

# AKKA

PASSION FOR  
TECHNOLOGIES

# AKKA TECHNOLOGIES

Dicembre 2021



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**ABOUT US**

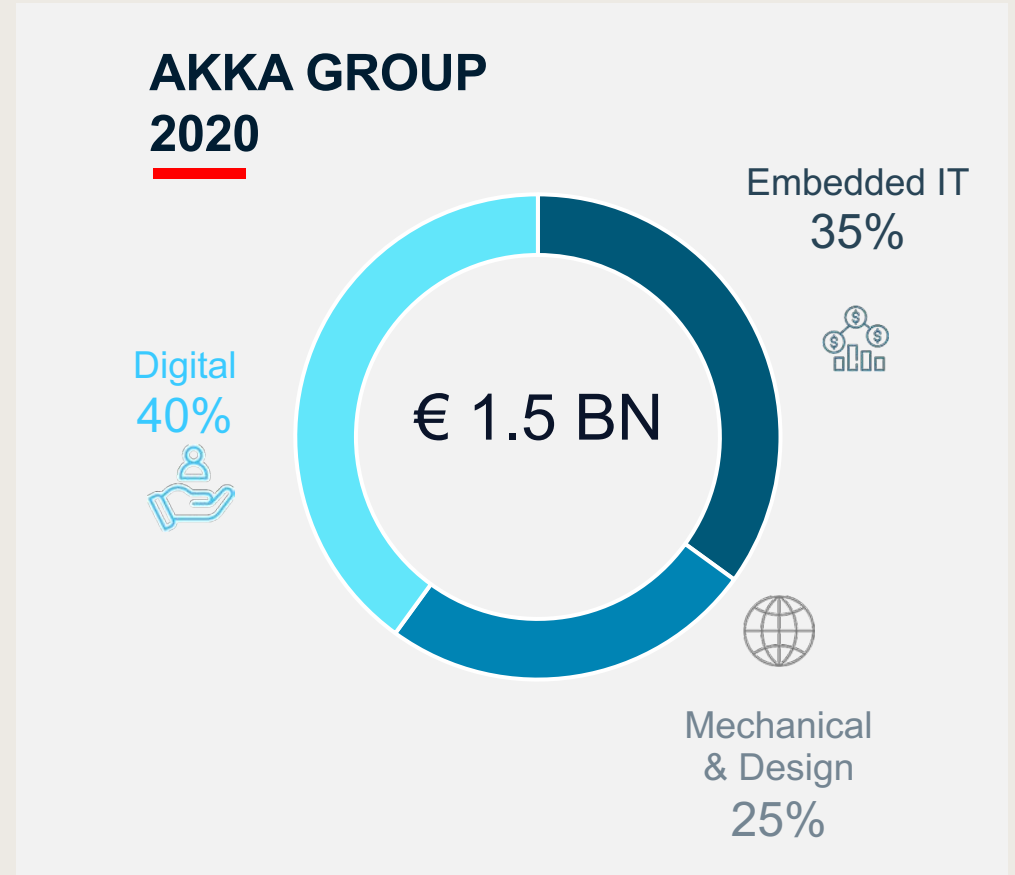
# GLOBAL PLAYER – CLOSE TO THE CUSTOMERS



AUSTRIA | BELGIUM | CANADA | CHINA | CZECH REPUBLIC | DENMARK | FRANCE | FRENCH POLYNESIA | GERMANY | INDIA | ITALY | JAPAN  
| LUXEMBOURG | MOROCCO | NETHERLANDS | NORWAY | QATAR | ROMANIA | RUSSIA | SINGAPORE | SLOVAKIA | SPAIN | SWEDEN |  
SWITZERLAND | TAIWAN | TURKEY | UNITED ARAB EMIRATES | UNITED KINGDOM | UNITED STATES

<sup>1</sup> End of December 2020

# POSITIONED FOR A MORE DATA DRIVEN WORLD



# 2

## A MULTI-SECTOR DIGITAL & ENGINEERING LEADER

# STRATEGIC CORPORATE DEVELOPMENT

## MAIN ACQUISITIONS

### Data Respons

IoT and smarter embedded solutions specialist, SW and HW development, R&D engineering services (1400 specialists)

### PDS Tech

Engineering and Technology Services (2600 Consultants)

### GIGATRONIK

IoT Specialist  
HW & SW development  
(1000 Consultants)

