



13th Annual

EMS Summit

European Manufacturing
Strategies

Factory 4.0 approach @ tk Norte

November 2017 | Jesús Fernandez, PhD

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Our understanding of “SMART factory”



Smart PROCESS

MANUFACTURING

- Rapid prototyping / tooling
- Digital mock-up
 - Layouts with DELMIA QUEST
 - Assembly patterns
- 3D Laser Allignment

INFORMATION FLOW

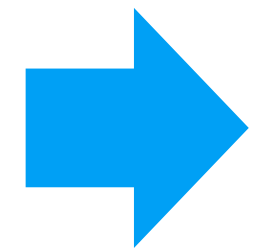
- WIP monitoring
- Material lagging in assembly lines
- Quality issues recording
- Machinery breakdown assistance
- RFID 4 Logistics

Smart PRODUCT

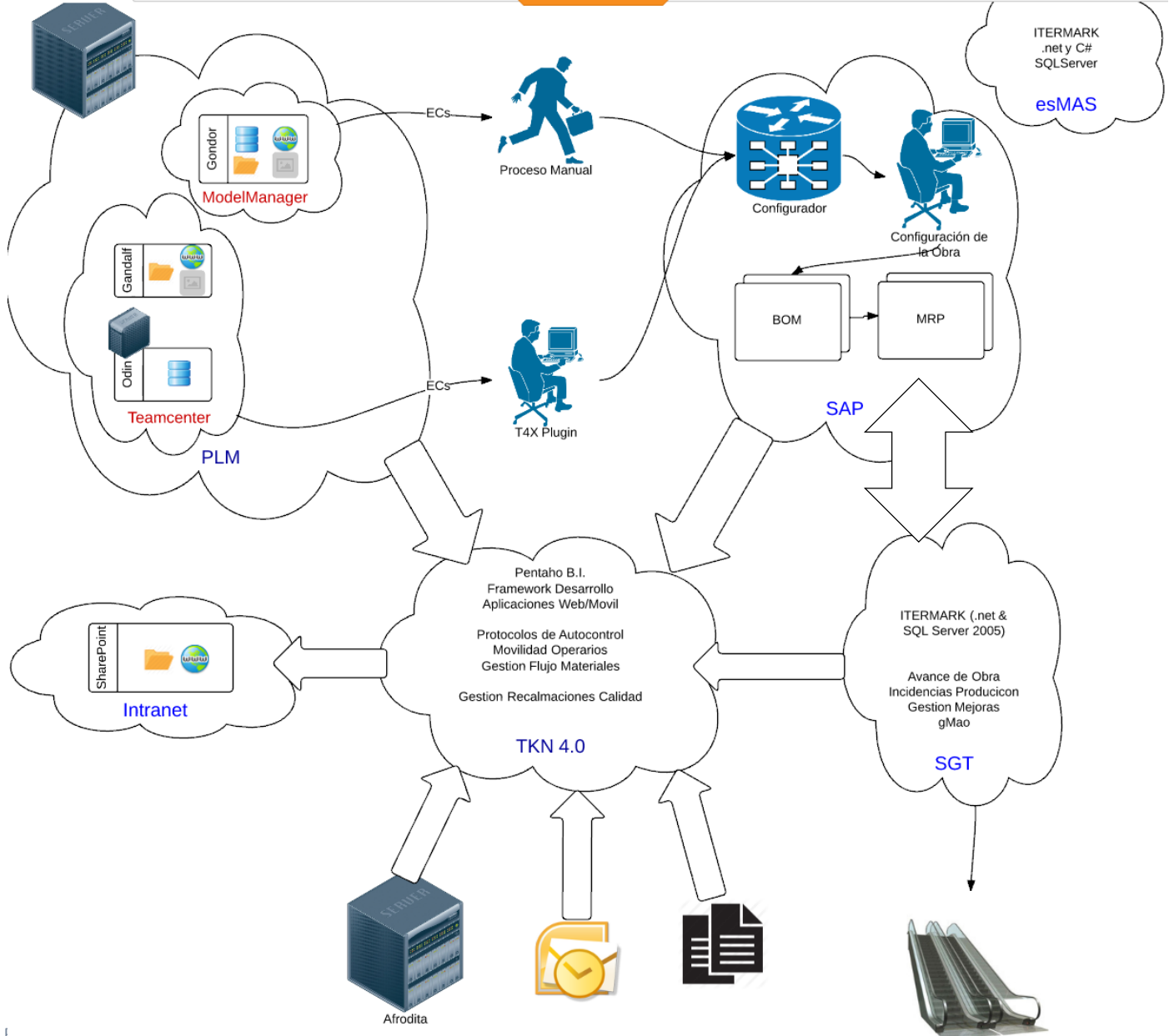
- tk VIEW
- Big Machine
- Elevators: Hololenses & MAX



Digital Process: Manufacturing with digital mock-ups



Digital process: Information flow – the starting point





ALREADY DONE

Business processes already implemented

In order to ease information recording and data collection, we also improved and upgraded **SGT Terminals** as a part of the project

Production Incident Management



tkN 4.0 – Working

Information analytics and intelligence: Pentaho B.I.



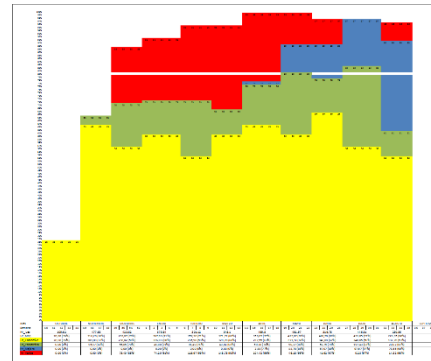
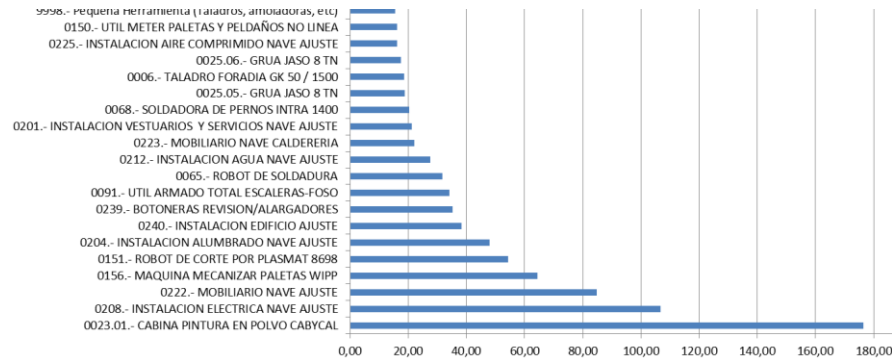
ALREADY DONE



WORKING



“Open Source” solution for online dashboard and K.P.I.





WORKING



SHORT TERM



Business processes to be implemented short term

Implementation and connection of some "quick win" processes currently "paper supported".
There are still lots of unconnected processes, so we should have a long term vision (e.g. Quality Management, Planning).

Material flow tracking



tkN 4.0 – Mid/Long Term Vision: Development Framework



01

To avoid "black boxes" whenever we need to implement a new process. IT solution uniformity.

02

Freedom to choose the best technological partner depending on project requirements.

03

Full solution ownership, so we can manage evolution and improvement.

Definition:
Scheme and pattern for application development and deployment.





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Thanks for your attention.

