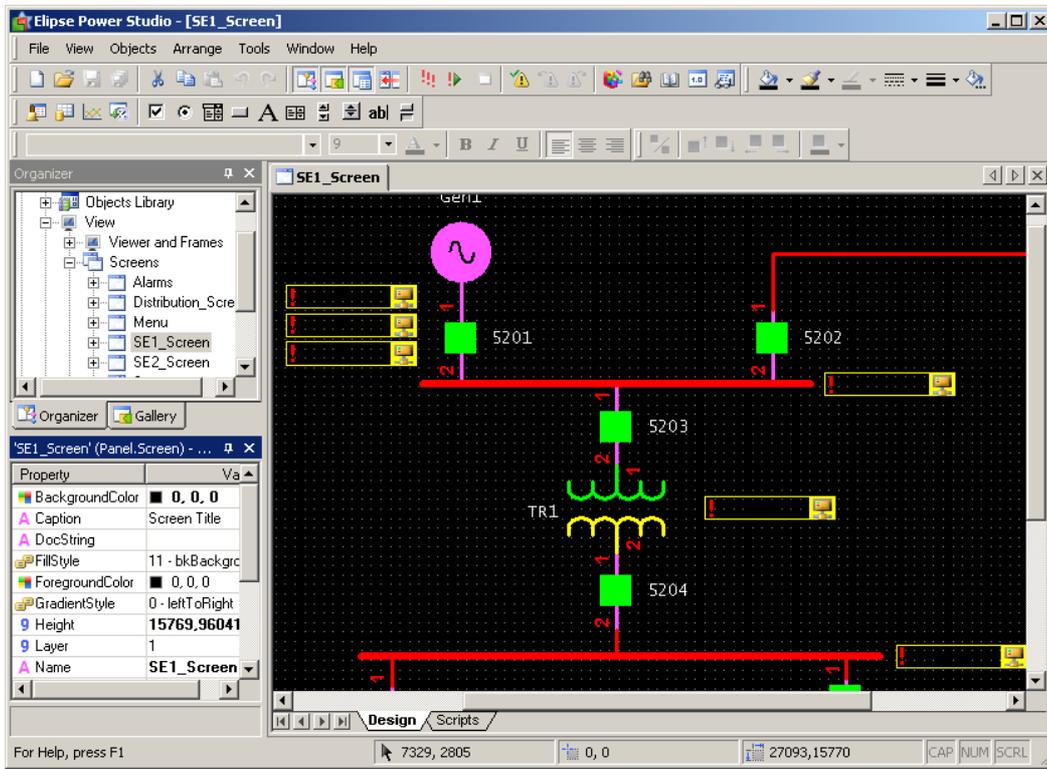
- Organizes the assets' hierarchy in the plant, linking real time data information and power devices, such as Transformers, Breakers, Bays, Switches, etc. It also provides a structure to receive values from other information sources, such as operator entries, calculated data, data from billing systems, data from other Control Centers, etc.



**Organizer**

### Screen Objects

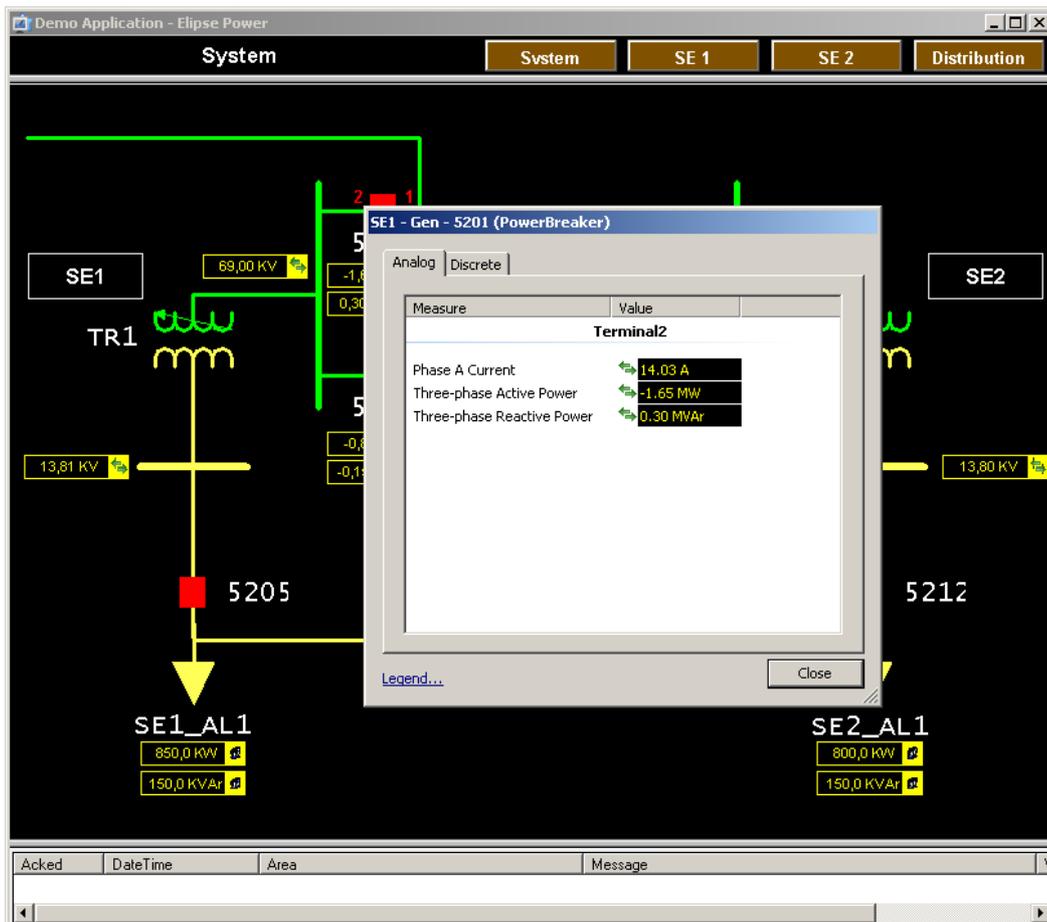
- **Elipse Power** automatically generates SCADA screens representing a substation, a circuit or an entire network by using object libraries that can be changed to address specific needs. Those screens can be modified and re-imported later, and only the affected components are changed.



