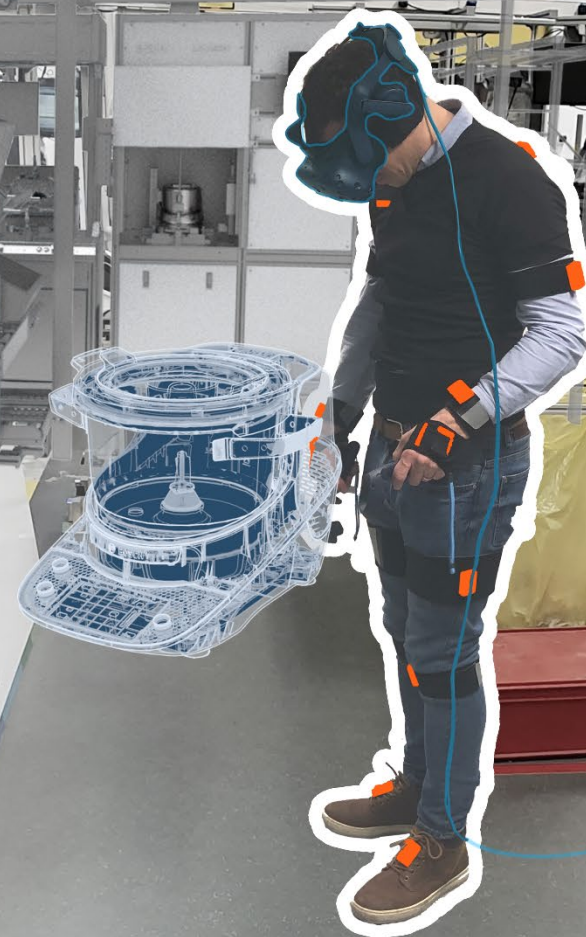


Ergonomie Analysen mit Virtual Reality und Motion Tracking.

Christian Hergt (GIT-PLF)
Philipp Winter (GIT-PLF)
Rodrigo Hernandez (GIT-PLF)





