

Aviation Environmental Tools

An update

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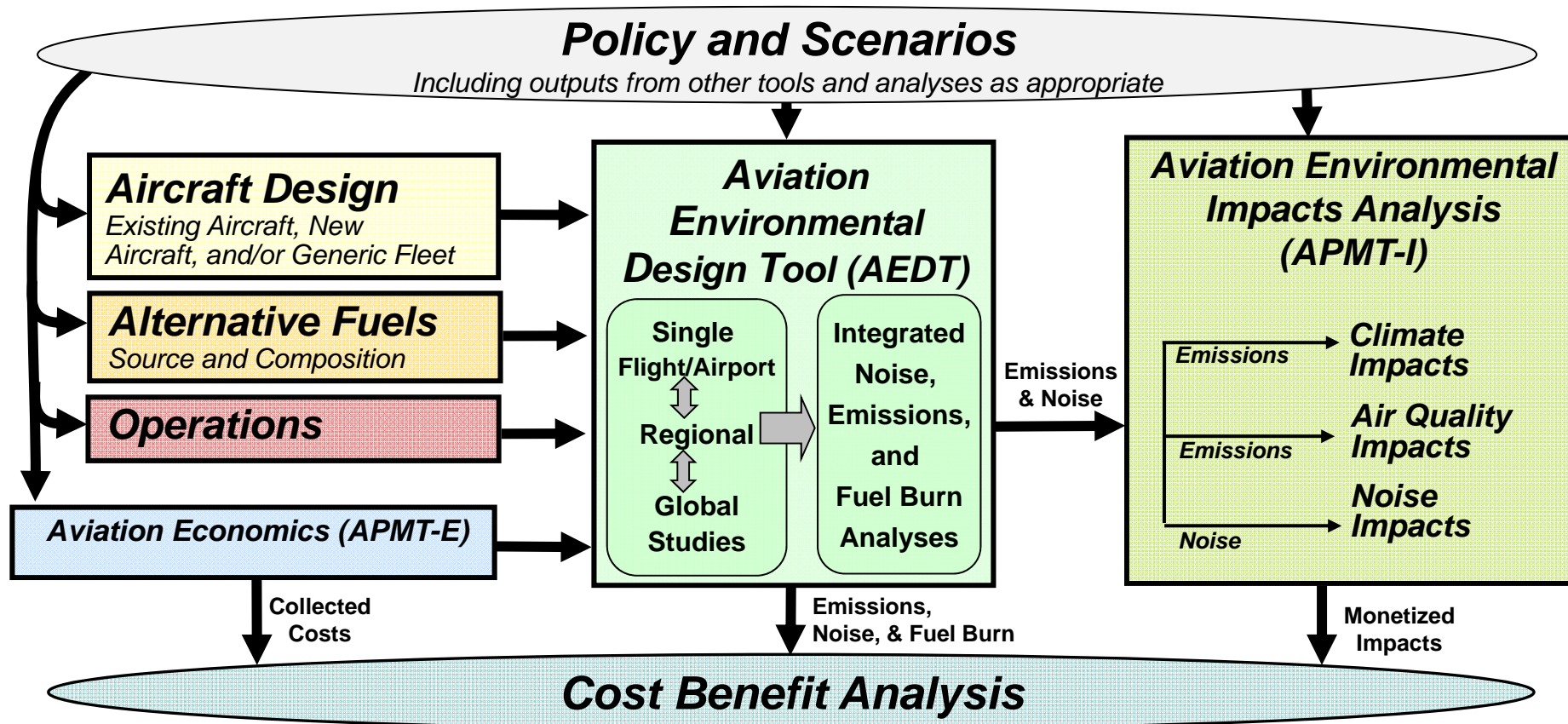
Date: March 25, 2014



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Aviation Environmental Tool Suite



