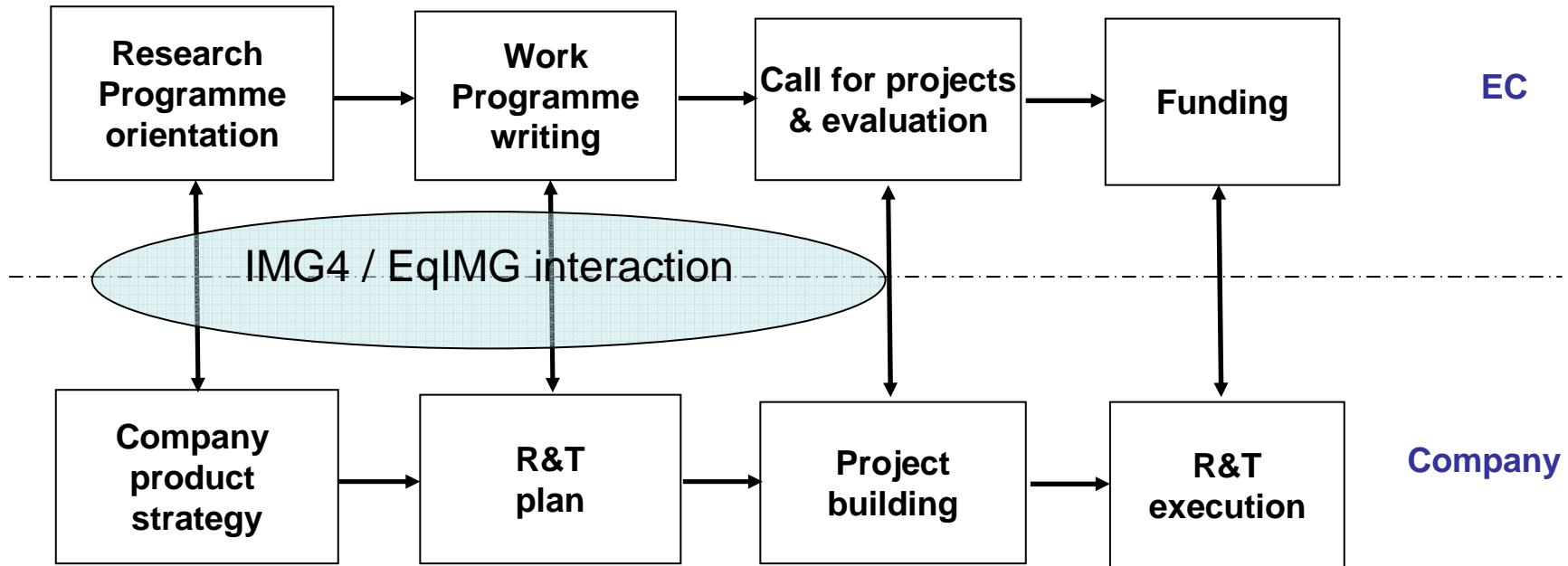


EqIMG projects for 3rd call

**15th of October 2009
AeroPortal Workshop
Brussels**

Jean-Thierry Audren (2009 EqIMG chairman)

IMG4 / EqIMG function versus companies



The European Aeronautics industry network for R&T IMG4

- ASD-IMG4 coordinates industry's position with regard to the EU Civil Aeronautics Framework Programmes.
- ASD-IMG4 represents, through the Industry Management Groups (IMG), the European Aeronautics Industry.

IMG4 comprises representation
from four groupings :

Euromart IMG

Agusta-Westland (2)
Alenia Aerospazio
Airbus (4/2)
Dassault Aviation
Eurocopter
SAAB AB
S.A.B.C.A.
Partners :
PZL Mielec & Swidnik
EADS-M, RUAG, HAI,
Aernnova

Engine IMG

Alstom
AVIO
ITP
MTU Aero Engines
PBS Velká Bíteš
Rolls-Royce
RRD
SNECMA
Techspace Aero
Turbomeca
Volvo Aero
WSK Rzeszow

