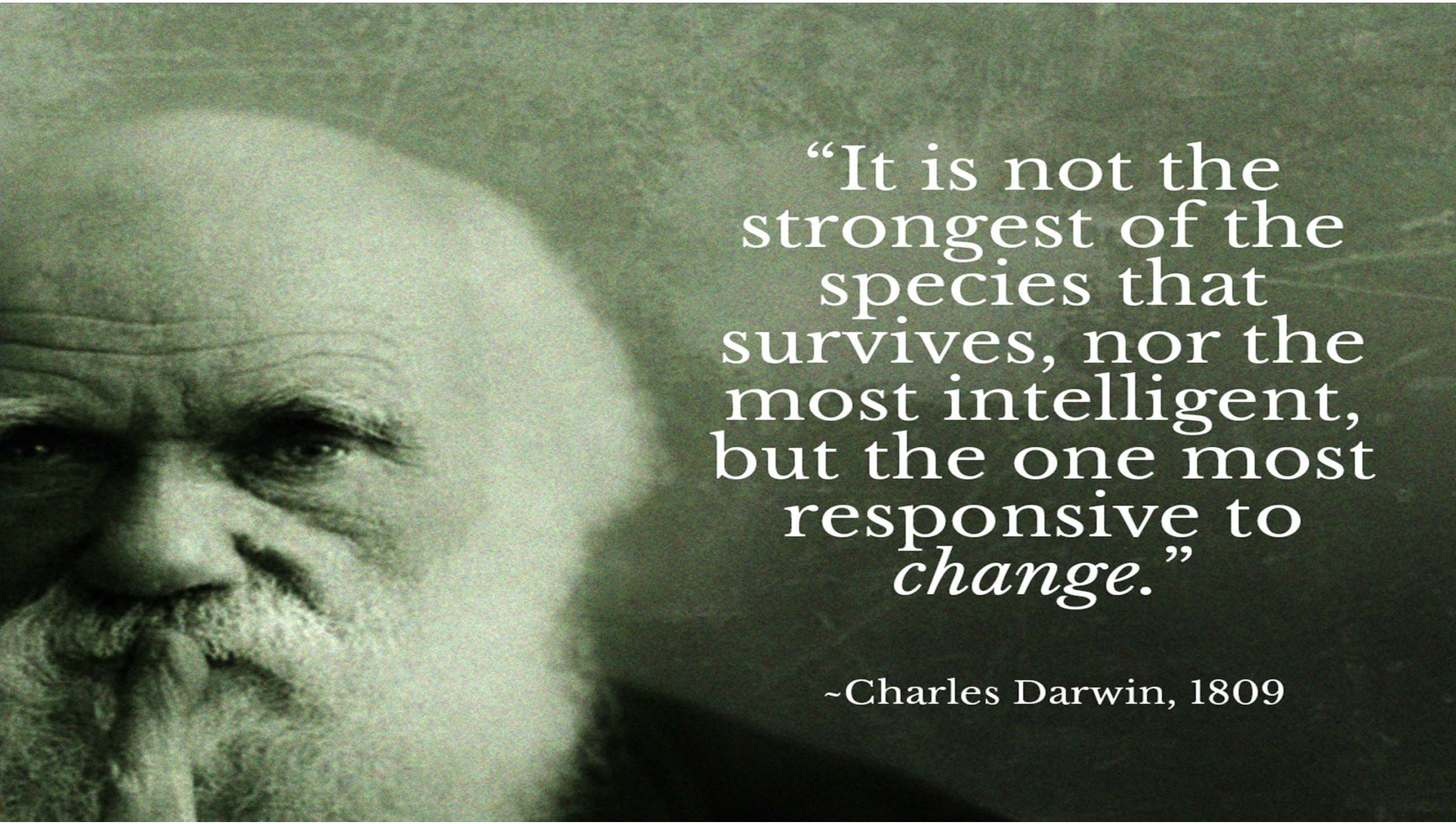
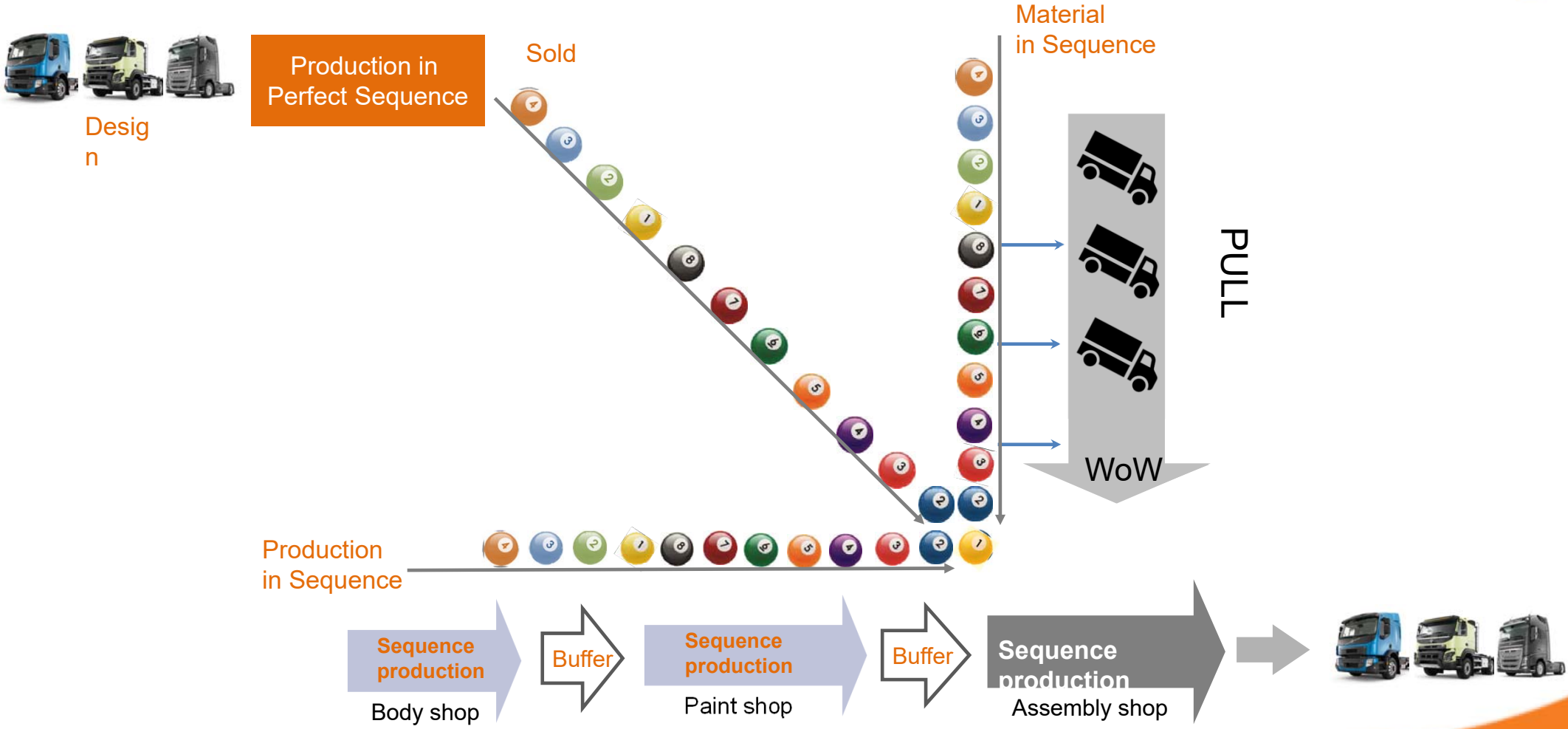
Prepare for change and agility