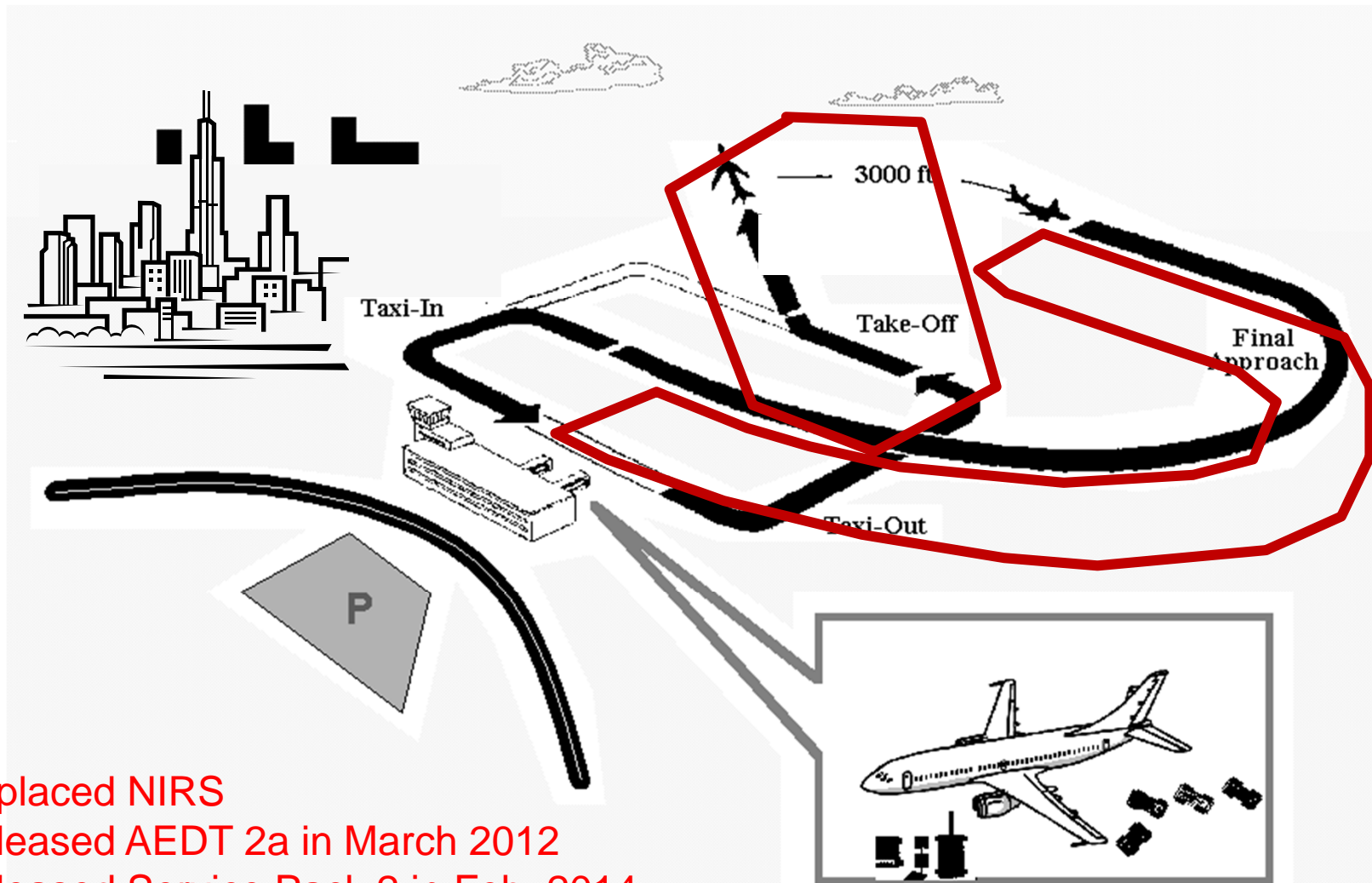
- AEDT2b release scheduled for 2014
- Developing databases with information on alternative jet fuels (e.g., ANL GREET)
- **These are not the only tools that we use. We employ other tools (e.g., CMAQ and climate models) as necessary**

