brancaro
INDUSTRIES

Company Profile

February 2019

Our Values

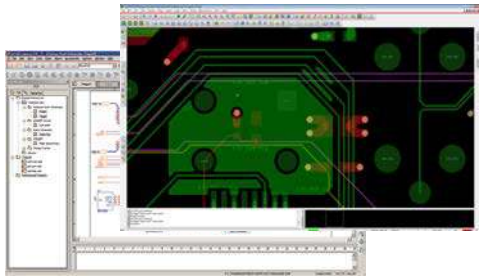
We strongly believe that transparent collaboration among tech companies is a key element to ensure a better future.

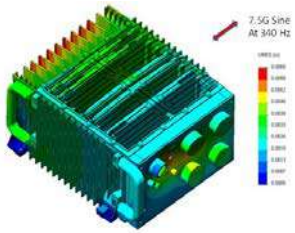
- Transparent collaboration
- Fast and reliable services
- Dynamic team

What we do

Avionics & Electrical Systems

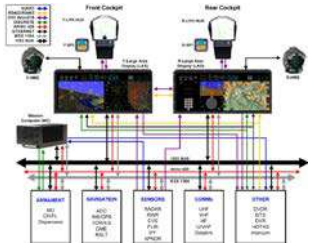
DESIGN & DEVELOPMENT

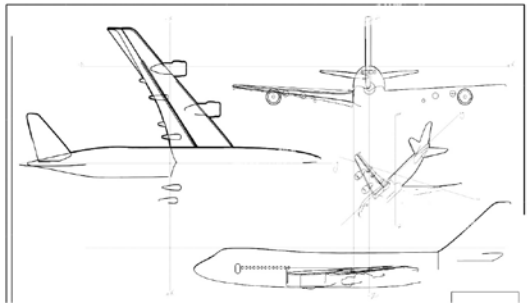




Avionics & Electrical Systems

INTEGRATION





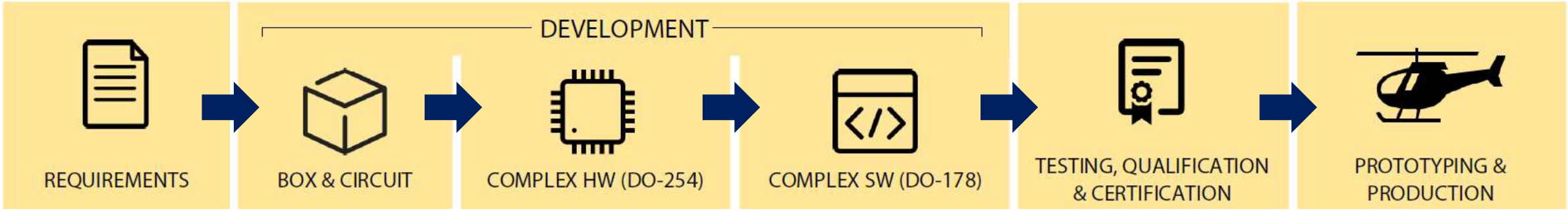
What we do

Avionics & Electrical Systems

DESIGN & DEVELOPMENT

