

# MyAssays Tecan i-control Excel Add-in

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## Overview

The MyAssays Tecan i-control Excel Add-in has been designed to simplify working with Tecan's i-control software and MyAssays Desktop Pro by delivering an integrated workflow for data collection, analysis and reporting. The add-in:

- Automatically saves an XLSX file containing collected measurement data when readings are completed by the Tecan i-control instrument software.
- Allows specification of a MyAssays Desktop protocol to create/use
- Automatically launch MyAssays Desktop with the collected measurement data to:
  - Create a new protocol
  - Run an existing protocol

This is achieved by utilising i-control's **Comment** setting to provide settings for the add-in to perform. (This setting is stored in the i-control measurement script for automatic integration with future runs.)

Specific features:

- Simple installation.
- No macros required.
- For consistency, the resulting XLSX file contains one sheet (Sheet1) containing the measurement data collected during the run.
- Supports multiple i-control measurement operations.
- Each XLSX file is saved under the **Tecan i-control** sub-folder which is located under the MyAssays data folder root.
- The saved XLSX file is named to correspond with the measurement **End Time** prefixed with any **Comment** setting or MyAssays Desktop protocol name, e.g. **EIA - 20 11 2022 17 07 12.xlsx** (for a protocol named EIA).
- The normal behaviour of Tecan i-control software is preserved, specifically the Excel content created by the Tecan i-control software during measurements remains the same, i.e. the new Excel sheet created by i-control in the current active workbook and is not saved.
- Easy to turn off and remove.
- Compatible with Tecan i-control 2.0 English and German installations.

For a seamless data analysis experience with Tecan readers use the add-in in conjunction with:

- MyAssays Desktop Pro <https://www.myassays.com/desktop>

Optional (but not required):

- Folder Poll <https://www.myassays.com/folder-poll>

With these tools, data analysis can be performed automatically after measurements are completed, meaning that the operator only needs to press **Start** button in i-control for data collection, data analysis, reporting, printing, exporting, QC, etc. to be automatically performed with no additional user intervention.

For Tecan Spark Users

The add-in is not required if working with Tecan Spark system (the Spark software can automatically save the XLSX files so the add-in is not required if working with Spark). Folder Poll is recommended for workflow integration with Spark.

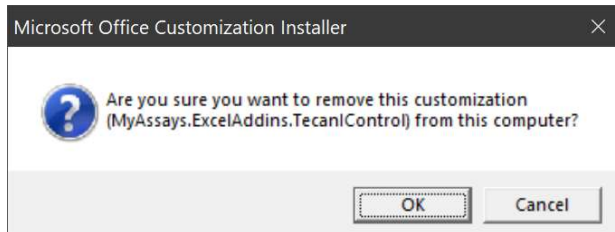
[Video Walkthrough](#)

For a video introduction and walkthrough, please see:

<https://www.myassays.com/video/tecan-i-control-integration-with-myassays-desktop>

## Installation

If you currently have an earlier installation of the MyAssays Tecan i-control Excel Add-in install then to upgrade to the latest version, before continuing: uninstall it from Control Panel | Add/Remove Programs or equivalent by selecting the **MyAssays.ExcelAddins.TecanIControl** option and then select OK when prompted:



To install:

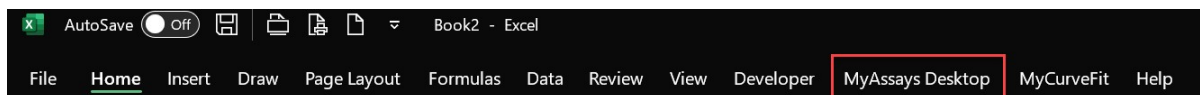
1. Download from:  
<https://myassaysfiles.blob.core.windows.net:443/productionbuilds/mticea/MyAssays-Tecan-i-control-Excel-Add-in-v1051.zip>
2. Unzip the files to a location on a local drive (e.g. create a folder on the desktop).
3. Launch SETUP.EXE from a local drive (note, it is important that the SETUP is not ran from a network location).

The add-in is now installed and ready to use.

## Usage Preparation

**IMPORTANT NOTE:** To ensure that the MyAssays Tecan i-control Excel Add-in is loaded, launch Excel before starting any measurements with the Tecan i-control software.

