

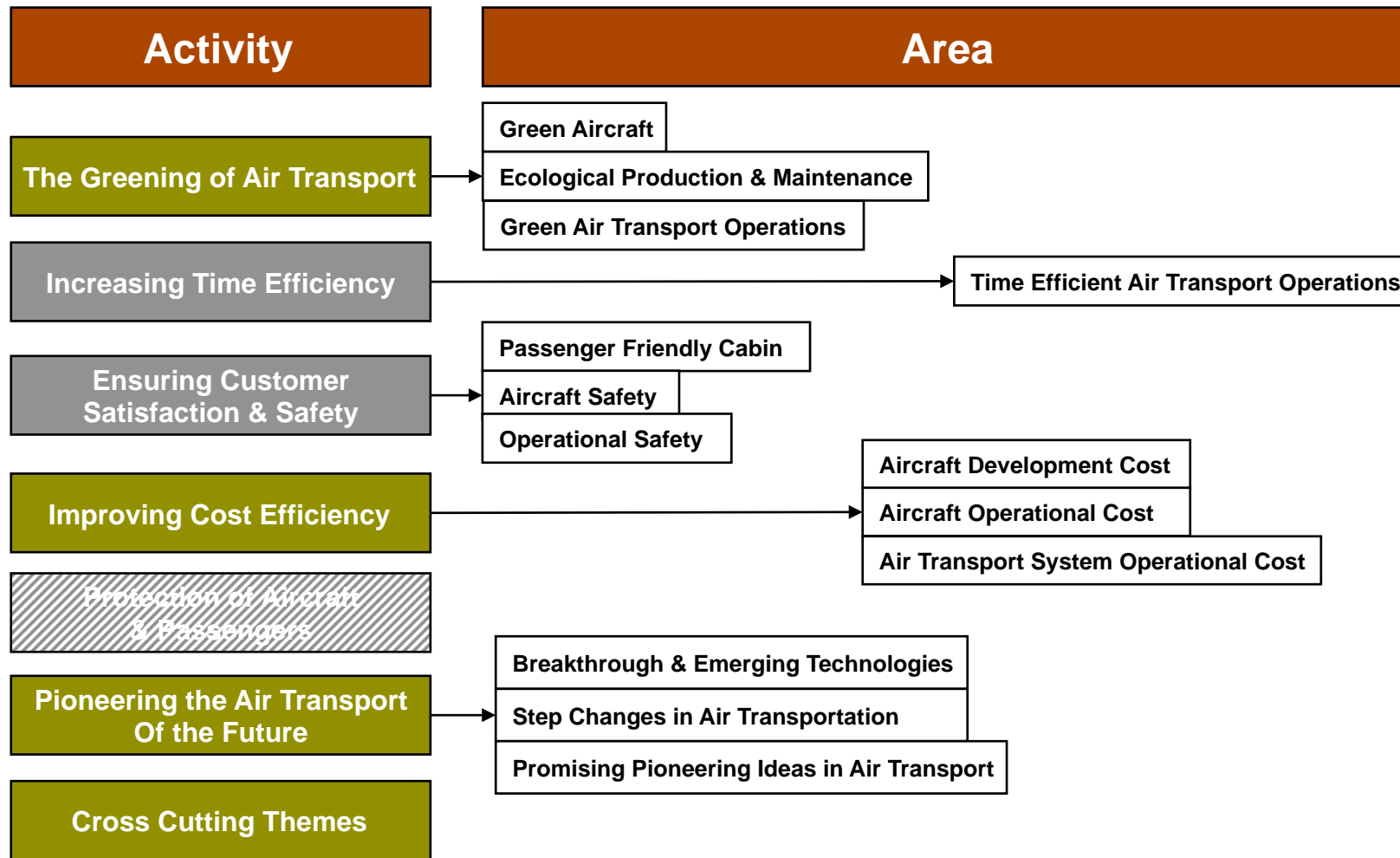
AeroAfrica-EU

FP7 Call Discussion

Pretoria & Stellenbosch Workshop Inputs
Consolidated



Call Activity Breakdown



Rules of Engagement

- We have many topics to get through
 - Maximum 5 minutes per topic
 - Many areas have duplicate topics
- Quick reminder on topic essence and keywords
- Need to populate topics with
 - Person
 - Institution
 - Specific subject matter (keywords)
- Move on
- If we do not finish
 - Follow up session for remaining topics, or
 - Offline discussions

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.1 Green Aircraft

Topic 2010.1.1-1 Flight Physics

- **Wing Morphing**
 - Dr. Craig Law (Wits MIA)
 - Prof. Oscar Philander (CPUT) Smart Actuation
- **Airframe Aerodynamics & Design**
 - Dr. Igle Gledhill (CSIR) CFD
 - Bennie Broughton (CSIR)
 - Joachim Huysen (UP) New aircraft configuration
 - Koosie van den Heever (Denel Dynamics)
- **Control System for Drag Optimization**
 - Mr. Japie Engelbrecht (SUN)