Design & Development Flow

Our experts team can perform **EVERY** Avionics Development Activity



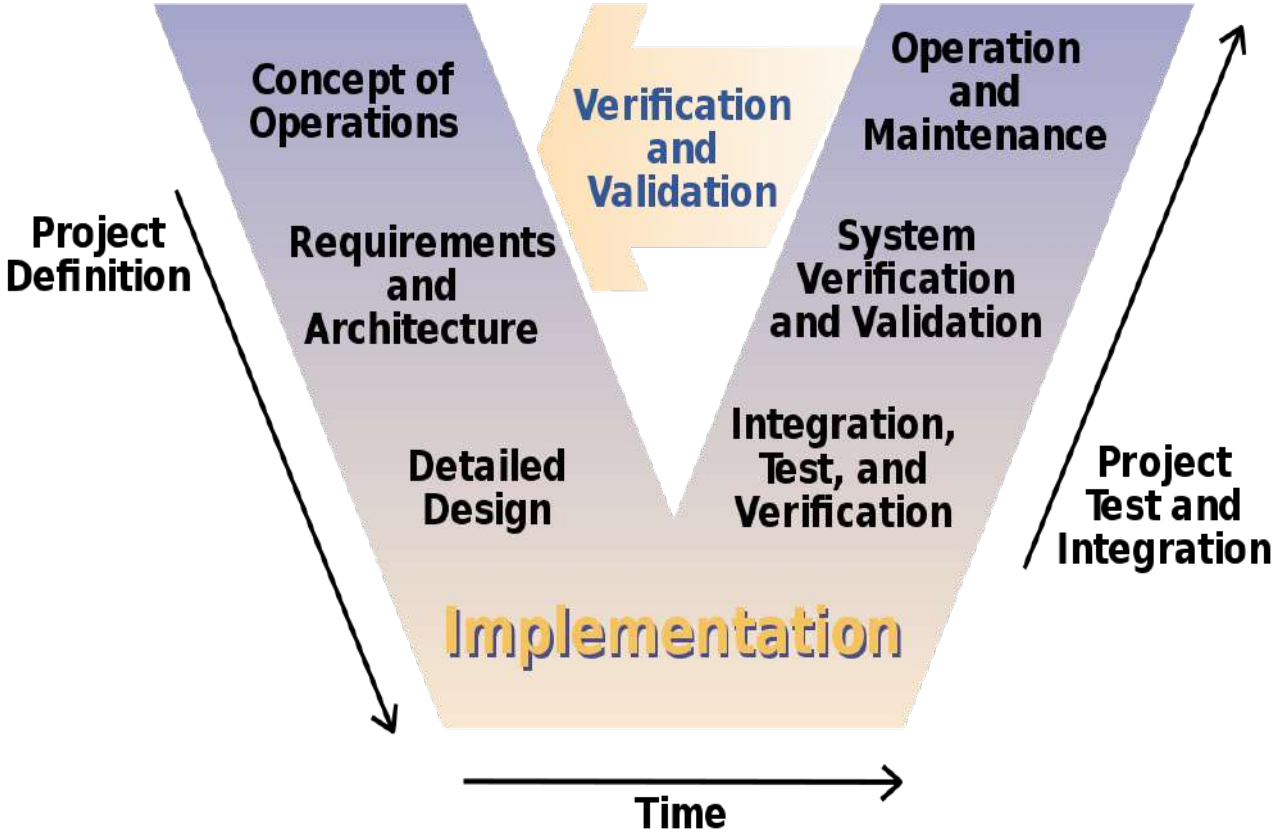
Design | Concept, Design Simulations & Reviews

We follow the V-Model development structure, in order to guarantee requirements traceability and ensure proper Validation and Verification.

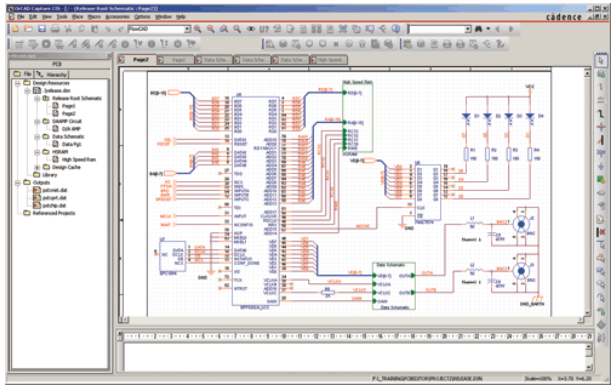
During the Development process, we produce all the required documentation, explained in the following slides and we can prepare:

- System Requirement Review (SRR)
- Preliminary Design Review (PDR)
- Critical Design Review (CDR)
- Test Readiness Review (TRR)
- Flight Readiness Review (FRR)

