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EU project ANASTASIA starts off for the future of navigation and communication for civil aviation

Brussels, Weßling – Today the EU project ANASTASIA starts off for the future of navigation and communication for civil aviation.

The overall scientific & technical objective of ANASTASIA is to define navigation and communications avionics based on satellite services that will best meet the needs of civil aviation in the period 2010 to 2020. The project includes the definition of an optimised avionics architecture and the resulting recommendations for ground and space infrastructures. It includes the preliminary system development of advanced airborne systems for flight trial evaluation and the dissemination of the results for standardisation activities.

Objectives in the Satellite Communications Domain

- To establish the requirements for an affordable SATCOM system for ATM, considering also the synergy with passenger use.
- To design, implement and demonstrate a preliminary system development of an affordable aeronautical SATCOM system that will meet evolving European ATM requirements such as using satellites to complement the congested VHF spectrum. The design will be based on the current or planned space segment and will have maximum synergy with existing and planned non-ATM aeronautical SATCOM systems
- To carry out research into higher bandwidth services, systems and airborne equipment to meet future SATCOM requirements for ATM. Due to the very high cost of satellite communication systems, the synergies with revenue-generating passenger use shall also be considered in order to ensure a cost efficient approach.

Objectives in the Satellite Navigation Domain

- To consolidate air navigation performance requirements and map to potential operational benefits from the use of space-based navigation systems in future aircraft and airspace.
- To investigate and evaluate the following techniques and technologies that are the keys to the success of future space-based navigation systems:
 - Multi-constellation, multi-frequency GNSS receivers (GPS/Galileo) for real world-wide autonomous robust navigation
 - Signal processing

techniques and antenna design for high robustness to critical Radio Frequency Interference environments

- High accuracy and integrity techniques for up to Cat 3 landing and gate-to-gate operations (SMGCS)
- Low cost inertial sensor technologies (MEMS) and techniques to optimally combine inertial and GNSS sensors for air navigation and landing
- To define, based on these evaluations, a set of new candidate architectures for navigation taking advantage of the new constellations, as the best trade-off between performance capabilities and cost requirements
- To contribute to standards and regulation

Objectives in the Surveillance Domain

- To assemble the surveillance needs of the future (2010 to 2020) in order to provide the necessary requirements on the definition of the navigation and communication systems.

About ANASTASIA

Launched on 1 April 2005, ANASTASIA is an Integrated Project of the “Aeronautics and Space” thematic priority of the 6th Framework Program (FP6), under the “increasing the operational capacity and safety of the air-transport system” topic.

Several partners from industry and academia are involved in the project and the lead Thales AVIONICS: Airbus (France and Deutschland), DASSAULT AVIATION, THALES AVIONICS (Thales avionics France and UK), ERA Technology Ltd., Inmarsat Limited, Ascom Systec AG (Switzerland), Astrium, MARCONI SELENIA COMMUNICATIONS S.p.A., DATA RESPON, GateHouse, RHEA SYSTEM S.A., Skysoft Portugal, S.A., SIREHNA, TriaGnoSys GmbH, Russian partners : RISDE and GEO-ZUP, DLR (Deutsches Zentrum für Luft- und Raumfahrt), EADS Corporate Research Center, JOANNEUM RESEARCH, NLR, INSA / ENAC, University College London, Imperial College London, University of Surrey, Technische Universität Braunschweig, Institut für Flugführung, University of Vigo, EADS CCR

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