Windows

TCI Workflow

TCI Workflow

1 Introduction

1.1 System requirements

The minimum system requirements for using TCI software can be found in the TCI user manual.

1.2 Working with the various TCI interfaces

A description of the various interfaces can be found in the TCI getting started and TCI user manual.
Note: TCI Workflow only supports the USB2DALI and NFC interfaces.

1.3 Assumed knowledge

To be able to use TCI Command Line basic programming skills and a basic understanding of MS-DOS commands is assumed.

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3 Attention points

3.1 General

Before starting TCI Workflow, make sure that the correct interface (USB2DALI or NFC) has been connected to your computer.

When upgrading the Windows Operating System, make sure the connection settings are correct when using software again.

When starting multiple instances of TCI Workflow for parallel configuring, make sure every instance of TCI Workflow uses another interface. The unique id of an interface is shown in the Connection Settings window where the interface port/reader is selected. Also, for the currently selected interface the unique id can be found in the About box and in the tooltip of the connection status indicator in the status bar at the bottom-right part of TCI Workflow.

When multiple devices are connected to a laptop (e.g FEIG interface) it might be that the laptop does not provide enough power to the USB ports. Connect the laptop to the power adapter and change the power profile to “high performance”. If connected devices then still can’t be found, try connecting them through a **powered USB hub**.

When TCI Workflow is running on a laptop. Speed improvements can sometimes be gained by connecting the laptop to the power adapter and changing the power profile to “high performance”.

3.2 DALI

Lighting applications with DALI devices can be seriously affected by the presence/absence of the DALI short address. Make sure the DALI short address is as you expect, after finishing working.

3.3 NFC interface

For NFC setting are three interfaces which can be used for communication (see the user manual): 127101, 127095A.

3.4 Label printer

TCI Workflow supports so called ‘Direct printing’, which means that a specified printer is used to print a label containing the selected label fields after successful

configuration. This functionality however requires that a supported label printer is available on the system where TCI Workflow is running.

The following printers are officially supported:

- Dymo LabelWriter 450 Turbo
- Zebra GX430t

Please use the documents provided with your label printer to properly connect and install the label printer on the system where TCI Workflow is running. After a successful installation on the system which can be tested using the software provided by the printer manufacturer, the printer can be configured in TCI Workflow to be used for direct label printing.

Note! If multiple printers of the same type are connected to the system, Windows will list them with reference numbers. (E.g. Zebra GX430t, Zebra GX430t 1)

4 Starting with TCI Workflow

4.1 Warning

To be sure that the correct feature configuration file is used, it is strongly advised to use the latest version of TCI Engineering to create a feature configuration file.

4.2 Preferences

To change the preferences, you need to start Workflow. In case an error occurred while reading the preferences file on startup, an error screen will appear as shown below.

Changing the preferences can be done by going to the **Tools->Preferences** menu. Please make sure to check all the preferences before saving.

The preferences menu exists of multiple tabs that contain the different preferences options. All preferences can be saved or discarded at once by pressing the **OK** or the **Cancel** button respectively.

4.2.1 General

Within the **General** tab you can:

- change the startup behavior
- select the application language

4.2.1.1 Starting Maximized

When the **Start maximized on startup** is selected the application will start up in full screen mode.

4.2.1.2 Application language

To configure the application language, a selection can be made from a set of pre- defined languages. A restart of the application is required to be able to use the new language setting.

4.2.2 File locations

Within the **File locations** tab you can:

- select the supported devices file
- select the scheduler file location

4.2.2.1 Supported devices configuration

To make sure only supported devices can be configured, a supported devices file can be created. The created file can be placed in any location on the pc and is used by selecting it via the corresponding **Browse** button.

To learn how to use this supported devices file see chapter: **8 The supported devices file**

4.2.2.2 Scheduler file execution

The scheduler file contains a series of DALI commands which were already created using software and saved on the PC. This scheduler file will then be executed on a connected device. The scheduler files gets executed just after writing the feature data to connected device. The scheduler file will be the same for TCI Workflow and TCI Command Line.

TCI Workflow accepts two scheduler file formats: MOS and XML. The created file can be placed in any location on the PC and is used by selecting it via the corresponding **Browse** button.

Note! Scheduler file location can only be selected when using a DALI interface.

