



ECO-DESIGN ITD
DESCRIPTION OF 2011 WORK
ANNUAL IMPLEMENTATION PLAN – ANNEX 1a

1. INTRODUCTION

The global objective of the **Eco-Design ITD** is to reduce the product environmental impact while keeping competitiveness of the aeronautic industry.

The **Eco-Design ITD** is focused:

- On one hand on designing equipped airframe with a minimum of inputs (raw materials, energy, water,...), outputs and nuisances (energy /warming, liquid effluents, gaseous effluents, solid waste, ...) all along the life cycle;
- And, on the other hand, on suppressing non-renewable and/or noxious substances (i.e. suppression of conventional hydraulic fluids) during operations and maintenance, while keeping the aircraft at the appropriate level of quality and performance.

The highest level WBS is represented on the following figure:

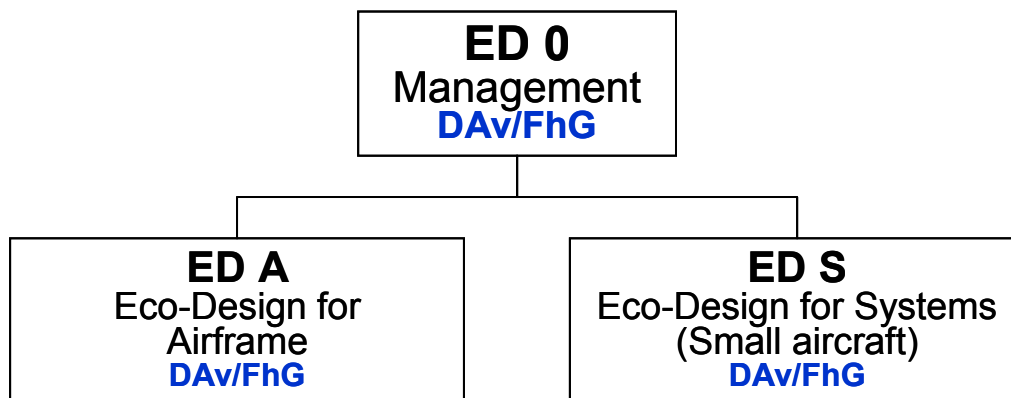


Figure 1 Eco-Design ITD Level 0 WBS

This figure structures the management caring for the execution of the work programme.

The coordinator in terms of Grant Agreement is Dassault Aviation.

Work Package ED 0 includes management activities at ITD, EDA and EDS level for 2011.



2. ECO-DESIGN FOR AIRFRAME

The Airframe Application of the Eco-Design ITD is meant to tackle the above issues by focusing on the following challenges:

- To identify and mature environmentally sound (“green”) materials and processes for a/c **production**.
- To identify and mature environmentally sound (“green”) materials and processes for a/c **maintenance and use processes**.
- To improve the field of **end-of-life** a/c operations after several decades of operation, including reuse, recyclability and disposal (“elimination”) issues.
- To provide means for an economic **design** process on order to minimize the overall environmental impact of a/c production, use/maintenance, and disposal.

These areas will be considered for significant parts of the aircraft: Structure, cabin covering and furniture, vehicle systems components / equipments, engine components, electronics.

In the following sections, To means the start date of the project: 1st of October 2008. To+N means N months after the start date. 2011 is the period between To+27 and To+39.

2.1 Statement of Work - Scope of 2011 Technical Work

This part describes the 2011 work in the frame of the Eco-Design ITD – Airframe Application.

