OST
Ostschweizer
Fachhochschule

Digital Manufacturing

Project – Dashboard

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Industrial Engineering (OST-RJ)

Extend your Dashboard

Make the Dashboard a Dashboard

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Task 2: Development of a Dashboard

Task Formulation

➢ Same groups as you had in task 1

1. Visualize data on your device
2. Model your assets in MindSphere
3. Establish communication to your Asset and check if data is received
4. Develop a minimal dashboard to visualize the data sent from your device
5. Extend the dashboard with further data visualizations from a second device

➔ Supporting Documents

- Node-RED Dashboard Manual
- Tutorial (Exercises)
- Persona

Expected Deliverables

- Dashboard with 6 tiles showing at least 12 data points
- Documentation of your project
  - Thoughts and implications of the persona for the UI (1 page)
  - Paper prototype/design concept (4 pages)
  - Finding/conclusion (0.5+ page)
  - Reflection on the task (0.5+ page)

  ➔ *The submission of the results has to be done on Moodle until 14.12.2021 (PDF-Format)*
- Presentation (approximately 5 minutes) of the dashboard on 14.12.2021

  ➔ *The submission of the presentation has to be done on Moodle until 14.12.2021 (PDF-Format)*

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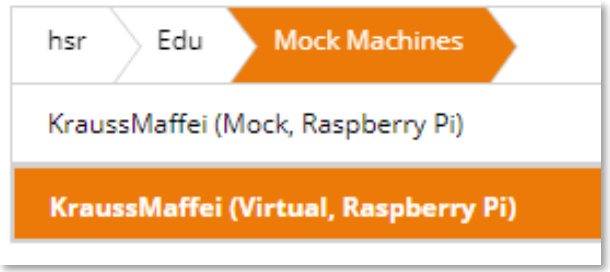
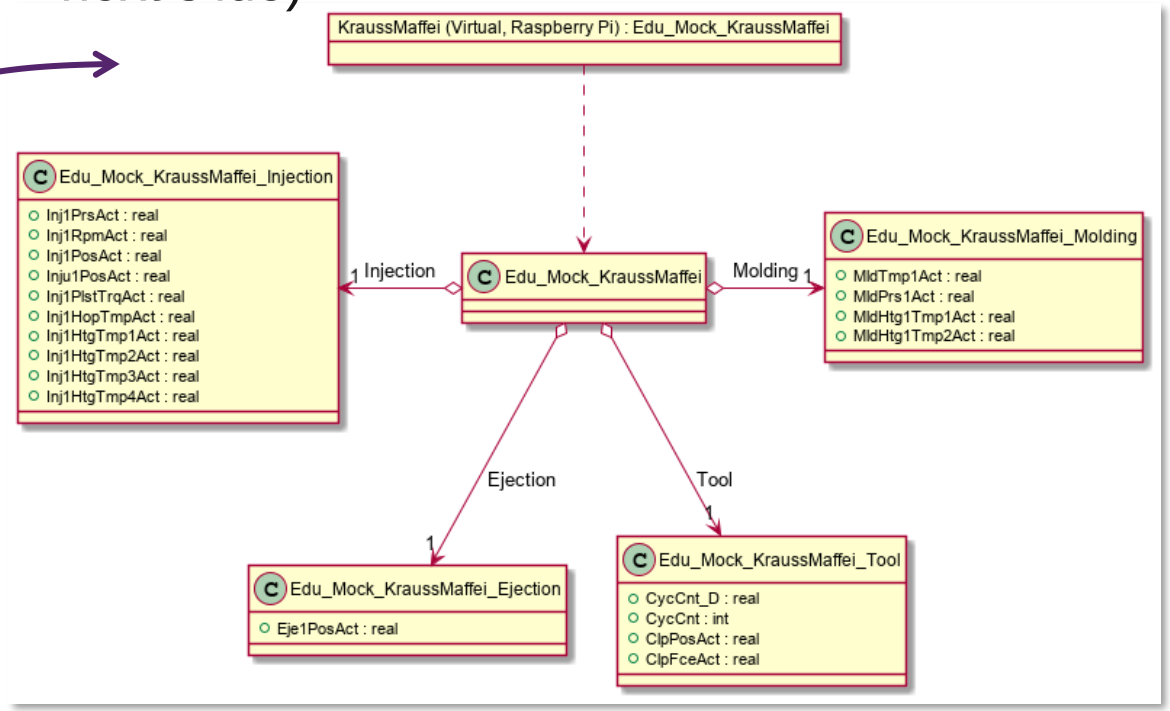
Your additional Datasource

- We have prepared another Raspberry Pi that sends more data
- You can find it under the name *KraussMaffei (Virtual, Raspberry Pi)*