4.2.3 Configuration

Within the **Configuration** tab you can:

- Choose between the usage of the local preferences or from a workflow configuration file

- if “Use Local Preferences” is selected then multiple configuration parameters can be changed. Chapter 7 workflow configuration file explains the parameters.
- if “Use workflow config file” is selected, then the workflow configuration file can be loaded.
- select different configuration mode
- allow or prevent duplicate configuration of same device in a batch configuration
- enable or disable displaying the features that are written during configuration

4.2.3.1 Workflow configuration

To configure Workflow, a configuration file template is located in: {Your install location}\ WorkflowConfig-TEMPLATE.txt. This file can be used as a template to create your own configuration file. The created file can be placed in any location on the pc except in the installation location or its child directories. In order to specify the location of the Workflow configuration file, the location can be selected via the corresponding **Browse** button.

To learn how to use this configuration file see chapter: **7 The Workflow configuration file**

4.2.3.2 Specifying the configuration mode

If **Batch size** is selected in the Configuration mode, TCI Workflow allows users to specify the number of devices to configure with a given feature file. TCI Workflow will keep track of progress during configuring. When all devices have been

configured, the current batch will be completed and a new feature file can be selected.

If **Unlimited** is selected in the Configuration mode, an infinite number of devices can be configured with a given feature file. To select a new feature file click **Cancel batch** at any time.

To learn how to enter the batch size see chapter: **5.4 Entering the number of devices**

If **Single shot** is selected in the Configuration mode, an infinite number of devices can be configured with a new file each time. To end single shot programming, click **Cancel batch** at any time.

How single shot programming influences the flow will be explained in each relevant chapter.

4.2.3.3 Prevent duplicate device/driver configuration

If **Prevent duplicate device/driver configuration** is checked, TCI Workflow will check the unique id of a device before configuring it. When the device was already configured in the current batch, a message will be shown indicating that the device was already configured.

Notice! DALI device without unique identifier will NOT support this feature.

4.2.3.4 Display programmed feature(s) during programming/configuration

If **Display programmed feature(s) during programming/configuration** is checked, TCI Workflow will display all features that are written to the device during configuration on the screen.

4.2.4 Label print

Within the **Label print** tab you can:

- enable or disable direct printing
  - select the printer to use for direct printing
  - select the label fields to print on the directly printed label
- enable or disable indirect printing (generating label data)
  - enable or disable specific label data
  - enable or disable including the device identifier into the label data
  - select the label data location

4.2.4.1 Direct printing

If **Direct printing** is enabled, TCI Workflow will print a label containing the selected label fields with its value on the selected printer directly after every driver configuration. To be able to successfully directly print a label, a supported printer must be connected the system and selected in the TCI Workflow preferences. Next to that, at least one label field must be selected in the preferences.

Chapter **3.4 Label printer** describes which label printers are officially supported by TCI Workflow and which information to use to install them on the system.

The **Printer** drop-down lists all available printers on the system and gives the user the opportunity to select the printer to be used for direct label printing. Any known

printer can potentially be used for printing, however TCI Workflow only officially supports the printers as mentioned in chapter **3.4 Label printer**.

The sub-settings can only be used when **Direct printing** is enabled.

Note! A label will not be printed unless the configuration succeeds.

4.2.4.2 Direct printing label fields

If **Direct printing** is enabled, it's possible to specify the label fields to be printed on the label after successful configuration.

When **Feature1** or **Feature2** is selected, the configured AOC output current or Minimum Dim Level (1to10V) can be added to the printed label **only** if AOC feature or MinDimLevel1To10 feature was part of the configuration.

By enabling **Custom field 1** and/or **Custom field 2**, TCI Workflow lets you specify 1 or 2 extra values that will be added to the printed label data.

Note! Only the first 18 characters of the entered custom fields will be added to the printed label data.

To learn how to enter the custom fields see chapter: **5.3 Entering the custom fields**

When **Date** is selected, the actual configuration date is added to the printed label.

If **Device unique ID** is selected, TCI Workflow retrieves the device identifier from the device and adds it to the printed label.

By enabling the **Firmware Version**, the version of the device is added to the printed label.

If the **QR code** is selected, a QR code is added to the printed label containing the device identifier retrieved from the device.

If the **Font Size** is selected, the printed label uses the configured font size.

4.2.4.3 Indirect printing (generate label data)

If **Indirect printing (generate label data)** is enabled and the **Location** field is filled in with a valid folder, TCI Workflow will generate and export label data (after every driver configuration) to this folder.

The generated label data is stored into a comma separated value file. The filename is constructed using the device name and the date and time the label data was

generated. For detailed information about the content of the label data file see chapter: **10 Label data file contents**

The sub-settings can only be used when **Indirect printing (generate label data)** is enabled.

