

*“It is difficult to say what is impossible, for the dream of yesterday is the hope of today, and the reality of tomorrow.”*

*Robert H. Goddard*

# Supply Chain on parts for Industry 4.0

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13th of March 2019

# Agenda

- Challenges – not limited to Space
- Challenges in Space Supply Chain for Industry 4.0
- Challenges in the Electronics Market

# Challenges – not limited to Space

New Space

Constellations

Digital world

Environmental Requirements

Cost pressure

Speed

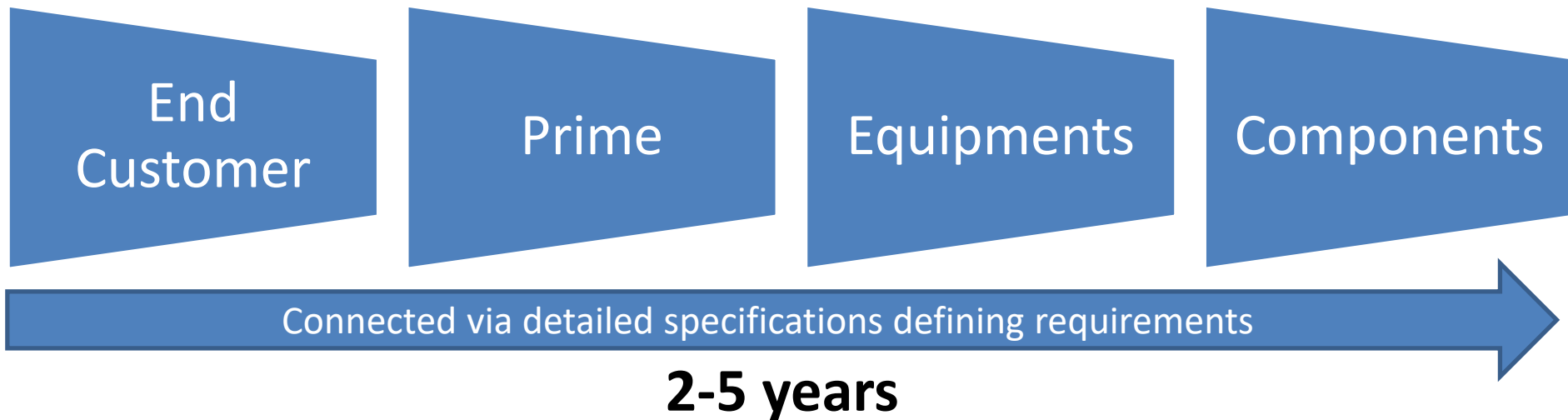
New Technologies

Electronics everywhere

New ways of working

New Players

# Traditional Space Supply Chain



Single supply chain for each project: works and worked well in the past due to limited sets of requirements and clear separation from the Space Industry to other industries !

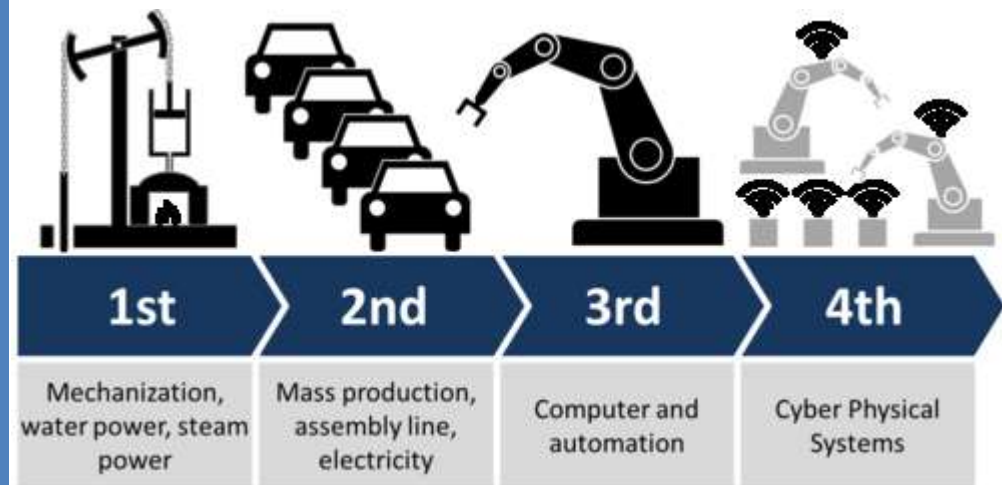
Negatives: manual processes, low speed, high cost, low flexibility, Niche Supply Base for Space,...

