New Automation Technology
Beckhoff Automation

BECKHOFF

XTS Training

BECKHOFF

BECKHOFF

XTS – TcIoXtsProcessingUnit (XPU)

Agenda | XTS- TcIoXtsProcessingUnit (XPU)

BECKHOFF

1. **XPU Introduction**
2. XTS Configuration Process
3. XPU – Deep Dive
4. XTS Viewer
5. Mover 1
6. Simulation Mode

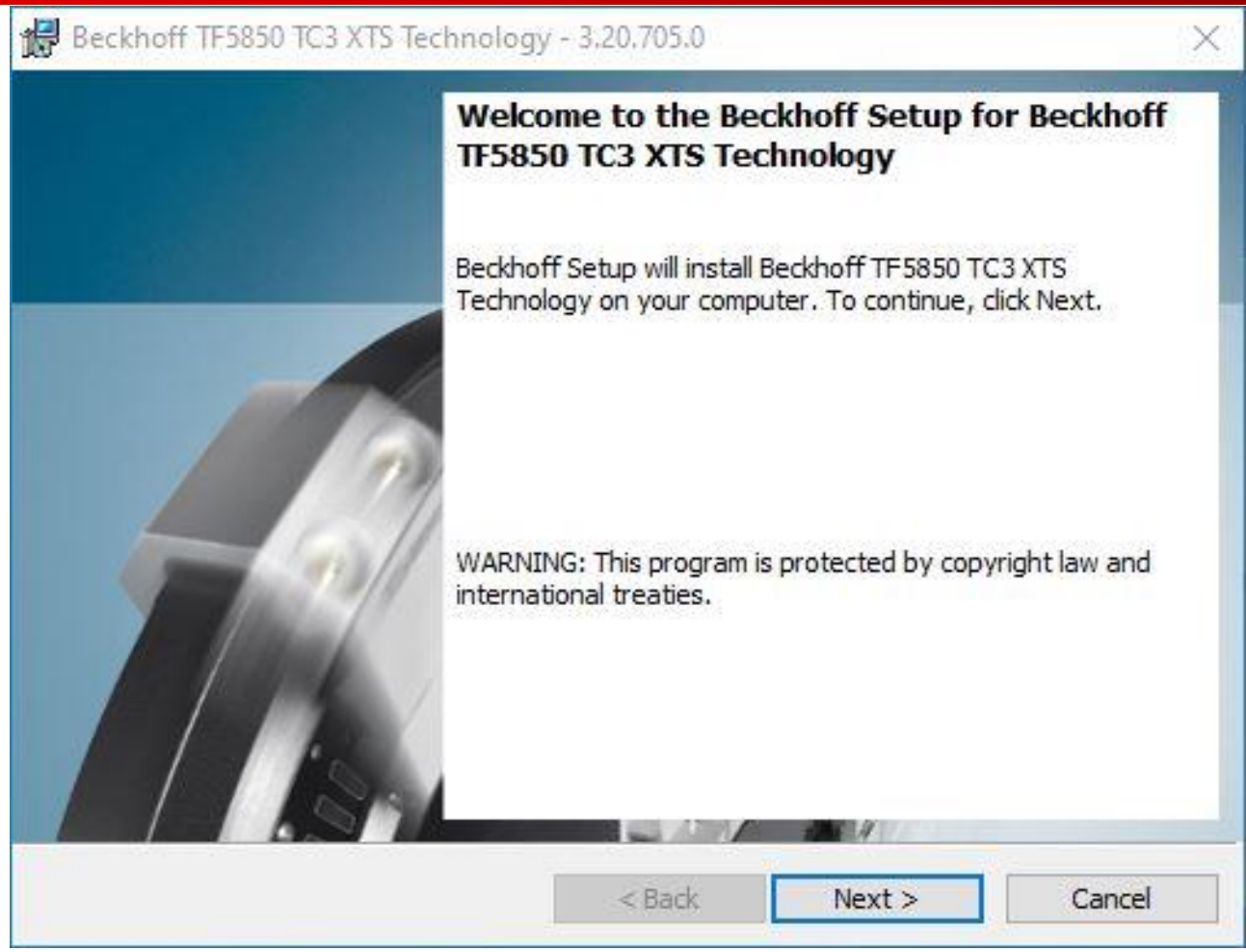
XPU Introduction

BECKHOFF

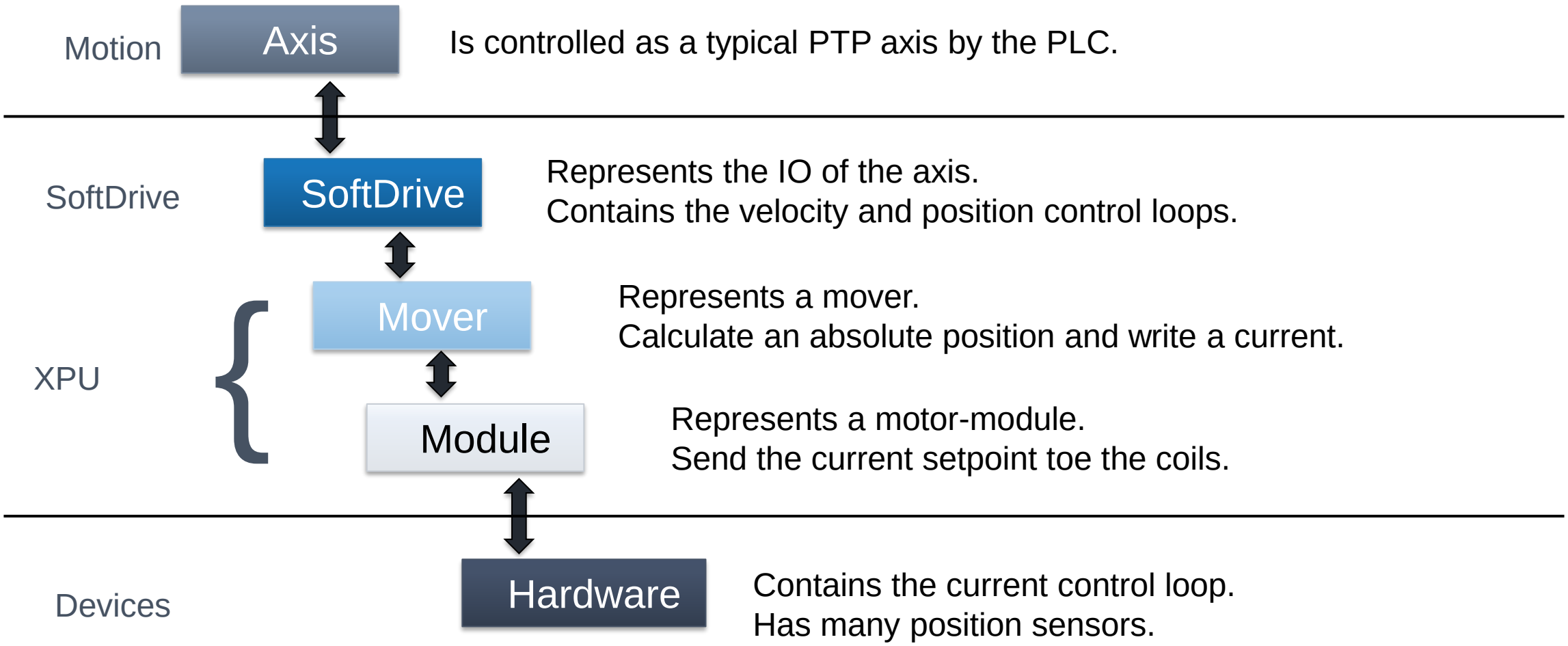
- TcIoXtsProcessingUnit
  as TcCOM Module
  (TwinCAT Component Object Models

- TF5850 | TC3 XTS Extension
  - Included
    TcIoXtsProcessingUnit
    TcIoXtsDrv (obsolete)
    SoftDrive

- TF5400 | TC3 Advanced Motion Pack
  - Included
    TC3 Collision Avoidance



- TcIoXtsProcessingUnit is the link between the Motion and the hardware.



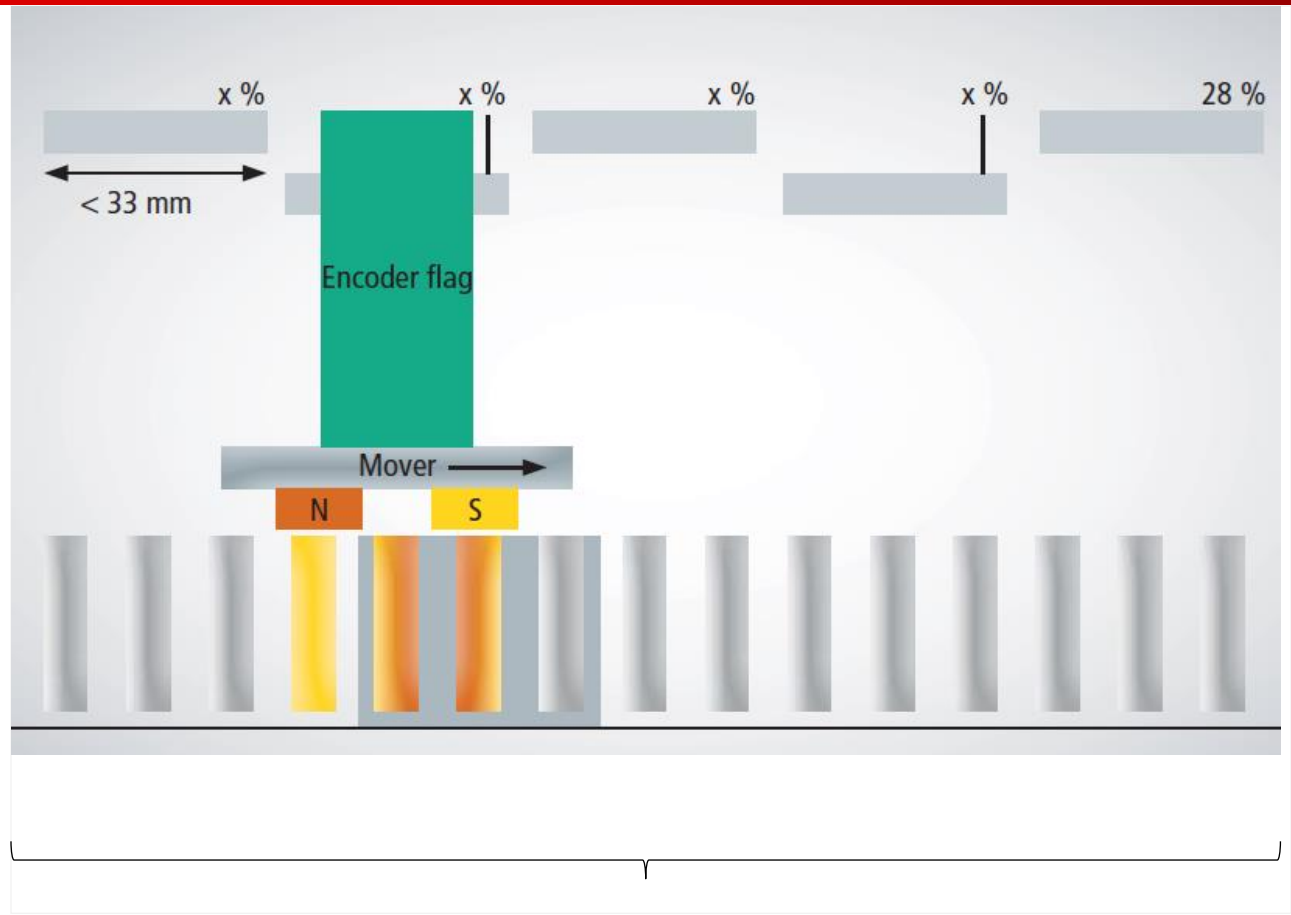
XPU Introduction

BECKHOFF

- Collects the input channels of all terminals and calculates an absolute position for each mover.
  (It knows the XTS topology.)

- Forwards the current output of the controller (SoftDrive) to the individual coils which are activated by a mover.

- Handles module boundaries smoothly.



The abstract components of one XTS module

Agenda | XTS- TcIoXtsProcessingUnit (XPU)

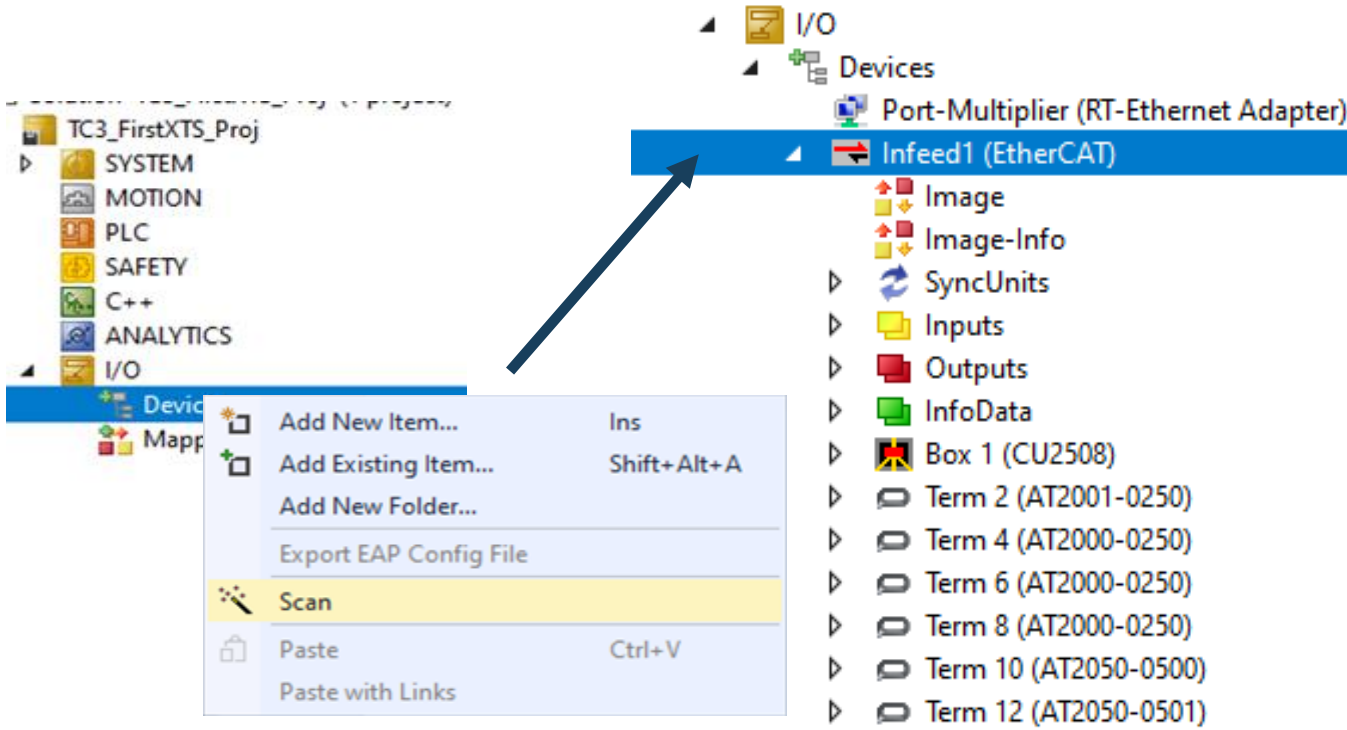
BECKHOFF

1. XPU Introduction
2. **XTS Configuration Process**
3. XPU – Deep Dive
4. XTS Viewer
5. Mover 1
6. Simulation Mode

XTS Configuration Process...

BECKHOFF

- Start with a new project.
- Perform a ‘Scan’ of the IO…



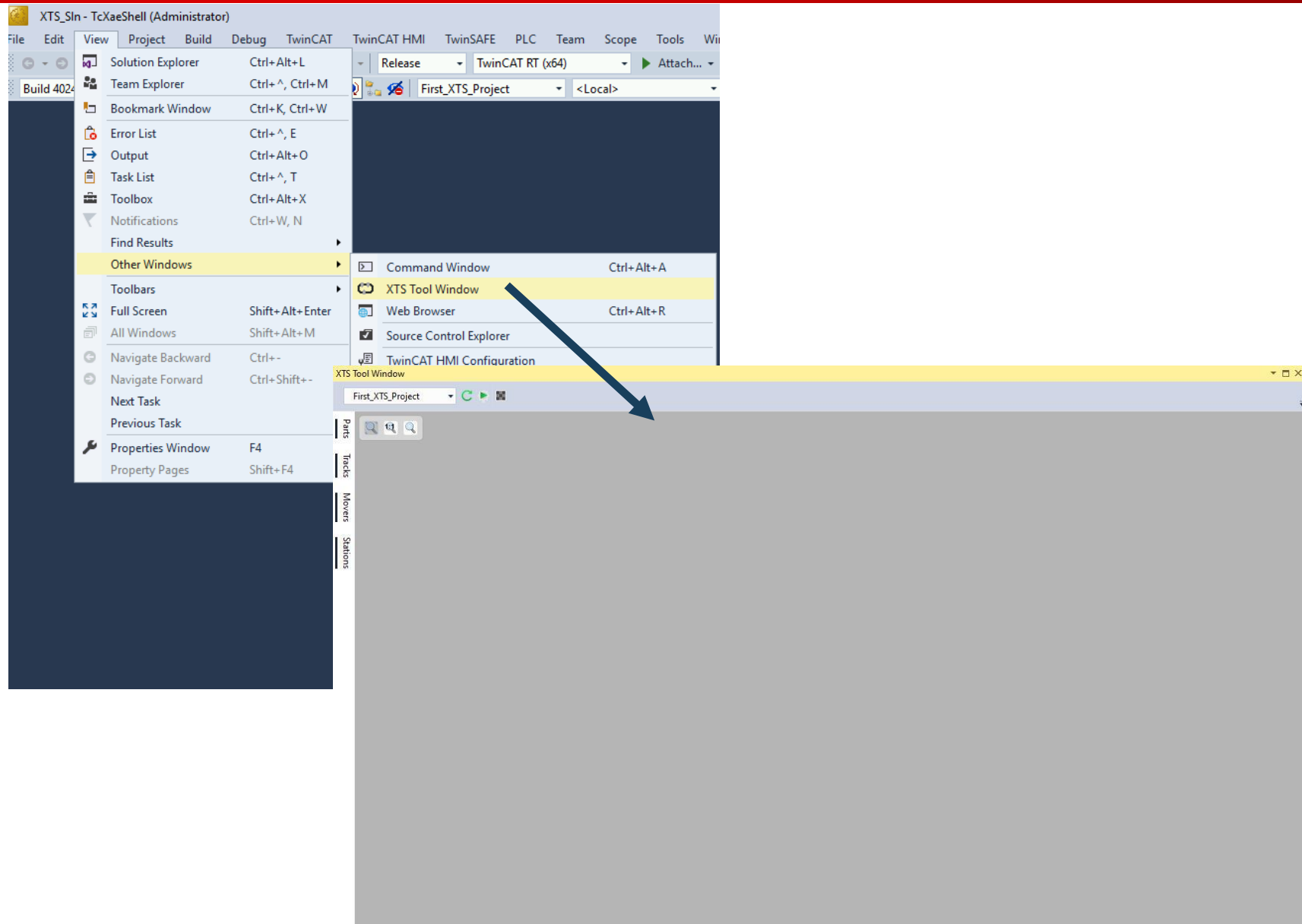
- **TIP**

  After scan, change to
  Free-Run mode and have a look at the signals,
  the values should be changing continuously.

XTS Configuration Process...

BECKHOFF

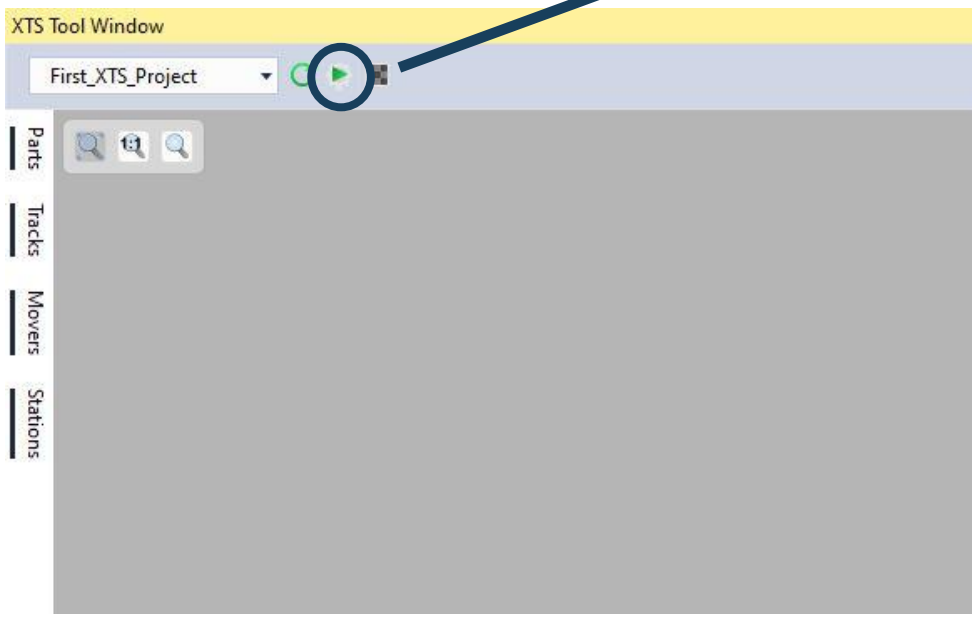
- Open XTS Tool Window

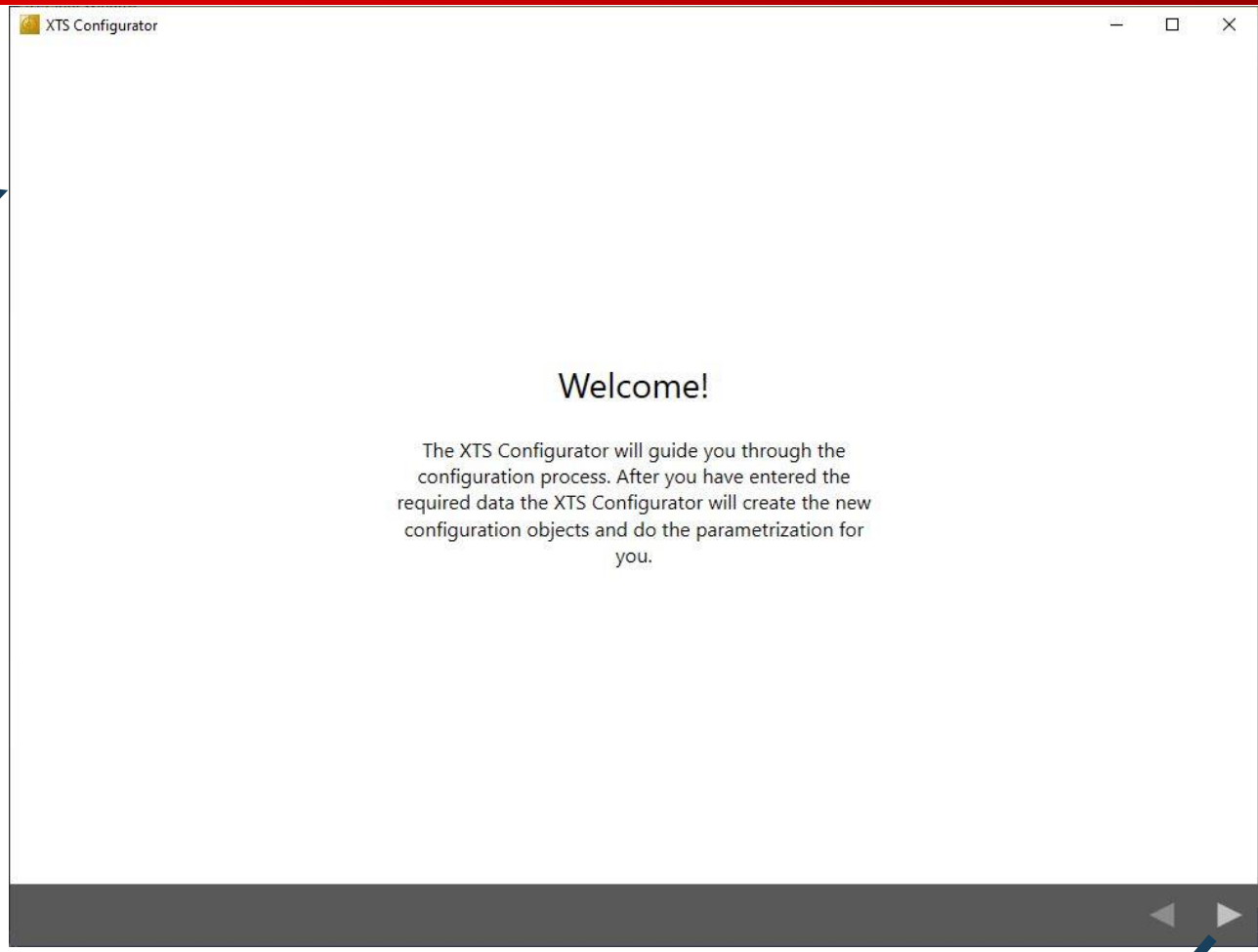


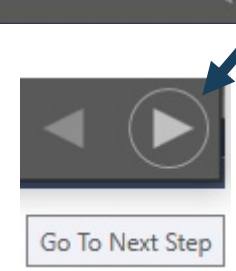
XTS Configuration Process...

BECKHOFF

- Start the configuration process



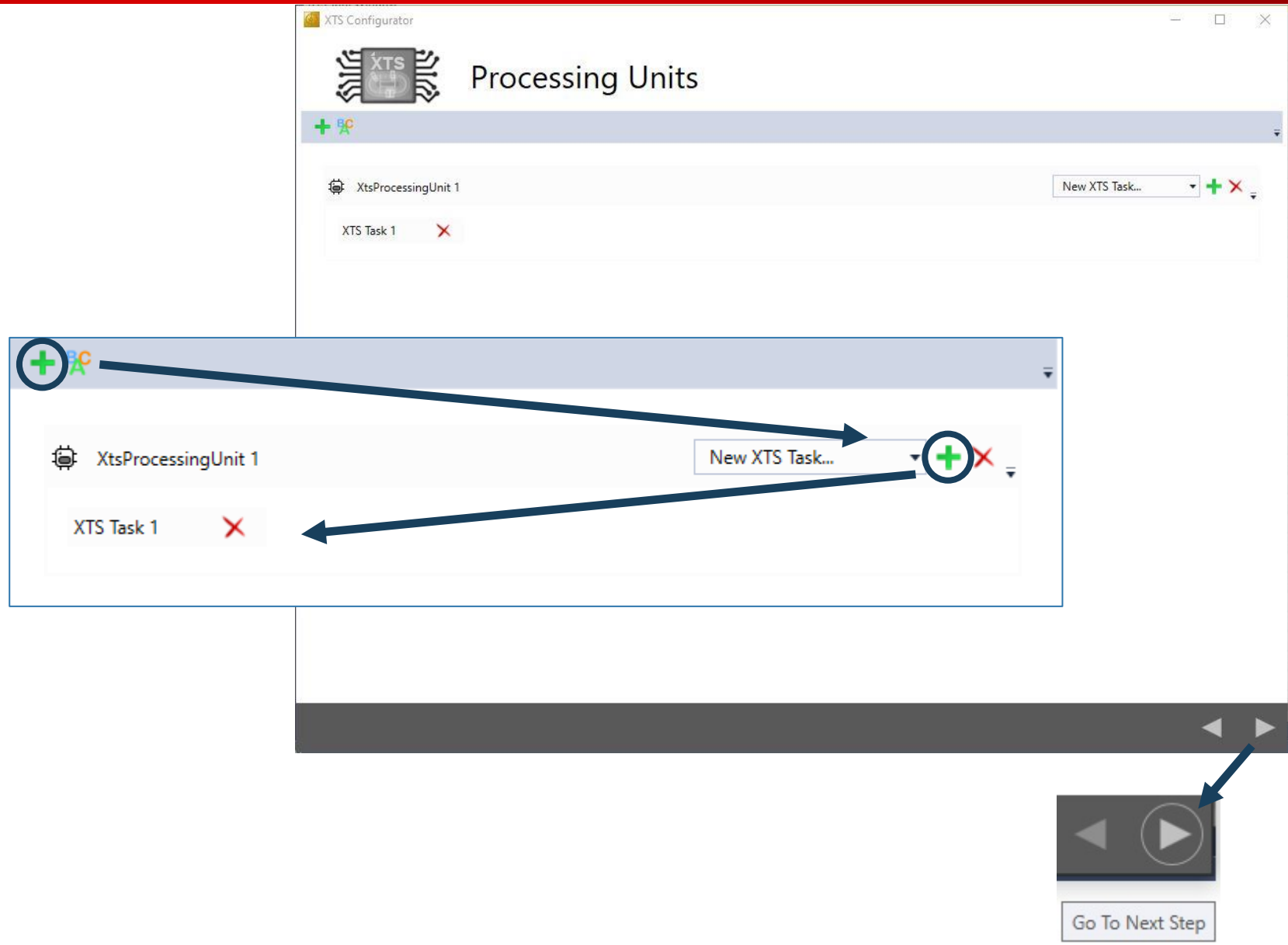




XTS Configuration Process...

BECKHOFF

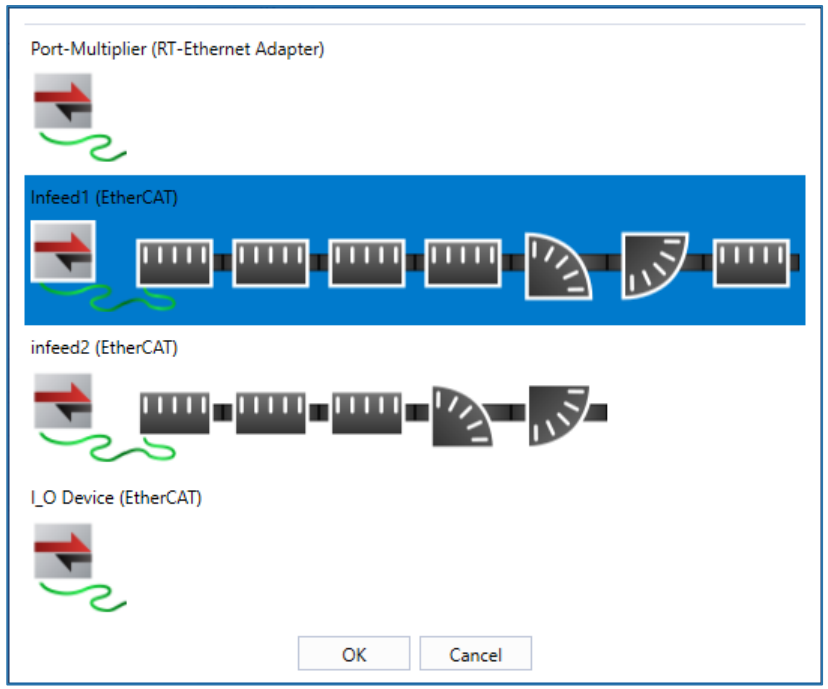
- Add XTS Task 1

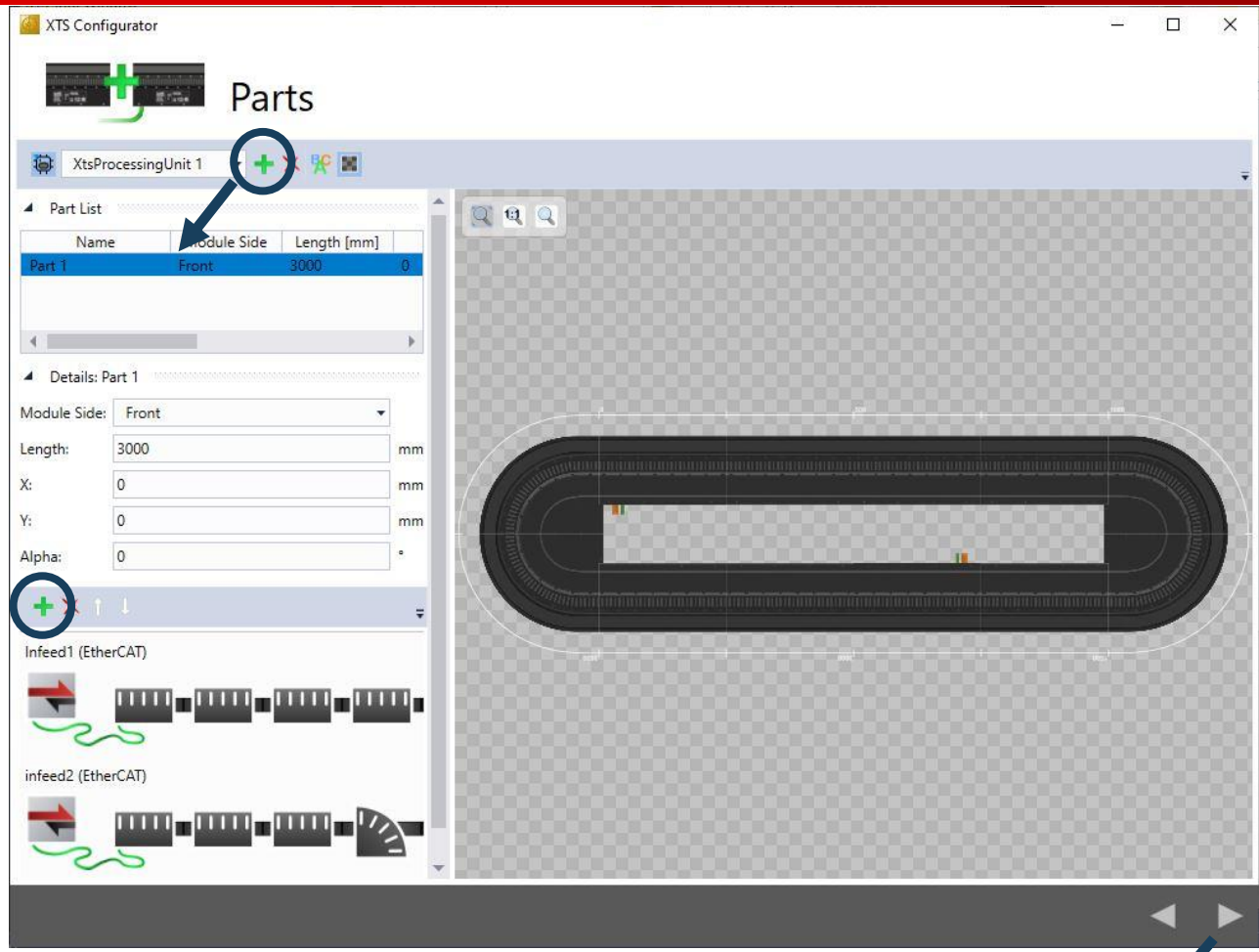


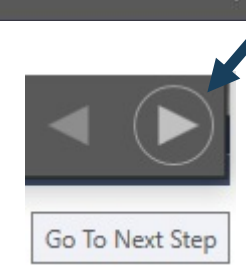
XTS Configuration Process...