Note! Label data file will not be generated unless the configuration succeeds.

4.2.4.4 Generate label data fields

If **Use custom fields** is enabled, TCI Workflow lets you specify 2 extra values that will be added to the exported label data.

To learn how to enter the custom fields see chapter: **5.3 Entering the custom fields**

By enabling **Include device identifier** TCI Workflow retrieves the device identifier from the device and adds it to the exported label data.

4.2.5 Barcode reading

Within the **Barcode reading** tab you can:

- enable or disable barcode reading for automatic file retrieval
- select the location of the feature files which are associated with the defined barcodes

4.2.5.1 Automatic retrieval of files using a barcode reader

If **Use barcode reader for automatic file retrieval** is checked, TCI Workflow will run in barcode reading mode meaning you can scan a barcode to automatically open its associated file. In normal mode the feature file is selected by clicking the 'Open…' button.

To configure where the files (which are associated with the barcodes on the devices) are located, browse for or fill in the location of the files at the **File Location** field.

By the combination of the configured location and the filename which the barcode resembles TCI Workflow can load the file.

The screenshot below shows the startup screen when in barcode reading mode.

Scan the barcode on the device when you are in this screen. When the barcode was scanned successfully and the file is loaded, TCI Workflow continues with the configuration.

4.2.5.2 Use barcode scanning combined with single shot

When **barcode reading** is used in combination with **single shot** in **DALI protocol**, the user can scan the barcode to load either the schedule file or the feature file.

There could be a case where there are two files with the same name but different extension in the provided folder. In this case, Workflow will show an error.

For more information about how to setup a barcode reader and how to generate the barcodes see chapter: **9 Barcode reader and barcode requirements**

4.2.6 Data logging

Within the **Data logging** tab you can:

- enable data logging

- select the location where the data logging files need to be placed
- select the frequency of the files
- enable to use custom fields for data logging
- enable to read device information (this will take extra time during configuration)

4.2.6.1 Data logging

Data logging is a way to track the configuration of features, the TCI Workflow and device information. Device information is only provided when the option is selected and will result in a slower configuration time (more data will be read from the device).

If **Generate logging** is enabled and the **Logging file location** field is filled in with a valid folder, TCI Workflow generates logging, in this folder, after every successful driver configuration.

The **File generation frequency** can be used to change the data logging period.

If **Use custom fields** is enabled, TCI Workflow lets you specify 2 extra values that will be added to the exported logging file.

If **Include device properties** is enabled, TCI Workflow reads additional device information from the device for logging purposes.

When enabled, xml files are generated in the specified location for the specified period (per device, batch, day, week or month). The date and time format used is UTC (Coordinated Universal Time).

Examples:

Device	HF-Ri TD 12 26-42 PL-TC E+-20160715T064806.xml
Batch:	Batch-20160715T064910.xml
Day:	Day-197-20160715T064933.xml
Week:	Week-28-20160715T065004.xml
Month:	Month-7-20160715T065027.xml

Note that if **SingleShot** is selected as configuration mode, then select **Use custom fields** or **Include device properties** will not have an effect if the user select a scheduler file from the main screen.

5 TCI Workflow

5.1 Connection settings

Before you start working with TCI Workflow you will need to set the connection settings. On first start TCI Workflow will detect what interfaces are connected to your PC or laptop.

- When only one interface is connected this one will be automatically chosen.
- Otherwise the Connection Settings window will appear.

Whenever TCI Workflow is started again and a previously selected interface is not connected anymore the following selection or action will take place:

- When only one interface is connected (independent of the type of interface) this one will be automatically chosen.
- When two interfaces are connected and one of them is of the same type as the previously selected interface this interface is automatically selected.
- Otherwise the Connection Settings window will appear.

Connecting multiple similar NFC interfaces is currently only supported when using a FEIG interface.

5.1.1 Changing the connection settings

To change the connection settings go to **Tools → Connection settings…** This option is only available on the main application window.

Choose the protocol you want to use, DALI for the USB2DALI interface and NFC for FEIG interface.

Then, select the interface. When a DALI interface is selected or when a FEIG interface is selected as then also the selected port/reader (depending on the interface) can be selected.

For both protocols the unique id of the interface is shown (when available). This, to be able to identify which interface is used by which software instance (when configuring devices in parallel using multiple instances of software).

