SIEMENS

NX Mechatronics Concept Designer

External Communication – SHM

Revision History

Rev. #	Date of change	Name of person making change	Description of Change
1.0	09/20/2018	MCD team	Initial Version
2.0	0715/2021	MCD team	Update the software version
3.0			

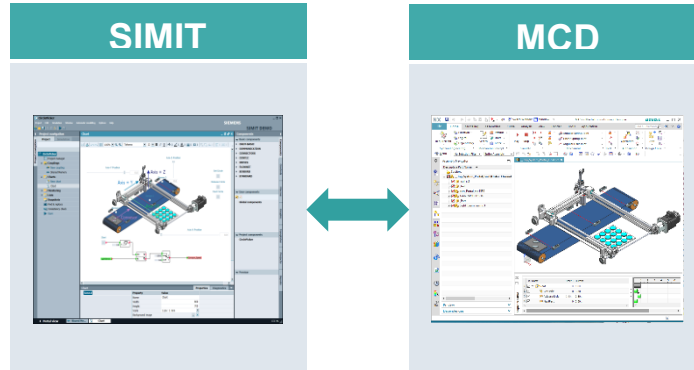# 1 Introduction

1.1 Overview

The following documentation describes the structure, machine model generation and commissioning of the soft-in-the-loop solution for SHM communication protocol.

The following diagram shows the overview of the communication.

Note It is assumed that readers have knowledge about SIMIT setup and configuration, and operating Mechatronics Concept Designer.

1.2 Principle of operation

The following figure shows the operating principle of the application example. The SIMIT and MCD must to be executed on a same computer or virtual machine (VM).
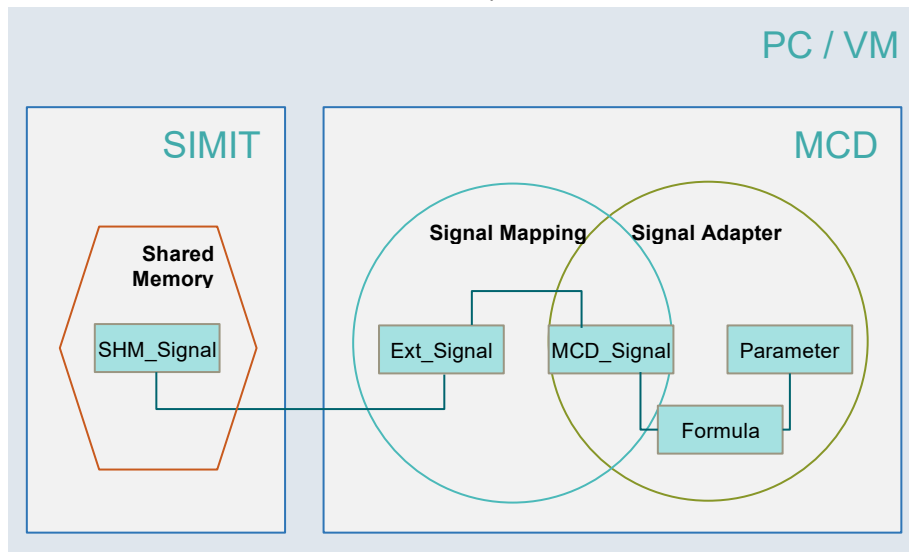
1.3 Components used

This application example was created with the following software components:

Component	Quantity	Note
SIMIT V10.0 or higher	1	
Mechatronics Concept Designer V953 or higher	1	

This application example comprises the following components:

