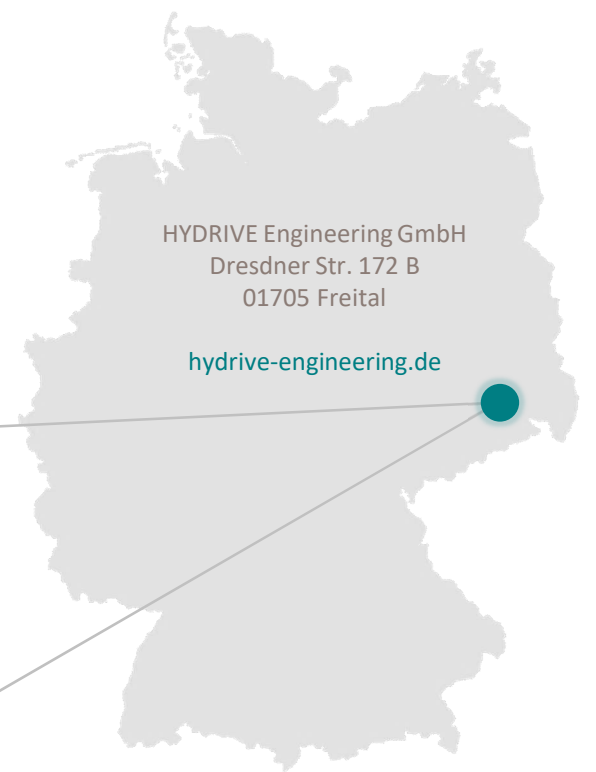


Automatisieren ohne Programmieren

Wie ein Anwender die Funktionen seiner Maschine flexibel selbst gestalten kann

Das ist HYDRIVE Engineering



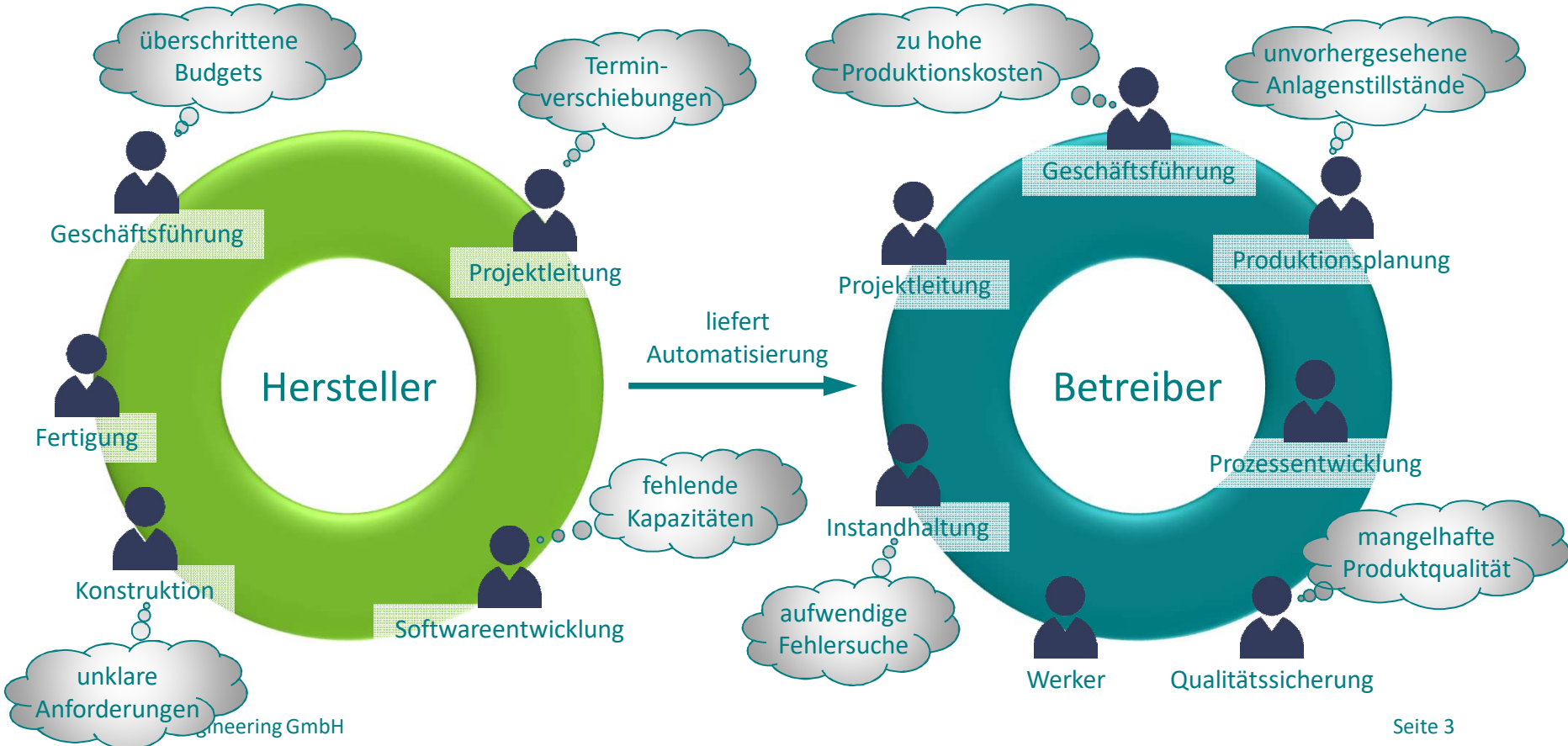
HYDRIVE Engineering GmbH
Dresdner Str. 172 B
01705 Freital

