Appbasierte Modellierung und Simulation von Wertströmen mit SimVSM

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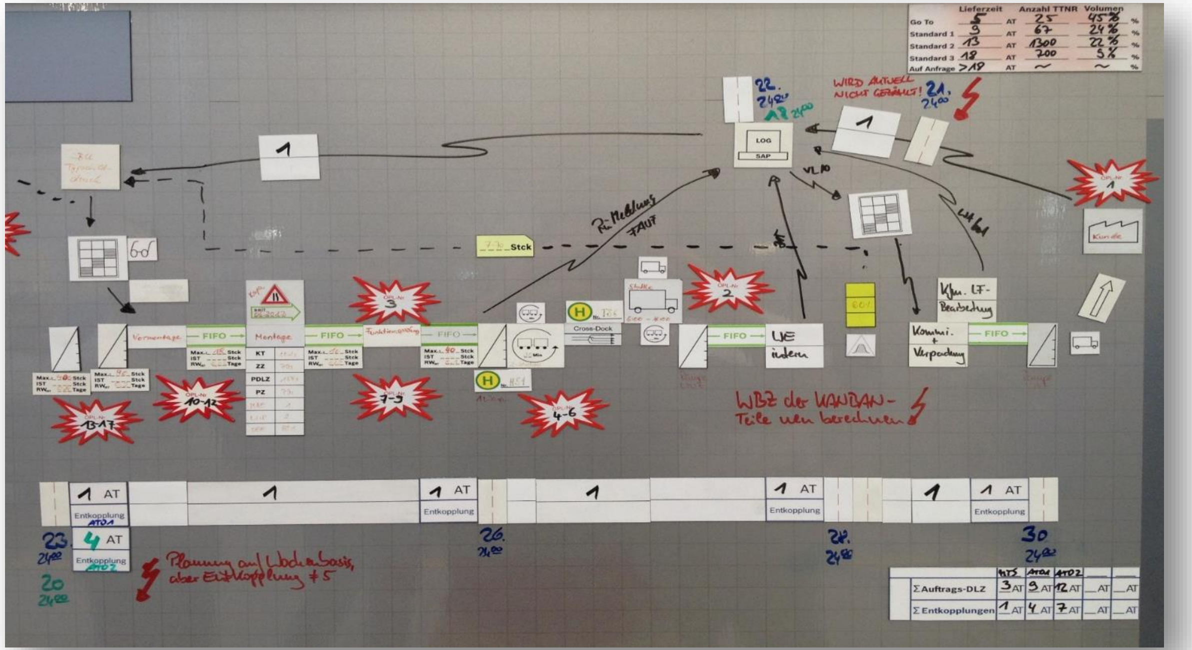
ASIM - Tutorial