When a selected interface contains an outdated firmware version, software will show a message that it is unable to connect to the selected interface:

5.2 Opening a Workflow file

Feature file and schedule file are both Workflow files. If the **DALI protocol** is used and the configuration mode is **Single shot**, then Workflow accepts both type of Workflow files. Otherwise, Workflow will only accept feature files. To open a file, select **File → Open...** or click **Open file.** ..... Select a file and click **Open**.

If in the preferences the option **Display features that are written during configuration** was checked, TCI Workflow will display all features that are written to the device during configuration in the upper section of the screen. This information is visible throughout the whole configuration sequence as depicted in the following picture.

5.3 Entering the custom fields

If in the preferences the option **Use custom fields**, **Custom field 1** or **Custom field 2** is checked, TCI Workflow will display a window in which one or two custom fields can be filled in. These fields will be stored as part of data logging, together with the generated label data and/or will be printed on a label (depending on the selected options).

Click **OK** to continue.

5.4 Entering the number of devices

If in the preferences the configuration mode was set to **Batch size**, TCI Workflow will display a window in which the number of devices for this batch can be entered. The minimum number of devices is 1.

If the loaded feature file contains device information it will be shown (see screenshot above).

Click **OK** to continue. TCI Workflow will now keep track of batch progress during configuring (the amount of successfully configured devices is shown against the amount of devices to configure).

5.5 Connect a device / Waiting for device

5.5.1 Connect a device (USB2DALI interface)

Use **Cancel batch** to go to the main application window. Click **OK** to continue. When **OK** is clicked and no device is connected, the following window will appear:

Connect a device and click **Retry** to try again, or click **Cancel batch** to go to the main application window.

5.5.2 Waiting for device…. (NFC interface)

Use **Cancel batch** to go to the main application window. To continue hold the NFC interface close to the device.

5.6 Device connected / Device found

In case of **USB2DALI**: a device was connected and OK was selected. In case of **NFC**: interface was moved close to the device.

The following windows will appear:

After successful identification, the following window will appear:

When the features have been successfully written, the following window will appear if label printing is enabled:

When a scheduler file is being executed then the following screen will appear if schedule file exists in the preferences under the scheduler file location:

When feature data has been written and the schedule has been executed the following screen will appear:

File Tools Help
File: D:\Feature File\
Schedule: D:\Schedule\schedule.mos
Device: SIRIO 75W/300-1000 4PN 1.0
Connected: SIRIO 75W/300-1000 4PN 1.0
Done. Connect the next device.
OK
Cancel batch
DALI

5.7 Configuring done (USB2DALI interface)

After successfully configuring the device, audible feedback can be heard and the following window appears:

Disconnect the device and connect a new device. Click **OK** to configure the new device.

Click **Cancel batch** to go to the main application window.

5.8 Remove the device (NFC interface)

After successfully configuring the device, audible feedback can be heard and the following window appears:

Move the NFC interface away from the device, software will then show the waiting for device view as explained in 5.5.2

Click **Cancel batch** to go to the main application window.

5.9 Single shot programming with a new file

If the configuration mode is set to **Single shot** and **Barcode reading** is disabled, Workflow will allow users to select a new file after removing the device.

If the **Barcode reading** is enabled, then the following screen will appear.

5.10 Configuring failed

When configuring failed, an audible feedback can be heard and the following window appears (This is for both **USB2DALI** and NFC interface):

To retry the same device, click **Retry**.

To skip configuring, disconnect the device, connect a new device and click **Skip**. Click **Cancel batch** to go to the main application window.

5.11 Configuring finished

At any time during configuring, click **Cancel batch** to go to the main application window.

If in the preferences the option **Enter batch size before configuring** was checked and the specified number of devices have been configured correctly, TCI Workflow will indicate that the batch is finished. Note that devices that could not be configured correctly (and were skipped by the user) will not be counted for the batch progress.

Click **Finish batch** to go to the main application window.

Select **File → Exit** or click **Close** to exit TCI Workflow

5.12 Possible errors before or during device configuration

In case an error occurs before or during device configuration, this is made visible to the user by displaying a red text on the screen. This chapter describes some of these error scenarios.

5.12.1 Database file does not exist

After startup or successful identification, the following window will appear in case the database file is missing:

Click **Exit** to close the application window and re-install the TCI Workflow.