[hydrive-engineering.de](https://www.hydrive-engineering.de)

Technologie- und
Gründerzentrum
Freital

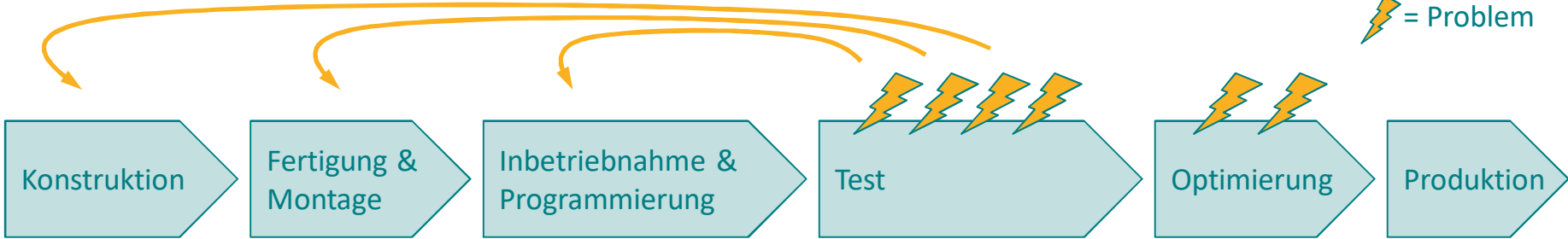


Stakeholder der Anlagenautomatisierung

