

Simmod Maintenance Work at ATAC

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**North American Simmod Users Group
Meeting**
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Simmod *PLUS!//PRO!* Maintenance

- Version 7.6.1 released 17 December 2010

Simmod *PLUS!//PRO!* Maintenance

- Network Builder

- Splitting a curved link did not properly update the AIRLINK_CONTROL_POINT and GNDLINK_CONTROL_POINT tables. Fixed.
- The copy/paste function of the Procedures Builder did not work if zero values were hidden. Fixed.
- Deleting a runway in the Runway Builder would not remove the runway name from the list. Fixed.

Simmod *PLUS!//PRO!* Maintenance

- Network Builder
 - Added a feature to the database table query window to import/export data from a .dbf file to a text file with a field delimiter selected by the user. Field validation checks are performed during import.
 - A new menu item has been added under Edit: Options: Use Magnetic Heading. When this is checked, headings displayed when moving the cursor around in the Network Builder (e.g., drawing links, moving nodes, and panning the display) are shown with a magnetic heading. The magnetic variation for the latitude/longitude of the center of the display is indicated by an arrow in the upper right corner. This value is dependent on the date and is computer based on the current date of the computer.

Simmod *PLUS!//PRO!* Maintenance

- Network Builder (Simmod *PRO!* only)
 - The Profile Builder allowed only the All (A) option as the cancel strategy in the Resource Cancel step. Fixed to allow FIFO (F) and LIFO (F).
 - Changes made to parent tables now cascade to profile steps. For example, if you rename a resource, the resource will be renamed in all occurrences in profile steps such as resource requests, givebacks, when used as activity names, etc. If step expressions are also updated.

Simmod *PLUS//PRO!* Maintenance

- Animator
 - Previously, if an aircraft id was not defined in the `acshapes.txt` file the Animator would not run properly. Now, the UNKNOWN icon type will be used. If no UNKNOWN icon is defined, a circle will be used for the icon.
 - A new menu item has been added under Options: Automatically Reverse Icon on Pushback. When this is checked, aircraft icons will automatically be displayed in reverse for the initial link movement from a gate in cases where no GATE_PUSHBACK rules have been specified for that movement.

Simmod Engine Maintenance

- Corrected taxi planning logic
 - The estimated times of arrival were not correct in situations where there was a non-zero dwell time during a pushback specified in the GATE_PUSHBACK tables. This caused the DSDPath logic to incorrectly predict if a future conflict would occur. Fixed.
- Corrected gate use blocking logic
 - Flights at gates that block or can be blocked by a gate of zero capacity will themselves be blocked indefinitely. Fixed.
 - The inputs were not read correctly in some situations causing the inputs to be ignored. Fixed.

Simmod Engine Maintenance

- Corrected gate selection logic
 - If a flight has both a gate and a concourse assigned yet neither the gate nor an alternative gate at the concourse is available, the flight would still select a gate at the concourse even though other gates at the airport were available. Fixed.
- Modified cloning logic
 - Arrival clones were not being given the same gate and taxipath assignments as their parents. Departure clones were not being given the same taxipath assignments as their parents. Fixed.

Simmod Engine Maintenance

- Added Simmod *PRO!* profile infinite loop detection logic
 - Optional entry INFINITE_LOOP_THRESHOLD added to the GLOBAL_DATA table. When the value for INFINITE_LOOP_THRESHOLD is set to greater than zero, the simulation will stop when the number of events executed at a given simulation instant exceeds this number. This is useful in cases where the analyst has inadvertently created an infinite loop in profile logic. Recommended values should be greater than 10000 to avoid false detection.

Simmod *PLUS!//PRO!* Maintenance

- Version 7.6.2 released 10 June 2011

Simmod *PLUS!//PRO!* Maintenance

- Network Builder
 - Ground link symbols did not display properly when creating or modifying the directionality or passing constraints; it was necessary to re-open the application. The symbols now immediately display properly when ground links are created or modified.
- Reporter
 - The Reporter would fail in cases where a the report should be sorted by injection time and more than 250 injections are “chronologically active” — that is, more than 250 injections have been found in the SIMU26 file without finding the closing ejections. Fixed.

Simmod Engine Maintenance

- Corrected DSDPath logic
 - If a flight has both a gate and a concourse assigned yet neither the gate nor an alternative gate at the concourse is available, the flight would still select a gate at the concourse even though other gates at the airport were available. Fixed.
- Corrected taxiplanning logic
 - The estimated times of arrival would possibly compute incorrect ground node times-of-arrival in cases where multiple links are attached to a gate and each gate link has a different pushback time or speed. Fixed.

Simmod Engine Maintenance

- Corrected landing logic
 - The procedure end node would not be blocked in cases which the arrival procedure end node is not at the end of the runway. All the other nodes from the procedure start node up to but not including the procedure end node would be properly blocked. Fixed.
- Corrected missed approach logic
 - In some situations, arrivals would hold unnecessarily or excessively at the arrival interface node prior to continuing to fly their missed approach route. Fixed.

Simmod Engine Maintenance

- Corrected arrival staging logic
 - Each gate had an undocumented limit of four arrival staging areas that may have been assigned to it. The engine behaved unpredictably in cases where more than four were assigned. There is no longer any limit to the number of arrival staging areas that may be assigned to a gate.

Simmod *PLUS!//PRO!* Future Work

- Next version will be 7.7
 - Target release the end of 2011
 - Enhancements that require database changes
 - Newer compilers, Java framework, installer, etc.
- Beyond version 7.7
 - Automatic data transfer to Aviation Environmental Design Tool (AEDT) – possible fully automatic calculation of noise and emissions