

## **1 Function and area of use**

iX Developer has a built-in function for converting your old Information Designer/E-Designer project to an iX Developer project.

This startup document will provide help regarding what to consider when choosing a replacement HMI in the iX series and the easiest way of getting started with your converted project.

## **2 About the start-up document**

This Start-Up document should not be considered as a complete manual. It is an aid to be able to start up a normal application quickly and easily. For further information we refer to the iX Developer reference manual and User guide.

- MAxx831x (Reference manual)
- MAxx832x (User Guide)

This document and other Start-Up documents can be downloaded from [www.beijerelectronics.com](http://www.beijerelectronics.com).

Please use the address manuals@beijerelectronics.com for feedback on our Start-Up documents.

## 3 Selecting the right replacement

The following chapter will describe the different models to help you select the right replacement model.

### 3.1 General differences

EXTER/E1000 HMI's are available in both touch- and key-based HMI's.

X2 HMI's are only available with a touchscreen configuration (but it is possible to connect external physical buttons, keyboards etc.).

If your original project is for a key based EXTER/E1000 HMI, there are several points you need to take into consideration compared to if it is a touch based HMI.

For instance, key based push events are handled differently.

The navigation in a converted iX project will also behave differently compared to the navigation in a key based EXTER/E1000 HMI.

Since all navigation will need to be redesigned for the touch based iX project, more screen surface will be needed (since you will need to add touch buttons that handle the navigation).

An EXTER/E1000 HMI with touch screen will be more graphically oriented and will be more easily converted to an iX project and generally, you will be able to convert to a matching X2 HMI of the same size.

An EXTER/E1000 HMI with lots of lists, texts and less focus on the graphical interface will usually need to be converted to a larger X2 HMI to be able to better handle the lists and texts in a good way.

But with some of the newer functions available in iX or simple reorganizing, you will be able to better optimize the project.

Differences regarding conversions will be discussed in more detail later in this document.

## 3.2 Matching HMIs

Below is an estimation table for which X2 HMI can replace your EXTER/E1000 HMI.

All suggestions have the same or larger screen size and resolution.

From EXTER	From E1000	To X2 series	Cut out - EXTER/E1000	Cut out - X2 series
EXTER K10	E1012	X2 base 5	121 x 80 mm	161 x 93 mm
EXTER K20	E1022	X2 base 5	120 x 138 mm	161 x 93 mm
EXTER K30	E1032	X2 base 7/ X2 pro 7	166 x 149 mm	186 x 136 mm/ 189 x 128 mm
EXTER K60	E1060/E1062	X2 pro 7	240 x 130 mm	189 x 128 mm
EXTER K70	E1070	X2 pro 7/ X2 pro 10	246 x 139 mm	189 x 128 mm
EXTER K100	E1100	X2 pro 12	343 x 208 mm	324 x 226 mm
EXTER T40	E1041/E1043	X2 pro 4	139 x 105 mm	130 x 89 mm
EXTER T60	E1061/E1063	X2 pro 7	180 x 130 mm	189 x 128 mm
EXTER T70	E1071	X2 pro 7	189 x 138 mm	189 x 128 mm
EXTER T100	E1101	X2 pro 12	265 x 206 mm	324 x 226 mm
EXTER T150	E1151	X2 pro 15	356 x 279 mm	394 x 270 mm
EXTER T70-bl	N/A	X2 marine 7	189 x 138 mm	189 x 128 mm
EXTER T100-bl	N/A	X2 marine 15	265 x 206 mm	394 x 270 mm
EXTER T150-bl	N/A	X2 marine 15	356 x 279 mm	394 x 270 mm
EXTER T70-sr-bl	N/A	X2 marine 7 HB	189 x 138 mm	189 x 128 mm
EXTER T100-sr-bl	N/A	X2 marine 15 HB	265 x 206 mm	394 x 270 mm
EXTER M70	N/A	N/A	N/A	N/A

Notes: Adapter plates are not offered for X2 units. EXTER/E1000 models labeled CI D2 can be replaced by X2 extreme units. Sunlight-readable models are available in the X2 marine and X2 extreme line. Cut out dimensions are listed as W x H.

## 3.3 Communication



All X2 HMI's support serial communication via 9-pin D-SUB.

All X2 HMI's have ethernet interface (RJ45 contact).

### 3.3.1 Communication drivers

Below is a list of all available drivers.

Are you missing a driver? Please contact your closest Beijer office.

Communication Drivers		 iX Developer	 Information Designer/E Designer
ABB	ABB Comli Slave	●	●
	ABB Comli Master	●	●
	ABB Modbus AC500	○	●
	ABB Freelance	●	○
	ABB TotalFlow	●	○
Allen-Bradley	AB ControlLogix	●	●
	AB DF1	●	●
	AB DH485	●	●
	AB SLC/PLC5 Ethernet	●	●
	AB MicroLogix Ethernet	●	●
	AB Ethernet/IP	●	●
Altus	Altus Alnet I	●	●
Animatics	Animatics SmartMotor	●	●
B&R	Bernecker+Rainer Mininet	●	●
Baumüller	Baumüller bmaxxOS	○	●
Beckhoff	Beckhoff ADS	●	●
	Beckhoff Modbus	○	●
	Beckhoff ADS Symbolic	●	○
Bosch Rexroth	Bosch Rexroth IndraDrive	●	●
Cactus	Cactus ASCII	●	○
CAN	CANopen (Expansion module)	●	○
	FreeCAN (Expansion module)	●	○
J1939	J1939 EM	◐	●
CODESYS	CODESYS ARTI	●	●
	CODESYS Soft Control Direct Access	●	○
Cognex	Cognex DVT	○	●
	Cognex In-Sight	●	◐
Control Techniques	Control Techniques Unidrive	●	●

CIMON	CIMON	<input type="radio"/>	<input checked="" type="radio"/>
CTC	CTC Serial Binary	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Danfoss	VLT FC Drive	<input type="radio"/>	<input checked="" type="radio"/>
Delta Tau	Delta Tau PMAC/UMAC	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Delta	Delta DVP	<input type="radio"/>	<input checked="" type="radio"/>
	Delta PLC Modbus ASCII	<input checked="" type="radio"/>	<input type="radio"/>
Demo	DEMO	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ELMO	Elmo Maestro	<input type="radio"/>	<input checked="" type="radio"/>
Emerson	EMERSON Modbus Master	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Eurotherm	Easy Serial 631	<input checked="" type="radio"/>	<input type="radio"/>
Fatek	Fatek Facon	<input checked="" type="radio"/>	<input checked="" type="radio"/>
FESTO/BECK	FESTO/BECK FST CI	<input type="radio"/>	<input checked="" type="radio"/>
	FESTO/BECK FST CI Ethernet	<input type="radio"/>	<input checked="" type="radio"/>
Galil	DMC series	<input checked="" type="radio"/>	<input checked="" type="radio"/>
GE Fanuc	GE Fanuc Ethernet	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	GE Fanuc SNPX	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Generic CAN open	Generic CAN Open	<input type="radio"/>	<input checked="" type="radio"/>
Generic Profibus	Generic Profibus driver	<input type="radio"/>	<input checked="" type="radio"/>
Giddings&Lewis	G & L Motion Control Serial	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	G & L Motion Control Ethernet	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Hitachi	Hitachi H-COMM	<input checked="" type="radio"/>	<input checked="" type="radio"/>
IAI	XSel	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	RoboCylinder	<input type="radio"/>	<input checked="" type="radio"/>
Idec	IDECA FA 1:1	<input type="radio"/>	<input checked="" type="radio"/>
	IDECA FA 1:1 (expanded)	<input type="radio"/>	<input checked="" type="radio"/>
	IDECA Micro	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Johnson Control	JCONTROL	<input checked="" type="radio"/>	<input checked="" type="radio"/>
KEB	COMBIVERT	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Keyence	KEYENCE KV-Series	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Koyo	Koyo DirectNET	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Koyo ECOM	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Koyo K-Sequence	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Lenze	Lenze LECOM A/B	<input checked="" type="radio"/>	<input checked="" type="radio"/>
LIYAN Electric	LIYAN EX	<input type="radio"/>	<input type="radio"/>
LS Industrial Systems	Glofa	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Master-K	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Matsushita	MEWTOCOL-COM	<input checked="" type="radio"/>	<input checked="" type="radio"/>

Mitsubishi (MELSEC)	Alpha2	●	●
	A-Series (C24)	●	●
	A-Series (CPU)	●	●
	Freqrol FR-A PLC	●	●
	FX Series Serial	●	●
	MC Protocol	●	●
	QnA/Qnn Profibus DP	●	●
	FX Series ADP/BD	●	●
	MR-J2/MR-J3-T	●	●
	QnA/Qnn Serial (CPU)	●	●
	QnA/Qnn-Series (C24)	●	●
	QnA/Q-Series (E71) Ethernet	●	●
	FX3U-ENET	●	○
	MELSERVO MR-J2/MR-J3-T	●	○
Modbus	Modbus Master RTU/ASCII	●	●
	Modbus Master RTU/ASCII IEC	○	◐
	Modbus Slave	●	◐
Moeller	Moeller PS4 series (SUCOM-A)	○	●
NMEA 0183	NMEA 0183	●	●
OMRON	OMRON FINS	●	●
	OMRON Host Link	●	●
Parker	GeParker6K	○	●
Regin	EXOline	●	○
SAIA	S-BUS Serial/Ethernet	●	●
SEW	MoviLink/SMLP	○	●
SIEMENS	SIMATIC S5 3964R	◐	●
	SIMATIC S7 MPI (EM)	◐	●
	SIMATIC S7 MPI (HMI Adapter)	●	●
	SIMATIC S7 MPI (Expansion mod.)	●	○
	SIMATIC S5 PG/AS511	●	●
	SIMATIC S7 3964R	○	●
	SIMATIC S7 ISO over TCP/IP	●	●
	SIMATIC S7 MPI Direct	●	●
	SIMATIC S7 200 PPI	●	●
	SIMATIC S7 Profibus DP	○	●
	SIMATIC TI500	●	●
Telemecanique/	TSX UNI-TELWAY	●	●

Schneider Electric	Schneider Electric Modbus	●	○
Toshiba	Computer Link	○	●
WAGO	WAGO Modbus TCP	●	●
Vigor	Vigor M/VB-Series	●	●
	Vigor VS Series	●	○
Yamaha	Yamaha VIP	●	●
Yaskawa	Yaskawa Memobus Master	●	●
	Yaskawa FSP	○	●
	SMC series	○	●
YET	YET XtraDrive	○	●
Yokogawa	Yokogawa FA-M3	●	●

### 3.4 Tags

In iX, exponents must be configured for the control the tag is bound to.

