

BREAK OUT SESSIE

Smart Supply Network

- Kies voor full screen weergave (zie icoontjes rechts onderin uw beeld)
- Vragen? Zet ze in de Q&A of bewaar ze tot de Ask the Expert sessie later in het programma
- Alle break outs zullen worden opgenomen en de presentaties worden achteraf met u gedeeld.

BREAK OUT SMART SUPPLY NETWORK

Agenda

15:20 – 16:00

- Inloop en Intro, Mike de Roode
- Intro smart supply network, Erik Vermeulen
- AML, Erik Vermeulen
- SCSN, Rutger van der Male
- KMWE adoption, Koen Herps
- Q&A, poll

What questions are on your mind to get to the desired logistics performance in your manufacturing environment?

FACTORY OF THE FUTURE

Main Areas of Interest

Smart System Engineering

Life Cycle Evolution & Sustainability

Model Driven Engineering

Smart Manufacturing

Smart Production Technologies

Smart Assembly & Robotisation

Smart Supply Network

Smart Connected Supplier Network

Smart Factory Logistics

Smart Working

Operator Decision Support Systems

Training & Education

SMART SUPPLY NETWORK



Smart Factory Logistics (AML)

Implement Digitization
and AI to
optimize factory
operations



Smart Connected Supplier Network (SCSN)

Create an Agile, Global,
Secure and Connected
supply Network to
shorten time to market

Logistic Hotspot For Manufacturers

Advanced Manufacturing Logistics



AMIL

Advanced
Manufacturing
Logistics

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What is AML?

AML is a logistics innovation platform for the manufacturing industry.

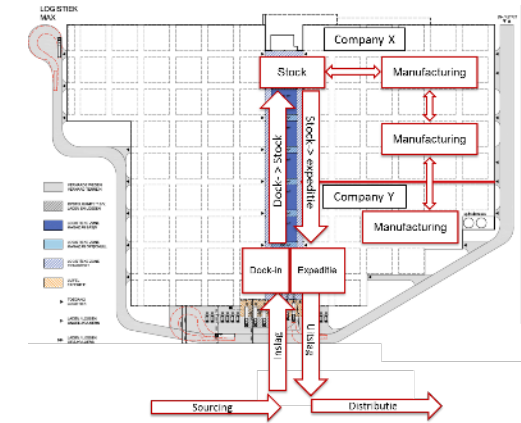
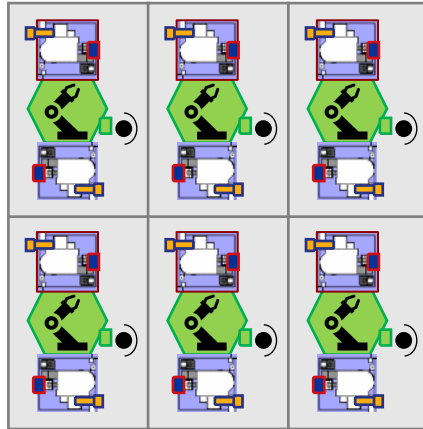
It supports manufacturers by realizing a state of the art generic logistic system:

- Innovative (factory of the future)
 - Smart (e.g. simulated first, planning & control, AI based, decentralized control)
 - Shared (e.g. connected resources, connected companies, connected brands)
- Modular (easy to implement)
 - Generic and fast applicable in other high tech clusters beyond BIC.
 - Supportive towards specific use-cases in small series production

An open innovation environment, where partners co-create

We innovate and demonstrate logistic solutions till proven concepts

WHY



Take the opportunity of a generic shared logistics system for storage and movement in a clustered supply chain through industry 4.0 in high-tech small-series industry with implementation of high level of automation.

To develop knowledge and implementation practices on:

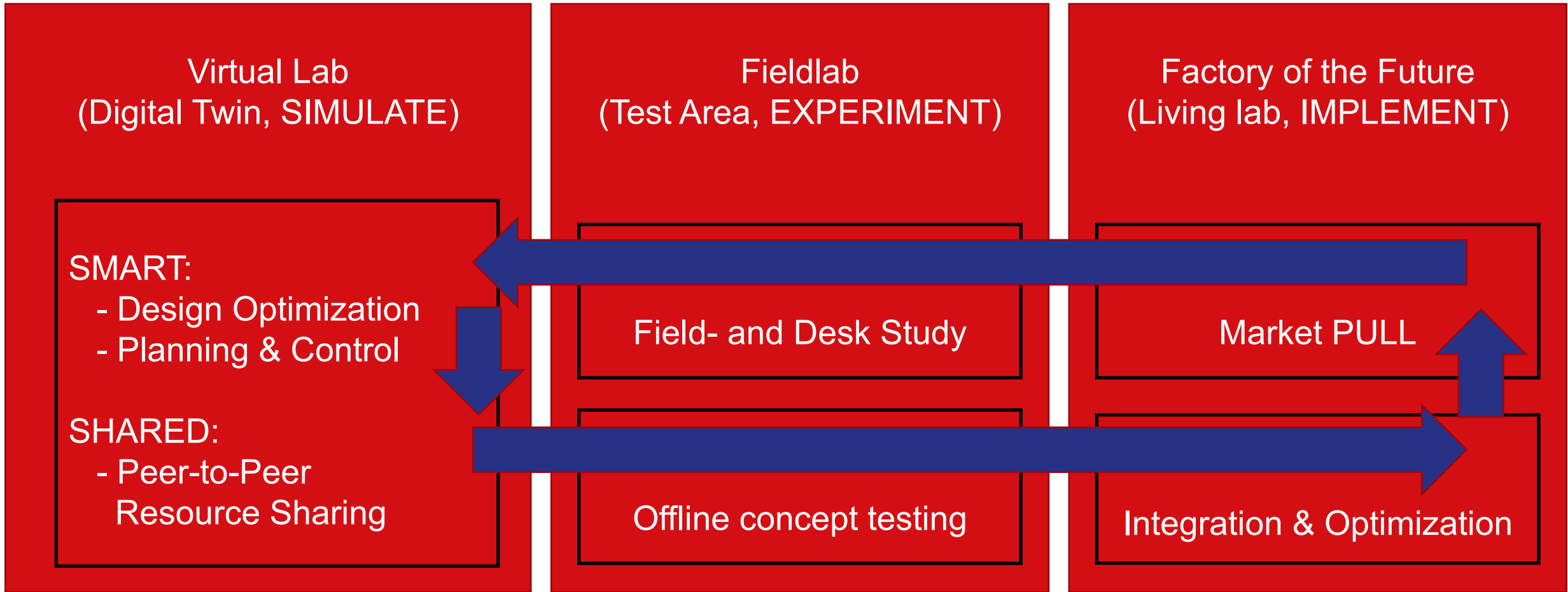
1. Achievable automation level
2. Feasibility multi-company planning and control model

