Selected Remarks about Smart AEROVAN as a Candidate for L2 Project

FP7 topic AAT call at 2011

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Outline of presentation

1. Role of AEROVAN in passenger transport system
2. Motivation for integrated project of AEROVAN class
3. Overcoming the weaknesses of current configurations
4. Consortium
5. Structure of the project
Components of the passenger air transport system

- Airliners
- Commuters
- High speed Aerovans
- Personal Planes
- STOL Aerovans

Z.Goraj, Smart AEROVAN Concept
1. In the past the producers of large airplanes, helicopters and engines were supported with European money in their research to become world leaders. **Now it is time for change!** - new member states must play more important role in the category of short range aircraft of lower capacity;

2. AEROVAN L2 might be a downstream RTD, multidisciplinary, focused on integration and validation at system level project;

3. AEROVAN L2 project might bring together partners from all of the Europe industry, research organisation and academia with the essential role of new member states: Poland, Czech Republic, Romania etc;

4. The so-called Flexi-Bird tool (scaled, flying model) could be used as a proof-of-concept (this tool was developed within NACRE project);
Multidisciplinary optimisation at system level - overcoming the weaknesses of current configurations

Goals:
- $V_{\text{landing}} \approx 75 \text{ km/h}$
- $V_{\text{cruise}} \approx 350 \text{ km/h}$
- Low noise
Potential partners in the consortium

Universities
1. PW (Warsaw University of Technology) — Poland
2. BUT (Brno University of Technology) — Czech Republic
3. CUA (Cranfield University Aerospace Engineering) — United Kingdom
4. Stuttgart University — Germany

Industry
5. Hoffmann — Germany
6. Grob — Germany
7. Piaggio Aero Industries SpA — Italy
8. SOCATA — France
9. IAI — Israel
10. BIRD — Israel
11. Aircraft Industries (former LET Kunovice) — Czech Republic
12. PZL-Swidnik — Poland
13. SAGEM — France

Research Institutes
14. ARA, Aircraft Research Association Ltd. — United Kingdom
15. IoA (Institute of Aviation) — Poland
16. VZLU (Vyzkumny a Zkusebni Letecky Ustav) — Czech Republic
17. ONERA — France
18. NLR — Netherlands
Draft scheme of the WP-ies in the AEROVAN L2 project

WP1
Novel A/C concept & requirements

WP1.1
Community Noise Driven A/C

WP1.2
Cabin Noise Driven Aircraft

WP1.3
Payload Driven A/C

WP1.4
FlexiBird Scaled testplatform

WP2
Novel lifting surfaces

WP2.1
Laminar wing

WP2.2
Advanced Flaps/Slots

WP2.3
Advanced tail

WP2.5
Optimal multi-surface configuration

WP3
Novel Power Unit

WP3.1
Low Noise Driven Power Unit

WP3.2
Static Thrust Driven Power Unit

WP3.3
High Performance Driven Power Unit

WP4
Novel fuselage

WP4.1
Low Weight Driven Fuselage

WP4.2
Easy Reconfigurable Passenger Cabin

WP4.3
Passenger Comfort Driven Cabin

WP5
Novel Avionics

WP5.1
All-Weather Support System

WP5.2
A/C Reconfiguration in Hazardous Condition

WP5.3
Smart Responsiveness to Unforeseen Situation

WP5.4
Optimal reconfiguration for trimming

WP6
Management