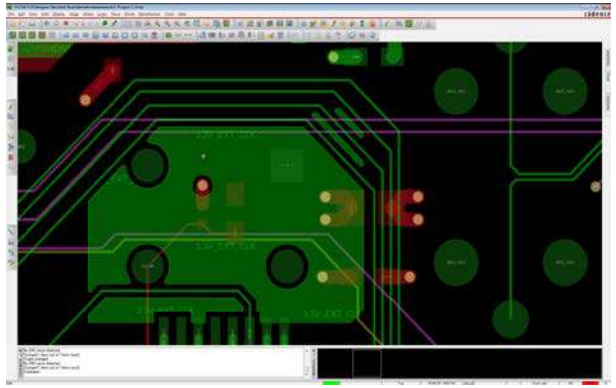
Our team can prepare Design Reviews and Product presentations for you and/or for your customers using your template and logo.



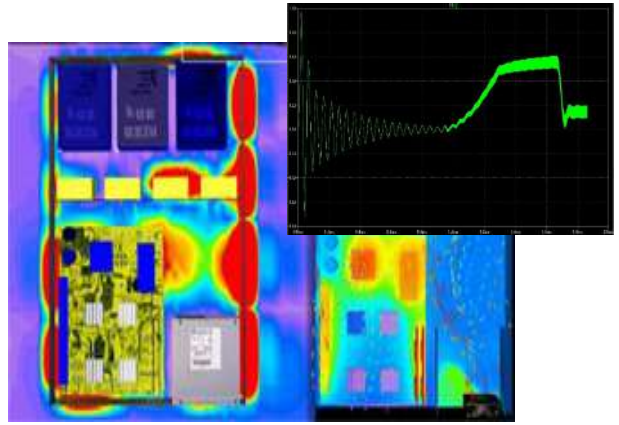
Design | Concept, Design Simulations & Reviews



Schematic Block & Electronic detailed schematic

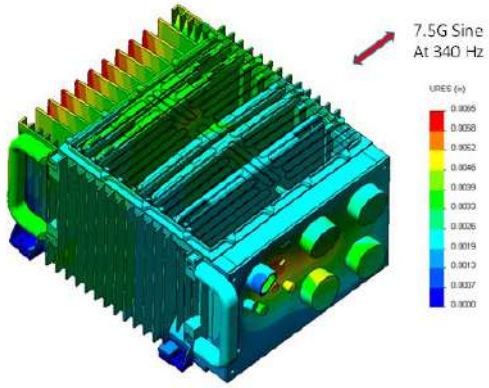


PCB Layout



Spice Simulation & EMC/EMI Simulation

3D Modelling



Structural Analysis (Stress, Acceleration, Vibrations)

Thermal Analysis

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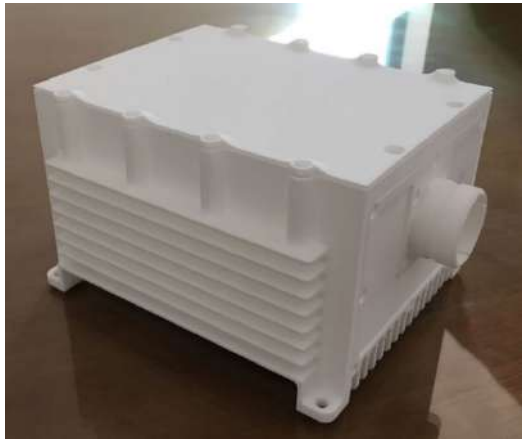
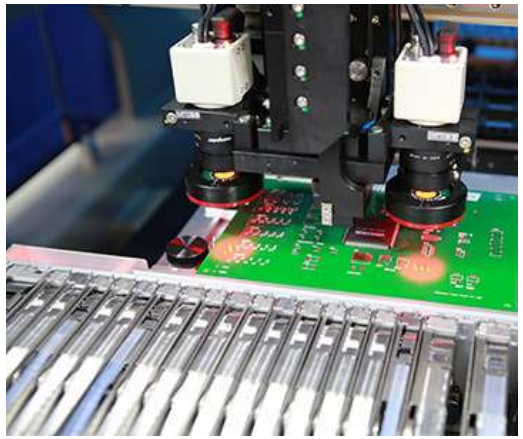
Design | Prototyping