During this period, some activities will be carried out in the following WPs:

- WP A.1 Alternative Solutions Requirements,
- WP A.2 Technology Development,
- WP A.3 Application Studies.
- WP A.4 Lifecycle demonstration definition
- WP A.5 Lifecycle demonstration preparation
- WP A.6 Lifecycle demonstration



WP A.1 Alternative Solution Requirements:

WP A.1.5 Societal

Description of work (Tasks)		
Ref. No	Title	Description
TA 15-03	Structured information processing	Formation of an information structure (e.g. a matrix) including socio-economic ASPECTS and STAKEHOLDERS and specific judgements. Information will be consolidated into an overall assessment system for WP3.1. Assessment system will be verified in a stakeholder workshop
TA 15-04	Analysis of societal requirements	Analysis of requirements stemming from legislative rules and regulations, e.g. REACH, ACARE as well as from societal responsibility. Analysis of social aspects of the working environment (Life Cycle Working Environment – LCWE): <ul style="list-style-type: none"> - Health and Safety aspects - Qualification Level of workers - Corporate Social Responsibility - Green Procurement Creation of a techno-ecological knowledge base as comprehensive basis for communication.
TA 15-05	Definition of a scenario / definition of the 'universe of discourse'	Identify the actors (of ECO evaluation tools) and their needs in terms of <ul style="list-style-type: none"> - granularity of information - precision of information - visualisation of information - interaction with information Define cut-off-criteria (what will be taken into account and what is irrelevant in the development).

Outputs			
Ref. No.	Title	Type	Date
DA 15-03	Assessment system: Structured Information on Aspects and Stakeholders; consolidated overall assessment system to be delivered to WP A.3.1. Presentation and discussion of assessment system.	R	T0+32
DA 15-04	Analysis of societal requirements: Discussion paper on requirements from legislative rules and regulations as well as from societal responsibility.	D	T0+28
DA 15-05	Universe of discourse definition: Report covering identification of Actors/Stakeholder and their value system, and definition of information scope and quality to meet their needs and standards	D	T0+38

WP A.2 Technology Development

Description of work (Tasks)		
Ref. No.	Title	Description
TA 2-02	Monitoring of technology roadmap	Continuous monitoring of technology readiness level of the materials/technologies worked on



Outputs			
Ref. No.	Title	Type	Date
DA 2-02	Definition of technology readiness level	D	T0+24 T0+36 T0+48 T0+60
DA 2-03	Technologies (Materials, Processes, Long Life Structure and EOL) with a sufficient TRL	D	T0+36

WP A.2.1 Technology Development – Materials and Surfaces:

In the frame of WP A.2.1, activities will be conducted in sub-WPs A.2.1.1 “composites and surface treatments”, A.2.1.2 “metallics and surface treatments” and A.2.1.3 “other important materials”.

Only the outputs of these activities are given in this document.

Outputs			
Ref. No.	Title	Type	Date
DA 211-02	Composites and surface treatments: Progress report 2	D	T0+36
DA 211-06	Materials data from materials development	D	T0+37
DA 212-02	Metallics and surface treatments: Progress report 2	D	T0+36
DA 212-06	Materials data from materials development	D	T0+37
DA 213-02	Other important materials: Progress report 2	D	T0+36
DA 213-06	Materials data from materials development	D	T0+37

WP A.2.2 Technology Development – Manufacturing:

In the frame of WP A.2.2, activities will be conducted in sub-WPs A.2.2.1 “new processes and associated tooling”, A.2.2.2 “manufacturing waste management” and A.2.2.3 “Modelling tools”.

Only the outputs of these activities are given in this document.

Outputs			
Ref. No.	Title	Type	Date
DA 221-02	New processes and associated tooling: Progress report 2	D	T0+36
DA 221-06	Manufacturing process data to modelling tool	D	T0+37
DA 222-02	Manufacturing waste management: Progress report 2	D	T0+36
DA 222-06	Data provision for modelling tool	D	T0+37
DA 223-04	Tool for optimized design for new processes (intermediate version)	S	T0+36
DA 223-05	Modelling tool for laser assisted AFP process (intermediate version)	S	T0+36
DA 223-06	Data collection on new technologies (from WP2.1/2.2)	S	T0+38



WP A.2.3 Technology Development – Long Life Structures:

In the frame of WP A.2.3, activities will be conducted in sub-WPs A.2.3.1 “Structural Diagnostic and Prognostic”, A.2.3.2 “Test Procedures” and A.2.3.3 “green repair solutions”.

Only the outputs of these activities are given in this document.