# Industry 4.0

## *Deloitte, 2015*

- **Digital Transformation**
  - Vertical Networking
  - Horizontal Integration
  - Through-Engineering
  - Acceleration Through Exponential Technologies
- **Disruptive Transformation**
  - Artificial Intelligence
  - Advanced Robotics
  - Collaborative Connected Platforms
  - Networks
  - Advanced Manufacturing

## Industrial Revolutions



Ref. Wikipedia

# Future Space Supply Chain in Industry 4.0

Challenging targets :

drastically  
 cost & c  
 schedules,  
 of working,  
 & Quality  
 vary  
 Environ  
 requirements changed

Traditional Space,  
 New Space, New  
 ways of working,

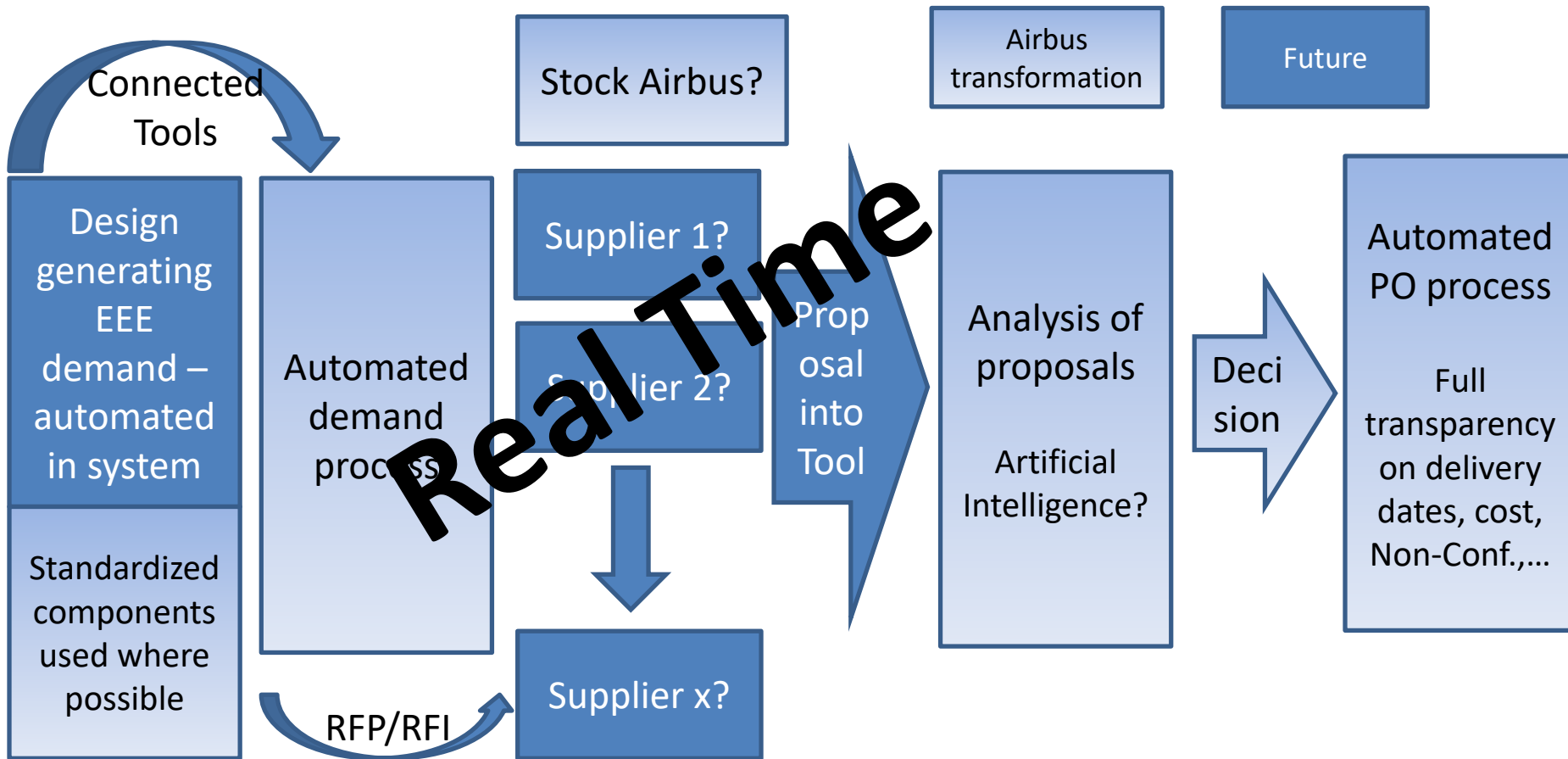
**Connected Digital Supply Chain –  
 Transparent and predictive  
 production/supply flow!**



