

E. SATURN Bugs

E.9 SATURN 11.3 Bugs

Date of last update: 6th May 2017

The following “problems” have been identified in **SATURN** Version 11.3.03 as released in April 2014 and/or in later 11.3 releases, principally 11.3.07 in October 2014, 11.3.10 in January 2015 and 11.3.12 in April 2015.

A partial update to 11.3.12 (called ‘11.3.12F Update 1’) was issued in June 2015 with a full update in November 2015 (referred to as ‘11.3.12U’). The final full update to 11.3.12 was undertaken in May 2017 (referred to as ‘11.3.12W’). These applied corrections for those bugs found which could be implemented without changing the assignment results.

Some of these (potentially) may pre-date 11.3 and could also have been present in 11.2 or even much earlier releases.

April 2014 - Version 11.3.03G released

- 1) **SATPIJA** Problems arise when using a .UFO input file with USEUFO=T; the number of PIJA matches detected is far too small. Corrected in 11.03.04 07/06/14.
- 2) **P1X** SLA fails when using a UFO input file as opposed to a UFC input. (In both this case and the above case the problem arises from the program “confusing” UFO and UFC files such that it reads UFC files as though they were UFO.) Corrected in 11.3.04. 07/06/14.
- 3) **SATNET**: Users may experience problems inputting 77777 count data with FREE77 = T since the “rules” have changed so that now the node numbers A-B-C are also free format, not fixed columns. In particular, if the third data column (the C-node) has been left blank to denote a pure link a zero will have to be explicitly included to avoid confusing it with the first data field. Corrected in 11.03.04. 22/06/14.
- 4) **SATPIJA**. Using a .UFO file with more than one user class/matrix level can lead to problems with large networks (e.g., LOHAM) caused by DA codes being created with 6 digits. Corrected in 11.03.04. 22/06/14.
- 5) **SATALL**. May crash with an Unknown Floating Point Exception in either SET_BB_TARGET_AVERQ or ..._FINALQ. The most likely reason is a simulation link which has been defined with a distance of zero and which has not been picked up as an error. Corrected in 11.3.06. 25/06/14.
- 6) **SATALL**. Creating a .UFC file for stochastic assignment (SUZIE = T) produces a corrupt file which cannot be used later for, e.g., SLA in **P1X** and, possibly, may also lead to a fatal error (missing DA code 1003) within **SATALL** if it tries to create a .UFO file (SATUFO = T). Corrected in 11.03.06. 31/07/14.

- 7) **SATNET**. Adding CLICKS to a network which has zero-length links (why?) causes a crash (invalid operation, divide by zero). Corrected in 11.03.07. 03/08/14.
- 8) **P1X**. Adding node-based data to the SATDB data base with two or more networks fails if the networks have a different number of zones. Corrected in 11.3.07. 18/08/14.
- 9) **SATALL, SATLOOK & P1X**. The bus statistics which are calculated and output either under total network summations (i.e., option 4 in SATLOOK), bus summary statistics (option 6 in SATLOOK) or as individual routes (Information in P1X) experience minor problems with simulation links where there is, say, a **nearside** bus lane but a particular route has to turn from an **offside** lane at the end of the link and therefore should not have a reduced turn delay. Consequently total times, distances and speeds may differ marginally in the latest releases. Corrected in 11.3.07. 08/09/14.

October 2014 - Version 11.3.07K released

- 10) **SATSUMA**. It fails for networks with 10 or more user classes. (And, therefore, so does the batch file SATTPX which calls **SATSUMA** as its final step although all previous time period runs are perfectly correct.) Corrected in 11.3.08. 14/10/14.
- 11) **SATNET/P1X** Setting both SAVUFO and USEUFO = T in a network .dat file causes a subsequent Fatal Error 306 in **P1X** trying to read weights per FW iteration from the .UFO file. Corrected in 11.3.08. 22/10/14.
- 12) **SATALL** may very occasionally "hang" during the simulation. Corrected in 11.3.08. 22/10/14.
- 13) **SATALL** may very occasionally crash with an illegal operation (divide by zero) in subroutine MIXSH during a simulation. Corrected in 11.3.08. 22/10/14.
- 14) **P1X**. Creating a new network .dat file runs into problems since a namelist variable name IXSHFT appears twice under &PARAM – the second name should be changed to IYSHFT. Corrected in 11.3.08. 27/10/14.
- 15) **P1X**. Select Link Analyses (SLA) based on using Spider networks, .UFC files and multiple user class networks are unreliable if the .UFC file has been taken from an extra SAVEIT assignment (as opposed to being based on the original simulation-assignment loops under UFC109/UFC111). The use of .UFO files is recommended (temporarily). Corrected in 11.3.08. 22/10/14.
- 16) **SATCH/P1X**. Similar problems to those noted above in 15) occur with matrix cordoning, either in **SATCH** with USESPI = T or in **P1X**. Corrected in 11.3.08. 22/10/14.
- 17) **P1X**. Select Link Analyses (SLA) using .KEY files have problems with handling "Yes" to continue with select link following a screen prompt. Prior to 11.3.03 the "Yes" had to be included, and after it had to be excluded! Changed to accept key files with or without the "Yes" response. Corrected in 11.3.08. 22/10/14.