Format	Data type Information Designer/E-Designer	Data type iX Developer	Range
<b>Bit</b>	Bit	BIT	0 and 1
<b>Bool</b>	-	BOOL	Values can be “false” (0) or “true” (1) <sup>1</sup>
<b>Signed 16-bit</b>	Signed 16-bit	INT16	-32,768 – +32,767
<b>Unsigned 16-bit</b>	Unsigned 16-bit	UINT16	0 – +65,535
<b>Signed 32-bit</b>	Signed 32-bit	INT32	-2,147,483,648 – +2,147,483,647 <sup>2</sup>
<b>Unsigned 32-bit</b>	Unsigned 32-bit	UINT32	0 – +4,294,967,295 <sup>2</sup>
<b>Float with exponent, 64-bit</b>	-	DOUBLE	1.7E308 <sup>1</sup>
<b>Float with exponent, 32-bit</b>	Float with exponent	FLOAT	±3.4E38 <sup>1</sup>
<b>7 x Signed 16-bit</b>	-	DATETIME	An Analog Numeric object can present the time format <sup>3</sup> . See help for more information.
<b>String</b>	String	STRING	Storing character strings in tags. For this data type, size can be selected.
<b>BCD Float</b>	BCD Float	FLOAT <sup>4</sup>	0 – 9999,9999
<b>BCD 16-bit</b>	BCD 16-bit	INT/UINT16 <sup>4</sup>	0 - 9999
<b>BCD 32-bit</b>	BCD 32-bit	INT/UINT32 <sup>4</sup>	0 - 99999999
<b>HEX 16-bit</b>	HEX 16-bit	INT/UINT16 <sup>4</sup>	0 - FFFF
<b>HEX 32-bit</b>	HEX 32-bit	INT/UINT32 <sup>4</sup>	0 – FFFF FFFF

1. Controller representation for this type is dependent on the driver software.
2. Regarding resolution of values in 32-bit format: both iX Developer and the operator panel can handle up to six decimal digits of an integer 32-bit value. Remaining digits will be truncated or changed into zeros.
3. yyyy = year, MM = month, dd = date, hh = hour, mm = minute, ss = second.
4. Displayed value have to be changed for the specific object, not the tag in general.



## 4 Import Project

### 4.1 Import Project to iX Developer 2.0

iX Developer supports the function of project import from Information Designer/E-Designer and H-Designer.

The following functions are supported by the import with iX Developer 2.0, up to 2.30 SP1:

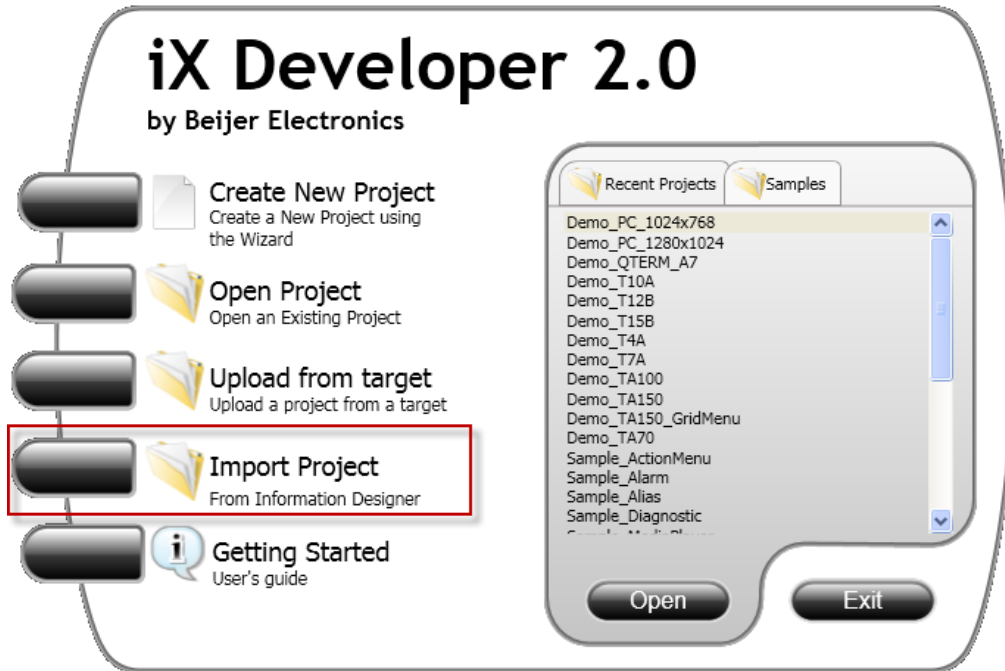
- Text Library
- Tag list
- Alarm Server
- Multi Language

During the import, a log is generated where you can find which objects and functions were not successfully imported. The log file can be saved for later trouble shooting.

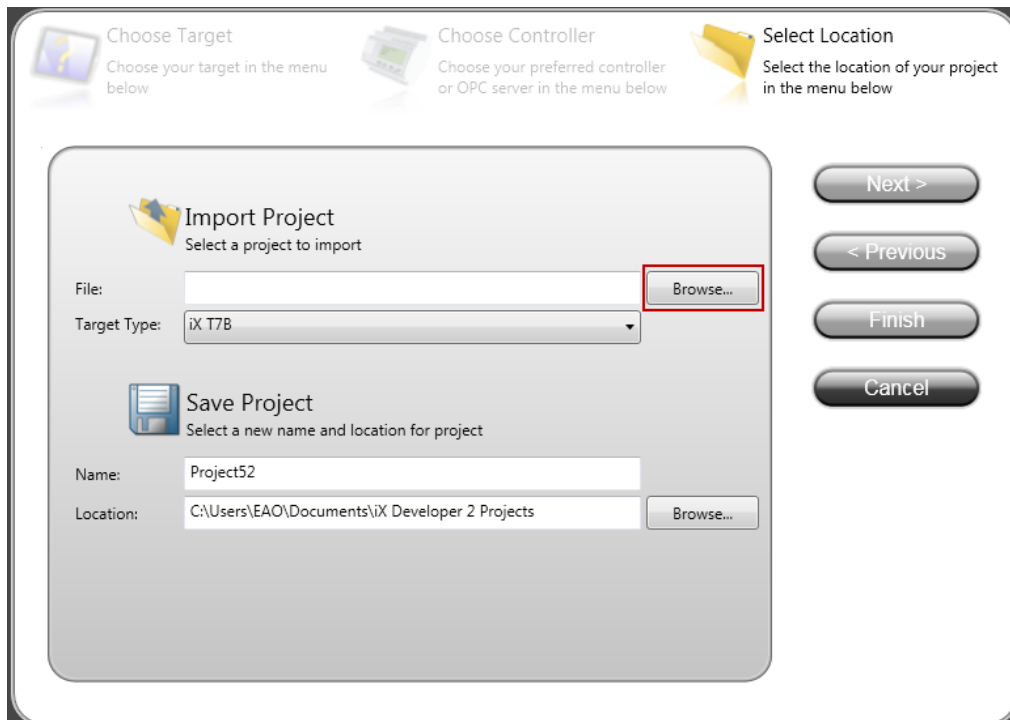
Note! Before you continue, make sure that:

- The EXTER/E1000 project is saved in the latest version of Information Designer (version 7.52)/E-Designer (version 1.52).
- That objects in the project are ungrouped.
- That a matching HMI has been decided.
- That you have read about the limitations in the end of this chapter.

- Start iX Developer. Select *Import Project* at the splash wizard.

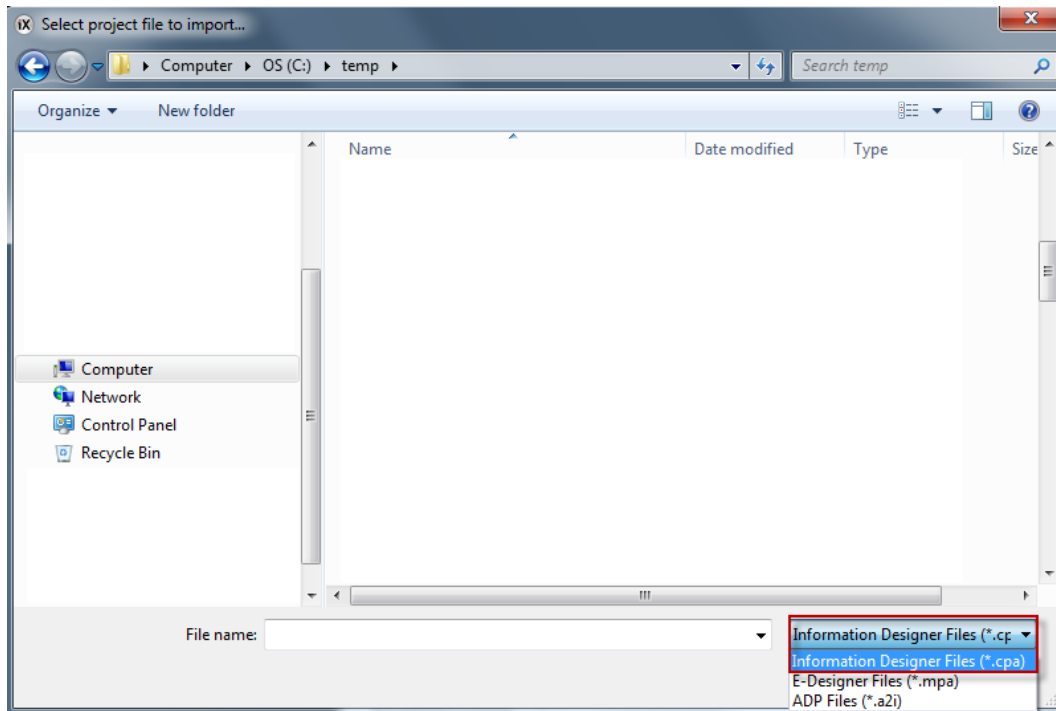


- Press *Browse...* then navigate and select which project to import.