Screen objects

## PowerExplorer Window

- The PowerExplorer window is available at run time and displays all analog and discrete measurements of the selected object, allowing to change values for **Operator**-type sources.



PowerExplorer

## Electrical Study Modules

With modules designed to fit the needs of each type of installation, **Elipse Power** applies advanced algorithms to provide valuable information, allowing to keep the network up in an efficient way and with great availability.

## Topology Processor

- Responsible for processing and building the system's topology, detecting existing paths in the electric power network. It enables users to analyze which elements are energized or not, by coloring components according to the voltage level. It also calculates online indicators such as the number of de-energized customers and unattended load.

## Power Flow

- Calculates the electric status, voltage module and angle for each node, active or reactive power flow circulating in network branches, and active or reactive power injected or absorbed by the nodes. This algorithm enables the execution of simulations of control actions over an electric power system, such as transformers tap change, generation and loads increase or decrease, capacitor and reactor banks turn on or off.

## Load Shedding

- Module responsible for preventing critical industrial process, which have redundant power energy supply systems, to be interrupted during the occurrence of unplanned events, avoiding losses relative to start-up time and raw material reprocessing. For this, the shedding module calculates the exact amount of low priority loads which must be instantaneously shut down when unplanned events occur, adjusting the power system load to the capacity of the remaining provider system and avoiding transient stability and overload problems of the provider system. This module is capable of working with standard IEC 61850 protection relays, using GOOSE messages to detect events which need a shedding action, such as opening a transmission line, turning off generator units, or a frequency deviation in the electric island, as well as commanding the immediate shut down of the selected loads for shedding.

## 14.1.9 Installation

- Updated the installer of HASP drivers (haspdinst.exe) to version 5.95.
- Integrated EELogs v4.5 Build 18, which corrects performance problems detected on event generation, after changes on the security level that **Windows 7** and **Windows 2008 R2** systems specify for access to certain users to object on the operating system.
- Installers were modified to support the **Windows 7** operating system.
- Added the Tutorial in Spanish to the installer e3full-x86-esn.exe.
- The name of the folder which contains files referring to the protection device was modified from **HInstall** to **HASP**.
- The former **E3 Tutorial** was removed from **Elipse Power** installers.
- Updated the digital certification used in **Elipse Power** installers and binary files (exe, ocx, dll, etc.). The new digital signature expires on 9/13/2011.

## 14.1.10 Interface

- The property list of **Elipse Power Studio** now displays a button to open AppBrowser when the **Source** property of the Alarm Source object is selected.
- The read-only cells of grids, such as the ones in Drivers and Data Server views and some windows such as Links and Property Lists, are not editable anymore. It is not allowed typing values anymore, which would be discarded because it was a read-only cell.
- The windows with a variable number of buttons, like the ones displaying the options **Yes To All** or **No To All**, have been standardized according to layout recommendations from Microsoft.
- Changed the color view in the result list of the Search and Replace window. Colors now are displayed in RGB and the column does not show an icon with the data type anymore.
- Changed the behavior in searching or replacing dates and times, allowing searches and replaces only for dates, times, or both.
- Added two buttons in the **Alignment** toolbar of **Elipse Power Studio**, **Horizontal Flip** and **Vertical Flip**.



Horizontal and vertical flip options

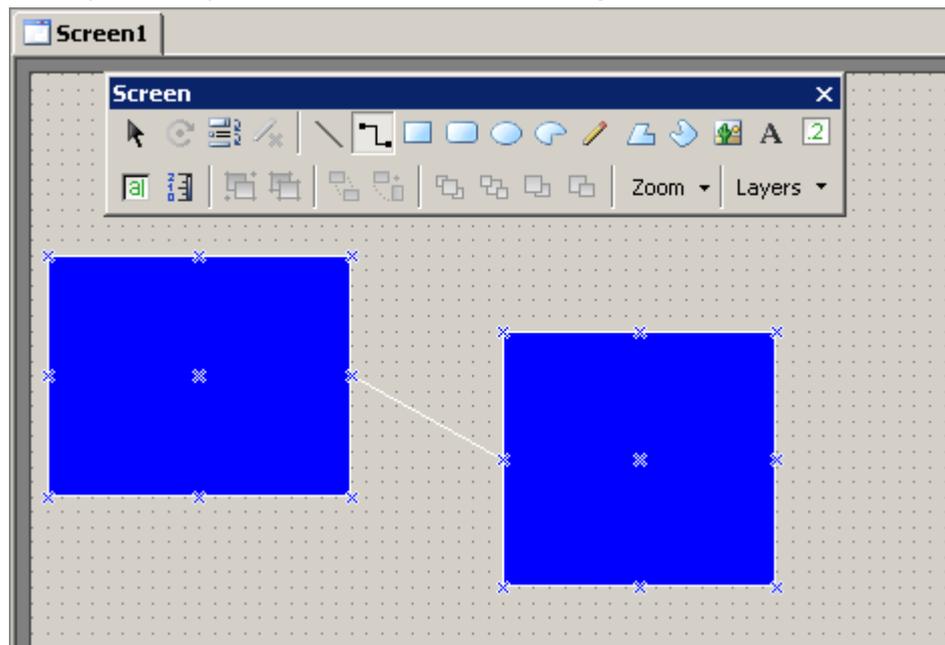
- The Property List of **Elipse Power Studio** now displays the documentation of the selected property. Besides, it also displays the text "null" or "empty" italicized when a **Variant** property has a type **VT\_NULL** or **VT\_EMPTY**, respectively.