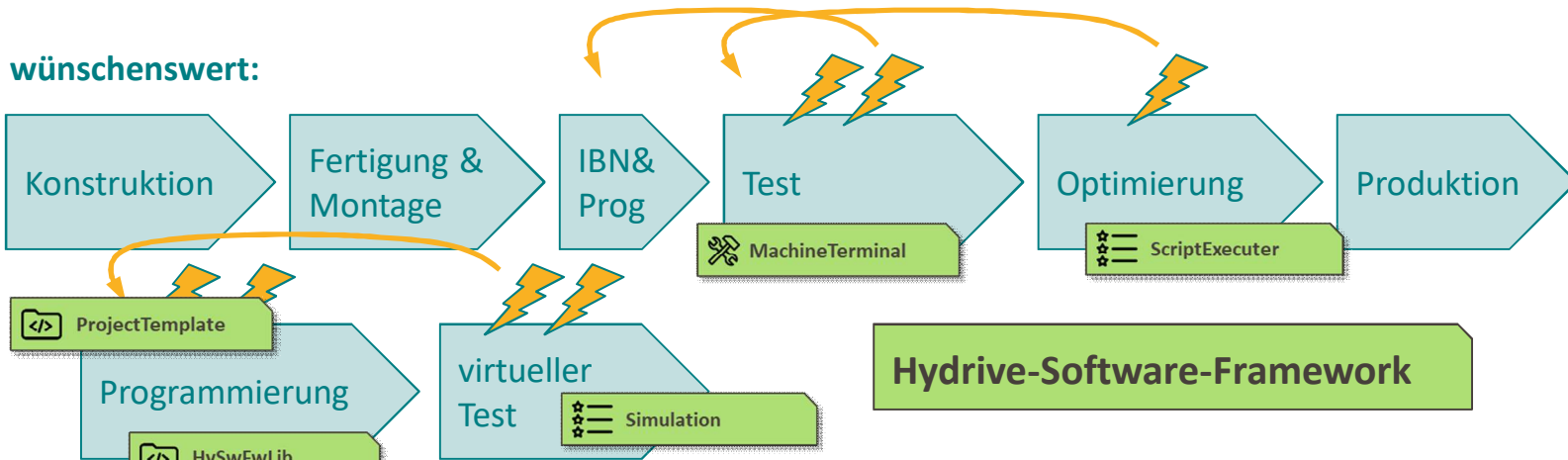


Projektbläufe der Anlagenautomatisierung

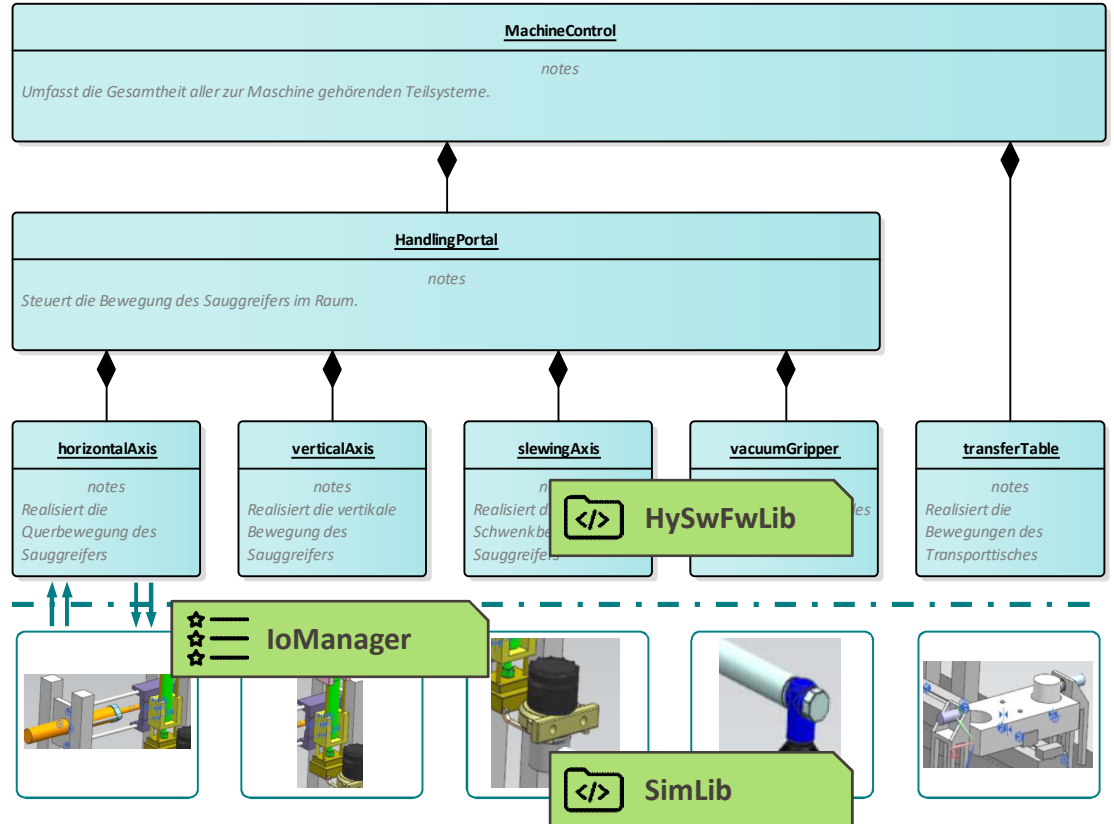
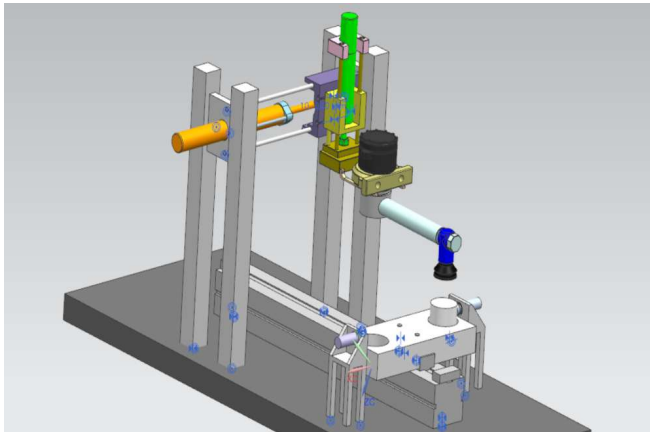
typisch:



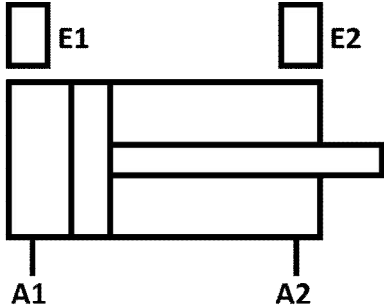
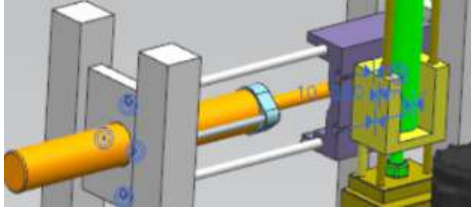
wünschenswert:



Maschinenfunktion und Softwarestruktur



Gemeinsamkeiten von Modulen



Commands

- float
- balance
- fixEndPos
- moveToE1
- moveToE2
- pushToE1
- pushToE2

Messages

- bothPosDetected
- hasLostE1
- hasLostE2
- hasE1NotReached
- hasE2NotReached

Hwlos

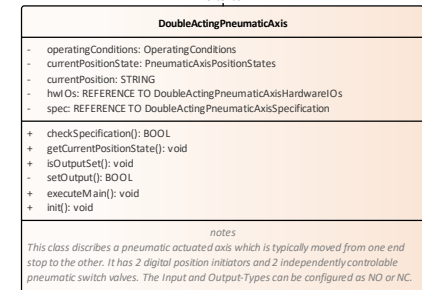
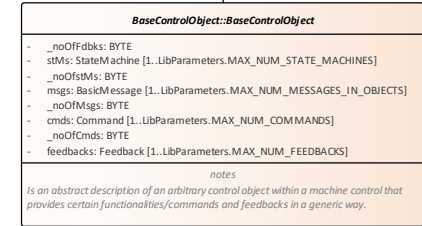
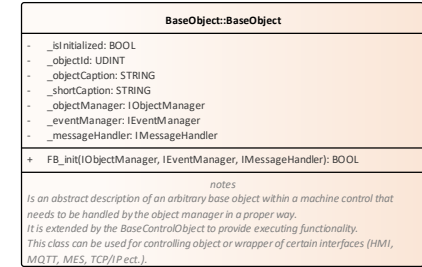
- isInputE1True
- isInputE2True
- setOutputA1
- setOutputA2