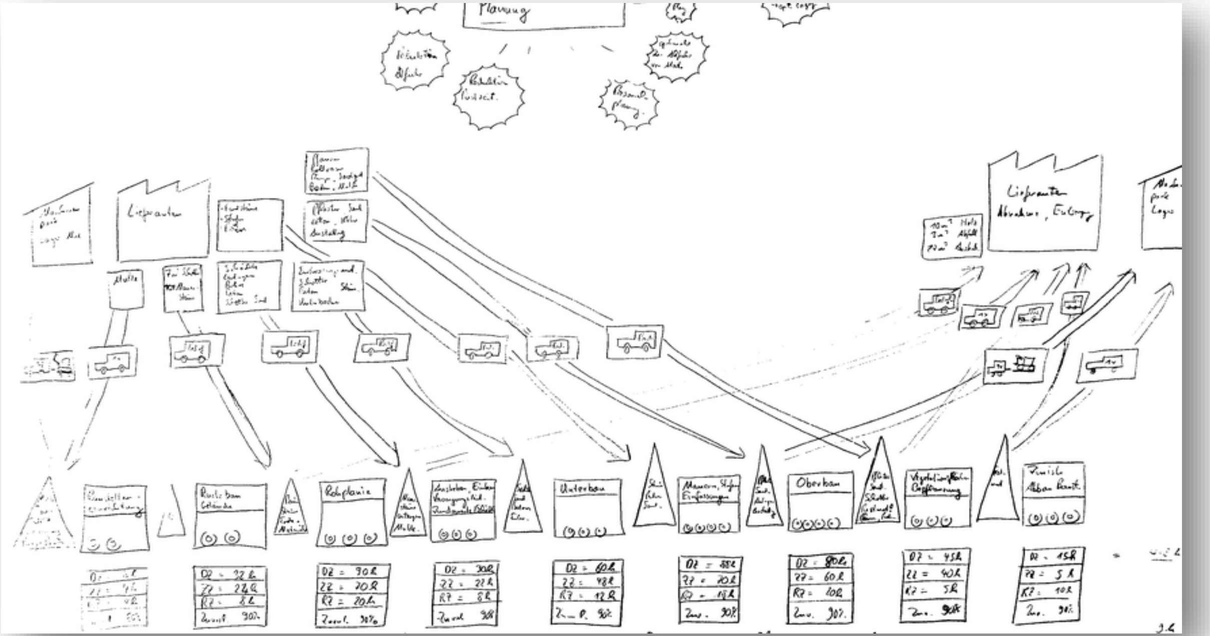
Ilmenau 13. September 2023

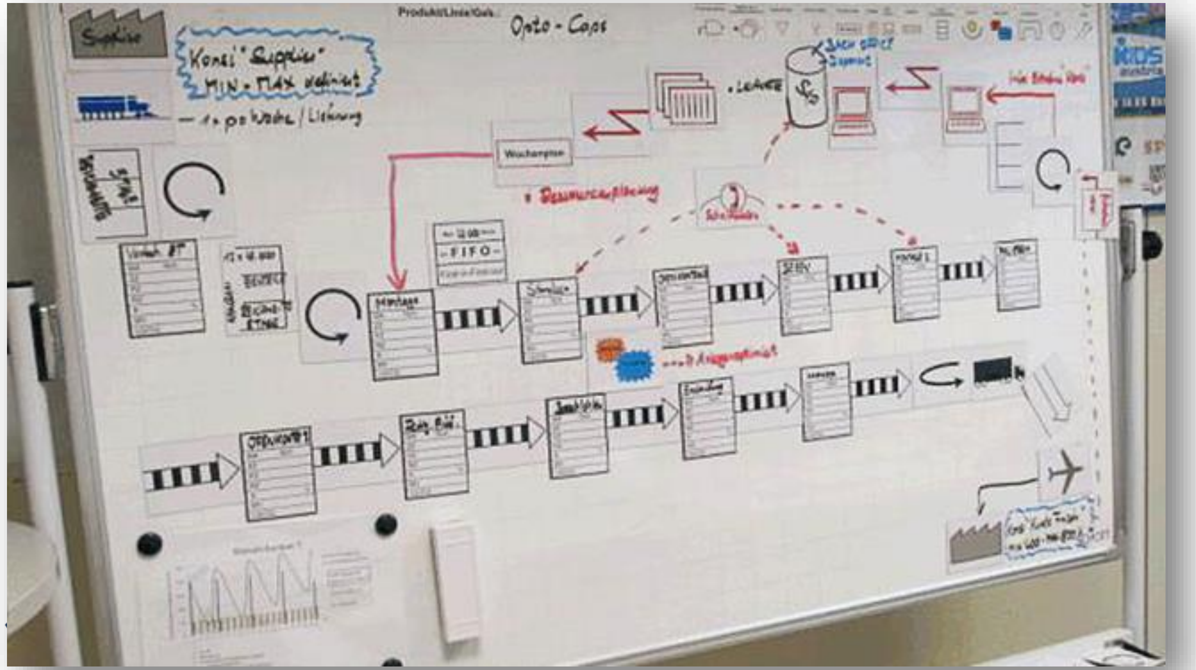
SimVSM

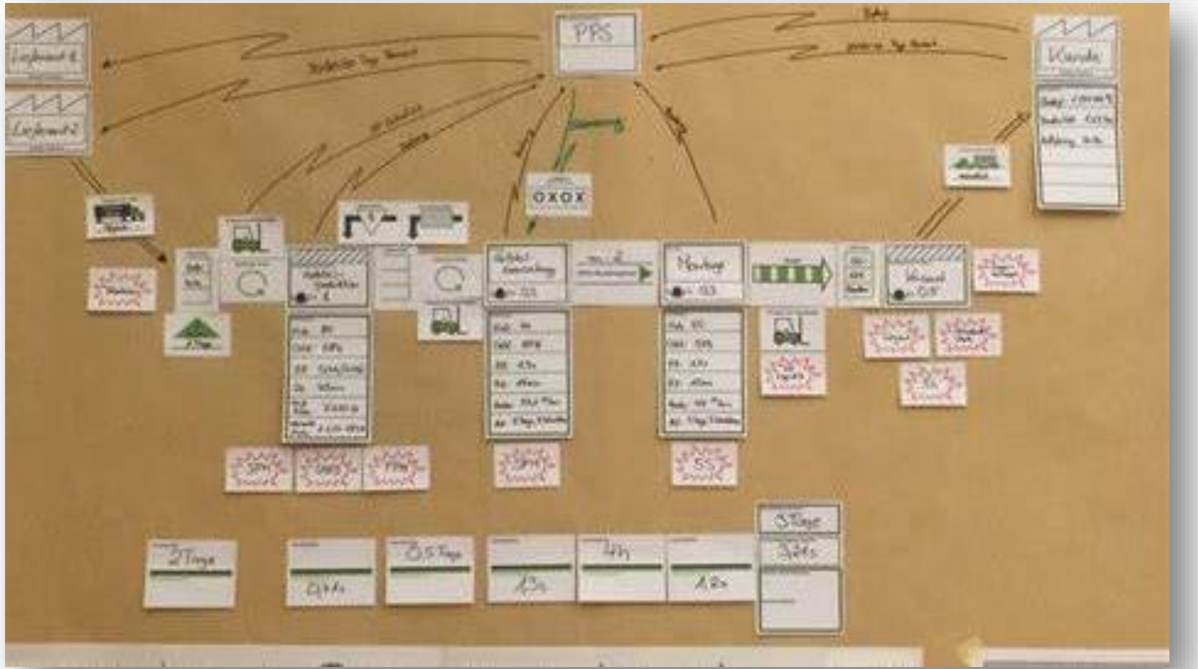
Contents

- SimVSM - Integration into value stream management
- Digitalization of value stream with SimVSM
- SimVSM Architecture
- Value Stream Simulation
- Introduction price model
- Package scope example

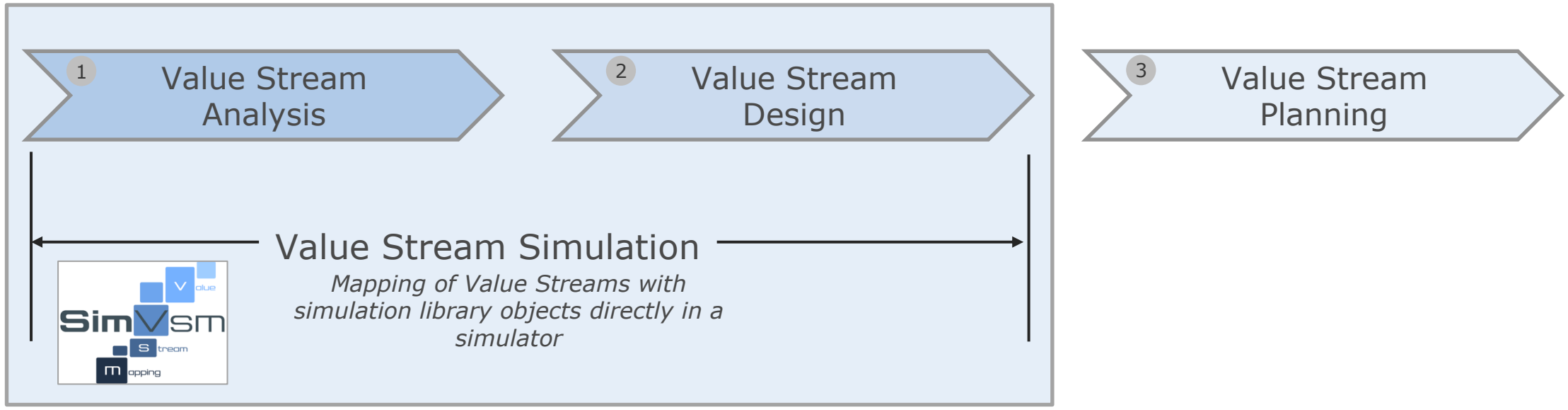

FIFO
Entkopplung
WBZ der KANBAN-Teile neu berechnen
Σ Auftrags-DLZ
Σ Entkopplungen




Opto - Caps
Wochenplan


PPS
Kunde

SimVSM - Integration into value stream management



1 Value Stream Analysis

- Select Product Family
- Collect Data
- Analyse Current State

2 Value Stream Design

- Identify Potential
- Define Ideal State
- Develop Future State

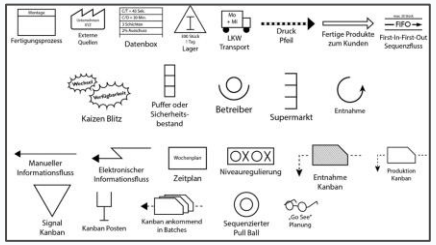
SimPlan

Digitalization of value stream with SimVSM

Traditional Approach

Towards Digital Transformation

SimVSM Approach



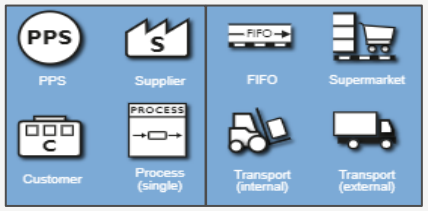
Rother and Shook (1999)

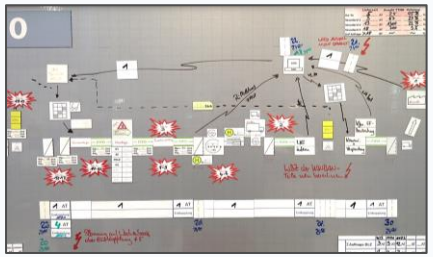
Symbols

Predefined shapes & symbols drawn manually.