### MBTECH

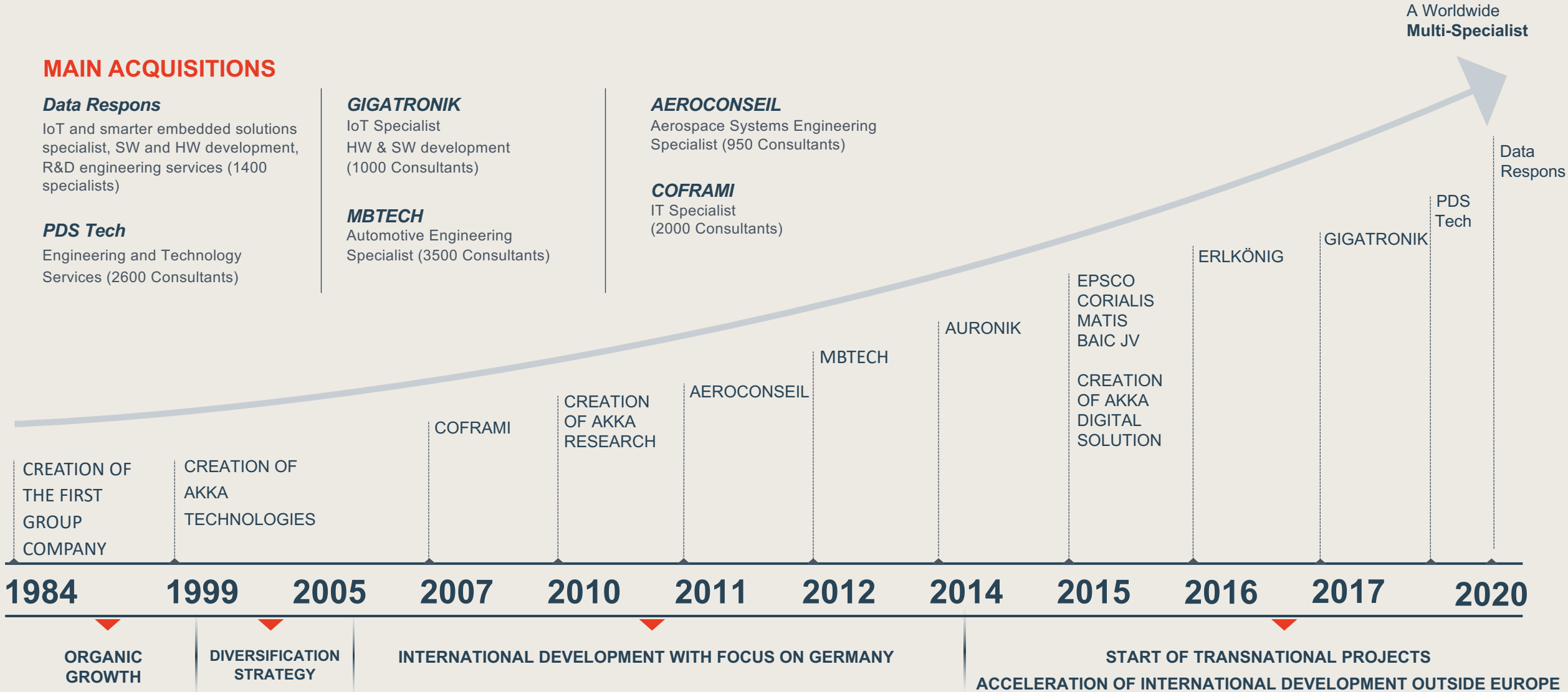
Automotive Engineering Specialist (3500 Consultants)

### AEROCONSEIL

Aerospace Systems Engineering Specialist (950 Consultants)

### COFRAMI

IT Specialist (2000 Consultants)



# A COMBINED EXPERTISE IN DIGITAL & ENGINEERING



# A CROSS-SECTORAL APPROACH TO ACCELERATE INNOVATION

## AUTOMOTIVE

Daimler, Renault, Volkswagen, BMW, Stellantis, Volvo Trucks, Jaguar, Valeo, Faurecia, Continental, Bosch, TRW, Porsche, Aston Martin



## AEROSPACE

Airbus, Boeing, ATR, Bombardier, Safran, Thales, Air France



## RAILWAY

Alstom, Ansaldo, SNCF, RATP, Deutsche Bahn

## DUAL EXPERTISE IN DIGITAL & ENGINEERING SERVICES

## LIFE SCIENCES

GSK, Sanofi, Novartis, CARMAT, Eli Lilly, Johnson & Johnson, Roche, Pfizer



## ENERGY

Areva, General Electric, EDF, Engie, Total, Schneider, Siemens, Air Liquide



## DEFENCE

Airbus Defence & Space, Airbus Helicopter, Thales, Dassault Aviation, Nexter, HONEYWELL



## TELECOM, IT & SERVICES

Orange, Rhône Telecom, Casino, Amadeus, French Government, Crédit Agricole, Société Générale, Ericsson

# KEY FIGURES IN ITALY



**60.5 M €**

2020 AKKA Italia revenue



**+ 900**

skilled and dedicated  
employees



**13**

Locations

Torino, Milano, Vicenza, Udine,  
Bologna, Pisa, Poggibonsi, Roma,  
Pomezia, Modena, Parma, Napoli,  
Bari