- 18) **SATALL** may very occasionally crash with an illegal operation (subscripted variable out of bounds) in subroutine TOMMIX_FLARES_PRI_KNOCK during a simulation. Corrected in 11.3.08. 11/11/14.
- 19) **P1X**. Fails to correctly create a **full** multi-level SLA matrix for multiple user classes using the spider network. It appears, however, to work correctly if just a single-level square matrix is requested. Corrected in 11.3.08. 21/11/14.
- 20) **SATALL**. Examples of “hysteresis” have been found with signalised arms with flares whereby both over-capacity and under-capacity solutions may exist for the same flows and the solution arrived at may depend on which direction you are coming from. Leads to (possibly extreme) poor convergence. Corrected in 11.3.08. 24/11/14.
- 21) **SATCH**. If the title for a new matrix is **not** included as the final record in the control file (and DOMAT = T to request a cordoned matrix) then the necessary .UFC file is not opened and the matrix cordoning fails, either by crashing or by producing a matrix with all zeros. A long-standing problem which pre-dates 11.3. Corrected in 11.3.09. 12/12/14.
- 22) **SATWIN11**. 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. All batch files have been upgraded to match. SATWIN11 (v1.8 onwards) provides a function to perform the necessary batch file upgrades on earlier SATURN versions. Corrected in v1.8 (released as part of 11.3.10). 19/12/14.
- 23) **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(as with SATWIN11 above). The SATWIN11 update batchfiles function also upgrades SATSTAT in older SATURN versions. Corrected in 11.3.10. 19/12/14.
- 24) **SATALL**. The simulation of signalised turns in a flared lane which are also filters (turn priority marker F) are unreliable and have been corrected. (Strictly speaking this applies to any flared turn with 100% green which normally can only occur with a filter). Corrected in 11.3.10. 05/01/15.

January 2015 - Version 11.3.10E released

- 25) **SATALL** may fail with overflow in SAXVT for networks with ROSIE = T where the problem is due to the presence of links whose mid-link flow exceeds the mid-link capacity. A long-standing problem detected in 11.3.07. Corrected in 11.3.11. 01/03/15.
- 26) **SATALL**. If both ROSIE and AUTONA = T with multiple user classes then the number of assignment iterations per loop will almost certainly be reduced to NITA_M which, if it is a relatively small number, means that the convergence effectively stalls. Simple workaround: set ROSIE = F. A long-standing problem detected in 11.3.07. Corrected in 11.3.12. 27/03/15.
- 27) **SATCH** fails – probably by “hanging” in an infinite loop – while creating the 66666 route data for an output network file if **both** the first two nodes in a route are the outer ends of cordon links. A simple work-around is to re-define the

route in the original network so that it starts with the second node. Corrected in 11.3.12. 17/04/15.

April 2015 - Version 11.3.12F released

- 28) **SATCH_MC/SATPIJA_MC** batch files may unnecessarily fail in the \$SATGET utility when newer networks are used. An updated **\$\$SATGET** which ignores later parameters resolves the problem. Corrected in 11.3.12G. 29/04/15.
- 29) **SATDB** failed when reading in large quantities of external data when printing the summed totals of all data values read. Corrected in 11.3.12H. 27/05/15.
- 30) **SATDB** failed to correctly read in Centroid Connector data from CSV files under Miscellaneous Link Data Entry. Corrected for most common file types in 11.3.12H. 30/05/15.
- 31) **\$\$SATGET** failed when used on some old (11.2.05) networks. Corrected in 11.3.12H. 03/06/15.