5.12.2 Scheduler file does not exist

If the scheduler file does not exist at the mentioned location (**Tools-> Preferences -> File locations -> Scheduler File location**) then it shows the following error just after closing the "Preferences" window:

5.12.3 Scheduler file is not valid

If the configured or loaded scheduler file is not valid or incorrect format then just after identifying the connected devices it shows the following error:

5.12.4 Scheduler file contains an infinite loop

If the configured or loaded scheduler file contains an infinite loop then just after identifying the connected devices it shows the following error:

5.12.5 Data logging doesn't support multiple device configuring

If a Workflow configuration file is loaded with multiple device configuring enabled and data logging is enabled (**Tools-> Preferences -> Data logging**) then it shows the following error just after closing the "Preferences" window:

5.12.6 Data logging location incorrect

In case an incorrect data logging location is provided, the following error is shown:

5.12.7 OEM Write Protection password is invalid

When using NFC, TCI Workflow verifies the password (when a password is provided in the feature configuration file) with the password that is currently set in the driver. When a mismatch takes place, the following error will be shown:

5.12.8 Duplicate device configuration

When using TCI Workflow, the application will check (depending on the setting in the preferences screen) if the currently connected device was already configured during the current flow. If the device was already configured, the following message will be shown:

Please do note that DALI device without unique identifier will NOT support this feature.

5.12.9 Partial device configuration after earlier configuration failure

When using NFC, TCI Workflow will check if the device can be configured correctly with the provided feature file. If the configuration of the device failed during a previous configuration session and in this session a feature file is provided to configure the device partially, the following message will be shown:

Use software to identify and resolve the problem.

5.12.10 Multiple device configuring with different devices

It is possible, when using TCI Workflow, to verify all written devices after multiple device configuring. This requires the programmed devices to be the same. The application will check the name and the version of the connected devices. If the devices are not all the same, then the following error will appear:

5.12.11 Direct printing selected printer not connected

When using direct printing, if the selected printer is not connected to the system, the following error is shown:

Please select a connected printer or disable direct printing in the TCI Workflow preferences.

5.12.12 Direct printing no label field selected

When using direct printing with a connected printer, however no label field is selected, the following error is shown:

Please select one or more label fields for direct printing to continue or disable direct printing.

5.12.13 Indirect printing invalid location selected

In case an incorrect label data location is provided, the following error is shown:

5.12.14 Missing dimming interface features

When a device contains the Dimming Interface feature, then the selected interface and all the 'Can be overridden by' interfaces that have been selected have to be included in the feature file. If any features are missing, this screen will inform the user which interfaces should be included and/or which configurations should be checked.

Make sure the features are properly configured before adding them to the feature file.

6 Command Line

TCI Command Line only runs from the Windows command line (console, MS- DOS prompt).

TCI Command Line is installed in the same directory as TCI Workflow.

6.1 Parameters

TCI Command Line is started using the following syntax: **TCIWorkflow.exe /f FeatureFile /w WorkflowFile [/p Protocol] [/v Verbosity] [/c ContinueOnRecoverableErrors] [/l LabelDataLocation] [/lu IncludeUniqueIdInLabelData] [/d SupportedDevicesFile] [/id UniqueId]**

Or when using a schedule the following syntax:

TCIWorkflow.exe /s SchedulerFile /p d [/v Verbosity] [/c ContinueOnRecoverableErrors] [/d SupportedDevicesFile] [/id UniqueId]

Note: The scheduler only works with DALI protocol.

Note: When both /f and /s are used, the /f option will be ignored. Note: When /f is

used, then /w has to be provided as well.

Or when retrieving the list of available DALI or NFC interfaces:

TCIWorkflow.exe /il Interface [/v Verbosity]

Parameters between brackets are optional.

When a parameter is ignored because of other parameters, a warning is displayed.
E.g. when both /s and /f are used.

The parameters have the following meaning:

Option	Parameter	Meaning
/f	FeatureFile	Path to the feature configuration file
/w	WorkflowFile	Path to the workflow configuration file, see **7 The Workflow configuration file**
/p	Protocol	The protocol used for communication. Possible values: **d** USB2DALI (default) **s** NFC
/v	Verbosity	The verbosity level (the message types that are shown in the console)