# CAREER PATH AKKA ITALIA





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# DELIVERY MANAGEMENT UNIT



# AGENDA

## 1 | Delivery Management Unit

- [Introduction](#)
- [Organization Chart](#)
- [Key People](#)
- [Customers/Collaborations](#)
- [Delivery key points](#)
- [Project Management Office](#)

## 2 | Delivery units:

- [Style Design](#)
- [Mechanical](#)
- [Value Analysis and Value Engineering](#)
- [Functional Safety e RAMS](#)
- [System Modelling](#)
- [System Engineering](#)
- [Hardware & Firmware](#)
- [FPGA](#)
- [Embedded and Application Software](#)
- [Industrial Automation](#)
- [V&V](#)

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# DELIVERY MANAGEMENT UNIT

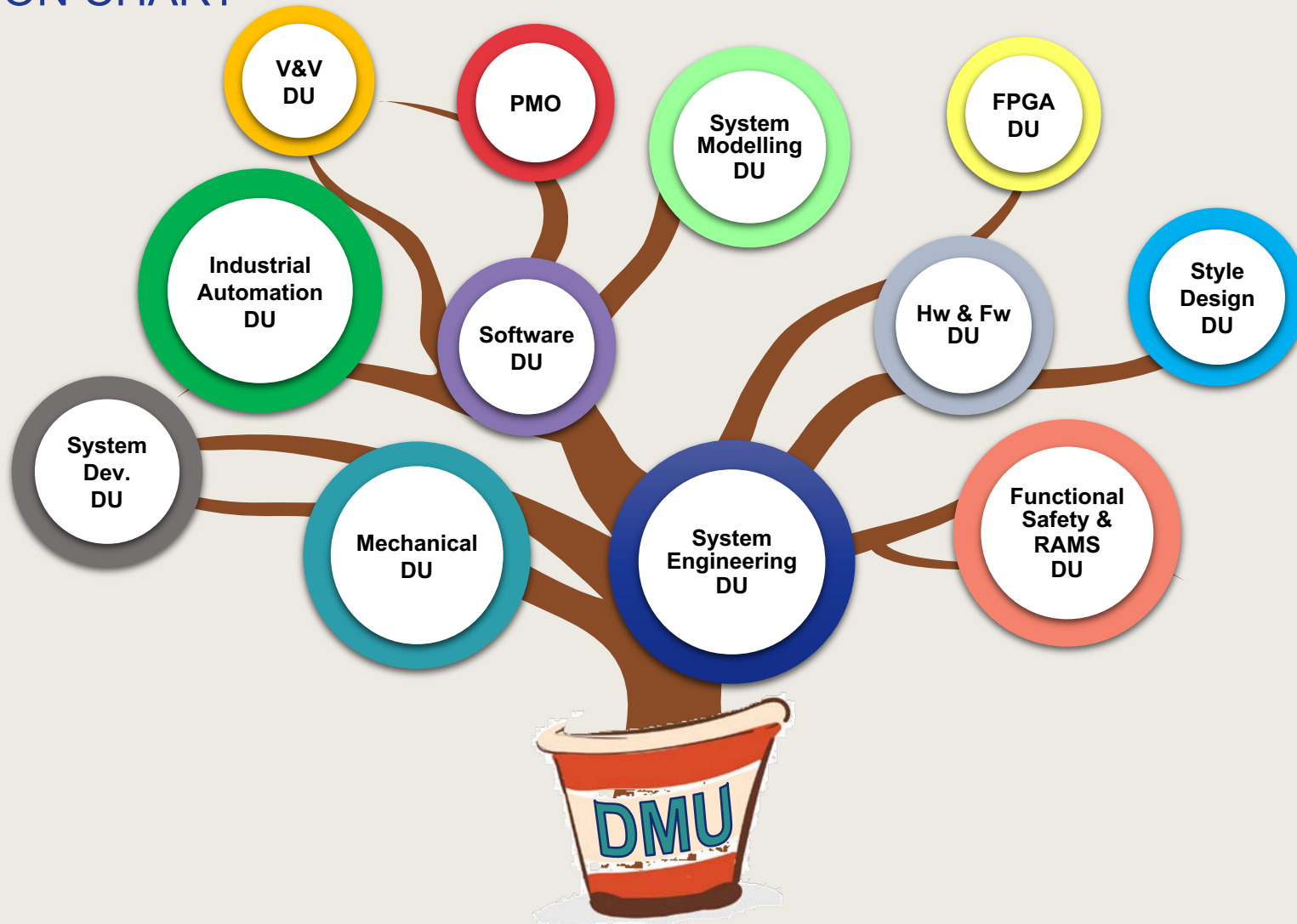
# DELIVERY MANAGEMENT UNIT

- We embody the three key values of AKKA
  - **Courage:** We are always open to new ideas and new challenges, leveraging on a huge amount of successful projects done and on our technical and management strong skills
  - **Ambition:** We always aim to the best-in-class performance for our customers, targeting lowest costs with the best quality
  - **Respect:** We are always deeply involved in the targets of our customers, taking in maximum account each one of our projects



