Introduction to the SESAR 2020 RPAS Definition Phase

Workshop 01

Brussels, September 4th 2014
Content

- Rationale
- EC Mandate
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- Civil RPAS Integration into the European Aviation System
RPAS will generate the emergence of a new service sector
RPAS limited by flight authorisations not aligned one-another and limited to segregated airspace
Need to develop a seamless regulatory framework and enhance the coordination of various on-going R&D initiatives
A broad, safe and swift RPAS integration into the EU civil aviation system requires an enhanced coordination between the numerous actors and the different activities involved (regulatory, R&D and others)
RPAS integration in airspace will be gradual and subsequently alleviated as soon as technology, regulation and societal acceptance progress
Mandat

Address the R&D requirements related to RPAS integration into the European civil aviation system

- **Aim:** integrate RPAS in the aviation system
- **In line with** the European for RPAS integration
- **Identify** what are the essential R&D activities
- **Funded under** Horizon 2020
Requirements & Challenges

- Requirements for RPAS integration are linked to the European ATM Master Plan and the ICAO Global Plan/ASBU timeline
- RPAS will have to fit into the ATM system (and not the reverse), with required adaptations to enable the safe integration of unmanned systems
- RPAS will have to prove to be as safe as current manned vehicle operations and, their behaviour in operations, to be equivalent to manned aviation, in particular for air traffic control
- Thus, RPAS integration into the Aviation System shall comply with:
  - existing and consider future regulations and procedures developments
  - the SESAR CONOPS (trajectory management)
  - ATC rules/procedures
  - capability requirements applicable to the airspace within which they operate

And not to:
- impact negatively the operations of the current system and its performance
- compromise existing aviation safety levels nor increase risk levels.

The way RPAS operations will be conducted, as regard to ATM operations has to be equivalent to manned aircraft
SESAR RPAS
Demonstration Projects
SESAR RPAS Demonstration Projects

- Demonstration Projects, which include integrated pre-operational flight trials activities, have been selected;

- Main objectives:
  - Demonstrate how to integrate RPAS into non-segregated airspace in a multi-aircraft flight environment, with the purpose of exploring the feasibility of integration within the wider aviation community by 2016;
  - Identify gaps and provide insight into filling them;
  - improve our knowledge of key operational and technical issues that will help us during the forthcoming RPAS definition phase.
Timeline and deliverables

Phase 1
"Definition"

Kick-Off Meeting (KOM)
Oct. / Nov. 2013

45 to 90 Days from KOM
Jan. / March 2013

Today

Phase 2
"Implementation"

Max. 24 Months from KOM
Oct. / Nov. 2015

Deliverable D.01

Demonstration Plan
- Including a Communication Strategy

Final Report

Deliverable D.02

FROM INNOVATION TO SOLUTION
MAIN OBJECTIVE: Develop a regulatory framework and to enable technologies which currently only allow the operation of RPAS in a segregated environment. 4-D trajectory information exchange between ATCO and RPAS operator and RPAS air vehicle, and alternative RPAS-specific interoperable surveillance, communications and navigation solutions will be addressed.

VALIDATION APPROACH: Simulations and flight trials on a fully remotely piloted Thales Watchkeeper installed with Detect & Avoid (D&A) capabilities.

TYPE OF RPAS: MALE optionally piloted.

PROJECT ENDS: October 2015;

PARTNERS:

LOCATION: UK and The Netherlands
Refine the essential R&D activities for the integration in the EU Aviation System in the context of the Single European Sky initiative, as of 2016 and beyond

Identify globally interoperable and harmonised ATM requirements and enablers to meet the performance requirements

Produce a R&D and Validation programme - including planning, costs and priorities, as required by the different identified ATM requirements and enablers

Establish a high level implementation timeline, including costs and priorities

Provide material supporting the alignment of the legislative, financial and regulatory frameworks required for the deployment, including incentive mechanisms

Structure and organise the RPAS R&D needs to anticipate the 2015 update of the European ATM Master Plan
… or how do we get there?
The RPAS Definition Phase will result in the following activities:

- Regulatory and Business Framework
- Performance Requirements and Assessment
- Operational Changes in ATM
- Enabling Systems
- Validation Needs
- SESAR RPAS R&D Programme requirements and outline
- Input to the EU ATM Master Plan

There is not intend to define a separate RPAS SESAR Programme for R&D
Foreseen steps

1. Mapping Roadmap Activities
2. Re-align roadmap WPs
3. Identify gaps
4. Update DOW for RPAS
5. Finalization
Building SESAR 2020

- June 2014 Proposal Programme 2020
- July 2014 Call for expression of interest
- Oct – Dec 2014 “Negotiations”
- Jan – Feb 2015 IBAFO 2020
- 1st July 2015 Programme 2020

FROM INNOVATION TO SOLUTION
Thanks for your attention