		Possible values: **info** Show info, warning, error and fatal messages (default) **warning** Show warning, error and fatal messages **error** Show error and fatal messages **fatal** Show fatal messages only
/c	ContinueOnRecoverableErrors	Whether software should halt on recoverable errors or ignore them and continue. Possible values: **continue** Continue on recoverable errors **halt** Halt on recoverable errors and produce an error code (default)
/s	SchedulerFile	Path to the scheduler file
/d	SupportedDevicesFile	Path to the supported devices file, see **8 The supported devices file**
/l	LabelDataLocation	The location where to store the generated label data
/lu	IncludeUniqueIdInLabelData	Include the unique ID of the device in the generated label data **true** include **false** not include (default)
/il	Interface	The software interface type for which to retrieve the list of available interfaces (with their unique id). Possible values: **d** USB2DALI interface (default) **s** **NFC** interface
/id	UniqueId	The unique id of the interface to use for communication (retrievable using the /il command line parameter). Notice! It is recommended to use the /p command line parameter to specify the interface type.
/dll	Data logging location	The location where the files will be placed Does not work with scheduler files
/dlf	Data logging generation frequency	The frequency of file creation **device** for every device a file will be created **day** for every day a file will be created **week** for every week a file will be created **month** for every month a file will be created This option is only used in combination with the /dll option.

/dldp	Data logging device properties	When set to true device properties will also be read out during configuration **true** **false** This option is only used in combination with the /dll option.
/identifyonly	IdentifyOnly	When set to true, device will be read out and the device info will be displayed. Possible values: **true** **false**

Example usage:

TCIWorkflow.exe /f "c:\files\FeatureConfiguration.xml" /w "c:\files\WorkflowConfiguration.xml" /p d /id 1A2B3C4D5E6 /l "c:\labels" /v fatal /c halt

6.2 Exit codes

In addition to console output, TCI Command Line produces an exit code when terminating. These codes can be used to integrate TCI Command Line into a custom tool chain. The exit codes are listed in the following sections.

6.2.1 General

Exit code	Meaning
0	Success
1	User software key not activated
4	Verification failed
5	The protocol provided as argument to the command line is wrong
6	Multiple interfaces connected, making a choice is required (look at the /id argument)
7	Specified interface (/id) is not connected
9	Workflow configuration file not found
10	Workflow configuration file contains invalid parameter combinations
11	Workflow configuration file not specified
12	The default template is used as Workflow configuration file
13	Mandatory settings are missing in the Workflow configuration file
14	A Workflow configuration file is used which is located in the installation directory
15	Invalid arguments combination
16	Duplicate arguments
20	Supported devices file not found
21	Supported devices file not valid
30	Label data folder could not be created
31	Label data could not be generated

32	Label data could not be exported
-1	General application failure

6.2.2 Related to writing feature data

Exit code	Meaning

101	There are no features to write (there are no features in the feature file matching the features in the device)
102	Writing failed

6.2.3 Related to resetting the short address of a device

Exit code	Meaning
150	Resetting the short address of the device failed
151	The DALI factory new operation failed

6.2.4 Related to selecting a feature file

Exit code	Meaning
200	Feature file not present
201	Invalid feature configuration file
202	Feature configuration file is empty
203	Feature configuration file contains duplicate features
204	The feature file contains an unsupported feature

6.2.5 Related to device features and feature file

Exit code	Meaning
300	The device does not support all features from the feature file
301	The device is not of the model specified in the feature file
302	Configuration mismatch, the device was configured incorrectly. Please use the software to identify and resolve the problem.
303	The feature file does not contain all selected dimming interfaces. In order to configure the device correctly, all selected dimming interfaces have to be configured and present in the feature file.
346	OEM Write Protection is enabled in the device, but no password was provided in the feature file
347	The connected device indicates OEM Write Protection, but it isn´t available in current device.
348	Failed to set the OEM Write Protection password.
349	The OEM Write Protection password stored in the feature file is not required to program the device. Remove the stored OEM Write Protection password from the feature file.
350	The OEM Write Protection password stored in the feature file does not correspond with the password in the device.
351	The ALO min value stored in the device is higher than the ALO value in the feature file.

6.2.6 Related to traceability

Exit code	Meaning
400	Writing traceability information failed

6.2.7 Related to identifying a device

Exit code	Meaning
500	No device found

501	Too many devices found
502	Unable to execute discover (There is a problem with the connection settings / connected devices. Check if the correct connection settings being used and the software interface is connected properly)
503	Multiple devices share the same short address
504	Unsupported device detected
506	The connected devices are not the same
507	The connected device uses an unsupported version of the Write Protection feature
508	The connected device is not in the custom supported devices list.