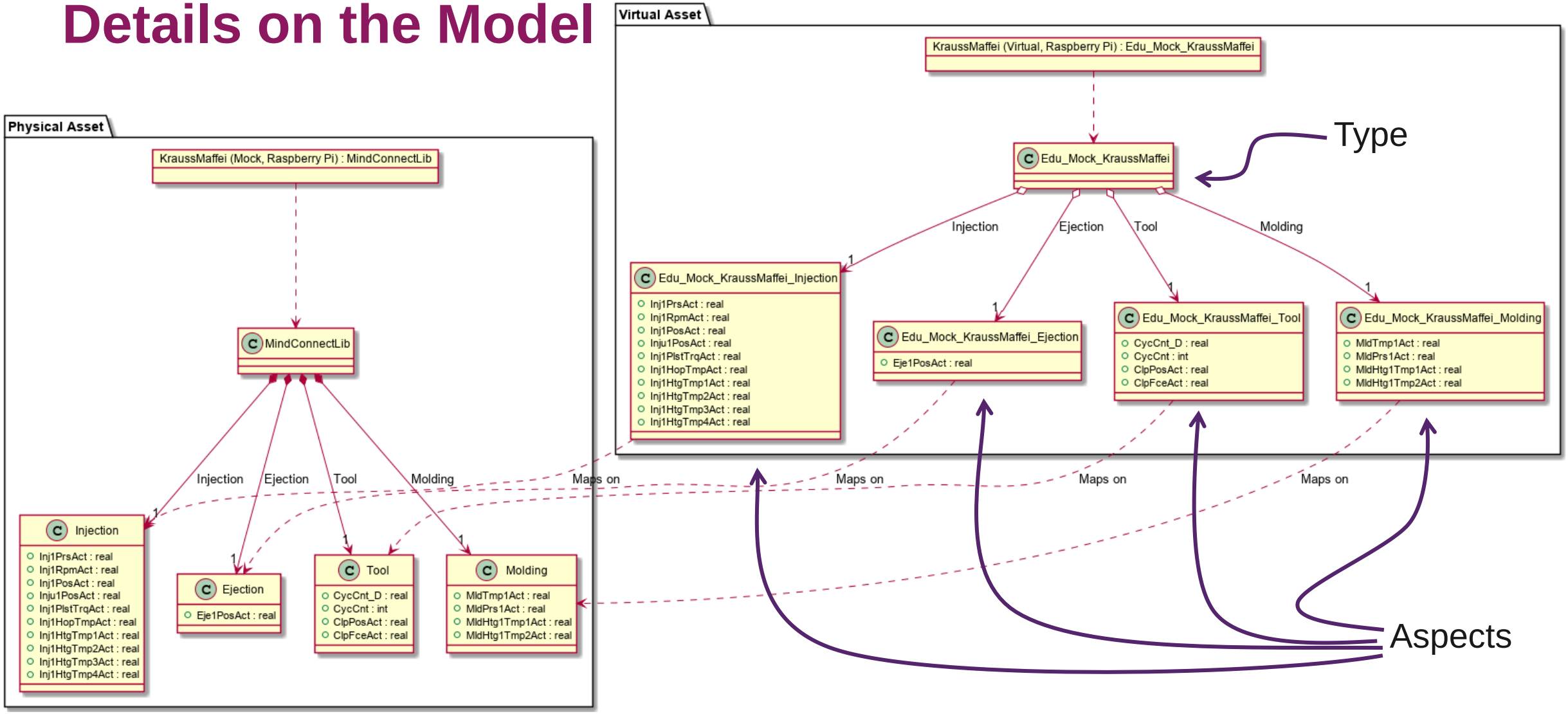


  - It's type structure is shown on the right
  - More details about the collected data is listed on the next slides

- You don't have to model anything in MindSphere
- Just work with the provided virtual asset (see next slide)



