



SATURN ELEVEN – Version 11.3.07

First of all, we wish you a warm welcome to the second full release of SATURN 11.3, 11.3.07.

SATURN 11.3.07 is the successor to all previous versions of SATURN, representing a direct evolution from its predecessors whilst offering significant enhancements from the strong existing base.

The first full release of SATURN 11.3 was undertaken in April 2014 and a detailed description of its release is described in Appendix A. Since then, further development work has been undertaken to introduce new functionality and address problems that have been identified in previous releases; both sets of changes are now available in this latest 11.3.07(K) release in October 2014.

1. Changes introduced with 11.3.07K

New Features

A number of new features has been introduced over the last few months including:

- Extended reporting on the impact of the matrix estimation in the **SATME2** LPM file as suggested in TAG Unit M3.1 (see section 13 of the User Manual);
- Additional reporting of the extra delays introduced by CLICKS within **P1X** (via the new option #30 as described in section 11.1.1) as well as the option to include them in Joy Rides and/or Route Validation times (see 11.8.2.3);
- Improved calculation of the **SATLOOK** bus route summary statistics and extra data export options;
- Continuation runs of **SATALL** (e.g. SATALL net MASL 1) will not now automatically create a new .UFC file to save CPU time if not required (see 9.12.1.1);
- Integration of the sector-based matrix estimation routines, previously released as stand-alone processes with v11.3.03), into **SATPIJA/SATME2**. Note that the sector-based process remains in beta form (see section 13.5); and
- New serious warnings in **SATNET** (SW187 and SW188) to identify potential convergence problems either: (i) arising with X-turns at signals where some green phases are terminated by a late (unopposed) cut-off but others are not (see 8.2.4.1); (ii) links with very short stacking capacities (i.e. less than 1 PCU) that cause havoc with blocking back calculations.

Further information may be found in Appendix D.21.

Problems Resolved

In addition to the new features, a number of problems have been identified and resolved including:

- Several problems with secondary analysis undertaken using UFO files including:
 - **SATPIJA**: the number of PIJA matches detected was far too small and/or using a .UFO file with more than one user class/matrix level may lead to a crash in large networks;
 - **P1X**: SLA fails when using a UFO input file as opposed to a UFC input; and



- **SATALL, SATLOOK and P1X:** corrections to the calculated bus statistics to apply the full delay, rather than just low-flow delay, for bus movements requiring to use off-side lanes rather than nearside bus lane.

Further information may be found in Appendix E.9.

2. Changes in Output Results using 11.3.07K

There have been a number of changes to the simulation since the first full 11.3.03 release in April 2014 and, therefore, it is very likely that assignments created using 11.3.07K will give **different** results to the earlier 11.3 release **and** the scale of those differences will vary between networks.

Practical testing has shown that, in the majority of networks, the overall differences between 11.3.03 were small but with some larger changes, such as re-routing of flows within the assignment, occurring at a more local level.

Therefore, as always, our **strong** advice is to continue to undertake evaluation comparisons of different scenarios only using outputs from the same version rather than mixing and matching.

3. Technical Support

If you require technical support, please do not hesitate to contact us at saturnsoftware@atkinsglobal.com. In the meantime, we wish you a successful continuation with SATURN 11.3.07 and thank you for your continued support.

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