We are capable of producing both electronic PCB boards and mechanical cases:



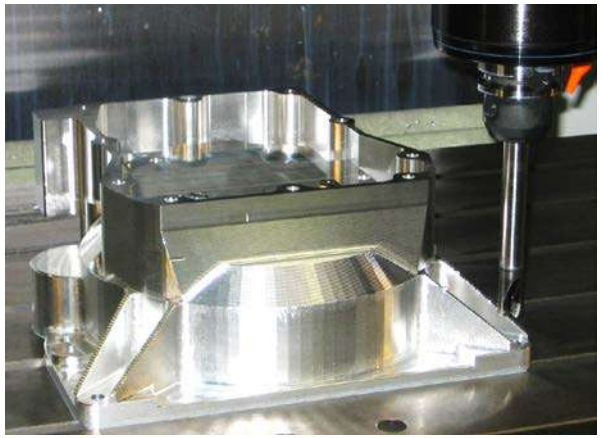
High-quality 3D-Printed objects for reviews and pre-assembly checks

Selective Laser Sintering (SLS) Technology 0,1mm (0,004") precision



In-house SMD and PTH Electronic Boards assembly line

Automatic Pick-and-Place and soldering systems



Aluminium and Steel cases milling from solid for prototypes and pre-series.

CNC 5-axis Milling 0,05mm (0,002") precision

Final Assembly line with automated and manual checks

Microscope Visual Inspection test

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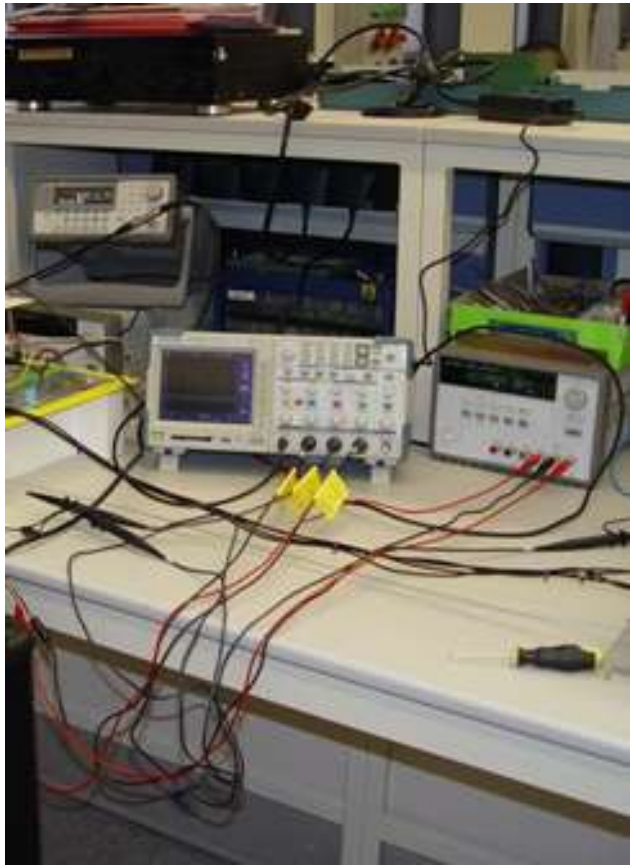
Design | Laboratory & Flight testing



- Functional Testing
- Failure Testing
- Acceptance test
- Procedures
- Reports
- Jigs design & Construction
- Dedicated test benches

- Test card preparation for fixed and rotary wing
- Flight test on our partner's platforms
- Logging equipments configuration and installation
- Data analysis
- Report preparation

Design | Documentation, Certification & Qualification tests

Technical Documentation

ARP4754A | AQAP-110 | MIL-STD-1472

- Technical Specification
- Compliance Matrix
- Requirement traceability
- Interface Control Documents
- Weight Report
- Product Acceptance Test Procedure
- Declaration of Design & Performance