Details on the Model



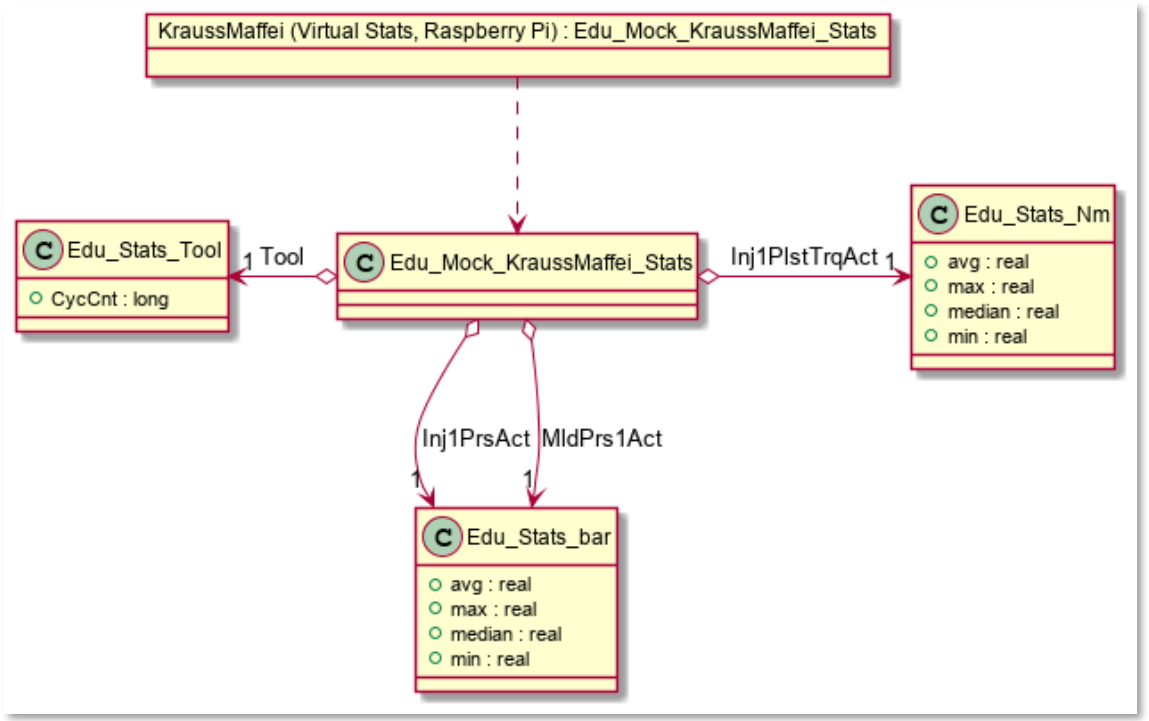
Details on the Data

Signal	Einheit	Nummer	Kurzzeichen	Frequenz [Hz]
Umgebungstemperatur	%	0:33	DX_Pmp1VolAct	200
Luftfeuchtigkeit	%	0:34	DX_Pmp2VolAct	200
Werkzeugtemperatur (Sensor)	°C	0:29	MldTmp1Act	200
Massedruck	bar	0:40	Inj1PrsAct	200
Schneckenposition	mm	0:44	Inj1PosAct	200
Plastifizierdrehzahl	rpm	0:46	Inj1RpmAct	200
Werkzeuginnendruck (Sensor)	bar	0:48	MldPrs1Act	200
Werkzeugposition	mm	0:57	ClpPosAct	200
Schliesskraft	kN	0:58	ClpFceAct	200
Auswerferposition	mm	0:71	Eje1PosAct	200
Aggregatsposition	mm	0:72	Inju1PosAct	200
Plastifiziermoment	Nm	0:97	Inj1PlstTrqAct	200
Traversentemperatur	°C	1:5	Inj1HopTmpAct	200
Zylindertemperatur 1	°C	1:6	Inj1HtgTmp1Act	200
Zylindertemperatur 2	°C	1:7	Inj1HtgTmp2Act	200
Zylindertemperatur 3	°C	1:8	Inj1HtgTmp3Act	200
Zylindertemperatur 4	°C	1:9	Inj1HtgTmp4Act	200
Düsentemperatur	°C	1:16	Inj1HtgTmp11Act	200
Heisskanal Zone 1	°C	1:69	MldHtg1Tmp1Act	200
Heisskanal Zone 2	°C	1:70	MldHtg1Tmp2Act	200
Heisskanal Zone 3	°C	1:71	MldHtg1Tmp3Act	200
Vorlauf Temperiergerät 1	°C	1:197	MldHt20mA1TmpAct	200
Vorlauf Temperiergerät 2	°C	1:198	MldHt20mA2TmpAct	200
Schusszahl	-		CycCnt	

* sollen in einem nächsten Schritt ergänzt werden

Machine Stats

- Some variables are sent with some more details (min, avg, median, max)
  - Inj1PlstTrqAct
  - Inj1PrsAct
  - MldPrs1Act
- You can find them in *KraussMaffei (Virtual Stats, Raspberry Pi)*
- Feel free to use them as well



Persona

Role/Name: Head of Production, Jimmy Doo

Goals (what should/wants the persona to achieve?)

As head of production, Jimmy needs a quick overview what machines are working, how they are performing and if there are values that might

Activities (Which main and side activities does the persona perform?)

His primary task is to keep the production up and running. Besides that, he needs to report to his supervisor once per week on the performance of the shop floor.

Decisions to be made (What decisions are made by the persona and in which frequency? Hourly, daily, weekly, etc.)

Hourly: If there are issue, how sewer are they?

Daily: Is there maintenance to be done?

Weekly: What's the targeted production and is the target reachable?

Required information (What information does the persona need to make their decisions? (KPIs, etc.))

Throughput, cycle time, temperature ranges, production status, pressure measurements of production cycle, tool position

Contacts

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- Mails should be answered within 48h

- Please
  - state precise questions,
  - or issue descriptions,
  - and mention what you've already tried
- Then
  - we can give you possible approaches,
  - and satisfying answers