Property	Value
BackgroundColor	212, 208, 200
Caption	Screen Title
DocString	
FillStyle	11 - bkBackground
ForegroundColor	0, 0, 0
GradientStyle	0 - leftToRight
Height	<b>14578,5416666667</b>
Layer	1
Name	<b>InitialScreen</b>
PathContainer	
PathName	InitialScreen
PathVolume	C:\Program Files\Elipse Softw...
PictureFile	
PicturePosition	0 - Center
TabStop	False
Width	<b>21166,6666666667</b>

BackgroundColor: Returns/sets the screen background color

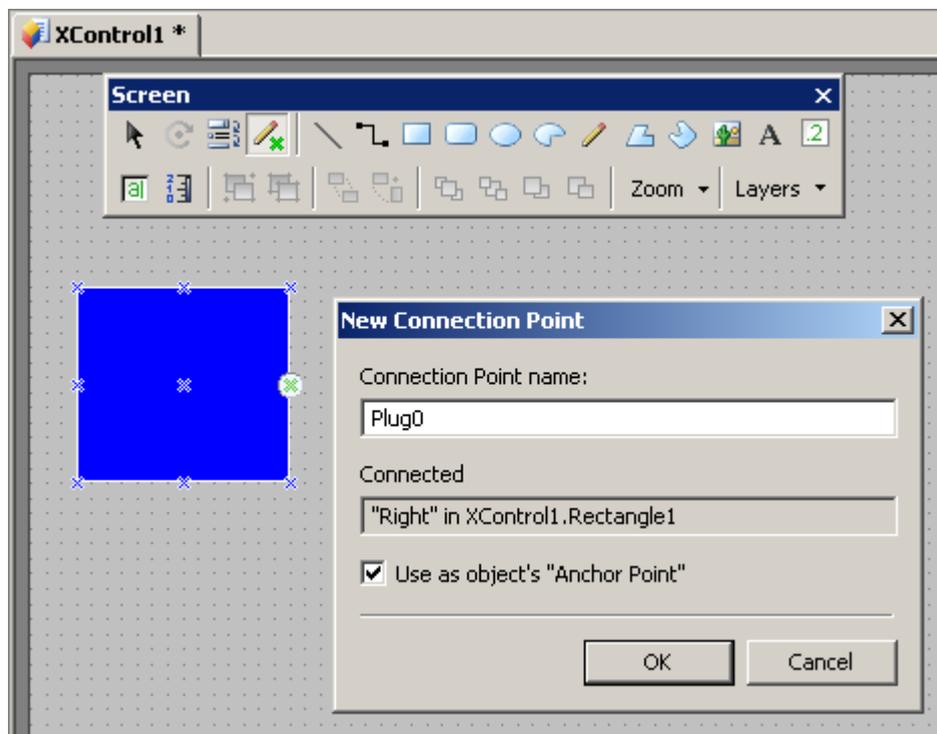
#### Documentation of the selected property

- Implemented the Connector object in the Screen editor. This object allows connecting points among two or more Screen objects. Connections among objects are displayed during drag and drop operations in the Screen editor. Besides, the implementation of native Screen objects has been revised, to ensure the correct positioning of Connection Points of objects in any combination of rotation, resizing, reflection, or distortion.



#### Connector object

- Added a tool for editing Connection Points for XControls.



**Editing Connection Points in XControls**

- Changed color formatting in the EcoListCtrl, from hexadecimal to RGB. It was also improved color editing, allowing input of values in RGB or numbers.

### 14.1.11 OPC Client

- Created the **WriteFeedbackMode** property in the OPC Driver object. The behavior is similar to the I/O Driver, except in the case of asynchronous writings and the **WaitNextRead** and **TrustWriteSuccess** modes.

### 14.1.12 Other Implementations

- Reduced the basic memory usage of native Elipse Power objects, meaning a general reduction of 5% of RAM memory used by **E3Run** at run time.
- The default **E3** grid control (EcoListCtrl) was prepared for better supporting of cut, copy, and paste operations of the configuration editor of **Elipse Power** objects.
- The elements of lists in the WatchWindow and DomainBrowser windows now are displayed in alphabetical order.
- Implemented a statistical log for REC connections and an individual statistical log of processes. Logs may have their frequency controlled by Windows Registry and may be completely shut down (frequency 0).
- SmartHeap (memory management library used by **Elipse Power**) has been updated from version 8 to version 9.01.
- Created an **E3GetActor** method in the Application Server object. This method returns the logon of the user who commanded the current **E3Run** operation. If **E3Run** is not currently handling an operation generated by another process, then returns "System". If there is no user logged on in the process which generated the current operation, then returns "Anonymous".

### 14.1.13 Playback

- E3Alarm and E3Playback now use the same icons to represent alarms: active (red), active acknowledged (red with a green check), inactive (yellow), inactive and acknowledged (green with a green check), and disabled (gray).

Ack...	Active Condition	Enabled	Category	DateTime	Message	
No	No	Yes	Level	12/23/2009 10:29:27 AM	Normal	6
No	Yes	Yes	Level	12/23/2009 10:30:02 AM	High	7
No	No	Yes	Level	12/23/2009 10:30:08 AM	Normal	6
No	No	Yes	Level	12/23/2009 10:30:09 AM	Normal	1
Yes	Yes	Yes	Level	12/23/2009 10:30:09 AM	Low	1
No	No	Yes	Level	12/23/2009 10:30:23 AM	Normal	5
No	Yes	Yes	Level	12/23/2009 10:30:24 AM	Low	2
No	No	Yes	Rate of Change	12/23/2009 10:30:24 AM	Normal	3

#### New alarm icons

- Improved the time for assembling Playback database. The queries which checked the amount of data available in each table were simplified to check only the date interval that the table contains. For a good performance, it is mandatory that all table have at least one index starting by the **E3TimeStamp** field.

### 14.1.14 Protection Device

- Added support to product keys of type **Softkey** (Hasp SL) in **Elipse Power**.
- Implemented new licenses in **Elipse Power** to allow **IHM**, **LITE**, and **Gateway** versions.
- The product key's access library (Hasp SRM) in **Elipse Power** was updated to version 5.10.
- Integrated version 5.3 of HKCustomer to **Elipse Power** installers.

### 14.1.15 Query

- The default value of the **CursorLocation** property of a Query object was changed to **clClient**.

### 14.1.16 Remote Domains

- Improved logs for client Remote Domains, indicating time between retries and the name of the servers associated to each connection.
- Improved performance of **GetObject** method, when called from **Elipse Power Viewer** or from Remote Domains.

