

# North American Simmod User Group

*Crystal City, VA*

Presented to: NASUG

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Federal Aviation  
Administration



# Model Release

- Version 3.2 of FAA's *Airport & Airspace Simulation Model* will be released end of March 2009
  - Window version
  - Linux version
  
- Received 5 requests for the FAA's engine since last release.



# Model Maintenance

## SIMU10 output file improvements:

1. Average delay and average travel times per aircraft are now written to one decimal place (one tenth of a minute)

Example: now 3.4, was 3

2. For studies with two or more airports, model results will be listed for each airport
3. Model results will be listed for each runway

All of the above are included in the sections of ground results, air results, sum of ground & air results; in the final report and in the global report. Results are further broken out into arrivals and departures.

# Model Maintenance

## DSDPath logic corrections:

- An aircraft erroneously entered a DSDPath while another aircraft was taxiing in the opposing direction, causing gridlock. The engine was estimating the time to a ground node incorrectly. Fixed.
- If a ground link belonged to more than one DSDPath, and an aircraft was conducting a gate push back, where one of the gate's blocking links is on the DSDPath, the engine erroneously computed a delay value less than 0 that terminated the simulation. Fixed.
- An aircraft on a DSDPath was spooling up its engine due to a RWYCROSS hold. The DSDPath logic did not take spool-up time into consideration, causing gridlock. Fixed.

# Model Maintenance

- Corrected gate push-back blocking logic. An aircraft taxied through a gate's blocking links while another aircraft was pushing back from gate, violating the gate's blocking rules. Occurred when one of the gate's blocking links was part of a DSDPath and the aircraft did not taxi on this particular link. Fixed.
- Corrected gate push-back blocking logic. An aircraft pushed back from gate and then stopped at its first node, erroneously allowing another aircraft to taxi through the gate's blocking links. The engine did not check to see if the aircraft's next link is also a blocking link. Fixed.
- An arriving aircraft selected a prohibited runway exit. The optimal taxipath logic did not take into consideration the prohibited exit links. Fixed.

# Model Maintenance

Problem: An aircraft remained in staging area for an excessive period even though gates were available.

Solution: modified gate logic to allow an aircraft in staging area to select a gate that was assigned to an aircraft that is still airborne.

- Increases gate efficiency



# Model Maintenance

Airline input added to the following records:

1. RUNWAY\_TAKEOFF\_OCCUPANCIES
2. RUNWAY\_EXIT\_LINKS (currently being implemented)
3. RUNWAY\_EXIT\_PROHIBITED\_LINKS (to be completed)

- Can specify a particular airline for runway occupancy times or prohibited exits
- Can specify individual aircraft models or TAMPS groups of an airline
- Airline input is optional
- Nice feature: not necessary to define one record for each airline, engine will search all records to select the appropriate one

Example:

```
RUNWAY_TAKEOFF_OCCUPANCIES  2
1 12L ; DL GRP 1 2 3 4 ; 7 ;
2 12L ;      GRP 1 2 3 4 ; 8 ;
```

# FAA TARGETS software

TARGETS is FAA software that can be used to build the airspace network. It's a tool "for the design, analysis, and operational assessment of procedures and airspace".

TARGETS allows users to import radar data (ARTS, PDARS, etc), displays flight tracks on screen, to digitize the airspace network.

A "plug-in" module was developed to export NODES, LINKS, and ROUTES in SIMU07 format.

Questions?

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