June 2015 - Version 11.3.12F Update 1 released

- 32) **P1X**. If a GIS was loaded when P1X was started, and then a different GIS read in, the GIS data could be incorrect. Corrected in 11.3.12I. 16/06/15.
- 33) **SATDB** failed to correctly read in Centroid Connector data from CSV files under Miscellaneous Link Data Entry (see 30) above) - fixed for other types of input. Corrected in 11.3.12I. 16/06/15.
- 34) **SATALL/SATUFO**. Creating a .UFO file may, worst case scenario, hang or give multiple reported errors due to a (large) number of banned links within a buffer network. Corrected in 11.3.14. (In 11.3.12U, a special batch file/program XSATUFO is provided to enable a .UFO to be created in such circumstances) 03/07/15.
- 35) **P1X**. Failed to display correct numbers for 8 digit nodes. Corrected in 11.3.12J. 15/07/15.
- 36) **P1X. SLA** analysis using UFO files for multi-user class networks could fail with an exception error, or with some of the later user class values set zero. Corrected in 11.3.12J. 16/07/15.
- 37) **P1X**. Could not input 8 digit nodes in NODE selection boxes. Corrected in 11.3.12J. 20/07/15.
- 38) **P1X**. When giving an 8 digit node number on the command line, it could lose accuracy to 7 leading figures and hence not be recognised. Similar error could apply to numbers in command lines etc. for other programs. Corrected in 11.3.12J. 20/07/15.
- 39) **SATALL & SATEASY**. Subscripted Namelist variables with a subscript greater than 9, e.g., BETA(11), are not recognised. Corrected in 11.3.12J and 11.3.14. 01/08/15.
- 40) **P1X**. When displaying differences between two networks, P1X could occasionally show spurious differences. This only happens when one (or both) of the networks contains duplicated links (i.e., two or more links with

identical A-nodes and B-nodes in the same network) where matching of links between the two networks may become “confused”. Corrected in 11.3.12J and 11.3.14. 24/08/15.

- 41) **P1X.** For a network with tolls set by a KNOBS file, the summary banner for individual O-D forests may incorrectly report a toll regardless of whether the routes used any of the tolled links. The reported toll relates to the total of all tolls, not to the selected links within the forest. Corrected in 11.3.12J and 11.3.14. 18/08/15.
- 42) **MX.** Stacking matrices that already have multiple levels can appear to work in some options without error (e.g., MXSTACK) but creates matrices with certain (non-essential) DA elements missing. Reading such a file in a subsequent program resulted in a fatal error. The matrix input routines have been updated such that failure to find the missing elements becomes a non-fatal error and all the essential components of a .ufm are read correctly. Longer term investigations to correct the root problems in MXSTACK etc. are underway. Corrected in 11.3.12J and 11.3.14. 25/08/15.
- 43) **SATWIN11/TUBA software installation.** If TUBA version 1.9.3 is already installed on your machine, then SATWIN11 may not install. The solution is to un-install TUBA before installing SATWIN11. TUBA v1.9.3 may then be re-installed but the problem may re-occur in the future. TUBA v1.9.4 and later should not have the problem.
- 44) **SATME2.** Certain release levels of **SATURN**, i.e., S, H, K,L, M1, M2, M3 and N2, may fail in **SATME2** due to the number of constraints (counts) exceeding the maximum number permitted, even though the same number of constraints/counts is allowed elsewhere within **SATURN**, e.g., within **SATPIJA**. Corrected in 11.3.12U and 11.3.14. 09/09/15.
- 45) **MX.** All options in the Matrix Graphics Menu (e.g. Trip Length Distribution, Frequency Distribution) throw the same divide by zero error. This was a problem with the colour palette not being defined for use with the latest Silverfrost (formerly Salford) graphics library. Corrected in 11.3.12J and 11.3.14. 19/10/15.
- 46) **MX.** In interactive mode, when using option '5 - Factoring' >> '4 - Column Factoring' and selecting levels to be factored, the selection 'INPUT 0 FOR ALL LEVELS' was not accepted. Corrected in 11.3.12U and 11.3.14. 23/11/15.

November 2015 - Version 11.3.12U released

*All corrections recorded above and denoted as corrected **within** the 11.3.12 family (e.g. 11.3.12J) are included within the 11.3.12U release.*

- 47) **P1X.** Problem doing a “node-to-node” (2 nodes) SLA using UFO files as opposed to UFC. Corrected in 11.3.12W and 11.4. 15/09/15.
- 48) **P1X.** A long-standing problem with carrying out a Select Link Analysis (SLA) with multiple nodes using a .UFO file (as opposed to .UFC) has been corrected. Corrected in 11.3.12W and 11.4.5. 01/12/16.