Predefined Icons

Easy drag & drop of predefined icons for all value stream objects.



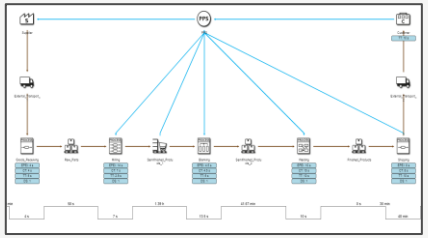


Manual Mapping

Manually drawn VSM, with limited flexibility in comparison & redesigning

Digitalization & Alternatives

Complete digitalised modelling with easy creation of alternatives, future state



Manual Calculation

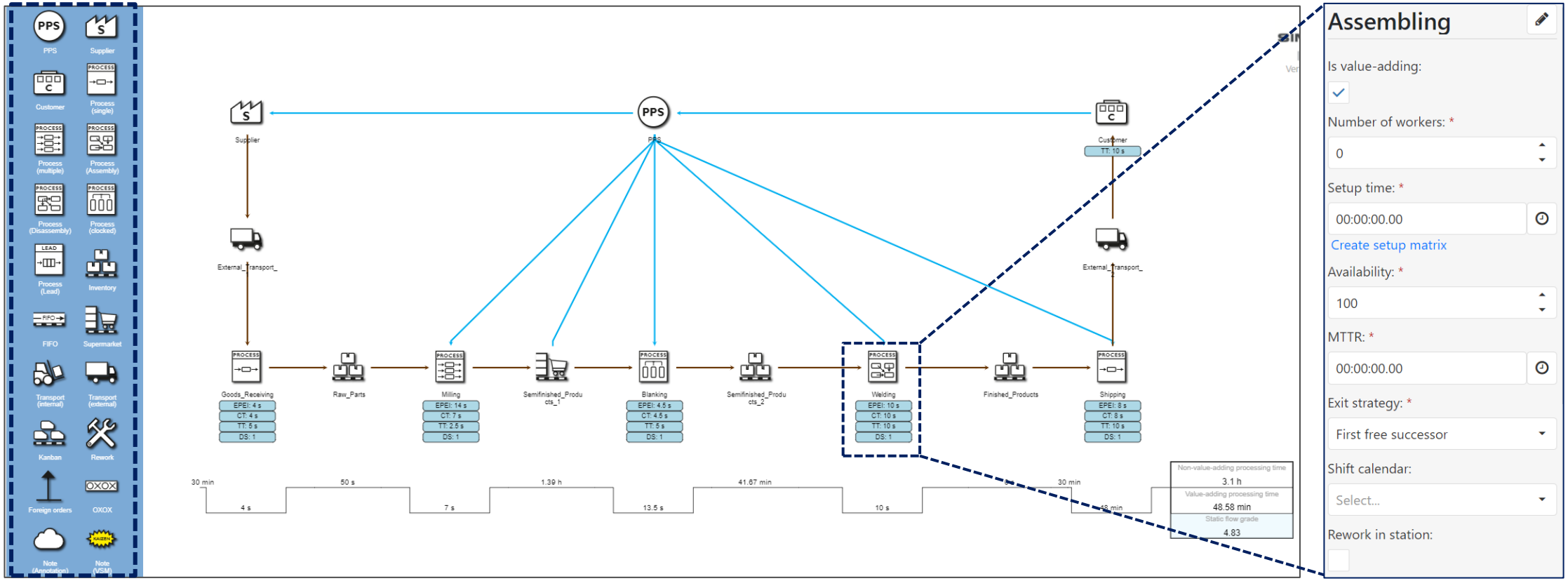
Manual recording and calculations of static KPI's , figures.

Simulation

Unique feature – Integration of simulation in entire workflow.

SimPlan

Value stream digitalization



Modelling Toolbox

All key lean symbols are available for modelling within the tool box, with easy drag and drop option for modelling.

Digitalize Workflow

Digital platform to not only map value streams, but also to visualise complete work flow and simulate it.

Digitalized Input

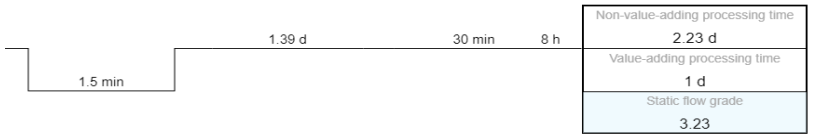
Input parameters could be recorded digitally and also displayed in the main modelling area.

SimPlan

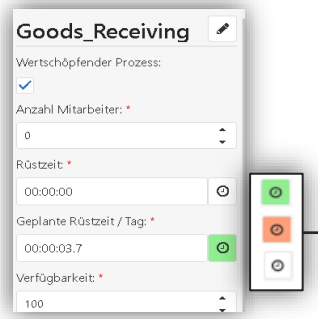
SimVSM : Benefits of Digitalization

Static KPI calculation

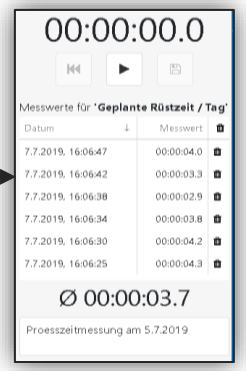
EPEI: 52,5 min
ZZ: 1,5 min
KT: 1,67 min
GAL: 0,95