To check whether the add-in is loaded, inspect the menu items of the Excel ribbon, you should see the entry titled **MyAssays Desktop** as highlighted in red here:



(Note the ordering and other options available in the ribbon will depend on your Excel configuration.)

If you do not see the **MyAssays Desktop** entry then the add-in has not been loaded. This could be because:

- The add-in has not been installed.
- The Tecan i-control software initiated the Excel session. For more information please see [i-control integration is not working](#).

## Options

Select the **MyAssays Desktop** option to reveal the settings for the add-in, the options under the **i-control Integration** group are as follows:

- **Save Measurements** – checkbox to denote whether the measurement XLSX file should be saved after the reader's measurements are completed. Note, the measurement XLSX file will only be saved if the i-control measurements script includes a **Comment** operation after all other i-control measurement steps.
- **Launch MAD Protocol** – checkbox to denote whether a MyAssays Desktop protocol should be created or ran after measurement have been completed and saved. The protocol to use should be specified using the **Comment** setting in i-control. (If a protocol is not specified then MyAssays Desktop will not be launched.)
- **Open Measurements Folder** – button to open the folder where all XLSX files saved by the add-in are stored.

The default settings are to save measurements and launch MyAssays Desktop (when a protocol name is provided in the **Comment** setting).

## i-control Comment

Use i-control's **Comment** feature to provide data for the add-in. This includes:

- An indication to save the XLSX file (i.e. the inclusion of any comment indicates that the add-in should save the XLSX file at that point).
- Optional comment text used to name the resulting XLSX file.
- MyAssays Desktop assay-protocol filename.

The inclusion of the **Comment** feature indicates to the add-in that the XLSX file should be saved. Ensure that the **Comment** is the last operation item defined in the i-control measurement script.

Note, if a **Comment** section is not included then the add-in will not save the XLSX file.

When working with certain measurement types, i-control might not insert the comment at the end of the measurements.

For example, with the following configuration:

The screenshot displays the i-control configuration interface with three sections:

- Kinetic Cycle:** Includes a 'Cycles' section with radio buttons for 'Number of cycles' (set to 2) and 'Duration'. A 'Kinetic Interval' section has an unchecked checkbox for 'Use kinetic interval'.
- Absorbance:** Includes a 'Wavelength' section with a dropdown set to '492 (10) nm' and an unchecked 'Reference' checkbox. A 'Read' section has 'Number of flashes' set to 25 and 'Settle time' set to 0 ms. A 'Multiple Reads per Well' section has an unchecked checkbox for 'Multiple reads per well'. A 'Label' section has a dropdown set to 'Label1'.
- Comment:** A text field labeled 'Comment' contains the text 'MAD Kinetic'.

Although the **Comment** has been after the Absorbance measurement it belongs to the same indentation level. With this setting i-control will insert the **Comment** in the middle of the XLSX measurements (the result is that the add-in will save the XLSX before measurements are completed).

To resolve, this right-click on the **Comment** section and select **Release Strip**

**Kinetic Cycle**

Cycles

Number of cycles:

Duration

Kinetic Interval

Use kinetic interval

---

**Absorbance**

Wavelength

Measurement:

Reference

Read

Number of flashes:

Settle time:  ms

Multiple Reads per Well

Multiple reads per well

Label

Name:


---

**Comment**

Comment:

- Cut
- Copy
- Paste
- Delete
- Select All
- Release Strip
- Indent Strip
- Collapse All
- Expand All

With this change the Comment is at a lower indentation level than the Absorbance, (it appears further to the left):

 **Kinetic Cycle**

Cycles


Number of cycles:

Duration

Kinetic Interval

Use kinetic interval

---

 **Absorbance**

Wavelength

Measurement:

Reference

Read

Number of flashes:

Settle time:  ms


Multiple Reads per Well

Multiple reads per well

Label

Name:

---

 **Comment**

Comment:

With this change the Comment will appear after the kinetic measurements are completed (enabling the add-in to save the measurements to the XLSX file).

## Measurement XLSX filename

The automatically saved measurement XLSX file will be named to include the **End Date/Time** of the last measurement operation. In addition:

If the comment includes a MyAssays Desktop protocol name then the name of the MyAssays Desktop protocol will be included in the XLSX filename (and MAD will be launched, see the next section).

If the comment does not include a MyAssays Desktop protocol then the XLSX filename will include the text of any comment provided.

(If a comment section is included but with no comment text provided then the XLSX file will be saved.)