 Productivity (+25%)

 Lead time (-50%)

 Supply chain cost (-25%)

HOW



COMPETENCE CENTER



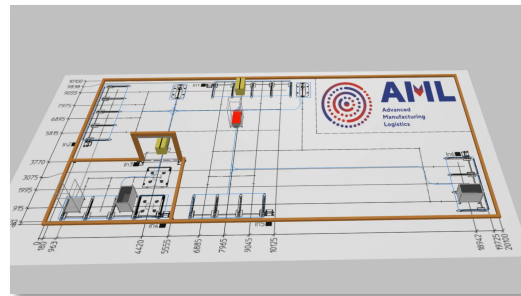
WP1 Industrial Automation

*Flexibele Automation
manufacturing & warehouse*



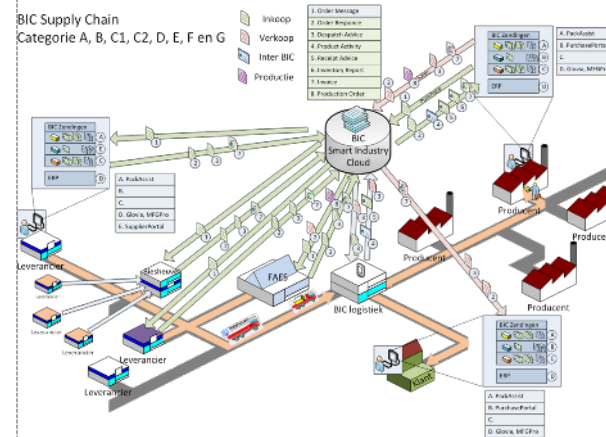
WP 2 Simulation

*Digital Twin,
Heuristic/Algorithm
Building*



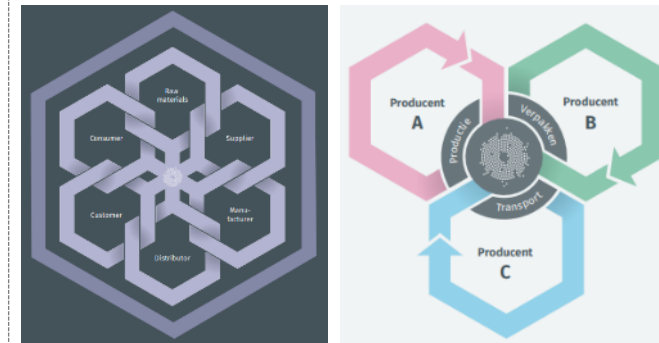
WP 3 Interconnectivity

Horizontal, Vertical

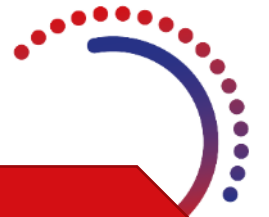


WP 4 Industrial Logistics

Smart Packaging, Track & Trace



HOW



WP 1: INDUSTRIAL AUTOMATION	(link FFM)	Mobile Robotics (warehouse logistics, generic) Mobile Robotics (manufacturing logistics, usecase-specific)
WP 2: SIMULATION	(link HTSC)	Digital Twinning, Manufacturing Design Smart Planning & Control
WP 3: INTERCONNECTIVITY	(link SCSN)	Horizontal- & Vertical Integration
WP 4: INDUSTRIAL LOGISTICS		Tracking & Tracing Smart Packaging

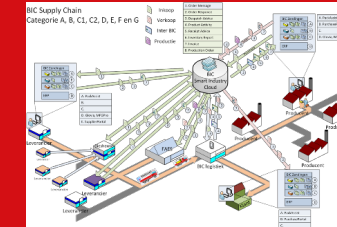
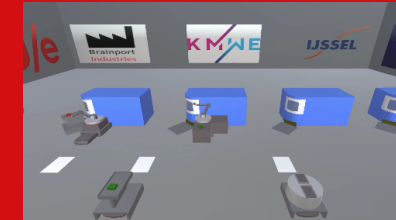
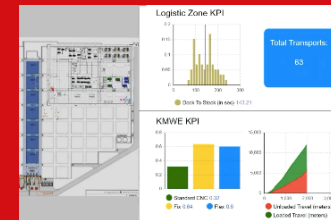
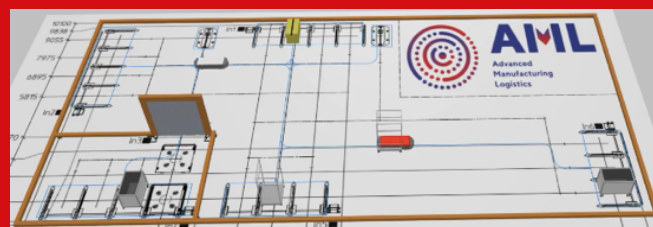
AML 1.0 successes in proof of concepts