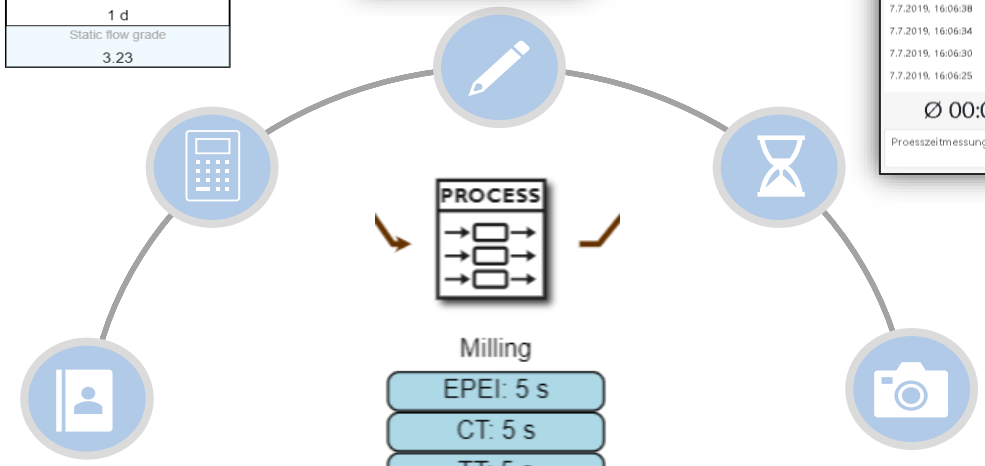


Configuration



Measurements

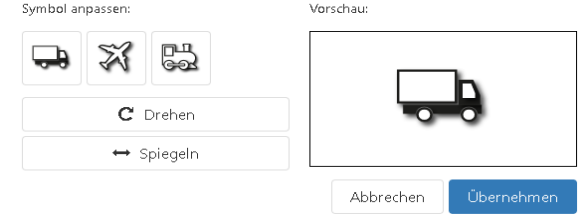




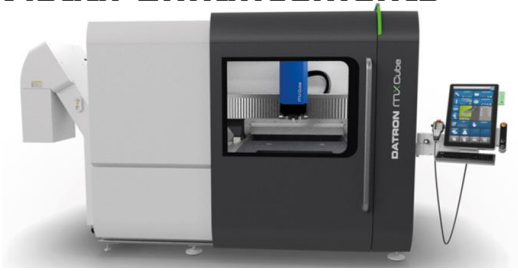
Milling

EPEI: 5 s
CT: 5 s
TT: 5 s
DS: 1

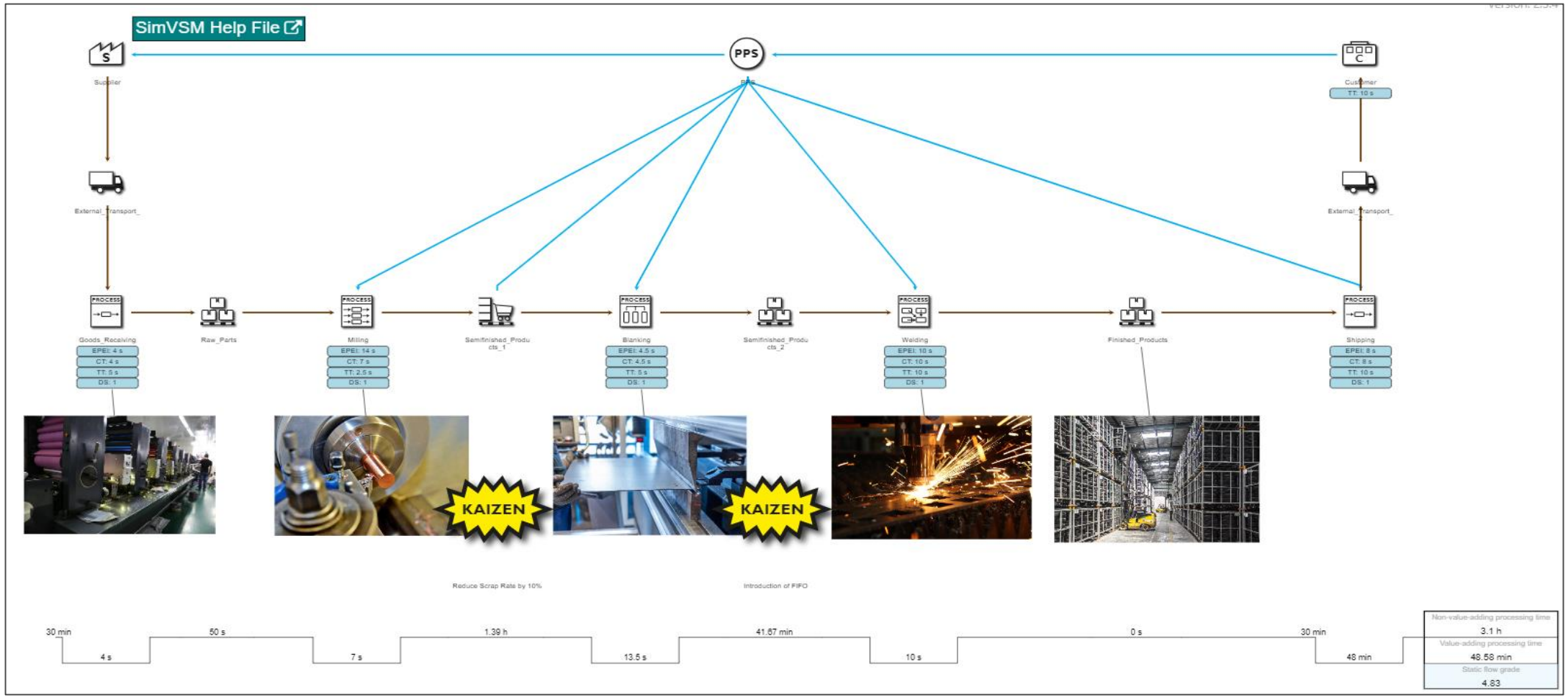
Customizing



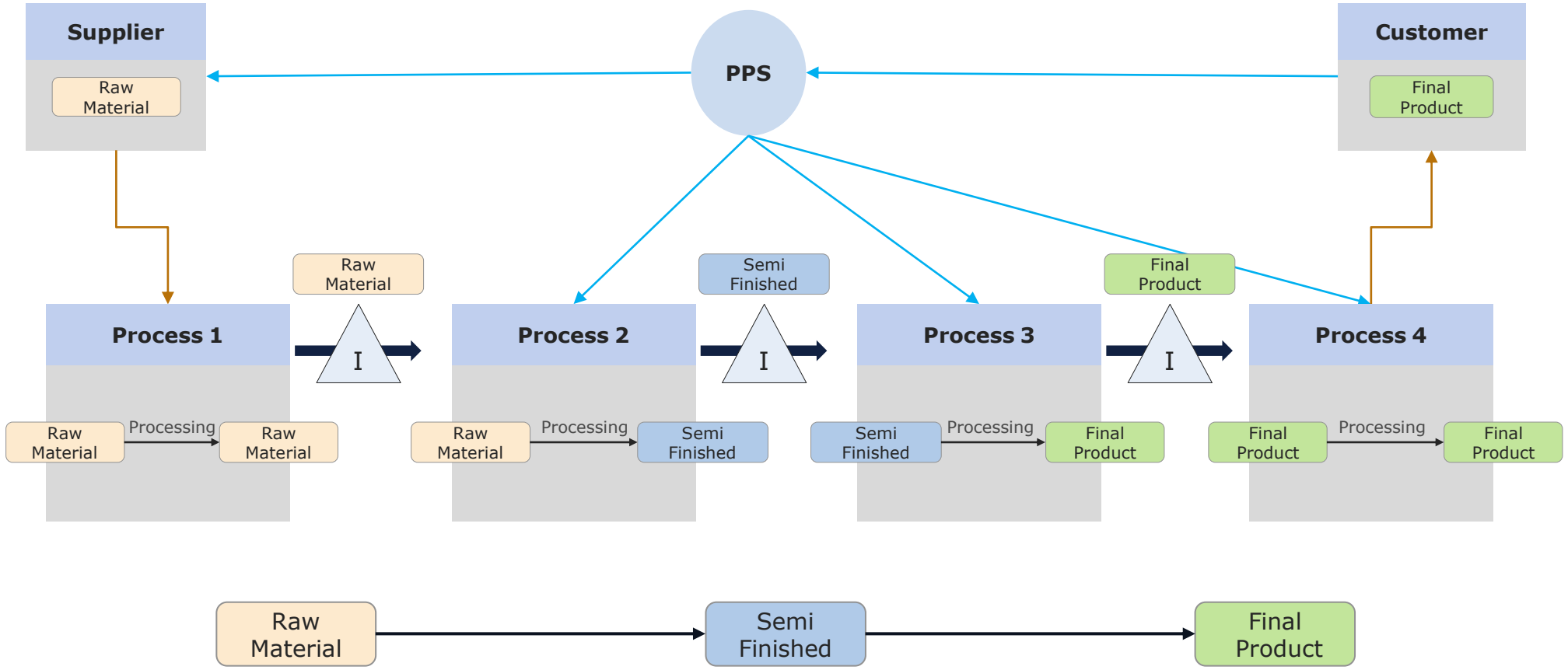
Visual Enhancements