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.1 Green Aircraft

Topic 2010.1.1-2 Aerostructures

- **Light Weight Metallics**

- Dr. Sagren Govender (SSM) Titanium
- Oliver Damm (LDMN)
- Rob Reid (Wits MIA)
- Gerald Nurick (BISRU)
- Andries Uys (Aerosud)
- Francois Prinsloo (NLC)
- Gerrie Booysen (CUT)
- Willie Van der Walt (Denel SAAB Aerostructures)
- Hasan Chauke (Limpopo)
- Khaled Abou- El-Hossein (NMMU) Machining fixtures for thin wall parts

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.1 Green Aircraft

Topic 2010.1.1-2 Aerostructures (continued)

- **Composite Materials**

- Dr. Abisha Thembo (CSIR Textiles)
- Dave Johnson (DUT)
- Prof. Rajesh Anandjiwala (CSIR Textiles / NMMU)
- Gary Corderley (CSIR MSM)
- Manfred Johannes (CSIR)
- Sa-aadat Parker (AAT Composites) Composite Manufacturing
- Shamil Isaacs (CPUT Textile Technology Station) Textile
Composite Testing
- Michael Brooks (UKZN) Environmental degradation of
Composites

- **Aeroelasticity**

- Louw van Zyl (CSIR)

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.1 Green Aircraft

Topic 2010.1.1-3 Propulsion

- **Aerothermal Analysis & testing**
 - Glen Snedden (CSIR DPSS)
 - Josua Meyer (UP) Heat Transfer
 - Johanne van der Spuy (SUN) Compressors
- **Advanced Manufacturing**
 - Ti LMD (NLC)
 - Laser Sintering (CUT)
 - Pierre Rossouw (CSIR) Superalloy Casting
 - Dimitri Dimitrov (GCC SUN)
 - Khaled Abou-El-Hossein (NMMU) Super Alloy Machining
 - Element 6 Tooling/Machining

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.1 Green Aircraft

Topic 2010.1.1-3 Propulsion (continued)

- **Cold Gas Spraying**
 - Dr. Ionel Botef (Wits MIA)
- **Synthetic Fuels**
 - UCT (Sasol Lab)
- **Combustion**
 - Dr Everard Van Niekerk
 - Blessing Musarurgwa (Desert Charm Trading) Noise reduction / Fuel Efficiency

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.1 Green Aircraft

Topic 2010.1.1-4 Systems & Equipment

- Nothing

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.1 Green Aircraft

Topic 2010.1.1-5 Avionics

- **Advanced Concepts & Technologies**

- Dr Denis Milton (CSIR) Modular Avionics
- Mr. Tom Roos (Cobham) Radar Altimeters & Antennas)
- Thomas Jones (SUN) Miniaturization & Modularization Avionics
- Marius Du Plessis (Cobham) Satellite Communication & Antennas
- Chris Williams (Tellumat) Avionics

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.2 Ecological Production & Maintenance

Topic 2010.1.2-1 *Production*

- **Friction Stir Welding**
 - Prof. Claudia Polese (Wits MIA)
- **Minimum quantity lubrication in Machining**
 - Khaled Abou-El-Hossein (NMMU)

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.2 Ecological Production & Maintenance

Topic 2010.1.2-2 Maintenance & Disposal

- **Lifetime increase of components**
 - Richard Bodkin (Element 6)
- **Disposal of metals**
 - Dusty Gardiner (CSIR)
 - Peter Ashton (NRE)
- **Laser paint stripping**
 - Neil Du Preez (SDI Lasers)
 - Francois Prinsloo (NLC)
- **Health and usage monitoring**
 - Ian Alers (Avitronics)
 - Prof Oscar Philander (CPUT) Health monitoring of skins
 - Michael Brooks (UKZN) Composites Biodegrading

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.2 Ecological Production & Maintenance

Topic 2010.1.2-2 Maintenance & Disposal

- **Prognostics**
 - Henk (Avitronics)
- **Structures**
 - Gary Corderley (CSIR MSM)
 - Ian Alers (Avitronics)
 - Manfred Johannes (CSIR) NDT

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.3 Green Air Transport Operations

Topic 2010.1.3-2 Airports

- Dr. Bridget Ssamula (CSIR BE)
- Name? (ACSA)
- Arthur Bradshaw (ATNS) Noise abatement
- Huysen (UP)
- Name? (DEA) Noise and air quality
- Patricia Forbes (UP) Air quality
- Prof. Arthur Every (Wits Physics)
- Jan Roodt (DPSS) Systems Modeling

