



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

Skin to stringer welding (first on A318)
WAFS FP5

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

On-board maintenance system
TATEM FP6-1

Dual air conditioning Pack concept
ASICA FP5, CABINAIR FP5

Upper fuselage skin in Glare®
TANGO FP5

Centre wing box in CFRP
TANGO FP5

Landing Gear fairing
RAIN FP5 SILENCE® FP5

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

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

New low weight fuselage structure
ADPRIMAS FP4, TANGO FP5

Zero splice inlet
SILENCE® FP5, RAMSES

Low noise nacelle and engine integration
SILENCE® FP5, RAMSES

Highly loaded LPT
EEFAE FP5

Electro-hydraulic Actuators
EPIGA, ELISA, EHA FP5

*BE=Brite Euram

Can we do the same for GA ?

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

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

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

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

Reduction of Interior noise
FACE FP4, FRIENDCOPTER FP6

AgustaWestland GRAND
Maiden flight in 2005

Eurocopter EC175
Maiden flight in 2009

*BE=Brite Euram



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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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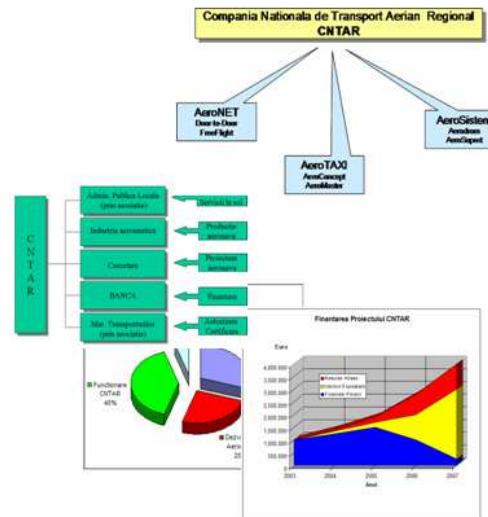


- Potential concept of CS 23 PLUS - for ATS based on small a/c

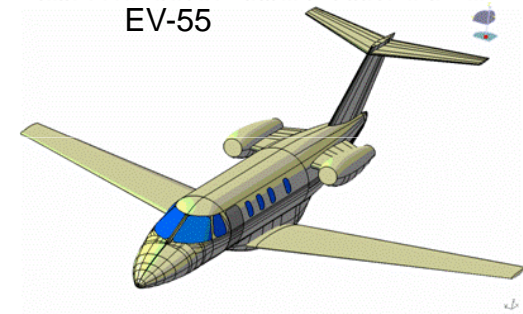
CNTAR – Regional Transportation System



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