“It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to *change*.”
~Charles Darwin, 1809

Real Time

Perlekette concept: Single piece flow



MASTER DATA ENGINE

GENERIC BREAK-DOWN RULES

- **Product Design (Technical) Rules**
- **Sales (Commercial) Rules**
- **Value Chain Engineering (Comm/Techn) Rules**
- **Manufacturing Engineering Technical Rules**
- **Service/AfterSales (Comm/Techn) Rules**

SINGLE PIECE FLOW

Sales Fulfilment → *Design Product* → *Sell Product* → *Create Value Chain Instance* / *Create Production Order (FOC)* → *Plan Exectue Control* → *Deliver Product* → *Maintain Product* → *Product Life Cycle Management*

INSTALL BASE INSTANCE

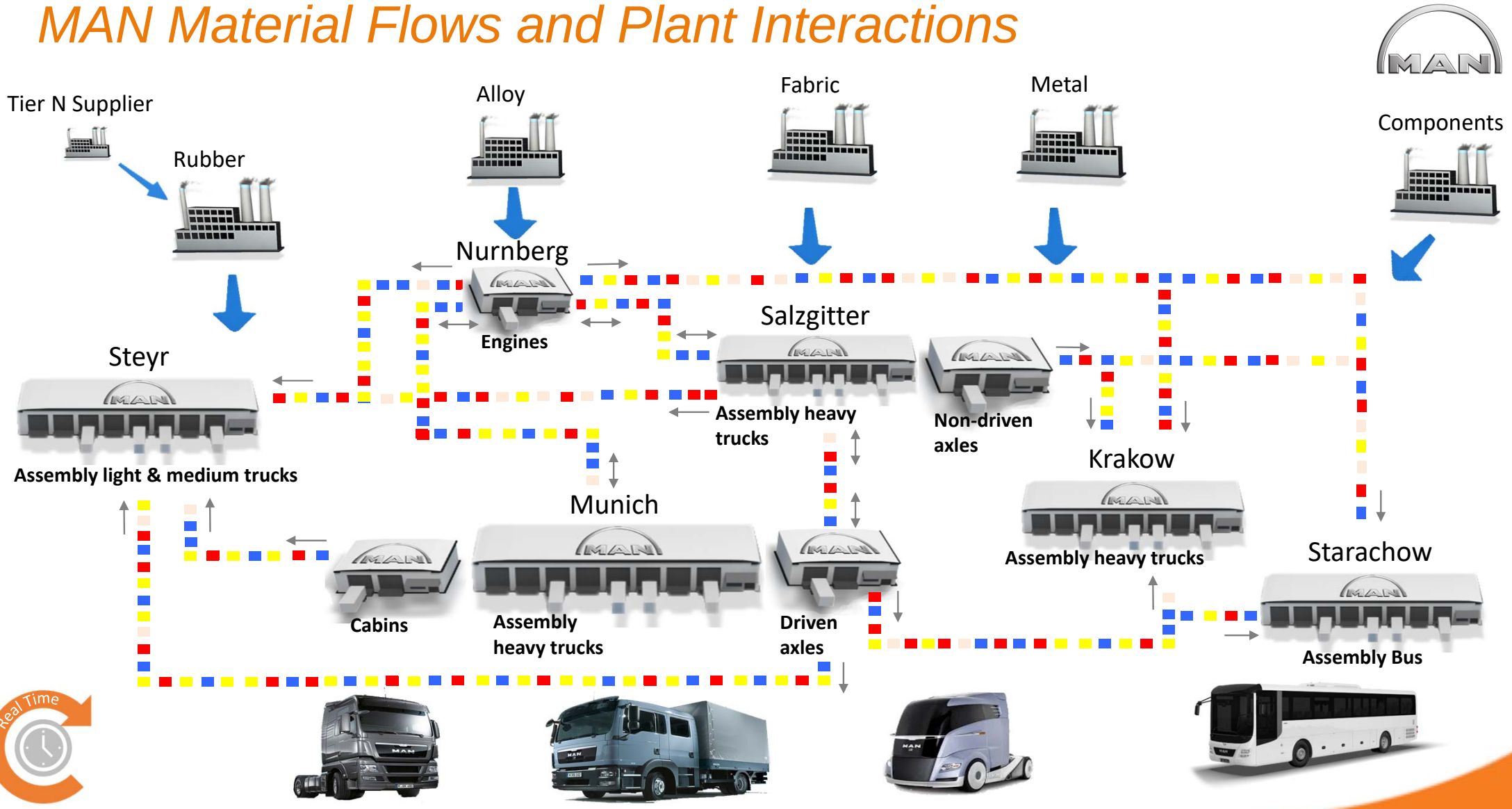
- As Designed
- As Configured
- As Contracted
- As Planned
- As Built
- As Delivered
- As Serviced