FIELDLAB



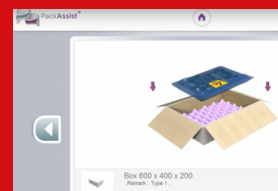
SIMULATION & INTERCONNECTIVITY



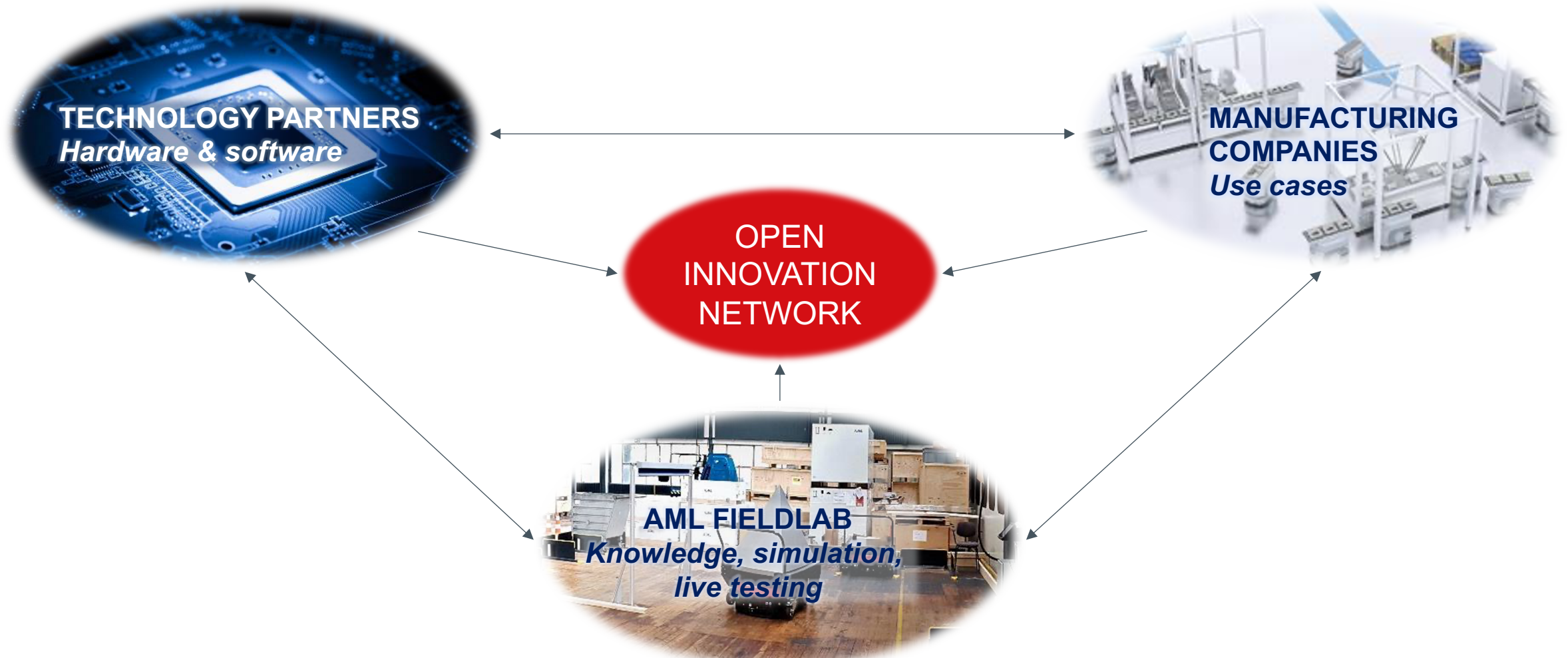
INDUSTRIAL AUTOMATION



INDUSTRIAL LOGISTICS



COLLABORATION & QUESTIONS





AIMIL

Advanced
Manufacturing
Logistics

RUBIX



YASKAWA



Brainport
Industries



TU/e



Powered by

Provincie Noord-Brabant



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TNO



INTERNATIONAL DATA
SPACES ASSOCIATION



Smart Connected Supplier Network

BIC Technology Update XL | 26 november 2020

Mike de Roode & Rutger van der Male



Smart connected supplier network

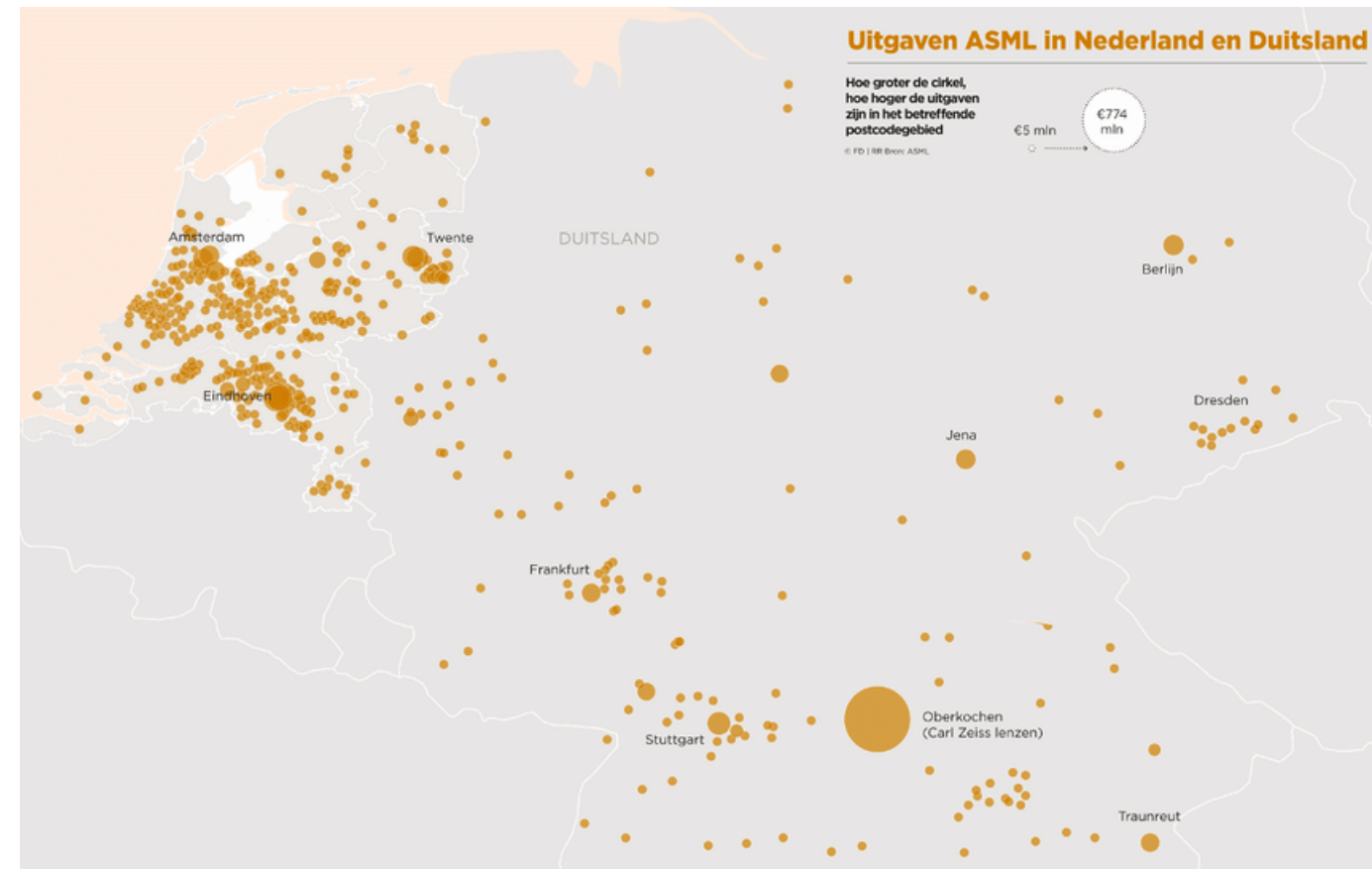
▶ GET CONNECTED

- SCSN is een communicatie standaard gericht op de low volume, high mix en high complexity maakindustrie.
- SCSN stelt bedrijven in staat om veiliger, makkelijker en betrouwbaarder data te delen.
- De productiviteit kan hierdoor tot 20% toenemen.
- Aansluiten is laagdrempelig en kan inmiddels bij een tiental SCSN Service Providers.

HET BELANG VAN DATA DELEN

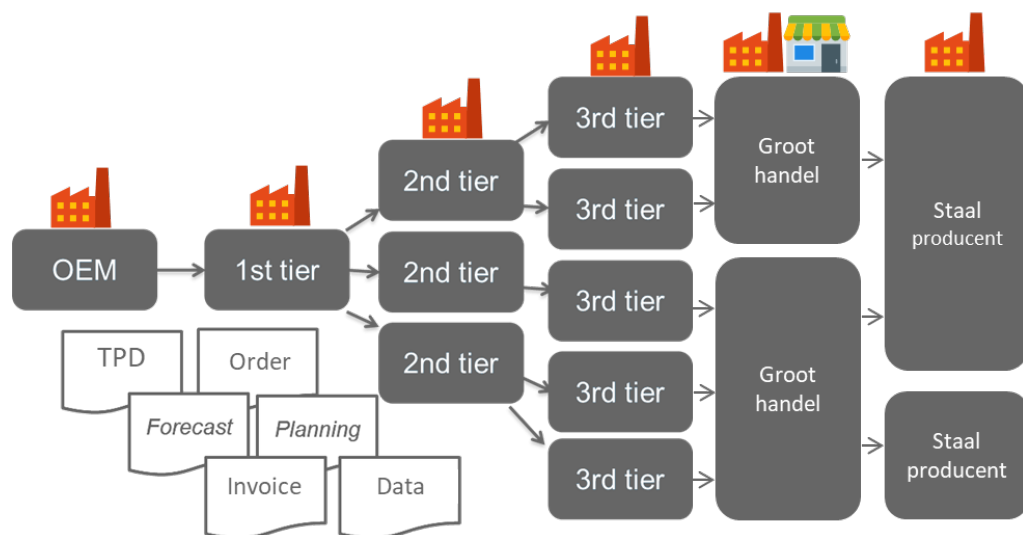
High mix, low volume, high tech manufacturing industry

- **Samenwerking** in supply chains is belangrijk.
- Vooral in de low volume, high mix, high complexity industrie is **data delen** essentieel.




SUPPLIER NETWORKS

Data delen in de maakindustrie