Activity 7.1.1. The Greening of Air Transport

Area 7.1.1.3 Green Air Transport Operations

Topic 2010.1.3-3 Design Systems & Tools (Interactions between air transport, environment & society)

- Refer to previous slide

Activity 7.1.2. Increasing Time Efficiency

Area 7.1.2.2 Time Efficient Air Transport Operations

Topic 2010.2.2-2 Airports

- Dr. Bridget Ssamula (CSIR BE)
- Name? (ACSA)

Activity 7.1.3. Ensuring Customer Satisfaction & Safety

Area 7.1.3.1 Passenger Friendly Cabin

Topic 2010.3.1-2 Noise & Vibration

- Johan Steyn (Aerosud)
- Stefan Heyns (UP Sasol Lab)
- Sa-aadat Parker (AAT Composites) Passenger Comfort & Ergonomics

Activity 7.1.3. Ensuring Customer Satisfaction & Safety

Area 7.1.3.3 Aircraft Safety

Topic 2010.3.3-1 Aerostructures

- **Blast Modelling**
 - Prof Gerald Nurick (BISRU)
- **Engines**
 - Ian Alers (Avitronics)
- **Structures**
 - Gary Corderley (CSIR)
 - Ian Alers (Avitronics)
 - Willie Van der Walt (Denel SAAB Aerostructures) Impact testing & certification / Modeling
- **Prognostics**
 - Henk (Avitronics)
 - Name? (EADS)

Activity 7.1.3. Ensuring Customer Satisfaction & Safety

Area 7.1.3.3 Aircraft Safety

Topic 2010.3.3-1 Aerostructures (continued)

- **Aeroelasticity**
 - Craig Law (Wits MIA) Active Flutter Suppression
- **Occupant Protection**
 - Prof. Theron (UP)

Activity 7.1.3. Ensuring Customer Satisfaction & Safety

Area 7.1.3.3 Aircraft Safety

Topic 2010.3.3-2 Systems & Equipment

- **FST**
 - Name? (NECSA)
 - Sa-aadat Parker (AAT Composites)
- **Fire Protection & Detection**
 - Name? (CSIR)

Activity 7.1.3. Ensuring Customer Satisfaction & Safety

Area 7.1.3.3 Aircraft Safety

Topic 2010.3.3-3 Avionics

- **Pilot Assisted Flight**
 - Etienne Louw (AfriNautics)
 - Nico Carstens (MGL)
- **Automatic upset recovery & Collision conflict avoidance**
 - Japie Engelbrecht (SUN)

Activity 7.1.3. Ensuring Customer Satisfaction & Safety

Area 7.1.3.4 Operational Safety

Topic 2010.3.4-1 Design Systems & tools

- Nothing

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.1 Aircraft Development Cost

Topic 2010.4.1-1 Design Systems & tools

- See Topic 2010.1.2.2./3.4.1
- Willie Van der Walt (Denel SAAB Aerostructures) Modeling...

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.1 Aircraft Development Cost

Topic 2010.4.1-2 Aerostructures

- **Structures**

- Claudia Polese (Wits MIA)
- Gary Corderley (CSIR MSM)
- Ian Alers (Avitronics)
- Willie Van der Walt (Denel SAAB Aerostructures)

- **Engines**

- Glen Snedden (CSIR)
- Ian Alers (Avitronics)

- **Aeroelasticity**

- Louw van Zyl (CSIR)

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.1 Aircraft Development Cost

Topic 2010.4.1-3 Systems & Equipment

- **System Integration**
 - Ed Eitelberg (UKZN)

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.1 Aircraft Development Cost

Topic 2010.4.1-4 Avionics

- **Modular Avionics**
 - Henk (Avitronics)
 - Japie Engelbrecht (SUN)
 - Chris Williams (Tellumat)

- **Near net shaped Avionics packaging**
 - Prof Dimitri Dimitrov (SUN)
 - Mr. Pierre Rossouw (CSIR MSM)

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.1 Aircraft Development Cost

Topic 2010.4.1-5 Production

- **Advanced Manufacturing Modeling**
 - Rian Coetzee (CSIR MSM)
 - Willie Van der Walt (Denel SAAB Aerostructures)
 - Dimitri Dimitrov (SUN)
 - Eugene Erfort (CPUT)

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.2 Aircraft Operational Cost

Topic 2010.4.2-1 Flight Physics

- Refer to previous Flight Physics slide.

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.2 Aircraft Operational Cost

Topic 2010.4.2-2 *Aerostructures*

- Refer to previous Aerostructures slide.

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.2 Aircraft Operational Cost

Topic 2010.4.2-3 Propulsion

- Refer to previous Propulsion slide.

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.2 Aircraft Operational Cost

Topic 2010.4.2-4 Systems

- Nothing

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.2 Aircraft Operational Cost

Topic 2010.4.2-5 Avionics

- Refer to previous Avionics slide.