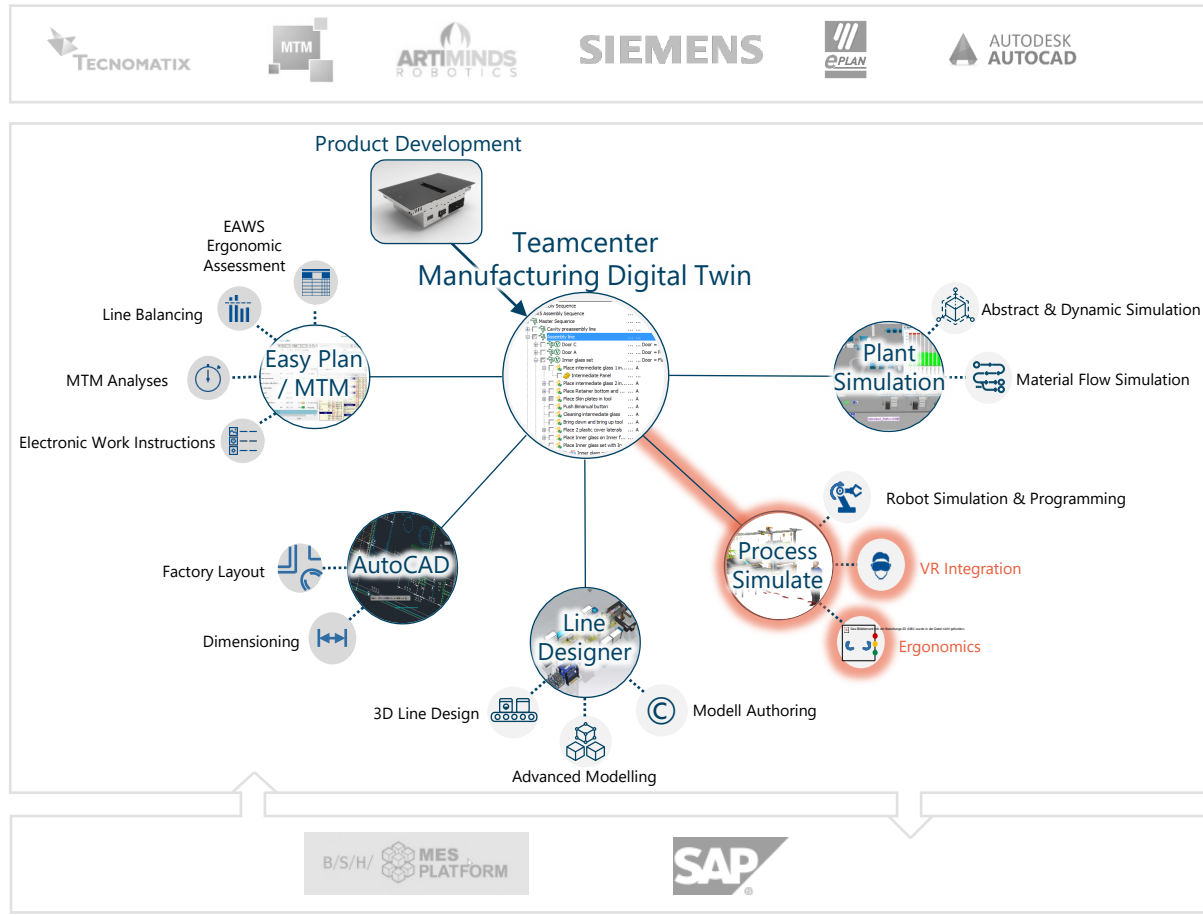
Agenda

- Live Inquiry
 - Digital Factory
 - Solution Elements
 - Process Workflow
 - Hardware
-
- **Live Demo**
 - Discussion

Live Inquiry | Mentimeter



Digital Factory | Big Picture



The current strategy is all about integrating core disciplines/processes into Teamcenter Manufacturing...

 **DIGITAL
FACTORY**

... as well as connect all information to the ERP and MES systems of BSH.

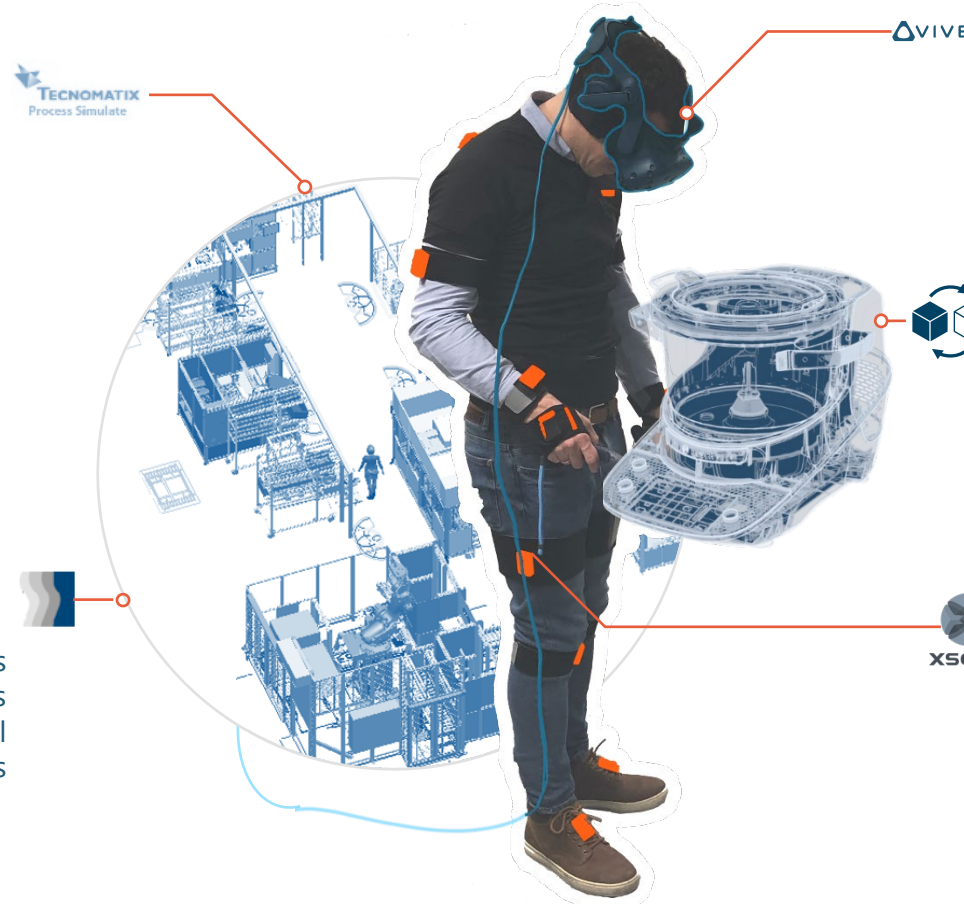
Solution Elements

Process Simulate

Process Simulate can verify the feasibility of an assembly process by validating reachability and collision clearance. This is done by simulating the full assembly sequence of the product and the required tools. Tools such as sections, measurements and collision detection allow the detailed verification and optimization of assembly scenarios

EAWSdigital

EAWSdigital is a software that digitizes the EAWS method and enables interfaces to other components of the Digital Factory. EAWSdigital is seamless integrated in Process Simulate



HTC VIVE

VIVE is a first-of-its-kind virtual reality system. Let yourself be visually, physically and emotionally dive into a virtual world. Fully integrated into Process Simulate VR