supply  
 nability,  
 g, higher  
 integration, link to  
 industrial  
 production lines,  
 high variety in  
 requirements,...



# EEE 4.0 – toward full digitalization



# Challenges in the electronics market





# Some facts and thoughts about the electronics market



## Market Situation Electronic Components

Growth Rate Electronic Components



Ref: Study Airbus/Prime Research international: Electronic Components Supply Chain Shortage – A Risk Analysis

Electronic market:  
high growth rates 2018 (trend for 2019/2020 even higher)  
– dominated by US and China

20% undercapacity in production seen in the overall component market !

## Aerospace & Defence

Within the global aerospace and defence sector, "electronic components are projected to witness the **highest growth**" of all hardware components through 2023. North America will remain the market leader in terms of component demand,

## Commercial Aircraft

Analysis by [Deloitte](#) projected global revenue for commercial aircraft to grow by 4.8% in 2018 year-on-year, driven primarily by demand for narrow-body commercial aircraft intended to meet increasing travel demand.

**Electric propulsion** and associated trends such as autonomous flight and urban air mobility are widely seen as the "third revolution in aerospace", with an ongoing industry-wide shift towards electrically-powered aircraft. Over 100 electrically-powered

## Automotive

The automotive sector is seeing an uptick in demand, spurred on by the economic recovery and centered around the United States and, especially, China. Rising demand for automobiles is complicated by a shift in demand for type of vehicle. Demand for electric and internet-connected vehicles is on the rise across the board, with Germany expected to build as many electric vehicles in 2021 (1.3 million) as existed in total globally in 2016.

increasing shares of the market. **Electric vehicles and smart (autonomous and otherwise) vehicles require significantly more electric components and demand on all types is accelerating.** The relative stability of the sector as well as accurate available forecasts make the automotive industry a high priority for electronic component suppliers.