BECKHOFF

- Add XTS Parts





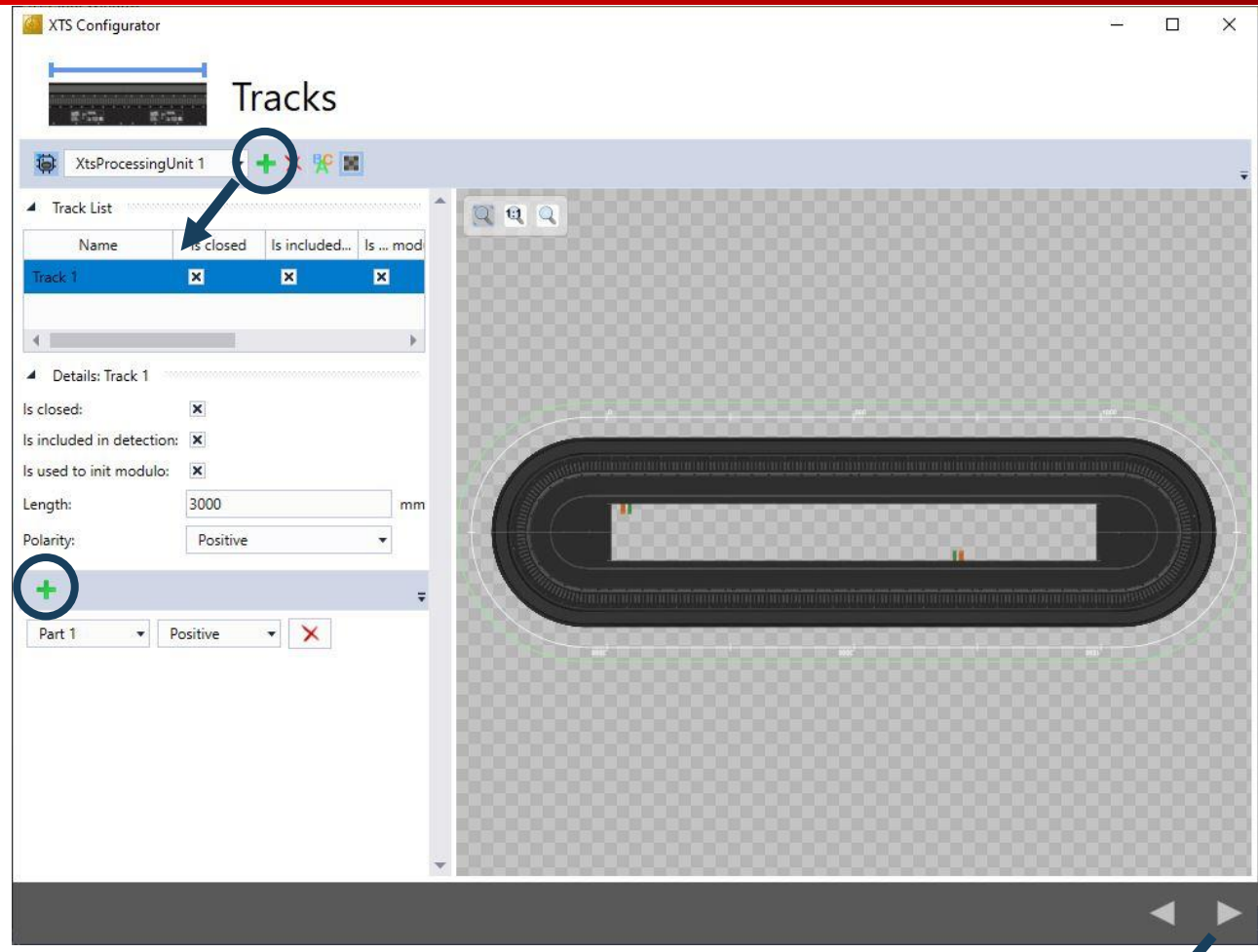


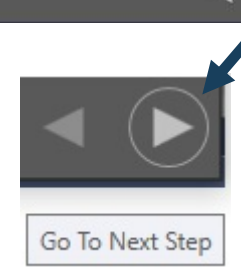
XTS Configuration Process...

BECKHOFF

- Add XTS Tracks
  (one track minmum)

- Add Parts to the track

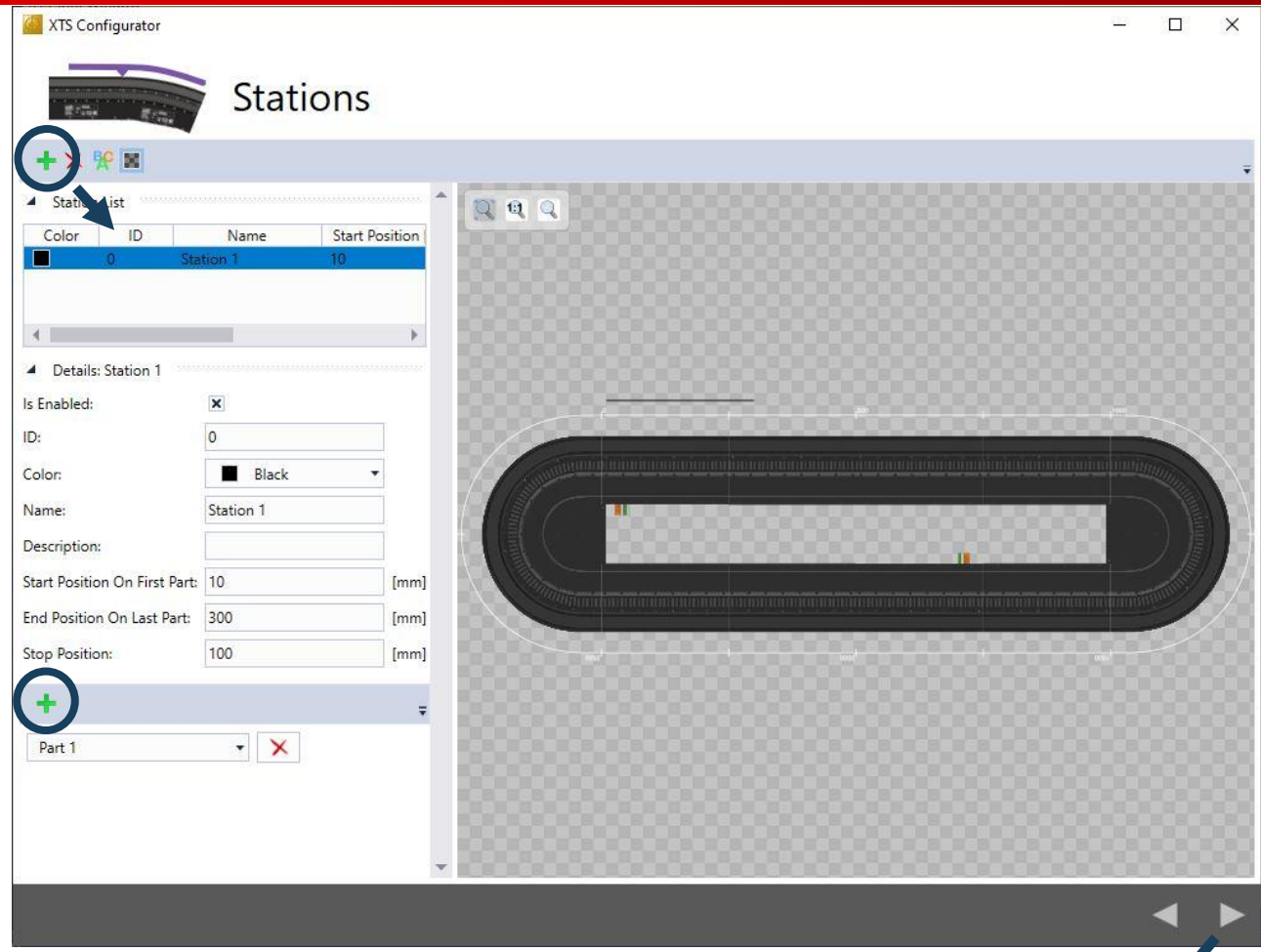




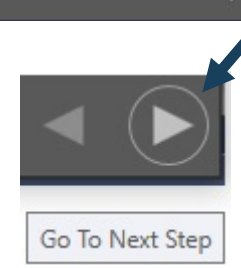
XTS Configuration Process...

BECKHOFF

- Add XTS Station
  (only display at the moment)



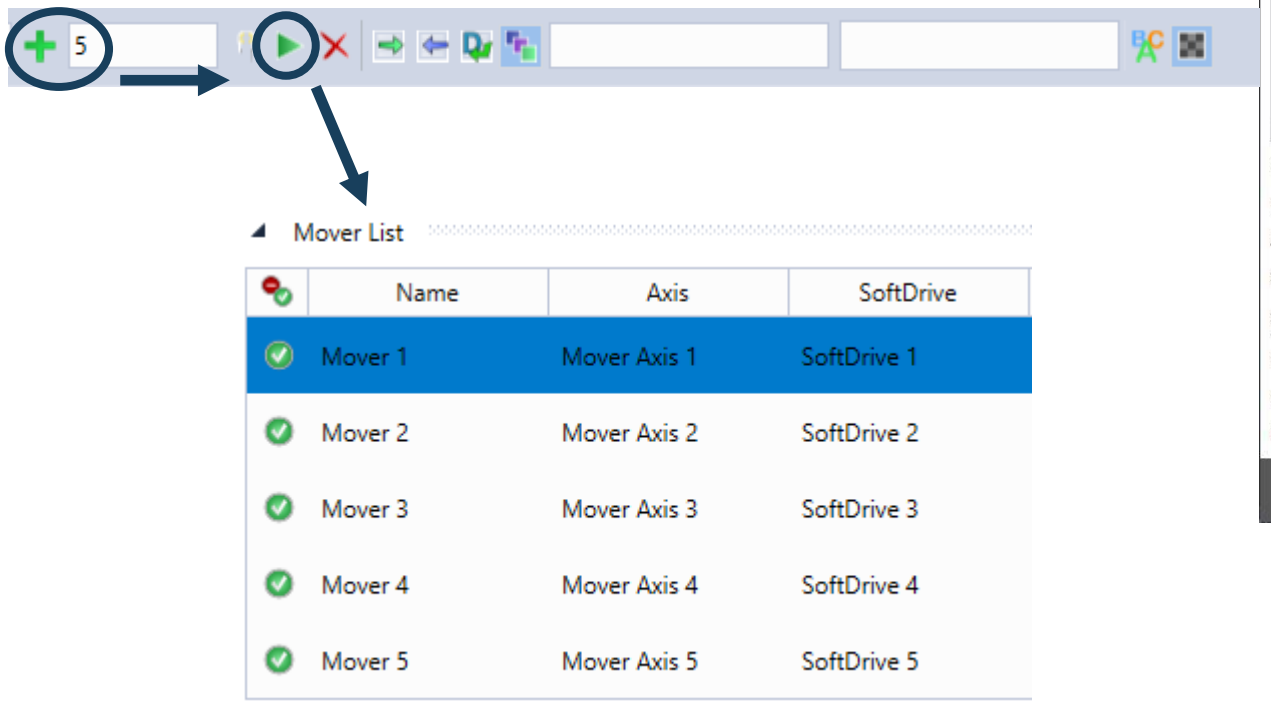
- **Info**
  - At the moment not necessary

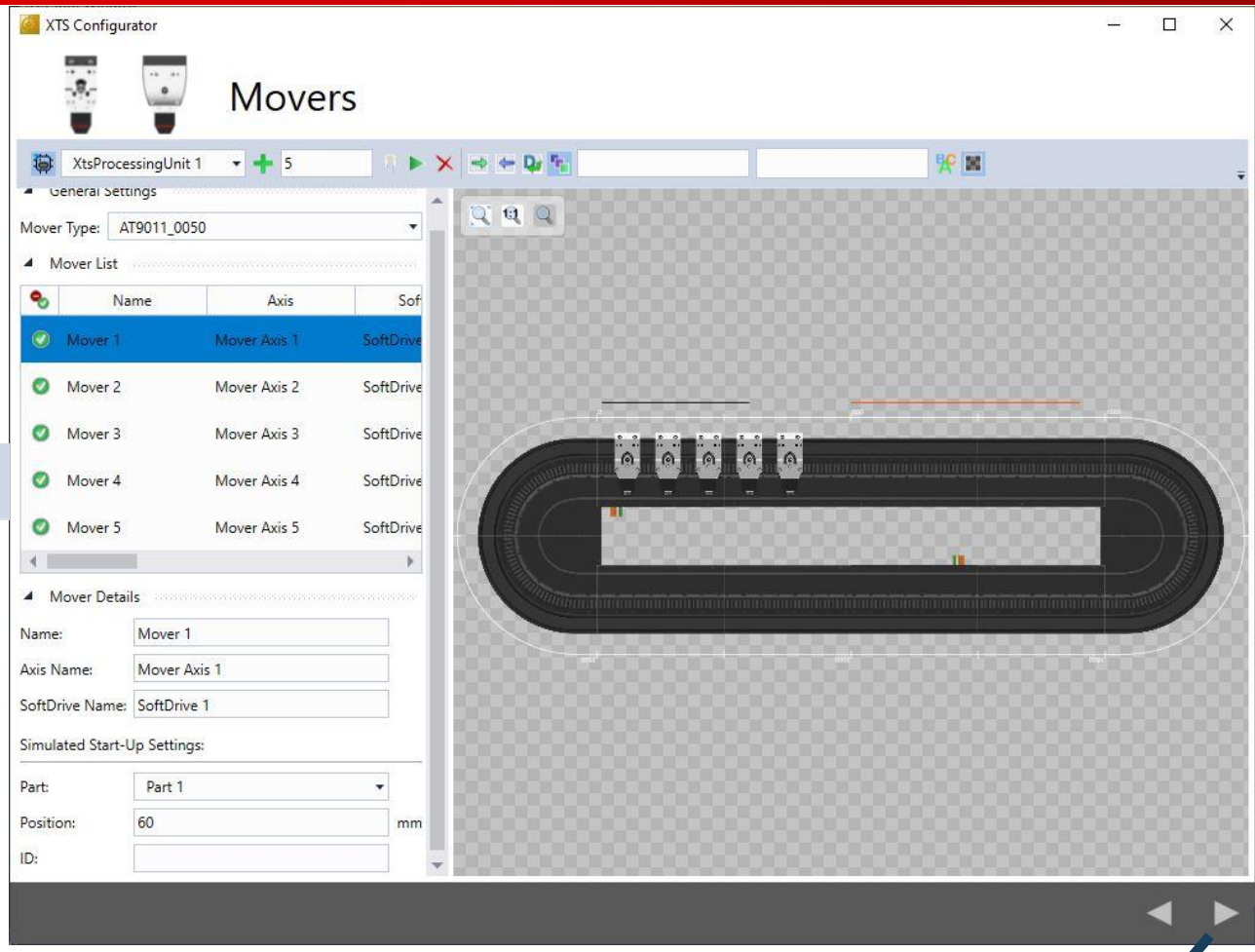


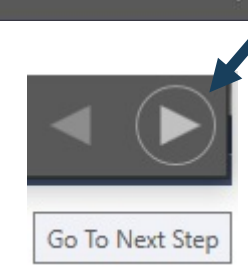
XTS Configuration Process...

BECKHOFF

- Add XTS Mover



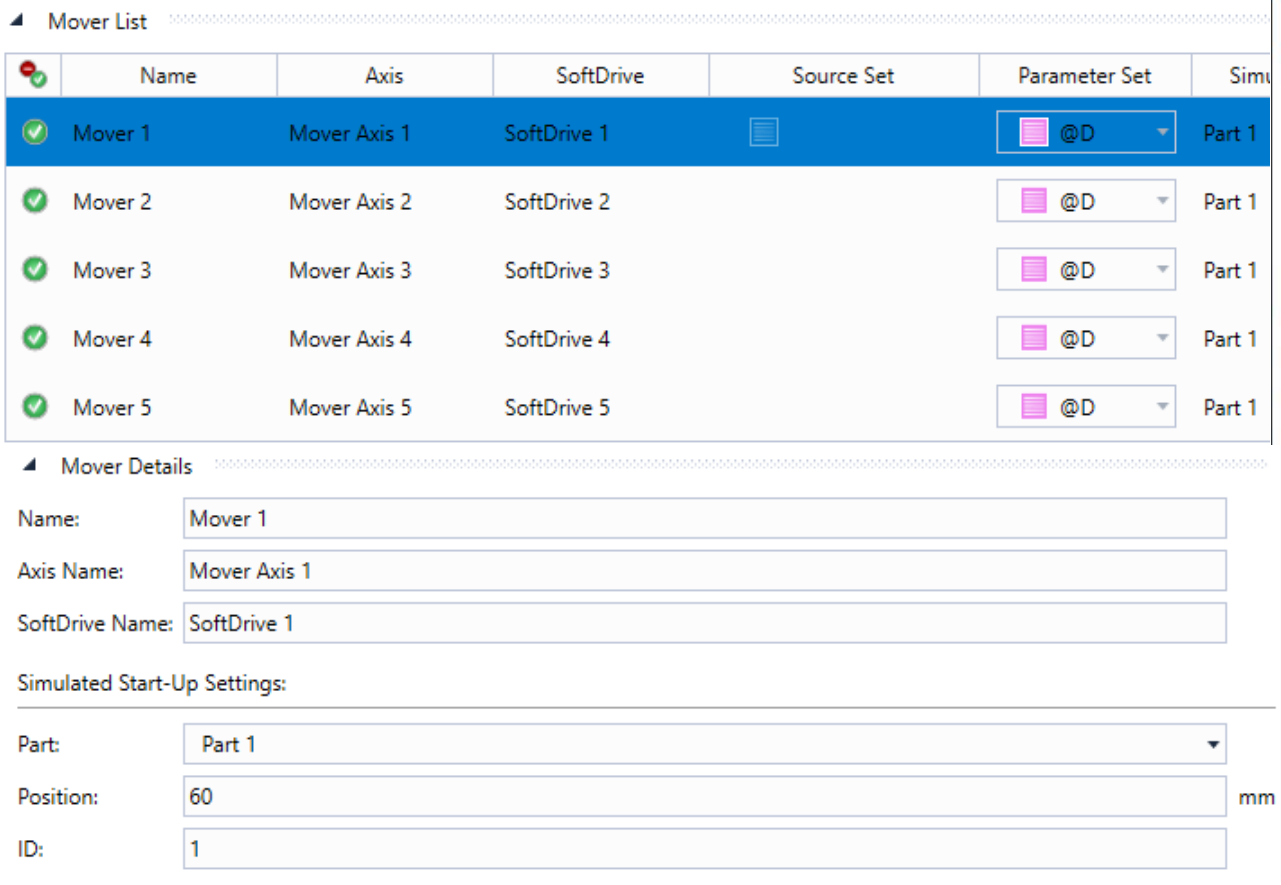


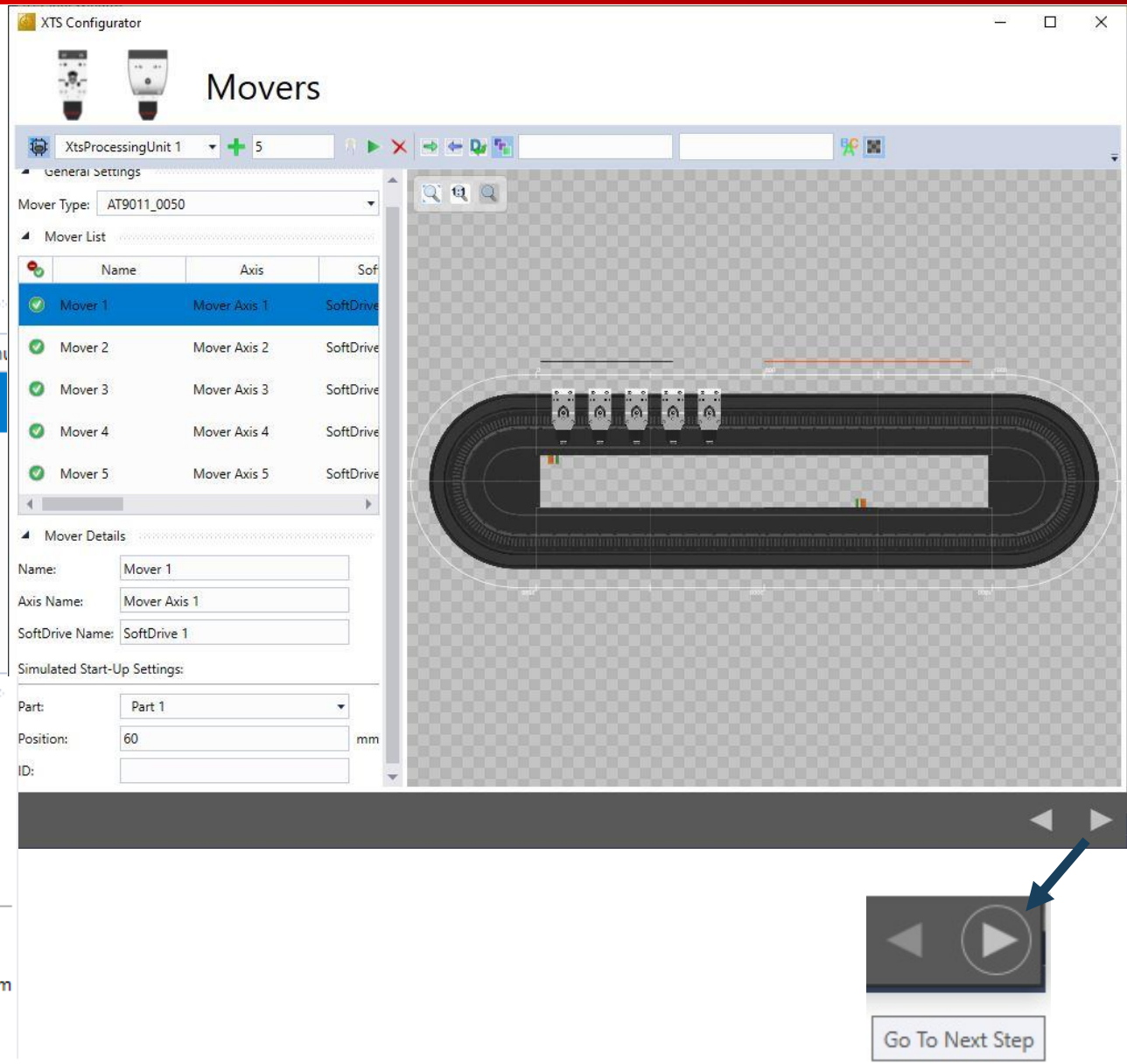


XTS Configuration Process...

BECKHOFF

- Add XTS Mover
  - Mover List and Mover Details

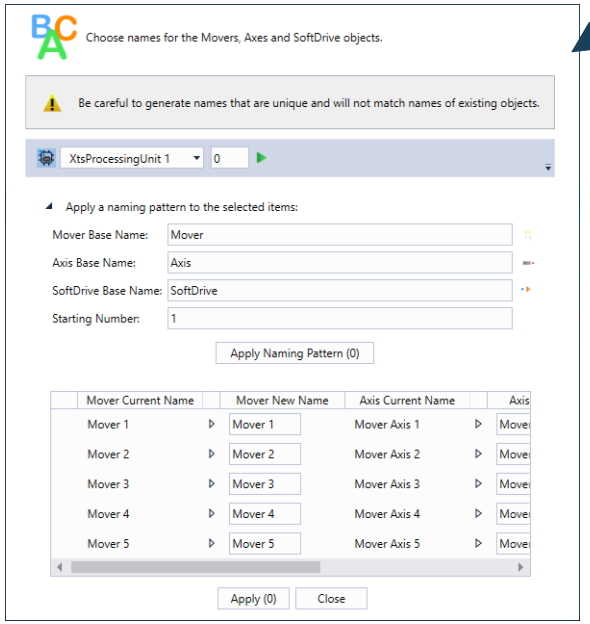


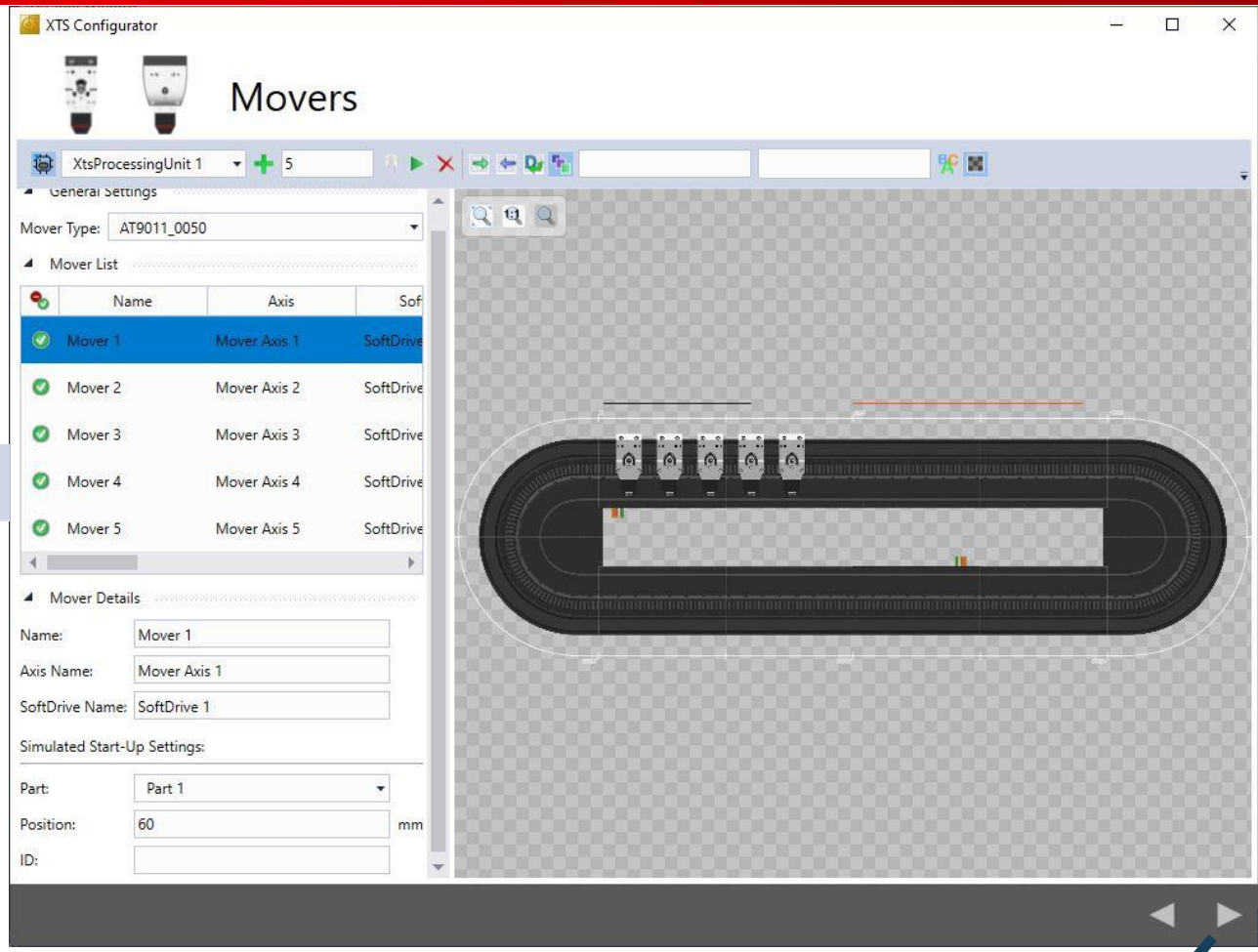


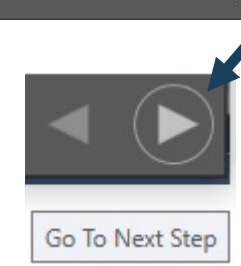
XTS Configuration Process...

BECKHOFF

- Add XTS Mover
  - choose names for Mover, Axis and Softdrive



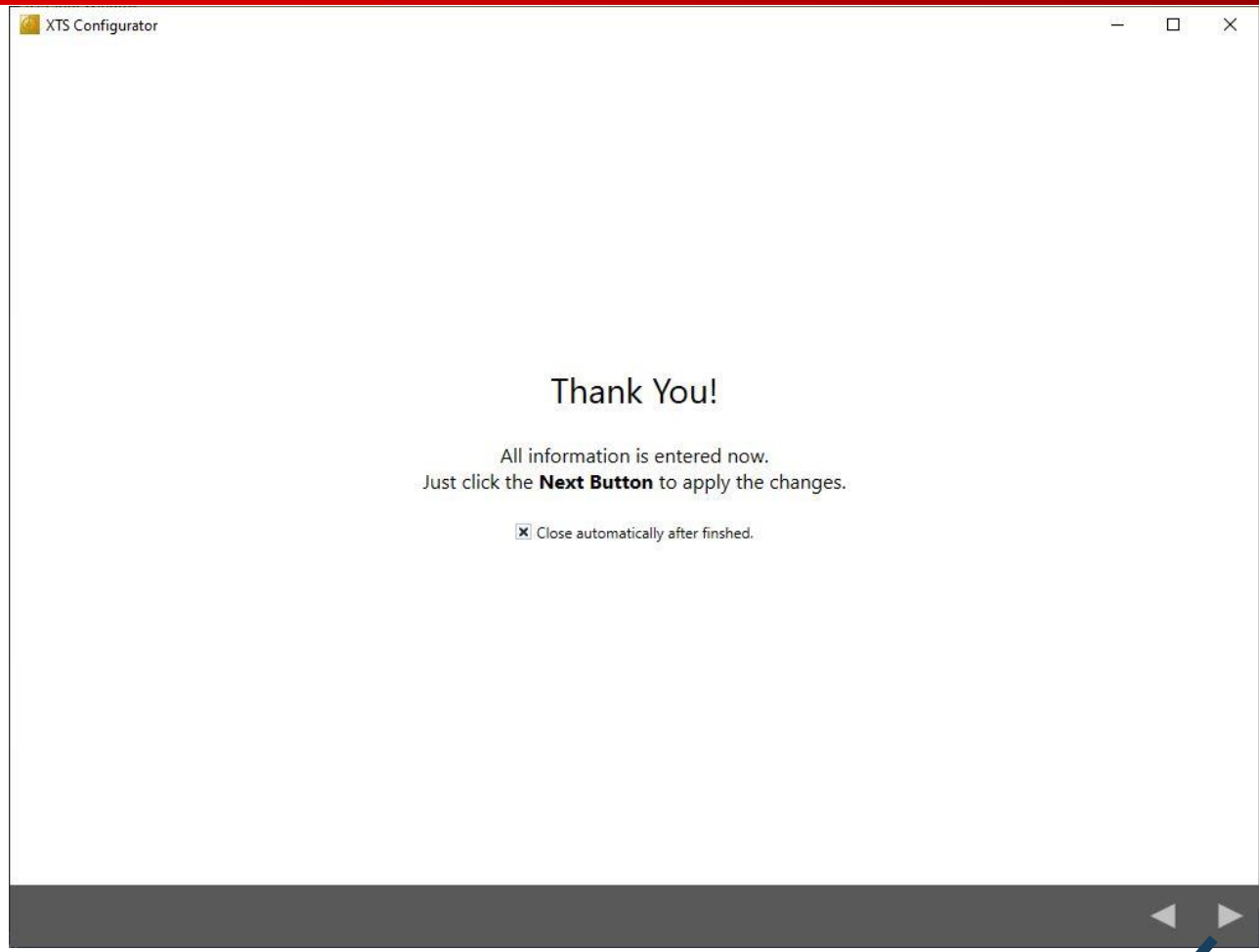


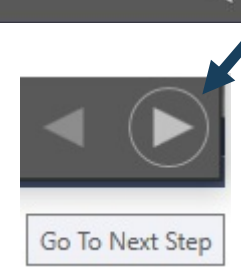


XTS Configuration Process...