Visual documentation of workflow



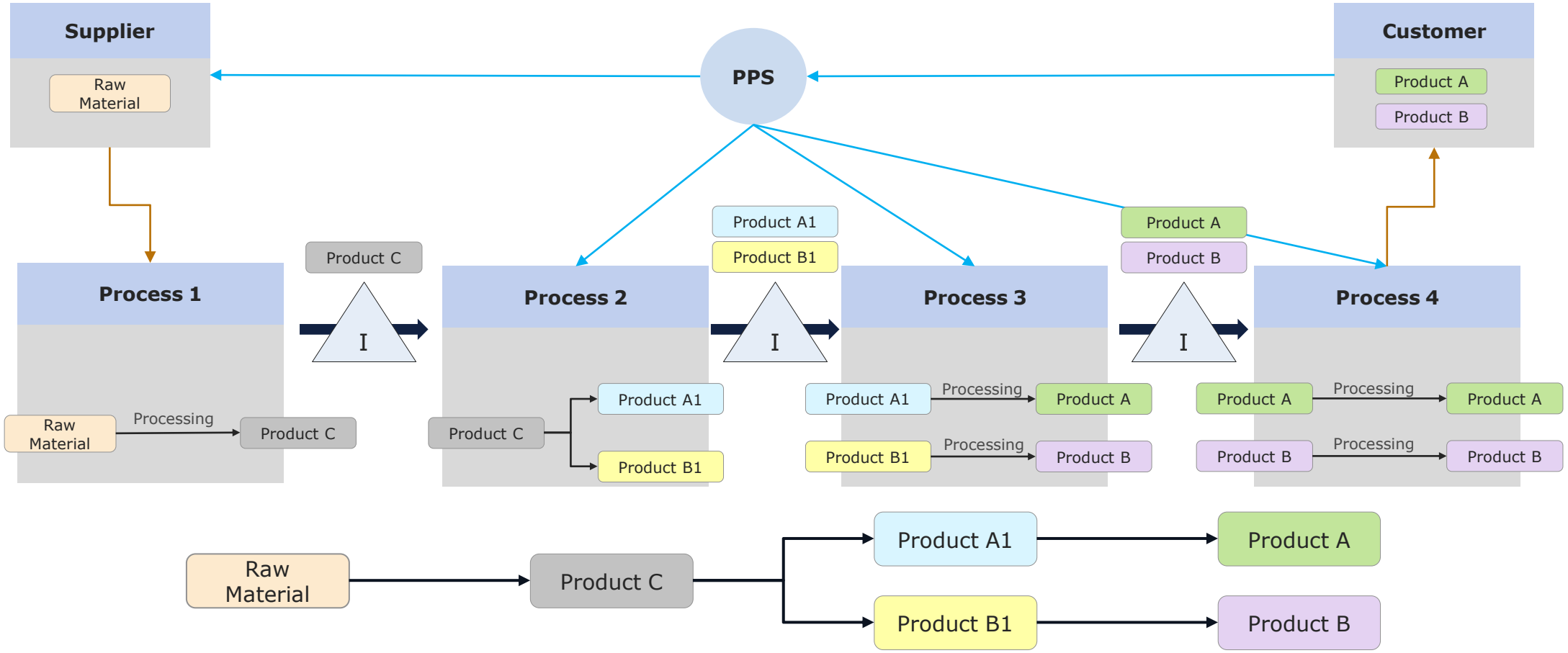
Product flow and transition – “Multiproduct-Definition”



A simple product flow and transition through the value stream

Information flow Material flow Material Push System

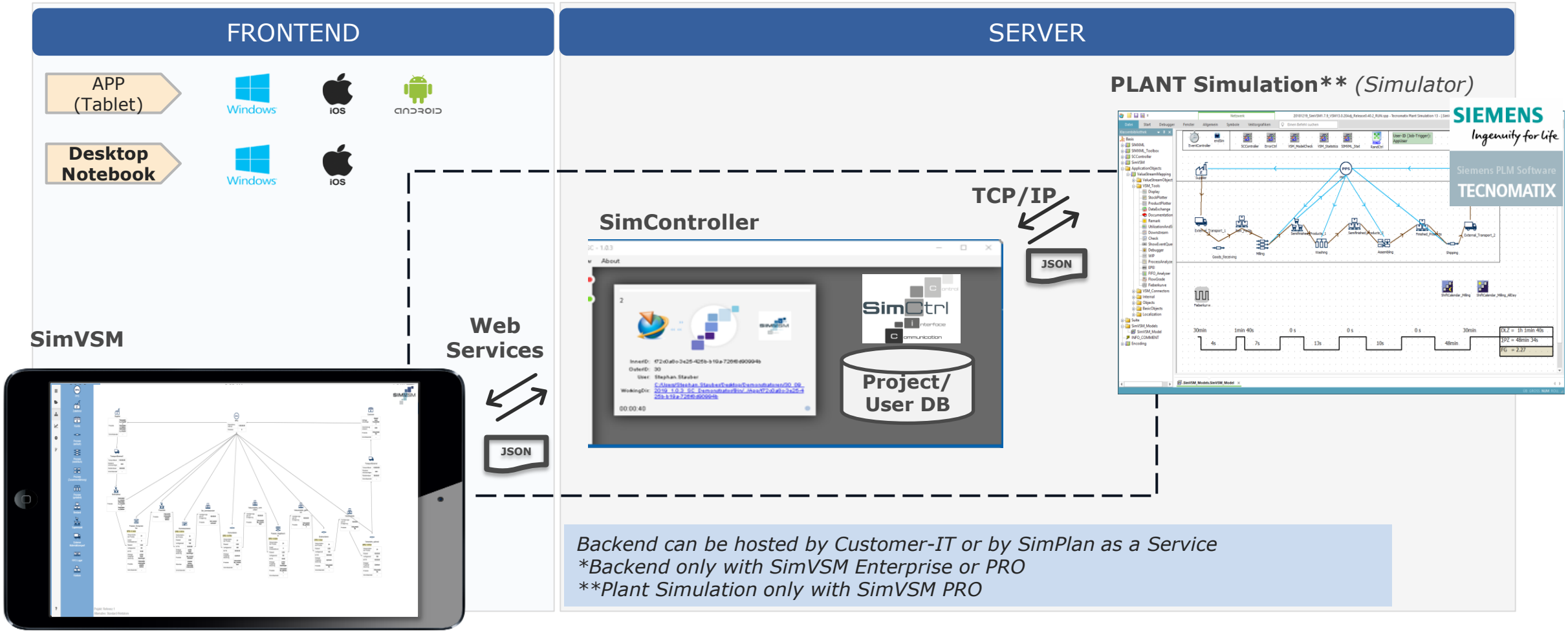
Product flow and transition – “Multiproduct-Definition” (2)