### 14.1.17 Script Editor

- Added new global methods to **Elipse Power**, available on links and scripts: **E3Format**, **Iif**, **Choose**, **BShr**, **BShl**, **GetBit**, **SetBit**, **OPCIsGood**, **OPCIsUncertain**, **OPCIsBad**, **OPCGetLimit**, **OPCSetLimit**, **OPCGetSubStatus**, **OPCSetSubStatus**, **OPCGetQuality**, **OPCSetQuality**, **OPCGetVendor**, **OPCSetVendor**, **OPCMakeQuality**, and **GetComputerName**. The following methods are only available in scripts: **GetLocalTime**, **GetLocalTimeUTC**, and **GetCurrentWindowsUserName**.
- Added an optional parameter to the **AddObject** method to inform a name for the object.
- The Script Editor does not color expressions or word started by **REM** anymore.

### 14.1.18 Storage

- Storage has been revised and several improvements were implemented. Among them, a new log section in **Elipse Power** was created, called **Storage**, which allows debugging values that entered the Storage algorithm and which values were sent to the Database.
- A new field type has been added to Storage, **Integer**. Just like fields of type **Bit** and **Text**, the **Integer** fields are not submitted to the compressing algorithm of the Storage.

Name	Source	Type	MinRecTime	MaxRecTime	Scan	Dead band	Unit
Field	Driver1.Tag1	0 - Double	0 ms	3600 s	3600000 ms	1	0 - dbPercent
Field	Driver1.Tag2	0 - Double	0 ms	3600 s	3600000 ms	1	0 - dbPercent
Field	Driver1.Tag3	1 - Bit	0 ms	3600 s	3600000 ms	1	0 - dbPercent
		2 - Text					
		3 - Integer					

### New Integer data type

- Now users can configure empty Storage objects (without fields) to allow querying data generated by other applications.
- A new parameter was added to Storage fields, **ScanTime**, in milliseconds. Therefore, the following changes were performed:
  - Added the **ScanTime** property (defined in milliseconds) to the StorageField object.
  - Added an optional parameter *ScanTime* to the **CreateNewSession** method of the Storage object.
  - Added an optional parameter *ScanTime* to the **AddField** method of the StorageSession object.
- Three new attributes are available in the attribute reading query of the Storage, **Size** (10), **VARTYPE** (11), and **ScanTime** (12).
- Added a new field in the "xxx\_Fields" tables, **FieldScanTimeMs**.
- Storage now simulates a scan of Tags which are not varying, feeding data to the compressing algorithm and making it to be sent to the database quickly (the simulated scan only starts after the Tag remains more than one minute without receiving any variation).
- Storage now fills in records of **MaxRecTime** between two values in case the timestamp difference between them is greater than **MaxRecTime**.
- A timer was created to flush after 2 (two) seconds the value which remains in cache in the timestamp filter of the Storage.
- Created two new methods in the field collection of the Storage. **AddField**, which adds a field to the collection, and **RemoveAll**, which removes all fields.

## 14.1.19 Users

- The *ActorID* parameter of several methods and events now assumes the current **Eclipse Power Viewer** user in case it is omitted. The affected methods are:
  - Alarm Server
    - **AckArea**
    - **AckAllAlarms**
    - **LogTrackingEvent**
  - Alarm Source
    - **Ack**
  - Power Command Unit
    - **Operate**
    - **Select**
    - **Cancel**
    - **DoAbort**
- The affected events are:
  - I/O Driver
    - **OnTagWrite**
  - OPC Driver
    - **OnTagWrite**
  - Power Command Unit
    - **OnOperateFinished**
    - **OnSelectFinished**
    - **OnCancelFinished**

- **OnSelect**
- **OnCancel**
- Power Configuration
  - **OnCommand**

## 14.1.20 Viewer

- Created two new methods in the Viewer object, **GetMouseX** and **GetMouseY**, to return the X and Y position of the mouse (referring to the whole computer screen), and two new methods in the Screen object, **FromPixelX** and **FromPixelY**, which convert values from Pixel to Himetric. Added a note in the description of the **GetMouseX** and **GetMouseY** methods of the Viewer object, alerting for script failures in situations where the current mouse position cannot be determined.
- Implemented in the Viewer object the **ViewerLanguageId** property, which informs the numerical code of the Viewer language or WebViewer that is executing.

## 14.1.21 WebViewer

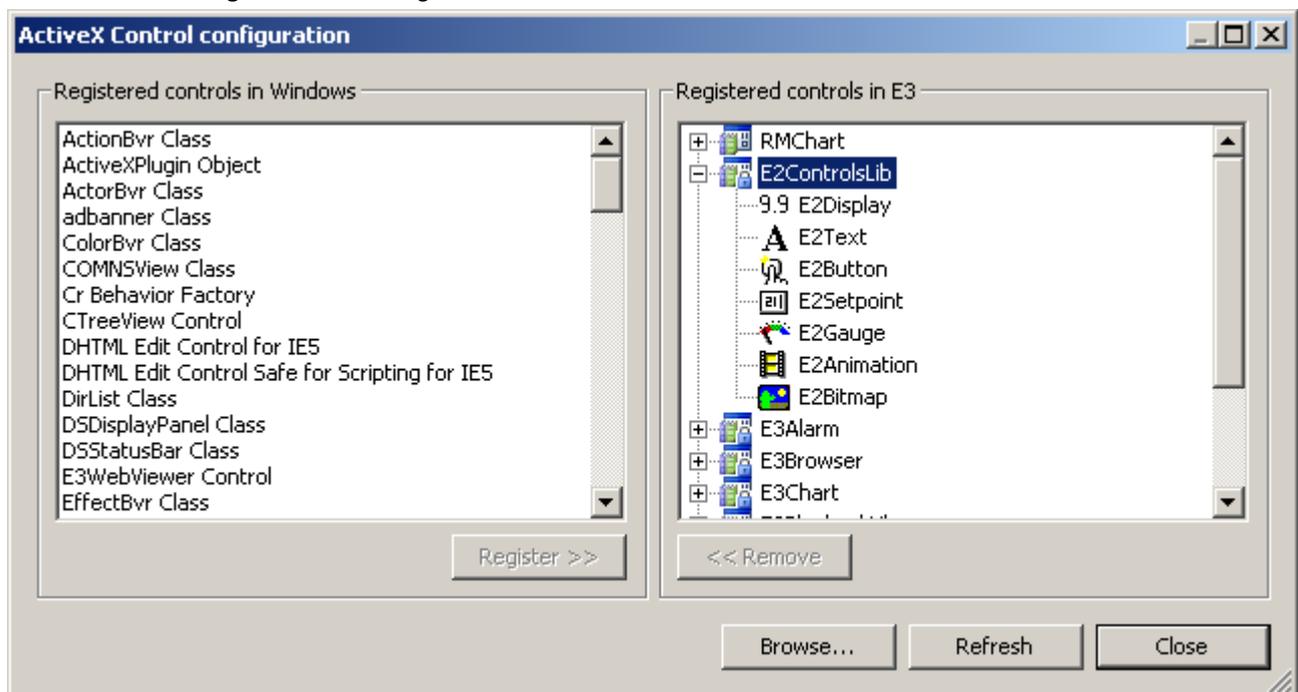
- Added the **URLToLoad** property in the **WebViewer**'s download ActiveX, which starts with "e3web2.asp" as the default value, and if it is changed by the user then loads, or navigate to, the new configured value. This property can be read and written.

