

Simmod *PLUS!* 7.5.3 Changes and Enhancements

Engine Change Descriptions

- **Corrected gate assignment logic.**
 - The logic would allow a later arrival to a gate that blocks another gate to pre-empt the usage of the “to-be” blocked gate by an earlier arrival. Now, an earlier arrival will ignore the future blocking caused by a later arrival. This may cause the later arrival to change gates.
 - Engine could crash if the AL_MDL_GATE_CHOICE inputs are used and the first choice is not available. Fixed.
- **Corrected gate input logic.** The logic would crash if the GATES inputs listed more than ten other gates that are to be blocked when an aircraft is pushing/powering back from the given gate. This limit has been removed.
- **Corrected pushback logic.** If none of optional pushback taxi-time inputs are used, the engine would use the taxi-time of the first link listed in the LnKList fields of the GATES inputs that is attached to the gate. This may not necessarily be the link used to depart from the gate. Fixed.
- **Corrected multi-link pushback logic.**
 - Logic would not always function properly in situations where the pushback path was restricted to specific aircraft models. Fixed.
 - The presence of a taxicheckpoint on the multi-link pushback path would disrupt the pushback movement. Fixed.
- **Enhanced gridlock termination logic.** Changes introduced to better allow the engine to start a new iteration rather than stop completely when a previous iteration ends in a gridlock.
- **Corrected groundlink/groundlink blocking logic.** The documentation indicates that the MdList* is optional; however, the logic required at least one entry in the list. Fixed.
- **Corrected DEPBLOCK logic.** The engine would crash if a departure needed to extend its departure blocking delay.
- **Enhanced SIMU10 output.** (Implemented by the US FAA.)
 - Delay and travel time averages per aircraft are now displayed to a precision of tenths of a minute.
 - Delays and travel times are now separated by airport in the tables for the ground section, the air section, and the sum of the ground and air section.
- **Corrected SIMU18 output.** The travel times were not properly rounded to the tenths of a minute in cases where the time had a fractional value of 0.9500001 – 0.9999999; there were incorrectly rounded to 0.1 rather than rounded up to 1.0. Fixed.

- **Corrected SIMU26 output.** The GT was not written in cases where an arrival turned into a departure and had to tow to a gate but did not have a departure lateness. Fixed.
- **Corrected SIMU44 output.** The RW code was not correctly writing the time of runway entry. Fixed.

Network Builder, Animator, Reporter, and cdf2simu Change Descriptions

- **Network Builder:**
 - Errors have been fixed in the Gates Builder in which several fields would store incorrect values.
 - The Metering Builder would not properly change the minimum and maximum threshold values when the spinner up- and down-arrows were clicked. This is fixed and the lists now update properly.
 - The Optimal Taxiplan Viewer has been fixed to consider runway links in cases where taxiing on the runway is permitted.
 - Minor improvements to the Procedures Builder.
 - The copy/paste feature would not work properly when editing tables in spreadsheet mode if cells were missing data. Fixed.
- **Animator:**
 - A toggle was added to allow the animation to loop back to the start time if the clock advances past the end time or vice versa if the clock is running in reverse.
 - Various animation settings were not being stored or read properly from the `plus.init` file. Fixed.
- **Reporter:**
 - The departure runway would be missing in the Simu26 header report for runways that consist of only one link.
 - The Node Reporter had an error in which delays due to slow down (SL), vectoring/path stretching (PS), and speed up (SU) events were doubled in the total time of the event. This affected all of the node reports in which these three codes are considered.
 - The Node2Node Reporter has been fixed to provide correct Between Nodes results in cases where the initial or final node was traversed more than once.
- **cdf2simu:** The link headings that were precisely 180.000000 were written as 0.000000. Fixed