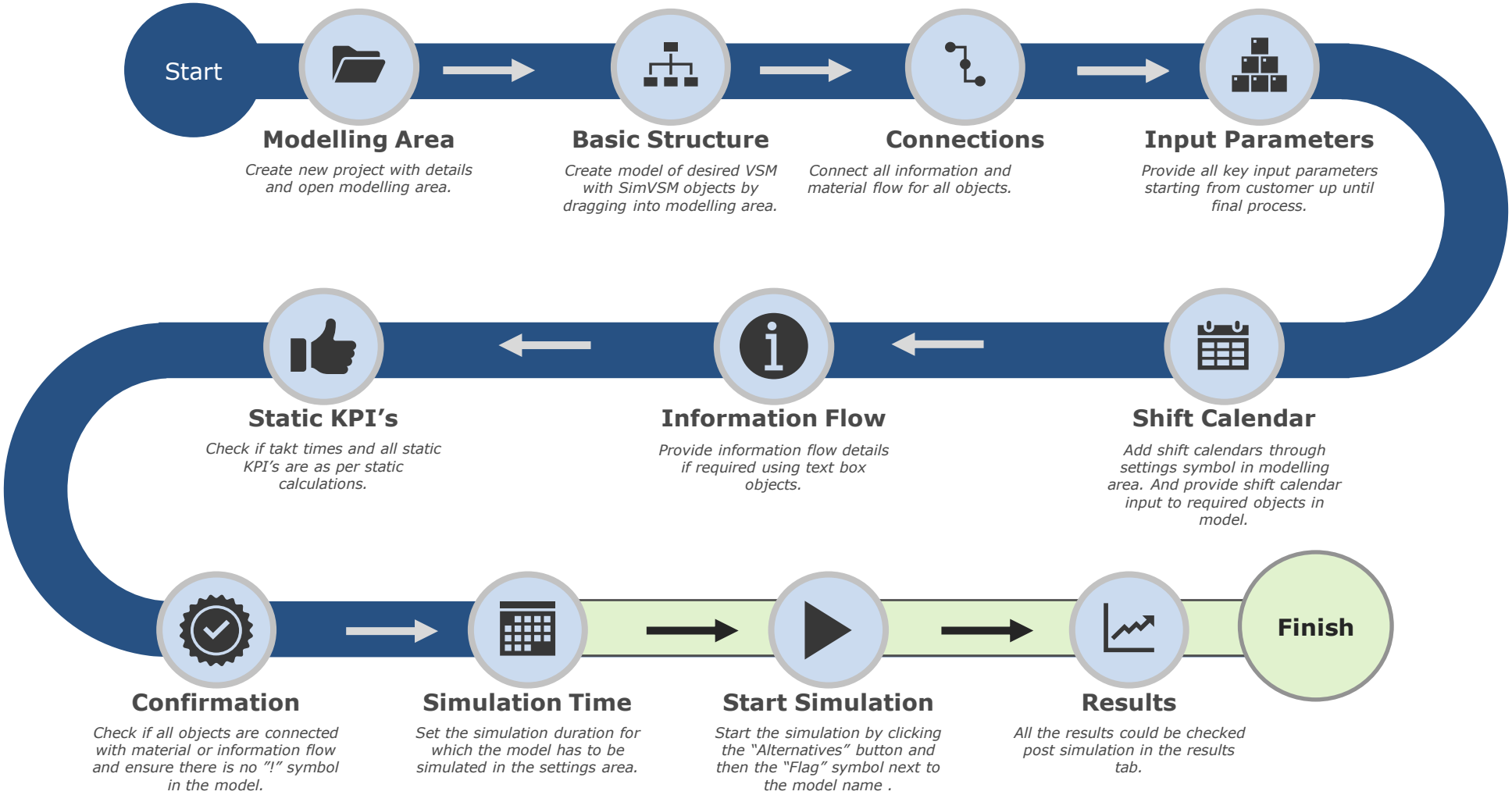
A simple product flow and transition through the value stream

Information flow Material flow Material Push System

SimVSM Architecture



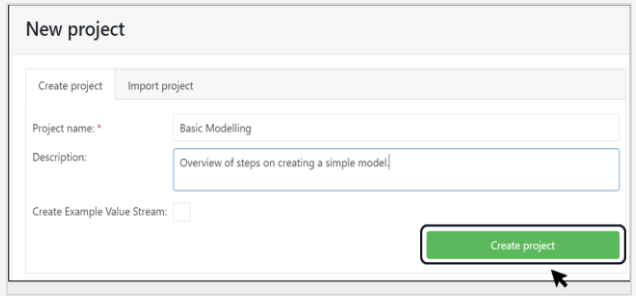
Overview of model creation

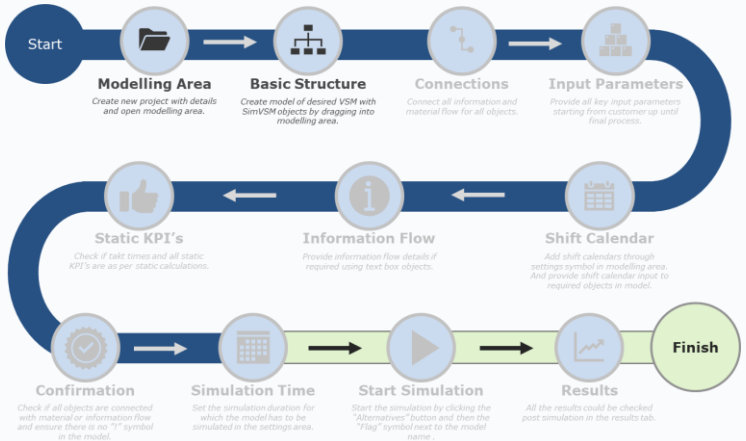


SimVSM
Value Stream Simulation

Modelling Area

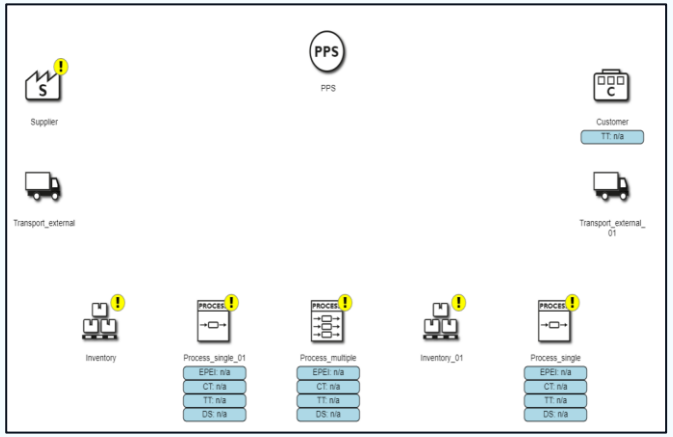
Create new project with details and open modelling area.