Real Time

Capable-to-Promise (CTP)

Offer

MAN Material Flows and Plant Interactions



Perlekette logistical synchronization by Real Time Management

BIM

Production in Perfect Sequence

Sold

Material in Sequence

PULL

Equipment in Sequence

Resources in Sequence

WoW

Production in Sequence

Sequence production

Buffer

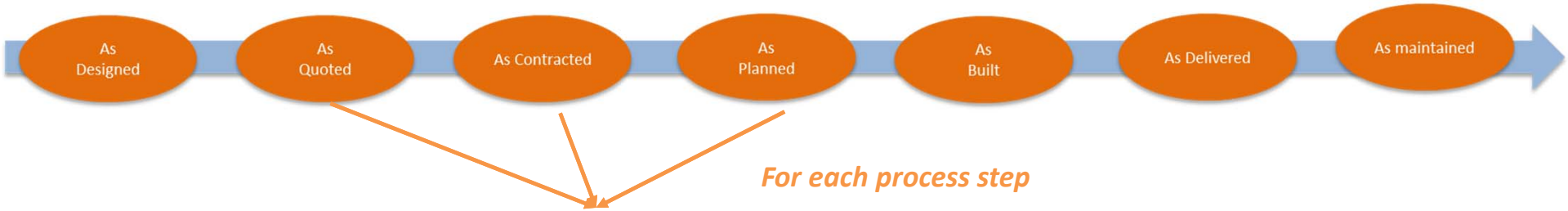
Sequence production

Buffer

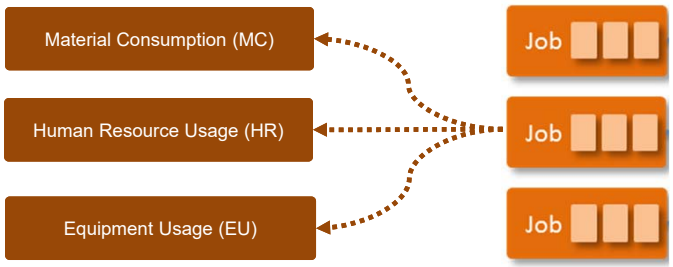
Assembly

Perlekette - Theory of Constraints

1. Creating Flow