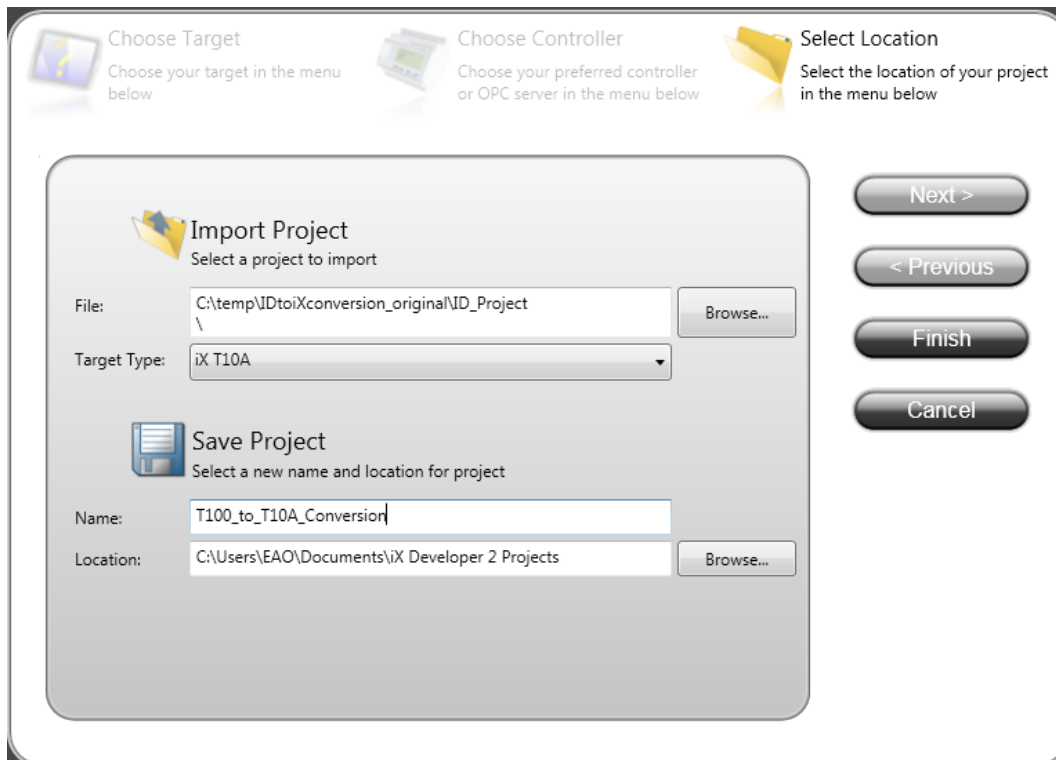


In the list *Files of type*, select which type of project you wish to import.

In this case, select Information Designer/E-Designer:

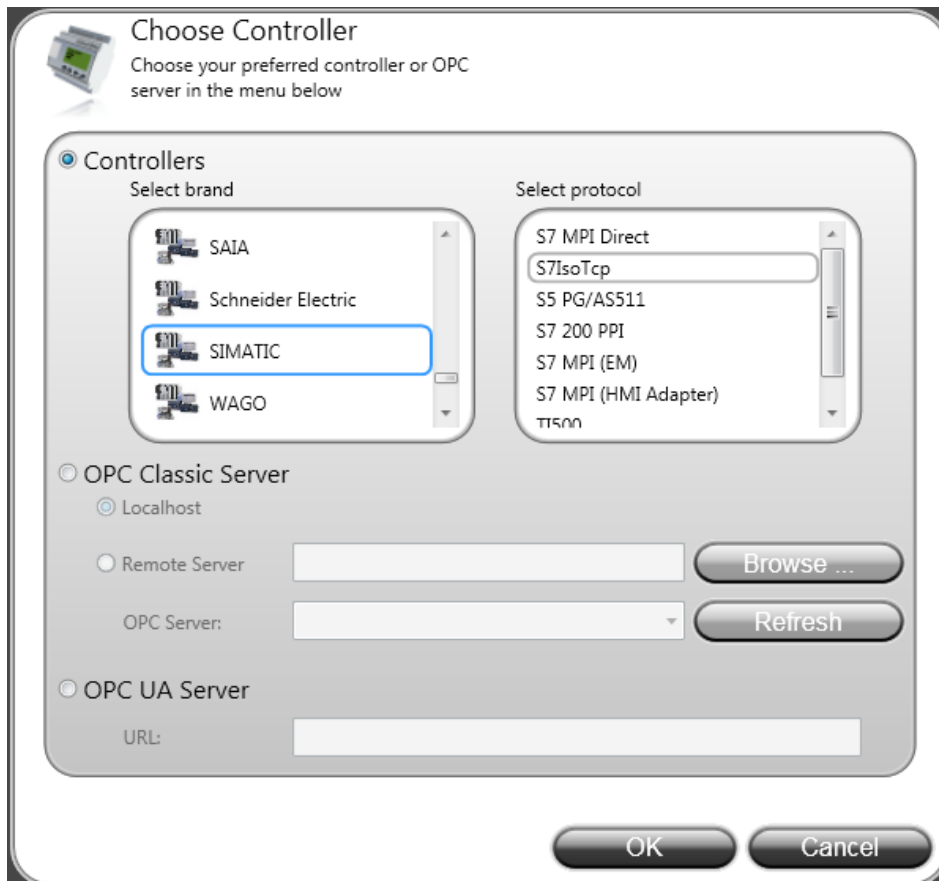
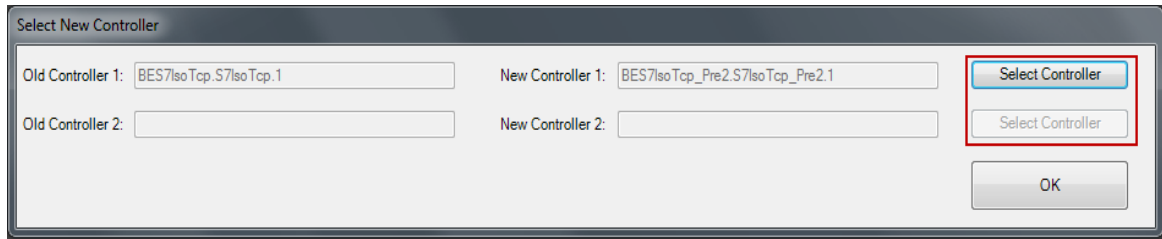


- Select your target type. Either PC or a specific X2 HMI.
- Select target folder and project name for the new converted project.



- Press *Finish* when done.

- Select matching controller. It is important that this step is made correctly for iX to be able to handle the imported device addresses from the original EXTER/E1000 project.
- In this example, the SIMATIC S7 ISOoverTCP driver is used in the EXTER/E1000 project. The matching driver will be the SIMATIC S7IsoTcp.



- When you have selected your new controllers, press the OK button.

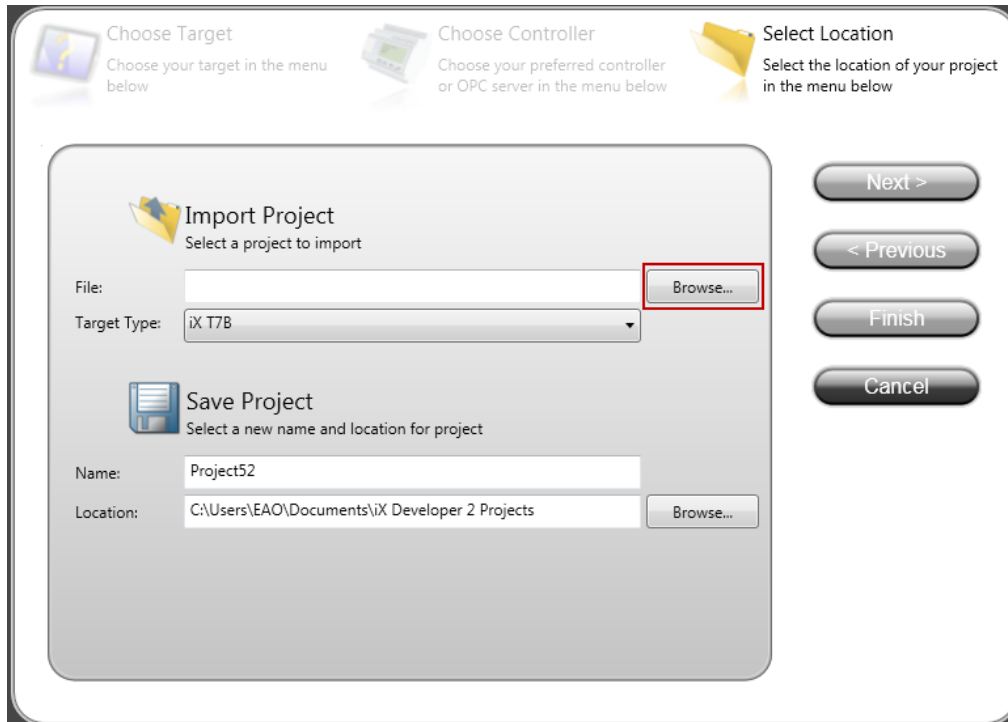
## 4.2 Import project to iX Developer 2.40

In iX Developer 2.40 which is released in April 2018, additional functions and minor fixes are added to further facilitate the import to iX. Please note that these added functions are only available in iX Developer 2.40 or later versions. They are not available in iX Developer 2.0.