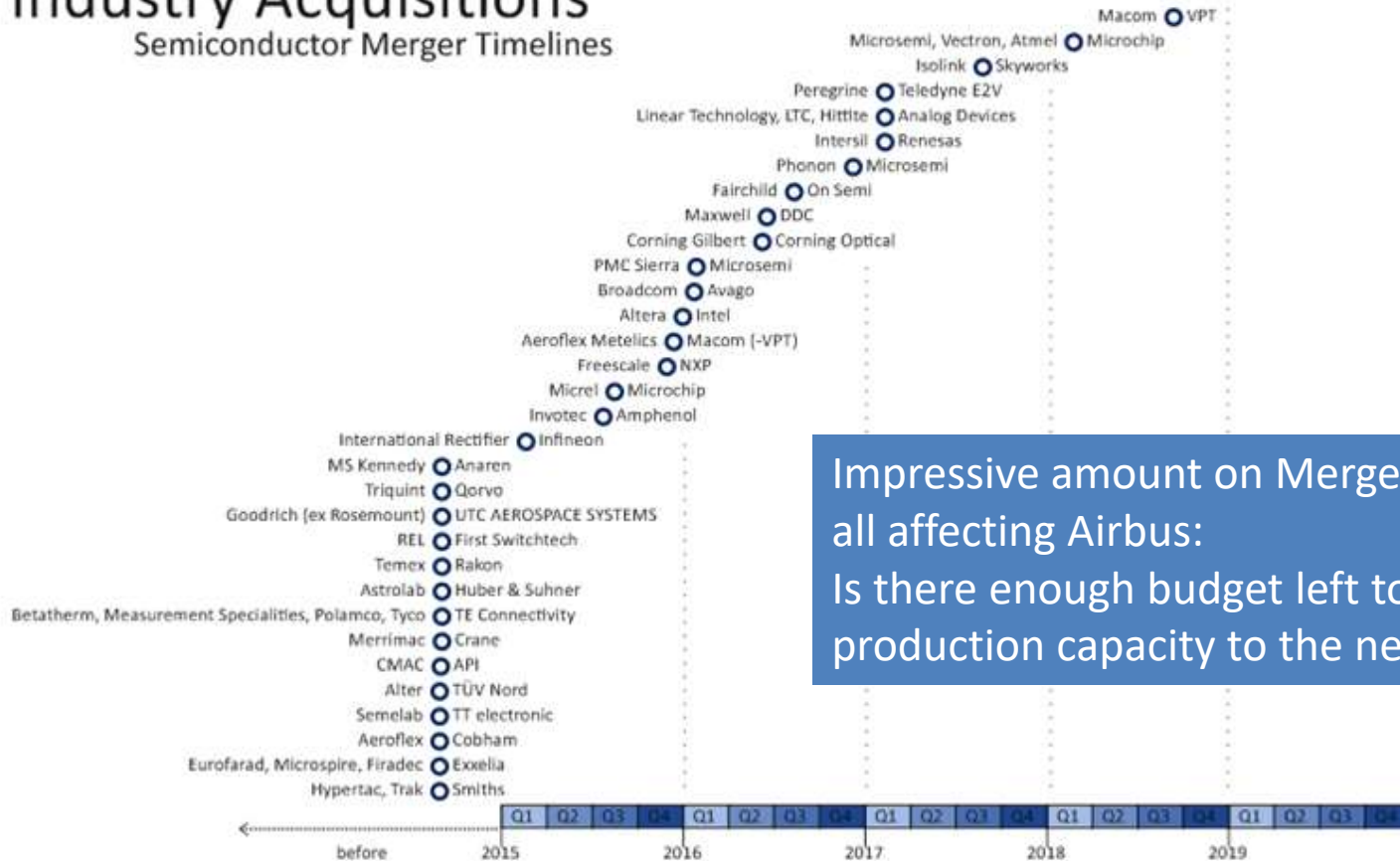
Ref: Study Airbus/Prime Research international: Electronic Components Supply Chain Shortage – A Risk Analysis



## Market Situation Electronic Components

# Industry Acquisitions

### Semiconductor Merger Timelines



Impressive amount on Mergers & Acquisitions - all affecting Airbus:  
Is there enough budget left to increase the production capacity to the needed level?







Let's share thoughts and collaborate to  
ensure EEE availability for Space

Airbus Task Force EEE  
[taskforce\\_eee@airbus.com](mailto:taskforce_eee@airbus.com)



## Collaboration with/within Airbus Group

Airbus Task Force EEE is interested to collaborate with you on the following topics:

- Create awareness on the EEE market situation
- To avoid any impact on the products provided to Airbus or built in Airbus
- To help in cases of immediate shortages risking the OQOTOC delivery to Airbus
- Short-/Mid-/Longterm mitigation plans in case of issues!



## Task Force / Work Force

Due to the critical market situation in electronics Airbus has established a Task Force EEE to secure the delivery of all electronic equipment used in Airbus applications

Common initiative lead by the Airbus Procurement Synergy Group Electronics – closely alignment across Airbus Group



## Integration one voice to Supply base

This initiative shall create awareness to a critical situation in the Electronic market. We encourage the whole Airbus Supply Chain to collaborate with us in an open and transparent way to secure OQOTOC delivery of our suppliers to us and to enable Airbus to stick to our delivery commitments !



## Methods / Processes - way of working

For further information or urgencies please feel free to contact your business partner at Airbus or directly the Task Force project team:

Generic Email address  
[taskforce\\_eee@airbus.com](mailto:taskforce_eee@airbus.com)



Thank you!