StateMachines

Feedbacks

Spec

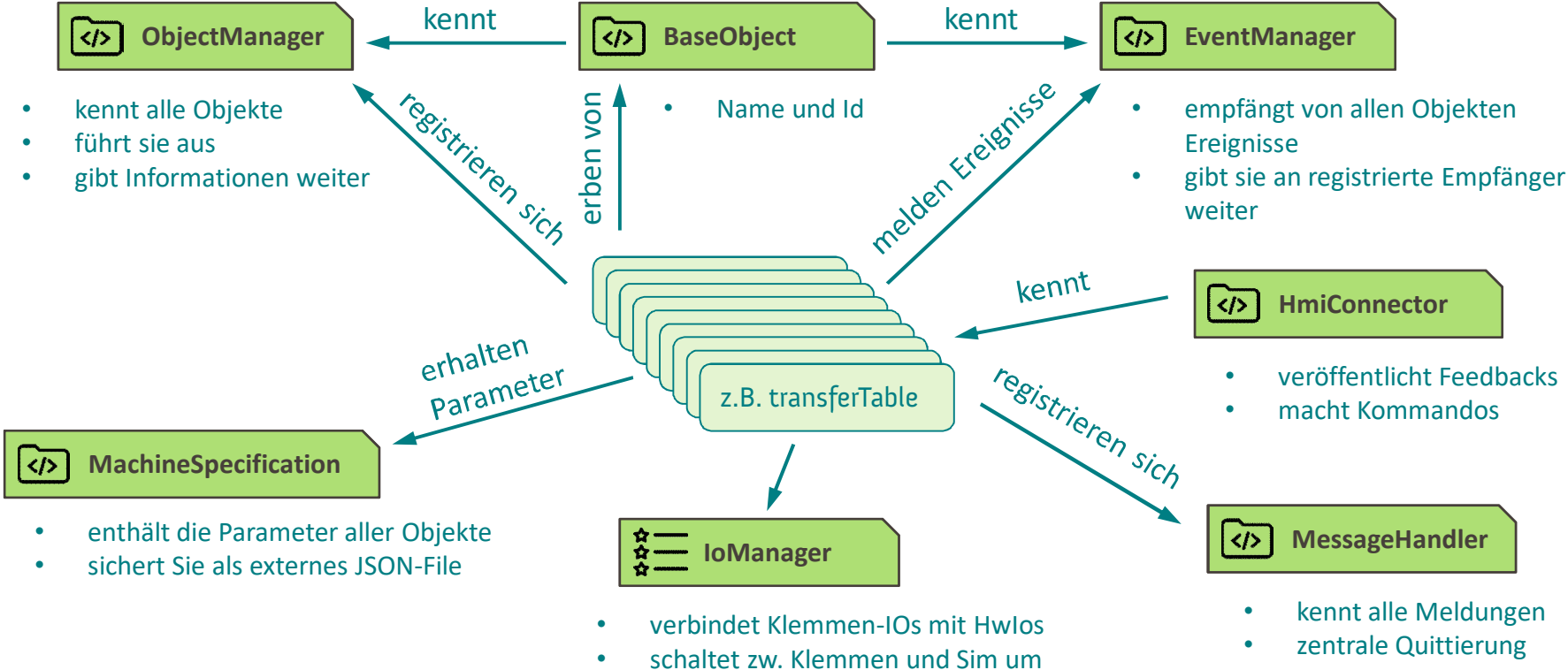
- typeOfE1
- typeOfE1
- typeOfA1
- typeOfA2
- maxTimeForReachingE1
- maxTimeForReachingE2
- debounceTime
- minTimeForLostPosition
- minVentilationTime