Outputs			
Ref. No.	Title	Type	Date
DA 231-02	Structural Diagnostic and Prognostic: Progress report 2	D	T0+36
DA 232-02	Test Procedures: Progress report 2	D	T0+36
DA 233-02	Green repair solutions: Progress report 2	D	T0+36



WP A.2.4 Technology Development – End of Life:

In the frame of WP A.2.4, activities will be conducted in sub-WPs A.2.4.1 “Dismantling and Re-use of Components”.

Only the outputs of these activities are given in this document.

Outputs			
Ref. No.	Title	Type	Date
DA 241-02	Identification and Recycling: Progress report 2	D	T0+36

WP A.3.Applications studies

WPA.3.1: Eco-Statement

In the frame of WP A.3.1, activities will be conducted in sub-WPs A.3.1.1 “Evaluation tools” and A.3.1.2 “Current Eco-Statement”.

Only the outputs of these activities are given in this document.

Outputs			
Ref. No.	Title	Type	Date
DA 312-02	Representative A/C based on consolidated list of reference parts	D	T0+30

WPA.3.2: Extrapolation to industrial conditions

Description of work (Tasks)		
Ref. No.	Title	Description
TA 32-01	Elaboration of the WP detailed development plan	Following the Kick-Off meeting to be held at T0+37, to release DA 32-01 report stating WP detailed activities

Outputs			
Ref. No.	Title	Type	Date
DA 32-01	Extrapolation to industrial condition: Work Package detailed development plan	D	T0+39

WPA.3.3: Eco-Design guidelines

Description of work (Tasks)		
Ref. No.	Title	Description



Description of work (Tasks)		
Ref. No.	Title	Description
TA33-01-01	Eco Design Format Definition	Defining the format (e. g. report, guideline, software tool) according to requirements (WP A.1.x) and users specifications, identification and development of the most appropriate eco-design guideline tool(s)
TA33-02-01	Data Collection from WP2.x, 3.x, 6.x	Analyse the outcome of WP A.2, WP A.3, WP A.6 and extract data to be converted into eco-design guidelines, Collection and Synthesis of information on eco-design issues
TA33-02-02	Green design basic survey	Identification and collation of general definitions, information and requirements for green design/eco-design/design for environment/design for recycling. This includes literature surveys, congress visits, and potentially interviews with stakeholders in green design
TA33-02-03	Green design model applications survey	Identification of example implementations of the general green design requirements in different industrial branches are to be produced using a uniform description format. These branches include -shipbuilding industry -railway industry -car industry. Consolidation of these results with the results from TA14-04 is planned.

WP A.4 Lifecycle demonstration definition

WPA.4.2: Equipment

Description of work (Tasks)		
Ref. No.	Title	Description
TA 42-01	Analyze WP A.2 and select the most effective "green" technologies	Determination from studies of WP2 technologies with TRL> 4 with environmental benefits and define the demonstrators / components that will use these technologies. <ul style="list-style-type: none"> • First selection at To + 33 • Second selection at To + 45
TA 42-02	Definition of equipment demonstrators / components for life cycle demonstration	After selection of the most promising technologies, definition of equipment demonstrators / components for testing of these technologies. <ul style="list-style-type: none"> • First selection from TA 42-01 • Second selection from TA 42-01

Outputs			
Ref. No.	Title	Type	Date



DA 42-01	Lifecycle demonstration definition : Progress report 1	D	T0+33
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WP A.5: Lifecycle demonstration preparation

WPA.5.2: Equipment

Description of work (Tasks)		
Ref. No.	Title	Description
TA 52-01	Demonstrator design phase	
TA 52-02	Definition of test	

Outputs			
Ref. No.	Title	Type	Date
DA 52-01	Lifecycle demonstration preparation : Progress report 1	D	T0+39

WP A.6: Lifecycle demonstration

WPA.6.2: Equipment

Description of work (Tasks)		
Ref. No.	Title	Description
TA 62-01	Demonstrator manufacturing	



3. ECO-DESIGN FOR SYSTEMS (SMALL AIRCRAFT)

The feasibility of an all-electrical aircraft has to be investigated through the study of innovative energy management architectures, requiring joining forces to provide appropriate requirements to Systems ITD.