# DELIVERY MANAGEMENT UNIT

## ORGANIZATION CHART



# DELIVERY MANAGEMENT UNIT

## CUSTOMERS/COLLABORATIONS



PIAGGIO



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# DU - FUNCTIONAL SAFETY AND RAMS



# FUSA & RAMS DELIVERY UNIT

## THE TEAM

- 15 Engineers involved in:
  - Aerospace
  - Automotive
  - Machinery
  - Railway



TECHNICAL FIELD	STANDARD
<i>Functional Safety</i>	ISO 26262 IEC 61508 ISO 25119 ISO13849 ISO14971, IEC 62304 EN50126/8/9
<i>Reliability</i>	SN29500 IEC 62380
<i>Quality Management</i>	ISO 9001 IATF16949 ISO 13485
<i>Safety Analysis</i>	FMEA Handbook

TOOLS
Medini Analyze
Reliability Workbench
IQ RM Pro
Doors

Functional Safety  
& RAMS DU

# FUSA & RAMS DELIVERY UNIT

## V-MODEL DESIGN AND DEVELOPMENT

- Safety levels definition (SIL, ASIL, Plr)
- Safety Concept
- SYS/HW/SW Design and Development according to standard V-model cycle

## SAFETY PROJECT MANAGEMENT

- Management of a Functional Safety Project
- Customer Interface
- Safety Team coordination



## SAFETY ANALYSES

- Hazard and Risk assessment
- RAMS Analysis
  - Reliability Analysis
  - FMEA (sys, sw, hw)
  - FMEDA/FMECA
  - FTA
  - DFA
  - FFE
  - CMA
  - ZHA

## STANDARD COMPLIANCE AND SUPPORTING PROCESSES

- Gap Analysis
- Quality/Safety Management Implementation
- Pre-assessment
- Confirmation Measures
- Quality and FuSa pre-audit
- Tool Evaluation

## TRAINING

- Technical and Methodological support via Classroom or on the job training.

Functional Safety & RAMS DU

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# DU - SYSTEMS MODELING



# SYSTEMS MODELING DELIVERY UNIT

## WHAT IS SYSTEM MODELING

System modeling is one the most cross functional engineering discipline which embraces a wide range of topics from the system physics modeling to control algorithm development. System modeling is helpful in all the upper side of the V-cycle model. It allows to simulate the system, test the control algorithms, identify in advance the potential criticalities, speed up the calibration activities and reduce testing and experimental activities.

### Competences

- Mechanical, hydraulic, pneumatic, electric model development
- Real time capable model development
- Control algorithm design
- Model Based Design

### Benefit

- Reduced design lead time
- Reduced experimental activities
- Deeper understanding of the system and its interactions



Systems  
modelling DU

# SYSTEMS MODELLING DELIVERY UNIT

## WHAT WE DO

	System analysis	Model development	Testing
ACTIVITIES	<ul style="list-style-type: none"><li>▪ Requirements analysis</li><li>▪ System analysis</li><li>▪ Mathematical modeling</li><li>▪ System simulation</li><li>▪ Calibration methodology</li><li>▪ Virtual and experimental calibration</li><li>▪ Control algorithm development</li></ul>	<ul style="list-style-type: none"><li>▪ Physical model development (Simscape, Amesim, Matlab, Python, C++)</li><li>▪ Model Based Design (MISRA, MAB)</li><li>▪ Automatic code generation (Embedded Coder)</li><li>▪ Model validation methodology</li><li>▪ Calibration methodology</li></ul>	<ul style="list-style-type: none"><li>▪ Test procedure definition and execution</li><li>▪ Experimental data analysis</li></ul>

Systems  
modelling DU

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# DU - HARDWARE & FIRMWARE DESIGN



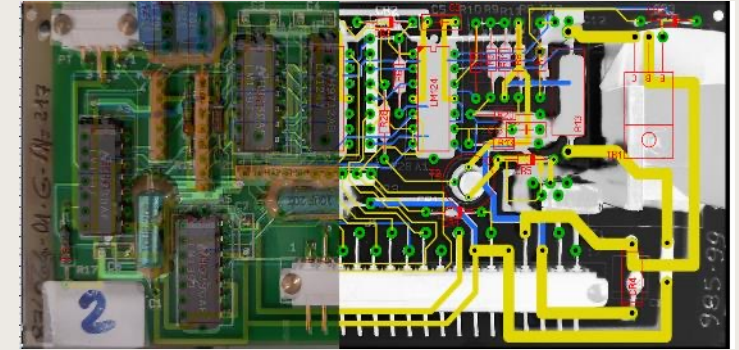
# HARDWARE & FIRMWARE DESIGN DELIVERY UNIT

## ➤ Competences

- High reliability standards compliance
- Sound experience in mass production
- Internal quality standard for hardware and firmware design
- Model Based Design approach

## ➤ Equipments

- Rework and test equipment  
(soldering stations, oscilloscopes, power supplies, logic analyzer, thermal imaging, AWG....)
- 3 Electronic test and integration bench
- 1 Electronic bench equipped for 220V
- Automated tests setup (Vector, NI...)