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- 49) **SATALL**. Various corrections to prevent several exception errors reported by users using 11.3.12U and previously released in a series of cumulative 11.3.12V beta updates to specific users between April and November 2016. Incorporated into 11.3.12W. 26/05/17.
- 50) **SATALL**. Using SIGOPT = T to optimise signal settings internally within the assignment fails under circumstances which are yet to be precisely determined (possibly just at flared arms) and in ways that may not be entirely obvious. One indicator is that the signal timings are incorrectly displayed within **P1X** node graphics. The basic error is the same as that identified by error 61) below and was therefore corrected in 11.3.12W as well as 11.3.14. 28/12/16.
- 51) **SATPIJA**. If GROUP = T, multi-core version can fail, or create invalid .UFP file when attempting to merge the individual parts as each part can generate components for the same sector-sector movement. Corrected in 11.3.12W and 11.4.05G. 26/01/17.
- 52) **SATSTAT**. Updates to SATSTAT (v3.40) to provide additional convergence reporting for %Delays measure for the last four assignment-simulation loops (as undertaken for %Flows) as suggested in TAG Unit M-3.1. Note that the revisions are not backward compatible with older versions. 11.3.12W. 09/02/17.
- 53) **SATCH**. Update to improve the internal precision used in the calculations to extract cordon matrices (where many zones and many trees used). The cordon matrices extracted by SATCH will now be similar to those generated by P1X (whose numerical precision had previously been improved). 11.3.12W. 01/03/17.
- 54) **SATALL/SATUFO**. Significant revision to the creation of UFO files to correct the problem of truncated paths generated for specific cell ij pairs when there is no demand (i.e. $T_{ij}=0$).

Where the UFO has been used for normal select link analysis or cordoning, by definition T_{ij} is non-zero, and 11.3.12W will materially give the **same** results. The majority of users should not be affected.

For users that use .UFO files to generate the full skimmed cost matrix, for cells where $T_{ij}=0$, the costs in 11.3.12U and earlier could be significantly wrong from being short from a truncated tree, or high from choice of a longer path (compared with a weighted average UFC based tree). If these were not identified, they could cause problems, e.g. in distributional modelling and wider impacts. By definition, in many cases where Trips*Costs are used, the overall problem could be small as the erroneous costs are weighted by a low number of trips. The correction resolves the truncated path issue, and makes all $T_{ij}=0$ skimmed costs a better match to the equivalent UFC ones.

Corrected in 11.3.12W. 01/05/17.

As part of the revisions to the UFO generation, the special 11.3.12U **XSATUFO** batch file has been withdrawn (see 34) above). Revised in 11.3.12W. 26/05/17.

- 55) **P1X**. When reporting validation counts, if one selected “links only” or “turns only” instead of leaving it to the default of both, would fail with a divide by zero error. Corrected in 11.3.12W and 11.4. 26/05/17.

May 2017 - Version 11.3.12W released

*All corrections recorded above and denoted as corrected **within** the 11.3.12 family (e.g. 11.3.12V) are included within the 11.3.12W release.*

The following items listed have been corrected in 11.3.13 or later, or are under investigation.

