Analytical Tool Development and Analysis Update

Federal Aviation Administration

Presented to: E&E REDAC Subcommittee

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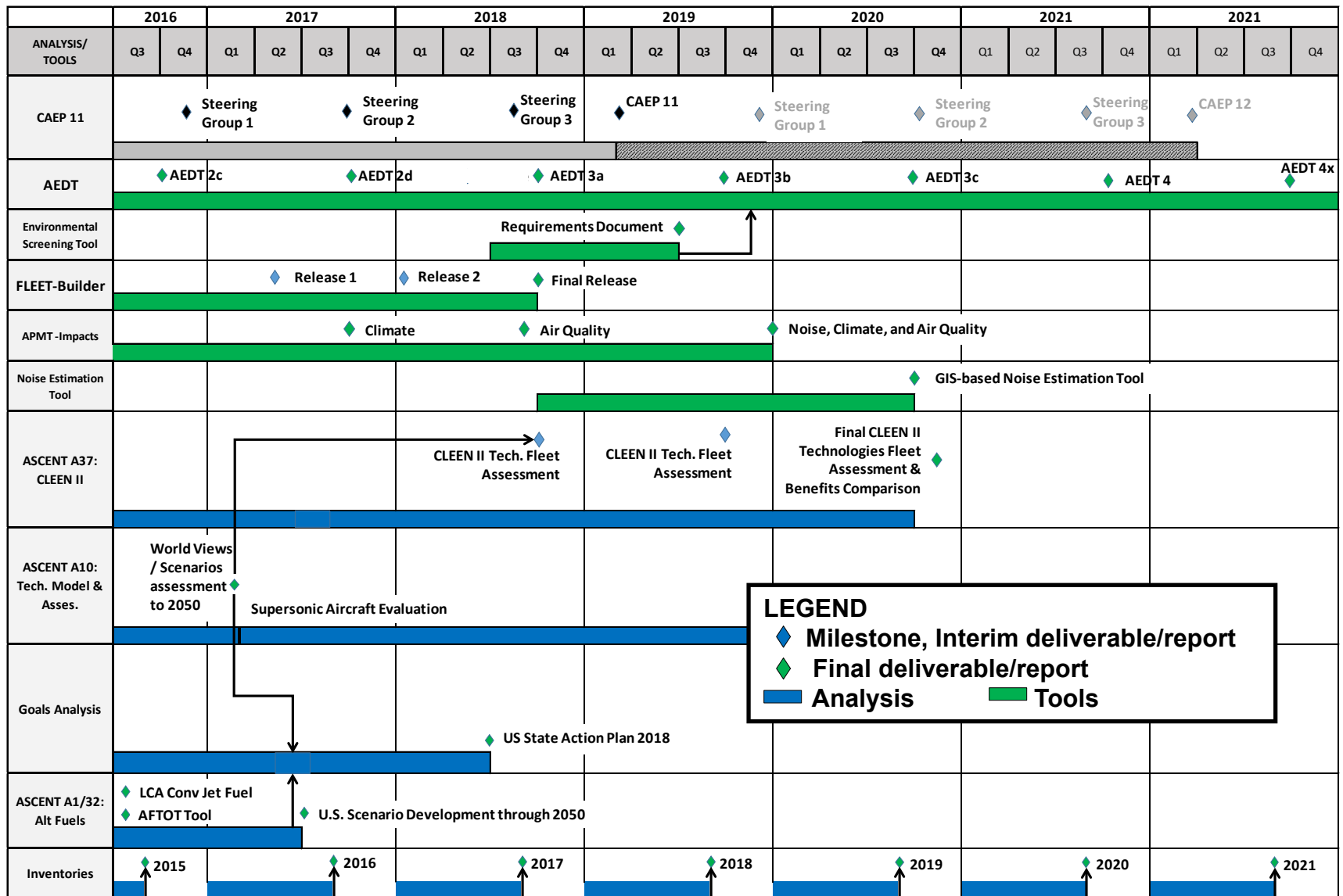
Date: September 11, 2018

Tools and Analysis Roadmap

ANALYSIS/ TOOLS	2016 Q3	Q4	2017 Q1	Q2	Q3	Q4	2018 Q1	Q2	Q3	Q4	2019 Q1	Q2	Q3	Q4	2020 Q1	Q2	Q3	Q4	2021 Q1	Q2	Q3	Q4	2021 Q1	Q2	Q3	Q4

CAEP 11: Steering Group 1; Steering Group 2; Steering Group 3; CAEP 11; Steering Group 1; Steering Group 2; Steering Group 3; CAEP 12