# HARDWARE & FIRMWARE DESIGN DELIVERY UNIT

## WHAT WE DO

	From Specs to Production	Engineering Services	Trainings
ACTIVITIES	<ul style="list-style-type: none"><li>▪ Hardware prototyping and production (up to 5kpcs/year)</li><li>▪ HW simulators</li><li>▪ Patent and competitor analysis</li><li>▪ Industrialization and cost analysis</li><li>▪ Definition of Test Plan</li></ul>	<ul style="list-style-type: none"><li>▪ Hardware Design</li><li>▪ Firmware Design</li><li>▪ Validation and Verification Services</li><li>▪ System Integration</li><li>▪ Reverse engineering</li><li>▪ Cost optimization</li></ul>	<ul style="list-style-type: none"><li>▪ Technical (Firmware Design, Hardware Design)</li><li>▪ Methodological (Electronic design Management)</li></ul>

HW & FW  
Design DU

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# DU - EMBEDDED AND APPLICATION SOFTWARE



# EMBEDDED AND APPLICATION SOFTWARE DU

## WHAT WE DO

### ACTIVITIES

#### From idea to Design

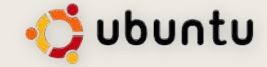
- High and Low Level Sw Requirement
- Software Architecture Design
- System and SubSystem Interface Specification
- Model Based Design
- Verification Planning

#### Engineering Services

- Embedded SW (C/C++)
- Embedded SO (Yocto, Linux, Win IoT, Win Embedded)
- Application & Object Oriented (C++, Java, Python)
- Integration & Validation