The general objective of this part of the Eco-Design ITD is to make a significant step towards the concept of the all-electric vehicle systems aircraft:

- *Removing of hydraulic fluid*

From the removing of hydraulic fluids we expect significant benefits in terms of **aircraft maintenance and disposal environmental impact**.

- *On board power by wire*

The use of electricity as only media offers a lot of possibility in terms of energy management (e.g.: Intelligent load shedding, power regeneration on actuators, sharing of Electrical Control Unit over actuators).

3.1 Statement of Work

Eco-Design WPs include:

- WP S.1: Common activities related to the generic architecture,
- WP S.3 and S.4: Electrical and thermal ground tests activities,
- WP S.2: Specific architecture activities related to the business jet.

For the purpose of the all electric small a/c objective, these WPs are completed with activities hosted by the GRA, GRC and SGO ITDs.

3.2 2011 tasks and associated outputs

List of tasks to be carried out in 2011 – Associated outputs:

WP S 1.1: Methods & Tools

Tasks performed in the frame of the common activities, method and tools are related to:

- WP S.1.1.1: Process
- WP S.1.1.2: Energy Management Model
- WP S.1.1.3: Electrical Network Analysis Model
- WP S.1.1.4: Thermal Model
- WP S.1.1.5: Ecologic Model
- WP S.1.1.6: Database Definition



Only outputs are provided in the following to give an idea of the activity.

Outputs			
Ref. No.	Title	Type	Date
DS1.1.1-3	Stakeholders Expression of Interest - draft	D	30/06/2011
DS1.1.1-4	Stakeholders Expression of Interest - final	D	31/12/2011
DS1.1.1-5	Description of Exchanges with Equipment Suppliers	D	30/04/2011
DS1.1.1-6	Equipment Supplier Interface Control Document	D	30/06/2011
DS1.1.1-7	Description of Exchanges with Engine Suppliers	D	31/03/2011
DS1.1.1-8	Engine Supplier Interface Control Document	D	31/03/2011
DS1.1.1-11	Process and Interfaces between EMM, ENAM and economic models - Interface control document	D	15/12/2011
DS1.1.1-12	Software Project Progress Presentation #1	P	31/03/2011
DS1.1.1-13	Software Project Progress Report #1	D	31/03/2011
DS1.1.1-14	Modeling Computer Platform System Requirements	D	31/12/2010
DS1.1.1-15	Modeling Computer Platform Validation Plan	D	31/12/2010
DS1.1.1-16	Modeling Computer Platform SyRR	R	31/12/2010
DS1.1.1-17	Models Information Exchanges - Interface Control Document	D	30/06/2011
DS1.1.1-18	Modeling Computer Platform PDR	R	30/06/2011
DS1.1.1-19	Modeling Computer Platform Top Level SSDD	D	30/06/2011
DS1.1.1-20	Modeling Computer Platform Software Requirement Specification	D	30/06/2011
DS1.1.1-21	Modeling Computer Platform Integration Plan	D	30/06/2011
DS1.1.1-22	Modeling Computer Platform CDR	R	30/06/2011
DS1.1.1-23	Process Validation Plan	D	30/06/2011
DS1.1.2-1	Energy Management Model Global Design	D	30/09/2011
DS1.1.2-2	APOM Global Design	D	30/09/2011
DS1.1.2-3	EMM and APOM Software Requirements Review	R	30/09/2011
DS1.1.2-4	EMM Presentation	P	31/10/2011
DS1.1.2-5	APOM Presentation	P	31/10/2011
DS1.1.3-2	Dynasim/Dassault Systems Dymola Assessment	D	31/12/2010
DS1.1.3-3	Electrical Network Analysis Model Global Design	D	31/07/2011
DS1.1.3-5	Electrical Network Analysis Model Presentation	P	30/09/2011
DS1.1.4-5	Small A/C Mockup and extension model principles	D	31/01/2011
DS1.1.4-6	R/C ACC and extension model principles	D	31/01/2011
DS1.1.5-1	Economic Model Justification Paper	D	30/03/2011
DS1.1.5-2	Economic Model Computer Implementation	S	31/05/2011
DS1.1.5-3	Economic Model Computer Implementation Validation File	D	30/06/2011