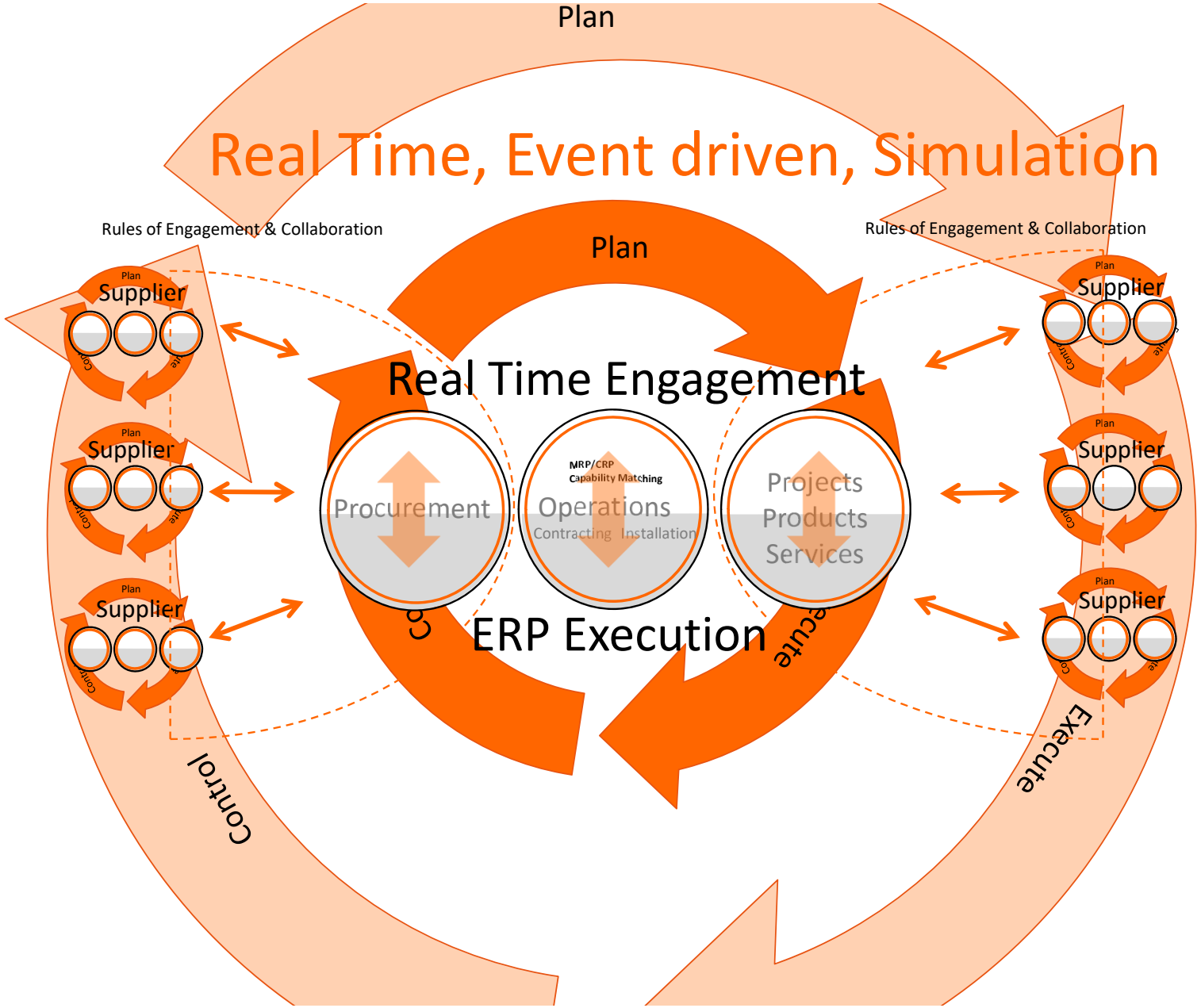


For each process step



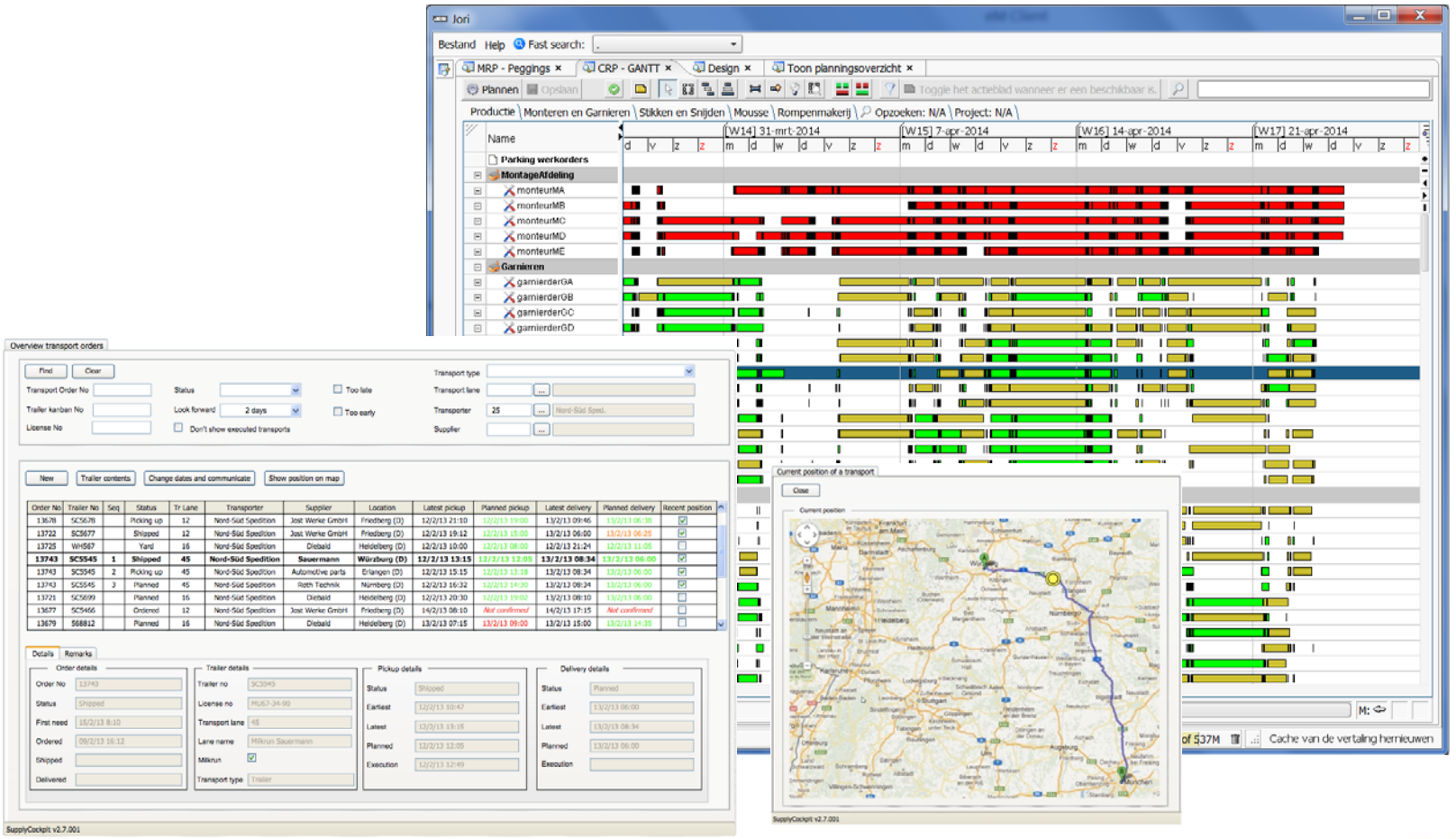
2. Using Finite Capacities

3. (re) Planning & Scheduling Real Time


Plan
Real Time, Event driven, Simulation
Rules of Engagement & Collaboration
Plan
Rules of Engagement & Collaboration
Plan
Supplier
Plan
Supplier
Plan
Supplier
Real Time Engagement
Procurement
MRP/CRP
Capability Matching
Operations
Contracting Installation
Projects
Products
Services
ERP Execution
Plan
Supplier
Plan
Supplier
Plan
Supplier
Control
Execute