Windows 10 IoT



## THE TEAM

- 4 Sw Designer Engineers
- 3 Sw Test Engineers
- 1 Agile Scrum Master

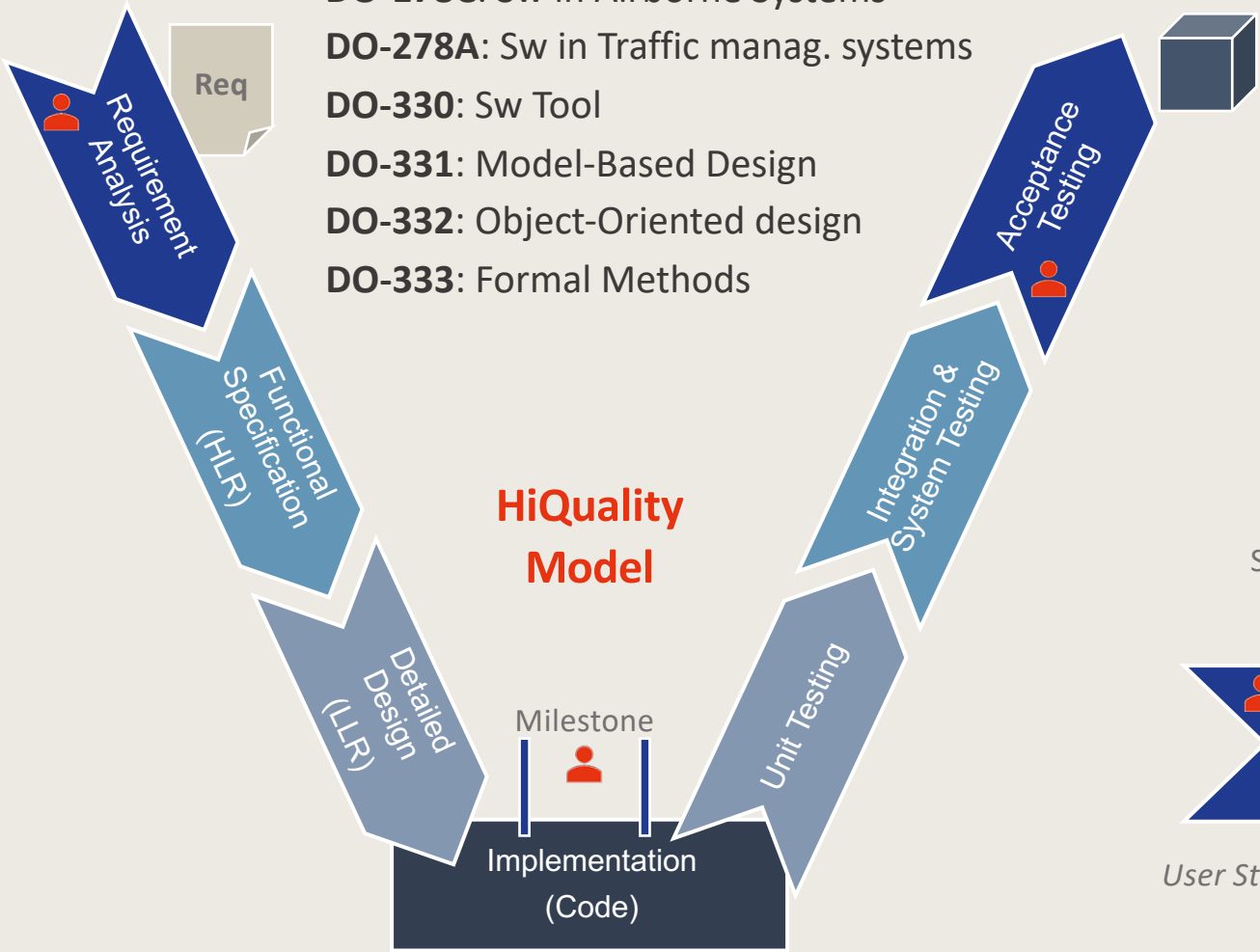


Embedded & App. SW DU

# EMBEDDED AND APPLICATION SOFTWARE DU

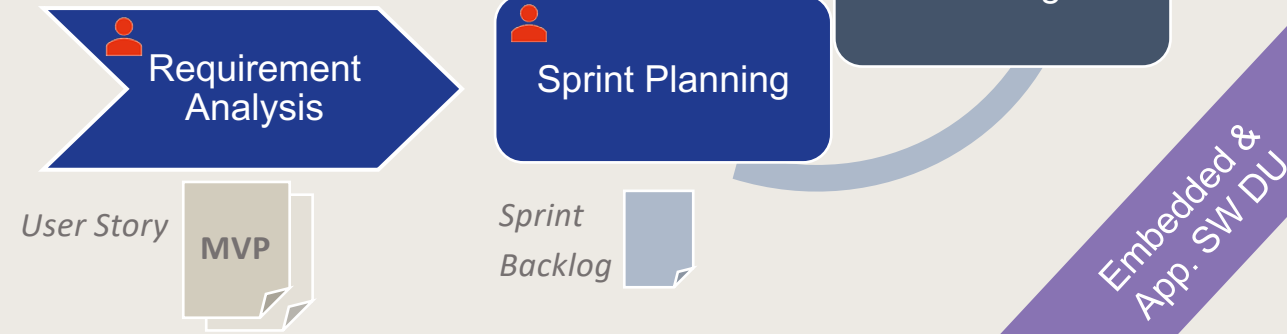
 Customer Actions

- DO-178C: Sw in Airborne Systems
- DO-278A: Sw in Traffic manag. systems
- DO-330: Sw Tool
- DO-331: Model-Based Design
- DO-332: Object-Oriented design
- DO-333: Formal Methods



## AgilePM Model

Scrum framework



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## DU – V&V

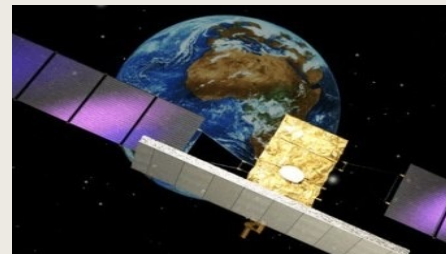
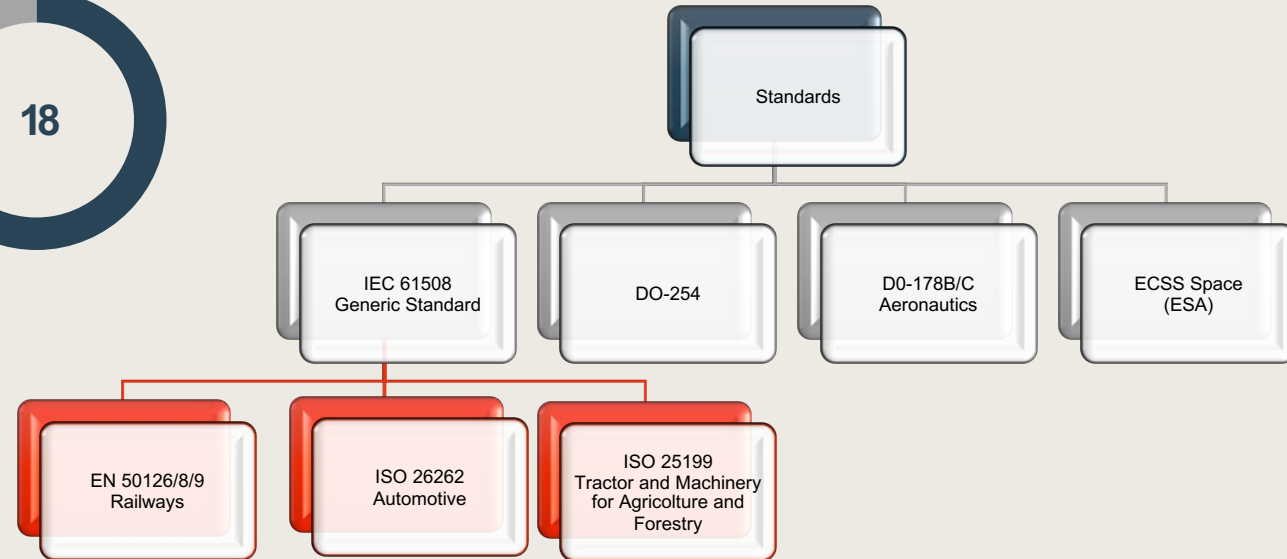
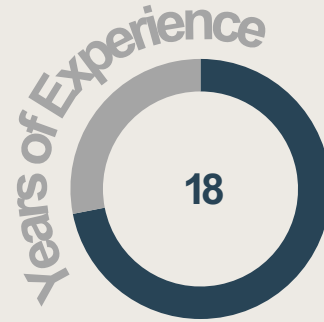


