Aviation Environmental Tools

An update

Presented to: REDAC Meeting, March 2014

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Date: March 25, 2014
• AEDT2b release scheduled for 2014
• Developing databases with information on alternative jet fuels (e.g., ANL GREET)
• These are not the only tools that we use. We employ other tools (e.g., CMAQ and climate models) as necessary

More Information on Aviation Environmental Tool Suite:
http://www.faa.gov/about-office_org/headquarters_offices/apl/research/models/
Aviation Environmental Modeling and Analysis

- Supports Environmental Planning, Regulatory and Compliance Requirements
- Supports Tracking, Reporting and Future Projection of System-Wide Environmental Performance
- Guides Aviation Environmental Mitigation Options (aircraft and fuel technologies, and operational procedures)
- Supports Analyses of International and Domestic Policy Options
AEDT 2a Scope: Runway to Runway

- Replaced NIRS
- Released AEDT 2a in March 2012
- Released Service Pack 2 in Feb. 2014
- AEDT 2a will be used for OAPM studies
AEDT 2b Scope: Gate to Gate

- Will replace NIRS, EDMS, SAGE, INM and MAGENTA
- Planned release in Dec. 2014
- Will support environmental compliance, research, assessment and decision-making
AEDT 2b Release Timeline

Released AEDT 2b Beta 6 to a select group of stakeholders at the end of January 2014.

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When AEDT 2b is released, it will become the required regulatory tool for aviation.

**Long-term future:**

Support AEDT user community

Expanding capabilities to ensure AEDT’s position as the cutting edge environmental consequences modeling tool

Success Criteria: Public release of AEDT Version 2B along with user guide and technical documentation DEC 2014
AEDT External Integration

- **TARGETS: RNAV procedure design tool**
  - Integrated with AEDT version 2a for environmental evaluation of RNAV procedures

- **TAAM: Airport and airspace traffic simulation**
  - Ongoing integration effort with AEDT

- **SWAC: NAS-wide air traffic simulation tool**
  - Ongoing integration effort with AEDT

- **PDARS: Performance Data Analysis & Reporting System**
  - Integration with AEDT
PDARS and AEDT
Performance Data Analysis & Reporting System

Radar data used for:

- Noise and Emissions Inventories, AEDT development, AEE policy, and environmental studies
- OAPM (Optimization of Airspace & Procedures in the Metroplex) analysis

PDARS Interface with AEDT – ongoing activities:

- Daily fuel burn and emissions reports for the portion of flight within TRACON Coverage
- Fuel burn and emissions reports for selected flights within the NAS
- Better understand PDARS data quality, usability and data integration
  - currently using a preprocess to transfer large data sets from PDARS into AEDT
  - potential for direct integration in future versions of AEDT
Range of Tools Related FY14 Planned Activities

• **AEDT**
  – Development, testing and release of AEDT2b
  – Risk management, outreach, guidance and documentation
  – Integration with NextGen airspace design tools and PDARS

• **APMT**
  – Updates to air quality and climate impacts modules of APMT for cost-benefit analysis
  – TAF modeling and fleet evolution

• **Aircraft and CLEEN Technology**
  – Aircraft technology assessment
  – GREAT (Global and Regional Environmental Aviation Tradeoff) development for rapid fleet-wide environmental assessment capability
  – Aircraft performance tools development

• **Goals and target analysis**
  – Annual assessment of air quality/health impacts and metrics

• **Domestic and CAEP-related analyses**
  – NAS-wide performance assessment and inventory
  – CO2 standard
  – Market based measures

Performers include:
• The Volpe Center
• AEE Contractors
• COE