BECKHOFF

- Finished Configuration process

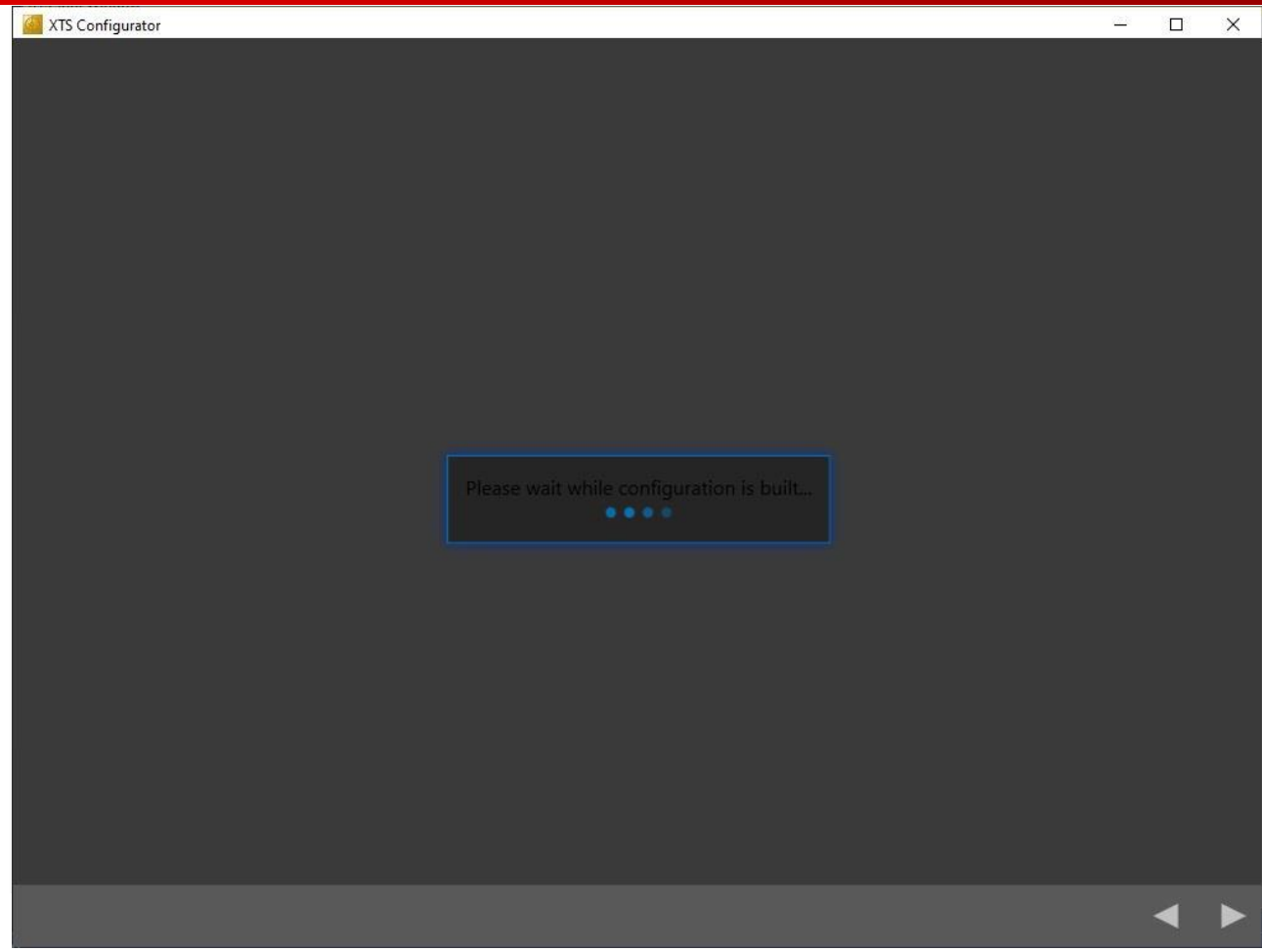




XTS Configuration Process...

BECKHOFF

- Finished Configuration process



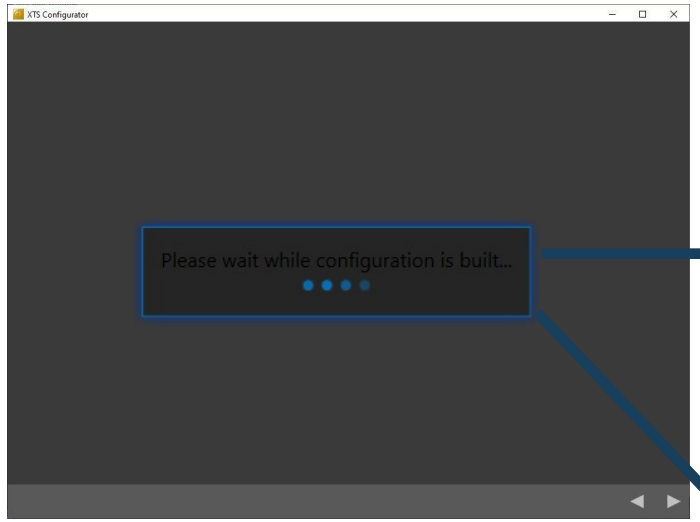
The manager creates the configuration of the system:

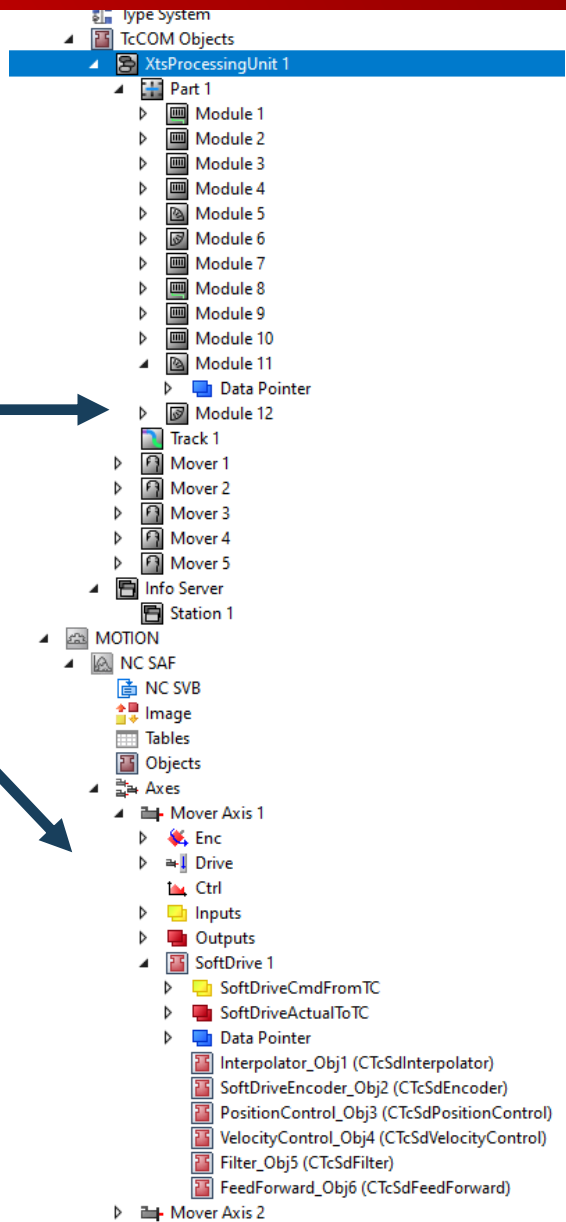
- Creates the XTS task.
- Creates the child objects of the TcIoXtsProcessingUnit (modules & movers)
- Adds the Movers to the NC configuration (with a SoftDrive object for each mover)
- Context (task) of all XPU objects and SoftDrive objects are set.

XTS Configuration Process...

BECKHOFF

- Complete the configuration



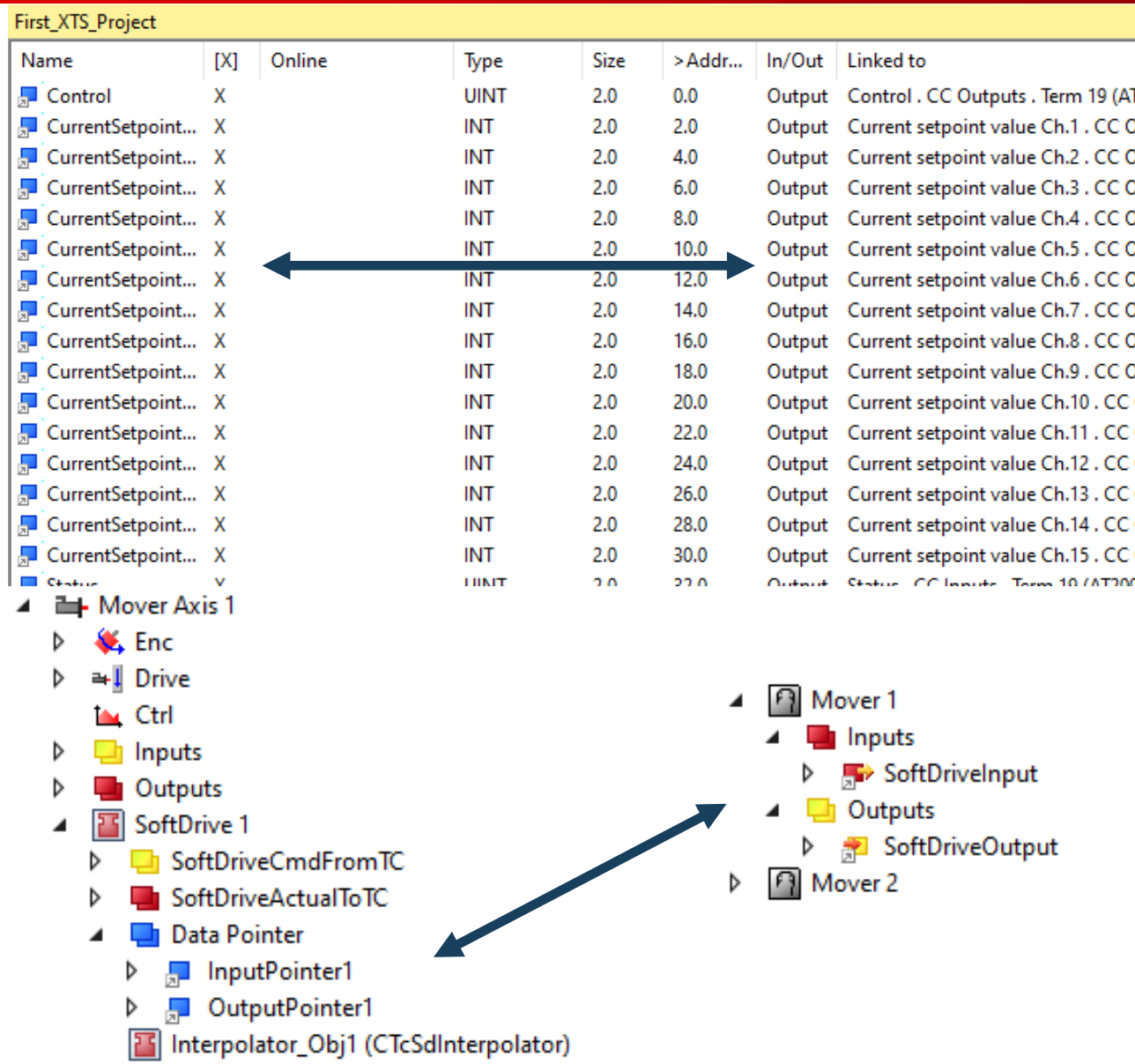


- **Info**
  - Module objects are linked with the IO.
  - Mover objects are linked with the SoftDrive.

XTS Configuration Process...

BECKHOFF

- Communication between the Modules:
  - via Data Pointers
  - No mapping object
  - No copy process



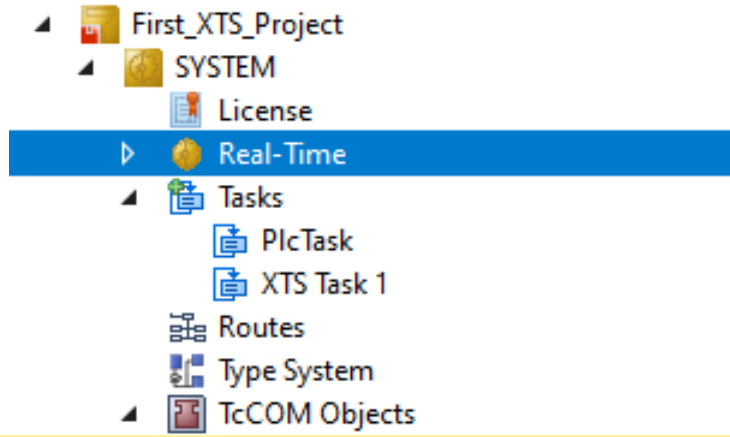
- **Warning**

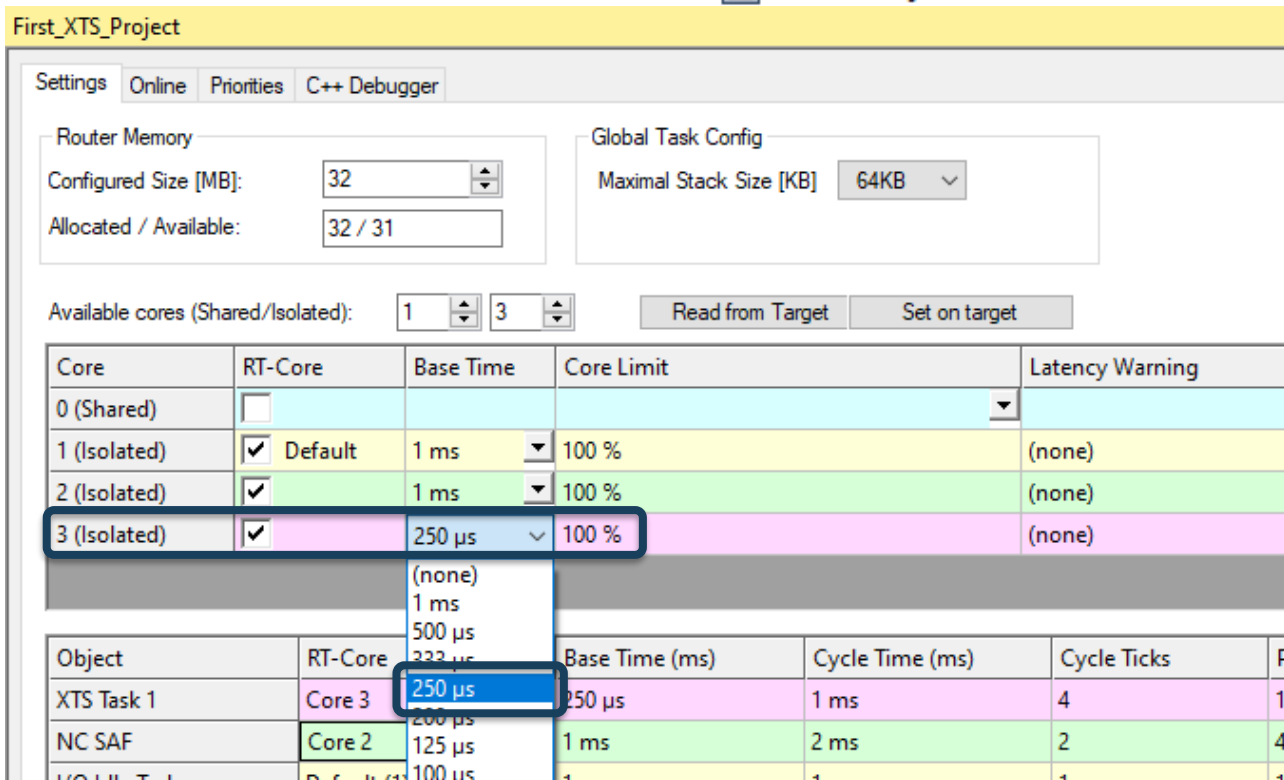
  Use of data pointers is very fast but if used incorrectly data may be corrupted…

XTS Configuration Process...

BECKHOFF

- Manual settings Real-Time
  - Change base time to 250 µs.
  - Change XTS task settings.

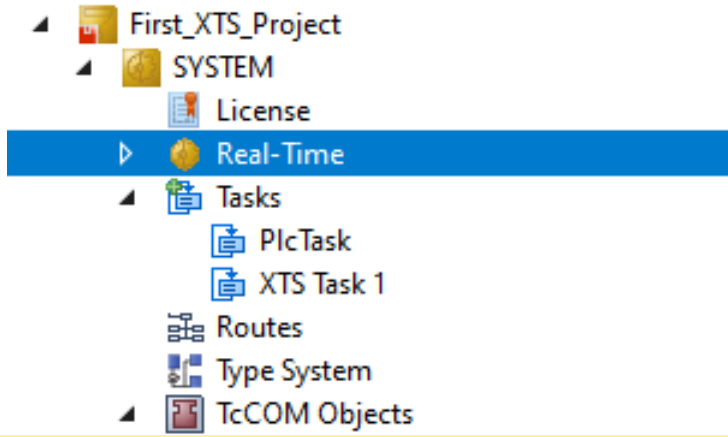


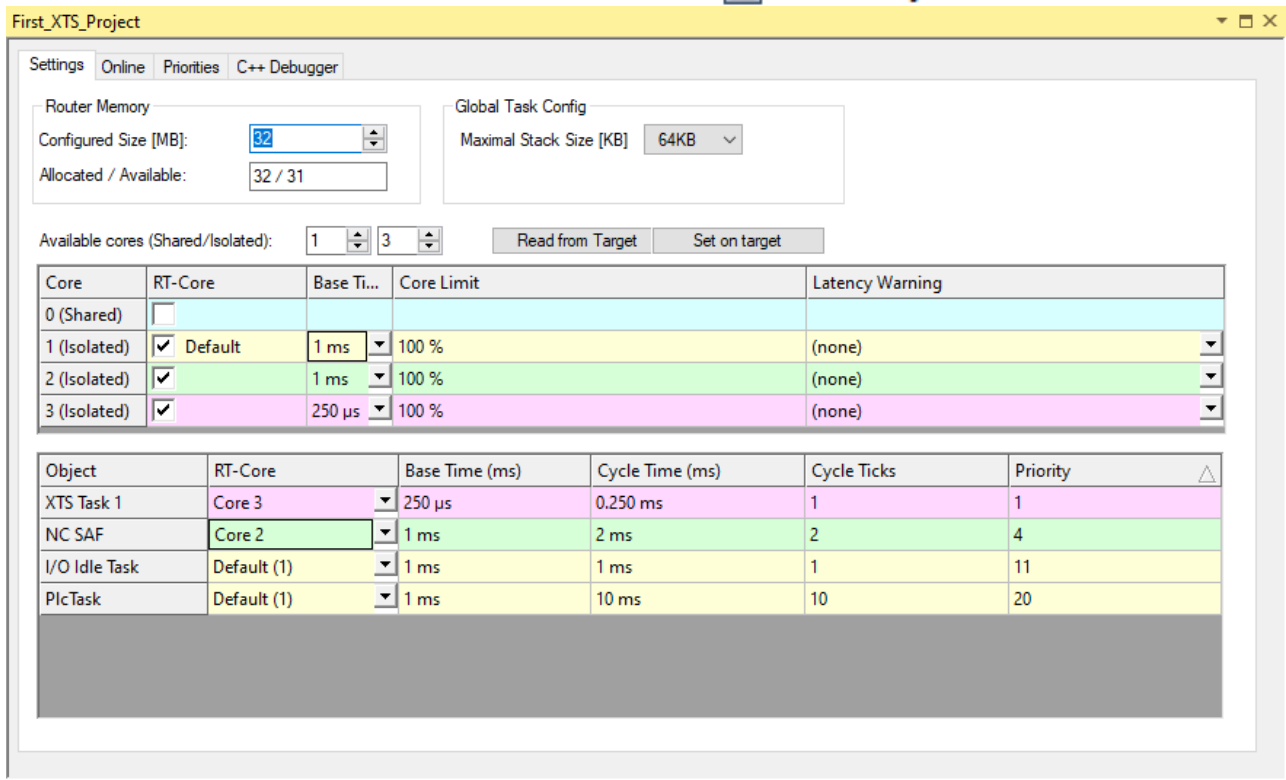


XTS Configuration Process...

BECKHOFF

- Suggested settings Real-Time (small XTS-Systems)
  - It is suggested to use one core just for the fast 250 µs XTS task (100% isolated).
  - use 1 core just for windows and three cores as isolated real time cores

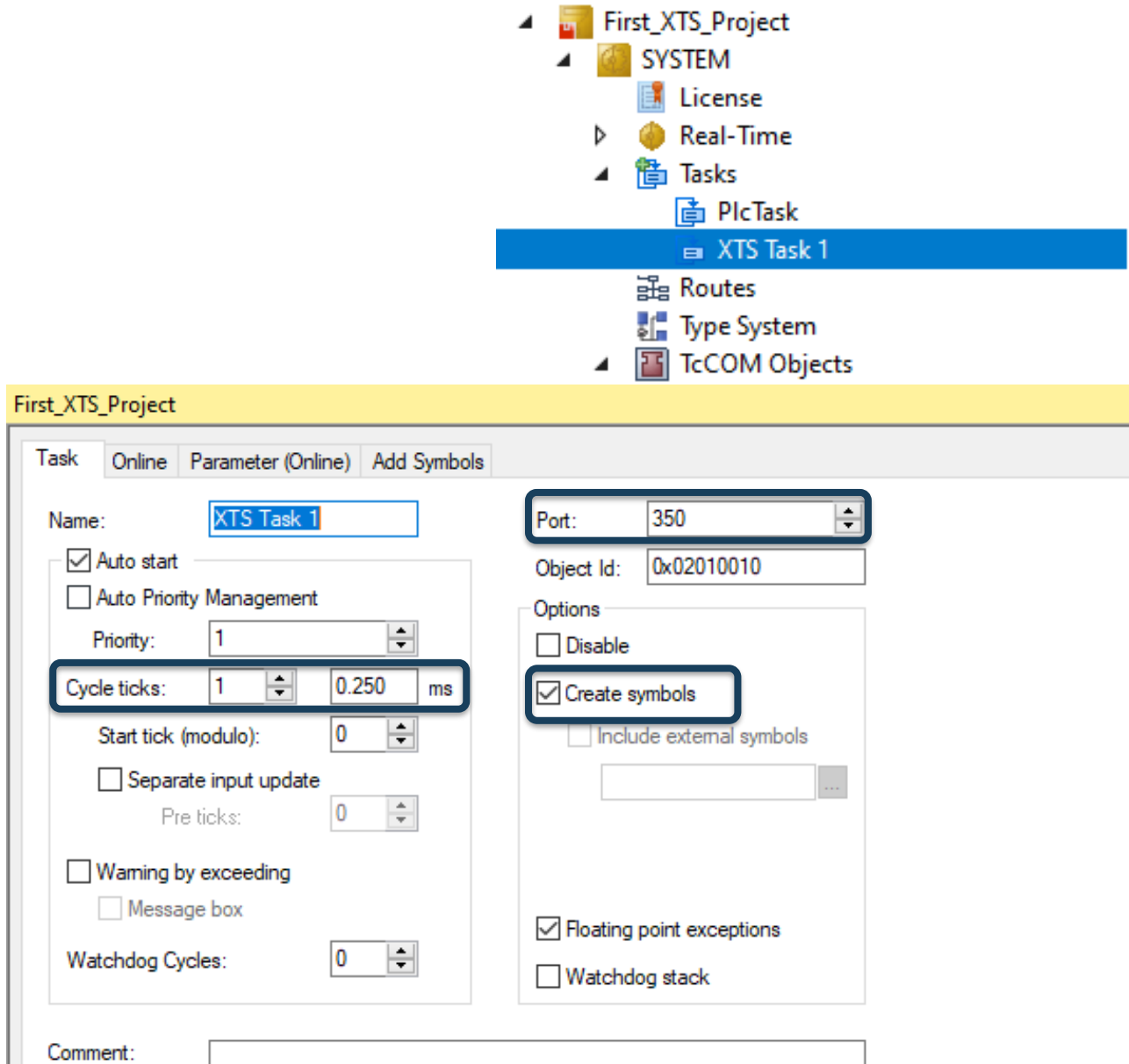




XTS Configuration Process...

BECKHOFF

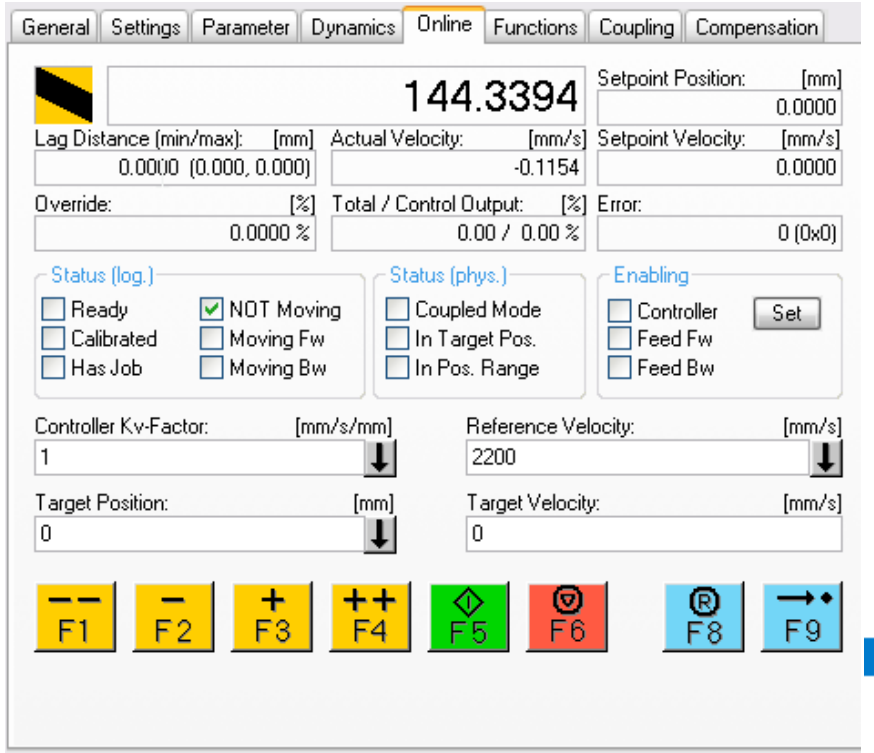
- Manual settings XTS Task
  - Change Cycle time to 250 µs
  - Port must be greater or equal to 350
  - ‘Create symbols’ is useful to simplify measurements with TC3 Scope

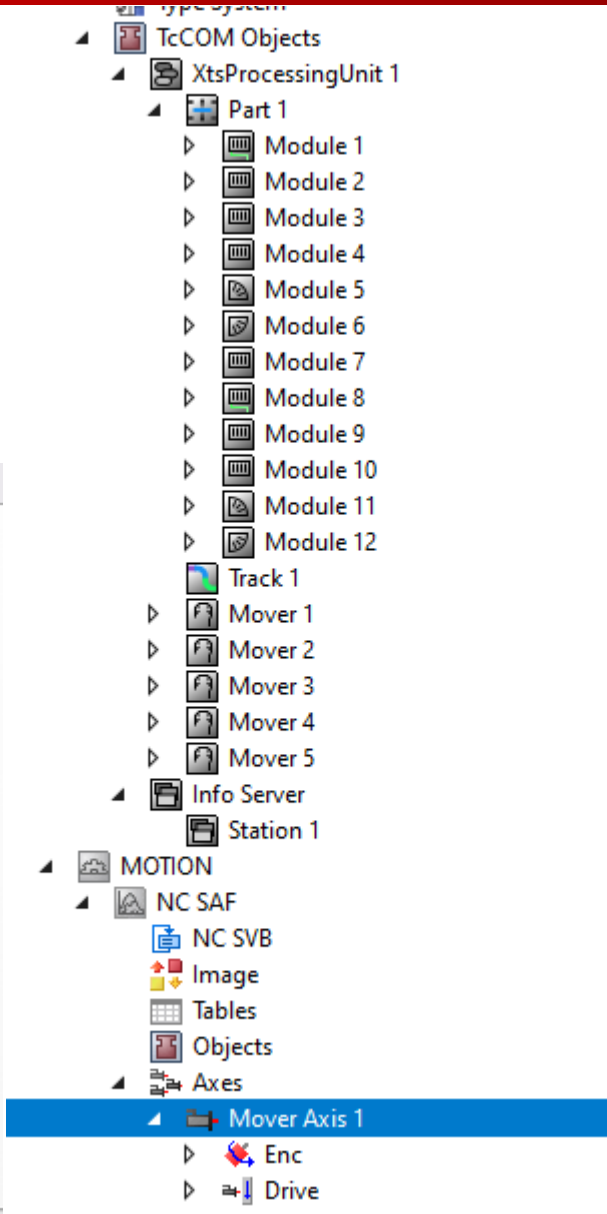


XTS Configuration Process...

BECKHOFF

- First activation…

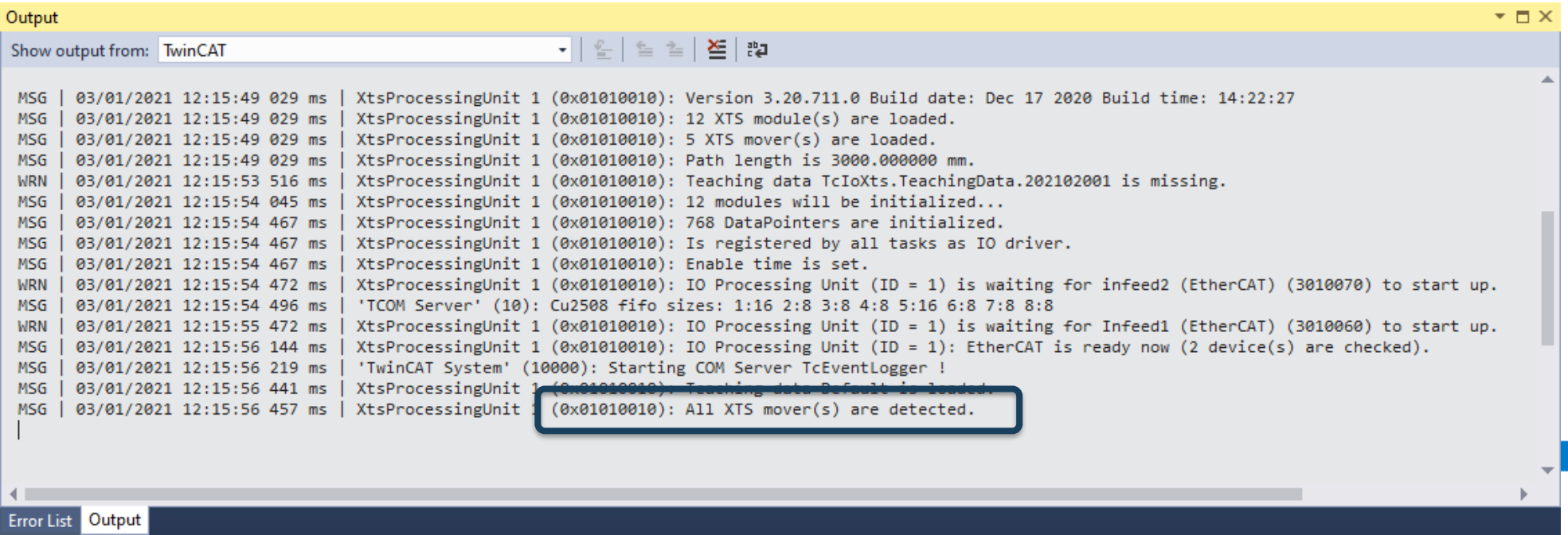


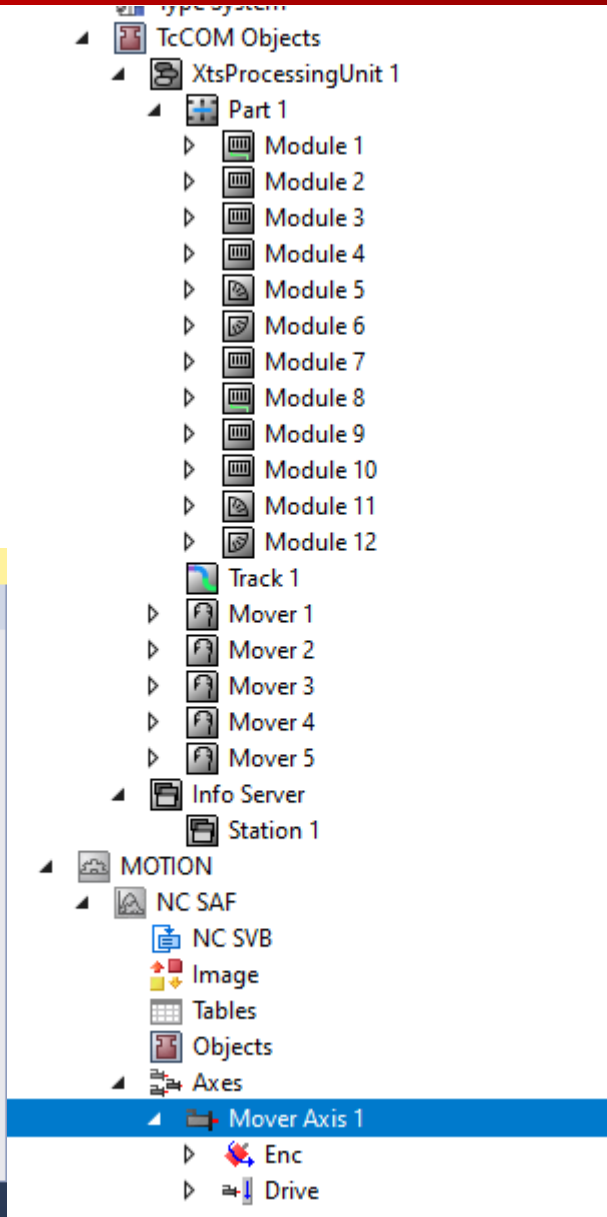


XTS Configuration Process...