## 14.2 Fixed Bugs

This section contains bugs fixed in version **3.5** of **Elipse Power**.

### 14.2.1 ActiveX

- Corrected a problem with a class registered by the user not showing on the list to be inserted in **Elipse Power**, nor showing any registry error message. For this, the window Add ActiveX was redesigned, aiming to make it easy to register new controls, as well as viewing the ones already loaded in **Elipse Power**. This window was renamed to ActiveX Control Configuration. *This bug occurred since v1.18.147.*



**ActiveX Control Configuration window**

### 14.2.2 Alarm Server and Alarm Configuration

- Corrected the behavior of the **ActiveNackAlarms** property, which remained in True when the Alarm Source object was disabled (property **AlarmVerify** equal to False), making the NACK counters of the Areas to remain incorrect. *This bug occurred since v3.2.90.*

## 14.2.3 AppBrowser

- Modified the behavior of the AppBrowser to not display folders of the container object, which appears repeatedly on top of the object tree. This avoids, in some cases, generating useless scripts at run time. *This bug occurred since v2.0.38.*
- Improved the behavior of the AppBrowser when generating script expressions for access to objects inside XObject definitions. Thus, it is not suggested anymore the access to other child of the XObject using expressions such as **Parent.Parent.Parent.Item()**, when could be simply used **XObject.Item("")**. *This bug occurred since v2.0.79.*
- Corrected the way the AppBrowser worked when used to select object for an ElipseX property. Now this mode takes into account the correct context of the object. Also, the object itself which contains the property does not appear in AppBrowser anymore. *This bug occurred since v2.0.38.*
- The **Paste** option of the AppBrowser now is disabled in cases where it is useless. Besides, properties and methods of folders do not appear anymore in cases where they are not supposed to appear. *This bug occurred since v2.0.38.*

## 14.2.4 Database

- Corrected a problem with the management of connections with SQL Server and Access database, which made valid Formula connections to be discarded, generating an excessive consumption of resources, and also preventing the **SaveFormulaValues** and **SetValueData** methods of the Formula object to work, and may lead to GPFs in the **E3Run** process. *This bug occurred since v3.2.217.*
- If a Database connection fails, now **Elipse Power** does not consume the database operation queue anymore, until connection is successful. In addition, any connection failure leads to using a reconnection policy, or waiting time. *This bug occurred since v1.18.147.*
- Corrected a failure in the processing of .e3i and .e3o files larger than 4 GB. *This bug occurred since v2.0.35.*

## 14.2.5 Demonstration Application

- Corrected texts and formatting of the **Elipse Power** Demonstration Application. The multi-language feature was extended to all Screens and scripts. *This bug occurred since v1.21.67.*

## 14.2.6 Documentation

- Corrected formatting and displaying problems with links in Elipse Power documentation in PDF documents included in the **Downloads** section of **Elipse Software** website. *This bug occurred since v3.2.242.*
- Added a chapter in all **Elipse Power** manuals with search tips for CHM documents. *This bug occurred since v3.2.115.*
- Corrected the default value of the **EnableReadGrouping** property of the I/O Driver object in the item **Drivers - I/O Driver - Methods** on **Elipse Power Reference and Scripts Manual**. The correct default value of this property is True. *This bug occurred since v2.0.135.*
- Corrected the examples of use of the **LoadFormulaValuesQuiet** method of Formula and Viewer objects on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.22.30.*
- Added descriptions to the **RenameValue**, **SaveFormulaValues**, **SetUnitData**, and **SetValueData** methods of the Formula object on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.2.140.*
- Corrected the description of the **Query** method of the Report object, to exclude the reference to the **SourceQuery** property, which is a private property of the Report. *This bug occurred since v1.20.418.*
- Corrected the description of the **AllowAckSelected** property of the E3Alarm object and the name of the chapter about User Libraries on **Elipse Power Reference and Scripts Manual**, to match **Elipse Power User's Manual**. *This bug occurred since v1.21.150.*
- Corrected example scripts of the **AddObject** method and the **Application** and **Links** properties, all from the chapter **Programming in Elipse Power**, on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.2.151.*
- The **FillStyle** property now is described only in the properties of the Screen object, containing all values and restrictions for all Screen objects. *This bug occurred since v1.22.37.*
- Added descriptions for the **CommErrorBkColor**, **CommErrorText**, **CommErrorTextColor**, and **EnableCommError** properties of the Viewer object on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.21.144.*
- Added to **Elipse Power Reference and Scripts Manual** the description of the **nRetries** property of the Database object. *This bug occurred since v3.0.218.*
- Added the description of the **AboutBox** method of the E3Alarm object on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.21.109.*