## MyAssays Desktop Protocol

To specify a MyAssays Desktop protocol to be associated with an i-control measurements script, enter the MyAssays Desktop protocol name under the i-control's **Comment** setting. The entry should be specified with either a:

- **MAD** prefix
- **.assay-protocol** file extension

For example, if the MyAssays Desktop protocol to use is named **EIA** then this can be specified as either:

- **MAD EIA**
- **EIA.assay-protocol**

Both of these settings will associate the measurements with the MyAssays Desktop protocol named **EIA.assay-protocol** located in the MyAssays Desktop Protocols folder. If you are unsure where the MyAssays Desktop Protocols folder is then launch MyAssays Desktop Explorer and select **File | Data** and click the **Assay Data Folder Root** hyperlink and select the Protocols sub-folder.

## Measurements

After ensuring Excel is already launched with the add-in loaded, use the Tecan i-control software as normal to start measurements. After measurement data is collected an XLSX file will be automatically created in the **Tecan i-control** sub-folder under the MyAssays data folder root named to correspond with the measurement **End Time** along with any data provided via the **Comment** setting.

If a MyAssays Desktop protocol has been specified with the **Comment** setting then:

If the assay-protocol does not already exist:

MyAssays Desktop's **New Protocol Wizard** will be launched ready to create a new protocol to import the data in this file and other data files created by the same i-control measurement script. The new protocol will automatically be named in accordance with the specified assay-protocol name and saved on completion of the wizard. Following this, the protocol will be launched with the measurement data imported.



Make any further enhancements to the protocol as required (such as adding required analysis, reporting, QC, export, etc.) and save the changes to the protocol ready for processing further measurements.

Optionally use the **Auto Commands** feature to define additional operations (such as automatic calculation). Save the changes to the protocol.

If the assay-protocol file already exists:

The MyAssays Desktop protocol is launched and will import the measurement data.

### Auto Commands

Use MyAssays Desktop Pro's Auto-Command feature to perform specific operations such as:

- Automatic calculation
- Export
- Print
- Import Sample IDs worklist from a file
- Import analysis parameters from a tweak file
- And more...

For more information, see <https://www.myassays.com/video/myassays-desktop-auto-commands>

### Working with Protocols in a different Folder

If your protocol file is located in a folder other than the default protocols folder (under **Assay Data Folder Root**), then a full path to a protocol file (including the alternative folder) can be provided with the .assay-protocol extension in the **Comments** data. For example,



The image shows a screenshot of a software interface. At the top, there is a blue speech bubble icon with a downward arrow and the word 'Comment'. Below this, there is a text input field with the label 'Comment:' and the text 'C:\CustomFolder\EIA.assay-protocol' entered inside it.

Note, if this protocol does not already exist then the **New Protocol Wizard** will store the new assay-protocol in the default MyAssays Protocols folder (ignoring the full path). Thus, it is only useful to use the full path to a file if the protocol file already exists in a location other than the default MyAssays Protocols folder.

## Example Configuration

In the following i-control measurement configuration, 2 absorbance measurement operations are defined:

1. Absorbance 492nm
2. Absorbance 280nm

Following this, the **Comment** feature is used to specify to launch a MyAssays Desktop protocol named EIA.



 ▼ **Plate**


Plate definition: [GRE96ft] - Greiner 96 Flat Transparent

Plate with cover

 ▼ **Part of Plate**

	1	2	3	4	5	6	7	8	9	10	11	12	
A	●	●	●	●	●	●	●	●	●	●	●	●	
B	●	●	●	●	●	●	●	●	●	●	●	●	
C	●	●	●	●	●	●	●	●	●	●	●	●	
D	●	●	●	●	●	●	●	●	●	●	●	●	
E	●	●	●	●	●	●	●	●	●	●	●	●	
F	●	●	●	●	●	●	●	●	●	●	●	●	
G	●	●	●	●	●	●	●	●	●	●	●	●	
H	●	●	●	●	●	●	●	●	●	●	●	●	

Details...