BECKHOFF

- First activation…
  - Output Window

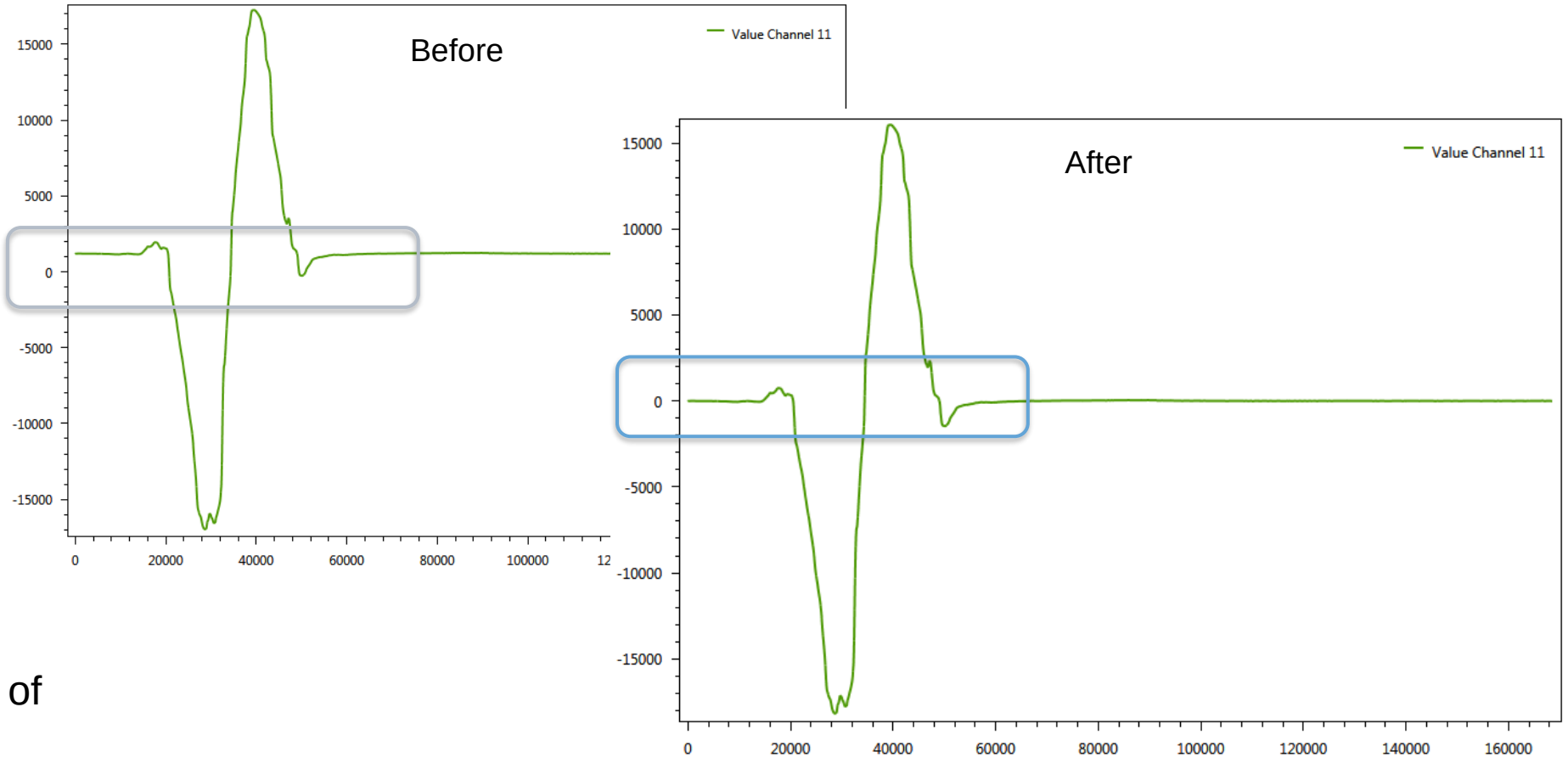




XTS Configuration Process...

BECKHOFF

- Teaching Process

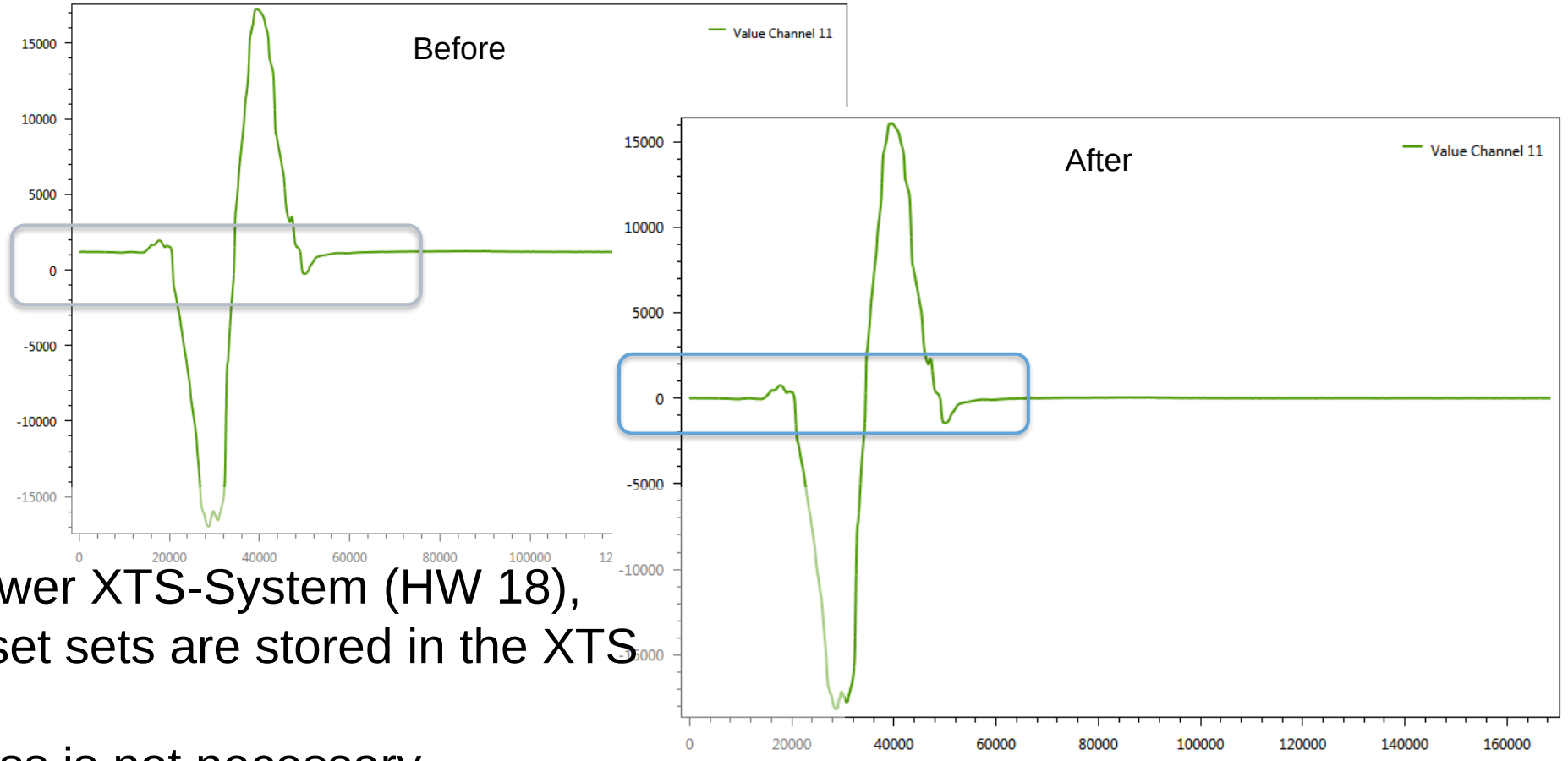


Analog position signal of an XTS-Module

XTS Configuration Process...

BECKHOFF

- Teaching Process



Info

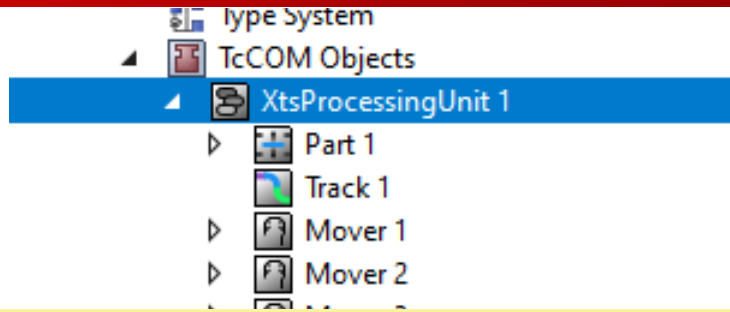
In the case of newer XTS-System (HW 18), the analogue offset sets are stored in the XTS modules.
A teaching process is <u>not necessary</u>

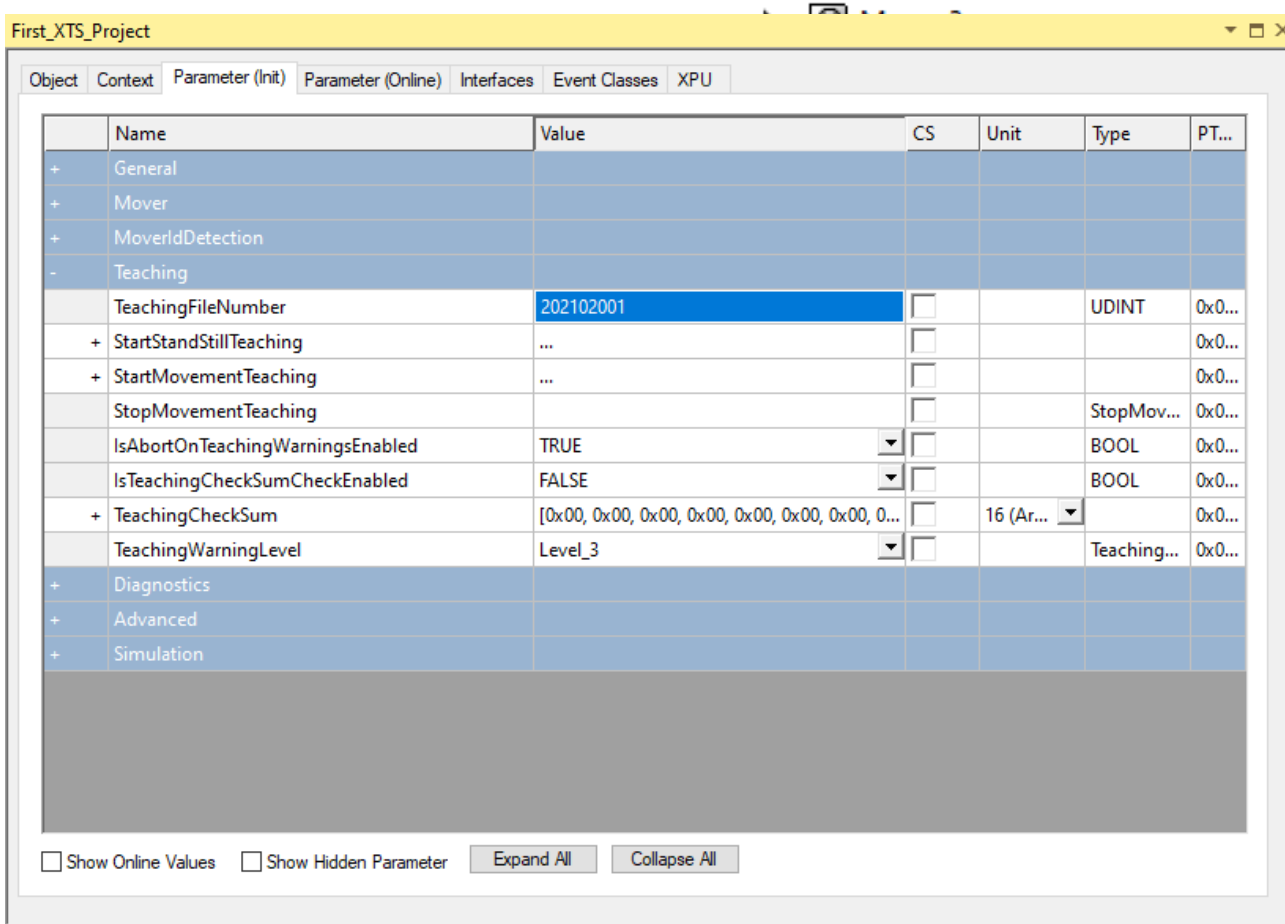
XTS Configuration Process...

BECKHOFF

- Teaching Process | first Step

  – set a number for the teaching file which represents the current date.





- **Info**

  Changes to the ‘TeachingFileNumber’ are not recognized until after an ‘Activate Configuration’ is performed.

  Before the teaching procedure is started, it must be activated so that the teaching data is saved in the correct file

XTS Configuration Process...

BECKHOFF

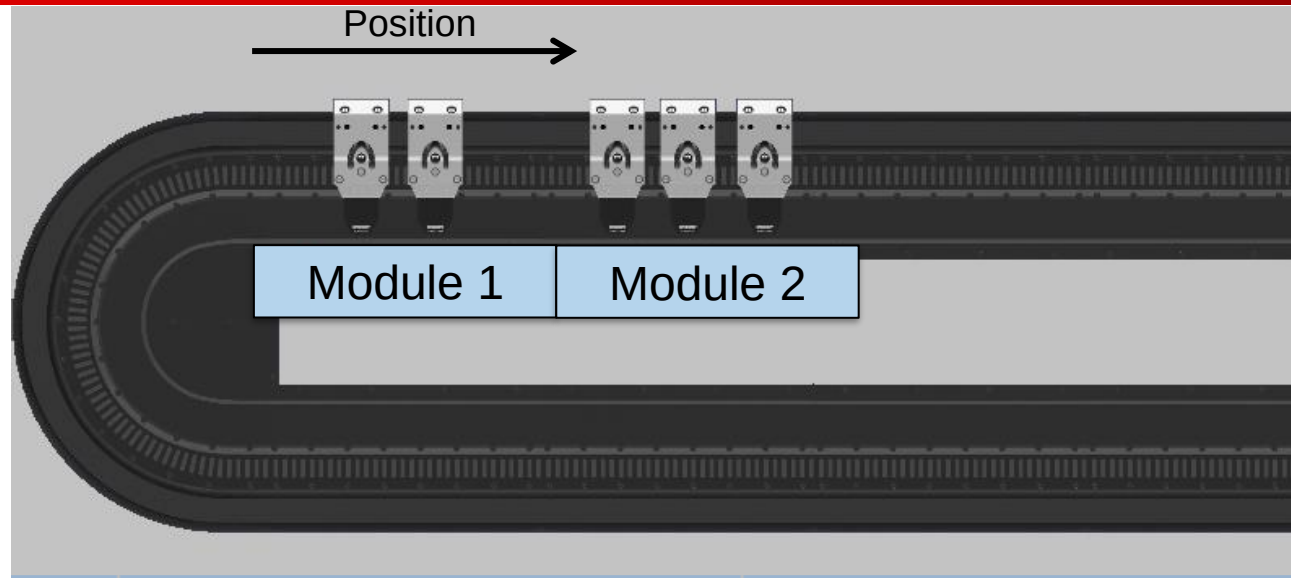
- Teaching Process | next Step

1. Move the Mover to a defined Position

2. Define Exclude Specified Items.

- **Info**

  .selectionString Format
  X, Y, Z or X-Z



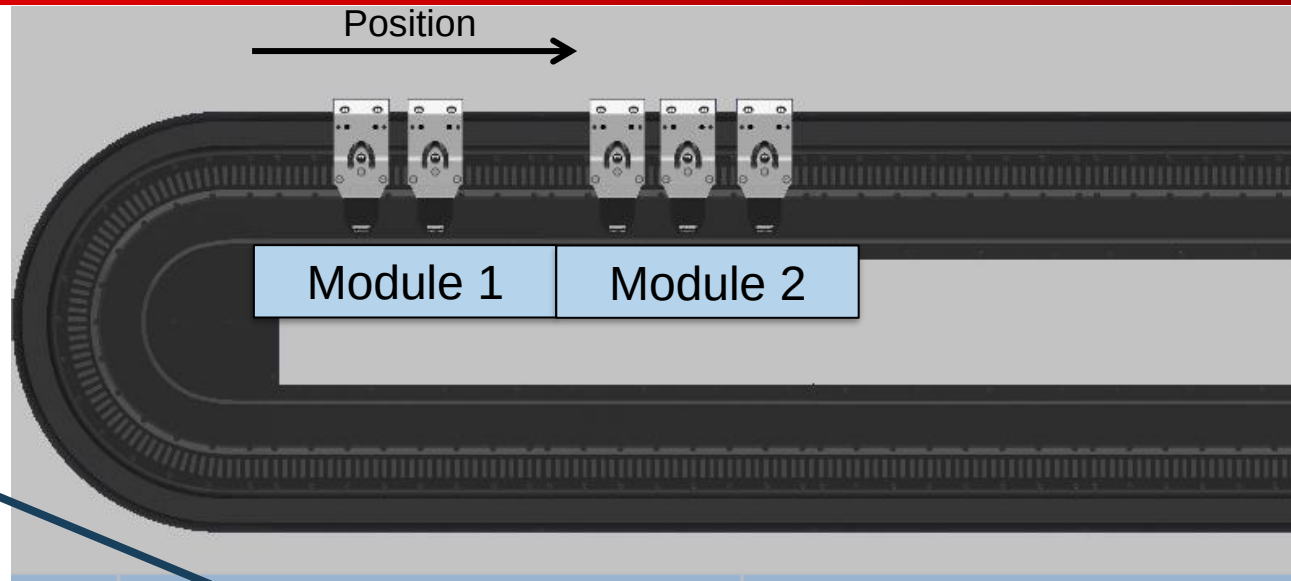
	Teaching	
	TeachingFileNumber	202102001
-	StartStandStillTeaching	...
	.teachingSelection	ExcludeSpecifiedItems
	.selectionString	1-2
+	StartMovementTeaching	...
	StopMovementTeaching	
	IsAbortOnTeachingWarningsEnabled	TRUE
	IsTeachingCheckSumCheckEnabled	FALSE
+	TeachingCheckSum	[0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x0
	TeachingWarningLevel	Level_3

XTS Configuration Process...

BECKHOFF

- Teaching Process | next Step

3. StartStandStillTeaching



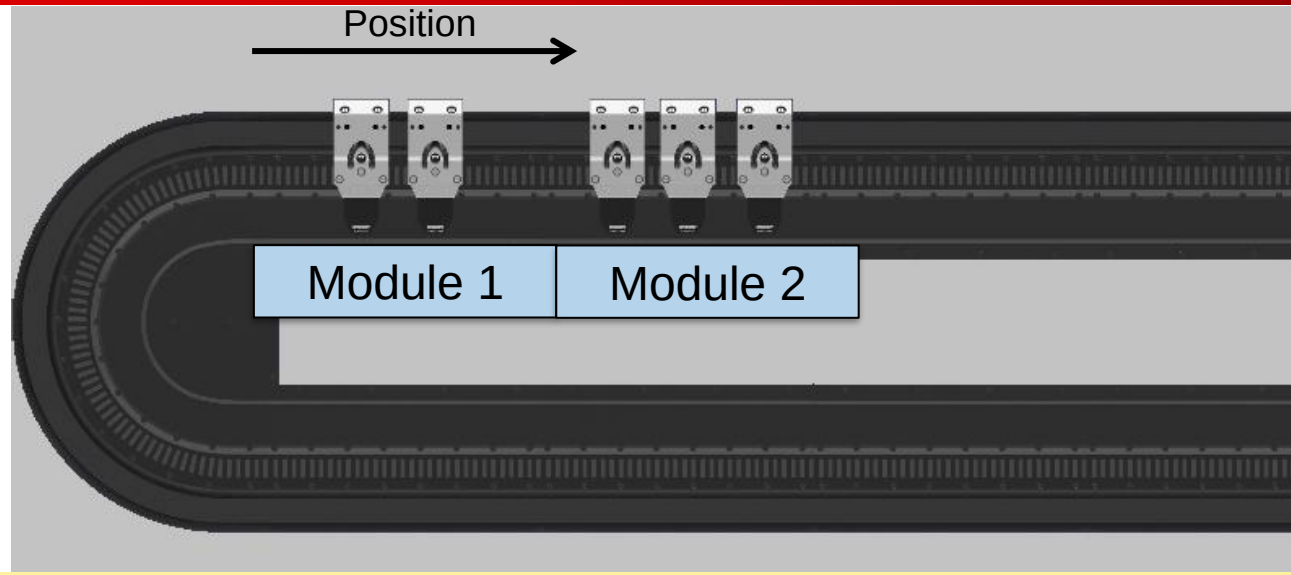
	Teaching	
	TeachingFileNumber	202102001
-	StartStandStillTeaching	...
	.teachingSelection	Exclud
	.selectionString	1-2
+	StartMovementTeaching	...
	StopMovementTeaching	
	IsAbortOnTeachingWarningsEnabled	TRUE
	IsTeachingCheckSumCheckEnabled	FALSE
+	TeachingCheckSum	[0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x0
	TeachingWarningLevel	Level_3

XTS Configuration Process...

BECKHOFF

- Teaching Process

4. Teaching Stops automatically



Output

Show output from: TwinCAT

```
| XtsProcessingUnit 1 (0x01010010): Teaching is started on 10 modules.
| XtsProcessingUnit 1 (0x01010010): Teaching is stopped on 10 modules.
| XtsProcessingUnit 1 (0x01010010): Teaching data plausibility check is passed successfully.
```

Error List | Output

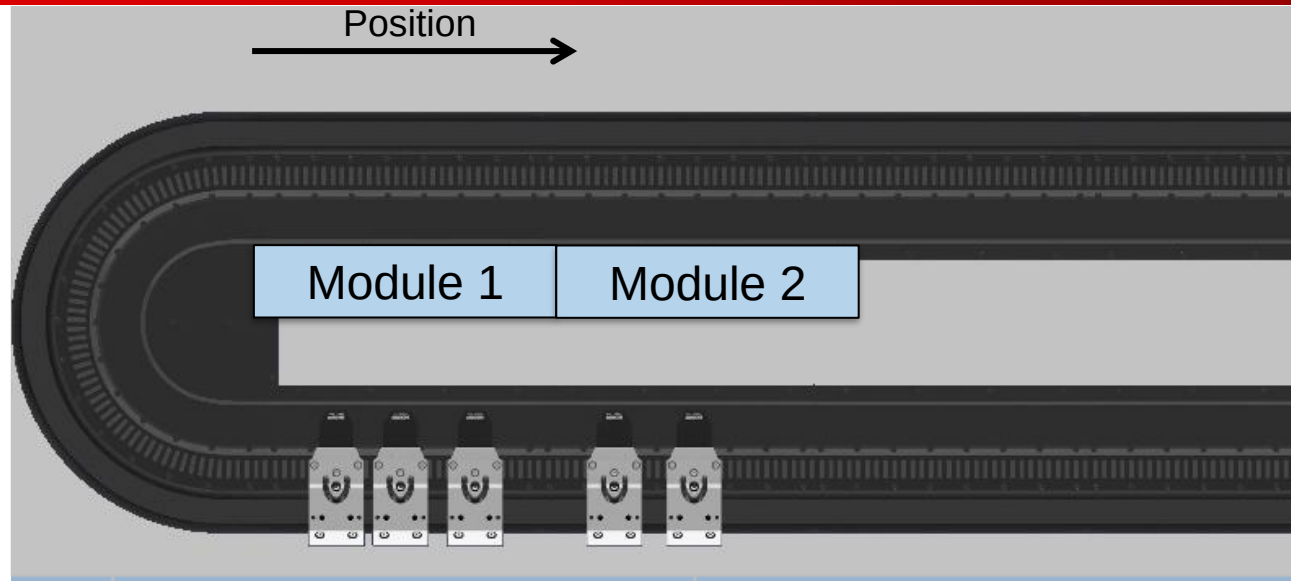
XTS Configuration Process...

BECKHOFF

- Teaching Process | next Step

5. Move the Mover to a different defined Position

6. Change “.teachingSelection”



	Teaching	
	TeachingFileNumber	202102001
-	StartStandStillTeaching	...
	.teachingSelection	IncludeSpecifiedItems
	.selectionString	1-2
+	StartMovementTeaching	...
	StopMovementTeaching	
	IsAbortOnTeachingWarningsEnabled	TRUE
	IsTeachingCheckSumCheckEnabled	FALSE
+	TeachingCheckSum	[0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x
	TeachingWarningLevel	Level_3

- **Warning**

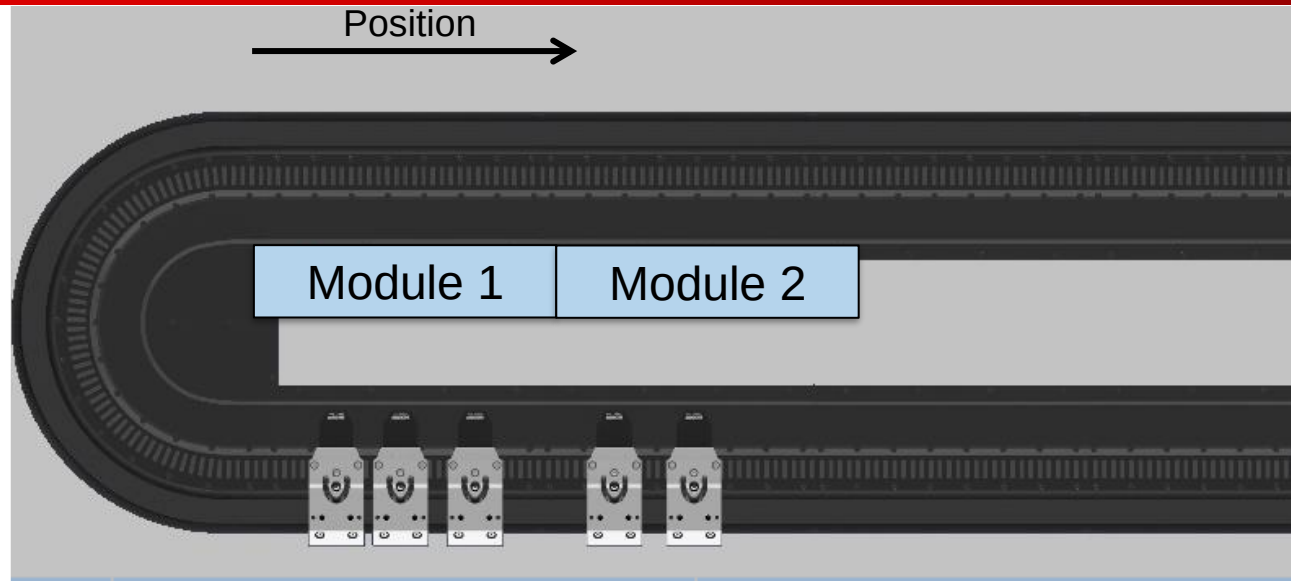
  Do not place movers at crossings where the module is active during teaching. Otherwise the feedback system will not work correctly.

XTS Configuration Process...

BECKHOFF

- Teaching Process | next Step

7. StartStandStillTeaching



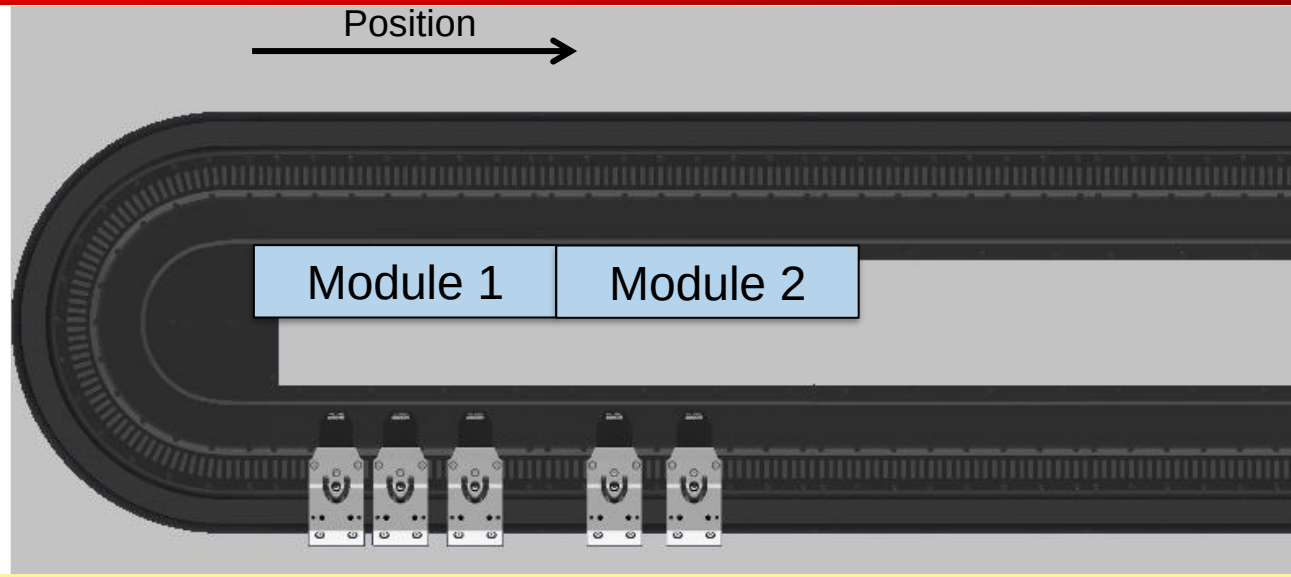
	Teaching	
	TeachingFileNumber	202102001
-	StartStandStillTeaching	...
	.teachingSelection	IncludeSp
	.selectionString	1-2
+	StartMovementTeaching	...
	StopMovementTeaching	
	IsAbortOnTeachingWarningsEnabled	TRUE
	IsTeachingCheckSumCheckEnabled	FALSE
+	TeachingCheckSum	[0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
	TeachingWarningLevel	Level_3

XTS Configuration Process...