RAMS Documentation

ARP 4761 | MIL-STD-882 | MIL-STD-1629
MIL-HDBK-217 | MIL-HDBK-781

- Component Part List, Primary Defect Rate & Stress Analysis
- FMECA
- Testability Analysis
- Safety Analysis
- Reliability Test Screening (Burn-in)
- Maintainability Analysis
- Maintenance Manual

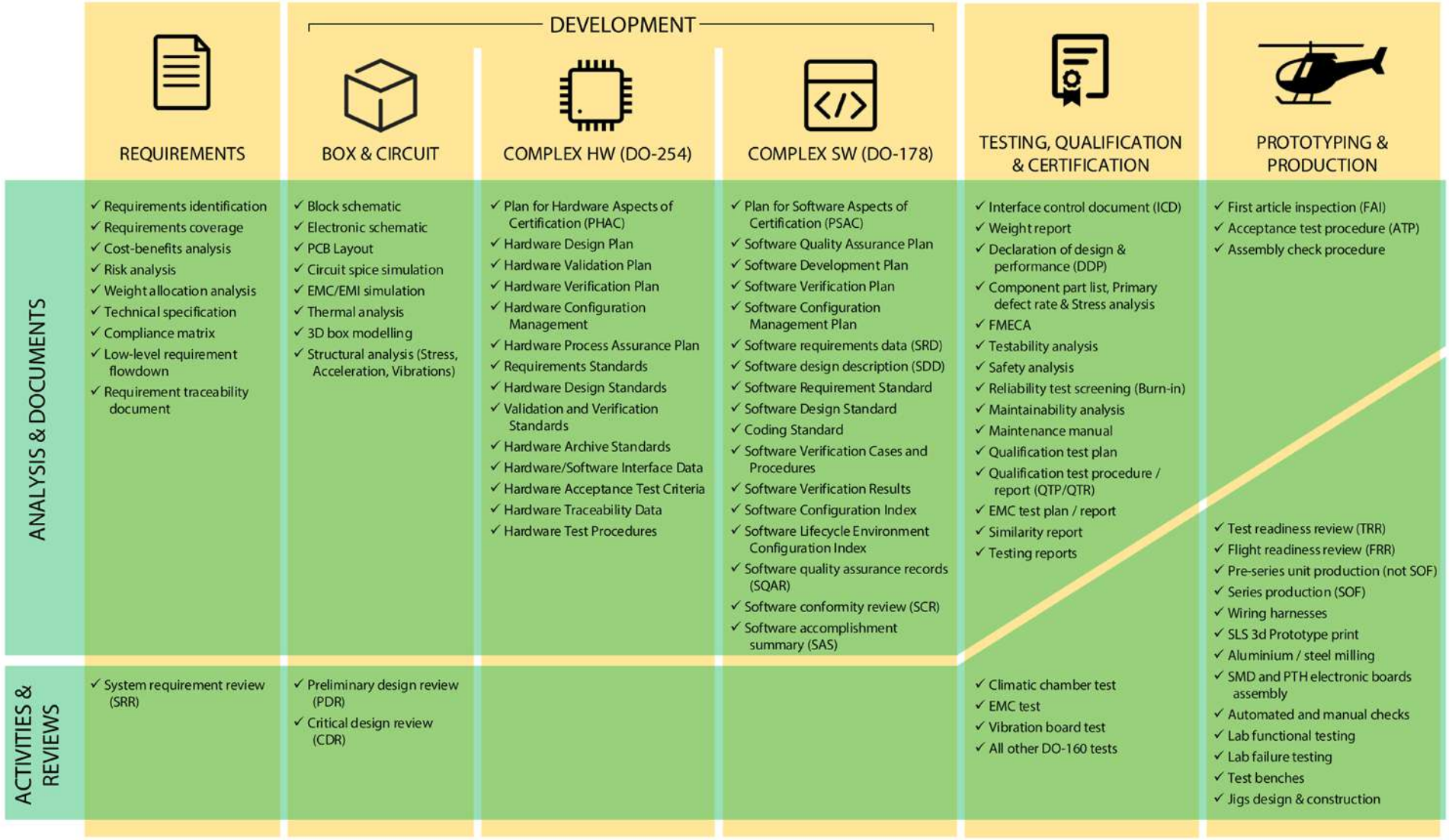
Environmental Docs & Testing

DO-160 | MIL-STD-461 | MIL-STD-462
MIL-STD-810 | MIL-HDBK-2165

- Qualification Test Procedure
- Qualification Test Report
- EMC Test Plan
- EMC Test Report
- Similarity Report