Basic Structure

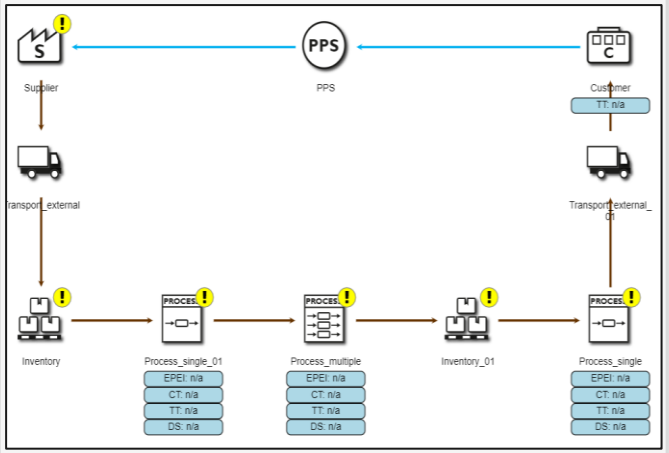
Create model of desired VSM with SimVSM objects by dragging into modelling area.

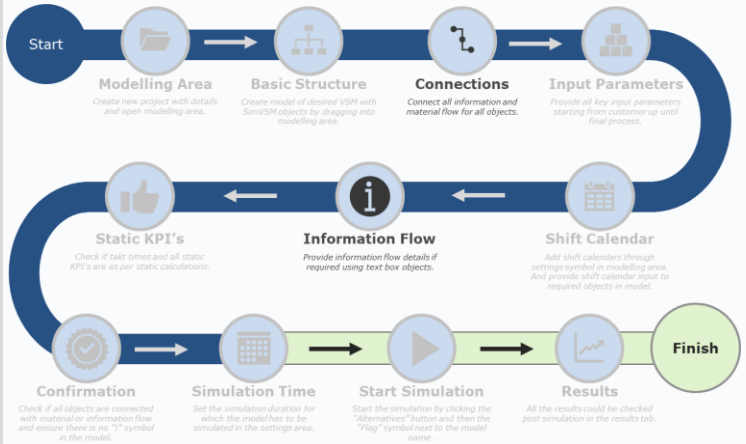


SimVSM
Value Stream Simulation

Connections

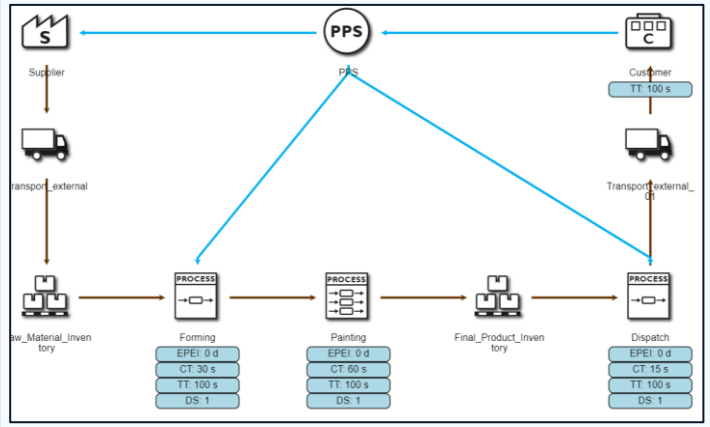
Connect all information and material flow for all objects.





Information Flow

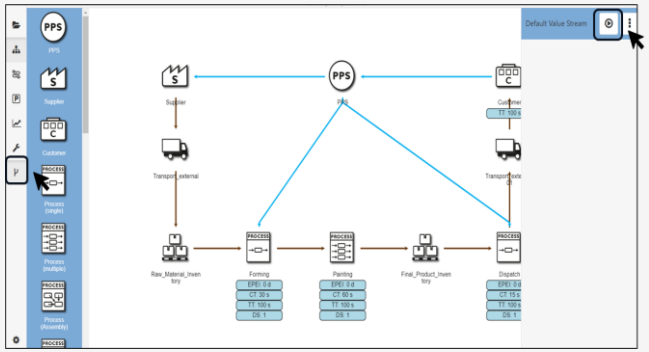
Provide information flow details if required using text box objects.

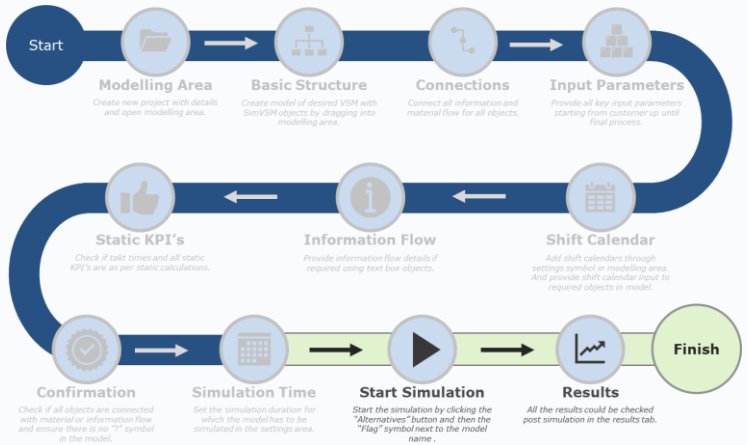


SimVSM
Value Stream Simulation

Start Simulation

Start the simulation by clicking the "Alternatives" button and then the "Flag" symbol next to the model name .

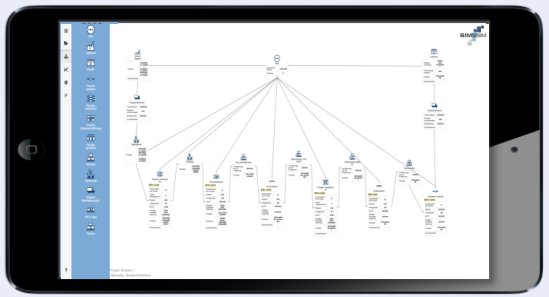




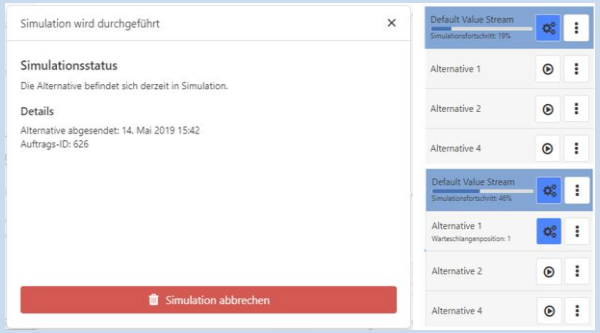
Results

All the results could be checked post simulation in the results tab.