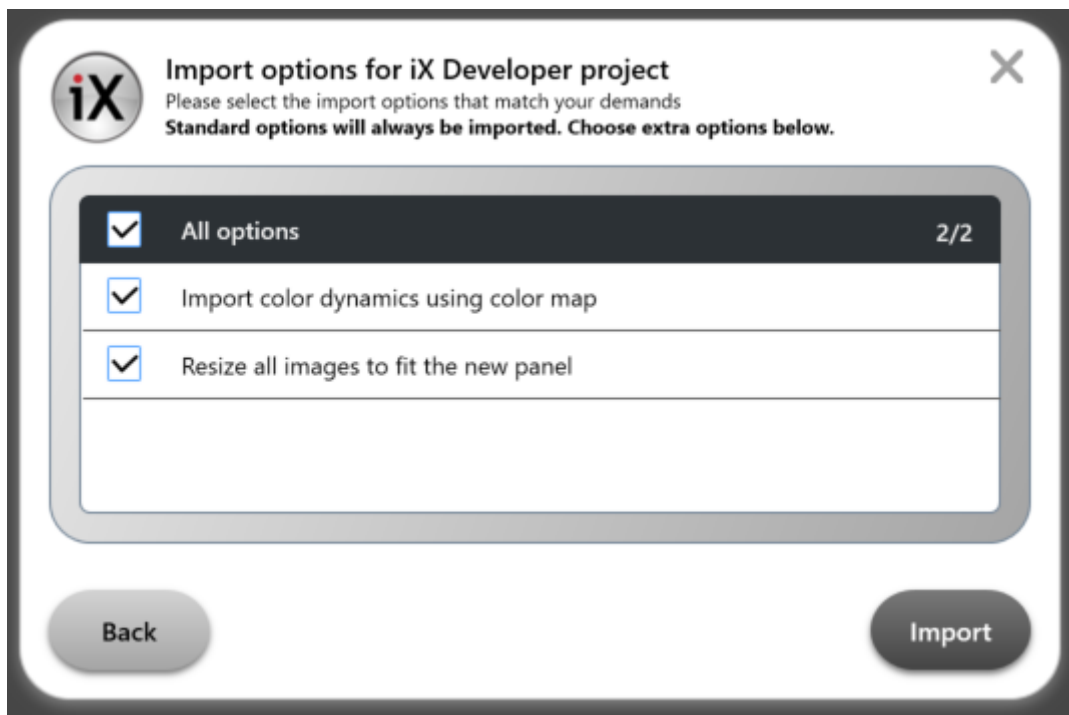
- A new keyboard with text input field that is similar to a touch key in Information Designer/E-Designer is added to facilitate value input when working with Analog Numeric.
- Ensure pictures are the correct size after import
- Support of dynamic text conversion
- Analog Fill and Digital Fill objects are converted in iX as a rectangle/circle object
- Added an option in iX to enable notification in display when VNC is active
- Support of rectangle border dynamics whose border is connected to a signal
- Support visibility dynamics
- Improve the UI flow of the import process.
- New conversion log
- Minor fixes:
  - Correct conversion of Analog Numeric object's boarder setting
  - Correct conversion of Analog Numeric object with decimals
  - Correct conversion of Picture Enable property for picture object
  - Correct conversion of Text Enable property for text object
- Start iX Developer. Select *Import Project* at the splash wizard.



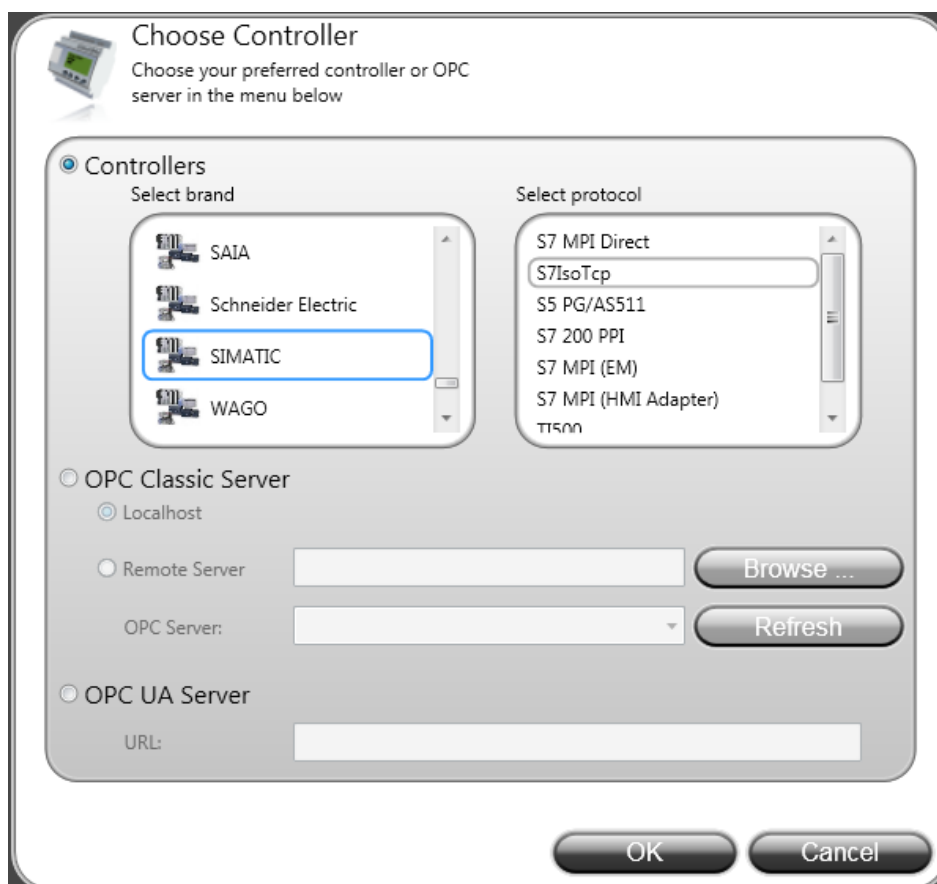
- Press *Browse...* then navigate and select which project to import.



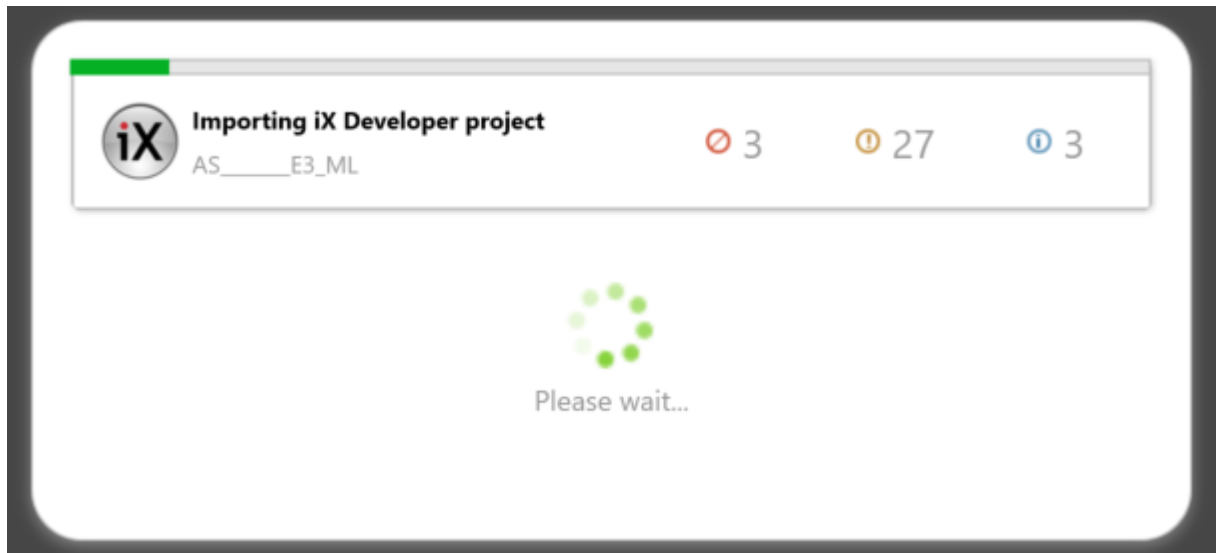
- If the Information Designer/E-Designer project to be imported to iX Developer uses color dynamics or contains a few images, it is recommended to select both import options to ensure the best result. Once the desired options are checked, press *Import* to continue the import process.