BECKHOFF

- Teaching Process

8. Teaching Stops automatically



Output

Show output from: TwinCAT

```
| XtsProcessingUnit 1 (0x01010010): Teaching is started on 10 modules.
| XtsProcessingUnit 1 (0x01010010): Teaching is stopped on 10 modules.
| XtsProcessingUnit 1 (0x01010010): Teaching data plausibility check is passed successfully.
| XtsProcessingUnit 1 (0x01010010): Teaching is started on 2 modules.
| XtsProcessingUnit 1 (0x01010010): Teaching is stopped on 2 modules.
| XtsProcessingUnit 1 (0x01010010): Teaching data plausibility check is passed successfully.
```

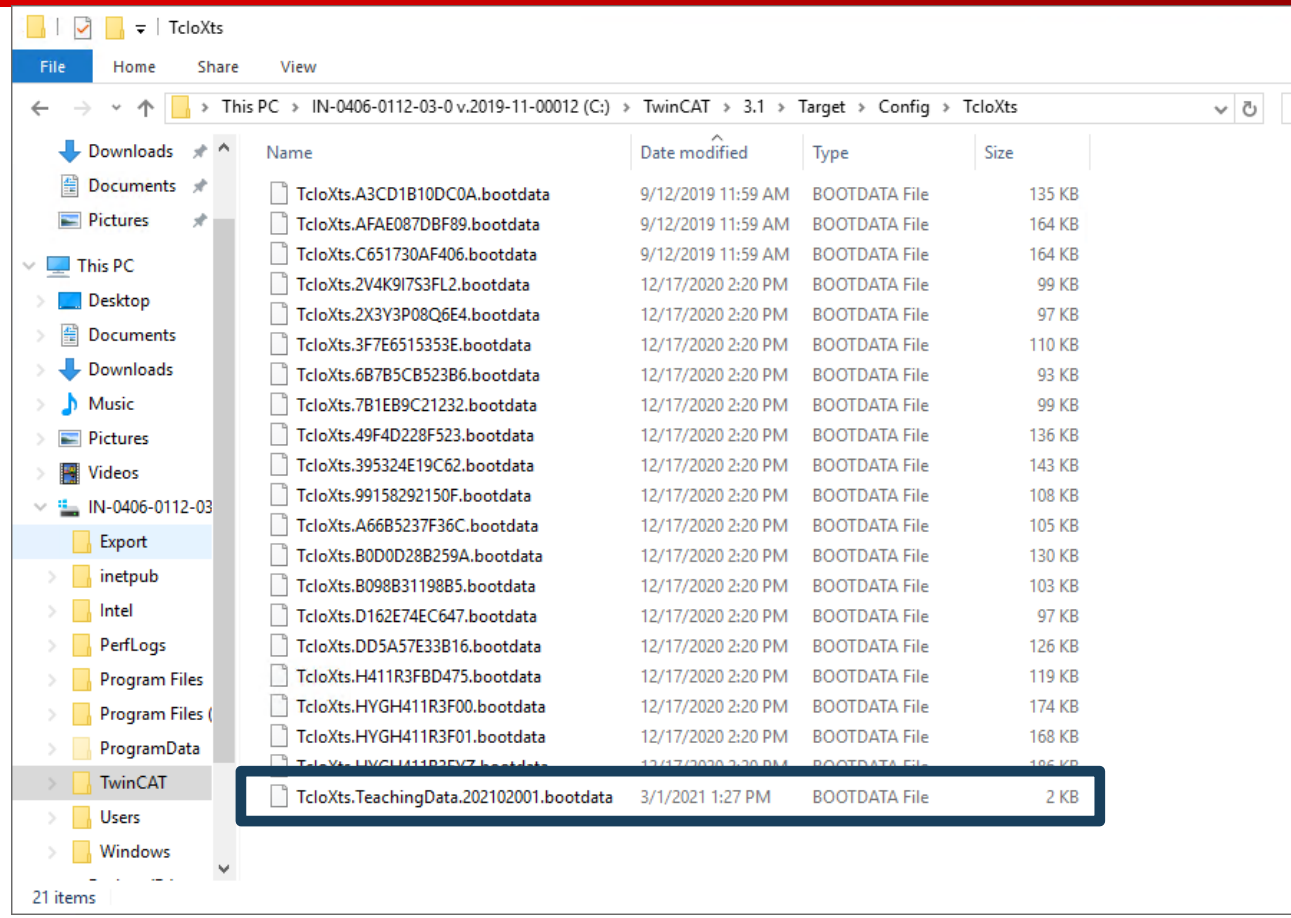
Error List | Output

XTS Configuration Process...

BECKHOFF

- Teaching Process

  - Set TwinCAT in Config Mode



- **Advice:** Make a backup after the teaching file is created the first time

XTS Configuration Process...

BECKHOFF

- Teaching Process

  - Set TwinCAT in Run-Mode

Output

Show output from: TwinCAT

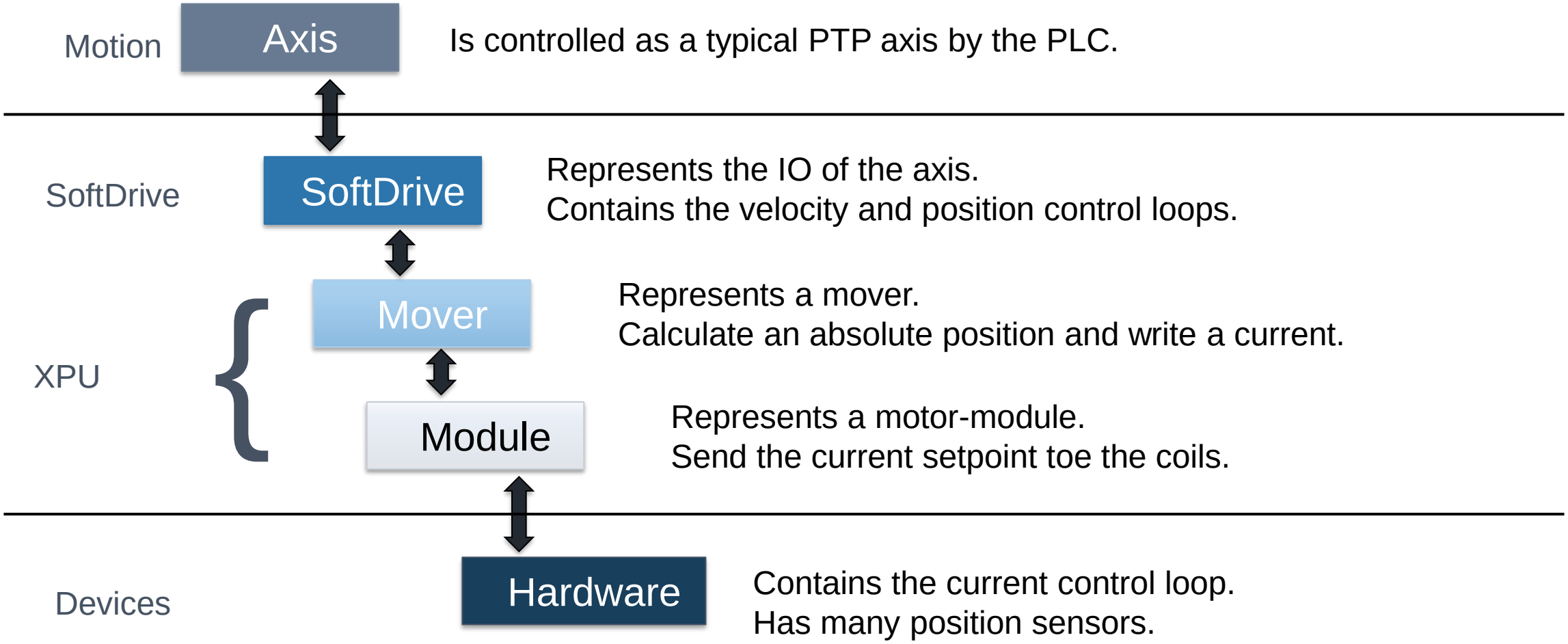
```
| XtsProcessingUnit 1 (0x01010010): Version 3.20.711.0 Build date: Dec 17 2020 Build time: 14:22:27
| XtsProcessingUnit 1 (0x01010010): 12 XTS module(s) are loaded.
| XtsProcessingUnit 1 (0x01010010): 5 XTS mover(s) are loaded.
| XtsProcessingUnit 1 (0x01010010): Path length is 3000.000000 mm.
| XtsProcessingUnit 1 (0x01010010): Teaching data TcIoXts.TeachingData.202102001 is loaded.
| XtsProcessingUnit 1 (0x01010010): 12 modules will be initialized...
| XtsProcessingUnit 1 (0x01010010): 768 DataPointers are initialized.
| XtsProcessingUnit 1 (0x01010010): Is registered by all tasks as IO driver.
| XtsProcessingUnit 1 (0x01010010): Enable time is set.
| XtsProcessingUnit 1 (0x01010010): IO Processing Unit (ID = 1) is waiting for infeed2 (EtherCAT) (3010070) to start up.
| 'TCOM Server' (10): Cu2508 fifo sizes: 1:16 2:8 3:8 4:8 5:16 6:8 7:8 8:8
| XtsProcessingUnit 1 (0x01010010): IO Processing Unit (ID = 1) is waiting for Infeed1 (EtherCAT) (3010060) to start up.
| XtsProcessingUnit 1 (0x01010010): IO Processing Unit (ID = 1): EtherCAT is ready now (2 device(s) are checked).
| 'TwinCAT System' (10000): Starting COM Server TcEventLogger !
| XtsProcessingUnit 1 (0x01010010): Module identity check for teaching is passed successfully.
| XtsProcessingUnit 1 (0x01010010): Teaching data plausibility check is passed successfully.
| XtsProcessingUnit 1 (0x01010010): All XTS mover(s) are detected.
```

Agenda | XTS- TcIoXtsProcessingUnit (XPU)

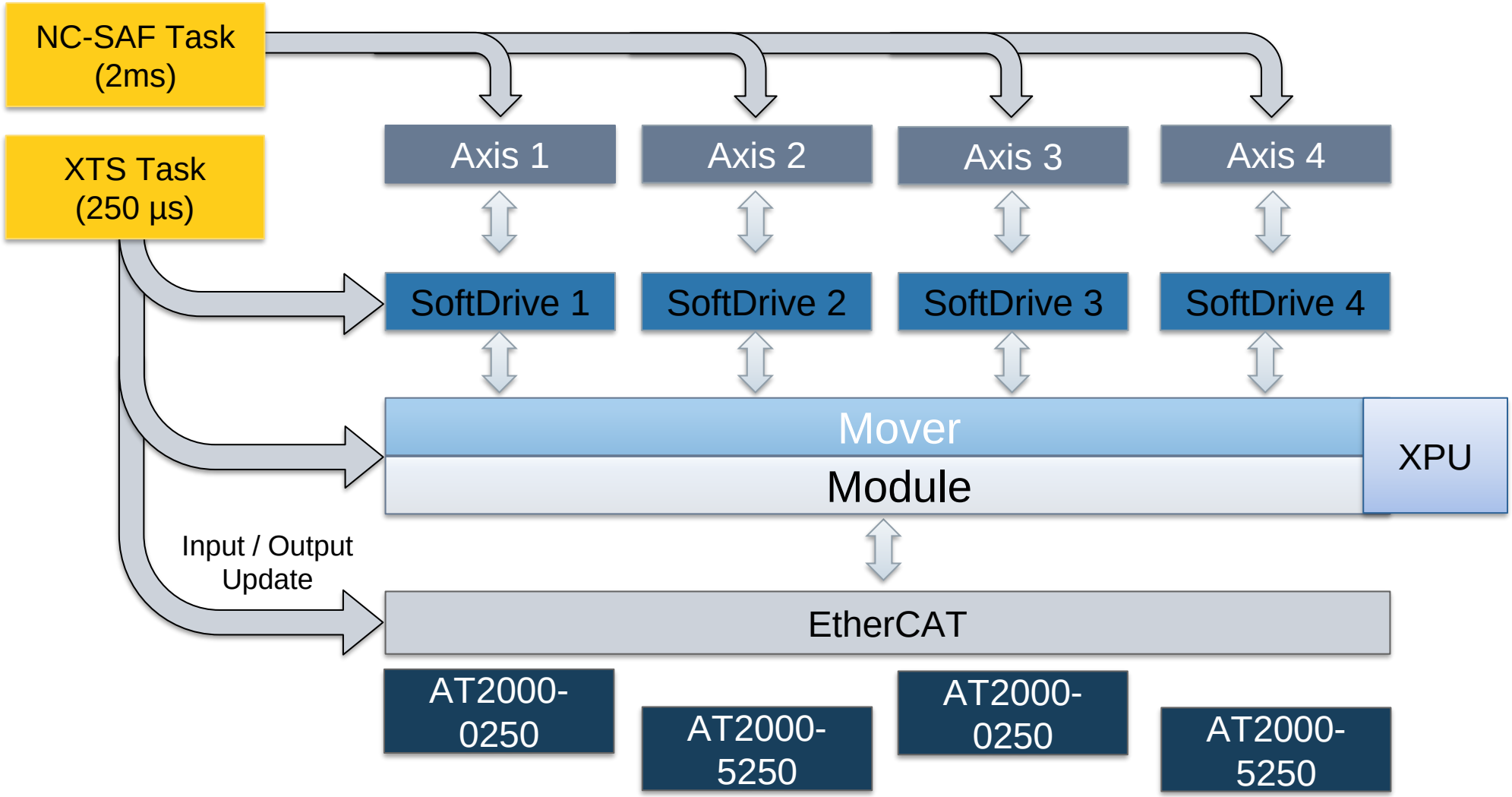
BECKHOFF

1. XPU Introduction
2. XTS Configuration Process
3. **XPU – Deep Dive**
4. XTS Viewer
5. Mover 1
6. Simulation Mode

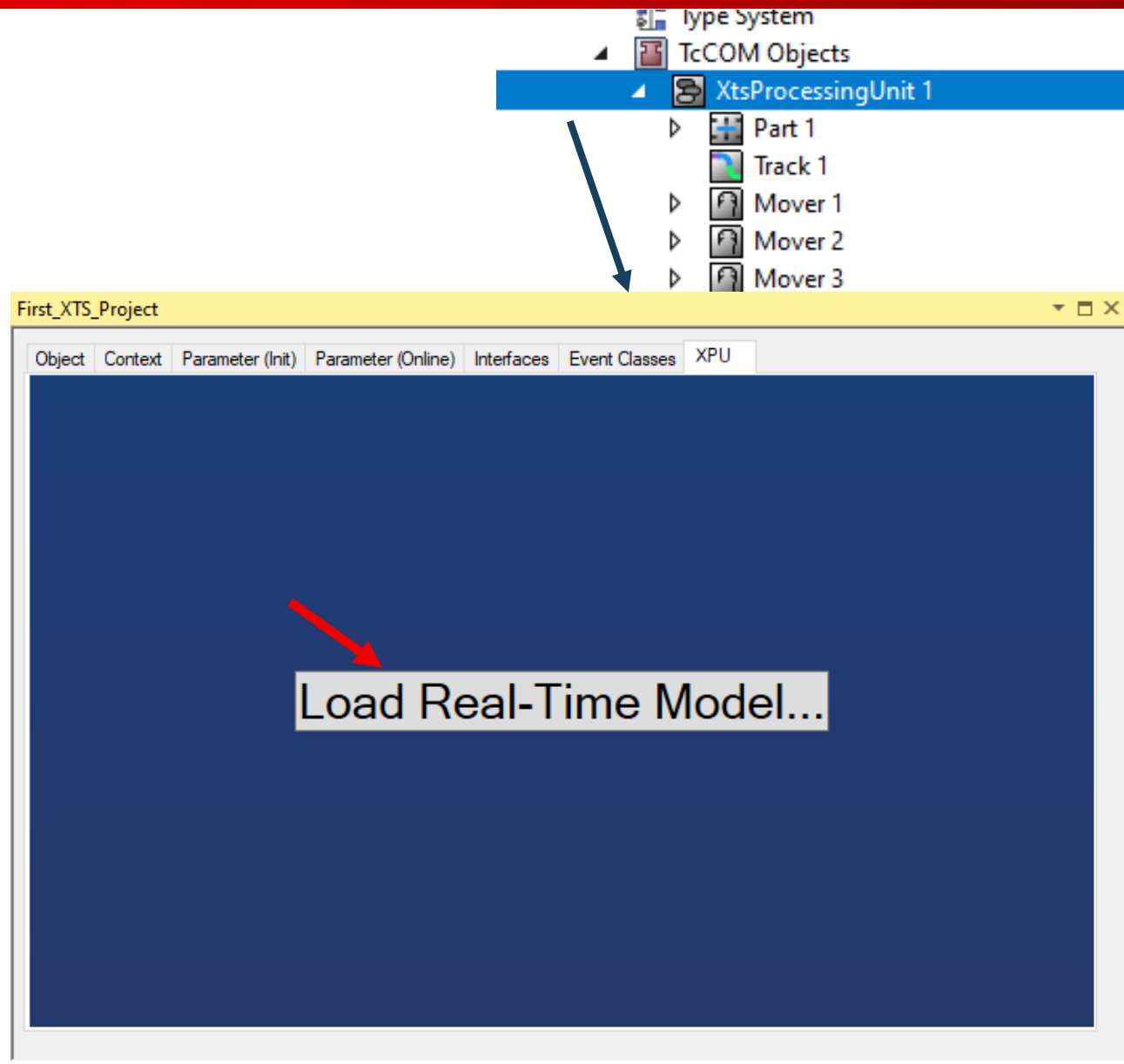
- TcIoXtsProcessingUnit is the link between the Motion and the hardware.



- Cycle Update of SoftDrive & Axis

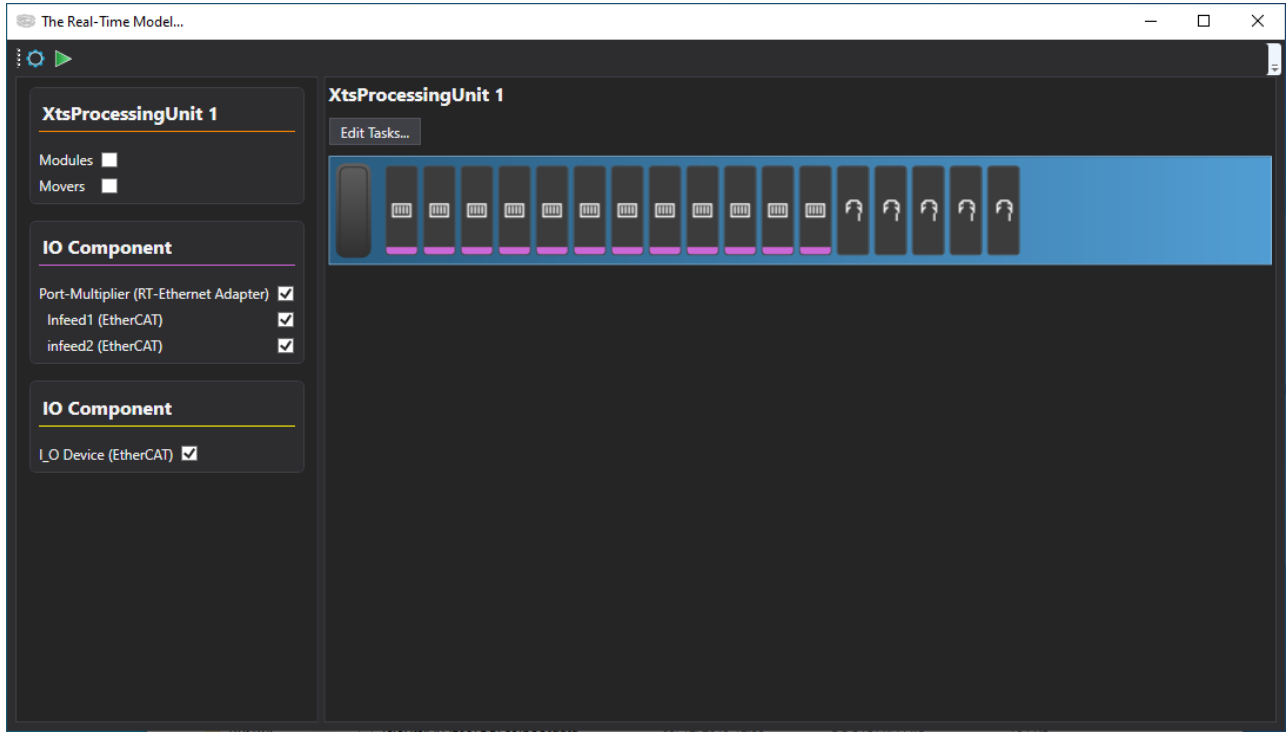


- Real-Time Model
  - click on Load Real-Time Model…



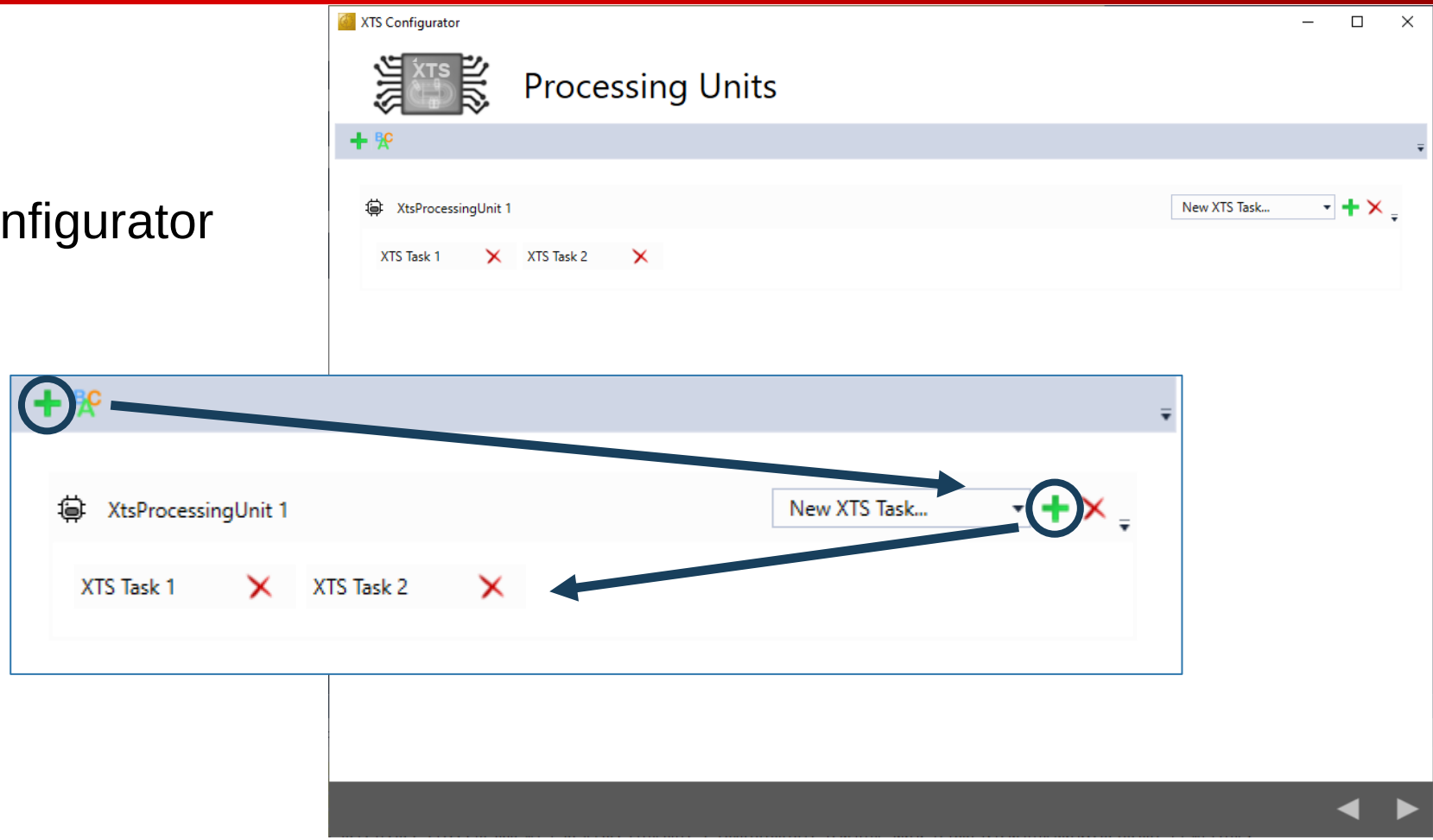
BECKHOFF

- Real-Time Model
  - Show the act. Real-Time Model
  - Can use to adjust
    (better via Configurator)

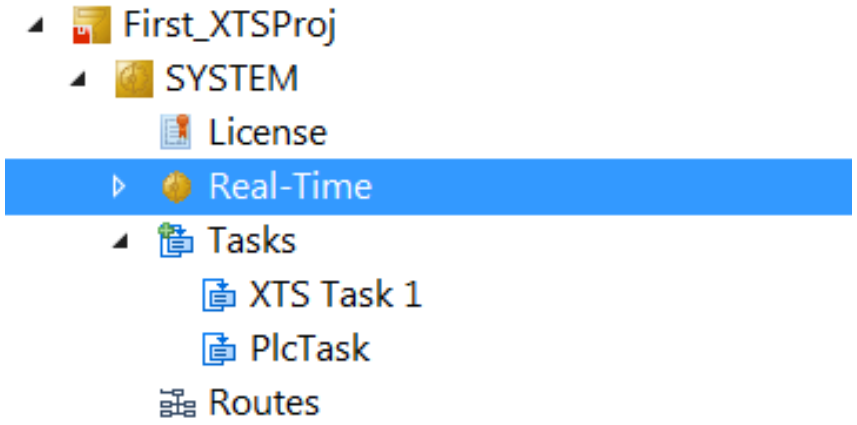


BECKHOFF

- Real-Time Model
  - Create XTS Task 2 via Configurator



- Real-Time Model
  - Setup Real-Time



First_XTS_Project

Settings | Online | Priorities | C++ Debugger

Router Memory
Configured Size [MB]: 32
Allocated / Available: 32 / 31

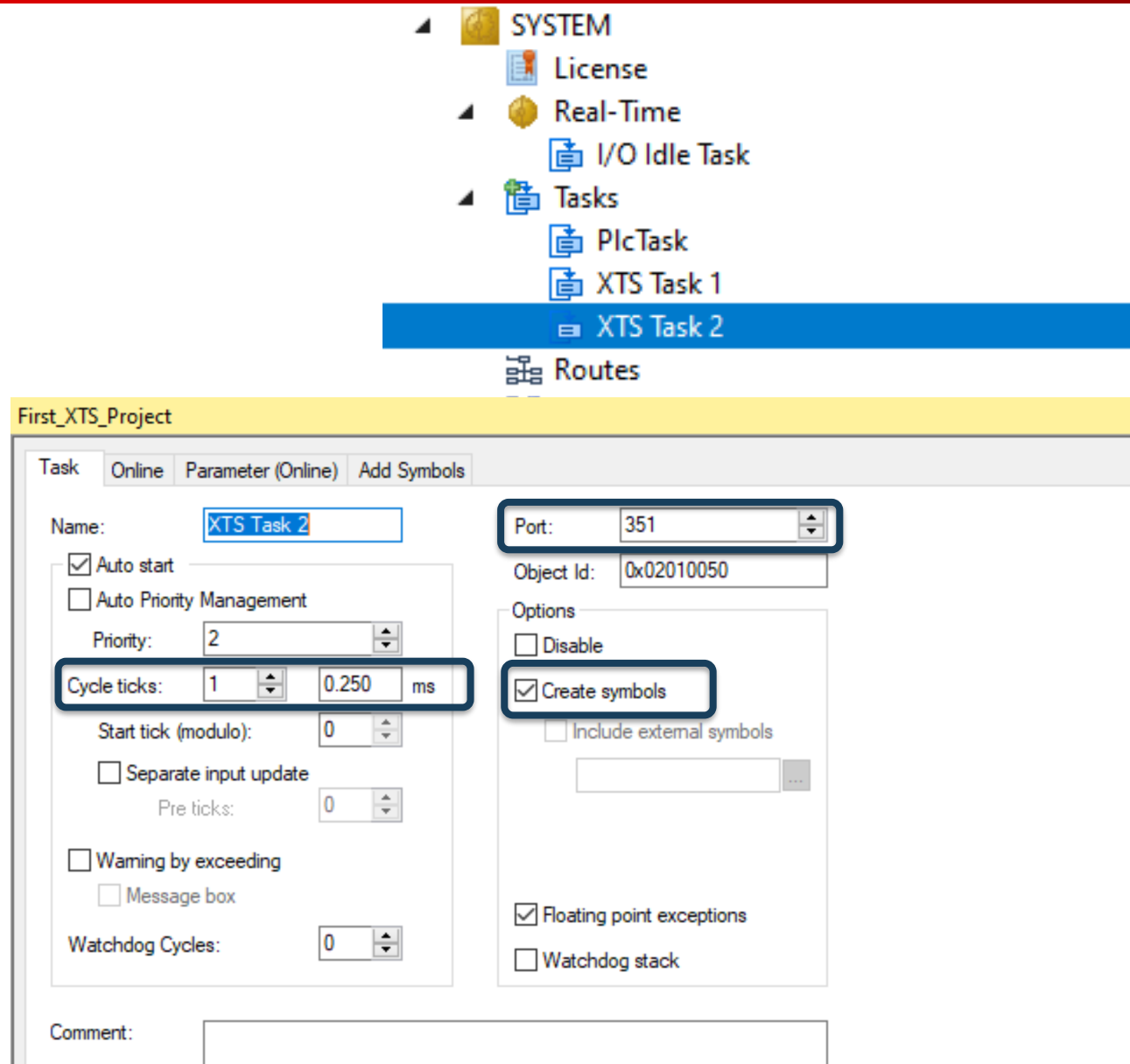
Global Task Config
Maximal Stack Size [KB] 64KB

Available cores (Shared/Isolated): 1 3 Read from Target Set on target

Core	RT-Core	Base Time	Core Limit	Latency Warning
0 (Shar...				
1 (Isol...	Default	1 ms	100 %	(none)
2 (Isol...		250 µs	100 %	(none)
3 (Isol...		250 µs	100 %	(none)

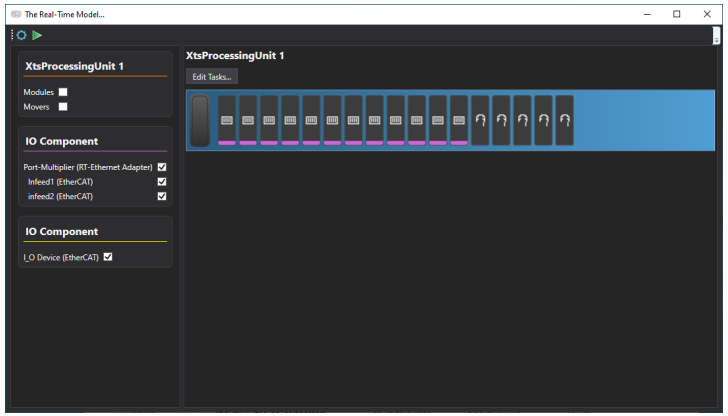
Object	RT-Core	Base Time (ms)	Cycle Time (ms)	Cycle Ticks	Priority
XTS Task 1	Core 3	250 µs	1 ms	4	1
XTS Task 2	Core 2	250 µs	1 ms	4	2
NC SAF	Default (1)	1 ms	2 ms	2	4
I/O Idle Task	Default (1)	1 ms	1 ms	1	11
PlcTask	Default (1)	1 ms	10 ms	10	20