- Perform Qual test, EMC, Lightning in our partner's laboratories

Design | Activities Summary



What we do

Avionics & Electrical Systems

INTEGRATION

Integration Flow

Our experts team can perform **EVERY** Avionics Integration Activity

Integration | Integration services for Avionic Systems

CS/FAR 23

CS/FAR 25

CS/FAR 27

CS/FAR 29

FAR 91

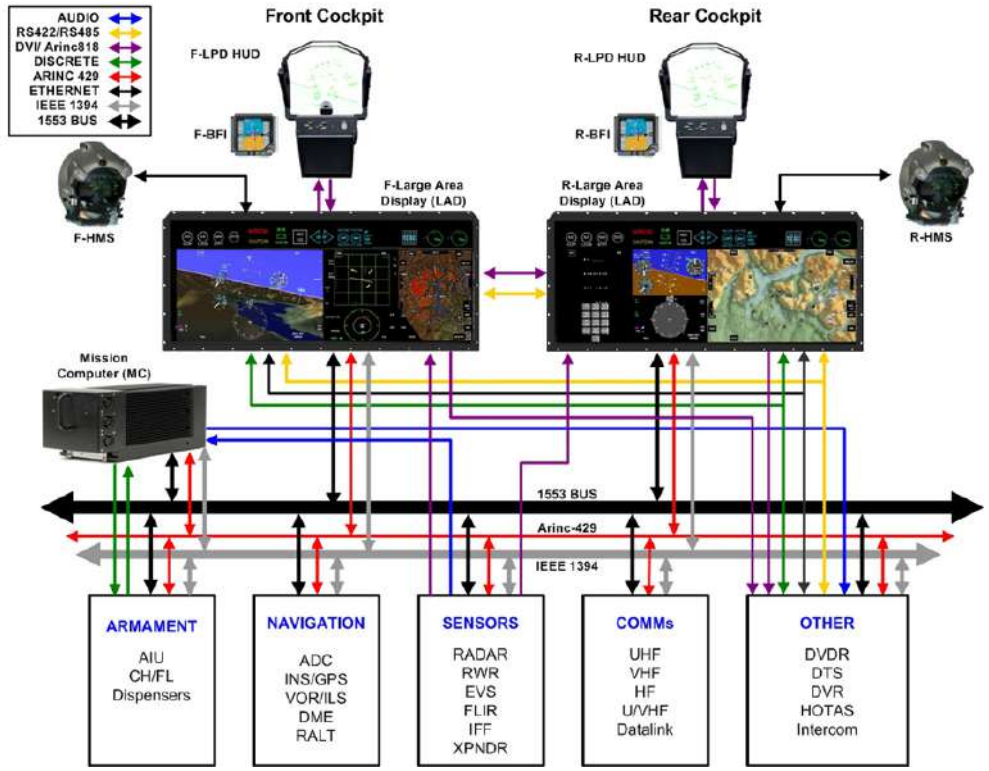
FAR 135

EU OPS

In addition to our Development Activities at the Equipment-level, we also provide Integration Services for Complete Avionic Systems.