Proactive planning and simulation

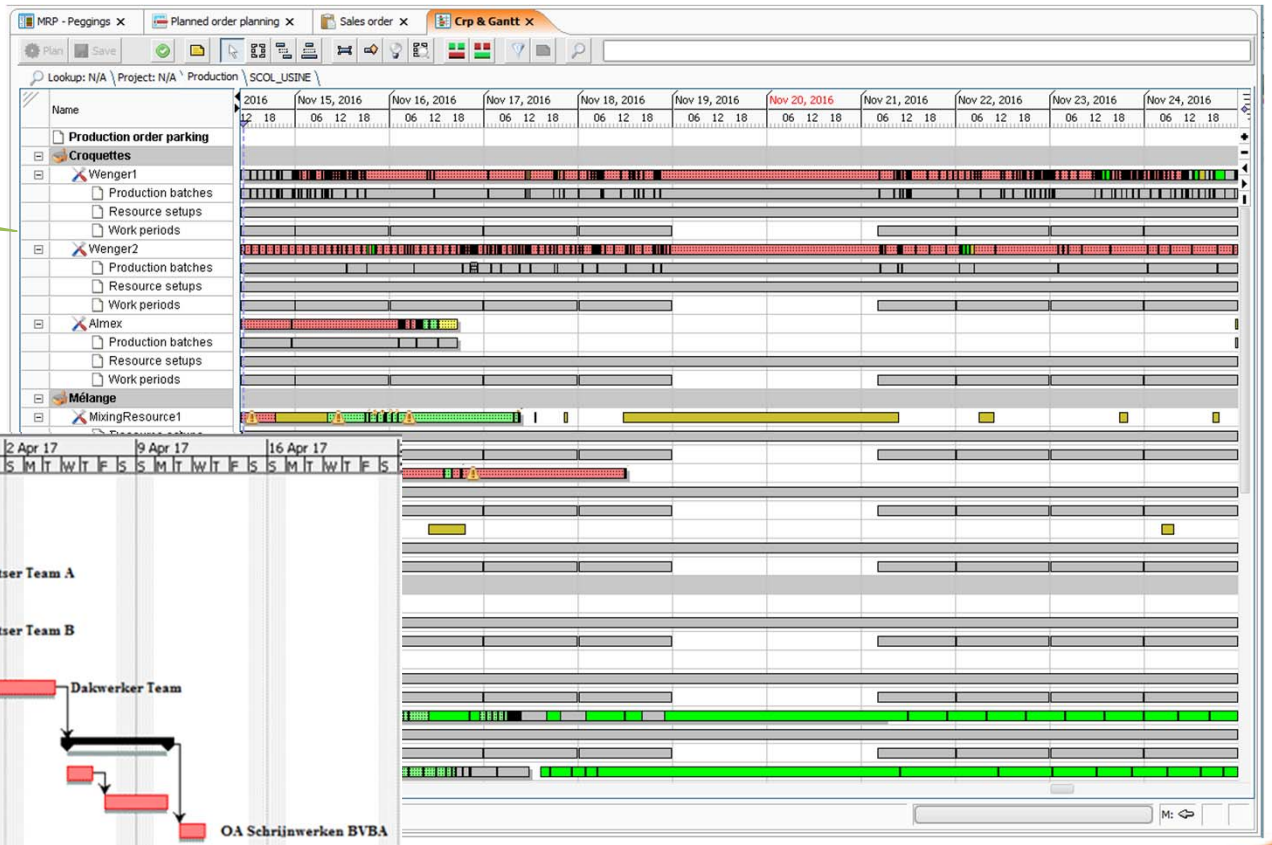
… Flexible process modeling to support business decisions and ***Real Time*** *situation-based information*



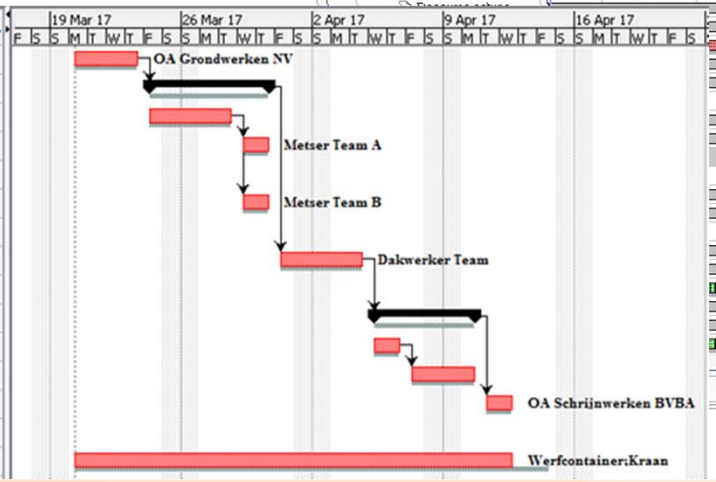
Real Time Capacities Planning (CRP)

*The **Real Time** capacities of resources (materials, people, equipment) must be taken into account at the capacities planning. Always finite capacities*

De capacities planning (CRP) of the various resources can be analysed and followed up by a GANTT chart or Project Follow Up

