

E.6 SATURN 10.8 Bugs

Date of last update: 12th November 2008

The following “problems” have been identified in **SATURN** Version 10.8.15 as released in March 2008 and/or in later 10.8 releases.

Some of these (potentially) may pre-date 10.8 and would also have been present in 10.7 or even much earlier releases.

- 1) **SATNET** – Although the manual states that multiple bus lanes may be defined on network .dat files by, e.g., BB2 it actually generates a fatal read error. Corrected in 10.8.16 9/04/08.
- 2) **P1X** – Calculating SLA Actual (as opposed to Demand) flows ignores any possible reductions on the **first** simulation turn immediately after an OD route leaves the origin; subsequent reductions at over-capacity turns are correctly treated. The end result is that the Actual flows may be over-estimated. The bug has been there in all previous versions. Corrected in 10.8.16. 16/04/08.
- 3) **SATCH/P1X** – Cordoning a network with KNOBS > 0 and where the KNOBS data appears as a second line after the link data lines within 33333 (so that KONAL = F and a knobs file is not being used) **and** the extra lines can be entirely blank can create errors. What happens is that the blank line is ignored and the **next** record which should be a genuine buffer link record is skipped instead. The error has been around for several releases. Note that we now strongly recommend inputting KNOBS data via a separate “knobs file”, not within the 333333 data, in which case the error can never occur. Corrected in 10.8.16. 16/04/08.
- 4) **P1X** – Network Editing has problems dealing with blank records within the 33333 data used as a “second record” containing KNOBS data. Basically the editor re-writes them as a comment and they will then be ignored in any output .dat file. A long-standing error, not just in 10.8. Corrected in 10.8.16. 18/04/08.
- 5) **P1X** – If a log/key file contains an integer X/Y co-ordinate with **6** (or more) digits, e.g., as used to define the corner of a Window box, the co-ordinate is output as an integer but incorrectly read within a key file as a real. For example, a value of 123456 will be read as 1234.56 and hence totally “misplaced” by the key file. 5-digit co-ordinates are not a problem. The error can be corrected by manually editing the key files to add a decimal place to 6-digit numbers but keeping within the requisite 8-column field; e.g., replace ‘bb123456’ by ‘b123456.’ (where ‘b’ represents a blank). The affected lines are those that are terminated by (Mouse pixels/status/X,Y). This is a new problem in 10.8 which is a consequence of including network co-ordinates in addition to pixels in key files in order to make key files less dependent on device resolution. Corrected in 10.8.16. 22/04/08.

- 6) **Simulation** – The new parameter RTP108 is unreliable and can generate incorrect random delays. Its use is therefore not recommended and it should be set to .FALSE. (its default) under &PARAM in network .dat files. Corrected in 10.8.16. 24/04/08.
- 7) **SATNET** – A bus route which executes a U-turn at a simulation node which is **not** a Type 5 roundabout may possibly (but not always) lead to a crash. Corrected in 10.8.16. 26/04/08
- 8) **SATALL/Simulation** – An explosive cocktail may be created by having two X-turners in the same exclusive lane with one or more of the X's entering a link which is blocking back. This may cause the computer either to crash, hang or to generate negative capacities – or it may only slightly misrepresent the extra post-green capacity "TAX". Corrected in 10.8.16 27/04/08.
- 9) **SATALL** – It is possible for the program to crash (Floating Point Error within subroutine DEL_107), caused by the "major turning movement" in a merge having zero flow (i.e., not the turn with a priority marker M but the turn into which it merges). In addition the new 10.8 "funneling" rules must be turned on, so that FUNNEL = T (its default) plus RTP108 must be T as well (default F). A simple work-around, should the problem arise, is, therefore, to set FUNNEL = F and/or RTP108 = F. Corrected in 10.8.16 04/05/08.
- 10) **SATALL** – A similar crash (Floating point stack fault in MIXRIV) may also occur (but extremely rarely) with RTP108 = T. Corrected in 10.8.16 04/05/08.
- 11) **SATNET** – If UPDATE = T and the arrays containing either the IN or OUT simulation profiles are greater than 75% of the maximum limits then problems may arise with the update addressing memory outside the allocated space. In general this does not seem to be a problem, except in so far as the update process is not as efficient as it might be, but it may also cause the program to crash, in which case you'll know about it! Corrected in 10.8.16. 07/05/08.
- 12) **MX** – The output of a sector-sector .UFM matrix file may omit certain cells. The bug is not new and has been present for a long time. Corrected in 10.8.17. 24/06/08.
- 13) **SATNET and others** – Input from a free format text file with data of the form "...1.0 , 2.0 ...", i.e., with the two data fields separated by both blanks and a comma, will not be read correctly. Specifically the problem surfaced while reading CLICKS data under KLUNK = 1 but it could happen anywhere. Note that "1.0,2.0" (comma, no blank) works correctly (and which is what is produced by CSV files output by **SATURN**) as does "1.0, 2.0" (blank after the comma) and "1.0 2.0" (blank, no comma). Corrected in 10.8.18. 14/07/08
- 14) **SATALL** – The simulation of the effect of funneling on **offside** merges (with M108 = T and FUNNEL = T) may identify the "major" merging turn incorrectly and thereby – most probably but not necessarily – underestimate the capacity reductions. Corrected in 10.8.17 as released. 16/07/08