Digital Twin

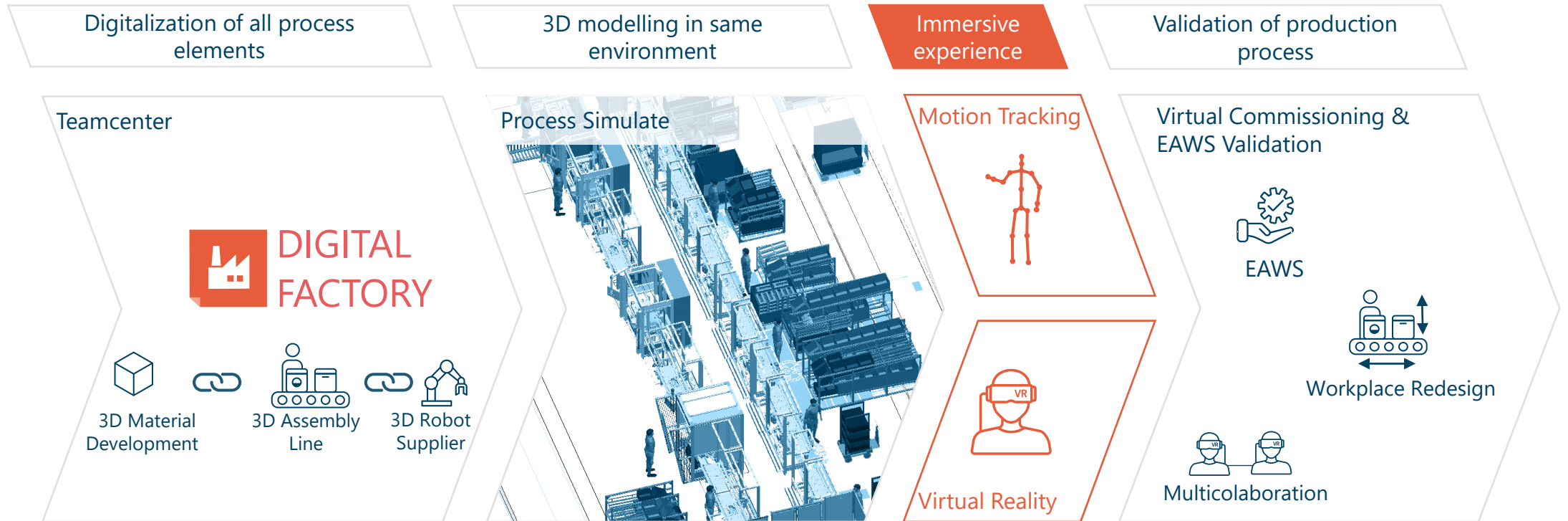
All relevant information is centrally stored within Teamcenter (Digital Backbone) to create a 100% digital copy of all resources and processes



Xsens

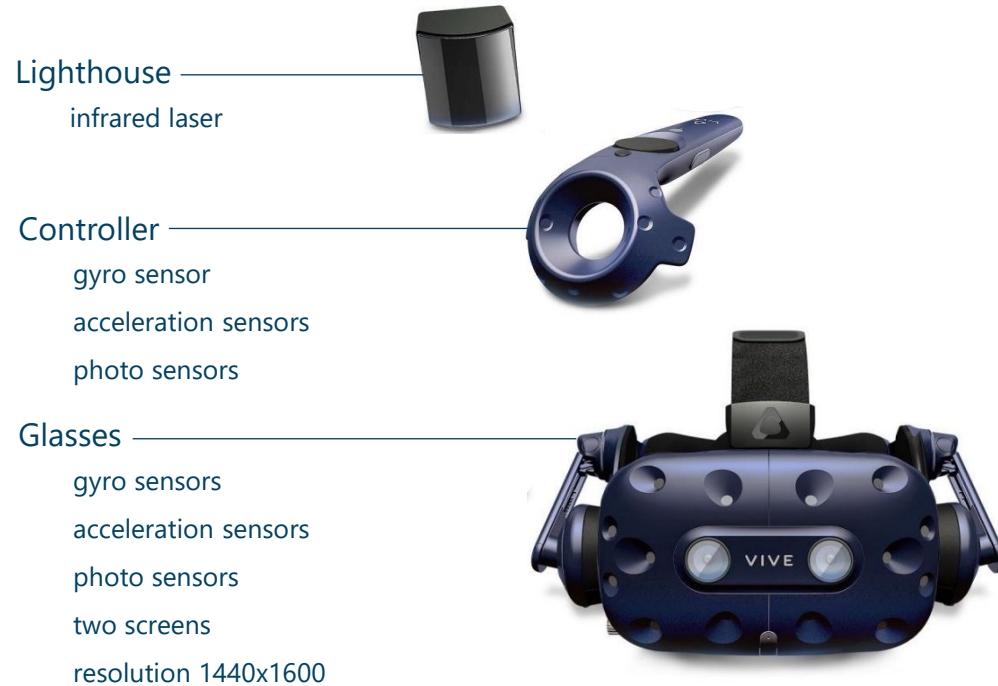
Easy to integrate wireless human motion tracker for real-time applications. Fully integrated into Process Simulate and connected with MTM analysis EAWS