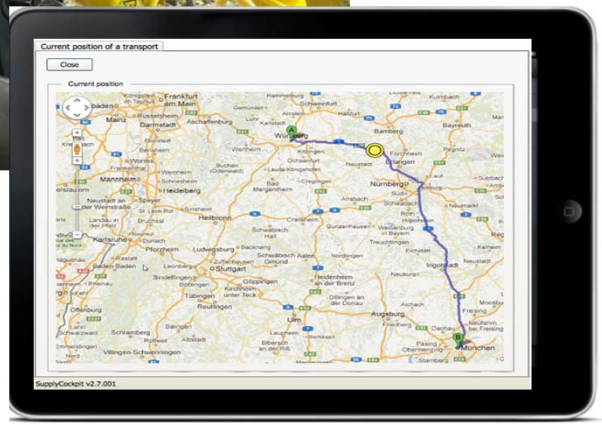


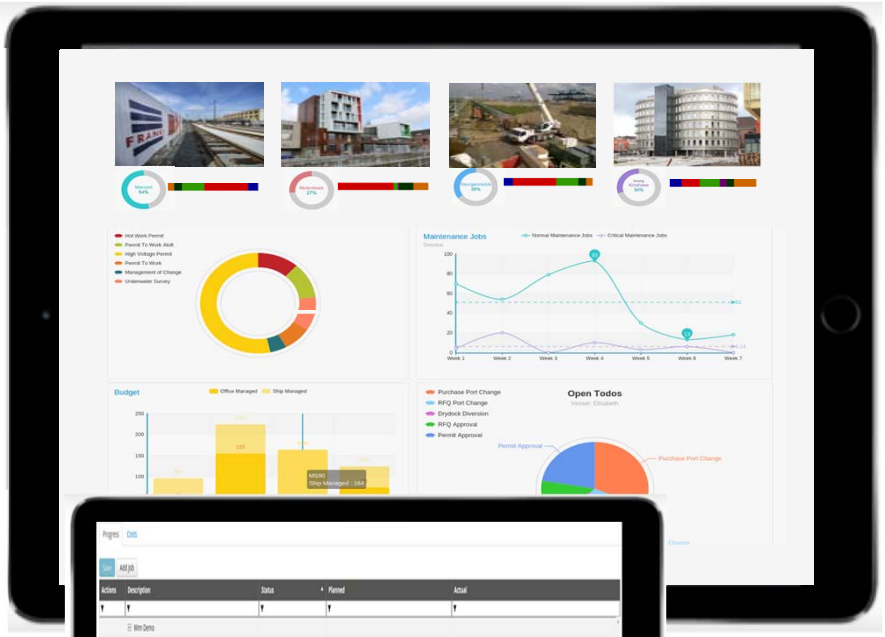
Name	Duration	Start	Finish	Pred...
Grondwerken	4 days	3/20/17 8:00 AM	3/23/17 5:00 PM	
Ruwbouwwerken	5 days	**3/24/17 8:00 AM**	**3/30/17 5:00 PM**	1
Onder de grond	3 days	3/24/17 8:00 AM	3/28/17 5:00 PM	
South Wall	2 days	3/29/17 8:00 AM	3/30/17 5:00 PM	3
North Wall	2 days	3/29/17 8:00 AM	3/30/17 5:00 PM	3
Dakwerken plat dak	3 days	3/31/17 8:00 AM	4/4/17 5:00 PM	2
Voorbereiding na ruwbouw	4 days	**4/5/17 8:00 AM**	**4/10/17 5:00 PM**	6
Afvoerleidingen	2 days	4/5/17 8:00 AM	4/6/17 5:00 PM	
Electriciteit	2 days	4/7/17 8:00 AM	4/10/17 5:00 PM	8
Buitenschrijnwerken	2 days	4/11/17 8:00 AM	4/12/17 5:00 PM	7
Werfmateriaal	18 days	3/20/17 8:00 AM	4/12/17 5:00 PM	

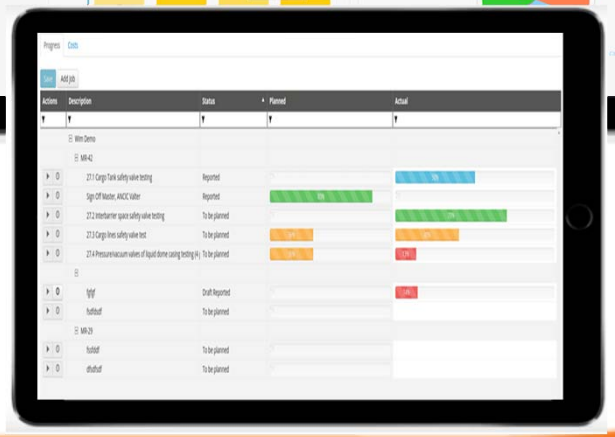


Mobile Work Instructions – Real Time Dashboards – Andon Screens

- *Functional location → How it should be and look like → Real condition*
- *Follow up of activities*