Our services include:

- Develop and evaluate trade studies between various system design alternatives
- Generate system-level specifications, schematics, test procedures covering a wide variety of avionics subsystems
- Perform system testing and robustness testing to demonstrate compliance with certification requirements



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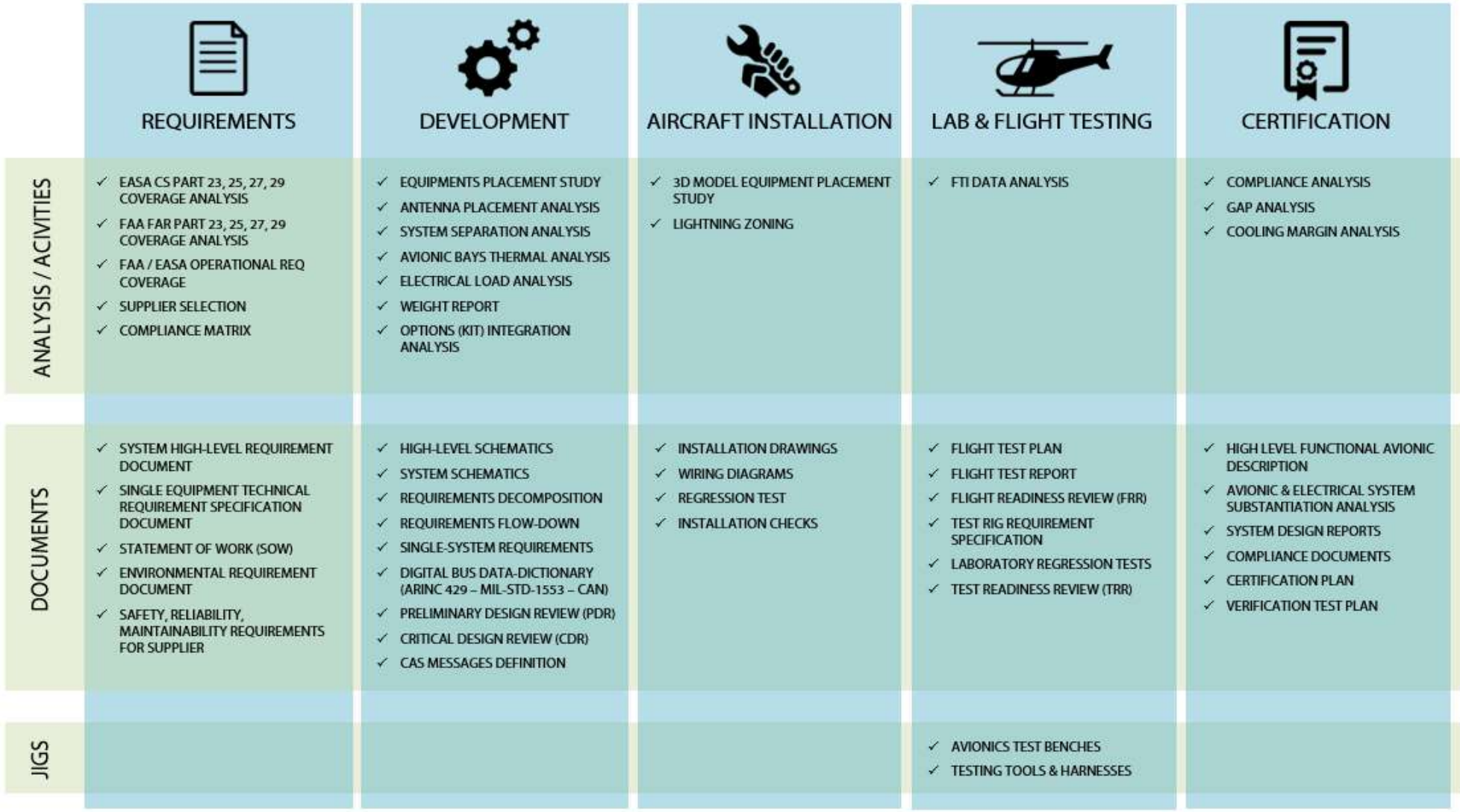
Integration | Activities Summary