! Data in ERP system en webportals zetten is handwerk

!  Administratieve lasten

!  Foutgevoelig, data niet eenduidig

!  Suboptimale supply chains

!  EDI verbinding duur en niet schaalbaar

!  Cloudoplossing maakt afhankelijk en maakt kwetsbaar

UNIEKE KARAKTER VAN SCSN

1x aansluiten – hele keten digitaal

**Maakbedrijven
sluiten 1x aan**

... en kunnen met de
hele keten
communiceren.

**Maakbedrijven
houden regie**

Maakbedrijf bepaalt
zelf met wie welke data
wordt gedeeld.

**De hele keten
digitaal**

Van OEM tot 1st, 2nd,
3rd tier, groothandel
tot bijv. staalproducent.

**Open standaard,
actieve community**

Stichting SCSN beheert
standaard, hierin rol
voor alle stakeholders

HET UNIEKE KARAKTER VAN SCSN

1x aansluiten – hele keten digitaal

Een gemeenschappelijke taal

- Eén gemeenschappelijke taal om data te delen door de gehele supply chain.
- Deze taal is een standaard van data standards (alignment en afstemming).



Een betrouwbaar netwerk

- Een betrouwbaar netwerk tussen bedrijven en Service Providers.
- Netwerk van netwerken (four-corner van service providers)

INTERNATIONAL DATA
SPACES ASSOCIATION

Sterke community

- SCSN is an open community driven by manufacturing companies, IT service providers, sector organizations, and knowledge institutes.