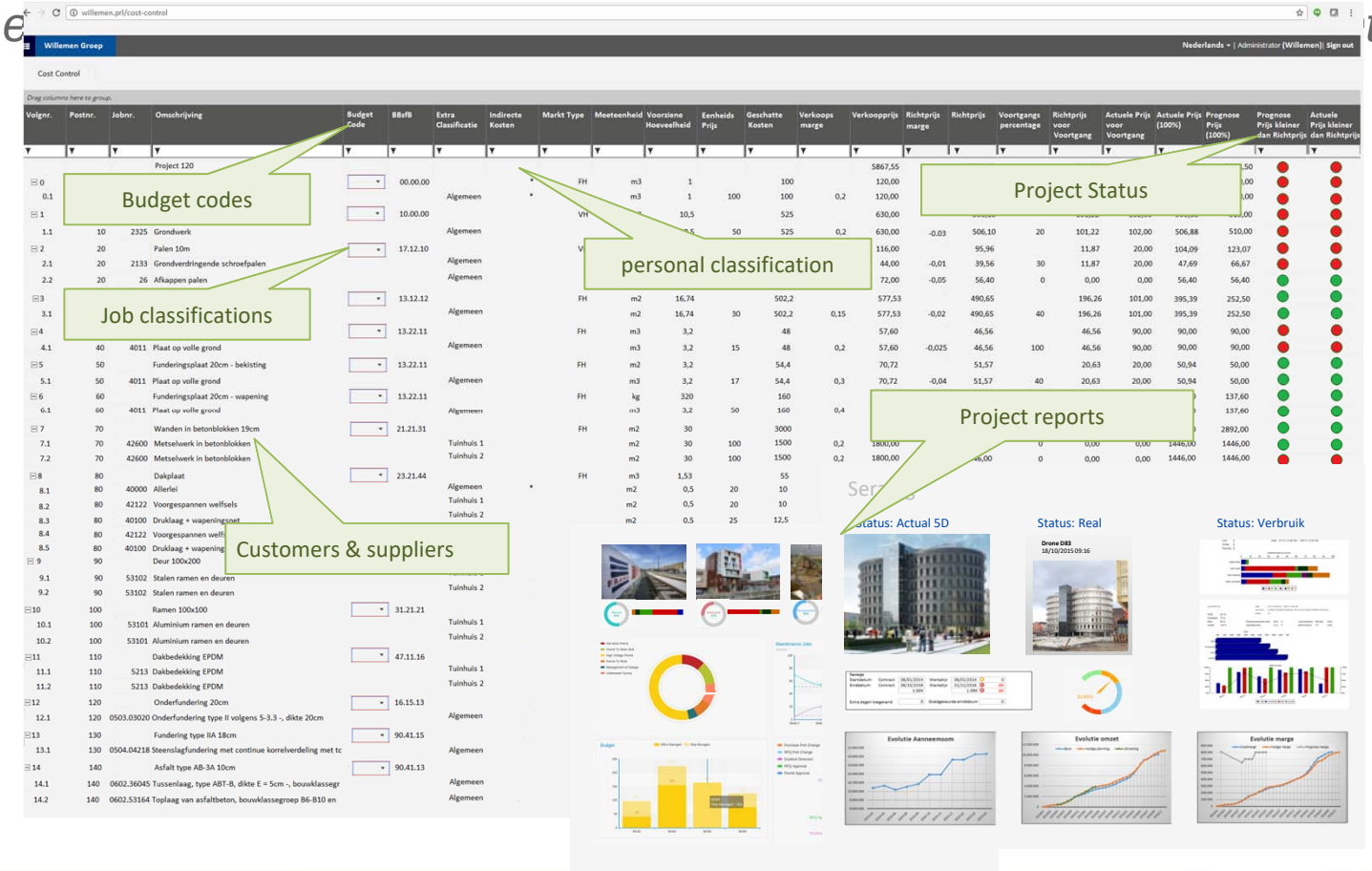
GIS Model in PearlChain

*The GIS will fully be integrated within the PearlChain Platform. It offers a total and **Real Time** overview of the complete Installed Base, a reference mapping from which you can work*

Execution & Cost Control

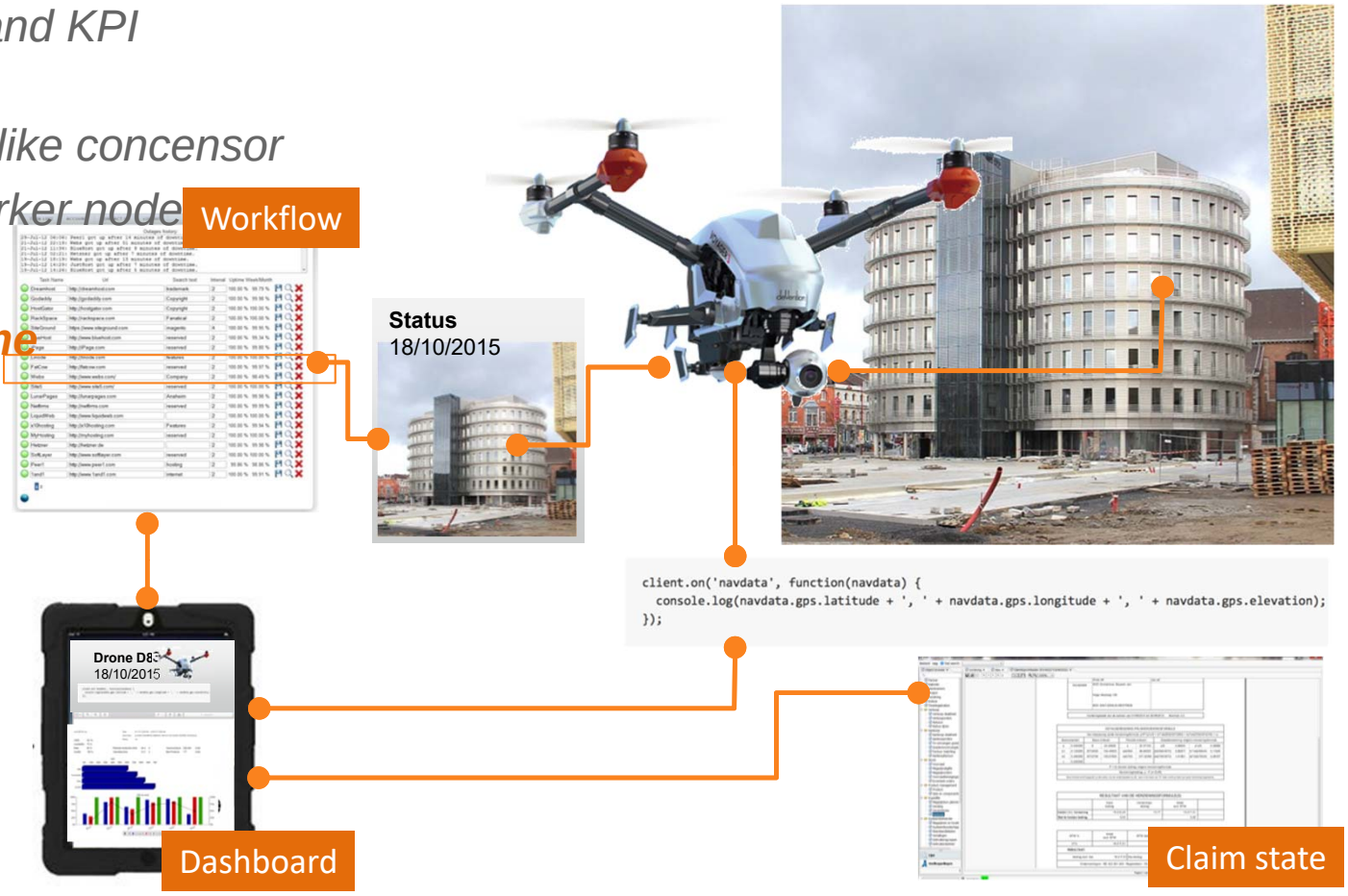
*During implementation, the various posts and jobs will be closely and **Real Time** monitored;*