 ▼ **Absorbance**

Wavelength  
Measurement: 492 (10) nm ▼


Reference

Read  
Number of flashes: 25 ▼

Settle time: 0 ▼ ms

Multiple Reads per Well  
 Multiple reads per well

Label  
Name: Label1 ▼

 ▼ **Absorbance**

Wavelength  
Measurement: 280 (10) nm ▼


Reference

Read  
Number of flashes: 25 ▼

Settle time: 0 ▼ ms

Multiple Reads per Well  
 Multiple reads per well

Label  
Name: Label2 ▼

 ▼ **Comment**

Comment: MAD EIA

## Command Line Arguments

MyAssays Desktop command line arguments can be specified as part of the **Comment** setting to perform additional operations each time the existing protocol is launched such as:

- Automatic calculation
- Export
- Print
- Import Sample IDs worklist from a file
- Import analysis parameters from a tweak file
- And more...

(Note these command line arguments do not apply when the New Protocol Wizard is launched to create a new protocol.)

**A simpler alternative to using command line arguments is to use MyAssays Desktop's Auto-Command feature. Please see <https://www.myassays.com/video/myassays-desktop-auto-commands>**

Command line arguments can be specified as part of the **Comment** setting. The following table provides examples:

Comment Setting	Description
EIA.assay-protocol /calc	Automatically calculate the results for the EIA assay-protocol protocol.
MAD EIA /calc	Automatically calculate the results for the EIA assay-protocol protocol.
EIA.assay-protocol /calc "/export-report:xlsx" /noappwin	Automatically calculate the results, export the XLSX report and do not display the MyAssays Desktop Analysis window (MyAssays Desktop will exit after operations are completed).
EIA.assay-protocol /calc /print	Automatically calculate the results and print.

For further information about available command line arguments available in MyAssays Desktop, please refer to:

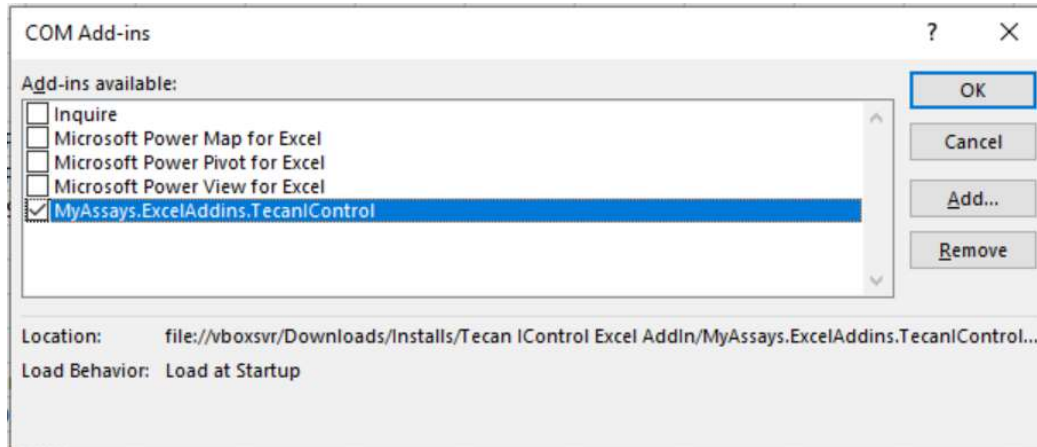
- MyAssays Desktop Help topic References | Command Line Arguments. (Help is available from **MyAssays Desktop Explorer | Support**)
- MyAssays Desktop Pro User's Guide, latest version available from <https://myassays.com/download-and-install-myassays-desktop.html>

The MyAssays Desktop Analysis Launcher tool (available from **MyAssays Desktop Explorer | Tools**) can be used to automatically generate command line arguments via a convenient user-interface. For more information, please see <https://www.myassays.com/video/myassays-desktop-analysis-launcher>

## Add-in Status

To check the status of the Add-In, launch Excel and select **File | Options | Add-ins | COM Add-ins | Go**

For example, the following indicates that it is installed and loaded:



To temporarily disable the add-in, uncheck the check box associated with the Add-in.

To permanently remove the Add-in use the **Remove** option.

## Troubleshooting

This section provides solutions to known issues with installing and using the software.

### Installation Error

For some configurations, upon installing the Tecan i-control Add-In may result in an error:

#### Installing Office customization



There was an error during installation.

**Name:** MyAssays.ExcelAddins.TecanIControl  
file:///C:/Users/taylo/OneDrive - MyAssays Ltd/MAD

**From:** Versions/iControl/MyAssays.ExcelAddins.TecanIControl-v1000/MyAssays.ExcelAddins.TecanIControl.vsto

Customized functionality in this application will not work because the certificate used to sign the deployment manifest for MyAssays.ExcelAddins.TecanIControl or its location is not trusted. Contact your administrator for further assistance.

