Collaborative Automation Team
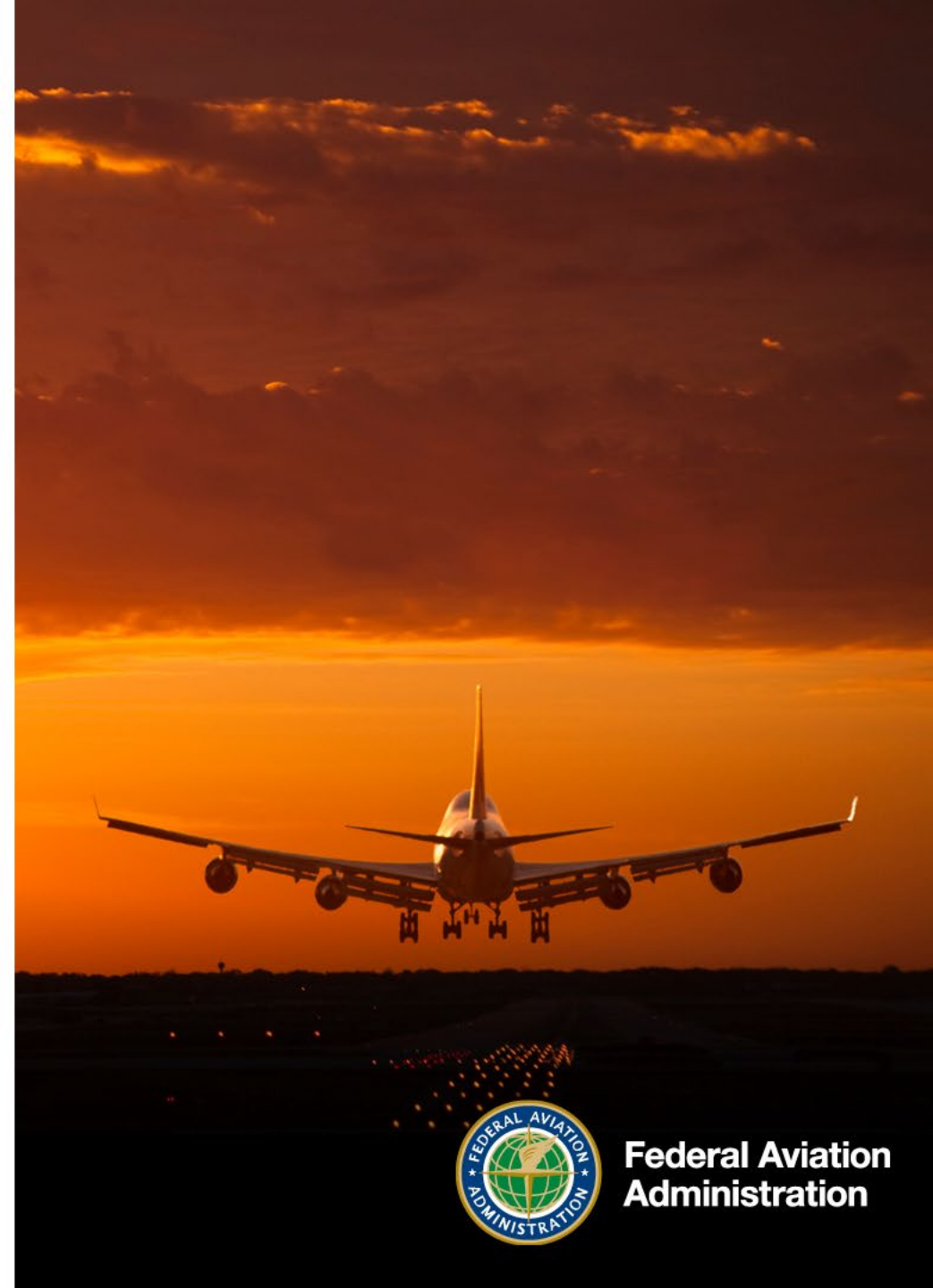
CDM General Session

Presented to: CDM

By: John Shuler & Bob Nursey

Date: April 3, 2025

Federal Aviation Administration

CAT Team Members

- **Greg Mullen- AAL**
- **Kevin Gunckel- DAL**
- **Stanley Wilson- FDX**
- **Jan Planten- NBAA**
- **Tim Matuszewski- NKS**

- **Charles Bland- UAL**
- **RB Haggerty- A4A**
- **John Shuler- FAA**
- **Bob Nursey- SWA**
- **Mel Sydnor- FAA/SLE**

Task 130 Substitution Rules for TFMS

- **Tasked with the goal of improving effectiveness of substitutions**

- **Task continues from previous task focused on data quality and stability in TFMS**

- **Focused on fluctuations in controlled estimated time enroute**
  - Relational to estimated time enroute
  - TFMS submission and processing rules

Research

- **Heavily supported by SME from Second Level Engineering**
- **Industry analysis of CDM data submissions and response form TFMS**
- **Deep examination of TFMS flight data records**
  - Timing of data submission
  - TMI event timing
  - TMI protective rules
  - Submitted values vs actual performance

TFMS Processing Rules

- **ETE Submission Rule**
  - User cannot submit an ETE with 40% or greater difference from existing TFMS value (Scheduled or last update)

- **Controlled ETE Submission Rule**
  - User cannot submit a change to CETE with 50% or greater difference from existing TFMS value (derived from ETE)

