

WP1: Project management

D1.1: Communication, reporting platform, and project management plan

WP2: Requirements Specification & Overall System Modelling Strategy

WP2.1: Define the architecture of the HEP, power profiles and system parameters

WP2.2: Set up requirements for the digital twin of the aircraft

WP2.3: Map out and characterise the faults and degradation at system level

WP2.4: Creating guidelines on maintenance procedure for HEP WP2.5: Requirement for life cycle assessment

WP3: Smart in-flight battery sensing

WP3.1: Specifications for sensors on energy storage system

WP3.2: In-operando monitor of the battery cell

WP3.3: Characterization and validation of the monitoring systems for energy storage

WP4: Integrated intelligent sensing for electric power distribution

WP4.1: State of the Art sensing systems for power electronics and electrical machines

WP4.2: Development of degradation and fault analysis models for multi-level inverters and associated components

WP4.3: Online temperature mapping with novel acoustic sensors

WP4.4: High voltage distribution modelling and faults analysis

WP4.5: Fault's progression and degradation analysis of electrical machines and development of sensors

WP4.6: Development of artificial intelligence and machine learning based algorithms for fault detection and identification

WP5: Integrated HEP ground tests

WP5.1: Defining the specification of the test rig based on sizing and selecting the component

WP5.2: Design the demonstrator and demonstrator preparations

WP5.3: Create test cases, testing, and validation

WP5.4: Degradation emulator with Software and Hardware in the Loop

WP6: Digital-twin driven central decision making

WP6.1: Review existing standards and novel technologies and methodologies for data processing, communications, health and performance management in aircraft

WP6.2: Data standards for central decision making and communications

WP6.3: Create a design methodology for the central decision-making platform based on the lesson learnt during the integrated testing

WP6.4: Machine learning models to create the central decision-making system

WP6.5: Processing resources

WP6.6: Characterisation and validation of the models adopted for central decision-making system through case studies

WP7: Dissemination, communication & exploitation

WP7.1: Dissemination & Communication Plan and Activities

WP7.2: Exploitation Plan and Activities

WP7.3: Event organization