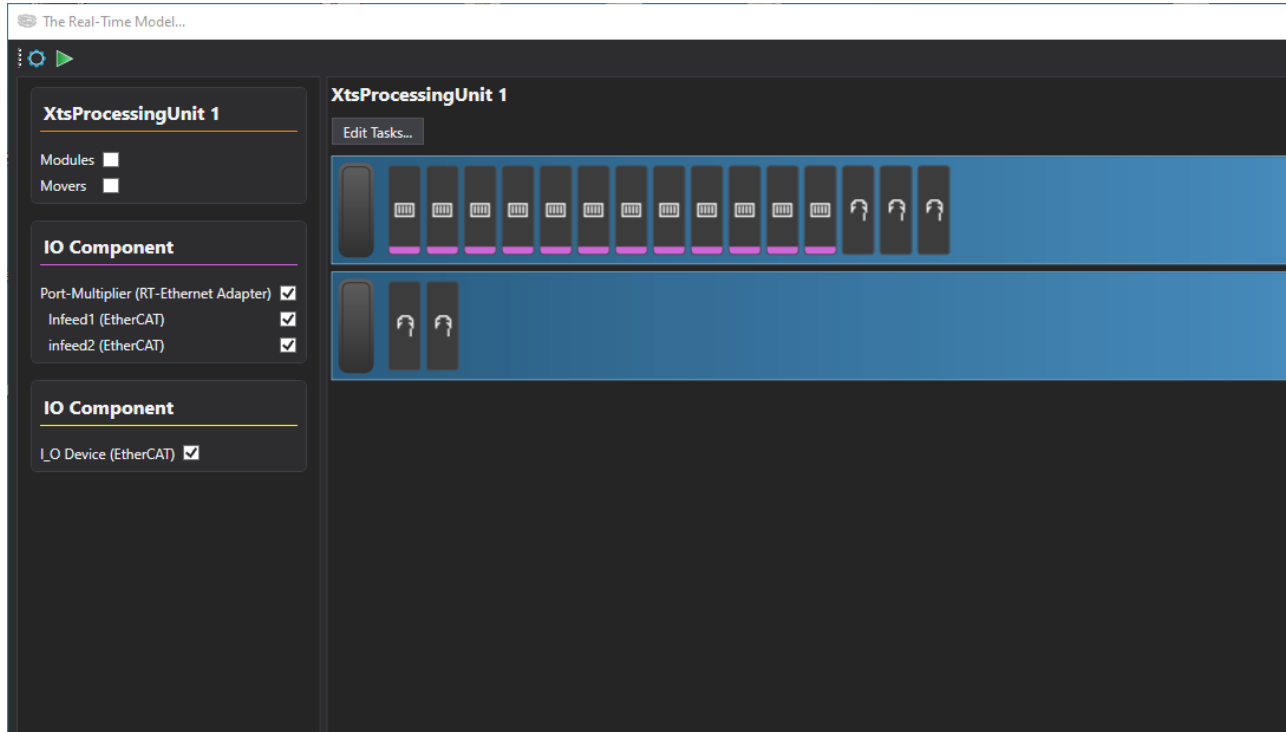
- Real-Time Model
  - Setup XTS Task 2



- Real-Time Model

  – new setup

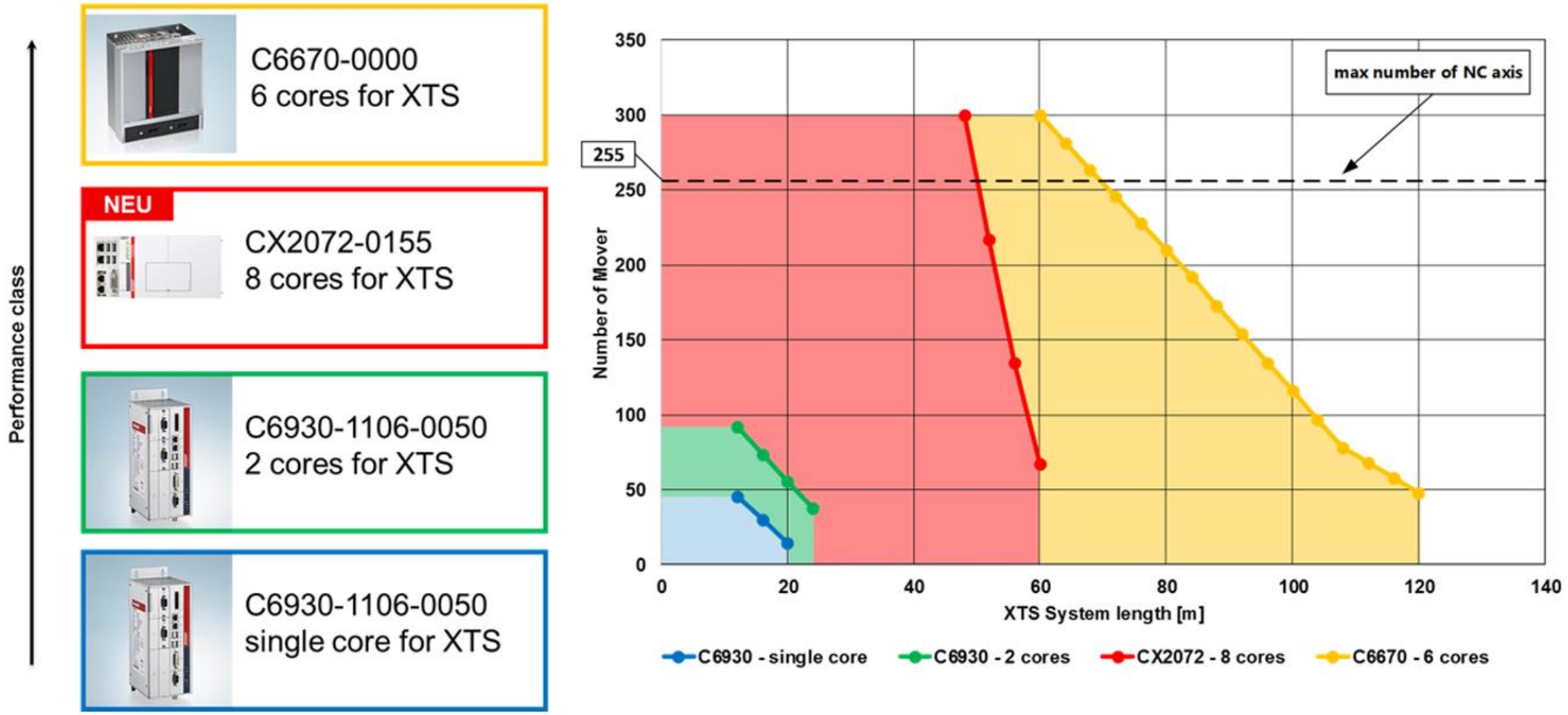




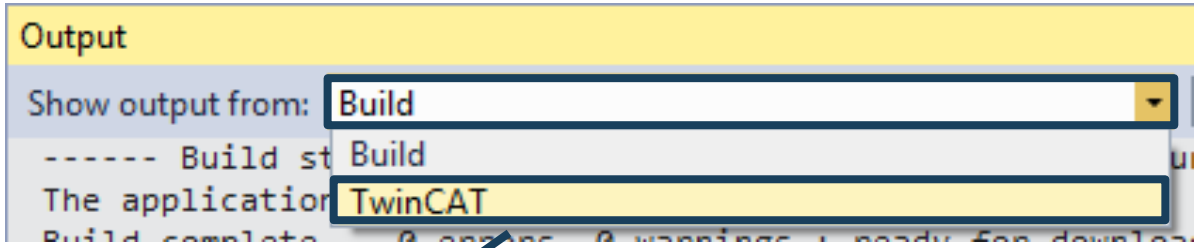
- **Info**

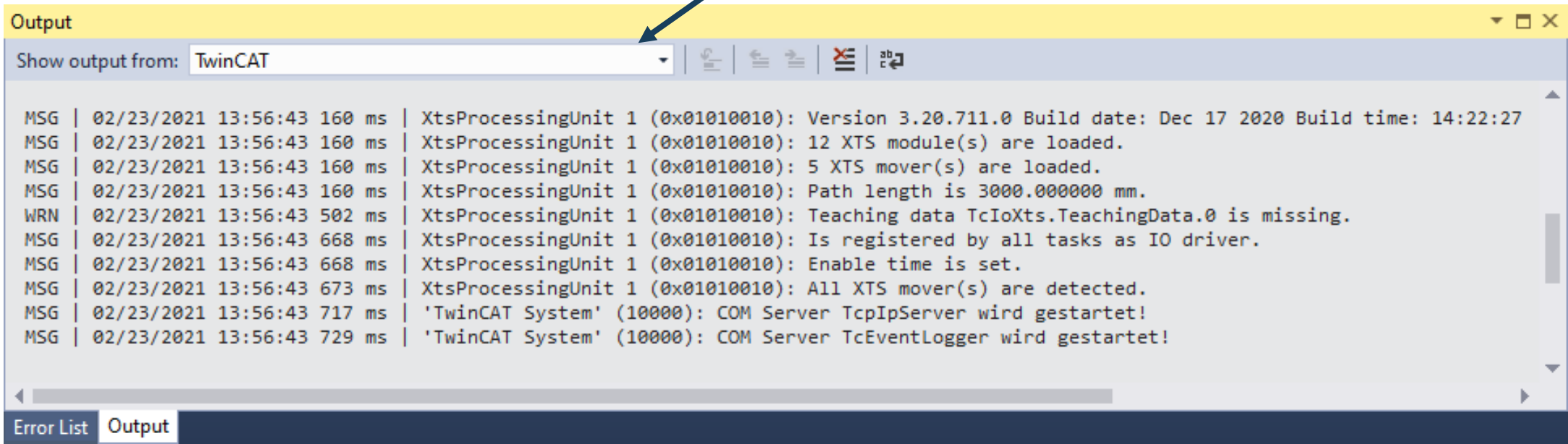
  This setup should not be used in a real machine. It is only an example.

- Real-Time Model

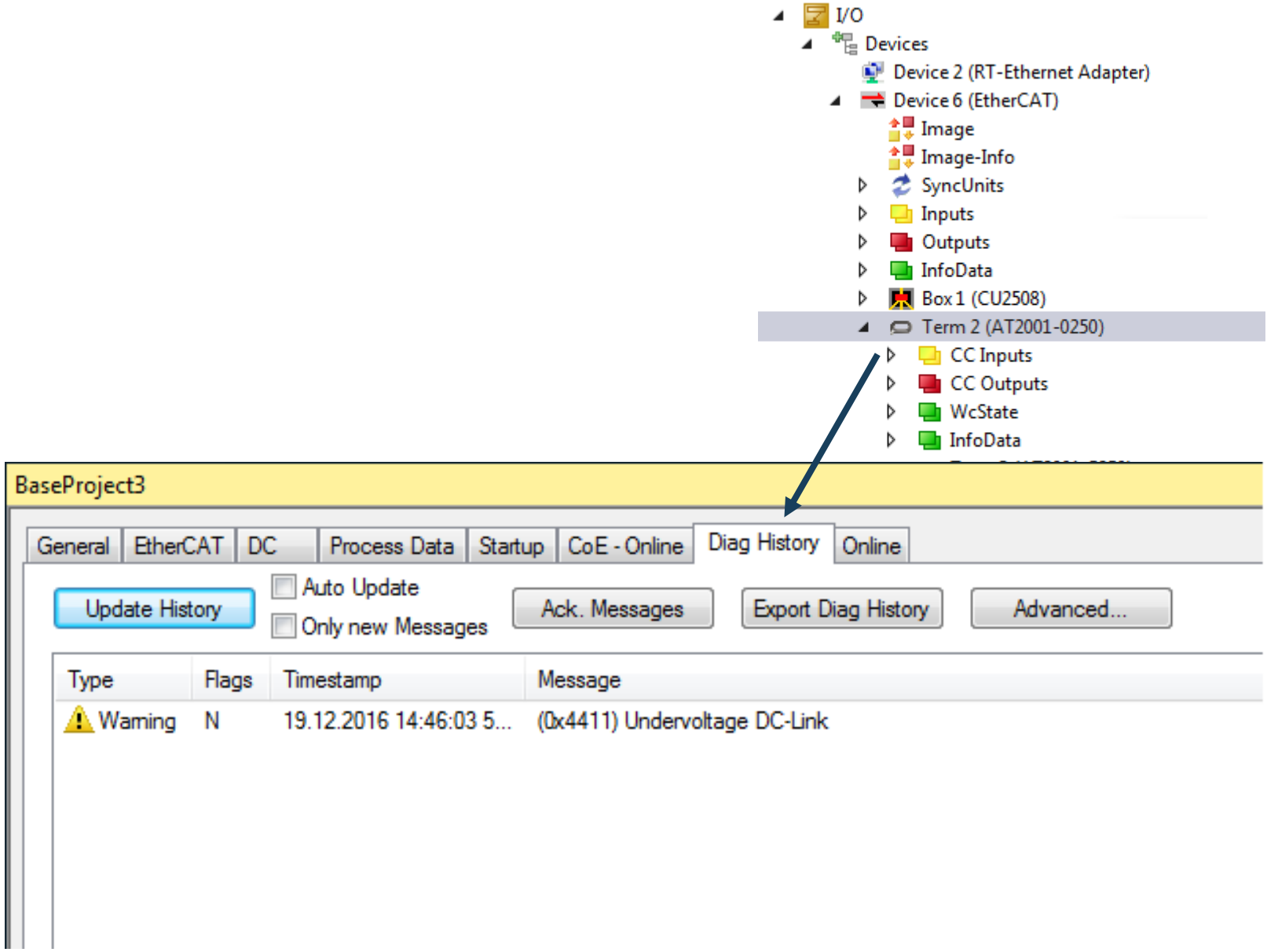


- Diagnosis
  - output Window from Visual Studio

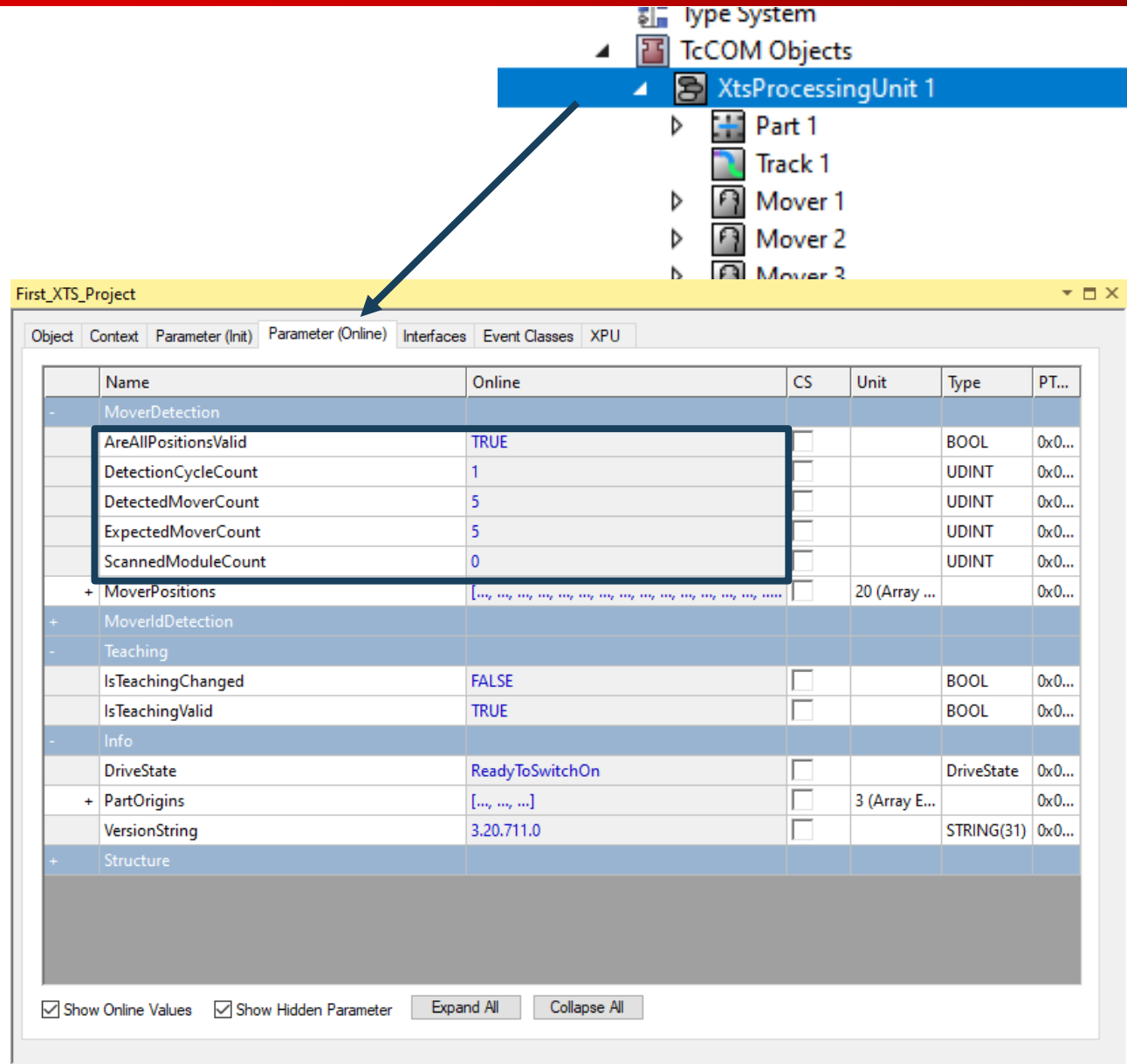




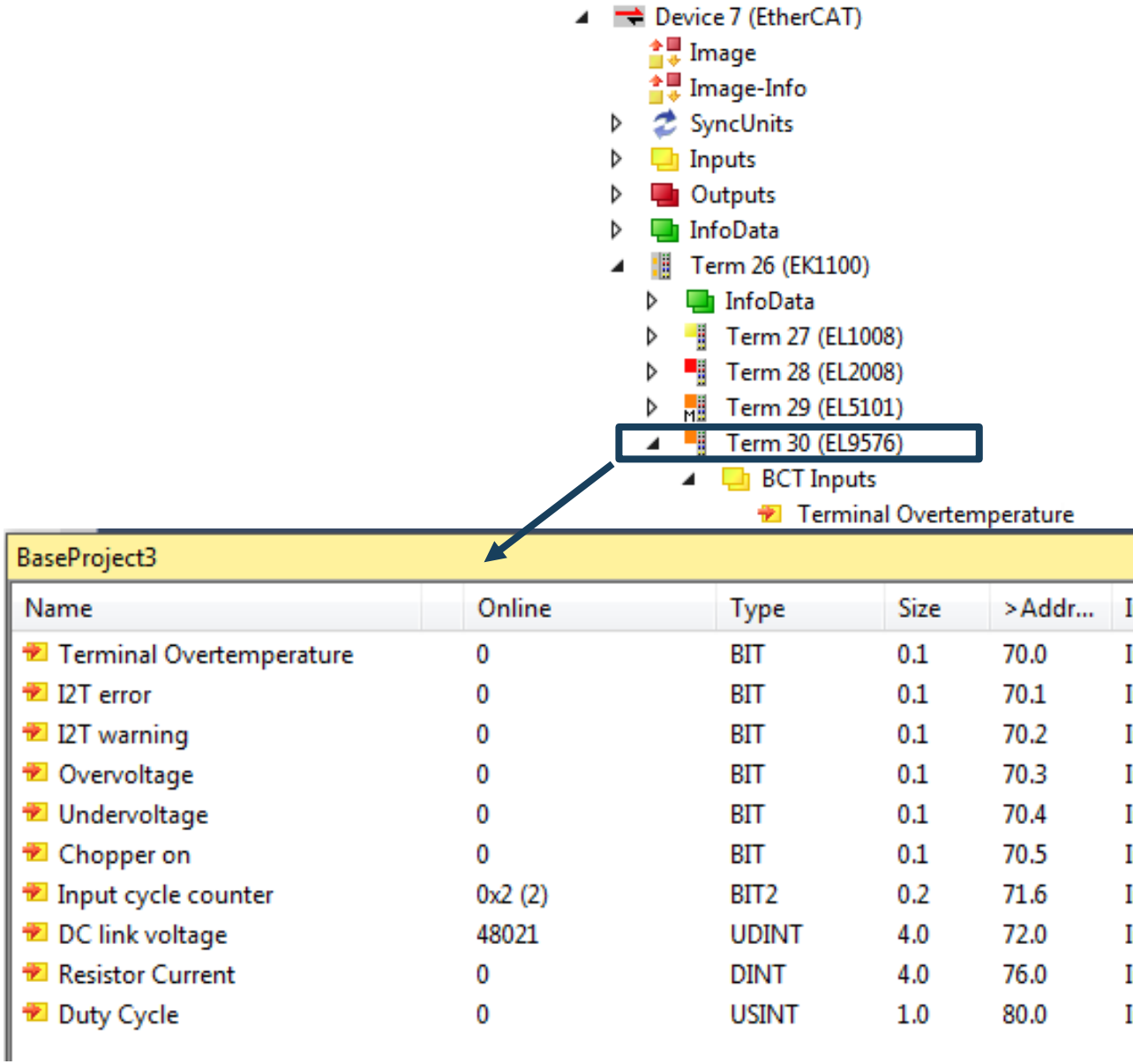
- Diagnosis
  - Module Diagnostic History



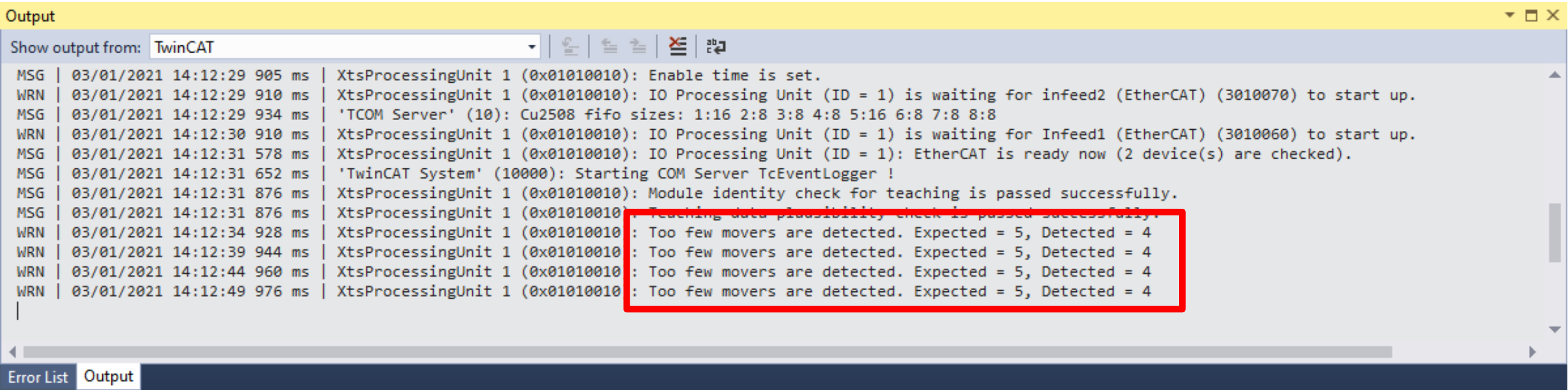
- Diagnosis
  - Parameter (Online)



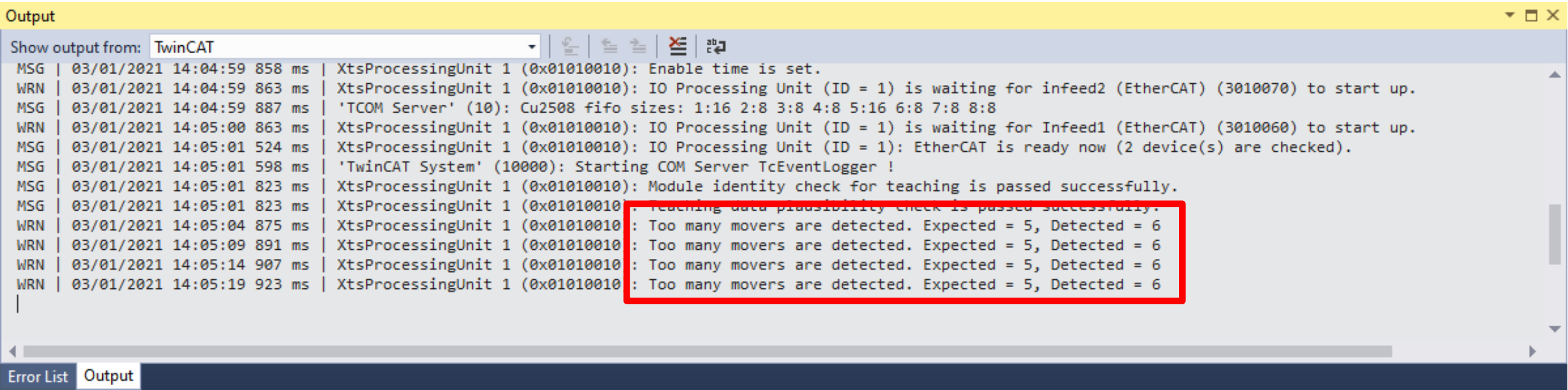
- Diagnosis
  - Info's from EL9576 (Break Chopper Terminal)



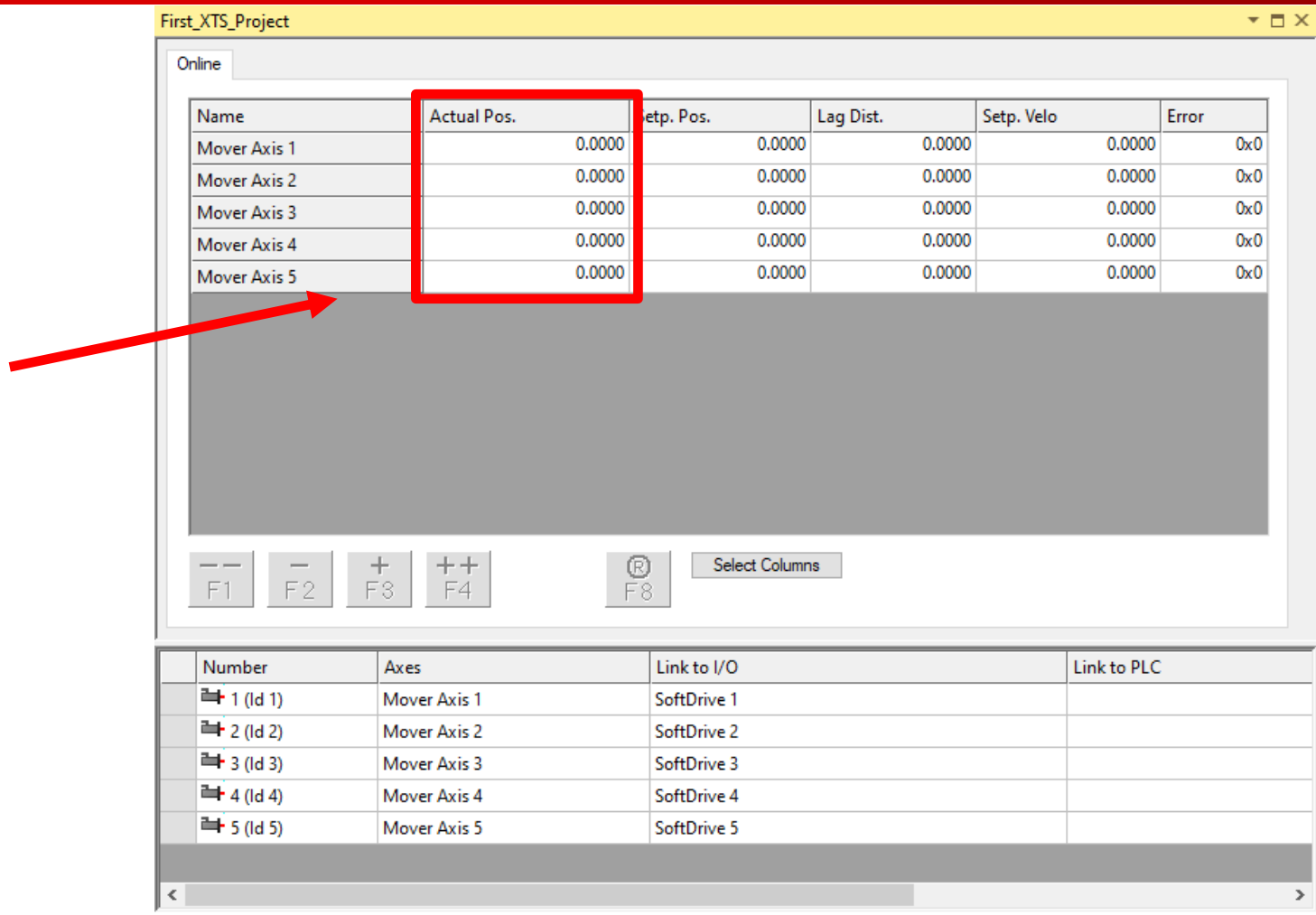
- Error Moverdetection
  - Too few movers detected



- Error Moverdetection
  - Too many movers detected

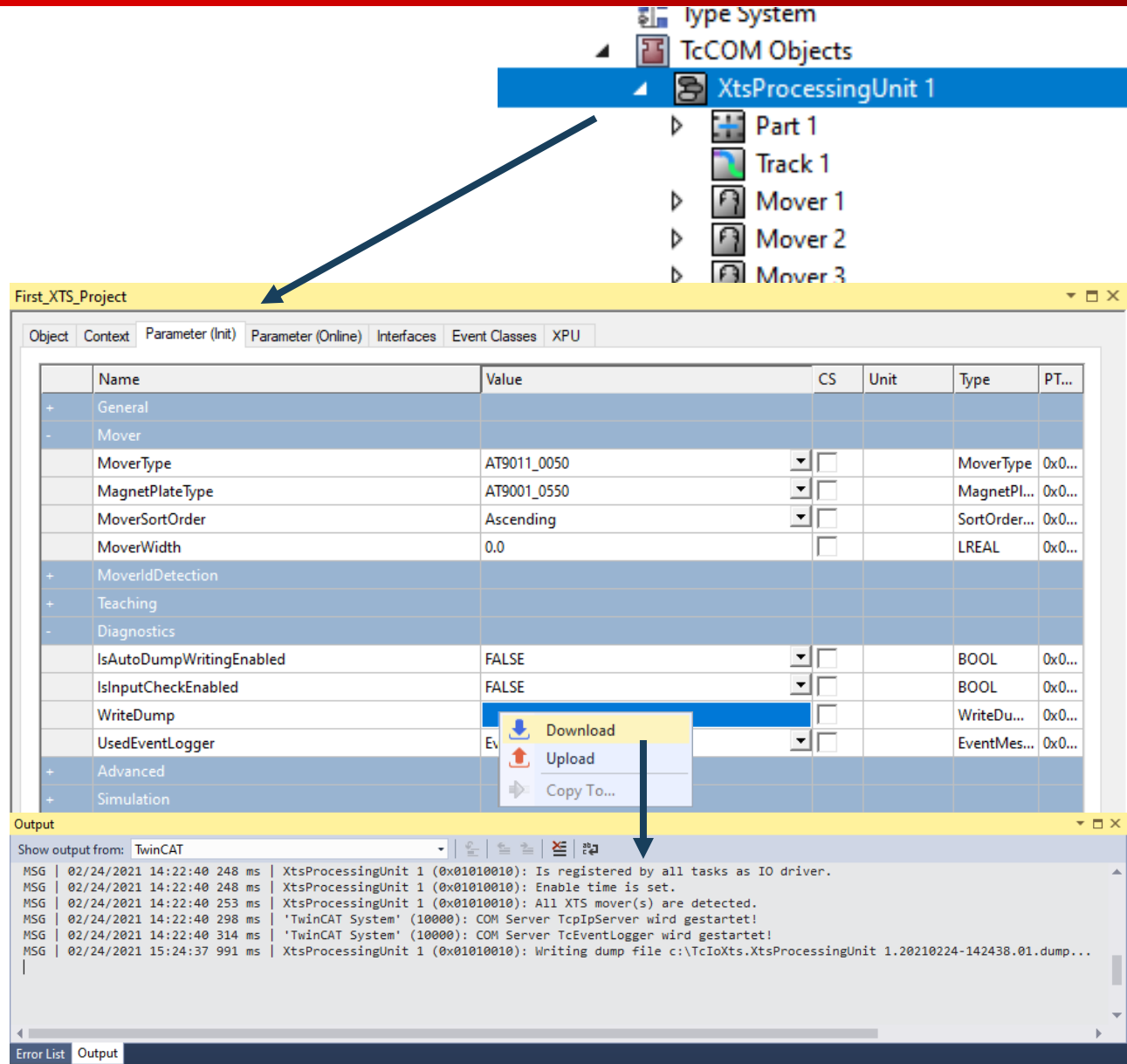


- Error Moverdetection
  - Too few movers detected
  - Too many movers detected



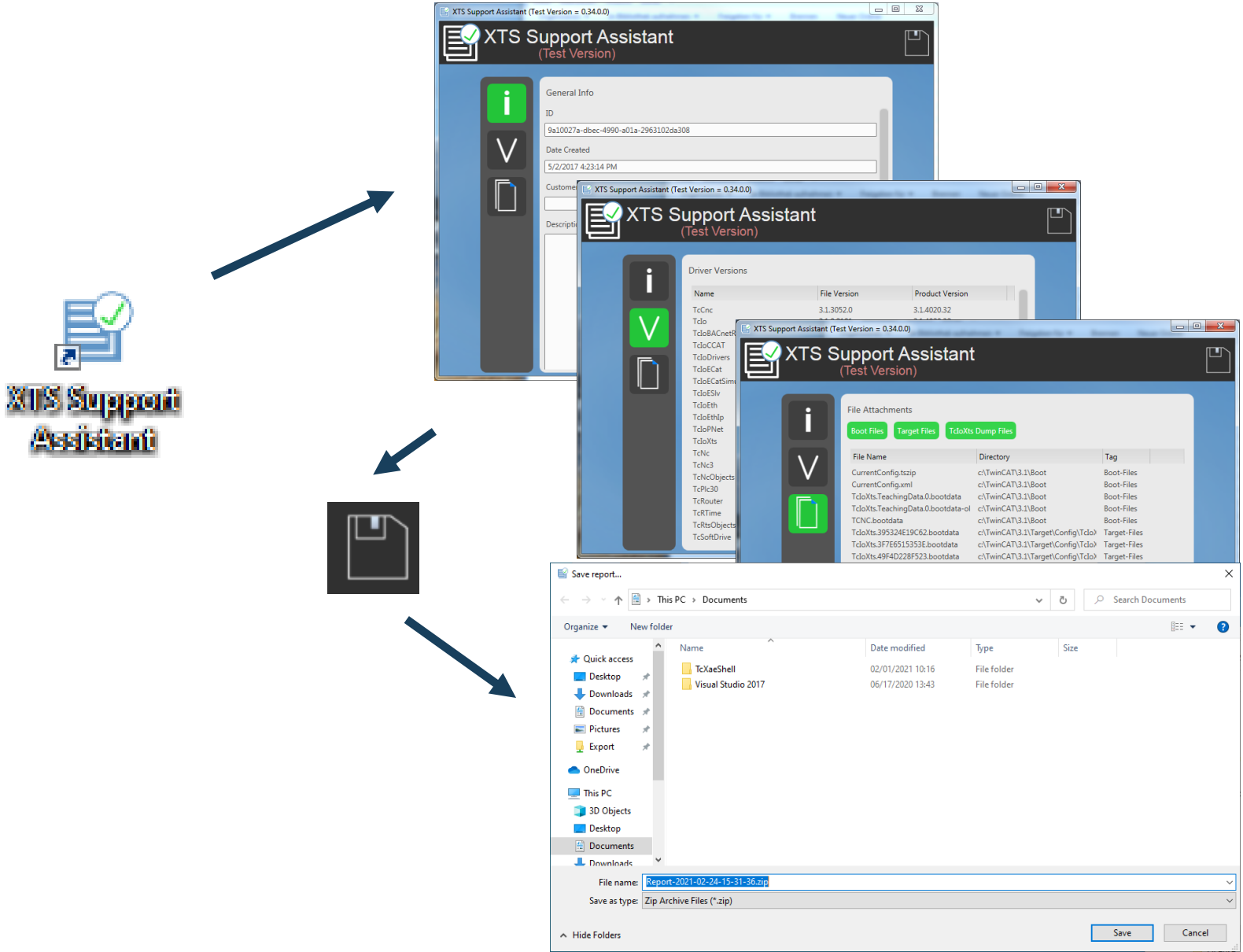
BECKHOFF

- Collecting data…
  - XTS-DUMP



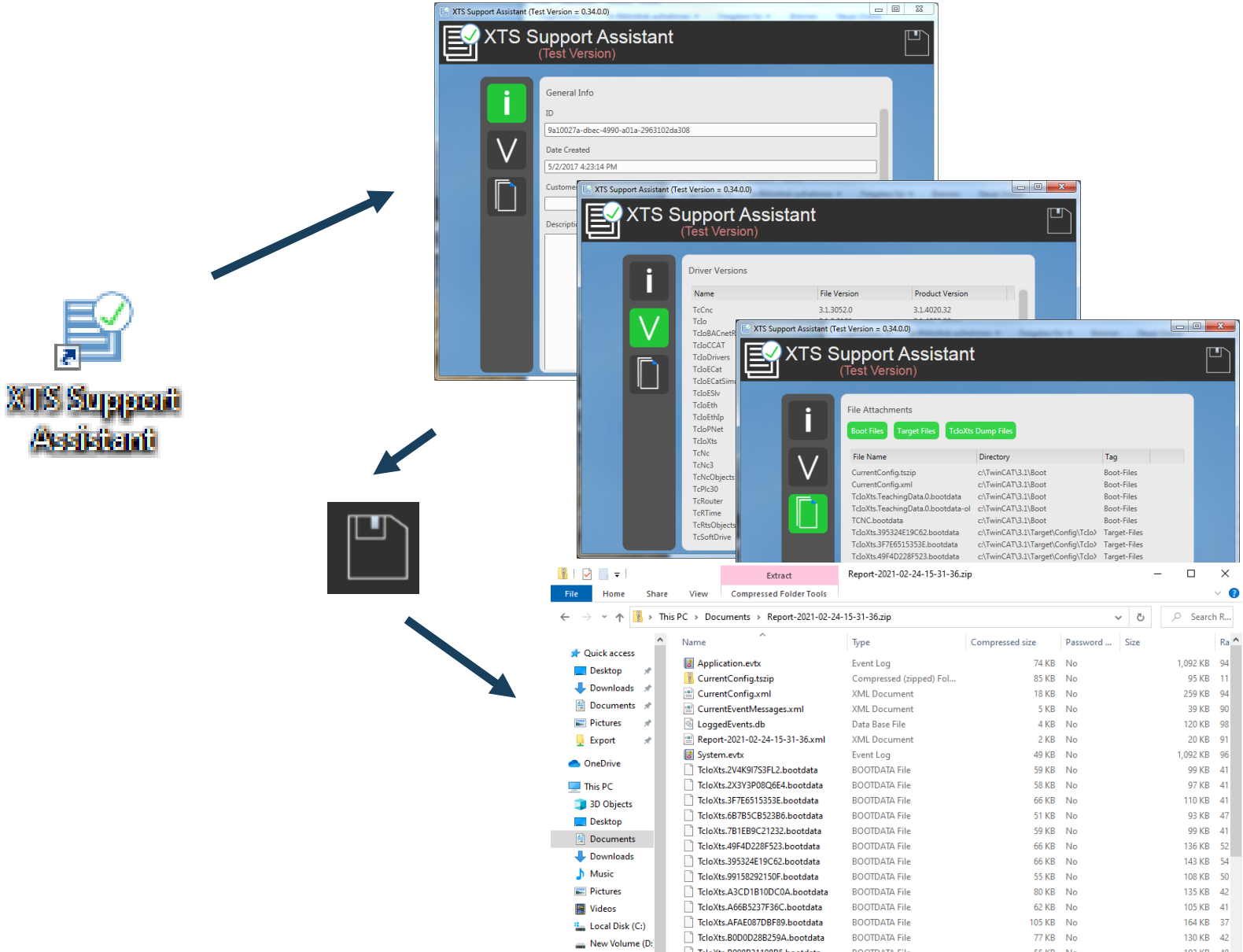
BECKHOFF

- Collecting data…
  - XTS-SupportAssistant



BECKHOFF

- Collecting data…
  - XTS-SupportAssistant



Agenda | XTS- TcIoXtsProcessingUnit (XPU)