- 56) **SATALL**. Delays at Q-nodes can currently exceed the maximum if the actual flow exceeds the saturation flow (see Appendix Q); i.e., there is no upper limit imposed on the delay as there should be. Corrected in 11.3.13K. 15/05/15.
- 57) **P1X**. Various problems when using SLA restricted to, e.g., downstream flows only have been corrected. For example, the averaged statistics for a single link using .UFC files were incorrect. Corrected in 11.3.14. 22/06/15.
- 58) **P1X**. Validation of counts taken from the input .ufs file may lead to a divide-by-zero crash if a count set is empty (or, more unusually, has all counts of zero). Corrected in 11.3.14. 03/07/15.
- 59) **SATALL**. Problems arising from the combination of a filter (all green) turn at signals with a nearside flare may cause an Invalid Operation grey-screen crash (possibly only if the turn has been assigned zero flow). Corrected in 11.3.14. (A partial fix for this was also added to 11.3.13). 07/07/15.
- 60) **SATALL/SATSIM**. A flared lane at signals which would be over capacity even with 100% green to all turns in that lane may have its capacity reduced to even lower levels, e.g., by an order of magnitude. Corrected in 11.3.14. 09/07/15.
- 61) **P1X**. Signalised nodes **which include flares** may have errors in the calculated total inter-green times, e.g., as reported within the printed node description. This may also manifest itself in scaled green times appearing incorrectly in the graphical stage inserts even when the total stage times equal LCY. Corrected in 11.3.14. 10/07/15.
- 62) **SIGOPT**. SATWIN11 does not call SIGOPT correctly when "Control File" is given, but will work if "KR controlfilename" is entered in "Extra Command Line Parameters" instead. To be corrected in the next release of SATWIN11. 13/08/15.
- 63) **P1X**. Replacing the existing (main) network with a new network which has a different structure causes a problem if a new .UFC file is opened at the same time since the number of links in the new .UFC file is checked against the number of links in the former .UFS file. A non-fatal error is reported with an incorrect DA 1003 array length. A very long-standing error. Corrected in 11.3.14. 24/08/15.
- 64) **SATDB**. Using the convention that, say, DA code 3818 refers to the actual flows from the demand flows in 3813 (i.e., user class 2 flows) fails if you have more than one network with different structures, e.g., a different number of

assignment links. On the other hand accessing the same data, e.g., user class 2 actual flows from network 2, works within the P1X menus. Corrected in 11.3.14. 29/08/15.


- 65) **SATDB**. Reading in counts under the Miscellaneous Input option (6) using multiple input files fails if the networks have different number of counts. Corrected in 11.3.14. 04/09/15.
- 66) **SATLOOK**. Problems may arise under master option 14, analyse minimum cost paths, with multiple user classes. For example, if the user class is re-set under option 12 then the “costs” used for either building trees or skimming under options 13 and 14 are automatically updated but the new user class is not correctly reported within the new menus. The simple work-around is to only build one set of trees/matrices at a time within master option 14, set the user class first (option 12) and only then invoke options 13 and/or 14 to set costs. But see 58) as well. Corrected in 11.3.14. 09/09/15.
- 67) **SATLOOK & P1X**. The text menu headed “DEFINE LINK TREE BUILD COSTS” (accessed either from within main menu item 14 in **SATLOOK** or from the user class sub-options of the tree build banner in **P1X**) followed by the choice 1 “ASSIGNMENT COSTS WITH PPM ...” double-counts any extra travel time associated with CLICKS for the currently selected user class and may therefore produce unreliable routes (but only if your network uses CLICKS). Corrected in 11.3.14. 11/09/15.
- 68) **P1X**. If the signal settings at a signalised node with X-turns are edited then the standard checks to detect X-turns which do not qualify for TAX due to an unopposed final stage (see 8.2.4.1) are not carried out and incorrect capacities, delays etc. may result. Note, however, that if the edited settings are saved in a .dat file which is then processed through **SATNET** then the correct checks are carried out. Corrected in 11.3.15. 20/11/15.
- 69) **P1X**. Choosing “tubies” to annotate turn data in network plots causes a grey box crash (but there is no problem with node plots). Corrected in 11.3.15. 09/12/15.
- 70) **P1X**. If a link in the map network is duplicated (e.g., link A-B appears twice) then A-B is (correctly) only plotted once but if there are **two** such instances from the same A node (e.g., there are two links A-B and two of A-C) then A-C may not be plotted at all. This arose in particular with centroid connectors where it is not infrequent to have duplicate connectors from a zone A to both real nodes B and C. A very long standing bug. Corrected in 11.3.15. 14/12/15.
- 71) **SATPIJA/SATME2**. The .UFP produced by **SATPIJA** using a .UFO file (USEUFO = T) and which is based on **3 or more** user class **may** contain errors which **may** then result in a crash (Floating point overflow error) in **SATME2**. It is therefore recommended **not** to use USEUFO in **SATPIJA** with previous releases when combining 3 or more user classes together. A long standing bug. Corrected in 11.3.15. 16/12/15.
- 72) **P1X/SATLOOK**. Using the option in **P1X** Joyride to create a key file to use in **SATLOOK** fails if the **P1X** option to add an extra turn delay at the final node is “on”, in which case the final node is repeated twice in the key file causing **SATLOOK** to crash. Corrected in 11.3.15. 20/01/16.