Process Workflow

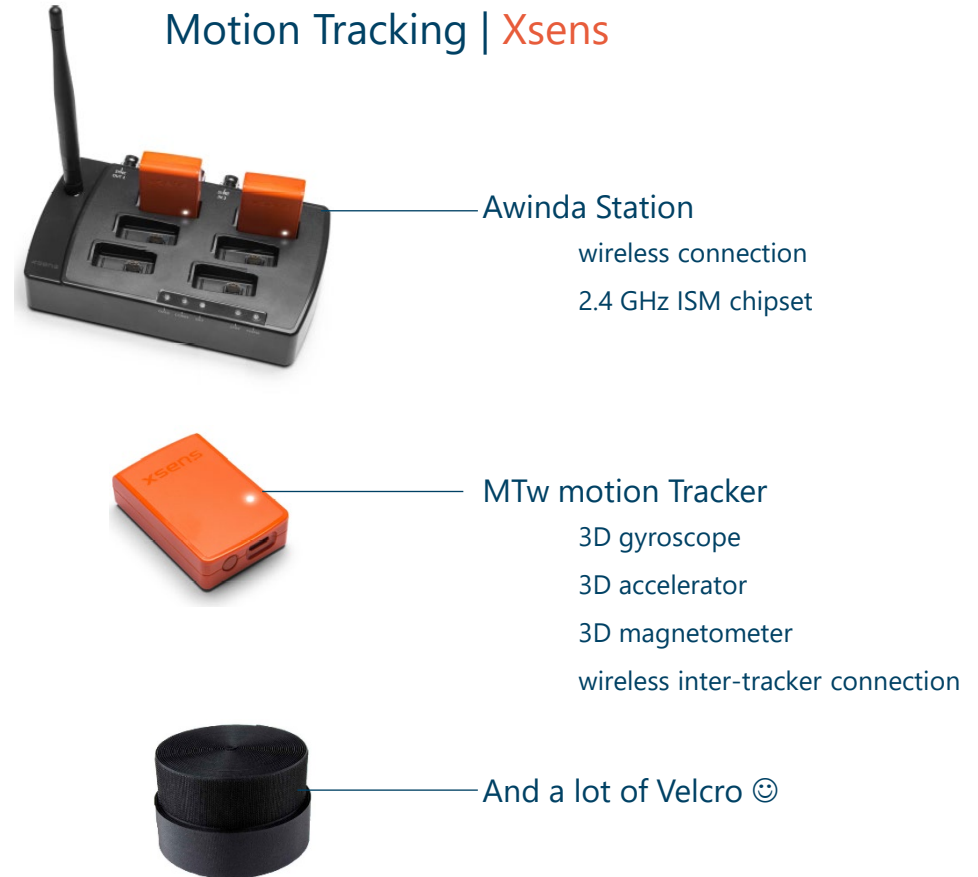


Hardware

VR Glasses | HTC Vive Pro



Motion Tracking | Xsens



LIVE DEMO

VR Experience

Feedback from FGM and LOCCIONI



LOCCIONI

BSH

MONTANA

BERLIN

VAG

918.83mm

THANK YOU !



Backup | EAWS

EAWS (Ergonomic Assessment Worksheet) is...

...a method to evaluate the physical workload.

...a combination of existing methods.

...a holistic method.



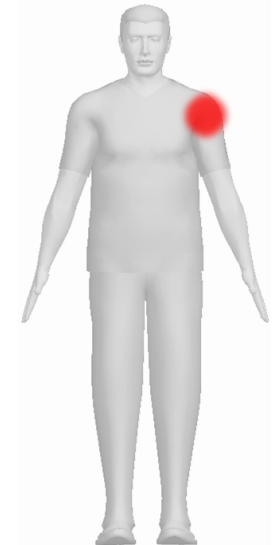
Motion Tracking & VR

- workplace measurements
- body postures
- work sequence



Manual Input

- shift duration
- production volume
- forces & weights
- ...



Backup | Virtual Reality

-  Review of design
-  Markup of critical positions
-  Simulating work steps
-  Discuss like on the real machine
-  Multiple devices in one session
-  Collision detection
-  Direct reachability test