Outputs			
Ref. No.	Title	Type	Date
DS1.1.5-4	Economic Model Presentation	P	31/07/2011
DS1.1.5-8	Economic Model Computer Implementation Validation File for BJ	D	30/09/2011
DS1.1.6-1	Database Definition	D	30/09/2011

WP S 1.3: Generic Architecture

Tasks performed in the frame of the common activities, generic architecture are related to:

- WP S.1.3.1: Top Level Generic Architecture
- WP S.1.3.2: Electrical Generation / Conversion
- WP S.1.3.3: Electrical Distribution
- WP S.1.3.4: ECS
- WP S.1.3.5: FCS

Only outputs are provided in the following.

Outputs			
Ref. No.	Title	Type	Date
DS1.3.1-2	Generic Architecture Synthesis	D	31/03/2011
DS1.3.2-1	HLTR for GA Ground Electrical Power Generation	D	31/12/2010
DS1.3.2-2	HLTR for GA Emergency Electrical Power Generation	D	31/03/2011
DS1.3.2-3	HLTR for GA Batteries and Battery Chargers	D	31/12/2010
DS1.3.2-4	HLTR for GA Main Electrical Generation System	D	31/01/2011
DS1.3.2-5	Modelling specification at the EPGCS level (1 st draft)	D	31/03/2011
DS1.3.2-6	Scalable models of EPGCS equipment (1 st draft)	S	31/03/2011
DS1.3.2-7	Electrical load balance report (1 st draft)	D	30/09/2011
DS1.3.2-8	Scalable models of equipment weight, volume, maintenance, reliability (1 st draft)	S	31/03/2011
DS1.3.2-9	High level specification of the optimised generic EPGCS (1 st draft)	D	31/03/2011
DS1.3.3-1	HLTR for GA Primary and Secondary Electrical Power Distribution	D	31/01/2011
DS1.3.3-3	Dassault Proposal for Primary Electrical Power Distribution for GA	D	31/12/2010
DS1.3.3-4	GA Electrical Distribution PDR	R	30/09/2011
DS1.3.3-10	Scalable Functional Model of GA Electrical Power Distribution Description and Specification	D	30/09/2011
DS1.3.4-1	HLTR for GA Environment Control System	D	31/12/2010
DS1.3.4-2	HLTR for GA Ice Protection System	D	31/12/2010



Outputs			
Ref. No.	Title	Type	Date
DS1.3.5-1	Integration Specification for Dassault Aviation Primary FCS EMA	D	30/09/2011
DS1.3.5-2	Integration Specification for CISACS Hardware	D	30/06/2011
DS1.3.5-3	Integration Specification for Rotorcraft Primary FCS Actuators	D	01/06/2011
DS1.3.5-4	Integration Specification for Regional Airplane FCS Actuators	D	30/06/2011

WP S 1.4: Ground Tests & Benches requirements

Tasks performed in the frame of the common activities, ground tests and benches requirements are related to:

- WP S.1.4.1, S.1.4.3: Electrical bench and tests requirements
- WP S.1.4.2, S.1.4.4: Thermal bench and tests requirements

Only outputs are provided in the following.

Outputs			
Ref. No.	Title	Type	Date
DS1.4.1-2	Electrical Bench Requirements Review	R	15/01/2011
DS1.4.1-7	Electrical Bench Requirements	D	15/12/2010
DS1.4.2-1	Thermal Bench Requirements	D	10/12/2010
DS1.4.2-2	Development Plan for the Thermal Bench	D	10/12/2010
DS1.4.2-3	Thermal Block Diagram	D	10/12/2010
DS1.4.2-4	Thermal Bench Requirements Review	R	10/03/2011
DS1.4.3-1	Electrical Test Cases Review	R	15/02/2011
DS1.4.3-8	Electrical Tests Requirements	D	31/01/2011
DS1.4.3-9	BJ Configuration Test Requirements	D	31/12/2010
DS1.4.4-1	Matrix of feature test points per platform	D	31/01/2011
DS1.4.4-2	Thermal Tests Requirements	D	31/12/2010
DS1.4.4-3	Thermal Tests Requirements Review	R	10/03/2011