- Added the description of the **AboutBox** method of the E3Browser object on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.21.109.*
- Added the description of the **Retentive** property of the Property object of an XObject on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v3.2.151.*
- Added descriptions for several properties of the IOFolder, OPCGroup, DrawGroup, DynamicRotate, and XMethod objects, and also properties common to Screen objects. *This bug occurred since v3.2.140.*
- Added the value corresponding to the option of centering the window (2048) in the description of the **Flags** parameter of the **SetFrameOptions** method of the FrameSet object, on **Elipse Power Reference and Scripts Manual**. *This bug occurred since v1.21.123.*
- Added a **Locate** button on the toolbar of CHM files, which allows locating the selected topic in the **Search** tab during a search. *This bug occurred since v3.2.131.*
- Replaced the figure displaying a Multiple Connection in the chapter **Links** of **Elipse Power User's Manual**, to a more representative figure of this type of connection. *This bug occurred since v3.2.136.*
- Corrected the description of the functionality of the field **Ping Addresses to check network integrity**, which is not quit immediately when detecting network interface problems, but enter the **Standby** mode. *This bug occurred since v1.20.364.*
- Corrected the description of the animation options of menus in **Elipse Power Studio** on **Elipse Power User's Manual** to include the **Default** item, default for Windows, to differentiate from the **None** option, default for **Elipse Power**. *This bug occurred since v2.0.124.*
- Added direct links to events, methods, and properties on **Elipse Power Reference and Scripts Manual** which are referenced on **Elipse Power User's Manual**. *This bug occurred since v3.2.131.*
- Added information on **Elipse Power User's Manual** about the need of a specific protection device license to use **Elipse Power** as an OPC server. *This bug occurred since v3.0.233.*
- Added a description of the procedures to enable ports on **Windows XP**, **Windows Vista**, and **Windows 7** Firewall on **Elipse Power User's Manual**. *This bug occurred since v2.5.28.*
- Corrected the description of the item **Query Object** in the chapter **Reports** of **Elipse Power User's Manual**. *This bug occurred since v1.20.418.*
- Corrected texts in several chapters of **Elipse Power User's Manual**. *This bug occurred since v3.2.131.*
- Corrected the description of the measurement unit of the **MaxRecTime** column, in the chapter about **Storage Configuration** on **Elipse Power User's Manual**. *This bug occurred since v1.21.135.*

## 14.2.7 Domain, E3 Server, and Hot-Standby

- Corrected a locking in the E3 Server, which could happen when using an asynchronous link creation in Remote Domains. *This bug occurred since v3.2.81.*
- Increased the limit of virtual memory of all **Elipse Power** processes, from 2GB to 4GB. This change specifically affects E3 Admin, E3 Server, I/O Server, and Viewer. *This bug occurred since v1.18.147.*
- Fixed GPFs that may occur in E3 Server when **Elipse Power Viewers** called methods **IsUserMemberOfGroup** or **GetFullUserName**. *This bug occurred since v1.18.147.*
- Applications with several drivers no longer take a long time to start up. *This bug occurred since v3.5.180.*

## 14.2.8 Drivers and I/O Server

- Corrected a memory leak in the file Et32b.dll. This leak may affect any Driver working with lists of values, but it was noticed first on DNP3 Driver with callbacks enabled.
- The configured dead band in Block Elements now works. *This bug occurred since v1.18.147.*
- Corrected a memory leak of a few KB which occurred in **E3Run** and **Elipse Power Studio** when a Driver was activated and deactivated. *This bug occurred since v1.18.147.*

## 14.2.9 E3 Admin

- Corrected a problem of displaying the same message twice when using a protection device with an expired license. *This bug occurred since v3.0.372.*
- Corrected the behavior of the item **Options** of the menu **Domain** in E3 Admin, which was always disabled in case of an **Elipse Power Studio** license remotely borrowed. *This bug occurred since v3.0.348.*

## 14.2.10 E3 Tweak

- Included in **E3 Tweak** an option to control the module **IOServer** in the log section **Track**. *This bug occurred since v3.1.32.*
- Corrected the path of the registry key displayed in **E3 Tweak** interface on 64-bit operating systems. *This bug occurred since v3.0.30.*
- Now **E3 Tweak** considers the range of values of type **DWord** when editing items of numeric type. *This bug occurred since v3.2.196.*
- Corrected a problem when validating numeric values which occurred in cases where a value outside the default range was used to indicate that the item is disabled. *This bug occurred since v3.2.196.*
- Corrected problems on the registry key description and creation of the item **Filter enabling**, the **COMFilter** option, of **E3 Tweak**. *This bug occurred since v3.1.30.*

## 14.2.11 E3Alarm

- In the property window of E3Alarm, the combo box to select the Alarm Server was replaced by an edit box with a button to open the AppBrowser, thus avoiding a problem with viewing Alarm Servers which were created inside several nested folders. *This bug occurred since v1.22.13.*

## 14.2.12 E3Chart

- Because of performance issues, dotted Pens with width 1 (one) are now drawn the same way as Pens with width zero. *This bug occurred since v3.2.68.*
- Fixed a problem causing a real time part of a Real Time & Historic Pen not displaying if the historic part query was incorrectly set. *This bug occurred since v3.1.189.*
- Fixed a problem when using complex field names in Storage fields with E3Chart Pens. *This bug occurred since v2.5.15.*
- Fixed a GPF in Historic Pen expressions. *This bug occurred since v3.2.89.*
- Fixed a problem in E3Chart causing the historic part of a Real-Time Pen to be plotted in certain configuration combinations. *This bug occurred since v3.1.189.*
- Starting an E3Chart query is now asynchronous, avoiding **Eclipse Power Viewer** locks in case a Database connection is slow. *This bug occurred since v1.19.87.*

## 14.2.13 Elipse Power

- Fixed the value informed by the Load Shedding module, which displayed the total amount of load to shed by scenario with a negative signal. *This bug occurred since v4.0.37.*
- Fixed a memory leak on Load Shedding module, which occurred when calculating system's power flow. *This bug occurred since v3.5.304.*

## 14.2.14 ElipseX Libraries

- Corrected a problem with indirect links among ElipseX properties of type **Object**, which may not connect, depending on the order in which the properties were declared. *This bug occurred since v1.20.282.*
- Corrected the connection of links in ElipseX properties which referenced other properties of type **Link** of the same ElipseX. *This bug occurred since v1.22.60.*

## 14.2.15 Expressions

- Corrected the behavior of the operators  $\geq$  (greater or equal than) and  $\leq$  (less or equal than) in **Eclipse Power** expressions, which returned 1 (one) instead of -1 (minus one). *This bug occurred since v2.5.93.*