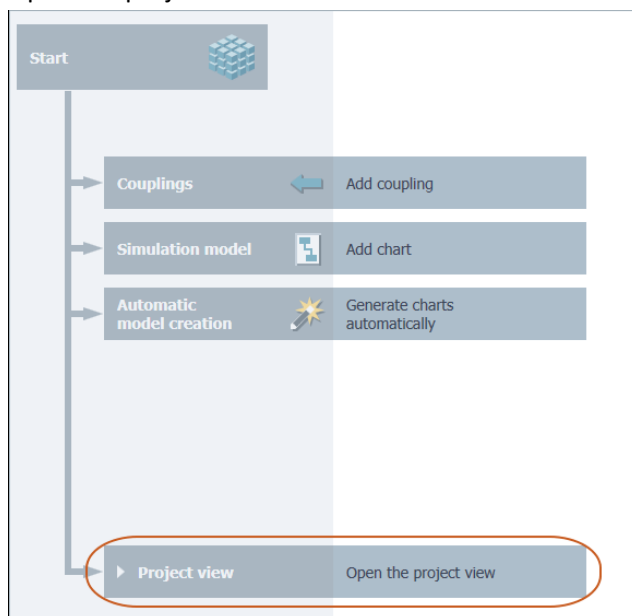| Component	File name	Note
Documentation	Case_SHM.docx	
SIMIT project	CirclePicker.simarc	
MCD part	CirclePicker_SHM.zip	

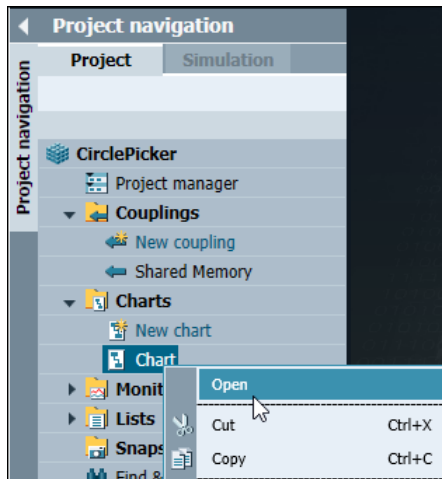# 3 Commissioning and coupling

3.1 Configuration in SIMIT

a) Start SIMIT SP Demo

b) Retrieve SIMIT project: **Start** –> **Retrieve project** –> **Archivename**, select "CirclePicker.simarc", –> **Retrieve**
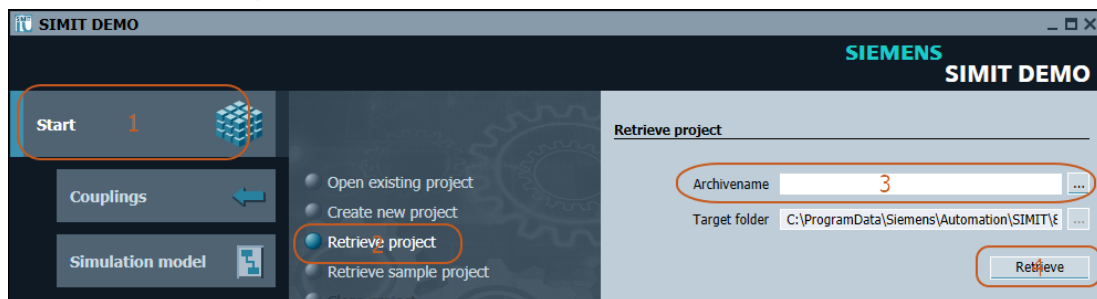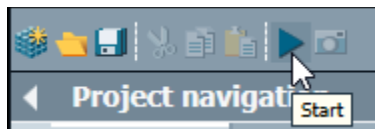

c) Open the project view

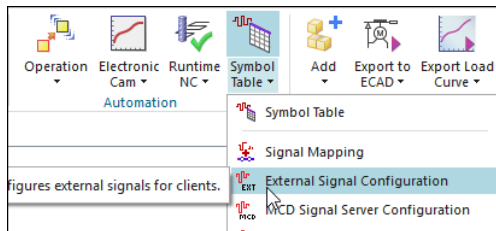d) In **Project navigation**, select "**Chart**", right click, **Open**