WP S 1.5: Subsystems Requirements and Development Follow-up

Description of work (Tasks)		
Ref. No.	Title	Description
TS1.5.0-1	Calls for Proposal	Prepare the topic sheets for items procured via CfP. Provide answers to any question coming from the CSJU, related to the topic sheets. Participate as a topic manager to the evaluation session. Perform the technical negotiation with the partner and support the commercial negotiation.



Description of work (Tasks)		
Ref. No.	Title	Description
TS1.5.0-2	Subsystem Requirements	Prepare the Subsystem Requirements or Subsystem Integration Requirements document for the target subsystem, test cells or function.
TS1.5.0-3	Development Follow-up	<p>Follow up development phase which consist in:</p> <ul style="list-style-type: none"> - Obtaining and examining the development plan - Participation to trade-off studies - Participation to the PDR - Examining PDR document and approbation of the Acceptance Test Plan and Qualification Plan. - Participation to the CDR - Participation to selected qualification tests - Participation to the First Article Inspection which includes a complete acceptance procedure - Evaluation of intermediate models - Final models acceptance <p>A library of development records will be created, gathering at least the management plan, acceptance plan and qualification plan.</p>
TS1.5.0-4	Models acceptance	Tests of the delivered models in the simulation environment of EDS

WP S 2.3: Subsystems Architecture Candidates

Tasks performed in the frame of the Business Jet (BJ) activities, Subsystems architecture candidates are related to:

- WP S.2.3.1: BJ Electrical Generation / Distribution
- WP S.2.3.2: BJ ECS & Ice Protection
- WP S.2.3.5: BJ Secondary Power System
- WP 2.3.6: BJ Engine

Only outputs are provided in the following.

Outputs			
Ref. No.	Title	Type	Date
DS2.3.1-1	System Requirements for BJ Ground Electrical Power Generation	D	30/06/2011
DS2.3.1-2	System Requirements for BJ Emergency Electrical Power Generation	D	30/06/2011
DS2.3.1-3	System Requirements for BJ Normal Electrical Power Generation	D	30/06/2011
DS2.3.1-4	System Requirements for BJ HVDC Electrical Power Distribution	D	30/06/2011
DS2.3.1-5	System Requirements for BJ HVAC Electrical Power Distribution	D	30/06/2011
DS2.3.1-6	System Requirements for BJ LVDC Electrical Power Distribution	D	30/06/2011
DS2.3.1-7	System Requirements for BJ ULVDC Electrical Power Distribution	D	30/06/2011
DS2.3.1-8	System Design for each architecture	D	30/09/2011



Outputs			
Ref. No.	Title	Type	Date
DS2.3.1-9	Preliminary performance data	D	30/09/2011
DS2.3.1-10	Preliminary equipment sizing	D	30/06/2011
DS2.3.2-1	System Requirements for BJ Low Power Electrical WIPS	D	30/06/2011
DS2.3.2-2	System Requirements for BJ Equipment Thermal Control System	D	30/06/2011
DS2.3.2-3	System Requirements for BJ Nacelle Ice Protection System	D	30/06/2011
DS2.3.2-4	System Requirements for BJ Pressurization System	D	30/06/2011
DS2.3.2-5	System Requirements for BJ Cabin Thermal Control System	D	30/06/2011
DS2.3.2-6	System Requirements for BJ Ancillary Ice Protection Systems	D	30/06/2011
DS2.3.2-7	Sketch of Target ECS Configurations for the BJ	D	30/06/2011
DS2.3.6-2	Definition of reference BJ engine : Conventional thermodynamic data and spot points performances data on selected reference business A/C turbofan engine Overall business A/C turbofan engine characteristics: weight and dimensions	D	31/12/2010
DS2.3.6-3	SFC, engine mass and dimensions data, for each bleed and power extraction option studied.	D	31/05/2011
DS2.3.6-4	Provide torque data (Engine torque as a function of relevant parameters, for N varying from 0 to Ground Idle, for various P, T conditions) for one business A/C turbofan engine	D	31/01/2011
DS2.3.6-5	Definition of optimum engine starting sequence for BJ engine with starter-generator architecture	D	31/05/2011