# V&V DELIVERY UNIT

## THE TEAM

- 2 Engineers
- 1 Project Manager

- HW analyses
- SW processes

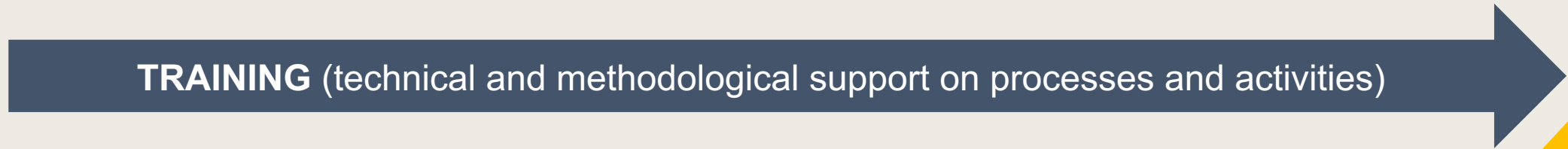


Validation  
DU

# V&V DELIVERY UNIT

## WHAT WE DO

	Concept	Design and Development	Testing
ACTIVITIES	<ul style="list-style-type: none"> <li>▪ Requirement Validation</li> <li>▪ Test Case Planning</li> <li>▪ Validation Test Cases</li> <li>▪ Requirement Coverage</li> <li>▪ Process: DO-178, DO-254, ISO26262</li> </ul>	<ul style="list-style-type: none"> <li>▪ Bench Design</li> <li>▪ Verification Planning</li> <li>▪ FPGA Verification</li> </ul>	<ul style="list-style-type: none"> <li>▪ Unit and Integration Testing</li> <li>▪ Bench Test</li> <li>▪ Automated Tests</li> <li>▪ Continuous Integration</li> <li>▪ Functional Verification</li> <li>▪ Formal Verification</li> <li>▪ Code Verification</li> </ul>



