



Dynamic Pairwise (RECAT Phase III)

REATEGORIZATION
WORKSHOP
June 20, 2011

Recategorization is a Three Phase Effort

- Phase I is Static 6 Category Separation
- Phase II is static pair-wise separation
 - Initial Considerations to be Presented in this Meeting
- Phase III is dynamic pair-wise separation
- All three phases are required steps towards NextGen and SESAR

EUROCONTROL/FAA Cooperation

- Phase I
 - Joint effort led by FAA and EUROCONTROL
 - Memorandum of Cooperation (one of 20+ Coordinated Action Plans)
 - Action Plan 14 deals with Wake Turbulence
- Phase II
 - Not well suited for SESAR JU
 - Implementation targeted for 2015
 - US cannot participate as partner
 - Better suited for AP14

EUROCONTROL/FAA Cooperation (continued)

- Phase III
 - Not well suited for SESAR JU
 - Implementation targeted for range of dates (2011-2020+)
 - Currently US cannot participate as partner
 - Better suited for AP14

Early Elements of Dynamic Pairwise Already Underway

- Europe
 - CREDOS
 - Transitions between current 2 minutes separation after Heavy departure from same runway to ~90 seconds separation when winds permit
 - Operational?
 - TBS
 - Transitions between current distance based wake separation behind Heavy on approach to ~.5nm less when headwinds permit
 - Operational 2012
 - CROPS
- US
 - WTMD
 - Transitions between current wake separation behind Heavy or B757 aircraft to no wake separation required from Heavy/B757s departing the downwind runway of a pair of CSPRs
 - Operational Demonstrations planned this year and next at 3 airports (IAH, SFO and MEM)
 - WTMA-S
 - Transitions from distance based separation on approach behind Heavy/B757 to 1.5 NM diagonal separation when Heavy/B757 are arriving the downwind runway for a pair of CSPRs
 - Operational 2017

Later Elements of Phase III

- Increased availability of wind dependent solutions, and access to decay driven solutions
 - Improved ground-based weather sensors
 - Access to existing (or improved) airborne weather sensors
 - Wake monitoring for decay based solutions
- Potential En-Route Applications
 - Tactical offsets for climb through and descend through
 - Offsets for 1000 ft vertical separation
 - Primarily opposite direction
 - Secondarily same direction

Requirements and Scope of the Effort

- Safety metrics could be
 - Relative: As safe or safer than today, or
 - Absolute: Acceptable wake encounter
- Transparency: Openly available tools and data
- Additional aircraft performance data will be used if made available by manufacturers
- Methods and Metrics drawn from Phase I & II efforts as well as new recommendations from stakeholders
- Recommendations will apply to Arrivals, Departures and En-Route
- Increase safety and capacity

Thoughts on Models and Methods

Framing the Follow-on Presentations

- Models and methods must be sufficient to convince the research partners
 - Goal might be to gain consensus among researchers
 - Requirement is to convince the parties that must Accept the risk
- Can models truly be validated?
 - Developers focus on the need to independently ‘validate’ certain assumptions or simplifications that are inherent in any model
 - If the strengths and weaknesses of a model are well understood, weaknesses can be addressed in how the models are used
- Successful safety cases are built by validating the results (the proposed separation)
 - Multiple models, methods and metrics
 - Safety arguments built from a preponderance of evidence
- Signature authorities are not often subject matter experts on wake, aerodynamics, statistics, etc
- In the end, the proposal and supporting evidence needs to make sense on the intuitive level as well on the engineering/science level

Next Phases