WP S 2.4: BJ Sub Systems Requirements and Development Follow-Up

Description of work (Tasks)		
Ref. No.	Title	Description
TS2.4.0-1	Calls for Proposal	Prepare the topic sheets for items procured via CfP. Provide answers to any question coming from the CSJU, related to the topic sheets. Participate as a topic manager to the evaluation session. Perform the technical negotiation with the partner and support the commercial negotiation.
TS2.4.0-2	Subsystem Requirements	Prepare the Subsystem Requirements or Subsystem Integration Requirements document for the target subsystem or function.
TS2.4.0-3	Development Follow-up	Follow development phase at the partner or in another project.

Outputs			
Ref. No.	Title	Type	Date
DS2.4.0-3	Alternator and AR Subsystem Requirements	D	30/06/2011
DS2.4.0-5	Heat pipe Subsystem Requirements	D	30/06/2011



WP S 3: Ground Electrical Test Bench

Tasks performed in the frame of the ground electrical test bench activities are related to:

- WP S.3.1: Ground electrical bench definition
- WP S.3.2: Electrical tests definition
- WP S.3.3: Electrical test bench integration

Only outputs are provided in the following.

Outputs			
Ref. No.	Title	Type	Date
DS3.1.0-1	Electrical Iron Bird Preliminary Design for Long Lead Items	D	14/07/2011
DS3.1.0-2	Electrical Iron Bird Preliminary Design for Long Lead Items Review	R	14/06/2011
DS3.1.0-3	Electrical iron Bird Preliminary Design for Long Lead Items Presentation	P	14/06/2011
DS3.1.0-4	Electrical Iron Bird Preliminary Design File	D	15/07/2011
DS3.1.0-5	Electrical Iron Bird Preliminary Design Review (PDR)	R	15/06/2011
DS3.1.0-6	Electrical iron Bird Preliminary Design Presentation	P	15/06/2011
DS3.1.0-8	Electrical Iron Bird Critical design Review (CDR)	R	15/12/2011
DS3.1.0-9	Electrical iron Bird Critical Design Presentation	P	15/12/2011
DS3.2.0-1	Generic configuration test plan	D	08/04/2011
DS3.2.0-2	Regional A/C configuration test plan	D	01/06/2011
DS3.2.0-3	Rotorcraft configuration test plan	D	01/06/2011
DS3.2.0-4	BJ configuration test plan	D	12/05/2011
DS3.2.0-5	Electrical test bench test plan	D	08/04/2011

WP S 4: Ground Thermal Test Bench

Tasks performed in the frame of the ground thermal test bench activities are related to:

- WP S.4.1: Ground thermal bench definition
- WP S.4.2: Thermal tests definition
- WP S.4.3: Thermal test bench integration

Only outputs are provided in the following.

Outputs			
Ref. No.	Title	Type	Date
DS4.1.0-1	Technical review of WIPS-Slat integration solution	R	31/03/2011
DS4.1.0-2	Low Power WIPS ICD	D	31/03/2011



Outputs			
Ref. No.	Title	Type	Date
DS4.1.0-3	Description of the Thermal Bench	D	28/02/2011
DS4.1.0-5	Definition file of the thermal test bench, mock-up supporting systems part	D	30/06/2011
DS4.1.0-7	Definition file of thermal test bench, large mock-up part	D	30/12/2011
DS4.1.0-8	Preliminary definition of the functions and geometry of the large mock-up	D	28/02/2011
DS4.3-2	Documentation of handling equipment	O	30/09/2011



4. 2010 CALLS FOR PROPOSAL

The Calls for Proposal on 2011 AIP represents an amount of about **10.42 M€** of funding. These CfPs are to be launched on the 1st to the 3rd 2011 call in order to start.

The related topics list is not defined at the release time of this document.