	REQUIREMENTS	DEVELOPMENT	AIRCRAFT INSTALLATION	LAB & FLIGHT TESTING	CERTIFICATION
ANALYSIS / ACIVITIES	✓ EASA CS PART 23, 25, 27, 29 COVERAGE ANALYSIS ✓ FAA FAR PART 23, 25, 27, 29 COVERAGE ANALYSIS ✓ FAA / EASA OPERATIONAL REQ COVERAGE ✓ SUPPLIER SELECTION ✓ COMPLIANCE MATRIX	✓ EQUIPMENTS PLACEMENT STUDY ✓ ANTENNA PLACEMENT ANALYSIS ✓ SYSTEM SEPARATION ANALYSIS ✓ AVIONIC BAYS THERMAL ANALYSIS ✓ ELECTRICAL LOAD ANALYSIS ✓ WEIGHT REPORT ✓ OPTIONS (KIT) INTEGRATION ANALYSIS	✓ 3D MODEL EQUIPMENT PLACEMENT STUDY ✓ LIGHTNING ZONING	✓ FTI DATA ANALYSIS	✓ COMPLIANCE ANALYSIS ✓ GAP ANALYSIS ✓ COOLING MARGIN ANALYSIS
DOCUMENTS	✓ SYSTEM HIGH-LEVEL REQUIREMENT DOCUMENT ✓ SINGLE EQUIPMENT TECHNICAL REQUIREMENT SPECIFICATION DOCUMENT ✓ STATEMENT OF WORK (SOW) ✓ ENVIRONMENTAL REQUIREMENT DOCUMENT ✓ SAFETY, RELIABILITY, MAINTAINABILITY REQUIREMENTS FOR SUPPLIER	✓ HIGH-LEVEL SCHEMATICS ✓ SYSTEM SCHEMATICS ✓ REQUIREMENTS DECOMPOSITION ✓ REQUIREMENTS FLOW-DOWN ✓ SINGLE-SYSTEM REQUIREMENTS ✓ DIGITAL BUS DATA-DICTIONARY (ARINC 429 – MIL-STD-1553 – CAN) ✓ PRELIMINARY DESIGN REVIEW (PDR) ✓ CRITICAL DESIGN REVIEW (CDR) ✓ CAS MESSAGES DEFINITION	✓ INSTALLATION DRAWINGS ✓ WIRING DIAGRAMS ✓ REGRESSION TEST ✓ INSTALLATION CHECKS	✓ FLIGHT TEST PLAN ✓ FLIGHT TEST REPORT ✓ FLIGHT READINESS REVIEW (FRR) ✓ TEST RIG REQUIREMENT SPECIFICATION ✓ LABORATORY REGRESSION TESTS ✓ TEST READINESS REVIEW (TRR)	✓ HIGH LEVEL FUNCTIONAL AVIONIC DESCRIPTION ✓ AVIONIC & ELECTRICAL SYSTEM SUBSTANTIATION ANALYSIS ✓ SYSTEM DESIGN REPORTS ✓ COMPLIANCE DOCUMENTS ✓ CERTIFICATION PLAN ✓ VERIFICATION TEST PLAN
JIGS				✓ AVIONICS TEST BENCHES ✓ TESTING TOOLS & HARNESSES	

References

Few examples where our technology is onboard

Personal Flight Vehicles

Fighter Jets & Trainers

Surveillance Drones

Tilt-rotor

Helicopters

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Collaborations

Zürcher Hochschule
für Angewandte Wissenschaften

zh aw School of Engineering

ZAV Zentrum für Aviatik

Brancaro collaborates closely and runs research projects with these universities and centres of excellence. Customers benefit from the key knowledge and understanding that is shared in flexible relationships with academic organisations.

POLITECNICO
MILANO 1863

POLITECNICO DI TORINO

POLITECNICO
DI TORINO

European Commission
HORIZON 2020

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INDUSTRIES

Facilities

Headquarters	Milan – Italy, Piazza IV Novembre, 4 Offices + Meeting rooms
R&D Laboratoires	Vercelli - Italy Engineering Offices + 1 Meeting room Electronic laboratory Mechatronic laboratory
Engineering	Novara - Italy Engineering Open Space Center Meeting rooms