6.2.8 Related to converting a feature file

Exit code	Meaning
600	The feature file provided does not contain any features

6.2.9 Related to reading feature data

Exit code	Meaning
650	There are no features to read (there are no features in the feature file matching the features in the device)
651	Reading failed

6.2.10 Related to system preparation

Exit code	Meaning
700	No interface connected

6.2.11 Related to converting feature data

Exit code	Meaning
800	The feature file provided could not be converted to the latest version

6.2.12 Related to the scheduler

Exit code	Meaning
900	The provided scheduler file is invalid and could not be loaded.
901	The provided schedule contains an infinite loop.
902	The provided schedule could not be executed.

6.2.13 Related to the database

Exit code	Meaning
1000	The database file is not found. Please re-install TCI Workflow.

6.2.14 Related to data logging

Exit code	Meaning
1100	The location supplied is not a valid location
1101	Data logging tried to create a file but it already exists

1102	Data logging tried to append a file, but the file was not a valid xml file
1103	Data is not supported with multidevice configuring, disable either one of the settings

6.2.15 Related to policies

Exit code	Meaning
1200	"Local Security Setting System cryptography: Use FIPS compliant algorithms for encryption, hashing and signing" is set to enabled. Please contact your administrator to disable this policy.

6.2.16 Related to verifying

Exit code	Meaning
1400	Failed to verify the device
1401	There are no features to verify

6.2.17 Related to file validation

Exit code	Meaning
1500	The quantity of drivers should be more than 0.

6.2.18 Related to writing feature data

Exit code	Meaning
1600	Unable to configure the device correctly with the given feature file.
1601	Communication error has occurred, please try again.
1602	Connection error has occurred, please check your connection.
1603	Recovering the device failed.

6.2.19 Related to general communication

Exit code	Meaning
1700	Communication failure, please try again.

6.2.20 Related to NFC communication

Exit code	Meaning
1800	Communication failure, please try again.

7 The Workflow configuration file

The workflow configuration is the same for TCI Workflow and TCI Command Line. The configuration file contains the following options:

Parameter	Meaning
checkdevicemodel	When enabled TCI Workflow will check if the connected device matches the device model that is included into the feature configuration file and raises an error if they do not match. If the feature configuration file does not contain any information about the device model (files created with software version 2.6.5 or older) an error will be raised. **true** checkdevicemodel is enabled **false** checkdevicemodel is disabled
DALIverify	When enabled TCI Workflow will perform a Write & Verify while configuring the devices. When disabled only a Write will be performed. **true** DALI verify is enabled **false** DAL Iverify is disabled
DALIidentifyalways	When enabled TCI Workflow will identify every device; otherwise it will identify only once. Disabling will increase the speed of the configuring process. (The assumption in the latter case is that TCI Workflow is used to **consecutively** configure a batch of devices of the same device type.) **true** DALI identifyalways is enabled **false** DALI identifyalways is disabled
DALImultidevice	When multidevice is enabled TCI Workflow will allow multiple devices of the same device type to be **simultaneously** configured. When multidevice is enabled identify always also has to be enabled. **true** DALI multidevice is enabled **false** DALImultidevice is disabled
DALIcommissionall	When commissionall is enabled TCI Workflow will commission all connected devices. Also, when commission all is enabled the short addresses of the connected devices are not reset anymore **true** DALIcommissionall is enabled **false** DALIcommissionall is disabled
DALIfactorynew	When dalifactorynew is enabled TCI Workflow will reset the short address of all connected devices, and perform a DALI reset after configuring has finished **true** DALIfactorynew is enabled **false** DALIfactorynew is disabled
DALIcheckdevicepresent	When enabled TCI Workflow will do an additional check to make sure that a device is connected before configuring the device. This parameter will only do this additional check if the **DALIverify** and **DALIidentifyalways** parameters are set to **false** and the selected protocol is DALI. **true** DALIcheckdevicepresent is enabled **false** DALIcheckdevicepresent is disabled

Notice! Before **simultaneously** configuring devices, at least one of the devices needs to have a unique short address. Therefore, as part of configuring, short addresses might need to be changed. In case such a change was needed all short addresses will be reset to 255 after configuring. Remember that applications can be affected by a change of the short address.

Examples of the workflow configuration file (a template for the configuration file can also be found in the TCI Workflow installation directory):

For consecutive configuring	For simultaneous configuring
checkdevicemodel = false DALIverify = **true** DALIidentifyalways = **true** DALImultidevice = **false** DALIcommissionall = false DALIfactorynew = true DALIcheckdevicepresent = false	checkdevicemodel = false DALIverify = **false** DALIidentifyalways = **true** DALImultidevice = **true** DALIcommissionall = false DALIfactorynew = true DALIcheckdevicepresent = false

Notice! When using DALI, all the configuration parameters must be provided in the file. When using NFC, only the **check device model** parameter must be provided in the file. In case not all mandatory fields are provided, an error screen will be shown in Workflow.

