



Workshop
Institute of Aviation (IoA)
Warsaw, July 7- 8, 2009



CHARLIE - Research to revitalization European GA

moderator: Catalin Nae (INCAS)



Workshop

IoA Warsaw, July 7- 8 , 2009



Topics for discussions

- Novel technologies – transfer/synergy with advanced RTD aerospace achievements
- Structural safety; Life Cycle Extension; Structural Health Monitoring for GA
- Potential concept of CS 23 PLUS - for ATS based on small a/c
- Technology Evaluator of Small Air Transport Aircraft



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- Novel technologies – transfer/synergy with advanced RTD aerospace achievements (1)

Contribution of FP projects to Airbus 380
Maiden Flight: April 2005

Integrated and modular avionics architecture (IMA)
NEVADA BE*3 , PAMELA FP5, VICTORIA FP5, NATACHA

Dual air conditioning Pack concept
ASICA FP5, CABINAIR FP5

High Reynolds Number; Low drag wing design
EGARP BE*3, EUROLIFT FP5, AWIATOR FP5, C-WAKE FP5

Upper fuselage skin in Glare®
TANGO FP5

New low weight fuselage structure
ADPRIMAS FP4, TANGO FP5

Skin to stringer welding (first on A318)
WAFS FP5

Centre wing box in CFRP
TANGO FP5

Zero splice inlet
SILENCER FP5, RAMSES

Carbon Composite rear fuselage (Section 19)
APRICOS FP4, TANGO FP5

Low noise nacelle and engine integration
SILENCE® FP5, RAMSES

On-board maintenance system
TATEM FP6-1

Landing Gear fairing
RAIN FP5 SILENCE® FP5

Highly loaded LPT
EEFAE FP5

New four post main landing gear (4-6-6-4 wheels configuration)
ELGAR BE*4

Electro-hydraulic Actuators
EPIGA, ELISA, EHA FP5

*BE=Brite Euram

IMG4 presentation

Contribution of FP projects to European Helicopter Products

Improved aerodynamic efficiency of rotors :
HELISHAPE BE*3

Fuselage drag reduction of rotors
HELIFUSE BE*3

AgustaWestland GRAND
Maiden flight in 2005

Reduction of Rotor Noise
HELISHAPE BE*3, HELINOVI FP4, FRIENDCOPTER FP6

Aerodynamic integration Rotor/fuselage/ tail unit
HELIFLOW FP4, HELINOVI FP4

Eurocopter EC175
Maiden flight in 2009

Reduction of Interior noise
FACE FP4, FRIENDCOPTER FP6

Improved handling qualities; flight control; flight procedures
HELIFLOW FP4 ; RESPECT FP4 ; FRIENDCOPTER; OPTIMAL FP6

Tool box for helicopter flight physics
HELIFUSE BE*3, EROS BE*3 ; ROSAA BE*3, HELIFLOW FP4

*BE=Brite Euram

Can we do the same for GA ?



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- Novel technologies – transfer/synergy with advanced RTD aerospace achievements (2)

Topics for discussions

- Manufacturing technologies
 - Composite vs “traditional” structure for GA
- Flight control systems for GA
 - Handling qualities
 - Gust alleviation systems for GA
- Avionics for GA
 - Enhanced pilot support
- Certification issues
 - CS-23 regulations



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- Structural Safety; Life Cycle Extension; Structural Health Monitoring for GA

Topics for discussions

- On-condition maintenance
 - HUMS: introduction of a global monitoring system on small aircraft
- Predictive maintenance
 - Pro-active maintenance
- Prognosis and diagnosis
 - on-board monitoring system on aircraft
 - at ground level with industrial expert - all fleet monitoring
- Maintenance on-demand
 - Maintenance-free equipment
 - Disposable electronic



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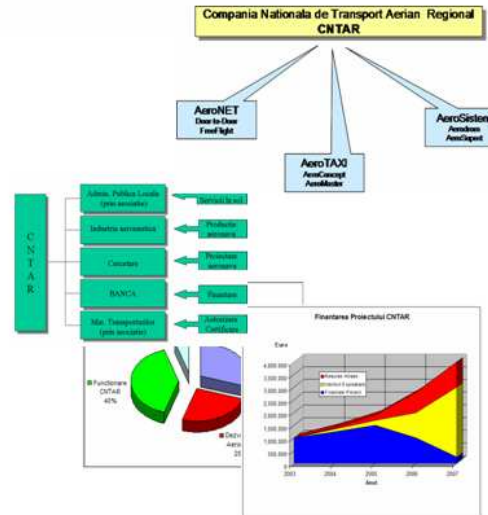


- Potential concept of CS 23 PLUS - for ATS based on small a/c

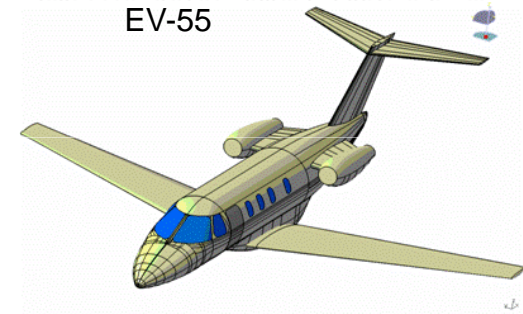
CNTAR – Regional Transportation System



SATS in Romania



EV-55



CESAR – AC2



AeroTAXI



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- Potential concept of CS 23 PLUS - for ATS based on small a/c

Topics for discussions

- SATS in Europe
 - EPATS project
 - CNTAR experience
- New generation of small a/c
 - CESAR project
- ATS based on small a/c
 - International cooperation
 - SESAR JTI
- CS-23 PLUS



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- Technology Evaluator of Small Air Transport Aircraft

Integration with partners from PL, CZ and RO:

- Product development from design specifications to certification and testing
- Specific industrial technology development
- Extensive/virtual enterprise organization
- New supply chain
- Joint testing procedures
- Certification issues
- Fleet monitoring and customer support