AEDT: AEDT 2c; AEDT 2d; AEDT 3a; AEDT 3b; AEDT 3c; AEDT 4; AEDT 4x

Environmental Screening Tool: Requirements Document

FLEET-Builder: Release 1; Release 2; Final Release

APMT-Impacts: Climate; Air Quality; Noise, Climate, and Air Quality

Noise Estimation Tool: GIS-based Noise Estimation Tool

ASCENT A37: CLEEN II: CLEEN II Tech. Fleet Assessment; CLEEN II Tech. Fleet Assessment; Final CLEEN II Technologies Fleet Assessment & Benefits Comparison

ASCENT A10: Tech. Model & Asses.: World Views / Scenarios assessment to 2050; Supersonic Aircraft Evaluation

Goals Analysis: US State Action Plan 2018

ASCENT A1/32: Alt Fuels: LCA Conv Jet Fuel; AFTOT Tool; U.S. Scenario Development through 2050

Inventories: 2015; 2016; 2017; 2018; 2019; 2020; 2021

LEGEND
- ◆ Milestone, Interim deliverable/report
- ◆ Final deliverable/report
- ▬ Analysis
- ▬ Tools

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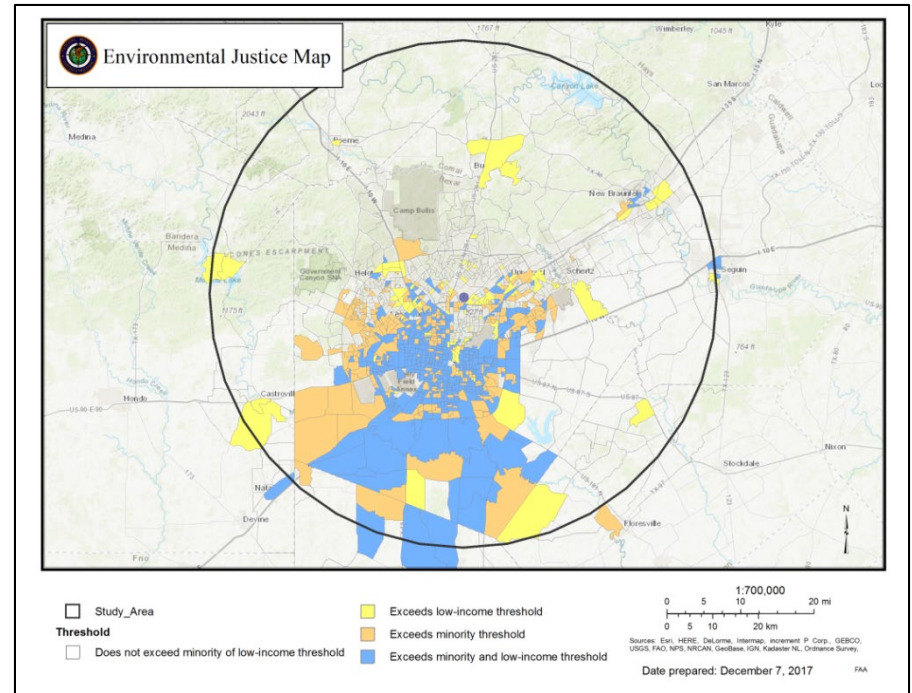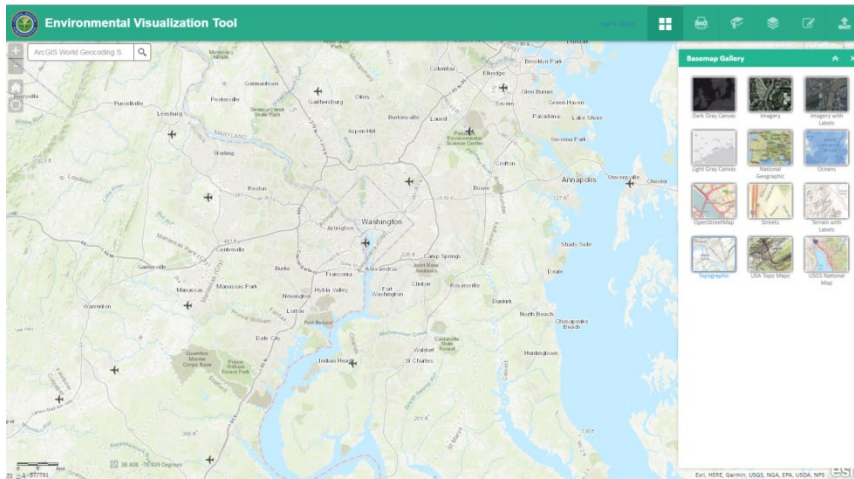
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FLEET-Builder

- **Use generic fleet and traffic demand forecasts as inputs to:**
  - Develop and allocate fully-defined fleets
  - Generate projected AEDT-compatible schedules of operations assigned to specific aircraft
  - Generate associated airline industry operating costs data
  - Estimate associate fuel and emissions data

- **Version 1.5 was delivered in July**

- **Upcoming work**
  - Performing validation and documentation to obtain approval for use in CAEP
  - Perform a Fleet Evolution Uncertainty study
  - Develop a releasable version for domestic applications based on public data sources