OPEN INITIATIEF, OPEN STANDAARD

Maakbedrijven, Service Providers, Kennisinstellingen



Ca. 10 Service Providers



Ca. 200 maakbedrijven, groei naar 2000+



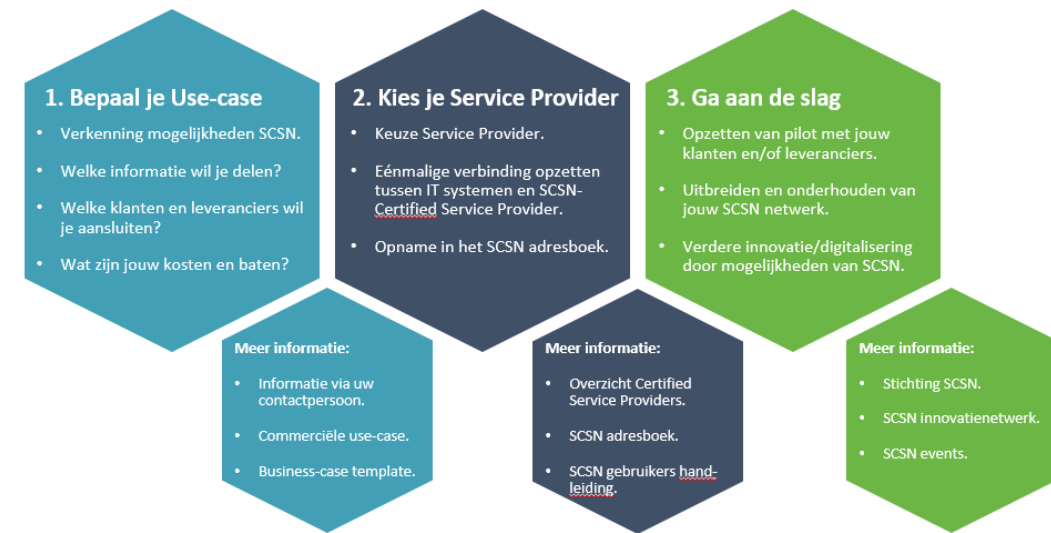
<https://smart-connected.nl/aangesloten-bedrijven/service-providers>

HOE BEGIN JE AAN SCSN?

Efficiënte onboarding

Onboarding voor maakbedrijven

<https://smart-connected.nl/deelnemen-aan-scsn/voor-maakbedrijven>



Onboarding van Service Providers

<https://smart-connected.nl/deelnemen-aan-scsn/voor-service-providers>

SCSN ROADMAP

	2020	2021	2022	
Organisation	Transition from project to SCSN Foundation.	NL: Strategic partnerships with branche organisations. EU: Strategic partnerships to accelerate growth.		
Services	Comprehensive SCSN message set for manufacturing industry.	Develop additional (AI) products and services for supply chain optimisation, condition based maintenance, etc.		
Infrastructure	Fully operational IDS infrastructure for Service Providers.	EU: Extend trusted network with advance security features e.g. usage control and ensuring interoperability with other data spaces.		
Connections	Growth to 300 connected manufacturing companies.	NL: 1.000 connections EU: 250 connections	NL: 2.000 connections EU: 1.000 connections	
Service providers	Growth to 10 approved SCSN Service Providers.	NL: 15 Service Providers EU: 5 Service Providers	NL: 20 Service Providers EU: 20 Service Providers	

JAARPROGRAMMA 2021

Vergroten van impact

1. **Formalize Foundation SCSN** by setting up procedures and processes.
2. **Strengthen the settlement in The Netherlands** by significantly growing the number of connected local manufacturing companies and service providers. Investing in marketing and public communication activities, attending fairs, setting up strategic collaborations, et cetera.
3. **Make use of existing technology** by supporting service providers to implement the improvements made in the past year (e.g. IDS Network, new messages).
4. **Positioning SCSN in Europe** as Digital Innovation Hub and as key use-case of the International Data Spaces Association and possibly as GAIA-X Hub. Influence, coordinate, and join strategic international innovation activities.
5. **Further improving SCSN** by extending the standard with new information to support advance use-cases.

HULP BIJ IMPLEMENTATIE

Vergroten van impact

<https://www.brainportindustries.com/nl/berichten/subsidie-beschikbaar-voor-digitaliseren-supply-chain-mkb-ers-tweede-ronde>

MEER INFORMATIE

Smart Connected Supplier Network

www.smart-connected.nl

- Meer informatie en achtergronden
- Details over onboarding
- Testimonial filmpjes
- Overzicht van SCSN Service Providers



smart
connected
supplier
network



A close-up photograph of a precision industrial machine, likely a CNC lathe or mill. The central focus is a silver-colored metal drill bit or tool holder, which is suspended and ready for use. The machine's body is made of polished metal with various bolts and components. The background is a blurred industrial setting with blue and white tones. The image is framed by a dark purple diagonal shape on the left and a pink diagonal shape on the right.

FIELDLABS @ KMWE



SCSN & AML

SMART CONNECTED SUPPLIER NETWORK
ADVANCED MANUFACTURING LOGISTICS

KMWE PARTICIPATION

PART OF THE SMART SUPPLY NETWORK OF THE FUTURE



(Practical) Development:

- Contact / Collaboration with Technical Suppliers (Expert Vision)
 - SCSN Partners
 - AML Partners
- Move to BIC

(Theoretical) Research

- Contact / Collaboration with Educational Institutes
- Academical Roadmap

COLLABORATION

SCSN & AML



SCSN:

Quick, secure and reliable interfaces among companies to accelerate decision making.

AML:

A seamless material handling network that enables “flow motion” (goods and information).