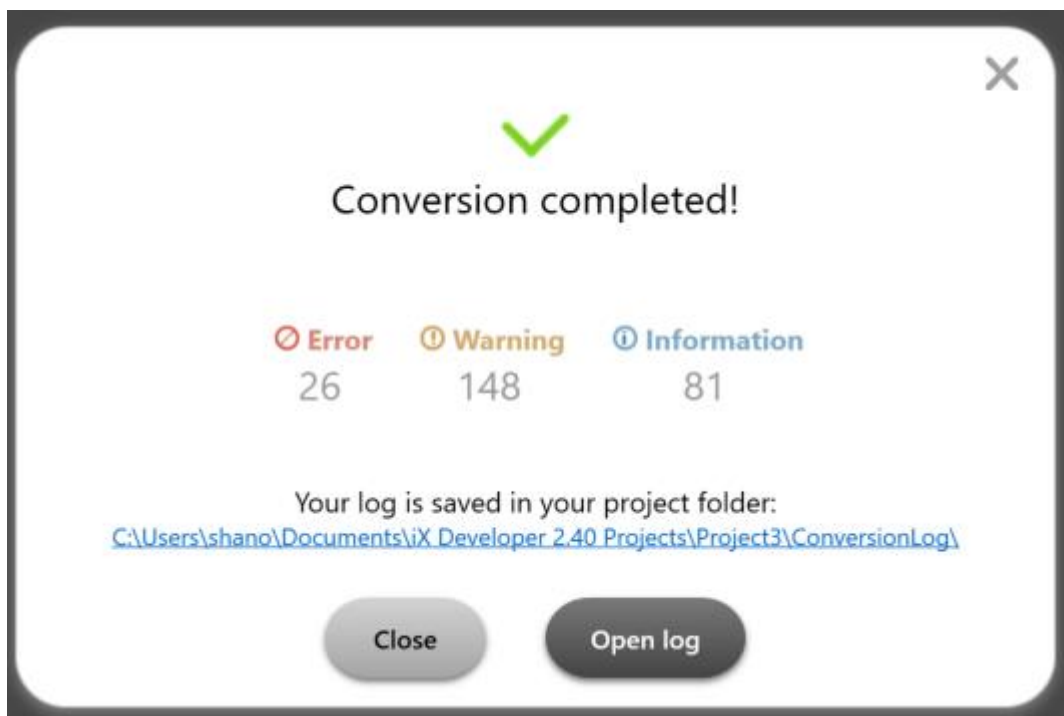
- Select matching controller. It is important that this step is made correctly for iX to be able to handle the imported device addresses from the original EXTER/E1000 project. Then *OK*
- In this example, the SIMATIC S7 ISOOverTCP driver is used in the EXTER/E1000 project. The matching driver will be the SIMATIC S7IsoTcp.



- The time it takes to import an Information Designer/E-Designer project to iX Developer depends on the size and the complexity of the project. It may take up to several minutes. During the process, a dialogue is continuously updated with the status of the import.



- When the import is finished, a dialogue is shown with the import status, including a statistic of the conversion log. The log is automatically saved in a folder. The path of the log is also displayed in the dialogue. It is possible to open the log from the dialogue as well. Click *Open log* to open the conversion log file. Click *Close* to proceed to the imported project in iX Developer.



- Once the log is open, it displays a summary of all the messages generated during import. They are also sorted into Error, Warning and Info. Each item is assigned with an ID number to facilitate search.



Log messages

2018-1-26 13:48:39

All (255)

Errors (26)

Warnings (148)

Info (81)

**Warning 1**  
Conversion discarded for <SetupIndex>

**Warning 2**  
Conversion discarded for <SetupClock>

**Warning 3**  
Conversion discarded for <SetupCountry>

**Warning 4**  
Conversion discarded for <SetupOnline>

**Warning 5**  
Conversion discarded for <SetupUI>

**Warning 6**  
Conversion discarded for <SetupPrinter>

**Warning 7**  
Conversion discarded for <PLCPort>

**Warning 8**  
Conversion discarded for <NetPort>

**Warning 9**  
Conversion discarded for <PTNPort>

- Limitations

Certain functions, like recipes and data logging (Data Logger) work differently in iX Developer and you will need to reconfigure these functions in your converted project.

Functions to consider in your converted project:

- **Text Library/Message Library** – Works without issues.
- **Tag list/Name List** – Indexing, poll groups and poll interval must be reconfigured manually.  
Gain/offset settings are now global and found in the tags editor  
Indexing and poll groups can be converted via manual import of the Name list.
- **Alarm Server/ Alarms** – Properties for Alarms must be configured manually.  
Acknowledge notify must be configured manually and is replaced by the Alarm acknowledge property in iX.  
*To Printer* has been replaced with Alarm Distributor Server function in iX.
- **Multi Language** – Works without issues.

Controller settings are not converted and must be manually configured.

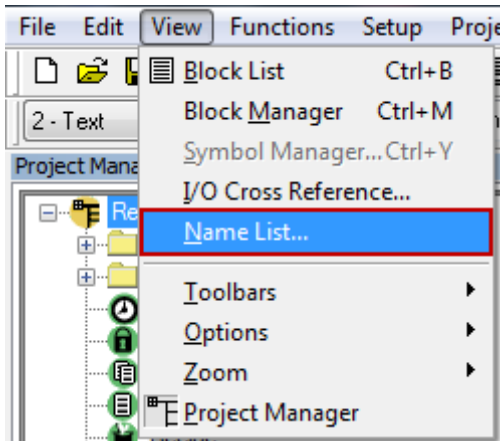
Note! Always verify that the import has been correctly made for all functions.

## 5 Manual import of the name list

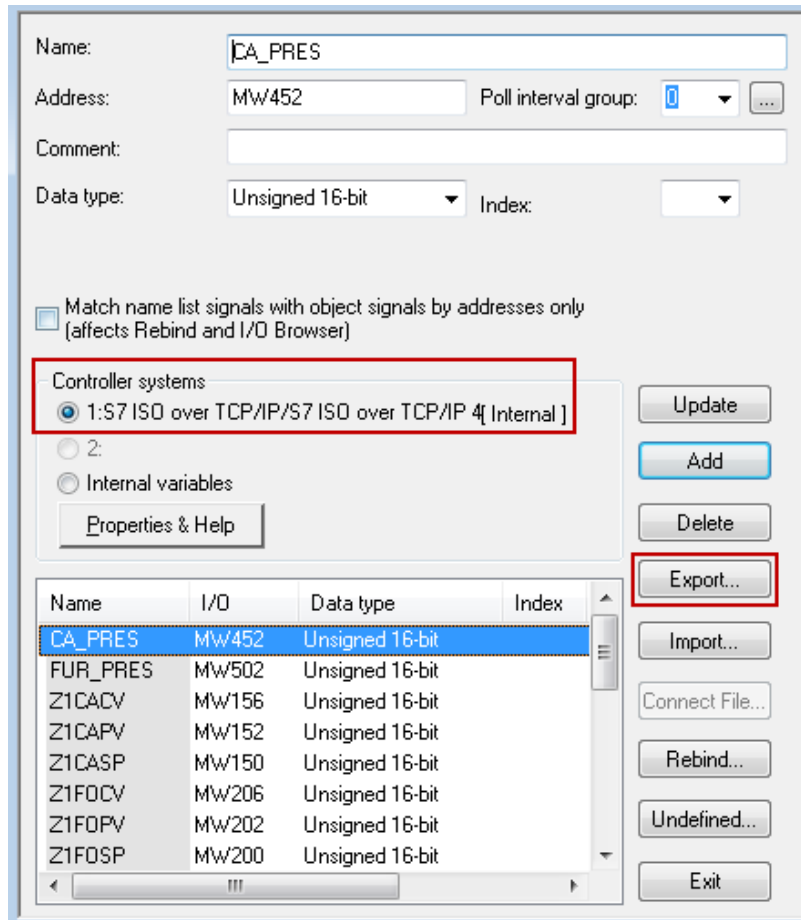
Below follows an example of how you can manually import the name list from Information Designer/E-Designer into iX Developer.

The correct controller must be used in the iX project to be able to import the name list from the Information Designer/E-Designer project.

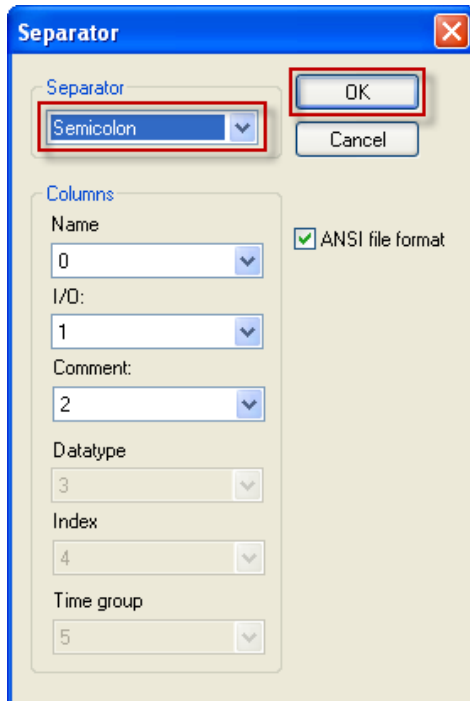
- Export the name list from Information Designer/E-Designer.