<< Details Close

Error Details:

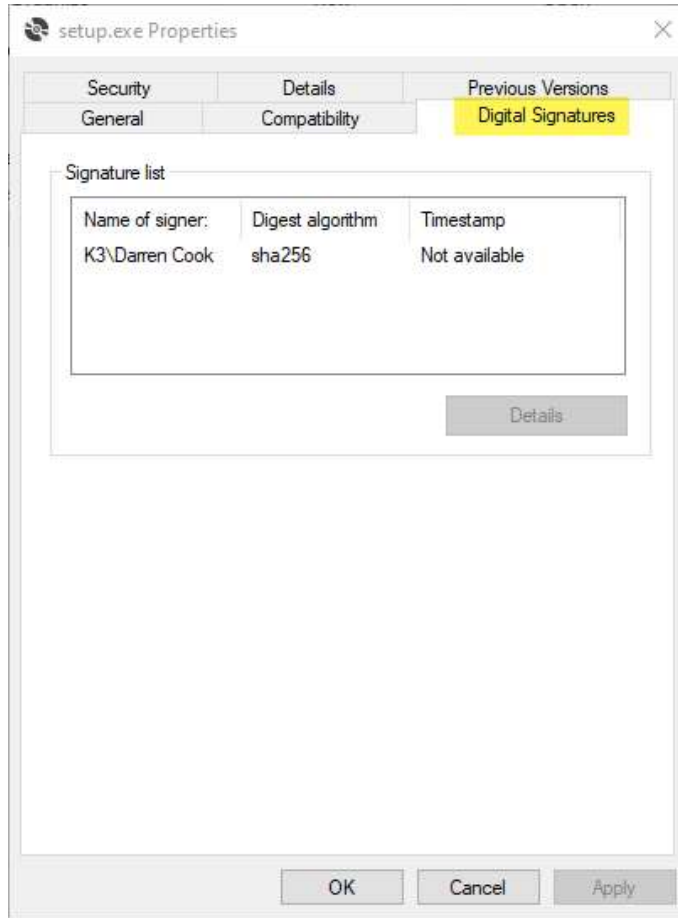
```
Name: MyAssays.ExcelAddins.TecanIControl
From: file:///C:/Users/taylo/OneDrive - MyAssays Ltd/MAD
Versions/iControl/MyAssays.ExcelAddins.TecanIControl-
v1000/MyAssays.ExcelAddins.TecanIControl.vsto

***** Exception Text *****
System.Security.SecurityException: Customized functionality in this application will not work
because the certificate used to sign the deployment manifest for
MyAssays.ExcelAddins.TecanIControl or its location is not trusted. Contact your administrator for
further assistance.
   at
Microsoft.VisualStudio.Tools.Applications.Deployment.ClickOnceAddInTrustEvaluator.VerifyTrustP
romptKeyInternal(ClickOnceTrustPromptKeyValue promptKeyValue,
DeploymentSignatureInformation signatureInformation, String productName, TrustStatus status)
   at
Microsoft.VisualStudio.Tools.Applications.Deployment.ClickOnceAddInTrustEvaluator.VerifyTrustU
singPromptKey(Uri manifest, DeploymentSignatureInformation signatureInformation, String
productName, TrustStatus status)
```

