



## **UPS Joins With ACSS to Develop and Implement ADS-B Applications Allowing Continuous Descent Arrivals in High Density Traffic Situations**

### FAA Center of Excellence for Noise and Emissions

- UPS joined as the partner airline
- Continuous Descent Arrival (CDA's) RNAV flight profile to mitigate noise and emissions demonstrated over 2 week trial October 2004
- Idle or near idle thrust from cruise altitude to final approach
- Flights lined up and properly spaced prior to starting arrival procedure
- Excellent results
  - Up to 30% noise reduction
  - Local air quality emissions (3000' and lower) were reduced by 34%
  - 3% emissions reduction overall
  - 250 – 465 pounds of fuel saved per flight
- Well received by pilots and controllers

### Requirements to Implement CDA's in High Density Traffic Situations

- ADS-B
- Traffic display – Class III Electronic Flight Bag
- ADS-B application software – Merging & Spacing developed & certified by ACSS
- Sequence information for controllers (or AOC)
- **No changes to ground automation systems**

### UPS Proposes Implementation in Early 2007 – Operational Concept – Simple but Elegant

- UPS Surface Management System or MITRE SMART tool shows arrival order
- UPS sends ACARS message (until FAA Traffic Managers have a sequencing tool)– flight 123 follow flight 456 at 90 second interval, provides same information to controllers
- 123 uses merging and spacing to fall in behind 456 and follow 90 seconds behind by adjusting speed
- At arrival fix, flights execute CDA RNAV procedure to landing



### Impact to ATC Controllers

- Reduced workload – almost no need for vectors or speed changes enroute or in terminal area. Radio transmissions reduced to frequency changes, clearance for the procedure, clearance to land
- First step to safe air traffic management instead of safe air traffic control
- Controllers still responsible for safe separation, will treat exceptions exactly as they do today

### Benefits to Industry & FAA

- Industry/Government partnership proves concept
- Provides implementation guidance for other airports, operators
- Proves concept of affordable retro-fit, standardized implementation across all fleet types
- Bundled applications within the Class III Electronic Flight Bag create layered, cumulative benefits with positive ROI
- High probability of success – using proven CNS technologies in slightly different ways to make major capacity and efficiency gains (one NASA study estimates 20% increase in capacity if implemented system-wide)
- Very near term – if successful in proving benefits a majority of commercial aircraft could be equipped in 5 – 6 years
- UPS/ACSS will also certify Surface Map capability for safer ground operations, protection from runway incursions and ground collisions