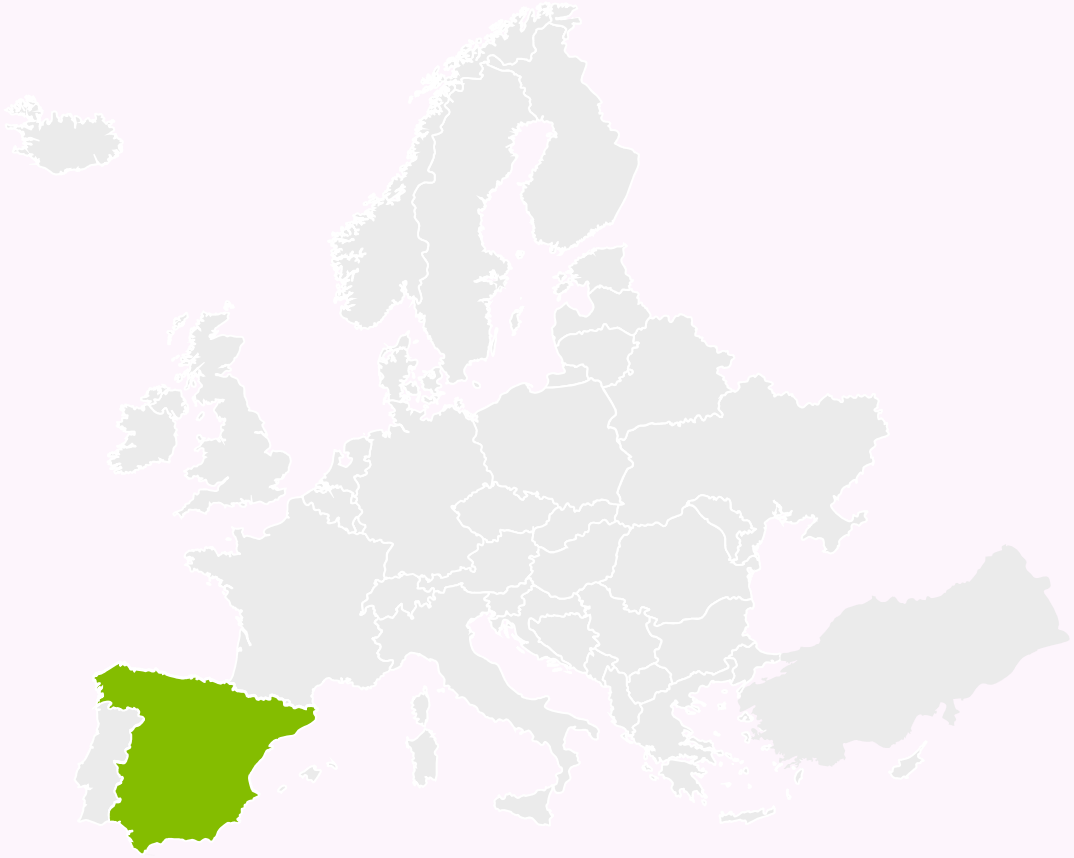
R&T National Plan: SP Priorities



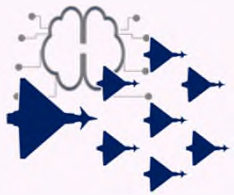
AD Spain R&T Priorities

- AD3.1: Combat Cloud and Connectivity
- AD3.2: Artificial Intelligence
- AD6.1: Cyber Security
- AD1.1: Power and Energy Management
- AD1.2: Predictive and Condition Based Maintenance
- AD4.1: Factory of the Future
- AD1.3: Next Generation Composites
- AD2.1: Autonomy for Mission Including New Mission Sensors
- AD6.2: Low Observability
- AD1.4: Decision Making Support
- AD1.5: Human Factors for multidomain actionable COP
- AD1.6: Methods and Tools
- AD2.2: Autonomy Enablers including Certification

R&T National Plan: SP Priorities

AD3.1: Combat Cloud and Connectivity
Active and passive antennas for Defence customers (+ other payloads: Radar, Radiometer, Reflectors

Common Core Comms Server - Digital Connectivity and Security for Transport, Combat Aircraft and Remote Carriers



AD2.1: Autonomy for Mission Including Mission Sensors
Highly automated collaborative Operations for flight and mission execution for Swarms of UAVs and mission aircraft.

Operating multiple ISR platforms with reduced number of operators using AI

Earth observation instrutments

AD1.4: Decision Making Support
Intelligent of Air Task Cycle
Integrated Future Tactical Training System Technologies
Integrated Operational Mission Preparation

AD1.5: Human Factors for multidomain actionable COP (Common Operational Picture)
Provide Human Factors design for virtual cognitive assistance integration in operations
Provide leading edge interfaces technologies between operators and assistance function
AI-based Assistance for Forensic Investigation

AD1.6: Methods and Tools

Digitalization of Flight Physics with focus on:

- cover Trsp a/c specific cases (Turboprop)
- Fluid - structural coupling phenomena on propeller a/c

AD6.2: Low Observability
Maintainability and Supportability of LO Design
Battle Damage Assessment incl. repairability of LO Design New
Industrial Processes for LO Aircraft including:
Manufacturing
Assembly
Ground Testing

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AD2.2: Autonomy Enablers including Certification
GPU certification for mission critical operations.
Qualification, Certification and Trustability of AI Algorithms.

AD1.3: Next Generation Composites
Use of new Materials and new design concepts for lighter, cheaper and more efficient aircrafts and satellites (e.g. thermoplastics, infusion)

Large structures for launchers and satellites

AD1.1: Power and Energy Management
Thermal Management topics mainly for Mission a/c driven by:
- Mision a/c power levels
- Surface Heat exchangers

Use of GAN components for Power Units

AD1.2: Predictive and Condition Based Maintenance
Operational Improvement Efficiency
Condition Based Maintenance

AD4.1: Factory of the Future
- Flexible Assembly - Automation, reusability, optimization (of tooling/ processes/ industrial means including COBOTS).
- Ground Testing - reduce the intrusiveness of testing to the aircraft
- Digital Factory
- Data analytics
- IoT
- Human Factory
- IoP (Internet of People) - Improvement of worker conditions, impact of working environment on people.
- Operators safety at work: use of sensors, biometry, IoP
- full integration of robotics operations maintenance and operational services at airport and deployment base

AD3.2: Artificial Intelligence
Autonomous decision making emergency procedures, contingency management and swarm autonomy (ground element)

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