Notice! Files in c:\Program Files or c:\Program Files (x86) can't be edited by Windows users who don't have administrator privileges. It is recommended to choose a different location for the workflow configuration file.

Notice! DALImultidevice in combination with **Data logging** isn't supported.

8 The supported devices file

The supported devices file is a file that describes which devices are supported during execution. If a connected device is not supported the execution fails. The supported devices file is the same for TCI Workflow and TCI Command Line.

Example of the supported devices file (a template for the supported devices file can also be found in the TCI Workflow installation directory):

```
<?xml version="1.0" encoding="utf-8"?>
<Products xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" FileVersion="1.0">
  <Product>
    <ProductName>SIRIO 40W/200-700 4PN</ProductName>
    <FactoryFirmwareVersion>V01E01</FactoryFirmwareVersion>
  </Product>
  <Product>
    <ProductName>HF-Ri TD zzzzzz</ProductName>
    <FactoryFirmwareVersion>1.4</FactoryFirmwareVersion>
  </Product>
</Products>
```

The first line describes the xml version. This never changes.

The second line describes the xml schema used and the version of the supported devices file. The xml schema specified is the default one and will never change. The version of the supported devices file can change in the future.

Then, depending on the amount of supported devices for every supported device a ‘Product’ element must be specified. Within the ‘Product’ element there are two subelements called ‘ProductName’ and ‘FactoryFirmwareVersion’. The ‘ProductName’ subelement holds the name of the product where the ‘FactoryFirmwareVersion’ holds the version of the product.

9 Barcode reader and barcode requirements

To enable the possibility to automatically open files the following is required for the barcode reader to be able to communicate with TCI Workflow:

- The barcode reader must be set to USB keyboard input mode (RS232 is not supported) and to the same keyboard layout as the system it is connected to.
- The barcode reader must be configured to send a carriage return (CR) after a scan.

For the barcode the following requirements are necessary:

- The barcode must contain the filename of the file, the extension of the file is optional
- The barcode may only contain characters allowed by the Windows filesystem.
  The following characters are not allowed: <, >, :, “, /, \, |, ?, and *.

Example of a 1D barcode for a SIRIO device:

SIRIO 75W/300-1000 4PN 1.0

Example of a 2D barcode (QR code) for the same device:

As you can see at the examples above a 1D barcode can get quite long, and some barcode scanners won’t be able to scan such long barcode anymore, so when using long filenames it is recommended to use 2D barcodes instead.

To test if your barcode reader is setup correctly open Notepad and scan one of the barcodes above. If notepad shows ‘SIRIO 75W/300-1000 4PN 1.0’ and the cursor is at the beginning of the next line, then the barcode reader is setup correctly.

10 Label data file contents

When label data is generated and stored in a comma separated value file the contents of the file consists of three lines. The first line contains the column names, the second line contains the units and the third and line contains the values.

The following table describes which columns are included with which unit and its value:

Column name	Unit	Value	Included
Date	dd-MM-yyyy	The date the label data was generated	Always
Time	Hh:mm	The time the label data was generated	Always
FeatureConfigurationFilePath	n/a	The path to the feature configuration file	Always
FeatureConfigurationFileName	n/a	The name of the feature configuration file	Always
Device Id	n/a	The unique identifier of the device	If configured to be included
Custom Field 1	n/a	Custom value 1	If configured to be included
Custom Field 2	n/a	Custom value 2	If configured to be included
Device Model	n/a	Device model (for example: Xitanium Outdoor 150W .35 Prog+ H)	Always

If the driver contains one of the following features:

- AOC
- MTP
- Interface Selection
- Dynadimmer

Their settings are also stored in the label data file.

11 Changes

Since version 1.0, the previous configuration file used by TCI Workflow located in **c:\temp\workflow.xml** has been **deprecated** and will no longer be supported in a future version of TCI Workflow (& Command Line).

We highly advice you to start using the new configuration file as described in **7 The Workflow configuration file**

Since version 3.0, the '/i' parameter has been **deprecated** and will no longer be supported in a future version of TCI Workflow (& Command Line). It has been replaced by the '/p' parameter which specifies the protocol for communication and it requires the same arguments as it predecessor.