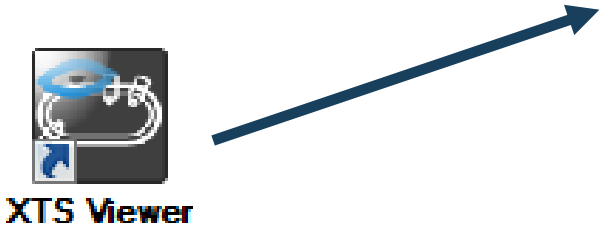
BECKHOFF

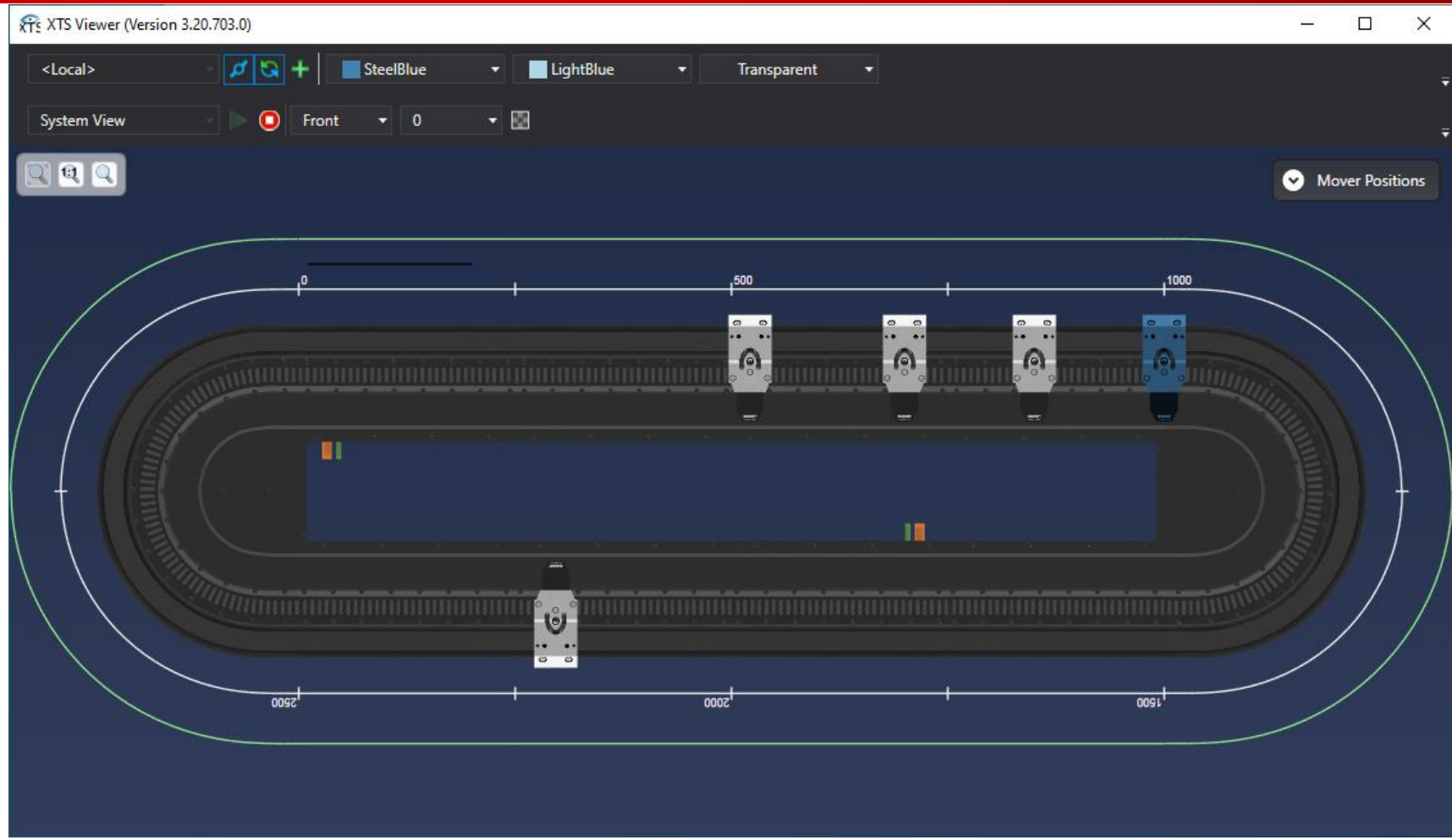
1. XPU Introduction
2. XTS Configuration Process
3. XPU – Deep Dive
4. **XTS Viewer**
5. Mover 1
6. Simulation Mode

XTS Viewer

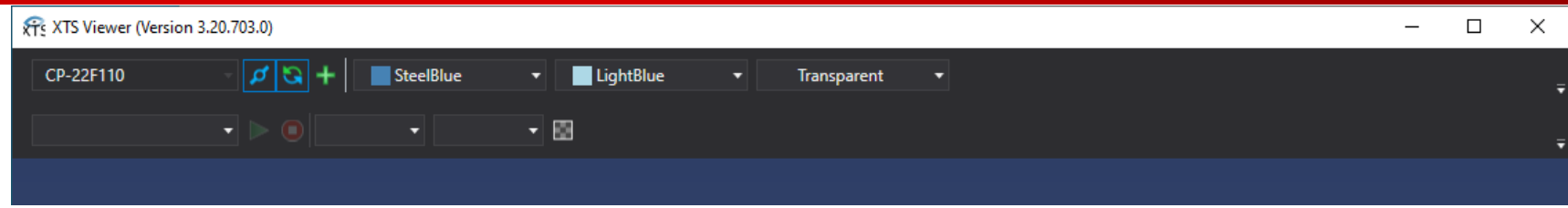
BECKHOFF

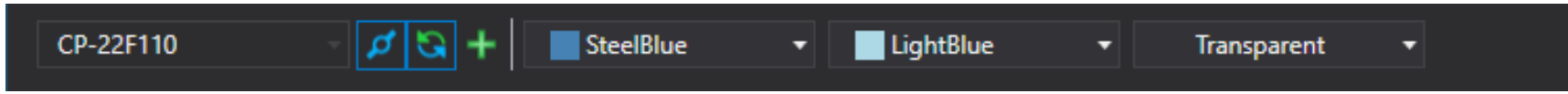
- XTS Viewer
  - Start

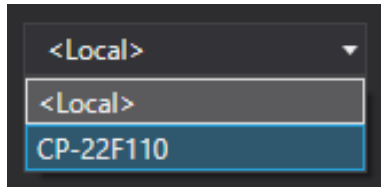




- XTS Viewer
  - Toolbar 1







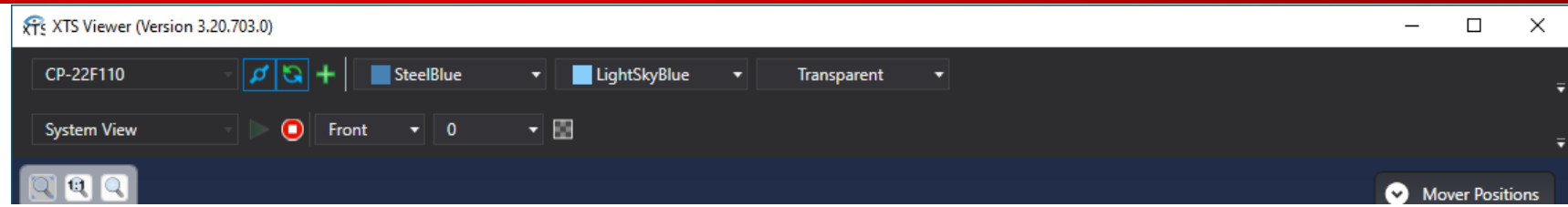
choose Target

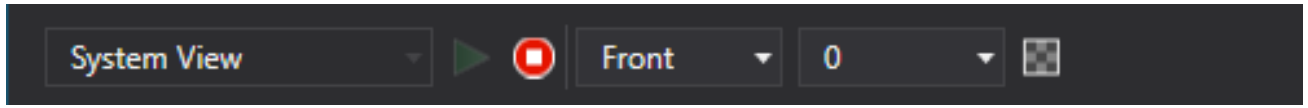
connect to selected target

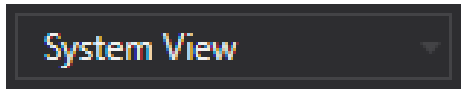
continuous update

open sup window

- XTS Viewer
  - Toolbar 2







choose a view description

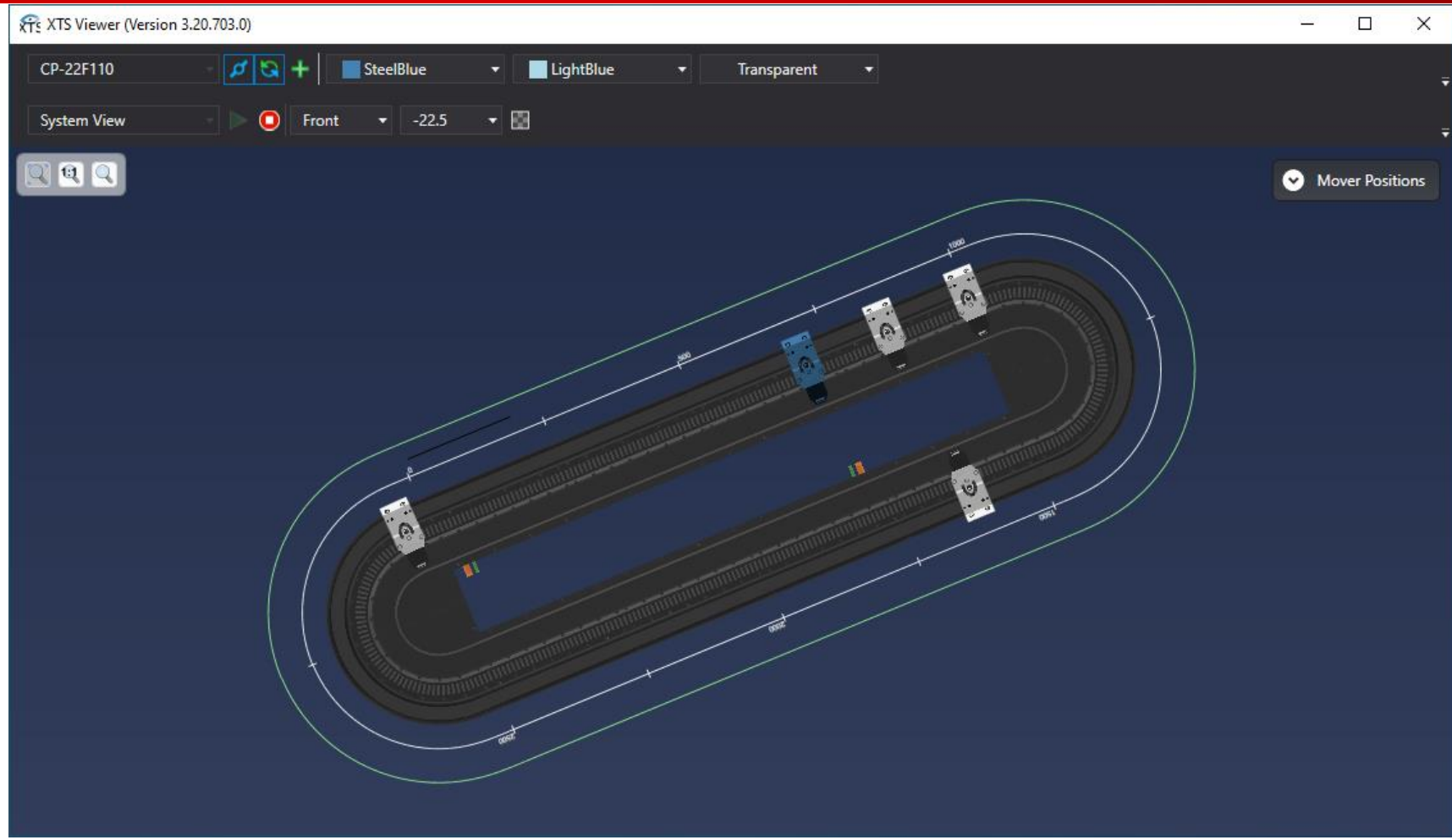
Start / Stop view

select module side and rotation degree

XTS Viewer

BECKHOFF

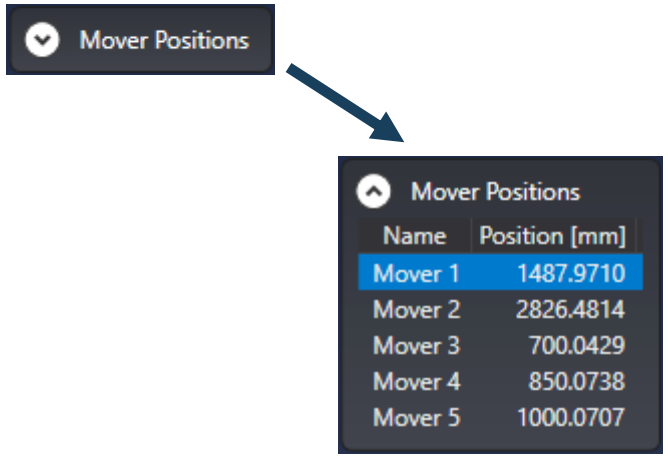
- XTS Viewer
  - Complete view

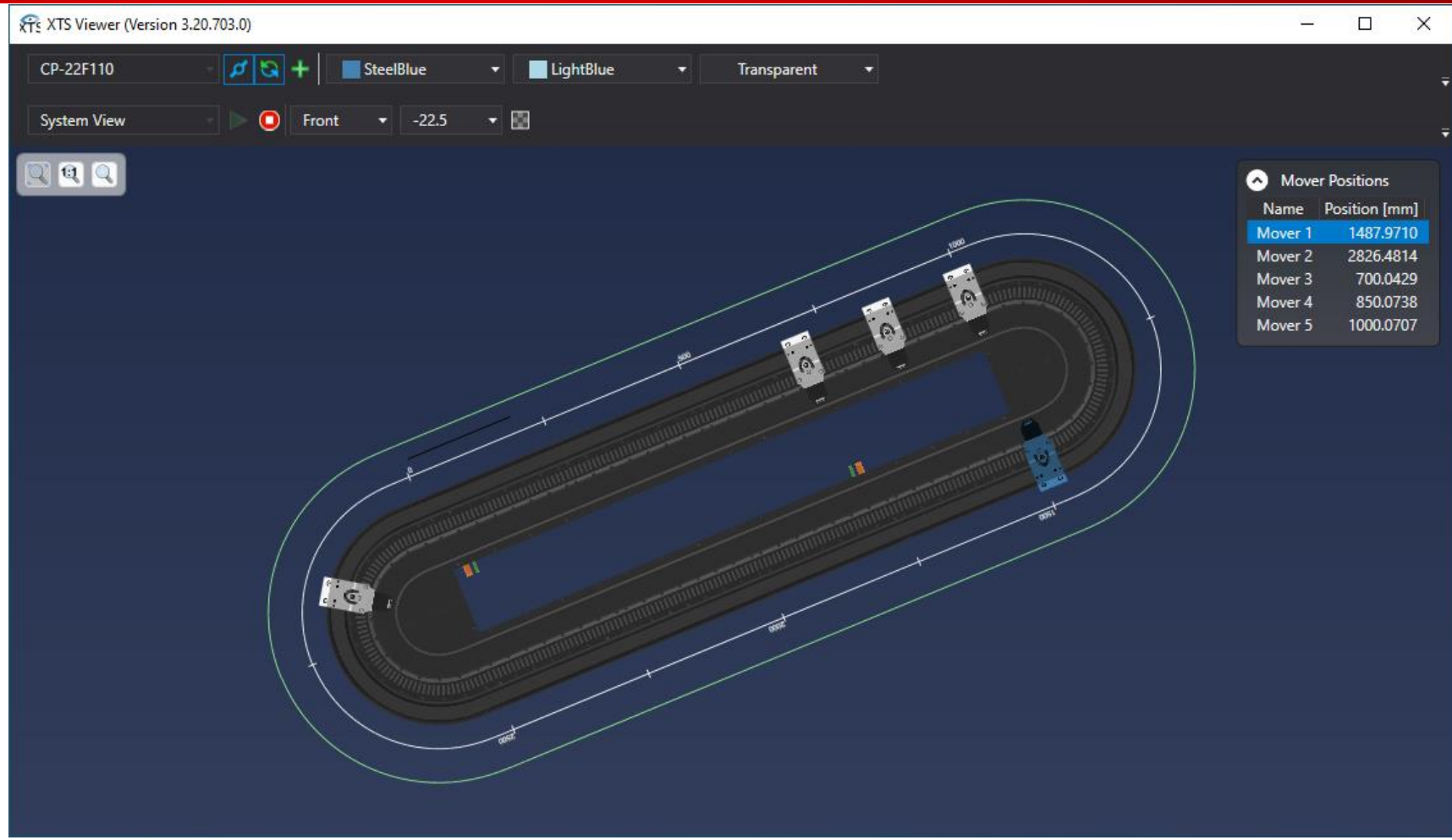


XTS Viewer

BECKHOFF

- XTS Viewer
  - Show Mover Positions (Modulo Value)





Agenda | XTS- TcIoXtsProcessingUnit (XPU)

BECKHOFF

1. XPU Introduction
2. XTS Configuration Process
3. XPU – Deep Dive
4. XTS Viewer
5. **Mover 1**
6. Simulation Mode

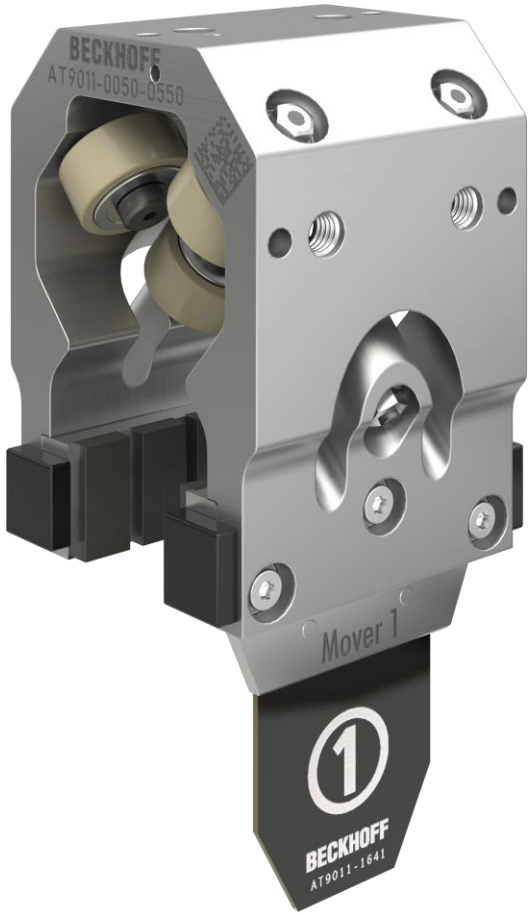
Mover 1

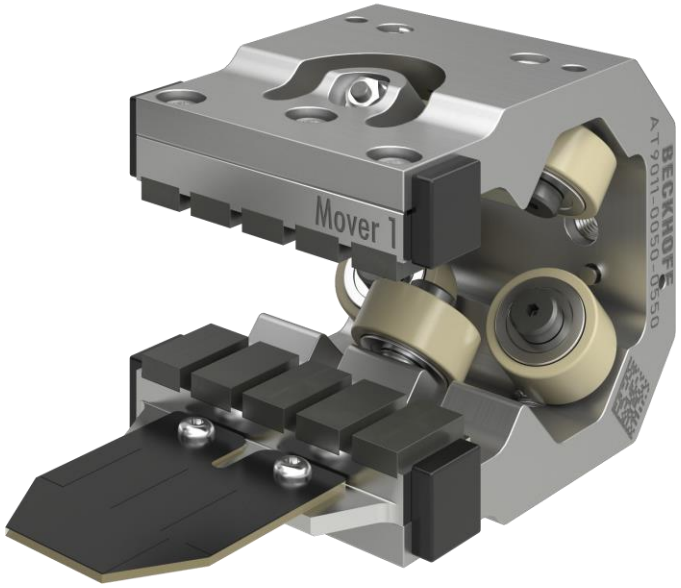
BECKHOFF

- Mover 1 functionality

The purpose of the Mover 1 detection is to identify a mover as a main mover and to distinguish it from the subsequent movers.

This offers then advantage of a clear correlation between mover hardware and software axis.





Mover 1

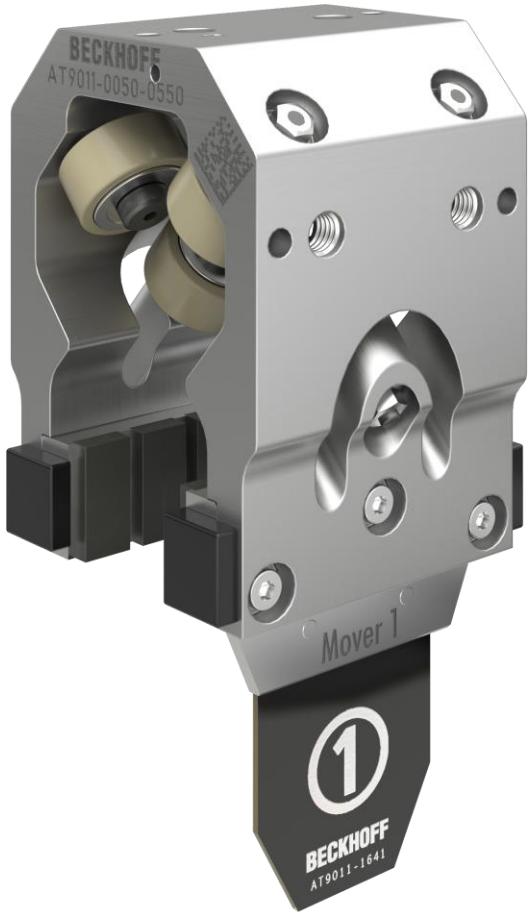
BECKHOFF

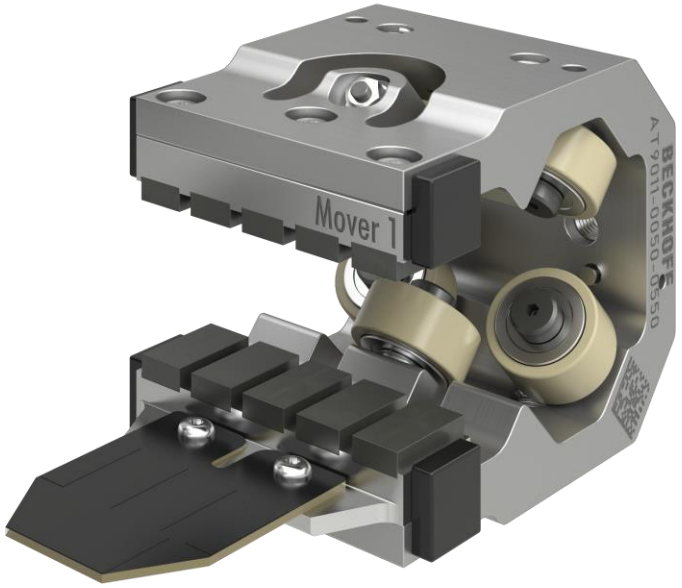
- Mover 1 functionality

Therefore one Mover with a special magnetic plate set is used (Mover1).

These magnets creates an inverted magnetic field.

This magnetic plate set exhibits a different behavior when the Mover1 search is triggered (MoverIdDetection)





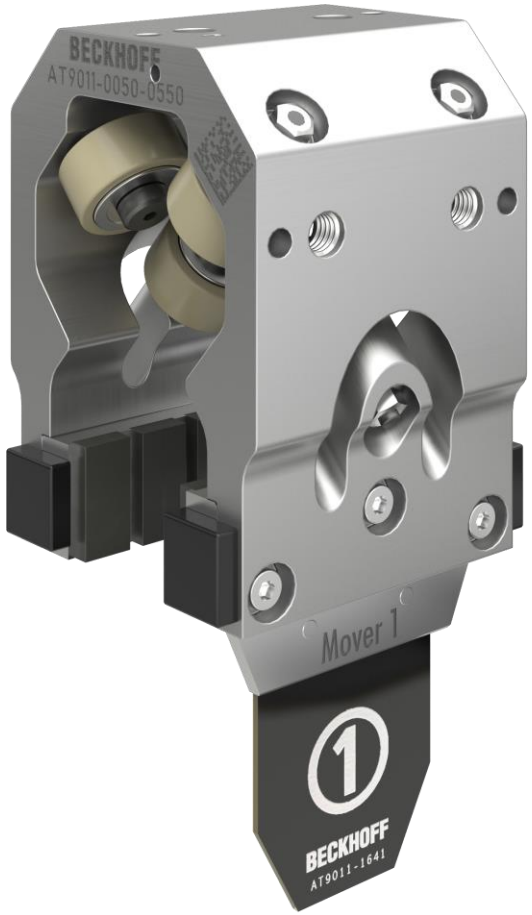
Mover 1

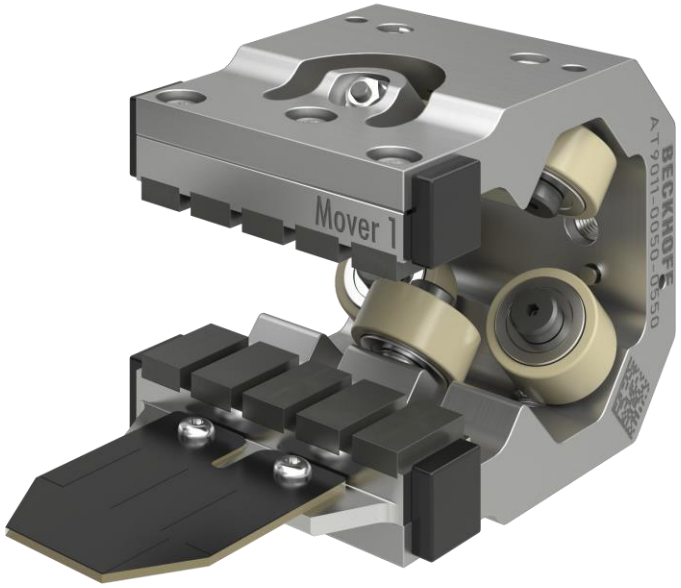
BECKHOFF

- MoverIdDetection

When MoverIdDetection is trigger, all Movers make a small movement
like "Wake and Shake".

Therefore 48V power supply is required.





Mover 1

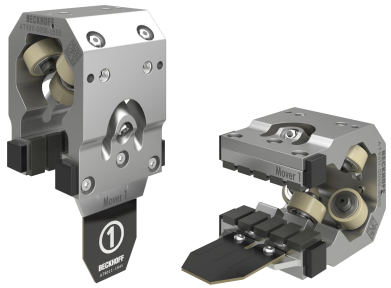
BECKHOFF

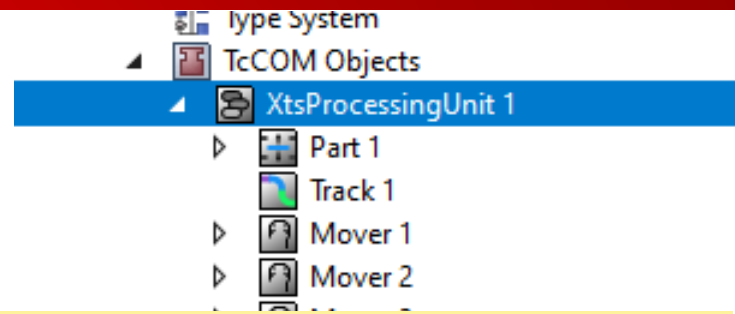
- MoverIdDetection

The mover detection across all movers is controlled via the TcIoXtsProcessingUnit (XPU) object.

You have the option to apply general detection parameters

and to trigger the Mover 1 search manually.





First_XTS_Project

Object | Context | Parameter (Init) | Parameter (Online) | Interfaces | Event Classes | XPU

	Name	Value	CS	Unit	Type	P...
+	General					
-	Mover					
	MoverType	AT9011_0050			MoverTy...	0x...
	MagnetPlateType	AT9001_0550			Magnet...	0x...
	MoverSortOrder	Ascending			SortOrd...	0x...
	MoverWidth	0.0			LREAL	0x...
-	MoverIdDetection					
	IdDetectionMode	Mover1			MoverId...	0x...
	MoverPositionAssignment	Standard			MoverP...	0x...
-	ExpectedMoverIds	[...]		1 (Arr...		0x...
	[0].Id	1			STRING(3)	
	[0].Count	2			UDINT	
	TriggerMoverIdDetection				Trigger...	0x...
+	Teaching					
+	Diagnostics					
+	Advanced					
-	Simulation					
	IsPositionNoiseEnabled	TRUE			BOOL	0x...
	IsRandomStartUpEnabled	TRUE			BOOL	0x...