Equipment IMG

BAE systems avionics	FLAG
Cesa	Diehl Aerospace
Hellenic Aerospace Ind.	Selex Galileo
GIFAS	Goodrich
Jihostroj	ISQ
<u>Liebherr-Aerospace</u>	Qinetiq
Messier-Bugatti	Meggitt
Messier-Dowty Ltd	NAG
Nord-micro	Saab Avionics
<u>Sagem</u>	SelexComm
Skysoft	<u>GE Avionics</u>
Thales Av. Electric Systems	<u>Thales Aerospace</u>
ZF Luftfahrttechnik GMBH	
ASME/GR	

ATM - IMG

Airbus
Alenia Aeronautica
Astrium
BAe Systems
Dassault Aviation
Eurocopter
Selex Galileo
Hellenic Aerospace Industry
Indra
Raytheon Systems
Selex Communications
Smiths Aerospace
Selex SI
Thales Alenia Space
Thales ATM
Thales Aerospace

The European Aeronautics industry network for R&T Role of ASD-IMG4

- **Develop and maintain the coordinated industrial position on EU R&T programmes in the field of civil Air Transport in line and in coordination with ACARE**
- **Represent, through the Industry Management Groups (IMG), the European Aeronautics Industry**
- **Maintain tight links with ARG (research establishments)**
- **Support workshops with AeroSME and universities**
- **Support workshops to promote international cooperation**

The Equipment Sector: Facts & figures

- **800+ companies in all E.U. countries**
 - **From large System / Subsystems companies to SMEs**
 - **Activities covering systems and equipment for fixed and rotary wing aircraft**
 - **Serves a global customer base**
 - **Employs a wide range of constantly evolving technologies :
Mechanics, Electronics, Hydraulics, Electro mechanics, Software,
Materials, etc. => Historically high level of R&D investment**
 - **Success of European airframe and engine suppliers does not
automatically equate to success for the European equipment
industry**
 - **More than 50% of the equipment on the A380 is non-European**
-

EqIMG: How it works

- **EqIMG is open to all EC Aeronautic equipment industry on a voluntary basis**
- **Candidates are presented by the national trade associations**
- **9 to 10 meetings each year most often in Brussel**
- **Activity**
 - **Exchanging information on a voluntary basis**
 - **Building EqIMG position towards EC and IMG4**
 - **Inviting guests: EC, Airframer, RTO groups,...**
 - **Organising workshop or representation in workshop**
- **Terms of reference are available**

EqIMG current activity

- **Workshops**
 - **Exchange with pilots (July 2009)**
 - **Presentation to AeroPortal (October 2009)**
- **FP7 3rd call preparation**
 - **Preparation of a list of L1 projects presented by EqIMG companies**
- **FP7 4th call preparation**
 - **Preparation of a list of EqIMG L2 projects to be supported at IMG4 level**

3rd call EqIMG list: Eq 3

- **AAT.2008.1.1.4. Systems and Equipment for all electric aircraft**
- **Before its final use, electrical power is often converted to suitable voltage and quality. Currently it happens in in hundreds of equipment and modules in each aircraft leading to significant weight and power wasting. Research using new magnetic material and electronics components combined with innovative controls in new generation of power conversion modules tailored to aeronautic needs will offer the opportunity to save a significant amount of mass, volume and power.**
- **Lead: Sagem**
- **Focal point: Laurent Martin
(laurent.martin@sagem.com)**

3rd call EqIMG list: PRIMA (Eq 16)

- **AAT.2010.4.1.3. Systems and equipment**
- **To define the new Commercial Aeronautical Packaging for Avionics in replacement of the thirty-five years old ARINC 600 Standard that has reached its limits for next generation of IMA platforms particularly in term of head densities, the idea is :**
 - **Propose more competitive packaging modular architectures and get the best compromise in term of volume, weight, energy and global cost at the Avionics subsystem level**
 - **Ensure usage of COTS electronics and new generation of processors**
 - **Simplify connectors to ease A/C installation**
 - **Fulfil the new A/C environmental carbon fuselage requirements (vibrations, EMC,..)**
 - **Increase the reliability by reduction of hot spots and average temperatures**
 - **Fulfil the functional requirements : maintainability, upgradeability, standardization of the interfaces**
- **Lead: Thales**
- **Focal point: Bertrand Larrieu (bertrand.larrieu@fr.thalesgroup.com)**