## 14.2.16 Installation

- Added the Release Notes file in Spanish in the installation e3full-x86-esn.exe. *This bug occurred since v3.2.242.*
- Corrected Spanish translation problems in E3Alarm and Alarm Server objects, and in **Eclipse Power Studio**.
- Tested the compatibility of RMChart with Internet Explorer 6, 7, and 8. In IE8 there is a workaround: Access the option **Tools - Internet Options**. In the **Advanced** tab, section **Security**, uncheck the option **Enable memory protection to help mitigate online attacks**. After restarting IE8, a **WebViewer** with an RMChart is correctly loaded.
- Corrected a problem in the installers, which caused a rollback in the installation when the files ped.exe, scrwiz.dll, ped.hlp, htmlr000.htm, htmlref2.htm, index.htm, and vbsref.htm were not present during the configuration of the Microsoft ActiveX Control Pad component. *This bug occurred since v3.0.268.*

## 14.2.17 Interface

- Corrected the positioning of the editor of **Variants** values in cells of default **Elipse Power Studio** spreadsheets, which was overlapping the icon identifying a data type. *This bug occurred since v1.18.147.*
- Corrected the behavior of windows with the message **Do not show this warning again**, when this warning was displayed again even when the check box was checked. *This bug occurred since v3.2.49.*
- Blocked the opening of selection boxes in read-only cells of editing spreadsheets inside **Elipse Power**. *This bug occurred since v3.2.128.*
- Changed the messages of the amount of licenses in the E3 Admin window to agree with singular and plural forms, and simplified the messages in case of no licenses. *This bug occurred since v1.18.147.*

## 14.2.18 Links

- Corrected a problem which occurred when a row in a Multiple Link was created at run time and the Link of that row got a bad quality. *This bug occurred since v3.2.85.*
- Corrected a GPF which may occur during the handling of reentrant variations of Links. *This bug occurred since v1.18.147.*
- Improved failure logs of sending Link events from **E3Run** to E3 Server, as well as improved the logic of quitting in case of repetitive failures. *This bug occurred since v1.18.147.*
- Corrected a problem with Links using Local Aliases which were not reconnecting correctly. Now, Links which use Local Aliases and are created disconnected, behave as Links which were created connected, that is, they are created and maintained without considering the Domain as part of their path. *This bug occurred since v3.1.203.*

## 14.2.19 OPC Driver

- Corrected the behavior of the **OnTagWrite** event of an OPC Driver, which was not generated when performing asynchronous writings if the communication with the server used the OPC DA 1.0 standard, or if the asynchronous writings failed immediately. *This bug occurred since v3.2.95.*

## 14.2.20 Other Corrections

- The loading or closing time of very large applications, which have many objects in the same folder, was greatly improved. *This bug occurred since v1.18.147.*
- Corrected a translation problem in **Elipse Power Studio**, from "Covert to symbol" to "Convert to symbol".

## 14.2.21 Remote Domains

- Improved the limit time and implemented a heartbeat during the REC connection of Remote Domains and Hot-Standby, as well as improved the limit time of connection of **Elipse Power Studio** with E3 Server. This corrects a problem with the Client Domain not reconnecting to the Server after several disconnections, due to network problems.
- Corrected a problem in reconnecting Remote Domains when the Client Remote Domain delayed several minutes to update or start the Domain. *This bug occurred since v3.0.201.*
- Corrected a problem in the threads for reconnecting and sending data from Remote Domain clients, to ignore Windows message floods, which makes the Client Remote Domain to fail on reconnection. *This bug occurred since v3.0.201.*
- E3 Server no longer hangs when there are too many accesses to a Remote Domain from which alarms are viewed. *This bug occurred since v3.0.201.*
- Improved the performance of the **GetObject** method when called by a **Elipse Power Viewer** or by Remote Domains.
- Revised the management of alarm subscription connections in E3 Server, fixing failures (GPFs) and increasing asynchronous operations. *This bug occurred since v3.1.68.*

## 14.2.22 Reports

- Fixed the behavior of the progress window of Reports, which may cause problems on **Elipse Power Viewer's** modal windows. *This bug occurred since v2.0.91.*
- Fixed E3Chart's behavior, which was displayed empty when printed isolated on a Report page. *This bug occurred since v1.22.1.*

## 14.2.23 Script Editor

- Corrected a problem when enabling or disabling texts in the window for editing user events via the Link Editing window. *This bug occurred since v3.2.46.*
- Corrected the appearance of the calendar opened by the **ShowDatePicker** method in computers with a changed screen DPI. The screen appeared truncated, displaying only days from Sunday to Thursday.
- Corrected a bug in the Search and Replace tool of the Script Editor, which returned odd results when there were empty rows adjacent to the rows containing the text searched. *This bug occurred since v3.1.5.*
- Corrected a problem in the Search and Replace tool of the Script Editor, which counted as replaced the texts found at the first and last rows of the script, which cannot be modified. *This bug occurred since v2.5.110.*
- Corrected leaks in the USER and GDI objects in **Eclipse Power Studio** when using the Search and Replace window of the Script Editor. *This bug occurred since v2.5.94.*

## 14.2.24 Storage

- Now users can manually add data, using **Storage.CreateNewSession**, to a Storage object without configured fields. *This bug occurred since v2.5.102.*
- The compression algorithm of the Storage now discards consecutive data which have the same timestamp, using only the last value of a sequence of values with the same timestamp. *This bug occurred since v1.20.354.*
- Corrected the behavior of **MinRecTime** in the compression algorithm of the Storage, which in certain situations was recording data without respecting the time configured in **MinRecTime**. *This bug occurred since v1.20.192.*
- Corrected a problem in the compression algorithm of the Storage which made the linking record of **MaxRecTime** not being recorded in some situations, or recording two records when reaching **MaxRecTime** instead of one. *This bug occurred since v2.5.102.*
- Corrected a problem in the **SampledData** Query of the Storage which failed if at least one of the Query Tags had duplicated data, more than one value at the same timestamp, at the beginning of the Query period, or at the end of the period. *This bug occurred since v3.0.150.*
- Corrected a problem in the compression algorithm of the Storage, which made the linking record of **MaxRecTime** being generated with an incorrect timestamp in certain situations, may leading to incorrect data interpolations. *This bug occurred since v2.5.102.*
- Corrected a problem in the Storage, which lead to a failure when creating tables with more than 100 fields in Access databases. *This bug occurred since v1.21.43.*
- Corrected a problem which deleted Storage fields in the database if there were duplicated fields in the Storage configuration. *This bug occurred since v1.21.43.*
- Performed several improvements in the Storage to avoid creating duplicated fields in the database, or preventing duplicated data to be recorded in a Storage field. Logs generated by the Storage were improved to provide a more accurate diagnosis of configuration errors and problems found at run time. *This bug occurred since v1.21.43.*
- Corrected a problem when updating Stored Procedures used by the Storage in SQL Server, which were always deleted and recreated as soon as the Database Server was activated, which could lead to problems on queries from other Database Servers using the same database. *This bug occurred since v1.21.26.*
- Fixed a problem occurring when Storage was executed with more fields than the available licenses, which lead the first field of each table to be erased, and the last field to be duplicated. *This bug occurred since v3.5.285.*