COLLABORATION

SCSN & AML

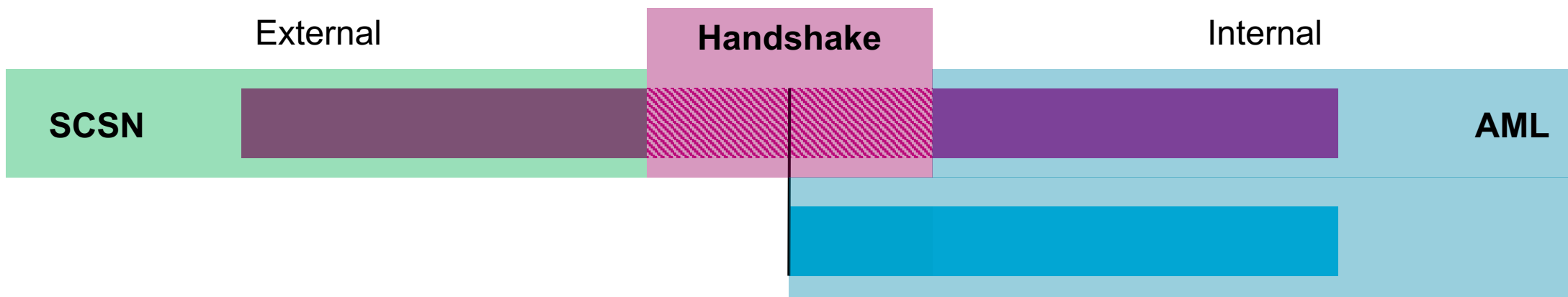


SCSN:

Quick, secure and reliable interfaces among companies to accelerate decision making.

AML:

A seamless material handling network that enables “flow motion” (goods and information).



KMWE PARTICIPATION

LEARNING GOALS SCSN



Finished (Highlights):

- Business Requirement Documents
- Centralized Purchase Order (PO) Generation
- Centralized Purchase Order (PO) Receipt
- Tailor-made API BIC-tenants (KMWE-RUBIX)

Pending:

- Generic Solution other Service Providers

KMWE PARTICIPATION

LEARNING GOALS AML



Finished (Highlights):

- Industrial Feasibility AGV
- AGV + Fixed Robot Collaboration
- Job Scheduling with Tooling Constraint
- Manufacturing System Design (TSC)
- RFID Industrial Stresstest
- AGV Network Reliability Requirements + Floorpath Design

Pending:

- Industrial Impact on AGV Network-based Manufacturing Design (CNC)

KMWE PARTICIPATION

LEARNING GOALS



Finished (Highlights):

- Industrial Feasibility AGV
- AGV + Fixed Robot Collaboration

Material

- Job Scheduling with Tooling Constraint
- Manufacturing System Design (TSC)
- RFID Industrial Stresstest
- AGV Network Reliability Requirements + Floorpath Design

Data / Information

Pending:

- Industrial Impact on AGV Network-based Manufacturing Design (CNC)

KMWE PARTICIPATION

INDUSTRIAL FEASIBILITY



Demo:



AML:



BIC:



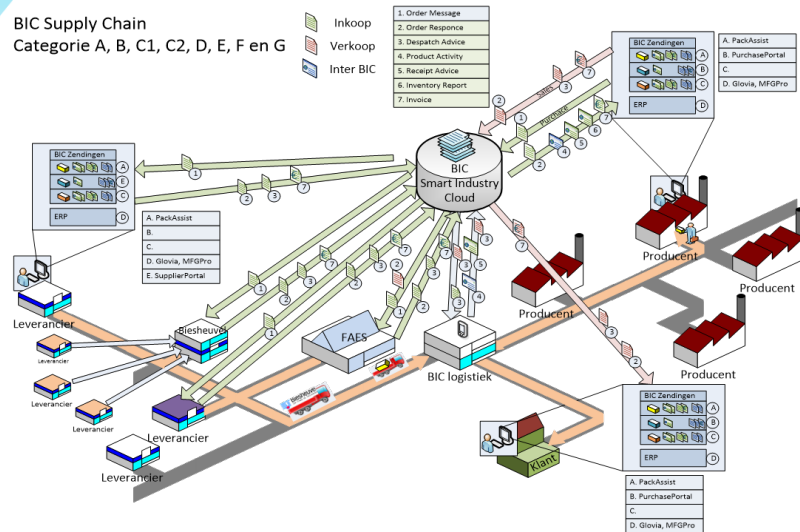
KMWE PARTICIPATION

BIC PORTAL



Concept:

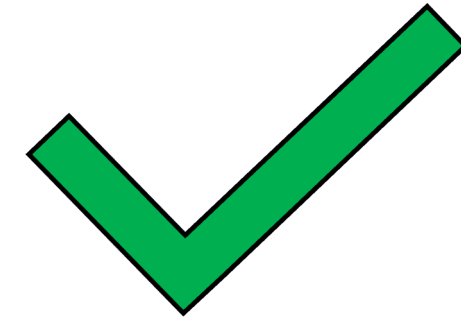
BIC Supply Chain
Categorie A, B, C1, C2, D, E, F en G



Fieldlab:

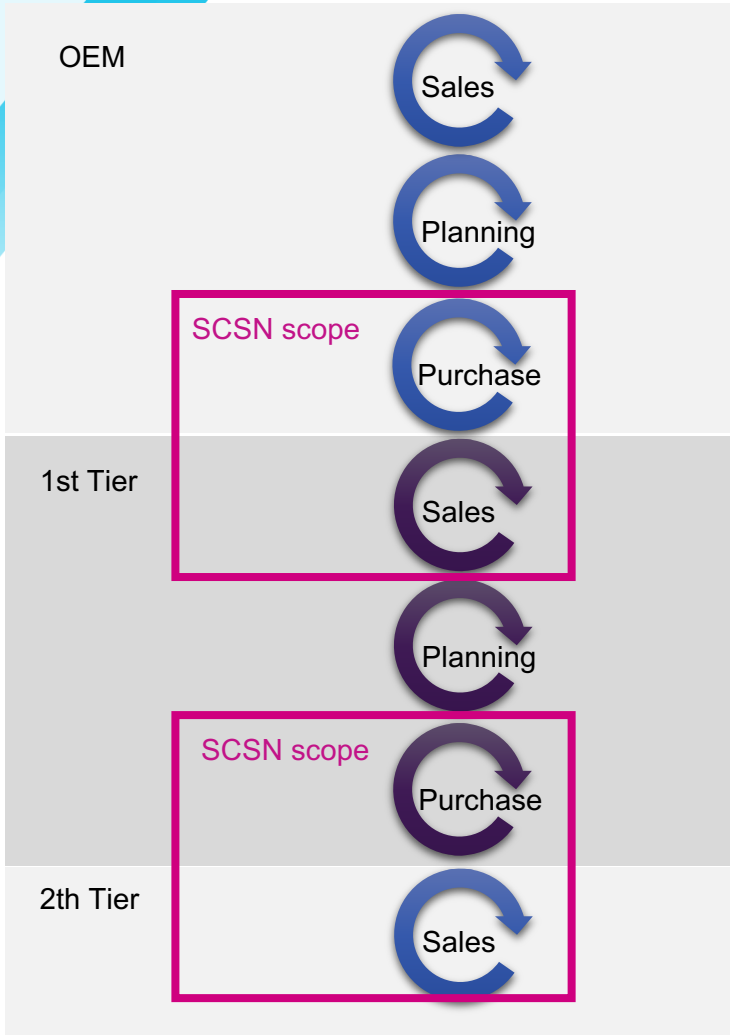


BIC:

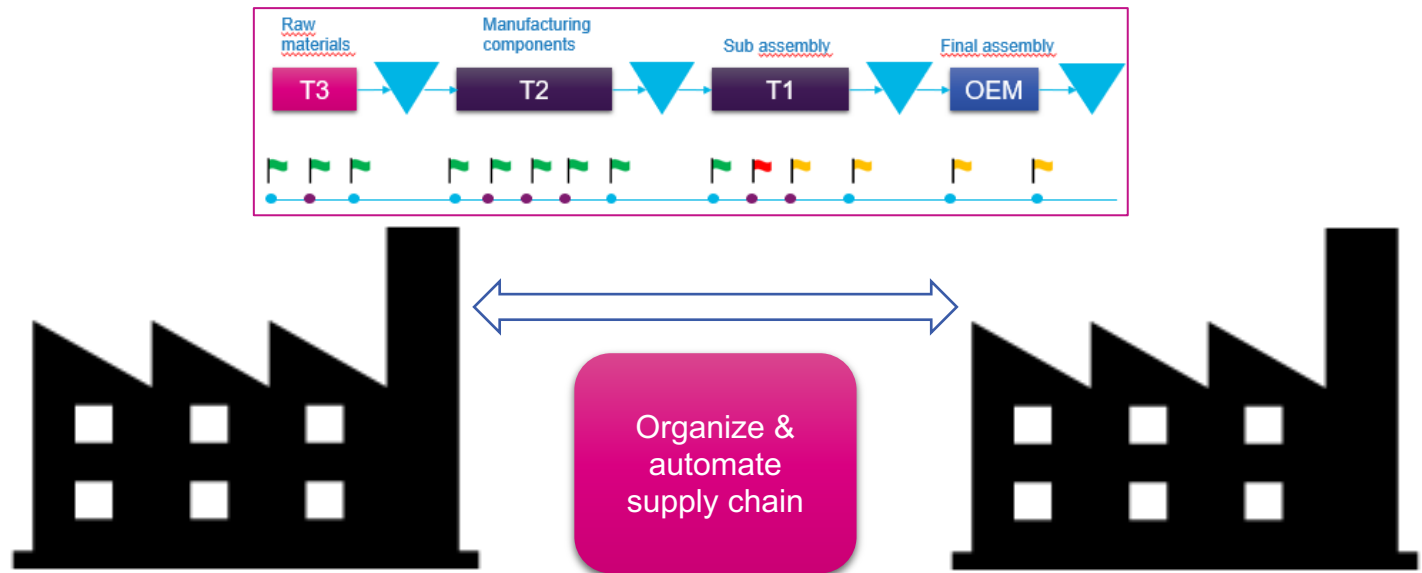


KMWE PARTICIPATION

SCSN FRAMEWORK



SCSN:

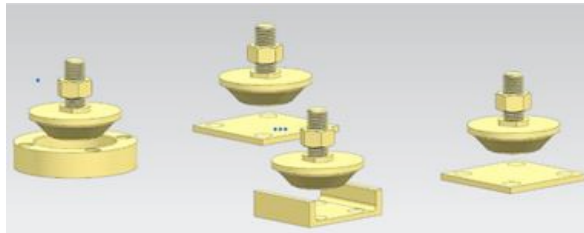


KMWE PARTICIPATION

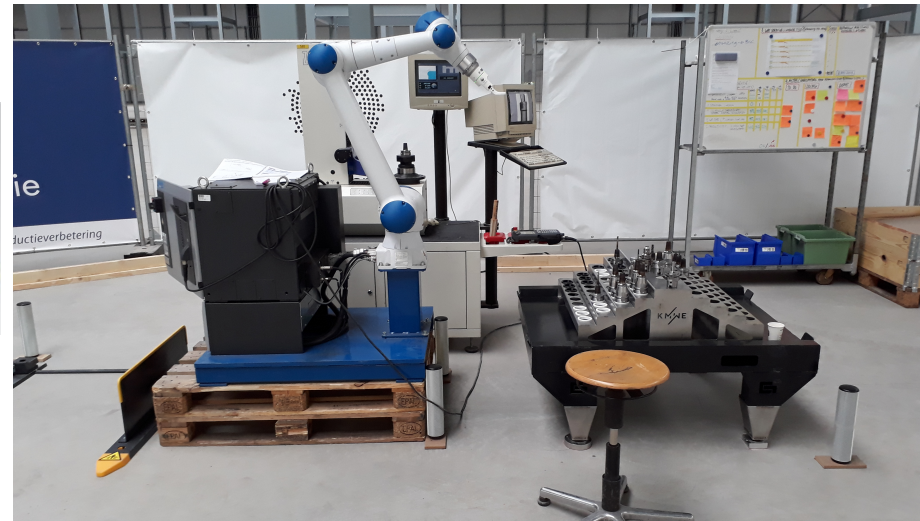
AGV + FIXED-ROBOT COLLABORATION



Concept:



AML:



BIC:



KMWE PARTICIPATION

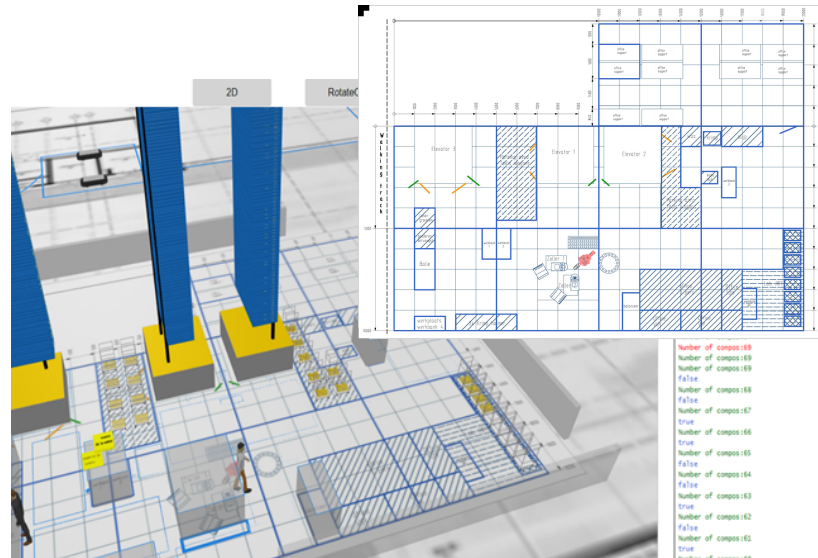
MANUFACTURING SYSTEM DESIGN (TSC)



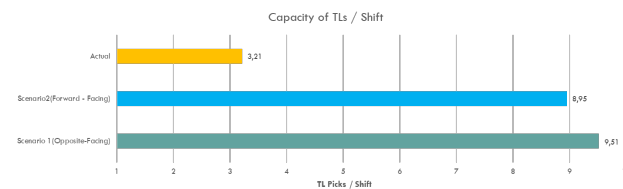
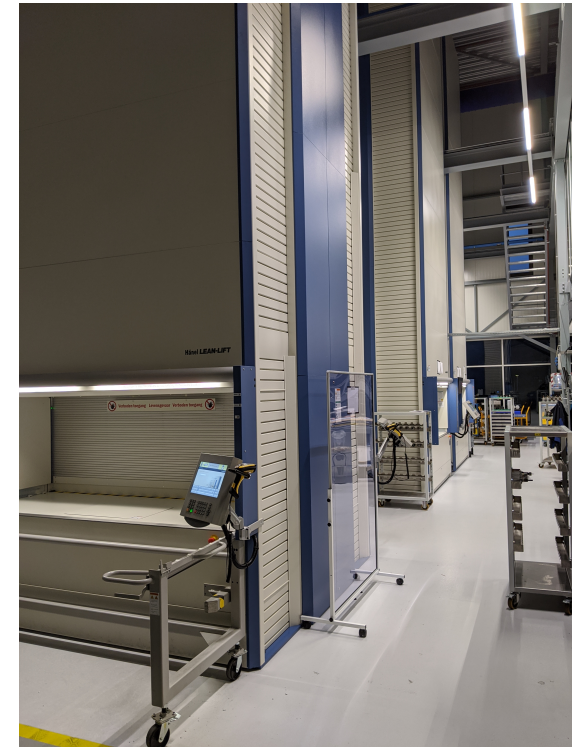
CROY 11:



Simulation (AML):



BIC:



KMWELEARNING GOALS

VALORISATION

Lessons learned | Advanced Manufacturing Logistics

<https://advancedmanufacturinglogistics.com/lessonslearned/>

25-11-2020





KMWE

MANUFACTURING THE FUTURE

BREAK OUT SESSIE

Smart Supply Network

What questions are on your mind to get to the desired logistics performance in your manufacturing environment?

Q & A - Poll

- AML, Erik Vermeulen
- SCSN, Rutger van der Male
- KMWE adoption, Koen Herps

BREAK OUT SESSIE

Smart Supply Network

Backup slides



SMART SUPPLY NETWORK – SMART FACTORY LOGISTICS



*Smart Supply
Network*

*Smart Factory
Logistics*

Goal

**Implement Digitization
and AI to
optimize factory
Operations**

How and focus technology areas

1

- **Develop advanced Planning & Scheduling to support Build to Order (self configuring production model)**

2

- **Accelerate Industrialization to assure first time right and shorten time to market**

3

- **Implement Mobile robots for factory logistics (materials, products, tooling)**

SMART SUPPLY NETWORK – SMART CONNECTED SUPPLIER NETWORK



*Smart Supply
Network*

*Smart Connected
Supplier Network*

Goal

Create an Agile, Global,
Secure and Connected
supply Network to
shorten time to market

How and focus technology areas

1

- Develop International Standards for supply network communication to optimize planning & scheduling (EU/global), compliant with latest cyber security protocols

2

- Apply Visualization and Simulation to optimize the Supply Network performance

3

- Develop & Implement Model Based Definition solutions / Product and Manufacturing Information (PMI) to optimize Machine, Factory & Network performance

FACTORY OF THE FUTURE – INNOVATION PROGRAM

