SATURN User Group Meeting: Leeds November 29 2018

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BATTING ORDER

- (Selected) 11.4 Bugs / 11.5 fixes
- Specific Program Upgrades in 11.5
- Important new 11.5 Features
- Extensions to TAC Modelling
- Ideas and Objectives : 2019

11.5 – New &PARAM Defaults

- LTP 30 – 60
- LTRP 0 – 30
- PMAX 10.0 – 5.0
- NITS 20 - 30 (See also AUTONS)
- N.B. Defaults are not activated if the .dat file contains **ALL** &PARAM values from a P1X clean dump. Dump non-defaults only.

11.4 Bugs /11.5 Fixes

Transient Delay (V < C) equations:

(a) $t(V) = t0 + A \cdot V^{**}n$

or

(b) $t(V) = t0 + (tC - t0) \cdot (V/C)^{**}n$

(a) is susceptible to over/underflow, in particular for large n (e.g., PMAX = 10)

(b) has only problems of underflow.

Overflow Problems from (a)

- Almost always due to PMAX = 10
- Cap introduced on A in 11.5
- Use (b) for transfer of speed-flow to other packages

SATNET (11.5)

- Duplicate 33333 links allowed
- ATLAS nodes (unconnected) improved:
  - do not generate errors for an unconnected network
  - Can be displayed in P1X
- Wildcard 44444 inputs improved.
- Namelist > 6 characters truncated; e,g., NIJKSTRA – NIJKST (Also DIJKSTRA)

SATALL (11.5)

- Modelling of TAC's (Toll Area Charging) continues to evolve
- AUTONS optimises NITS based on level of convergence
- ISTOP statistics disaggregated by link type (e.g., simulation vrs buffer)
- Optional signal optimisation for 2-arm nodes (i.e., pedestrian crossings)

Simulation (11.5)

- More of the same!
- Multiple small(ish) changes to simulation rules, mostly associated with flares and blocking back.
- Constant objective: better convergence
- Most – but not all – included in 11.04.6D
- Bottom line – 11.5 gives different results.

P1X (11.5)

- Improvements to dumping “clean” .dat files
- Ban/penalise selected links prior to building min-cost OD routes
- Similarly ban turns prior to One Song in SATDB – what happens if a link is closed.
- “QUICK” forests – based on one loop only – also applied more widely for “quick’n’dirty” analyses (see TAC)
- Full OD arboretum dumped to .LPP
- Route flows by company generated/displayed

MX (11.5)

- Major changes to handle “blocked” as well as stacked matrices, primarily to deal with multi-toll TAC matrices
- MXUNBLOCK – extract specific block/toll matrix
- UFM2CSV mat text NAMES SEQ

IMPORTANT NEW 11.5 FEATURES

- Direct zone-to-zone connectors
- Toll Area Charging (TAC)
- .UFG files within .GIS files
- Improved SPIDER options: 10-15% reduction in CPU
- Spider-only UFO files (10x smaller) –

  FLY = T

New Features in TAC modelling

- SKIMTAC – time, distance etc. matrices
- SKIMTIJ – OD trips by charge regime
- MXTAC – OD trips from data on .UFS
- MXTOLL – convert trips to tolls
- QUICK option for SKIMTAC/SKIMTIJ
- TAC SLA within P1X – limited options

Ideas/Objectives: 2019 (i)

- Release of 11.5 ASAP
- Quick access to my latest exe's
- Better integration of P1X and SATVIEW
- Improved tree build algorithms based on Spider networks and pre-processing
- Remove "impossible" spider links at the network build stage – pre SATGPU
- Signalised roundabouts etc defined as "Super-nodes" or "Interchanges"

Ideas/Objectives: 2019 (ii)

- Make MX and .UFM formats more “block friendly” by identifying zero sub-matrices
- Convince users to set optimum signals …
- … and to prefer GAP to ISTOP …
- … and/or base ISTOP on, say, simulation links only (as a proxy for area)
- Save incremental trees (cf. UFC and UFO)
- Increased PPT for congested links