Activity 7.1.4. Improving Cost Efficiency

Area 7.1.4.3 Air Transport System Operational Cost

Topic 2010.4.3-4 Human factors

- Arthur Bradshaw (SESAR issues)

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.1 Breakthrough & Emerging Technologies

Topic 2010.6.1-1 *Lift*

- **Novel Aircraft Configuration**
 - Joachim Huyssen (Diomedes)
- **Aeromorphing**
 - Craig Law (Wits)
 - Bennie Broughton (CSIR)
 - Oscar Philander (CPUT)
 - Japie Engelbrecht (SUN) Adaptive Control
 - Prof Ed Eitelberg (UKZN) Interaction & Multi loop control
 - Chris Redelinghuys (UCT) ???

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.1 Breakthrough & Emerging Technologies

Topic 2010.6.1-2 Propulsion

- **Constant Volume Combustion**
 - Craig Law (Wits MIA)
- **Plasma**
 - Igle Gledhill (CSIR)
- **Ceramics**
 - Jack Sigalas (Wits)

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.1 Breakthrough & Emerging Technologies

Topic 2010.6.1-3 Interior Space

- Nothing

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.1 Breakthrough & Emerging Technologies

Topic 2010.6.1-4 Life-Cycle

- **Life Cycle Management**
 - Henk (Avitronics)
- **Obsolescence Management**
 - Andrew Meyer (LMS)

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.2 Step Changes in Air Transport Operation

Topic 2010.6.2-1 *Novel Air Transport Vehicles*

- See Joachim
- Mike Boer (Wits MIA)

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.2 Step Changes in Air Transport Operation

Topic 2010.6.2-2 Guidance and Control

- **Pilot Free Operation**
 - Etienne Louw (African Astronautics)
- **Control**
 - Prof Thomas Jones (SUN)
 - Dr. Japie Engelbrecht (SUN)
 - Rory Yorke (Denel Dynamics) 6 DOF modelling
 - Joachim Huysen (Wake Control)
 - Prof Ed Eitelberg (UKZN) Multiple Helicopter load lifting
 - Chris Redelinghuys (UCT) Formation Flight Aerodynamics

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.2 Step Changes in Air Transport Operation

Topic 2010.6.2-3 *Airports*

- Nothing

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.3 Promising Pioneering Ideas in Air Transport

Topic 2010.6.3-1 *The Cruise/Feeder Concept*

- Nothing

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.3 Promising Pioneering Ideas in Air Transport

Topic 2010.6.3-2 Take-Off and Landing with Ground based Power

- **Laser Propulsion**
 - Name? (NLC)

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.3 Promising Pioneering Ideas in Air Transport

Topic 2010.6.3-3 Personal Air Transport Systems

- Mike Boer (Wits)

Activity 7.1.6. Pioneering the Air Transport of the Future

Area 7.1.6.3 Promising Pioneering Ideas in Air Transport

Topic 2010.6.3-4 New Sources of Aircraft Main Propulsive Power

- Nothing

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-3 Improving passenger choice in air transportation with the incorporation of additional and new vehicles

- Nothing

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-4 Retrofitting for improved sustainability and economic viability of aeronautical products

- **Obsolescence and retrofitting**
 - Andrew Meyer (LMS)
 - Name? (ATE)
 - Philip Haupt

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-6 *Stimulating research with International Cooperation Partner Countries*

- AeroAfrica-EU

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-9 Supporting the organisation of conferences and events of special relevance to aeronautics and air transport research

- AeroAfrica-EU

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-11 Stimulating the participation of small and medium size enterprises (SME) and other small organisations for improved integration of the European Research Area

- AeroAfrica
- MESS
- Blessing Musarurgwa (Desert Charm Trading)

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-12 Assessing and further developing the role of small aircraft in the air transport system

- **Pilot Free Cargo Transport**
 - Etienne Louw (African Astronautics)

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-13 Observation platform to assess the fulfillment of Vision 2020 goals from technological and institutional standpoints

- Nothing

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-14 Platform to stimulate the development of breakthrough technologies and concepts enabling step changes in aviation

- Prof Ed Eitelberg (UKZN) Ornithopter

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-15 Updating the strategic agenda for aeronautics and air transport research in Europe

- Nothing

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-16 Exploring opportunities and stimulating research cooperation with the United States of America

- **Titanium MMC**
 - Sagren Govender (CSIR)

Activity 7.1.7. Cross-Cutting Activities

Topic 2010.7-17 *Socio-economic incentives and barriers to innovation in air transport*

- Study on Barriers on the African continent
 - NACoE
- Aeronautical related Education Barriers
 - Khaled Abou-El-Hossein

Ideas & Thoughts

- Aerospace Networking Events with specific focus to be held
- Open Invitation to All to attend Aero Skills Study Workshop

End