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## DU - FPGA



# FPGA DELIVERY UNIT

## THE TEAM

- 3 FPGA Designer
- 1 System Engineer
- 1 PM
- 1 Team Leader



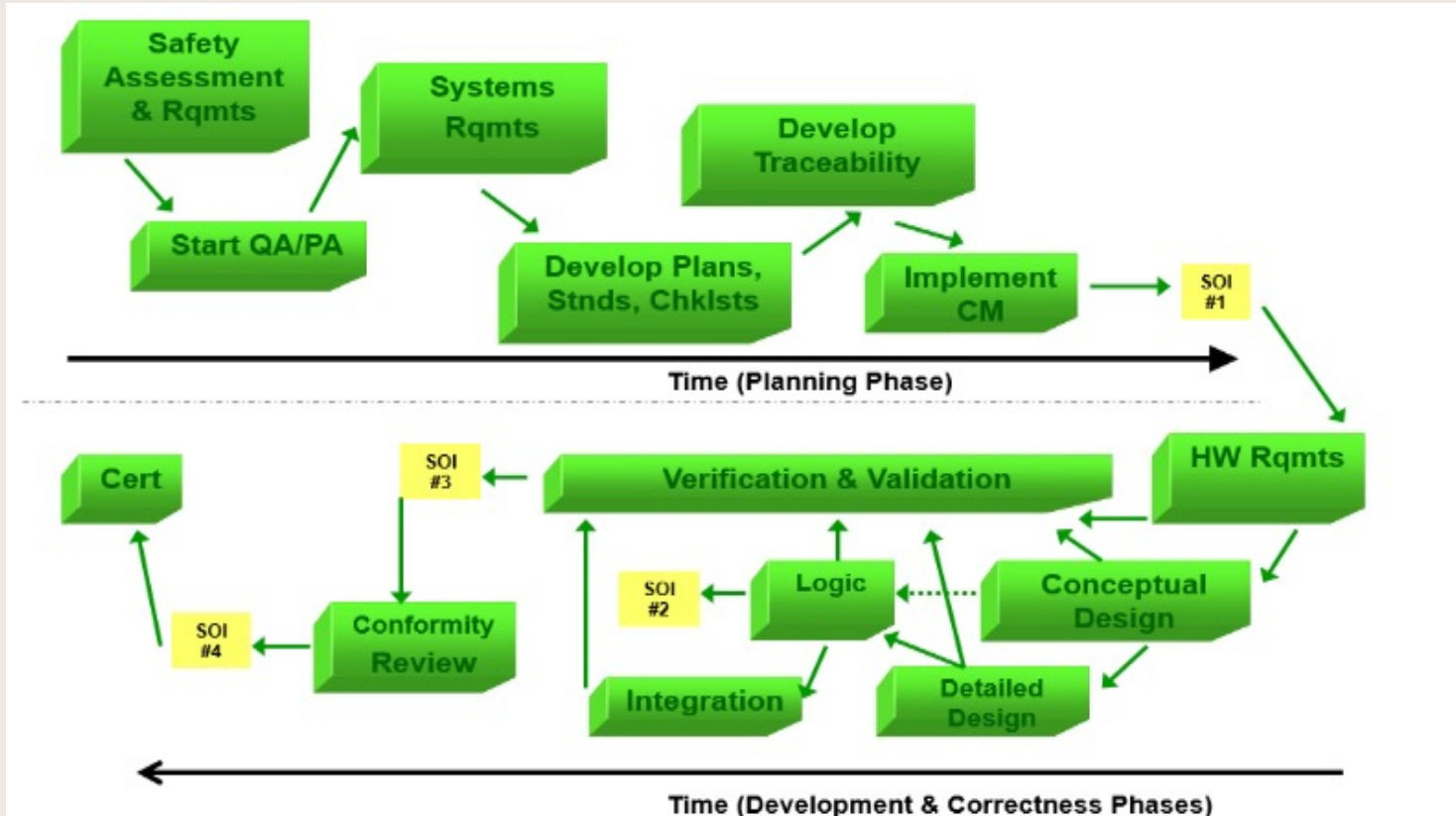
## FACILITIES

- 2 Electronic Integration benches
- 1 Electronic RF bench
- 1 Electronic bench equipped for 220V

FPGA  
DU

# FPGA DELIVERY UNIT

## WHAT WE DO: FPGA DESIGN AND VERIFICATION ACCORDING TO STANDARDS

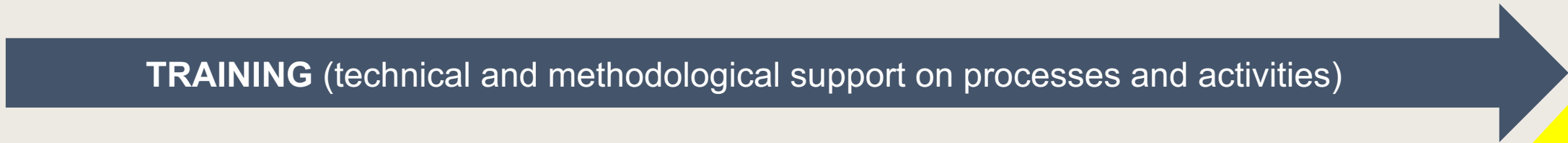


- Standards
  - DO
  - CENELEC
  - ECSS
  - Client Own Standards
- Markets
  - Telecom
  - Satellite
  - Avionics
  - Railways
  - Naval
  - Industry
  - Domotics
  - Appliance
  - Etc.

# FPGA DELIVERY UNIT

## WHAT WE DO

	From Specs to Production	Engineering Services	Trainings
ACTIVITIES	<ul style="list-style-type: none"> <li>▪ Hardware prototyping for ASIC testing</li> <li>▪ Test Equipment design for FPGA/ASIC</li> <li>▪ Process: DO-178, DO-254</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to Hardware Design</li> <li>▪ Firmware Design for Embedded Processors</li> <li>▪ FPGA Design and Synthesis</li> <li>▪ System Integration</li> </ul>	<ul style="list-style-type: none"> <li>▪ Technical (Model Based Design, Firmware Design, VHDL, Verilog, TCL/TK...)</li> <li>▪ Methodological (Electronic design Management, Formal Verification, Code Coverage)</li> <li>▪ Xilinx Tools</li> <li>▪ Altera Tools</li> </ul>





## CONTACT

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## CONTACT

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THANK YOU.  
QUESTIONS?