## 14.2.25 Studio

- The Domain Checker now performs a name consistency for Database Servers and the table of the Alarm Server object. *This bug occurred since v1.18.147.*
- Added support for Undo operations when changes are performed through the **Replace** tool. *This bug occurred since v1.20.382.*
- Corrected a problem with searching or replacing properties of type Color, where a value inside the color were found and replaced, which would change the final color of the property. For that, the behavior of the search and replace tool was modified to identify the data type of the search: **String**, **Date**, **Color**, **Boolean**, or **Number**. *This bug occurred since v1.20.382.*
- Corrected a message of insufficient memory displayed in **Eclipse Power Studio** when Search or Replace is performed in objects which cannot be loaded. *This bug occurred since v1.20.263.*
- Corrected a problem in **Eclipse Power Studio** when replacing values in fields already deleted, which may lead to a GPF. *This bug occurred since v1.21.80.*

- Fixed a problem which caused **Elipse Power Studio** to unexpectedly quit when pressing ESC in the Filter Class Configuration window of Importing and Exporting objects to CSV (**Export - Advanced - Filters - Change**). *This bug occurred since v2.5.63.*
- Corrected a memory leak in Pick objects. *This bug occurred since v1.20.22.*
- Corrected a problem when mirroring Arc objects when they are already rotated. The drawing of the Arc rotated and mirrored now is correct. *This bug occurred since v1.18.147.*
- Corrected a GPF in **Elipse Power Studio** when displaying the Property List or the Link window and the name of an ElipseX property is a special character, such as a Greek letter). *This bug occurred since v1.18.147.*
- Now **Elipse Power Studio** asks users if they want to save an unsaved application when Windows is restarted or shut down, or when users log off. *This bug occurred since v1.18.147.*
- Corrected a GPF which occurred in **Elipse Power Studio** when trying to convert a very complex metafile (WMF or EMF file) to a symbol. The conversion process was also improved, which could take seconds, now is nearly instantaneous. *This bug occurred since v1.18.147.*
- Corrected a problem which occurred in windows which allowed moving Splitters. The cursor icon remained the default, while it was supposed to change to horizontal and vertical arrows. *This bug occurred since v3.1.1.*
- Fixed a GPF (stack overflow) which occurred in **Elipse Power Studio** when a large number of objects, such as 5000, of a Screen were selected at the same time. *This bug occurred since v1.18.147.*
- The file msstkprp.dll now is installed and registered in the **System32** Windows directory. The **Font** and **Color** tabs of E3Alarm, E3Chart, and E3Browser objects rely on this file. *This bug occurred since v1.18.147.*
- Corrected a problem when double-clicking values of type Enum in the Property List. In this case, double-clicking was not changing the following value if the numbers were not continuous. *This bug occurred since v1.18.147.*
- Corrected the behavior of auto-incrementing names of **Elipse Power Studio** spreadsheets in several locations where names are not supposed to differentiate upper from lower case. *This bug occurred since v1.18.147.*
- Fixed a problem in **Elipse Power**'s Screen Editor in point editing of Polyline or PolyBezier objects. The operation of creating points was not being undone. *This bug occurred since v1.18.147.*

## 14.2.26 Viewer

- Corrected a problem in the **Application.ESign** method, which did not work if called by certain events (for example, **ComboBox.Change**) on a non-modal screen. *This bug occurred since v1.20.394.*
- Corrected a problem in the **Application.ShowDatePicker** method, which did not work if called by certain events (for example, **ComboBox.Change**) on non-modal screens. *This bug occurred since v1.20.65.*
- Corrected the **ShowDatePicker** and **ShowPickColor** methods to use omitted parameters instead of -1 (minus one) to indicate window coordinates. Negative values may be valid as coordinates in case of more than one monitor. *This bug occurred since v1.20.65.*
- Corrected a memory and handle leaks which occurred at each disconnection on a REC client. *This bug occurred since v2.5.135.*
- Corrected a problem which may lead E3 Server to cancel a **Elipse Power Viewer** or **WebViewer** connection during or after a very large download. Implemented new options in Windows Registry to configure the **ping** that E3 Server sends to clients trying to connect to it. **PingRetries** indicates the amount of retries and **PingRequired** indicates if it is mandatory that the client answers the **ping**. *This bug occurred since v3.0.303.*
- Corrected a problem with the returned value of the **Viewer.ChangePassword** method, which was returning False even when the operation was successfully performed. *This bug occurred since v3.0.115.*

## 14.2.27 WebViewer

- Modified the behavior of E3Downloader to:
  1. Not install or reinstall **WebViewer** when there is another Elipse Power installed, such as **Full** or **Viewer**.
  2. Not install or reinstall **WebViewer** if the current version is equal or greater than the one in the server.
  3. Avoid downloading the installer when there is no need to install **WebViewer**. *This bug occurred since v1.20.319.*



**Headquarters**

Rua Mostardeiro, 322/Cj. 902, 1001 e 1002  
90430-000 — Porto Alegre — RS  
Phone: (+55 51) 3346-4699  
Fax: (+55 51) 3222-6226  
E-mail: [elipse-rs@elipse.com.br](mailto:elipse-rs@elipse.com.br)

**Branch in Taiwan**

9F., No.12, Beiping 2nd St., Sanmin Dist.  
807 — Kaohsiung City — Taiwan  
Phone: (+886 7) 323-8468  
Fax: (+886 7) 323-9656  
E-mail: [evan@elipse.com.br](mailto:evan@elipse.com.br)

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[elipse@elipse.com.br](mailto:elipse@elipse.com.br)



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