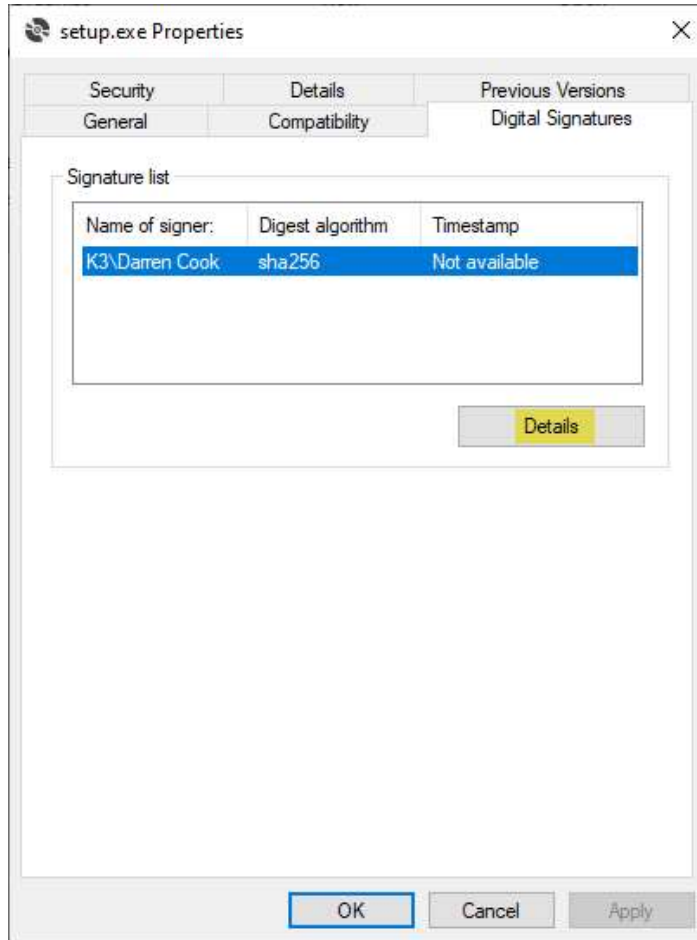
For these cases, please follow the below steps to enable the installation of the add-in.