Data	Source	Comments
Network	INV 2015	• Make sure equipment ids and airport ids are compatible with AEDT
Forecasts	TAF-M	• Aggregate data to Cbin, route group and distance band level • Use utilization as Target 2
G&R Aircraft	Flight Global Fleets Analyzer	• Aircraft that have been delivered or ordered in the past 5 years will be considered as G&R aircraft
Route Group		• There will be only two route groups: domestic (U.S. airport to U.S. airport) and international (U.S. airport to non-U.S. airport)
Competition Bins	BTS	• Convert to BTS aircraft categories
Base year fleet age	TBD	• Potential to leverage age information from previous work or COD 2015

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Environmental Visualisation Tool (EVT)

- **A web-based application that relies on easy to use GIS functionality to provide the Environmental Protection Specialist with accessible environmental information and the means to effectively communicate such information visually**
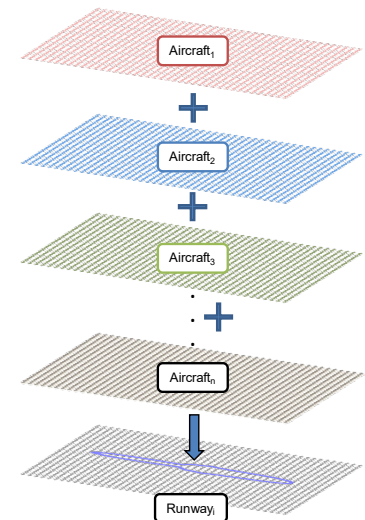

- **Only accessible within the FAA network**

Screening Tools Update

- **Under NEPA three(ish) levels of Environmental review can be required**
  - Categorical Exclusion (CATEX)
  - Environmental Assessment (EA)
  - Environmental Impact Statement (EIS)
- **A screening tool is often used to inform whether a CATEX is appropriate**
  - Area Equivalent Method (AEM) – Airport operational use changes
  - AEDT Screening Tool (AEST) – Air traffic changes
  - TARGETS AEDT Environmental Plug-In – Air traffic design phase
- **Noise Screening Tools have traditionally supported the NEPA review process, but there has been increased interest in providing the public additional information before any determinations are made**
- **New project will develop up to date screening tool requirement**
  - Review current tools capabilities and options for integration of the new tool in AEDT
  - Review and define conservative noise screening methodologies
  - Coordinate with AJV on requirement and long term support
  - Develop guidance on the proper use of noise screening tools

GIS-based Noise Estimation Tool (ASCENT 009)

- **The project has three goals**
  - Explore the options available to replace the existing mapping system in AEDT with a more maintainable and cheaper alternative
  - Investigate energing computational technologies (e.g. cloud computing, GPU computing) that might be leveraged by the new system
  - Use the selected option to develop a tool that can evaluate and map the noise exposure that could result from the introduction of large numbers of UAS vehicles into commercial and private use.

- **Key aspects of the new tool**
  - Provide a flexible interactive GIS-based user interface that gives the user the ability to select the type of vehicle and then create or assign trajectories associated with that vehicle operation
  - Base noise computation on vehicle and phase-of-flight specific grids that can be quickly tiled and added to generate each operation noise levels
  - Combine all noise grids to compute the overall noise levels and distribution and display them on the interface's map display

Action Item: Examine the Pathways Program

On December 27, 2010, the President signed Executive Order 13562 entitled Recruiting and Hiring Students and Recent Graduates. This Executive order established the Pathways Program.

Internship Program

The Internship Program is for current students who have been accepted for enrollment or enrolled and seeking a degree in a qualifying educational institution, on a full or half-time basis. The Pathways internship replaces the Student Career Experience Program (SCEP) and Student Temporary Employment Program (STEP). The new Internship Program provides students in, colleges, trade schools and other qualifying educational institutions with paid opportunities to work in agencies and explore Federal careers while completing their education.

Action Item: Examine the Pathways Program (2 of 2)

Recent Graduates Program

The Recent Graduates Program provides developmental experiences in the Federal Government. It is intended to promote possible careers in the civil service to individuals who, within the previous two years, graduated from qualifying educational institutions with an associates, bachelors, masters, professional, doctorate, vocational or technical degree or certificate from qualifying educational institutions. To be eligible, applicants must apply within two years of degree or certificate completion except for veterans precluded from doing so due to their military service obligation, who will have up to six years after degree or certificate completion to apply.

Presidential Management Fellows (PMF) Program

The PMF Program provides leadership development for advanced degree (e.g., masters or professional degree) candidates. Executive Order 13562 expands the eligibility window for applicants, making it more "student friendly" by aligning it with academic calendars and allowing those who have received a qualifying advanced degree within the preceding two years to participate. It also directs OPM to set eligibility requirements and minimum qualification standards, and to make the PMFexperience more robust and substantive for participants.

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Questions?