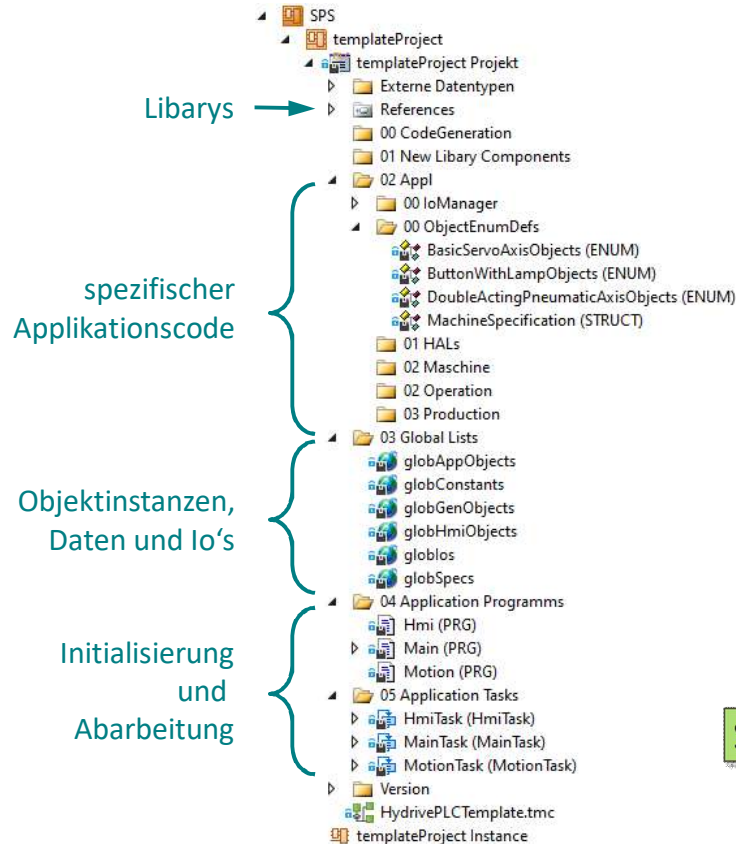
Generisch

Spezifisch

Zusammenwirken von Modulen



Ein neues Projekt aufsetzen



1. Steuerungsprojekt anlegen

2. ProjectTemplate laden

3. Applikationsobjekte einhängen

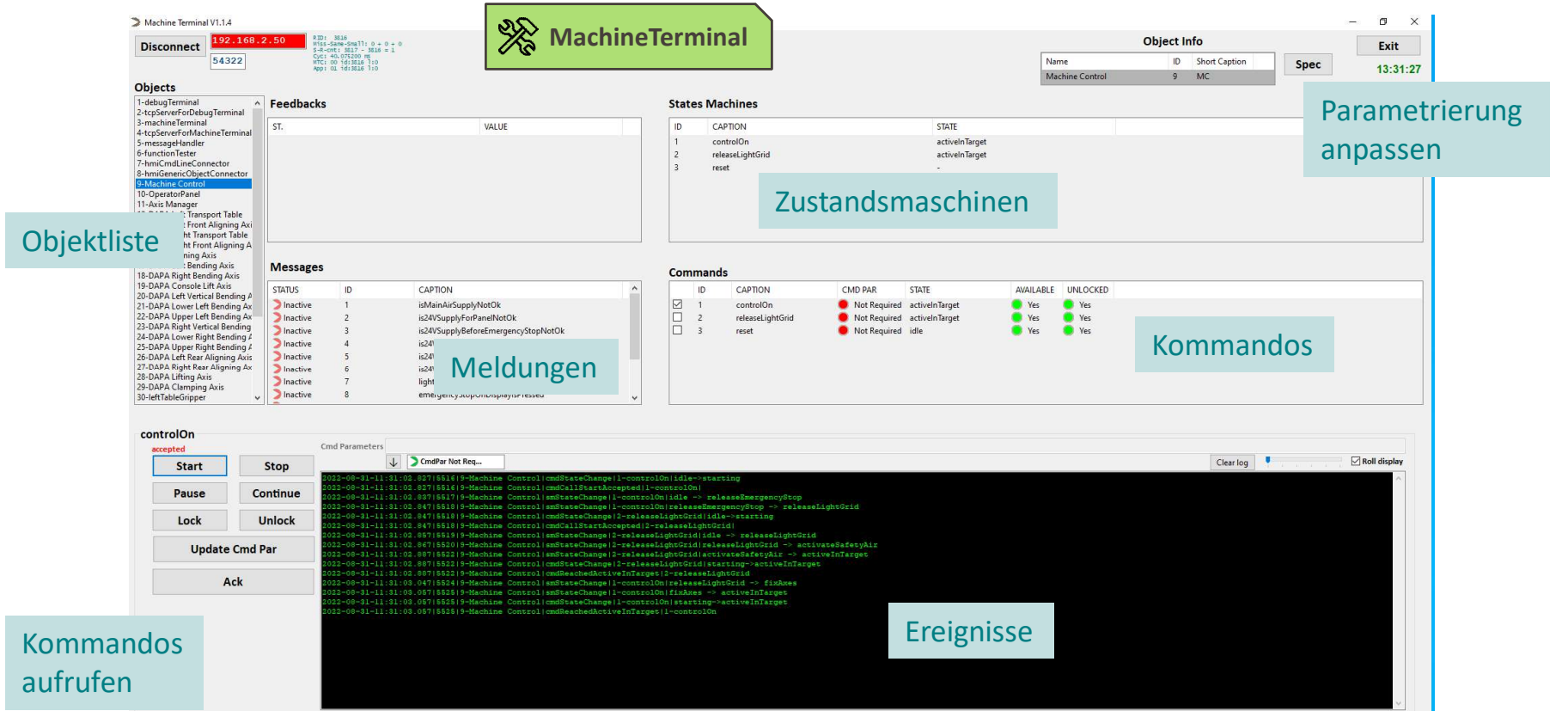
4. IOs anknüpfen

5. Übersetzen und herunterladen

6. Parametrierung vornehmen

7. Testen

Inbetriebnahme mit dem MachineTerminal



MachineTerminal

Objektliste

- 1-debugTerminal
- 2-tcpServerForDebugTerminal
- 3-machineTerminal
- 4-tcpServerForMachineTerminal
- 5-messageHandler
- 6-functionTester
- 7-hmiCmduLineConnector
- 8-hmiGenericObjectConnector
- 9-MachineControl**
- 10-OperatorPanel
- 11-Axis Manager
- 12-Transport Table
- 13-Front Aligning Axis
- 14-Front Transport Table
- 15-Front Aligning Axis
- 16-Bending Axis
- 18-DAPA Right Bending Axis
- 19-DAPA Console Lift Axis
- 20-DAPA Left Vertical Bending Axis
- 21-DAPA Lower Left Bending Axis
- 22-DAPA Upper Left Bending Axis