1. Right-click on SETUP.EXE and select **Properties**

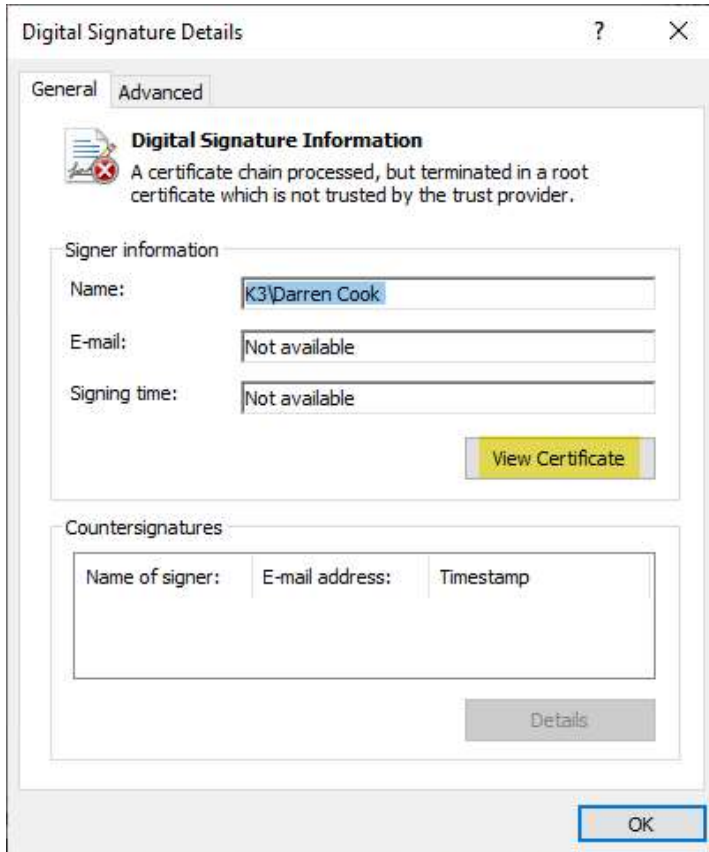
## 2. Select **Digital Signatures**



3. Select the signature and press **Details**

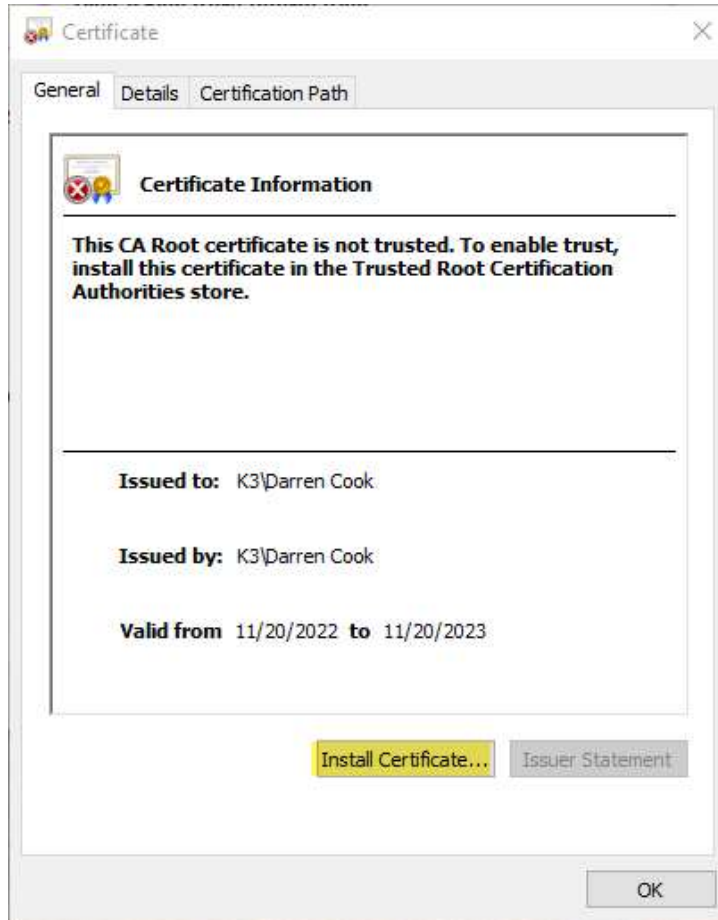


#### 4. Select **View Certificate**





5. Select **Install Certificate...**



6. Within the Certificate Import Wizard select either **Current User** (to install the certificate only for the current user) or **Local Machine** (to install the certificate for all users of the local machine) and press **Next**

← Certificate Import Wizard

### Welcome to the Certificate Import Wizard

This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.

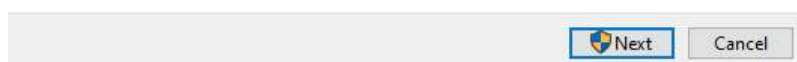
A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.

Store Location

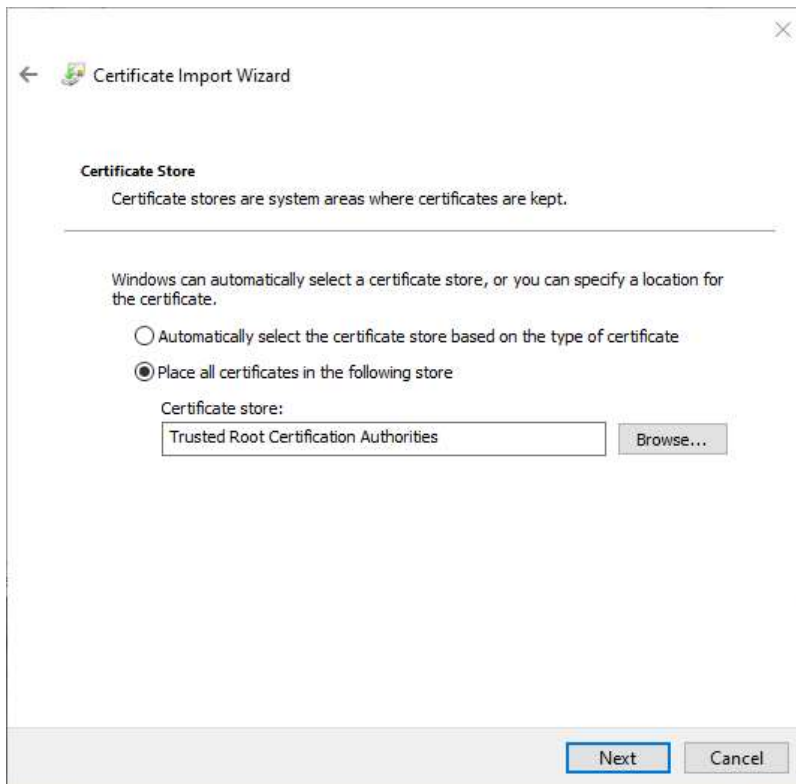
Current User

Local Machine

To continue, click Next.



7. Select **Place all certificates in the following store**, and browse for and select **Trusted Root Certification Authorities**



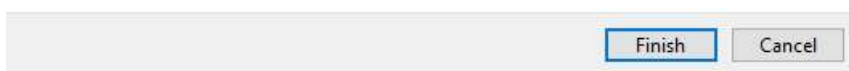
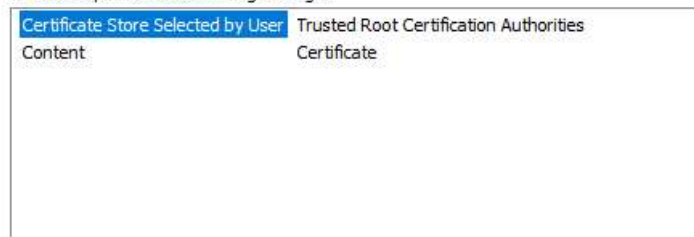
8. On the final step press **Finish**

← Certificate Import Wizard

### Completing the Certificate Import Wizard

The certificate will be imported after you click Finish.

