

# Analysis and Tools Development

## AEDT Updates

**Presented to:** REDAC E&E Subcommittee  
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Federal Aviation  
Administration



# Presentation Outline

- **AEDT Updates**
- CY 2022 U.S. Noise, Emissions, and Fuel Burn Inventory
- Inventory Data Sharing to date



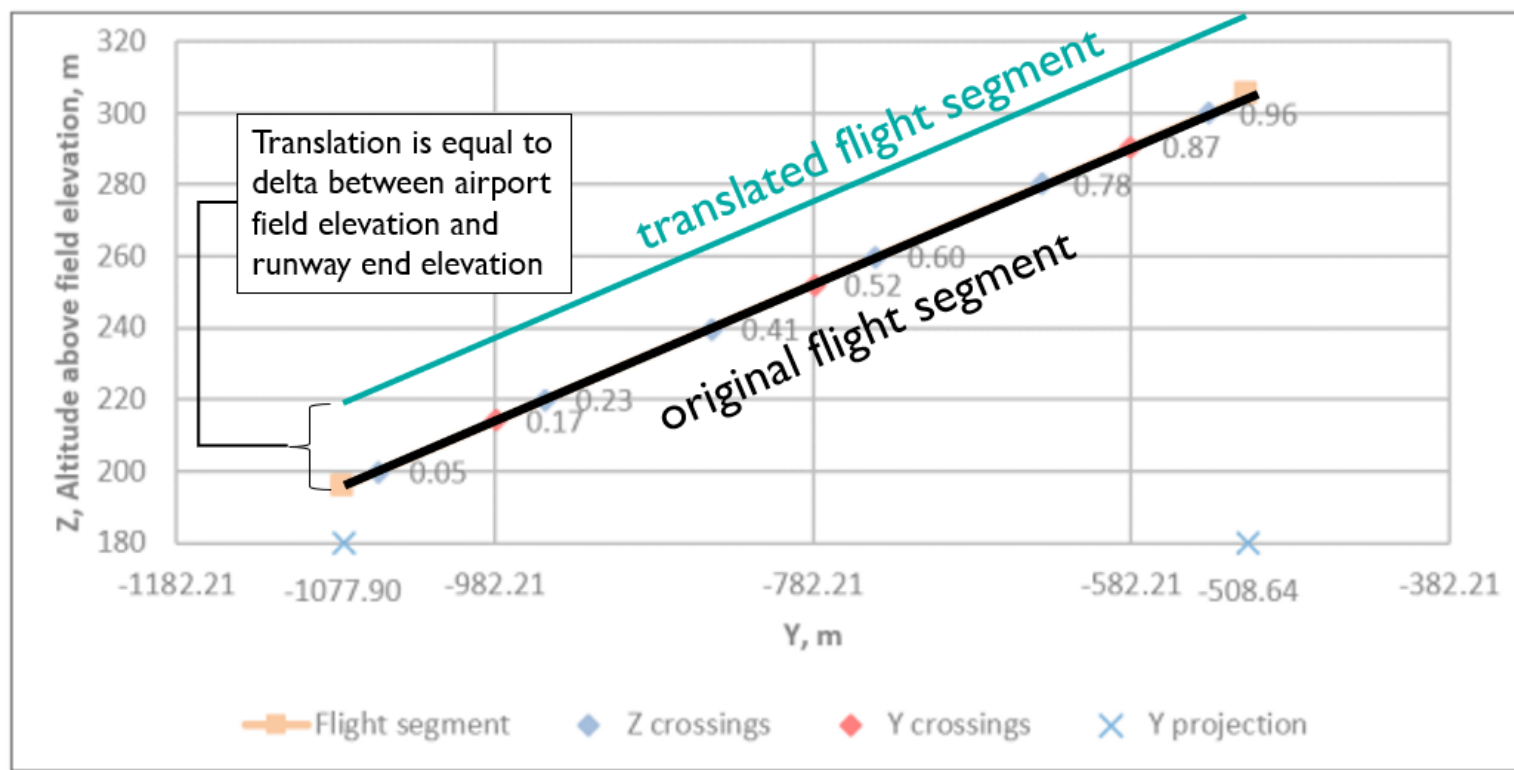
# AEDT 3g Updates (1 of 2)

- **Scheduled for August 28<sup>th</sup> Release**
- **Minor updates**
  - Updated Time-Above Algorithm
  - Harmonization of tropopause temperature and pressure profiles across all workflows
  - GHG emissions factors review and update for GSE and stationary sources
  - Reverting the fuel flow rate for taxi operations (SAE AIR 8035) – per CAEP
  - Move to SQL 2022
- **URG recommended usability improvements**
  - CSV import of run-up operations
  - Use of operational profiles in dispersion modeling for runup operations

# AEDT 3g Updates (2 of 2)

- **Emissions Dispersion Modeling**

- New AERMOD source groups (aircraft engine type and operation groups)
- Assignment of segment emissions to initial cuboid layers relative (AFE vs runway end)
- Fix a potential negative release height issue in AERMOD inputs



# AEDT 4a - Development Plans

- **Noise Model Updates**
  - Modeling noise with mixed ground types
  - Modeling noise with terrain and manmade structures
  - Non-standard report generation
  - Update helicopter database
  - APM – important bug fixes
- **Emissions and Dispersion Modeling Updates**
  - AERMOD Annual Update
  - Weather harmonization across all workflows – important bug fixes
- **CAEP**
  - SST fuel burn

# AEDT Long Term Development

- **AEDT Software Maintenance Costs are Growing**
  - AEDT relies on third-party software for GUI and GIS tools.
  - Third-party software changes rapidly and is a challenge for AEDT to maintain and consumes a large amount of development resources.
- **AEDT Development Options for the Long Term**
  - Use expert developers as needed to address specific maintenance issues.
  - Consider structural changes to AEDT (GUI, GIS, etc.) to reduce maintenance burden.
- **AEDT User Community Survey**
  - AEDT development team is preparing a user survey to understand how users interact with AEDT and to what extent GUI and GIS are used.