- 23-DAPA Right Vertical Bending Axis
- 24-DAPA Lower Right Bending Axis
- 25-DAPA Upper Right Bending Axis
- 26-DAPA Left Rear Aligning Axis
- 27-DAPA Right Rear Aligning Axis
- 28-DAPA Lifting Axis
- 29-DAPA Clamping Axis
- 30-leftTableGripper

Meldungen

STATUS	ID	CAPTION
Inactive	1	isMainAirSupplyNotOk
Inactive	2	is2VSupplyForPanelNotOk
Inactive	3	is2VSupplyBeforeEmergencyStopNotOk
Inactive	4	is2V
Inactive	5	is2V
Inactive	6	is2V
Inactive	7	light
Inactive	8	emergencySupplySupplyNotOk

Zustandsmaschinen

ID	CAPTION	STATE
1	controlOn	activeInTarget
2	releaseLightGrid	activeInTarget
3	reset	idle

Kommandos

ID	CAPTION	CMD PAR.	STATE	AVAILABLE	UNLOCKED	
<input checked="" type="checkbox"/>	1	controlOn	Not Required	activeInTarget	Yes	Yes
<input checked="" type="checkbox"/>	2	releaseLightGrid	Not Required	activeInTarget	Yes	Yes
<input type="checkbox"/>	3	reset	Not Required	idle	Yes	Yes

controlOn

accepted

Cmd Parameters: CmdPar Not Req...