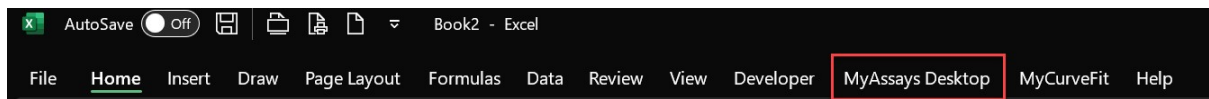
You have specified the following settings:



9. Double click SETUP.EXE to complete the installation of the Tecan i-control Excel Add-In.

i-control integration is not working

If the **MyAssays Desktop** entry does not appear on the Excel ribbon like this:

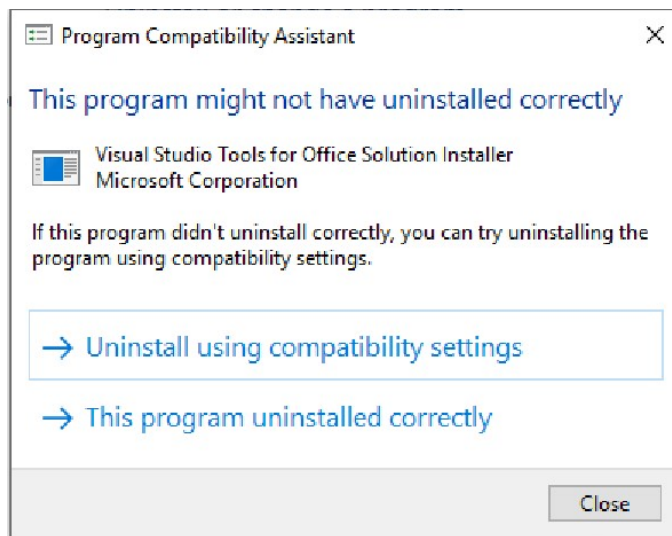


then the add-in is not loaded. To avoid this:

Ensure an instance of Excel is opened first and NOT via Tecan i-control. If the Tecan i-control software opens Excel then the Add-in might not be loaded; this should be avoided by always launching Excel first.

In some cases, if Tecan i-control has previously opened Excel, even though there might not be any Excel windows visible, the EXCEL.EXE process might still be running in the background and in this case even if opening a new Excel window the add-in still might not load. In this case, close all Excel windows and use Task Manager to identify if there are any running EXCEL.EXE instances. If there are then terminate each EXCEL.EXE and then launch Excel directly again to ensure that the add-in is loaded.

This program might not have uninstalled correctly notice appears on Uninstallation  
After installation the **Program Compatibility Assistant** notice appears advising **This program might not have uninstalled correctly**



In this case select **This program uninstalled correctly** to continue.

## Version Changes

### V1050

Replace: Label setting now replaced with use of Comment settings (after all measurements), with no need to specify number of operations (using \*n notation in label)

### V1041

Added: Support for specifying the number of operations to expect i-control to complete before saving the XLSX (using \*n notation in label)

### V1034

Fixed: In some cases the first run of i-control was not detected.

Added: Optional developer logging. To enable logging, create a file "log.txt" in the **MyAssays\Tecan i-control** measurements folder.

### V1033

Added: Support for multiple operations.

The add-in now determines that i-control has finished creating the Excel sheet once the **End Time** has been written to the sheet and there are no further updates to the sheet within 5 seconds.

For example, with a dual label measurement (two operations) when i-control writes the end time to Excel (e.g. cell B37), the add-in will wait for 5 seconds, during this period if more content is added to the sheet then the document will not yet be saved. For a dual label measurement we would expect that i-control will write the end time of the second operation to Excel following this (e.g. cell B64), again the add-in will wait for 5 seconds, however, in this case as there is no further content written to Excel within this time period, after the 5 seconds has elapsed, the add-in will then save the Excel sheet.