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- 15) **SATPIJA & SATME2** – The use of the parameter SUBPQ = T to subtract PASSQ flows from the input count does not work correctly for MUC assignment in that it subtracts the **total** PASSQ flow from the counts rather than the user-class specific PASSQ flows. Corrected in 10.8.19. 24/07/08
 - 16) **TBA22UFM and TBA32UFM** – The batch files for converting Tuba-2/3 text files back into .UFM do not re-create all the original zones in the input .ufm file if a zone does not appear at all as either an origin or a destination in the text file. Not a problem for “full” matrices. Corrected in 10.8.19. 25/07/08
 - 17) **SATNET** – You can get a crash – Divide by Zero in CHECK_IGL_NUC – if you have a stage length of zero which would otherwise produce Semi-Fatal Error 227. It may be caused by having an incorrect number of stage definition records / an incorrect value of the number of stages in the Node Record. Corrected in 10.8.19. 04/08/08.
 - 18) **P1X** – PMAKE fails when a new link is connected to a traffic signals node. Corrected in 10.8.19. 22/08/08.
 - 19) **SATNET** – The use of < or > symbols to set explicit upper and lower limits on stage green times in network .dat files (see 6.4.13 in the Manual) has several problems. Firstly, **SATNET** may crash with certain inputs. Secondly, various analysis programs such as **P1X** may fail to read the limits correctly from .ufs files (although they should be OK in **SATALL**). Corrected in 10.8.19. 04/09/08.
 - 20) **SATNET** - Reading in an ascii file of pre-load flows under free format (PLODFF) implicitly assumes that the data file consists of link records only, i.e., A-node, B-node, flow. Hence pre-load flows on turns cannot be read and, if your data records do consist of A,B,C,flow, A,B will be read as a link and C will be incorrectly read as a flow. Corrected in 10.8.20 by adding a new &OPTION logical parameter PLFF3. 20/10/09.
 - 21) **P1X** – Certain semi-fatal errors detected in **SATNET**, in particular references to otherwise undefined simulation nodes as a link A-node, may cause a crash if the node in question is viewed using node graphics. Corrected in 10.8.20. 06/11/08.



E.7 Version Control

JOB NUMBER: 5073429		DOCUMENT REF: App E6.doc				
Revision	Purpose / Description					
		Originated	Checked	Reviewed	Authorised	Date
1	Re-formatted (Final to DVV)	TF / BG	NS	IW	IW	06/05/06
2	E.4 14) 15) added	DVV				11/05/06
3	Upgrade to V2 Template	DVV	IW	DVV	IW	28/06/06
3.1	Additions to 10.6.17	DVV				10/07/06
3.1i	E.4 20 & 21	DVV				15/07/06
3.1ii	E4 22	DVV				15/08/06
3.2	Web release – Sept 06	DVV	NP	IW	IW	08/09/06
3.3	Web release – Jan 07	DVV	NP	IW	IW	04/01/07
	E.4 37 and 38	DVV				22/02/07
3.4	SATURN v10.7 Release	DVV	NP	IW	IW	12/03/07
	E.5 Additions	DVV				30/03/07
	Further E.5 Additions	DVV				10/04/07
3.5	Web Release for Jul 07	DVV	NP	IW	IW	20/07/07
3.6	SATURN v10.8 Release	DVV	NP	IW	IW	25/03/08
	E.6 started for 10.8 bugs	DVV				26/04/08
3.7	Web Release for Jul 08	DVV	NP	IW	IW	07/07/08
3.8	Web release – Dec 08	DVV	NP	IW	IW	12/12/08