- 73) **SATNET**. Multiple spurious occurrences of Serious Warning 113 – not all arms at a simulation node are in clockwise order – occur if a .GIS file which defines curved links (data segment 77777) is used and that GIS file has incorrectly included X,Y co-ordinates for the link A-node and B-node in the first and last slots. Only the **intermediate** X,Y points need to be included within 77777 curved link data. Corrected in 11.3.15. 22/01/16.
- 74) **SATUFO**. Possibility of less-than-perfect UFO output and/or the program hangs if: (a) SPIDER = F, (b) the network has a relatively large number of zones relative to the maximum allowed by that release level (791 vrs 2000 when the error was first identified) and (c) there are banned turns and/or bus only turns present. Corrected in 11.3.15. 04/02/16.
- 75) **SATNET**. Errors may occur when defining the properties of out-bound external simulation links, i.e., links to an external simulation node, if speed-flow data is included in **both** the 11111 and 33333 data sets. In particular, the distance from the 33333 record may over-write the distance on the 11111 record but the travel time is **not** over-written, potentially leading to incorrect speeds. Corrected in 11.3.15. 08/02/16.
- 76) **SATNET and P1X**. The creation of .RGS files (e.g., using FREDDY = T in **SATNET** or interactively in **P1X**) fails under TOPUP = T if there are multiple occurrences of signalised nodes or if the use of negative node numbers is used to delete simulation nodes. Corrected in 11.3.15. 09/02/16.
- 77) **SATNET**. Setting user-class specific values of SUET within &PARAM fails as they all revert to their global value. However using the final field on the 88888 records – see note 9) in 6.11 of the Manual – works correctly. Corrected in 11.3.15. 12/02/16.
- 78) **P1X/PMAKE**. Various problems have arisen editing networks which have been created using \$INCLUDE files within the 11111 data records, in particular creating updated versions of the \$INCLUDE files. Corrected in 11.3.15. 12/02/16.
- 79) **SATPIJA**. Problems may occur – and incorrect .UFP files generated which are only detected once they are used in **SATME2** – by having inconsistent values set for the Namelist parameter USEUFO in the input SATPIJA control file and in the original network .dat file. But only if USEUFO = T in one but not the other **and** if multiple matrix levels are being analysed, IVC ne 0. Corrected in 11.3.15. 20/02/16.
- 80) **P1X/SATALL**. Printing the lane choices by simulation node (option12 in the node display list and also used for error messages in **SATALL**) fails if there are 7 lanes in an arm. “Error 89. Attempt to write past end of internal file.” Corrected in 11.3.16. 27/02/16.
- 81) **SATME2**. It is possible, but highly unlikely, for errors to occur in processing combined (66666) counts whereby the same O-D pair appears twice in the list of constituent counts. The impact on the output matrices should be minimal. Corrected in 11.3.16. 01/03/16.
- 82) **P1X**. Trying to access a node with node graphics may cause the program to stop with miscellaneous error 29 if the node has more than 26 lines of data in

- the original network .dat file – where the lines can (and most probably do) include comment (*) records before the actual node data records. Corrected in 11.3.16. 09/03/16.
- 83) **P1X**. Cordoning a trip matrix using a UFO file may not work – the option “TRIP MATRIX” appears greyed out in the cordon banner menu. Corrected in 11.3.16. 17/03/16.
- 84) **SATALL**. A Floating Point Divide by Zero may occur in TOMMIX_SIGNALS, most likely (but possibly not necessarily) after a relatively large number of assignment-simulation loops (e.g., 120). A very long-standing error. Corrected in 11.3.17. 30/04/16.
- 85) **SATALL**. If a network contains multiple user classes and the final user class is distance-only (in terms of generalised cost) then the program fails with a call to Fatal Error 29. Corrected in 11.3.17. 25/05/16.
- 86) **P1X**. Requesting average turn delays as opposed to exact turn delays in a joy ride and/or in a timed route validation double counts any delays on the link itself due to speed-flow curves by including them within the turn delays. In addition the calculation of “extra” delays (i.e., actual delay less minimum delay at zero flow) as reported in the banner has been tightened up. Corrected in 11.4.1. 02/06/16.
- 87) **SATNET**. 44444 data input records where NOMADS > 10 require 2 or more input records per ban; if the required continuation records are not included then records are skipped but no error messages are generated. See Section 6.7, note (9). Corrected in 11.4.1. 18/06/16.
- 88) **SATNET**. If the 88888 records use integer values to define values of time, distance or KNOBS rather than reals, e.g., ‘ 1’ rather than ‘ 1.0 ‘, then the data as read may be not what the user intended. Thus ‘ 1’ may be interpreted as 0.01 rather than 1.0 which is probably what was intended. See Section 6.11 note 14. Amended in 11.4.1 so that integers are read without any assumed decimal points (**and which may result in 11.4.1 giving different generalised cost weights from previous releases!**). 19/06/16.
- 89) **P1X**. Using a DA code such as 803808 to identify actual flows for user class 9 in a network with >10 user classes gives a “data acquisition failure” message. Corrected in 11.4.1. 20/06/16.
- 90) **SATALL**. Using a control file to change parameter values, e.g., MASL, will not correctly retain the new parameter values if: (a) a Warm Start is being used and (b) the old network has a different structure from the new. Corrected in 11.4.1. 28/06/16.
- 91) **P1X**. If a network data file contains 11111 signalled node data in **both** the main segment and in \$INCLUDE files (using TOPUP) and the signals are either being edited using .RGS files (11.9.14) or optimised via SIGOPT (15.31.6) then it is possible that the updated signal timings **may** appear in the **wrong** location; e.g., in the main segment when it should be in a \$INCLUDE file or vice-versa. Corrected in 11.4.1. 30/06/16.