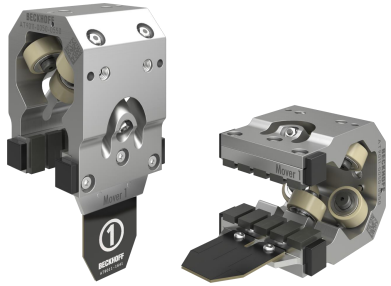
Show Online Values | Show Hidden Parameter | Expand All | Collapse All

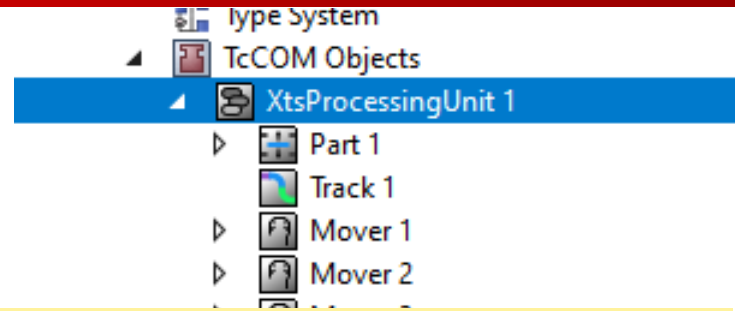
Mover 1

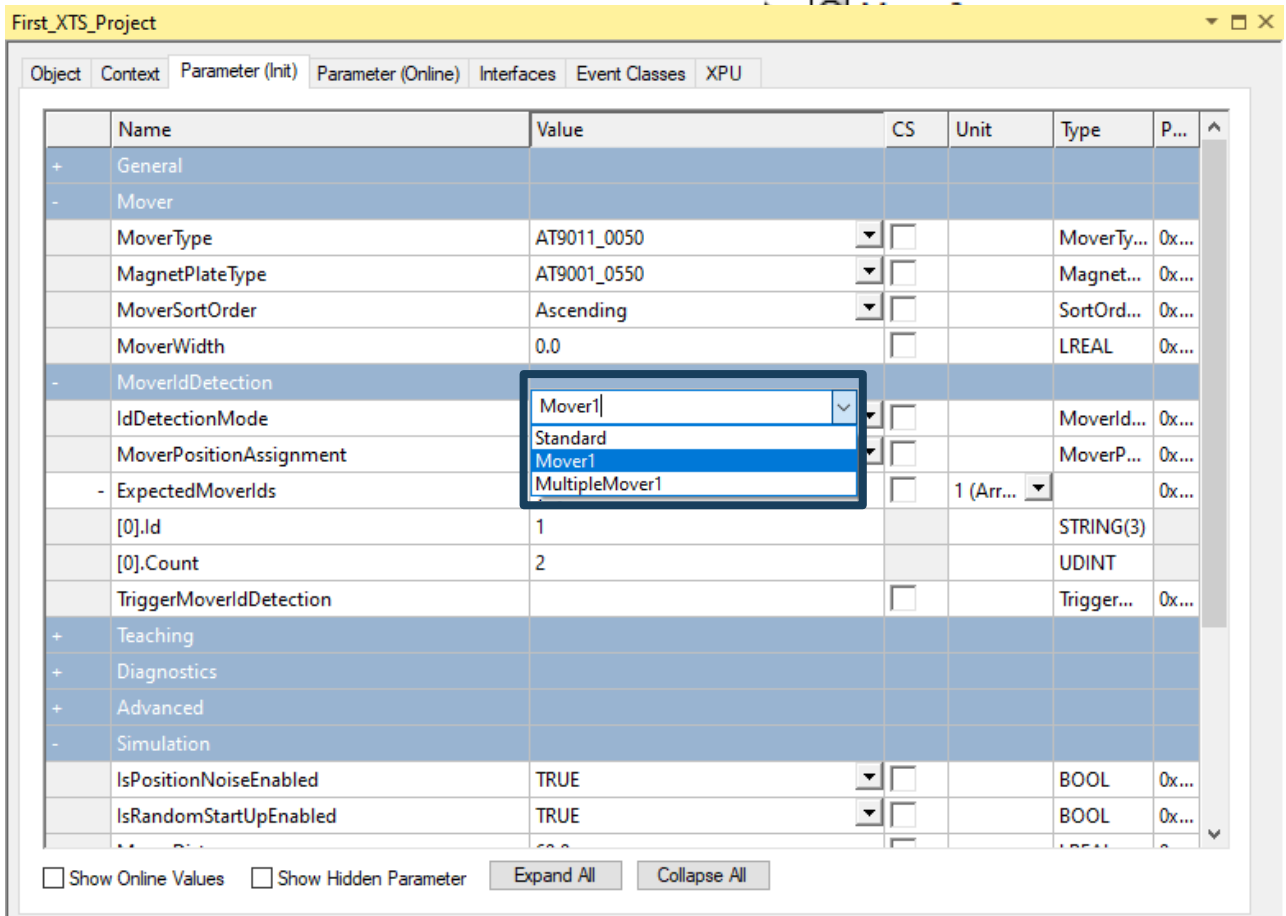
BECKHOFF

- MoverIdDetection

To use Mover Id detection
the parameter "MoverIdDetectionMode“
has to change to "Mover1 ".







WARNING

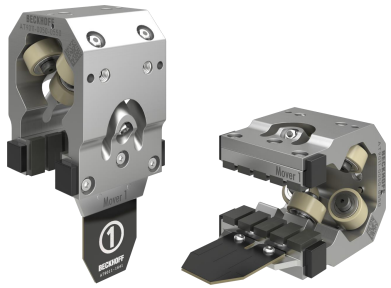
When a Mover with the certain magnetic plate is on the Track, this Parameter has to be setup.
Otherwise this leads to unforeseen movements of the mover.
Unforeseen movements can lead to injuries to people and damage to tools and the machine.

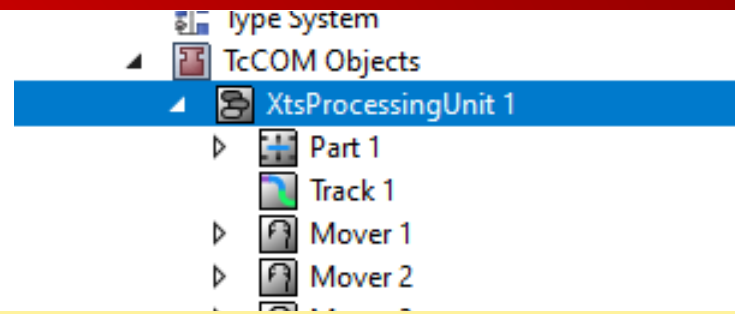
Mover 1

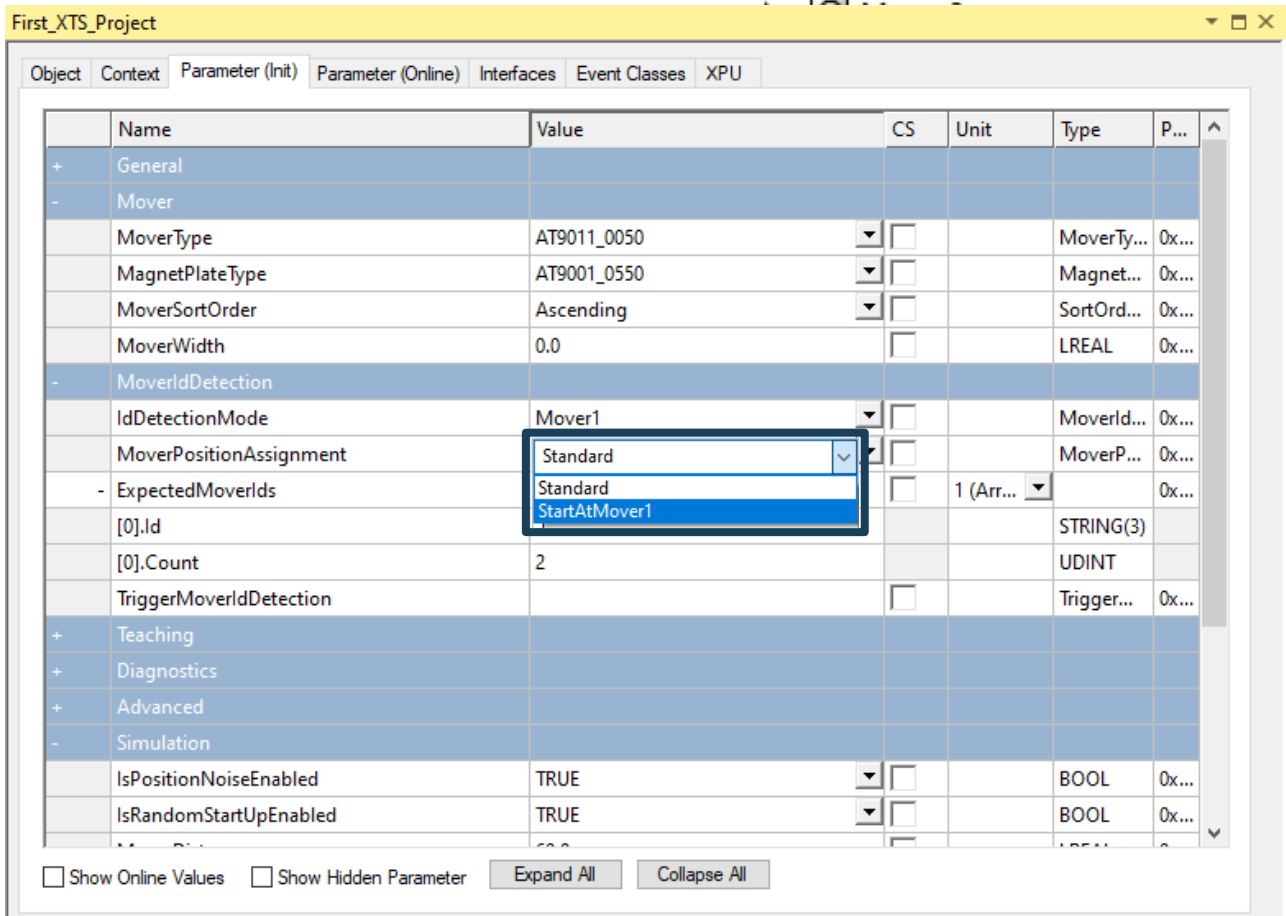
BECKHOFF

- MoverPositionAssignment

The absolute Position is setup regarding this parameter.
If the Parameter is set to "StartAtMover1" the mover has the lowest or highest position, dependent and the sorting order.







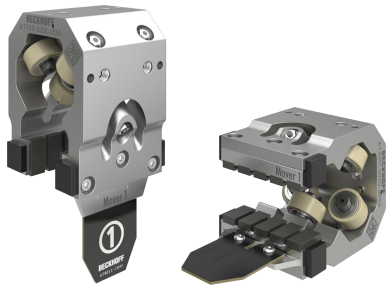
Mover 1

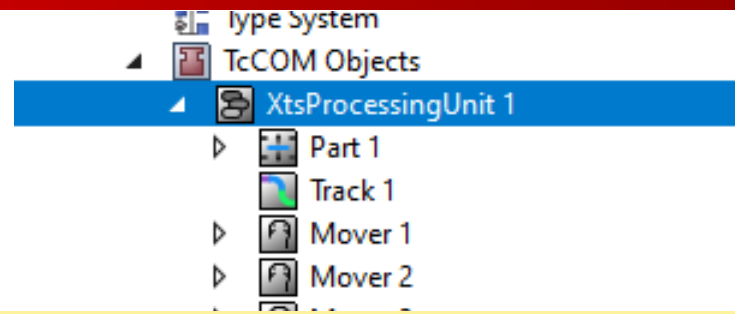
BECKHOFF

- MoverIdDetectionMode
- MoverPositionAssignment

Change of these parameters requires at TwinCAT

→ Activate Configuration





First_XTS_Project

Object | Context | Parameter (Init) | Parameter (Online) | Interfaces | Event Classes | XPU

	Name	Value	CS	Unit	Type	P...
+	General					
-	Mover					
	MoverType	AT9011_0050			MoverTy...	0x...
	MagnetPlateType	AT9001_0550			Magnet...	0x...
	MoverSortOrder	Ascending			SortOrd...	0x...
	MoverWidth	0.0			LREAL	0x...
-	MoverIdDetection					
	IdDetectionMode	Mover1			MoverId...	0x...
	MoverPositionAssignment	Standard			MoverP...	0x...
-	ExpectedMoverIds	[...]		1 (Arr...		0x...
	[0].Id	1			STRING(3)	
	[0].Count	2			UDINT	
	TriggerMoverIdDetection				Trigger...	0x...
+	Teaching					
+	Diagnostics					
+	Advanced					
-	Simulation					
	IsPositionNoiseEnabled	TRUE			BOOL	0x...
	IsRandomStartUpEnabled	TRUE			BOOL	0x...

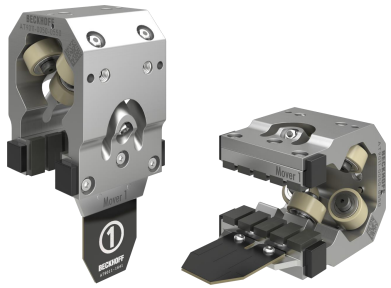
Show Online Values | Show Hidden Parameter | Expand All | Collapse All

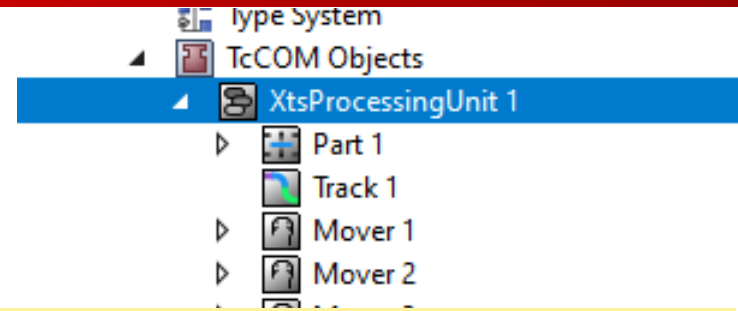
Mover 1

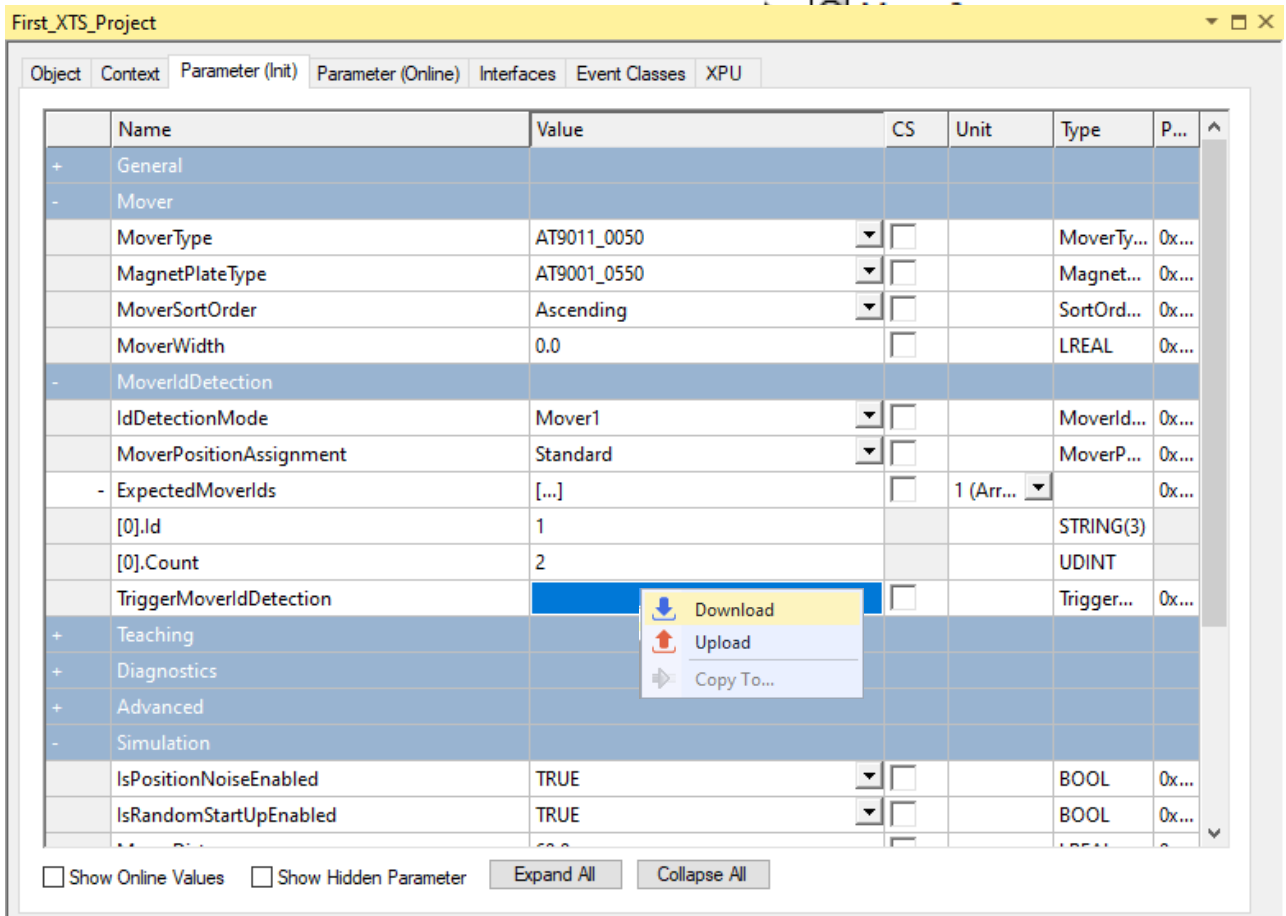
BECKHOFF

- TriggerMoverIdDetection

By selecting the parameter "TrigerMoverIdDetection" and ,via right Mous-Click, download the Parameter,
the Mover 1 detection is triggered manually







Mover 1

BECKHOFF

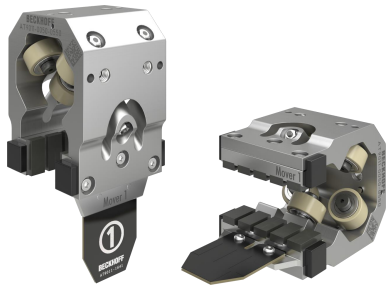
- Feedback Mover Id detection

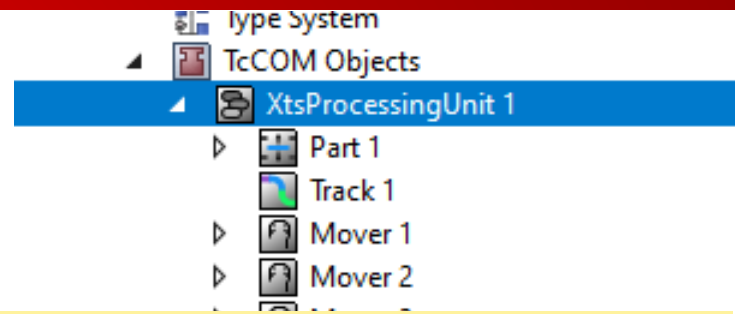
Massages from the Mover Id detection

→ shown in the Output Window

State of Mover Id detection

→ as Parameter in "Parameter (Online)"





First_XTS_Project

Object | Context | Parameter (Init) | Parameter (Online) | Interfaces | Event Classes | XPU

	Name	Online	CS	Unit	Type	P...
-	MoverDetection					
	AreAllPositionsValid	TRUE	☐		BOOL	0x...
	DetectionCycleCount	1	☐		UDINT	0x...
	DetectedMoverCount	5	☐		UDINT	0x...
	ExpectedMoverCount	5	☐		UDINT	0x...
	ScannedModuleCount	0	☐		UDINT	0x...
+	MoverPositions	[..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ...	☐	20 (Arra...		0x...
-	MoverIdDetection					
	HasIdDetectionError	FALSE	☐		BOOL	0x...
	IsIdDetectionValid	TRUE	☐		BOOL	0x...
	IsIdDetectionActive	FALSE	☐		BOOL	0x...
-	MoverIds	[1, , , ,]	☐	5 (Array ...		0x...
	[0]	1			STRING(3)	
	[1]				STRING(3)	
	[2]				STRING(3)	
	[3]				STRING(3)	
	[4]				STRING(3)	
+	Teaching					
-	Info					

☑ Show Online Values ☐ Show Hidden Parameter | Expand All | Collapse All

Output

Show output from: TwinCAT

```
MSG | 02/25/2021 11:34:29 400 ms | 'TwinCAT XAE': No deployment information found for class factory 'CLib_Tc3_System'
MSG | 02/25/2021 11:34:29 400 ms | 'TwinCAT XAE': No deployment information found for class factory 'CLib_Tc3_McCoord
MSG | 02/25/2021 11:34:29 400 ms | 'TwinCAT XAE': No deployment information found for class factory 'CLib_Tc3_McColli
MSG | 02/25/2021 14:29:30 931 ms | XtsProcessingUnit 1 (0x01010010): The Mover ID Detection has been triggered.
MSG | 02/25/2021 14:29:30 931 ms | XtsProcessingUnit 1 (0x01010010): Mover ID is detected.
```

Error List | Output

Agenda | XTS- TcIoXtsProcessingUnit (XPU)

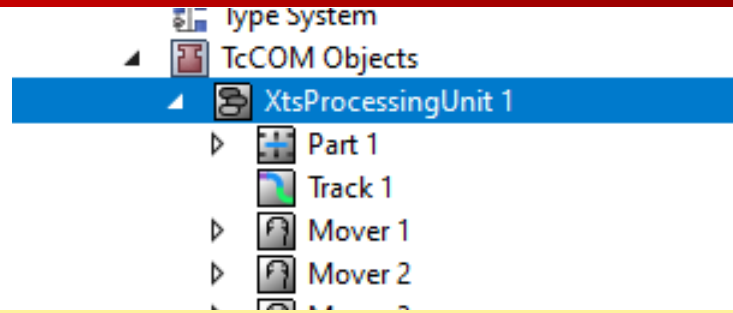
BECKHOFF

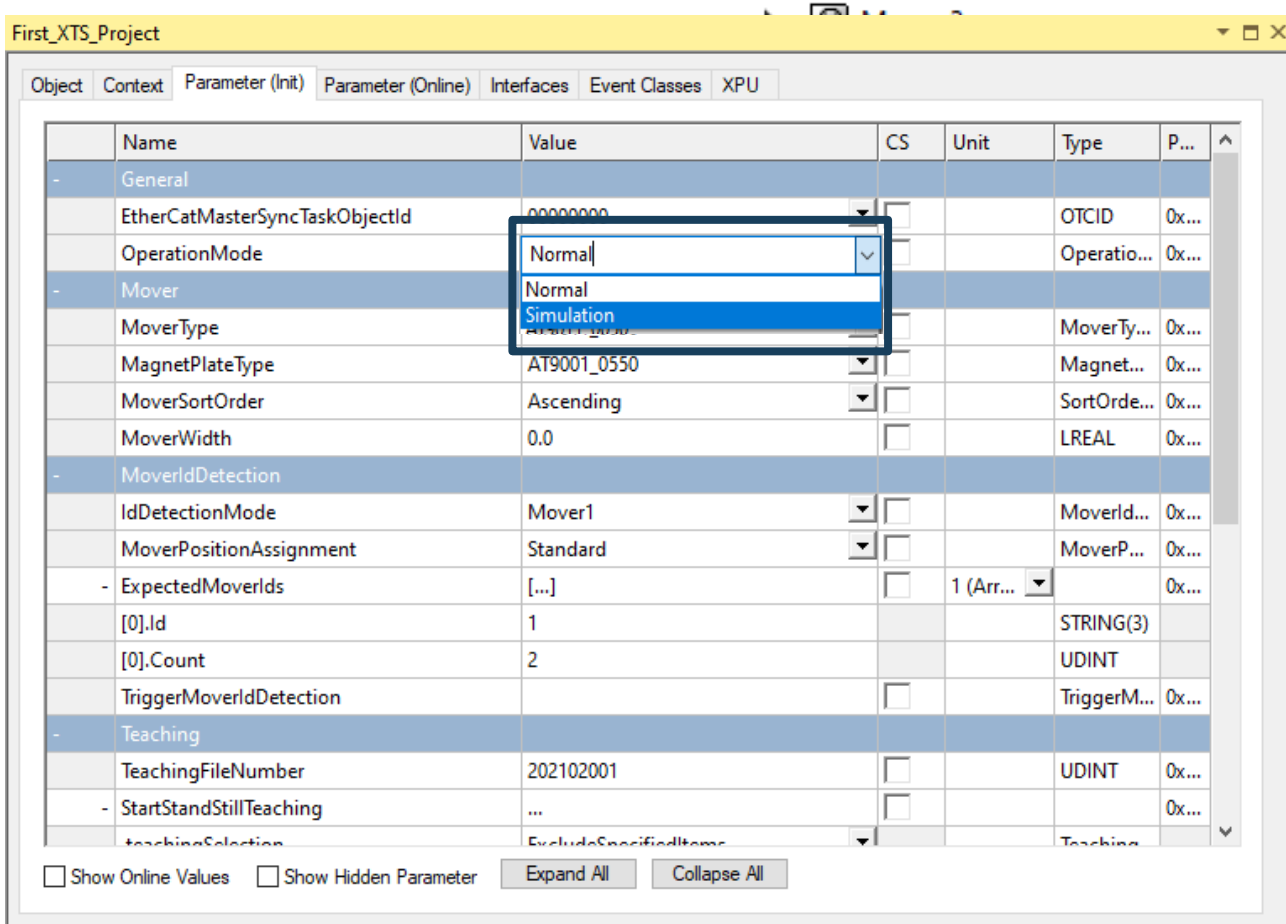
1. XPU Introduction
2. XTS Configuration Process
3. XPU – Deep Dive
4. XTS Viewer
5. Mover 1
6. **Simulation Mode**

Simulation Mode

BECKHOFF

- Simulation Mode
  - Change Parameter „OperationMode“
  - Setup Mover Simulation parameter
  - Deactivate I/O Devices
  - Activate Configuration





Simulation Mode

BECKHOFF

- Simulation Mode
  - Setup Mover Simulation parameter

Mover List

	Name	Axis	SoftDrive	Source Set	Parameter Set	Simu
✓	Mover 1	Mover Axis 1	SoftDrive 1		@D	Part 1
✓	Mover 2	Mover Axis 2	SoftDrive 2		@D	Part 1
✓	Mover 3	Mover Axis 3	SoftDrive 3		@D	Part 1
✓	Mover 4	Mover Axis 4	SoftDrive 4		@D	Part 1
✓	Mover 5	Mover Axis 5	SoftDrive 5		@D	Part 1

Mover Details

Name: Mover 1

Axis Name: Mover Axis 1

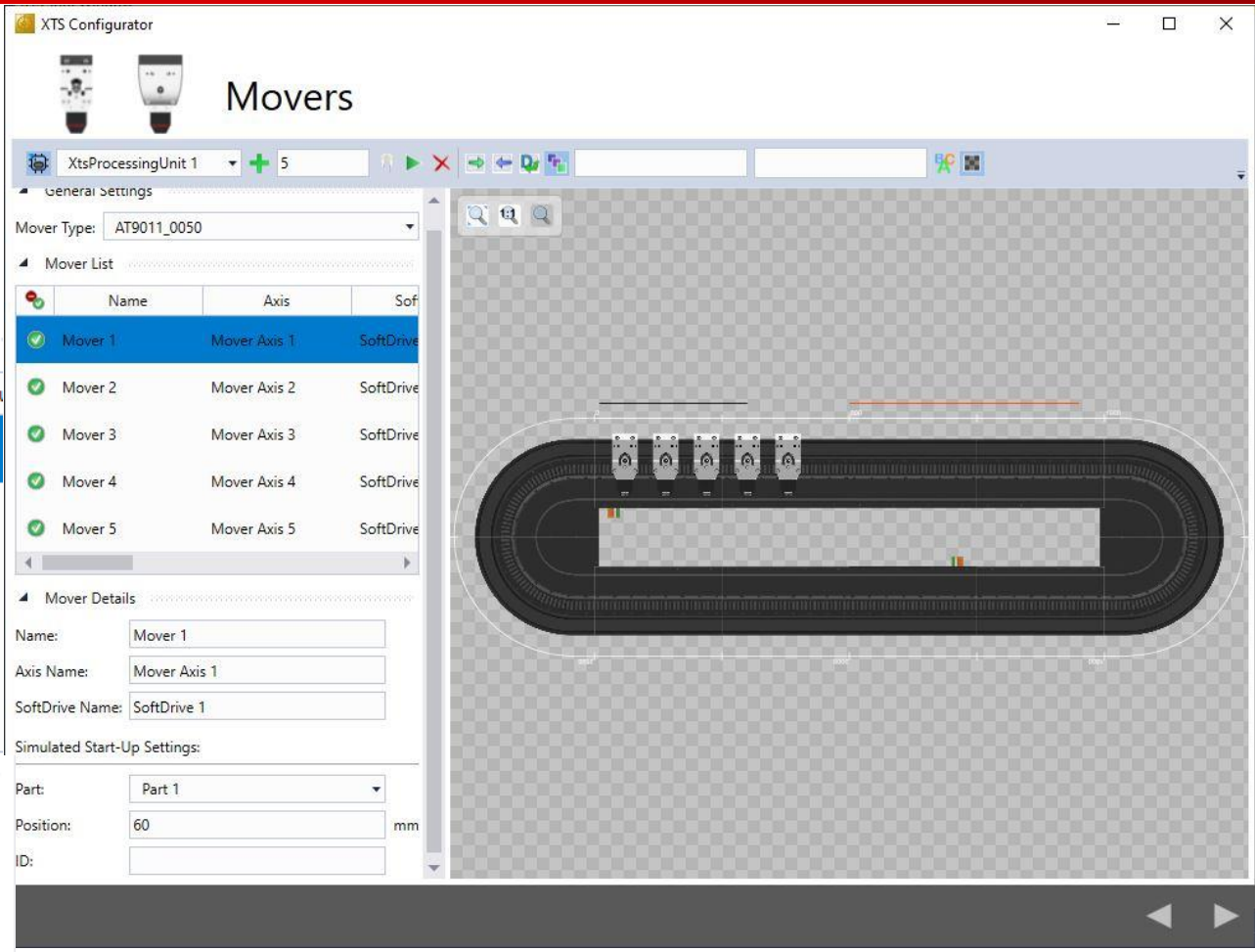
SoftDrive Name: SoftDrive 1

Simulated Start-Up Settings:

Part: Part 1

Position: 60 mm

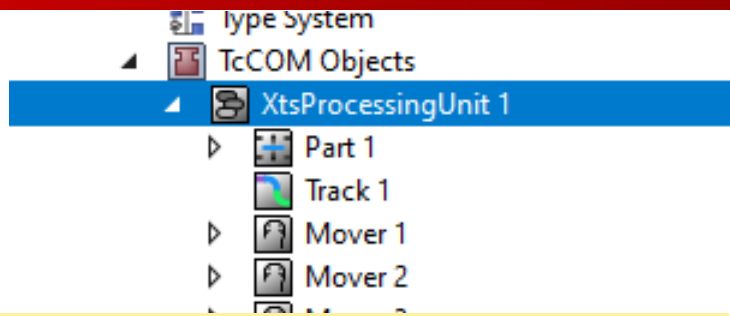
ID: 1



Simulation Mode

BECKHOFF

- Simulation Mode
  - Simulation Mode Parameter



First_XTS_Project

Object | Context | Parameter (Init) | Parameter (Online) | Interfaces | Event Classes | XPU

	Name	Value	CS	Unit	Type	P...
-	General					
	EtherCatMasterSyncTaskObjectId	00000000			OTCID	0x...
	OperationMode	Simulation			Operatio...	0x...
+	Mover					
+	MoverIdDetection					
+	Teaching					
+	Diagnostics					
+	Advanced					
-	Simulation					
	IsPositionNoiseEnabled	TRUE			BOOL	0x...
	IsRandomStartUpEnabled	TRUE			BOOL	0x...
	MoverDistance	60.0		mm	LREAL	0x...
	PositionOffset	40.0		mm	LREAL	0x...
	PositionNoiseBandwidth	0.02		mm	LREAL	0x...
	RandomStartUpBandwidth	10.0		mm	LREAL	0x...
	PositionStartUpSimulationMode	UseMoverParameters			Position...	0x...
	MoverIdStartUpSimulationMode	UseRandomDistribution			MoverId...	0x...
	RandomInitMode	UseSystemTime			Random...	0x...
	RandomInitSeed	56789			DINT	0x...

Show Online Values | Show Hidden Parameter | Expand All | Collapse All

BECKHOFF

Complex sequences – simplified solution: XTS

Training material

BECKHOFF

Contact

BECKHOFF

Beckhoff Automation GmbH & Co. KG
Headquarters
Huelshorstweg 20
33415 Verl
Germany

Phone: +49 5246 963-0
E-mail: info@beckhoff.com
Web: www.beckhoff.com