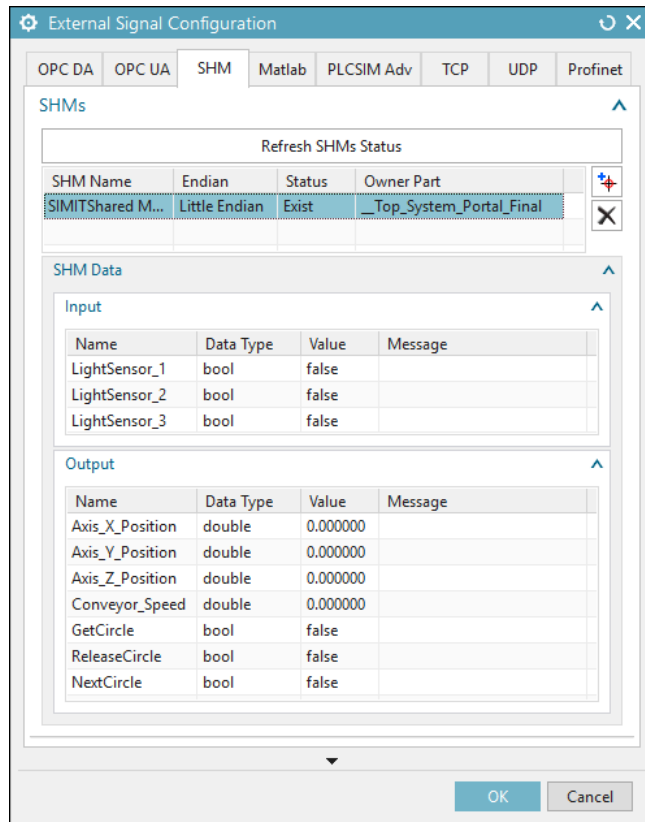e) In toolbar, Click **Start** to start simulation


3.2 Configuration in NX MCD

a) Start NX MCD

b) Open file "__Top_System_Portal_Final.prt"

c) Open External Signal Configuration dialog: **Home** -> **Automation** -> **External Signal Configuration**

- In **SHM** page, click **Add SHMs**
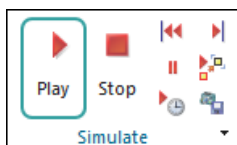- Input **SHM Name**: **SIMITShared Memory**, press Enter

- Click **OK**

d) Open signal mapping dialog:
  - Type: **SHM**
  - SHM Names: **SIMITShared Memory**
  - Click **Do Auto Mapping,** then signal mapping will be list under **Mapped Signals** list.
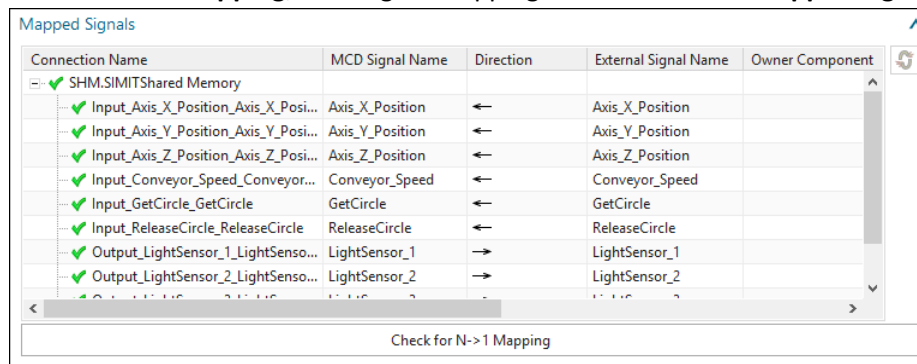
  - Click **OK**.

3.3.4 Start MCD simulation

a) Start MCD simulation by click **Play**.

3.3.5 Commissioning

a) Do operation in SIMIT
- Click Start button in chart page in SIMIT to control transport surface.
- Drag slider to move components along X, Y, Z
- Click button "Get Circle", "Release Circle" and "Next Circle" to "grab circle part", "release circle part" and "generate next part".
- See detail operations in "CirclePicker.mp4"