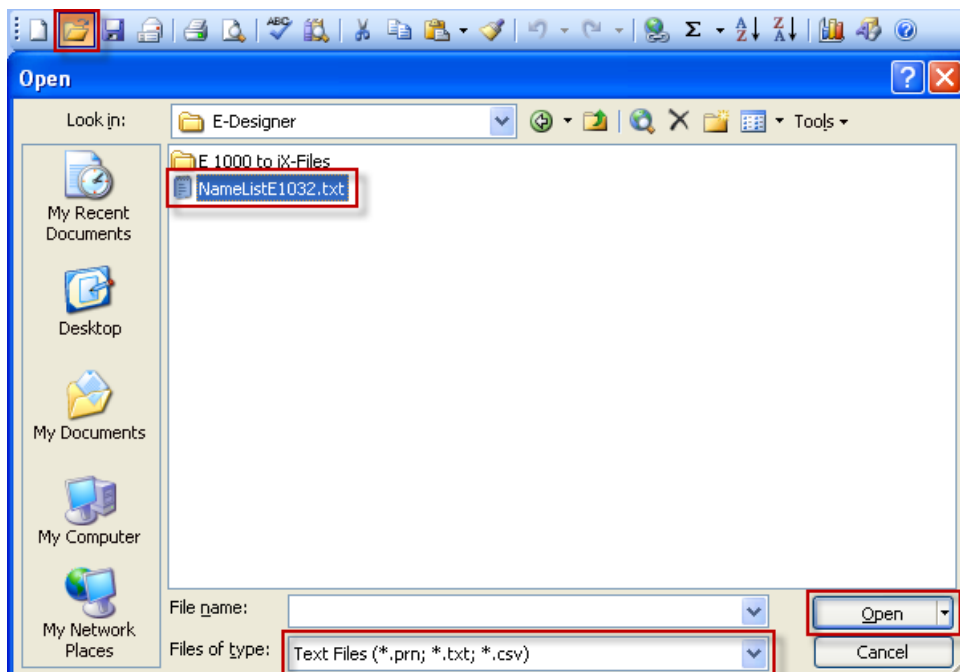
- Select the devices/tags belonging to the driver you wish to export. You are only able to export from one controller/driver at a time. Push Export...



- Select *Semicolon* as the separator, push *OK*.
- Save the exported tags to a file with a suitable name.

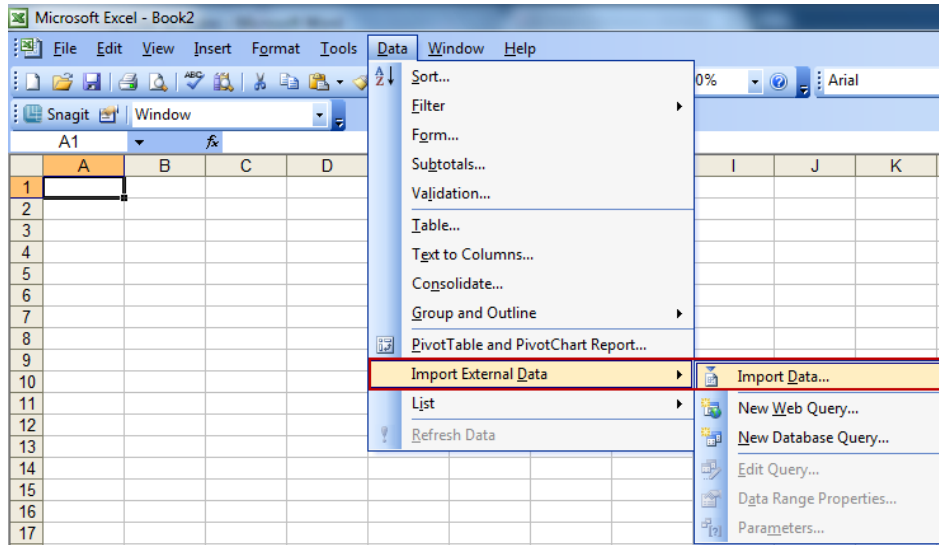


- Start Excel (Excel 2003 is used in this example).
- Open the exported text file from Information Designer/E-Designer.

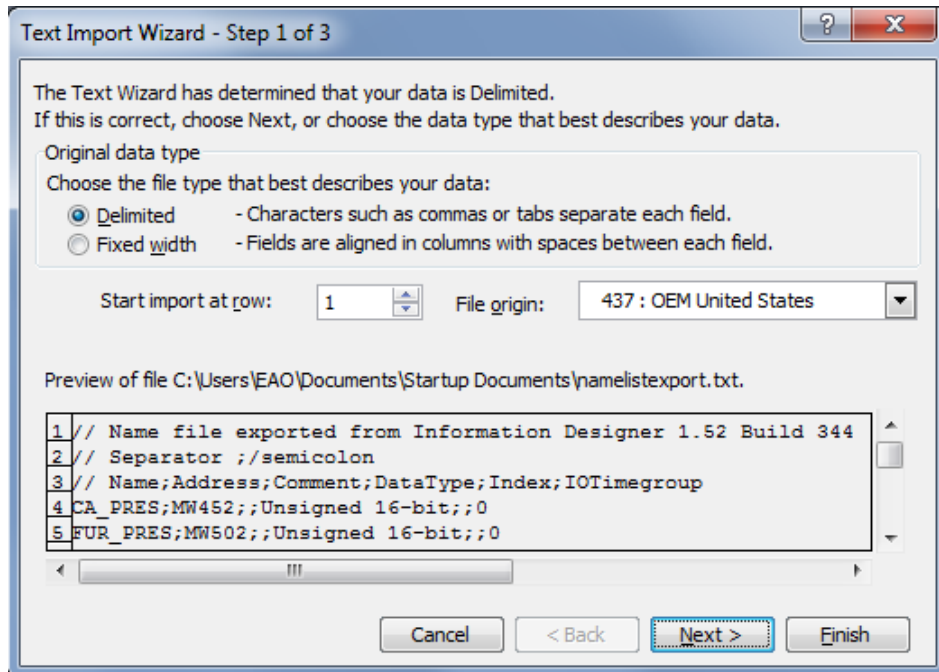


*Text Import Wizard* will be displayed automatically by Excel.

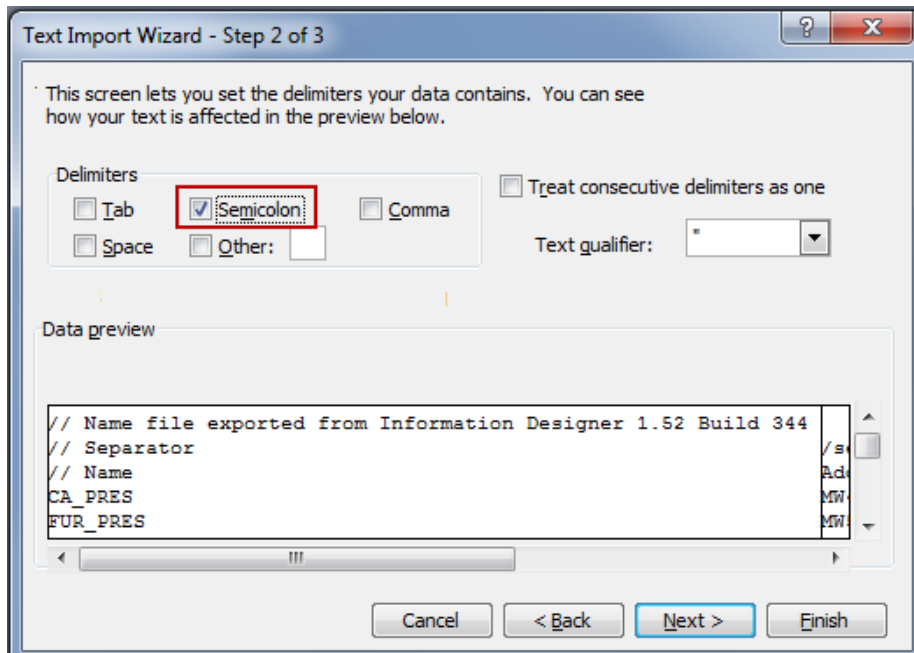
If it does not start up automatically, use Import Data and manually select your file:



- Select *Next*.



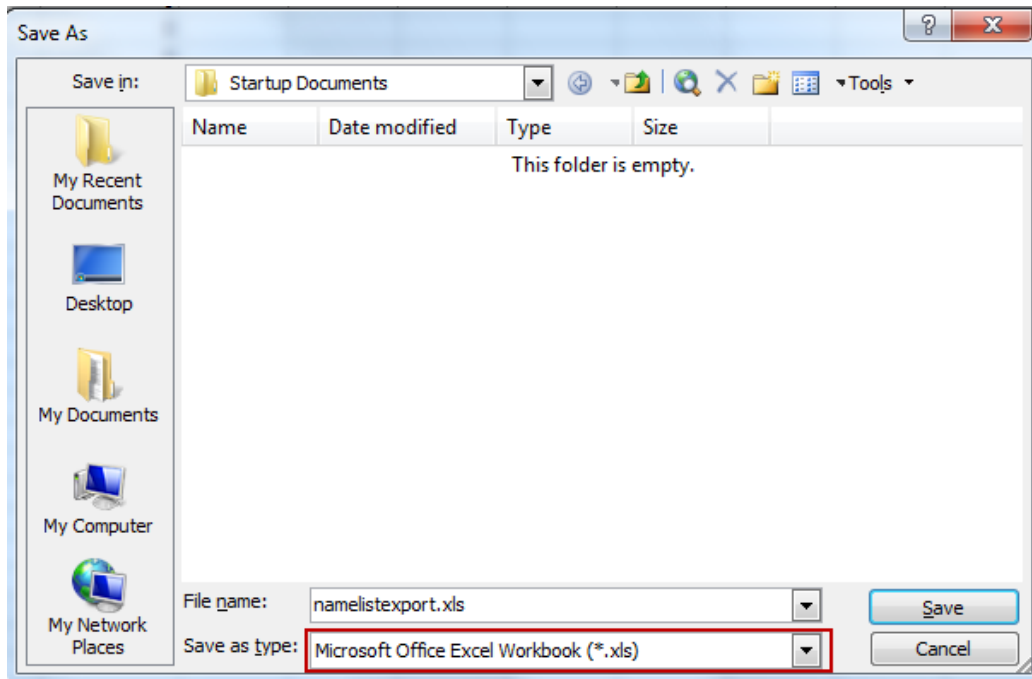
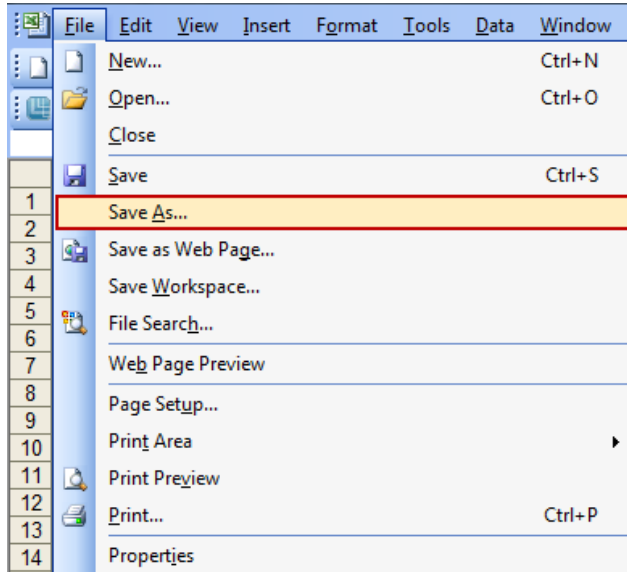
- Select *Semicolon* as the *Delimiter*. A preview will be shown in the lower textbox. If it looks correct, press *Finish*.