Start Stop

Pause Continue

Lock Unlock

Update Cmd Par

Ack

Ereignisse

```
2022-08-31-11:01:03.827|861619-Machine Control|cmdStateChange|1-controlOn|idle-starting
2022-08-31-11:01:03.827|861619-Machine Control|cmdCallStartAccepted|1-controlOn|
2022-08-31-11:01:03.827|861619-Machine Control|smStateChange|1-controlOn|idle -> releaseEmergencyStop
2022-08-31-11:01:03.847|861619-Machine Control|smStateChange|1-controlOn|releaseEmergencyStop -> releaseLightGrid
2022-08-31-11:01:03.847|861619-Machine Control|cmdStateChange|2-releaseLightGrid|idle-starting
2022-08-31-11:01:03.847|861619-Machine Control|cmdCallStartAccepted|1-releaseLightGrid|
2022-08-31-11:01:03.857|861619-Machine Control|smStateChange|2-releaseLightGrid|idle -> releaseLightGrid
2022-08-31-11:01:03.867|862019-Machine Control|smStateChange|2-releaseLightGrid|releaseLightGrid -> activateSafetyAlr
2022-08-31-11:01:03.867|862019-Machine Control|smStateChange|2-releaseLightGrid|activateSafetyAlr -> activeInTarget
2022-08-31-11:01:03.867|862019-Machine Control|cmdStateChange|2-releaseLightGrid|starting-activateInTarget
2022-08-31-11:01:03.887|862019-Machine Control|cmdReachedActiveInTarget|1-releaseLightGrid
2022-08-31-11:01:03.047|862419-Machine Control|smStateChange|1-controlOn|releaseLightGrid -> flushes
2022-08-31-11:01:03.087|862519-Machine Control|smStateChange|1-controlOn|flushes -> activeInTarget
2022-08-31-11:01:03.087|862519-Machine Control|cmdReachedActiveInTarget|1-controlOn|activateInTarget
2022-08-31-11:01:03.087|862519-Machine Control|cmdReachedActiveInTarget|1-controlOn|
```



Automatisieren ohne Programmieren

☆☆ ScriptExecuter

- generisches Libraryobjekt
- kann mehrere Kommandos haben
- kennt JSON-File
- dort ist der Ablauf beschrieben

Objektliste



bestimmt Ablauf

```

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2  [{"name": "PB300FB320-Typ2.xml", "cmdNo2json": 1}
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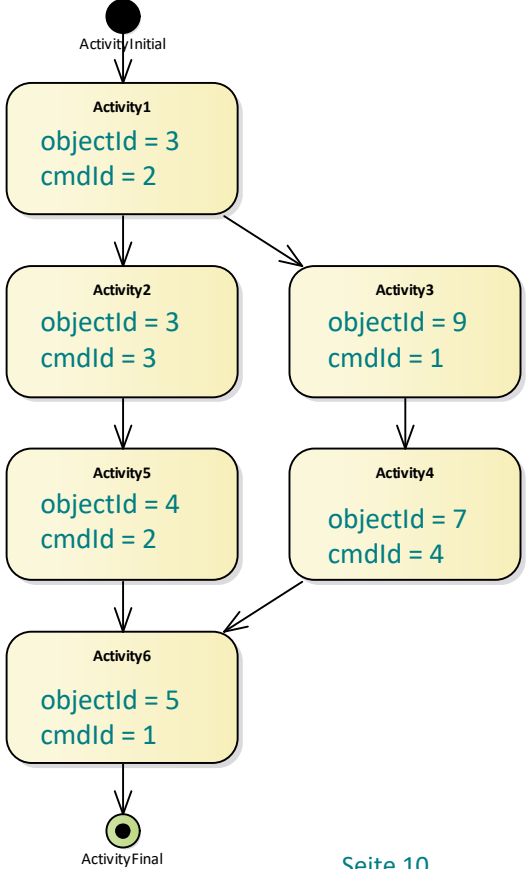
```

Kommandoname

Startbedingungen

Schrittbeschreibung

Weiterschaltbedingungen



Hydrive-Software-Framework

Templates

 ProjectTemplate

 HySwFwLib

 SimLib

 CustomLib

Tools

 MachineTerminal

 DebugTerminal

 CodeGenerator

Features

 Simulation

 IoManager

 ScriptExecuter

 JobScheduler

 Testing

 Parameter

Guidelines

 Coding Guidelines

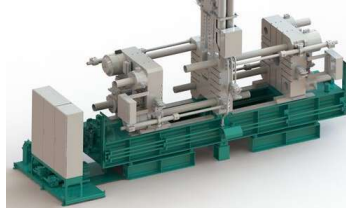
 Doku Wiki

Realisierte Anwendungen

Vakuum-Handlingsysteme



DuoCast Druckgussmaschine



Kartonagen-Stapler



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