- 92) **P1X**. If **actual vehicle class flows** are annotated for more than one input network then the flows for the second (or later) network are the (correct) demand flows for network 2 but are factored down by the actual/demand ratios for network 1, **not** for network 2. Corrected in 11.4.1. 21/07/16.
- 93) **SATALL**. A continuation run (e.g., SATALL net MASL 2) will give incorrect results on a network which has previously been run with a warm start **and** has a different structure from its update network. Corrected in 11.4.1. 23/07/16.
- 94) **P1X**. Carrying out SLA for a single link but with the two-way option “on” does not work correctly with UFO files which treat the link as a one-way link. Corrected in 11.4.2. 22/08/16.
- 95) **SATALL**. Very small networks, e.g., as produced by a localised cordon, may not load any (or very few) O-D trips if SPIDER = T. Essentially SPIDER works “too well” and the only links left are direct zone-to-zone connections which may be excluded from loading. N.B. With such very small networks there is no real need to have SPIDER “on” so it may need to be explicitly set to F if the value of T has been set via cordoning. Corrected in 11.4.3. 07/09/16.
- 96) **SATPIJA**. If a network has more than 6 user classes the results could either be wrong or the program fail with an exception error. Corrected in 11.4.5. 05/11/16.
- 97) **P1X**. If a network has been built using a .RGS file to define (some) signal settings (so that the stage definitions inside the network .dat file may be inconsistent with those on the .RGS file) then the nodes/links so affected may not be identified using the global data update options under network editing. Corrected in 11.4.5. 17/12/16.
- 98) **P1X**. Node graphics give strange diagrams if – unusually – two arms enter at exactly the same angle; e.g., if their two A-nodes were assigned the same co-ordinates. Corrected in 11.4.5. 17/12/16.
- 99) **P1X**. Tracing a bus route with joy ride on under Information may fail with a “variable subscript out of range” error resulting from curved links. Corrected in 11.5.2. 06/05/17.

E.10 Version Control

JOB NUMBER: 5157408		DOCUMENT REF: App E9.doc				
Revision	Purpose / Description					
		Originated	Checked	Reviewed	Authorised	Date
11.3.03	SATURN v11.3 Release	DVV	SN	IW	IW	28/02/14
11.3.07	SATURN v11.3.07 Release	DVV	DAS	IW	IW	26/09/14
11.3.10	SATURN v11.3.10 Release	DVV	DAS	IW	IW	22/01/15
11.3.12	SATURN v11.3.12 Release	DVV	DAS	IW	IW	22/04/15
11.3.12+	SATURN v11.3.12 Update 1	DVV	DAS	IW	IW	05/06/15
11.3.12+	SATURN v11.3.12U Release	DVV	DAS	IW	IW	23//11/15
11.3.12+	SATURN 2015 UGM	DVV	DAS	IW	IW	24/11/15
11.3.12+	SATURN 2016 UGM	DVV	DAS	IW	IW	31/10/16
11.3.12+	SATURN v11.3.12W Release	DVV	DAS	IW	IW	28/05/17