The imported file should look something like this and have the correct column separation:

	A	B	C	D	E	F
1	// Name file exported from Information Designer 1.52 Build 344					
2	// Separator	/semicolon				
3	// Name	Address	Comment	DataType	Index	IOTimegroup
4	CA_PRES	MW452		Unsigned 16-bit		0
5	FUR_PRES	MW502		Unsigned 16-bit		0

- Save the file in the Excel format ".xls".



It is a good idea to export a sample of a tags list from iX to later use as a template when you want to create files to import.

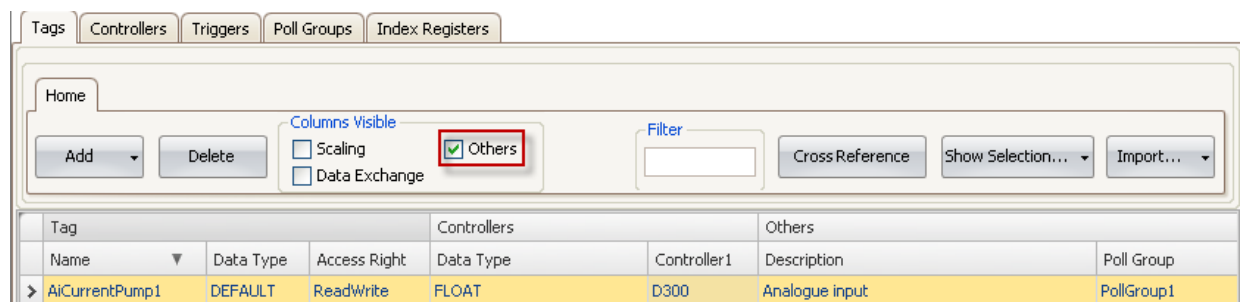
In this example, we only go over the differences between the two Export/Import formats (see below). Using the template as a guide for what you need to change should help you be able to convert your name list to a file that can be imported in iX Developer.

- Start iX Developer 2.0.

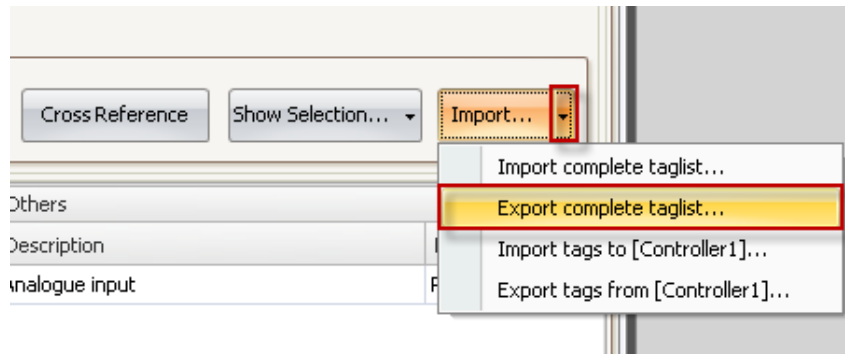
Let us use the following tag as an example, *AiCurrentPump1*:

2	// Separator	#separator					
3	// Name	Address	Comment	Data Type	Index	IOTimegroup	
4	AiCurrentPump1	D300	Analogue input	Float without exp.		0	

- Configure an identical tag in iX Developer 2.0.

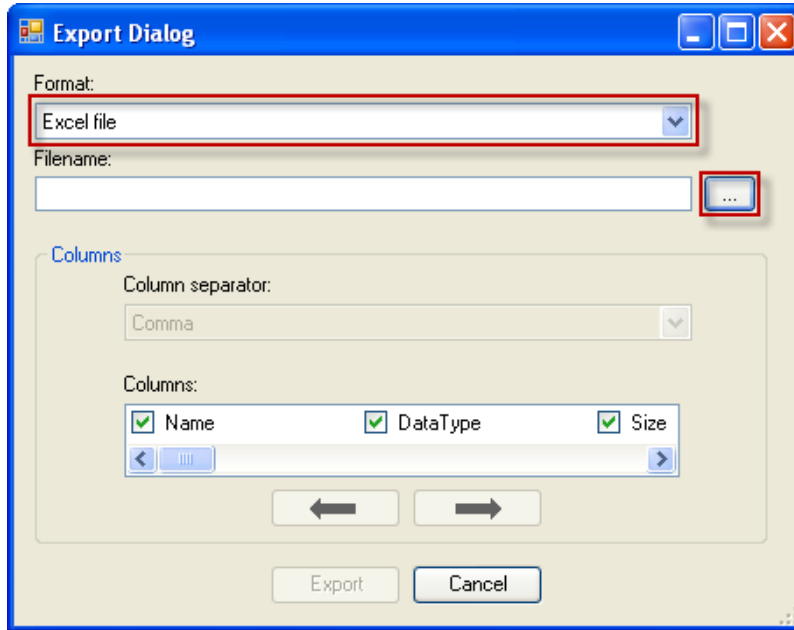


- Export the complete tag list.





- Select to export to Excel format. Select target filename.



Select a suitable name and press Export.

- Open the file you exported in Excel.

See explanation below covering the different properties and how they match up between Information Designer/E-Designer and iX Developer.

// Name	DataType	SI	PollGroupName	IndexRegisterNumber	Location	Address_1	AccessRight_1	Description //
AiCurrentPump1	FLOAT		PollGroup1	0		D300	None	"Analogue input"

Information Designer/E-Designer	iX Developer
Name	Name
Address	Address_1
Comment	Description
DataType	DataType
Index	IndexRegisterNumber
	0 (Default)
	1
	2
	Etc.
IOTimegroup	PollGroupName
	PollGroup1 (Default)
	PollGroup2
	PollGroup3
	Etc.

How to modify the export file from Information Designer/E-Designer:

- Remove the two top rows.

	A	B	
1	// Name file exported from Information Designer 1.52 b		
2	// Senarator	/semicolon	
		Address	Comment
		M1980	
		M1981	
		M1982	
		s[1]	R520
		s[2]	R521
		s[3]	R522
			R500
			R501
			R502

- Change names of the columns to match them with what iX Developer understands.

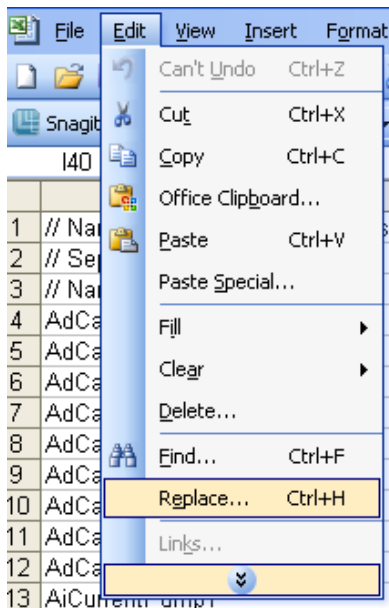
Information Designer/E-Designer:

1	// Name	Address	Comment	DataType	Index	IOTimegroup
---	---------	---------	---------	----------	-------	-------------

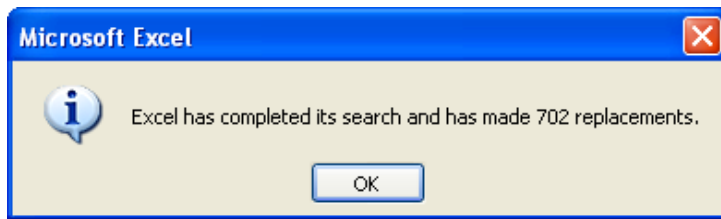
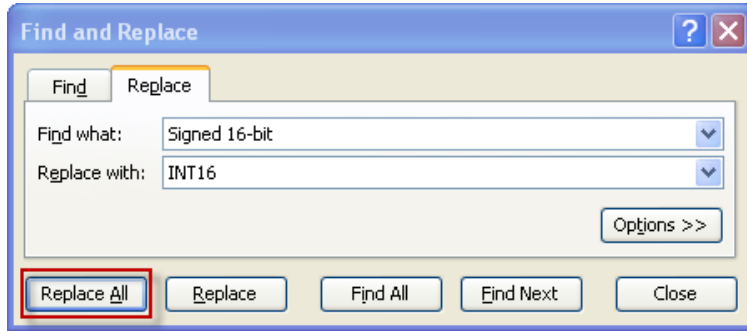
iX Developer:

1	// Name	Address_1	Description	DataType	IndexRegisterNumber	PollGroupName
---	---------	-----------	-------------	----------	---------------------	---------------

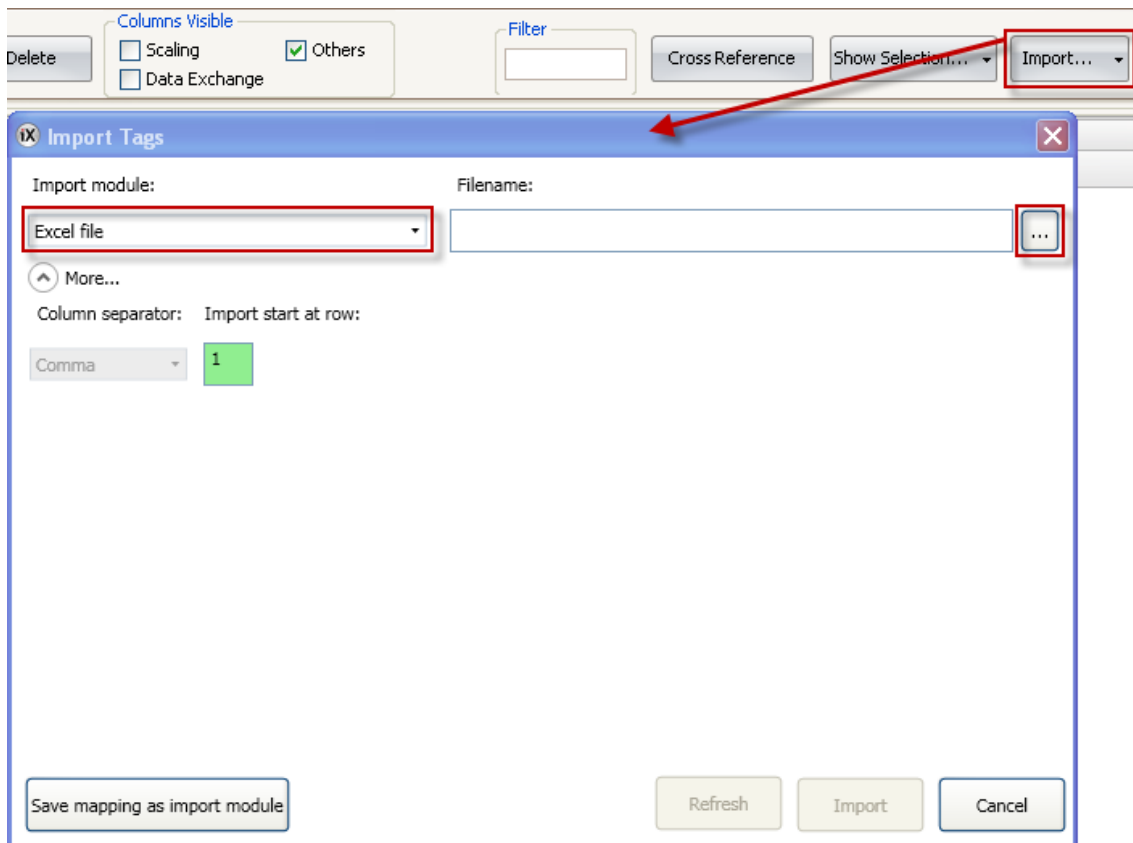
- Replace the incorrect data types.

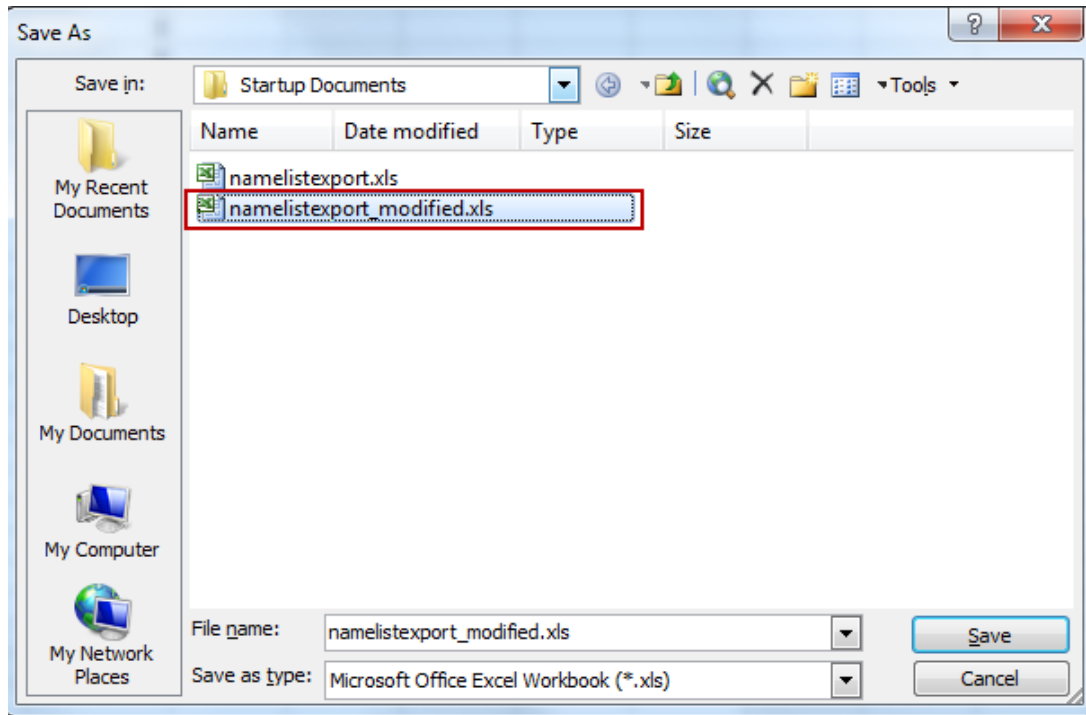


For example:



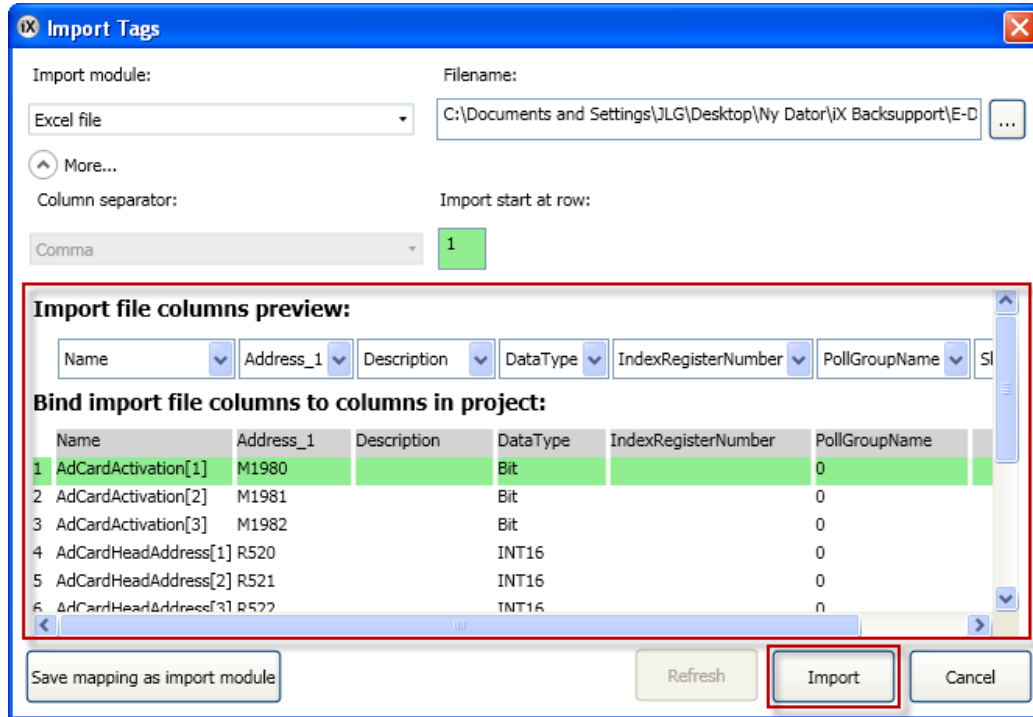
- Import your tags list in iX. Select *Excel file*.





A preview is shown:

- If it looks correct like the example below, press *Import*.



Done.

Tag				Controllers		Others	
Name ▲	Data Type	Access Right	Data Type	Controller1	Description	Poll Group	
AdCardActivation_1_	DEFAULT	None	BIT	M1980		PollGroup1	
AdCardActivation_2_	DEFAULT	None	BIT	M1981		PollGroup1	
AdCardActivation_3_	DEFAULT	None	BIT	M1982		PollGroup1	
AdCardHeadAddress_1_	DEFAULT	None	INT16	R520		PollGroup1	
AdCardHeadAddress_2_	DEFAULT	None	INT16	R521		PollGroup1	
AdCardHeadAddress_3_	DEFAULT	None	INT16	R522		PollGroup1	
AdCardPlace_1_	DEFAULT	None	INT16	R500		PollGroup1	
AdCardPlace_2_	DEFAULT	None	INT16	R501		PollGroup1	
AdCardPlace_3_	DEFAULT	None	INT16	R502		PollGroup1	
AiCurrentPump1	DEFAULT	None	FLOAT	D300	Analogue input	PollGroup1	

## 6 After the project is converted

You must locate your Gain/offset settings in your old EXTER/E1000 project manually.

It is not a global setting like in iX, it is instead configured on individual objects/controls.

Save the log file that is generated during an import. It will contain clues as to what screens/objects in your project was not converted, and that should help you learn what needs to be converted manually/redesigned in your converted project.