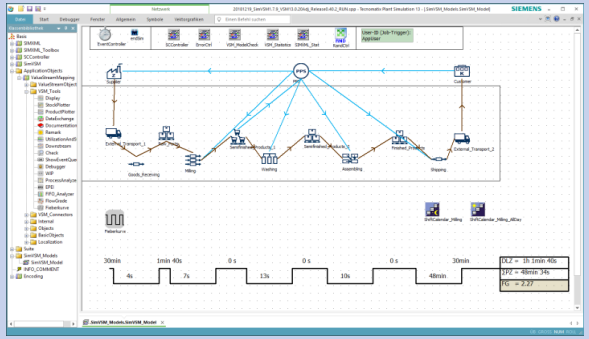
SimVSM
Value Stream Simulation



- Administration of different Value Stream Alternatives
- **System-supported modelling and parameterization.**
- User-supporting plausibility checks and error handling



- Control of Simulation Jobs
- Asynchronous, parallel processing of simulation jobs
- Visualization of the processing status
- Detailed information about the simulation job
- Access to simulation data



- Automatic start and coupling of the simulator instance
- Automatic model generation
- Plausibility and error handling
- Generic preparation of result data
- Result forwarding to frontend

SimVSM
Price Information

SimVSM – Introduction price model

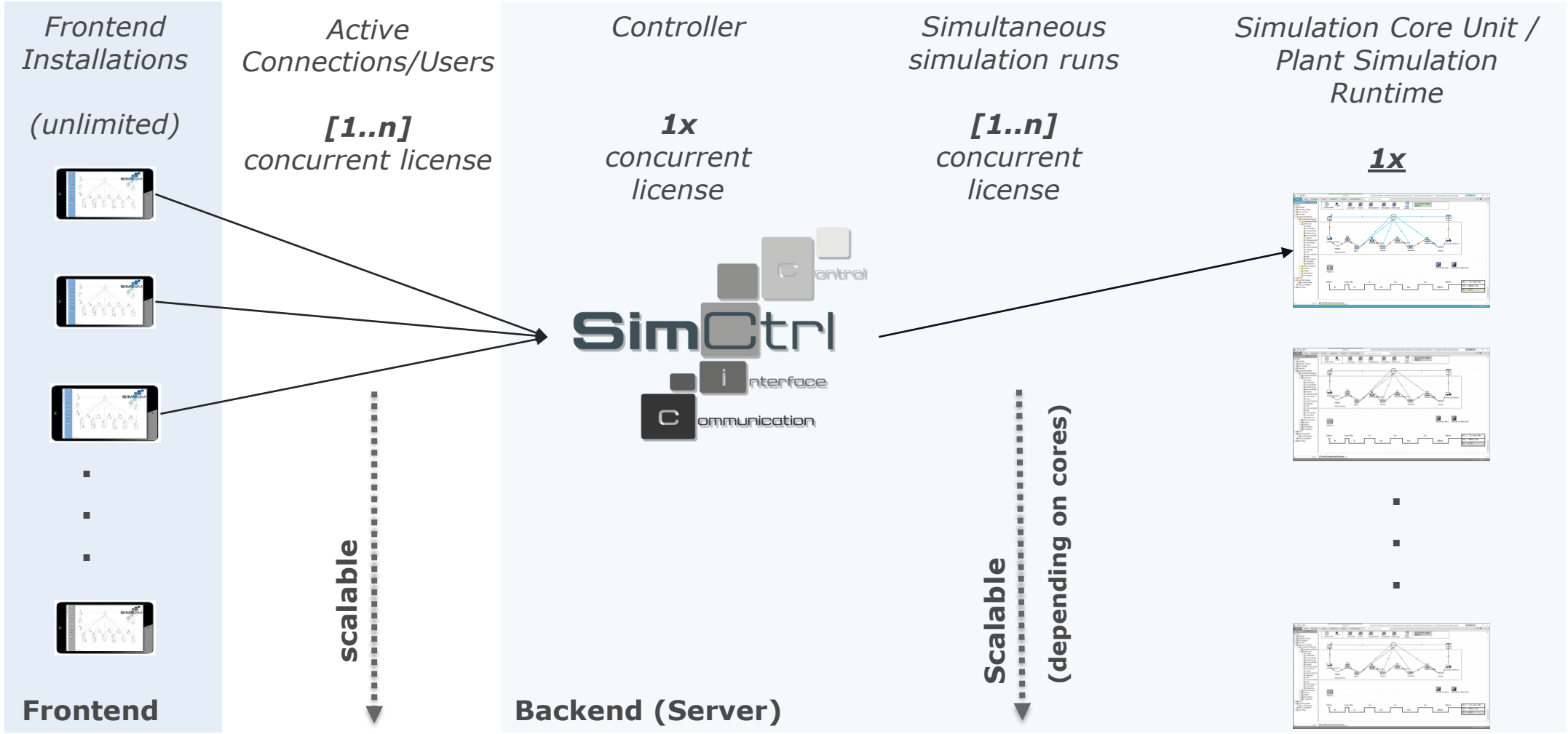
AppStores	Enterprise	PROfessional
• **Standalone App** without server connection • Basic modeling & static KPIs. • VSM 4.0 • Project Options.	• All AppStore functionalities • Client/Server Architecture • Project management for exchange of **projects** • **User administration** • **Flexible floating licensing**	• All AppStore functionalities • All Enterprise functionalities • Integrated **simulation** • **Dynamic key figures** • Number of **parallel simulation jobs** • **Free trial version**
Free / Fee based*	**From €3.360****	**From €10.600****

*** fee based subscriptions (Monthly, yearly):**
- Expert Add-On
- Premium Abo
- ValueStream 4.0 Abo
- ***Simulation Abo in planning***

**** per Backendsystem Additional Options:**
- Hosting
- Subscription
- Scalability
- Test System (private Cloud)

SimPlan

SimVSM Package
Scope - example



SimVSM– supplementing information

Product Homepage

- https://www.simvsm.de/en/

Introduction Video YouTube

- https://www.youtube.com/watch?v=d8-F65aMZK8

Online Help

- http://www.simvsm.info/en/

E-Mail

- simvsm@simplan.de

Free AppStore Variants

- with Limits
- without Simulation

Apple

Microsoft

Android

SimVSM Pro

- with Simulation (backend)
- Distributed via SimPlan directly
- Testsystems available

Der Stifterverband für die Deutsche Wissenschaft hat unsere Forschungstätigkeit mit dem Gütesiegel „Innovativ durch Forschung“ gewürdigt.

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Niederlassungen
Hanau
Braunschweig
Bremen
Dresden
München
Regensburg
Sindelfingen

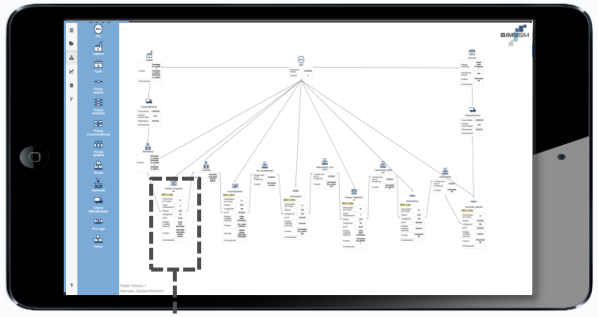
Backup

SimVSM -
Parameter Application to Simulation

FRONTEND

SERVER

SimVSM



SimController

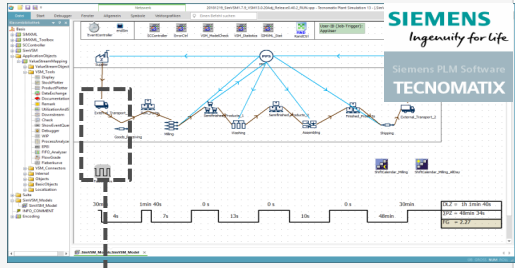
Web Services

JSON

TCP/IP

JSON

PLANT Simulation**
(Simulator)



Input Parameter

- *Parameter 1*
- *Parameter 2*
- *…*

Parameter

- *Parameter 1*
- *Parameter 2*
- *…*
- *Simulation only parameters*

SimPlan