Data Submission Considerations

- ## Schedule Flights

  - ➢ TFMS Ingest from OAG upload 24 hours ahead of flights schedule
  - ➢ Scheduled flights are based on shortest distance with no weather.
  - ➢ CDM Operator times submitted after TFMS schedule ingest.
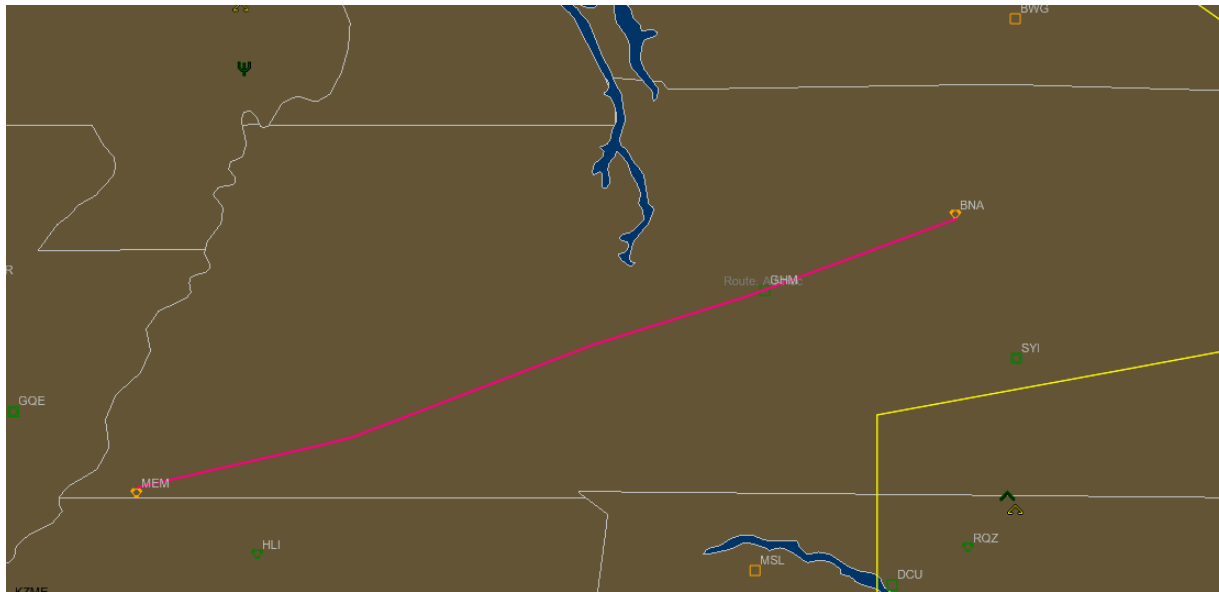
- ## Non-Scheduled Flights

  - ➢ Flight Create submitted by operator as soon as known.
  - ➢ New flight still based on shortest distance with no weather
  - ➢ SWIM messaging requires user to submit initial FC and wait 3 seconds before sending CDM time estimates

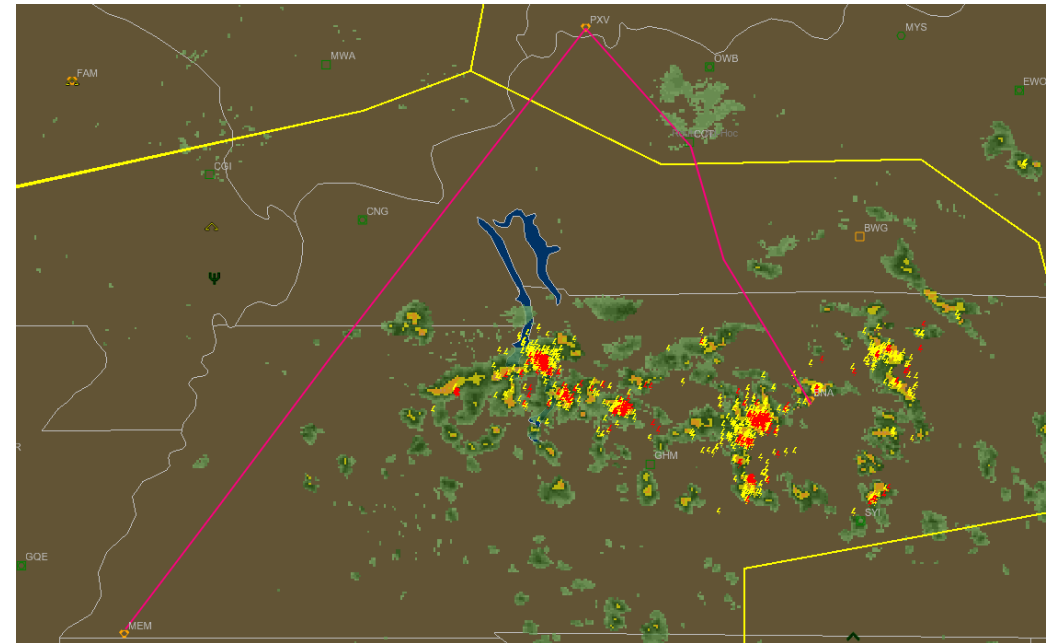## Neither scenario accounts for flight disruption

Disruption Effects

Route and ETE at Flight Create

Filed Route

Recommendations

- CAT Members internal data analysis shows high number of rejections from TFMS when attempting to send estimated time updates due to ETE rule violation.

- CETE modification allows for correction of erroneous data and supports program stability.

- Existing known substitution rules appear solid.

- Eliminating CETE modification permission could drive more problems than improvements.

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