3rd call EqIMG list: Eq 19

- **AAT.2010.4.1.3. Systems and equipment**
- **Information management**
- **Research into an Integrated approach to information management, aimed at a holistic approach to dissemination and presentation which embraces all aspect of platform operation - air, ground, people/cargo and operations including Aircraft On board Data management Security and the on-ground interface for applications. It will increase the global safety of the aircraft operational use. It will be compliant with the communication link defined in SANDRA and based upon the SESAR recommendations for data security . This would exploit new generations of display technologies (wide screen, flat projection, HUD or head mounted) and human centred interface solutions.**
- **Lead: Sagem**
- **Focal point: Laurent Martin (laurent.martin@sagem.com)**

3rd call EqIMG list: Eq 21

- **AAT.2010.4.1.3. Systems and equipment**
- **High rate communication**
- **Research for a comprehensive solution for a high bandwidth aeronautical network by integrating innovative technologies such as mobile ad hoc networking and electronically steered beam forming microwave antennas. A system encompassing layers 1-3 will be defined and tested**
- **Lead: Sagem**
- **Focal point: Jean-Thierry Audren (jean-thierry.audren@sagem.com)**

3rd call EqIMG list: Eq 30

- **AAT.2010.4.2.2. Aerostructures**
- **Advanced concepts for sensing damages in composites**
- **Fiber Bragg gratings (FBG) appear to be a good sensor solution for stress / strain and temperature monitoring as well as damage detection of these parts. The scope is to develop the technology and tools for the manufacture of composite structures with wired sensor mesh that can be interrogated and provide online, real-time information about structural capability of the part and the sensor network itself.**
- **Lead: Open**
- **Focal point: Theo Spathopoulos (spaths@hol.gr)**

3rd call EqIMG list: Eq 27

- **AAT.2010.6.2.2. Guidance and control (Breakthrough and emerging technologies)**
- **Non cooperative landing**
- **Investigation of new approaches to guide and control the vehicle flight with very high or total automation. It could include topics such as the application of new generation computers, on-board or on-ground, to entirely manage the flight and provide for pilot-free operation with the possibility to reverse the operation to human control, robotic technologies embodied in autonomous robots to perform specific guidance and control tasks.**
- **Lead: Open for lead**
- **Focal point: Nigel Mills (njmills@qinetiq.com)**

3rd call EqIMG list: Eq 28

- **AAT.2010.6.2.2. Guidance and control**
- **Advanced ATC communication**
- **Advanced ATC communication system, relaying instructions to pilots and automatically broadcasting aircraft information and intent to ATC and other airspace users. Spectrum efficient solution facilitating insertion of unmanned aircraft in controlled and non-controlled airspaces, and also enabling unmanned and manned aircraft take-over in case of emergency.**
- **Lead: RCF**
- **Focal point: GIFAS (anne.bondiou-clergerie@gifas.asso.fr)**

3rd call EqIMG list: Eq 9

- **AAT.2010.6.2.2. Guidance and control (Breakthrough and emerging technologies)**

- **Automated decision making**

- **Autonomous collision avoidance:**

Research into new approach to vehicle guidance in conflict situations aimed at the provision of Autonomous Non cooperative collision avoidance system for commercial aircraft (to complement TCAS) based on integration of the particular properties of new sensors (e.g. FLIR) which are becoming more common on aircraft for other purposes (e.g. for use as a landing aid in low visibility) with algorithms having sufficient integrity to interface with flight control systems. For example, IR can be used to detect exhaust gases. Solutions are necessary to eliminate the threat from non-cooperative hazards such as the recent accident (737 + Embraer Legacy) over Brazil.

- **Lead: Sagem**

- **Focal point: Jean-Thierry Audren (jean-thierry.audren@sagem.com)**

3rd call EqIMG list

Cooperation with Russia MOZART

- **Context :**

In the field of health management systems, model-based diagnostic technologies appear as very efficient way to characterise embedded systems' fault models. These fault models are intended to reproduce the physical symptoms of each fault condition.
- **Objective :**

Application of the new distributed local diagnostic technologies to electronics systems, to :

 - Reduce the frequency of scheduled and unscheduled time-based maintenance
 - Reduce the required maintenance man-power
 - Enhance vehicle availability & operational reliability
- **Project description :**

Development of methodology and tool to perform BITE diagnostic using diagnostic model based reasoning in design development phase
- **Partners :** Russian partners and European research centres
- **Point of contact :** THALES Aerospace : Bertrand LARRIEU
bertrand.larrieu@fr.thalesgroup.com