status of the e *tc.*



Drones: 5D Control

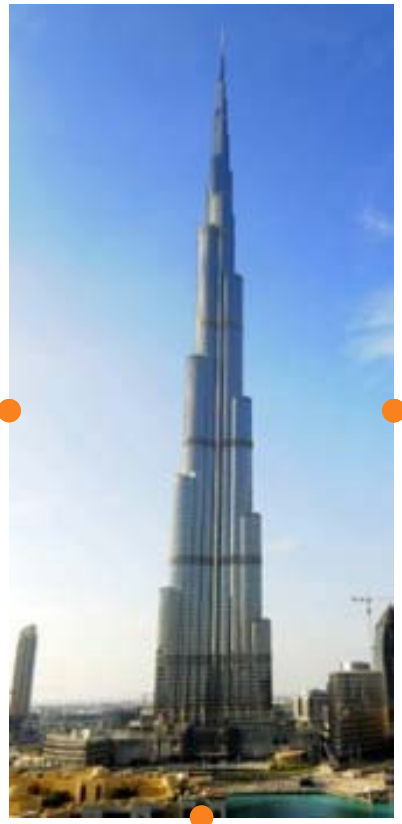
- *Mobile work instructions and KPI dashboarding*
- *IoT with various sensors, like concensor*
- *Drones with GPS and marker node*
- *Augmented Reality*
- ***Management in Real Time***



Smart use of robots

- *Perfect treatment of repetitive tasks*
- *For simple and complex jobs*
- ***Management in Real Time***

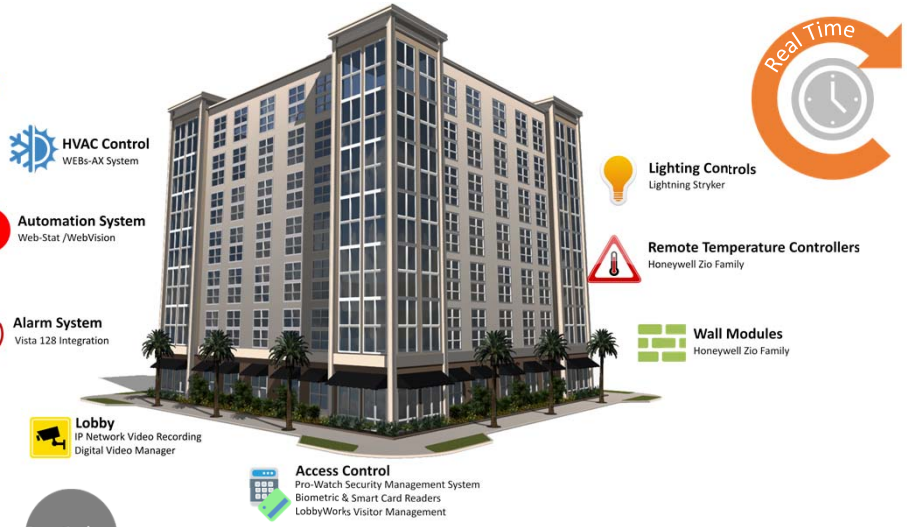
On the yard

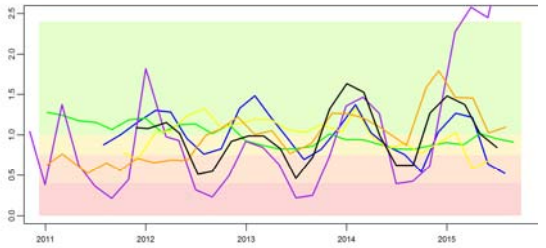


Prefab

Integration with IoT: Smart Building

Sensors in the building infrastructure capture ***Real Time*** *data on the quality, condition and many other data that apply to this infrastructure and influence it, in order to facilitate preventive inspection / maintenance and to minimize the need for curative procedures.*





Questions?