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

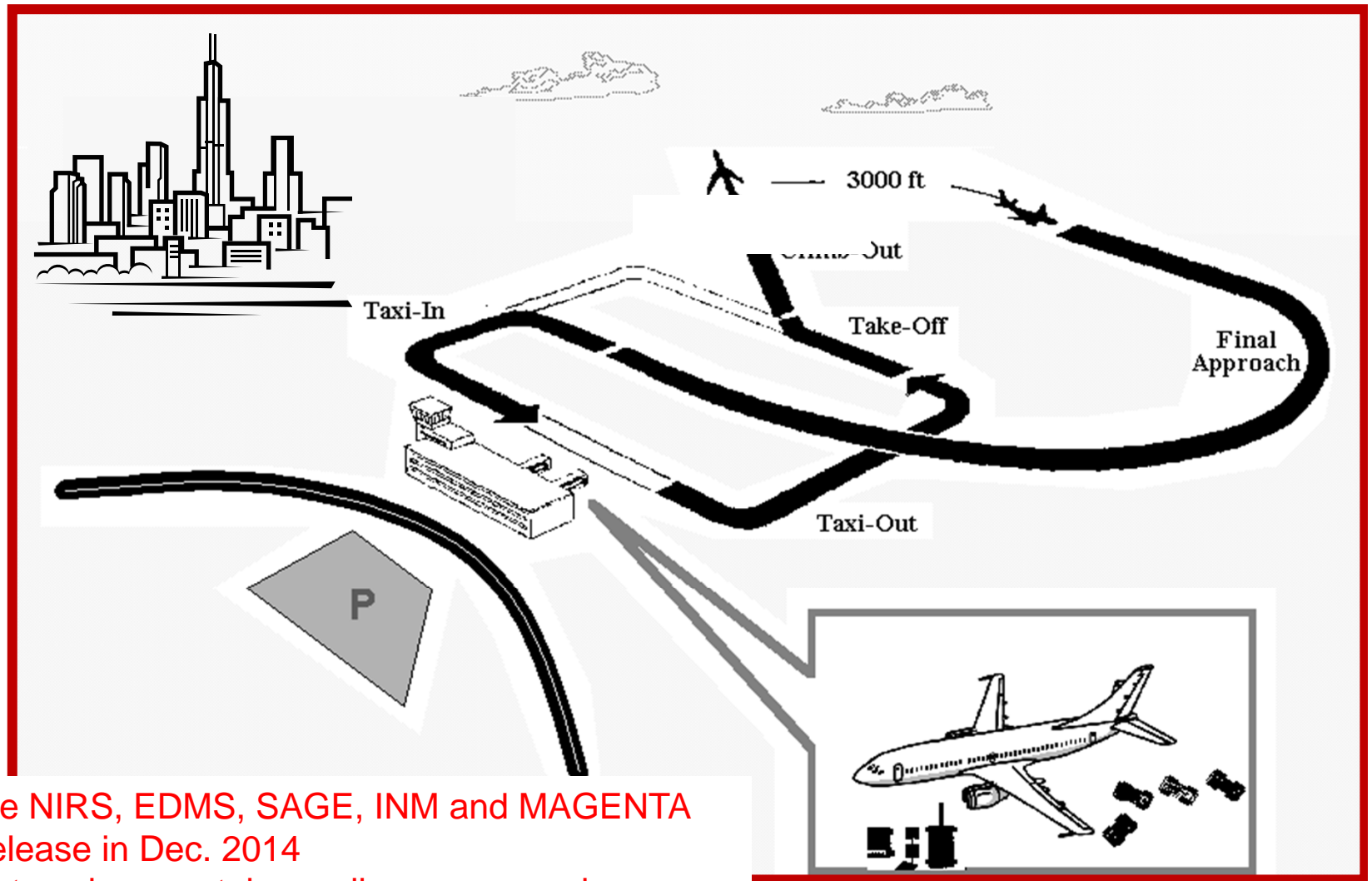


- Replaced NIRS
- Released AEDT 2a in March 2012
- Released Service Pack 2 in Feb. 2014
- AEDT 2a will be used for OAPM studies



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AEDT 2b Scope: Gate to Gate



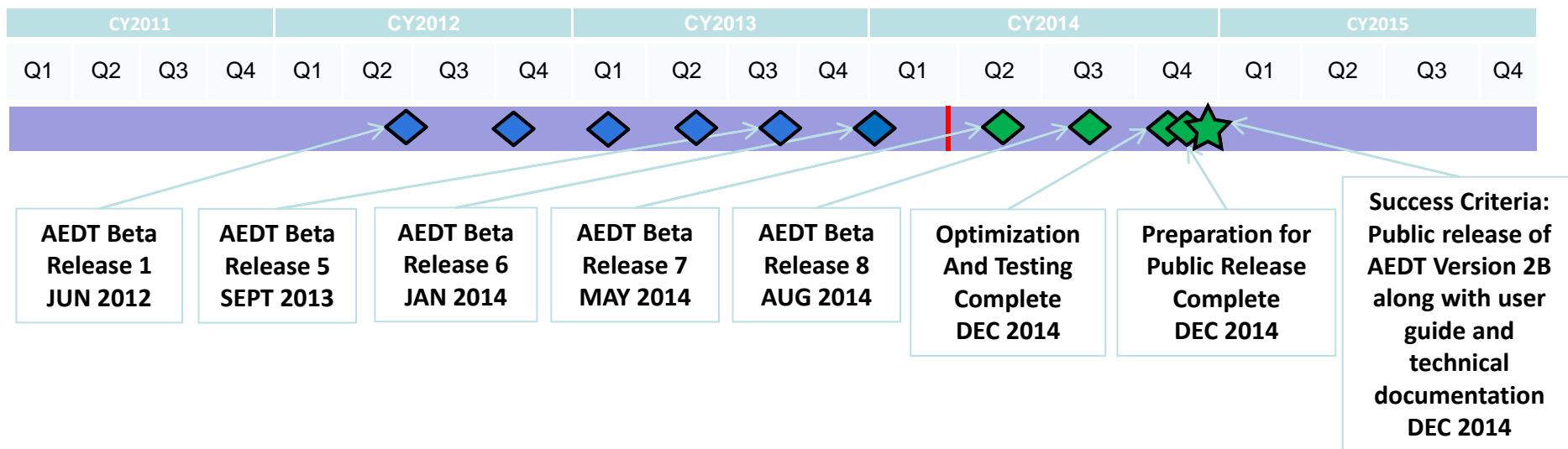
- Will replace NIRS, EDMS, SAGE, INM and MAGENTA
- Planned release in Dec. 2014
- Will support environmental compliance, research, assessment and decision-making



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AEDT 2b Release Timeline

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



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



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

