



## SATURN ELEVEN – Version 11.3.10

First of all, we wish you a warm welcome to the third full release of SATURN 11.3, 11.3.10.

SATURN 11.3.10 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. The first set of updates were provided in the 11.3.07K release in October 2014 as described in Appendix B. The second set of updates are now available in this latest 11.3.10E release in January 2015 as described below.

We recommend that users use the "Update Batch Files" function in SATWIN 11 (version 1.8.0.0) to update any previous SATURN versions to cope with new IT systems that no longer handle short names. SATWIN11 and \$SATSTAT.exe have had to be revised, and all batch files updated to consistently handle long names. If using any old SATURN versions, the batch files in use for that version have to be updated. For help on this, please open "Satwin 11 Help" in the new SATWIN11, and follow the "upgrade your SATURN batch" link on the "What's New?" page. It has to be run individually on each existing version you wish to update.

### 1. *Changes introduced with 11.3.10E*

#### *New Features*

A couple of new features have been introduced over the last few months including:

- **Simulation:** Small improvements in the lane choice model for allocating of flows to 2 or more lanes for a single turning movement; and
- **P1X:** option added to exclude any pre-loaded flows from the total Demand or Actual annotated link flows. The option may be toggled on or off under the Options sub-menu within the Choice of Link Annotation menu.

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:

- **SATSUMA:** It failed for networks with 10 or more user classes. (And, therefore, so did the batch file SATTPX which called SATSUMA as its final step although all previous time period runs were perfectly correct.)
- **SATNET/P1X** Setting both SAVUFO and USEUFO = T in a network .dat file caused a subsequent Fatal Error 306 in **P1X** trying to read weights per FW iteration from the .UFO file.
- **P1X:** Creating a new network .dat file ran into problems since a namelist variable name IXSHFT appeared twice under &PARAM – the second name should be changed to IYSHFT.



- **P1X.** Select Link Analyses (SLA) based on using Spider networks, .UFC files and multiple user class networks were unreliable if the .UFC file had been taken from an extra SAVEIT assignment (as opposed to being based on the original simulation-assignment loops under UFC109/UFC111).
- **SATCH/P1X.** Similar problems to those noted above occurred with matrix cordonning, either in **SATCH** with USESPI = T or in **P1X**.
- **P1X.** Failed to correctly create a **full** multi-level SLA matrix for multiple user classes using the spider network. It appeared, however, to still work correctly if just a single-level square matrix was requested.
- **SATALL.** Examples of “hysteresis” were found with signalised arms with flares whereby both over-capacity and under-capacity solutions existed for the same flows and the solution arrived at may have depended on which direction you were coming from. Led to (possibly extreme) poor convergence.
- **SATWIN11/SATSTAT.** Revisions to the (internal) handling of path/filenames to enable SATURN to correctly access data files located on Windows Servers that have disabled short names.

Further information may be found in Appendix E.9.

## ***2. Changes in Output Results using 11.3.10E***

There have been a number of changes to the simulation since the last full 11.3.07K release in October 2014 and, therefore, it is likely that assignments created using 11.3.10E will give **different** results to the previous 11.3.07K releases **and** the scale of those differences will vary between networks.

Practical testing has shown that, in the majority of networks, the overall differences between 11.3.07 and 11.3.10 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](mailto:saturnsoftware@atkinsglobal.com). In the meantime, we wish you a successful continuation with SATURN 11.3.10 and thank you for your continued support.

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