DSATools™
Dynamic Security Assessment Software

TSAT 25.0 Release Notes

This document summarizes the new features and enhancements available in TSAT version 25.0. All changes included are from TSAT version 24.0. For more details on these changes, please refer to TSAT documentation.

1. Option to perform critical clearing time (CCT) assessment respecting all criteria. By default, TSAT only respects transient stability criteria when performing CCT assessment.
2. New contingency command to change device signal value.
3. Pre-simulation line outages are now reported in Progress Report and in consolidated XML
4. Support for tripping and inserting fixed shunts with an ID in contingency commands and in SPS action blocks
5. New option for Fixed Step search method for transfer analysis to apply a large initial step
6. User interface for transfer limit region shows region limited by interface MW limits in a new color
7. User-defined model enhancements
    - Supervisory controller models are now supported
    - Additional functions supported in template UDMs
        - sysmva
        - sysfreq
    - Monitor (MON) block support for fixed shunts with ID
    - Shared Signal (SSG) block. These blocks can be used to send/receive signals from model functions coded in DLL's.
    - Allow multiple plant controller (PLT) blocks in a supervisory controller. When multiple blocks exist, the references are initialized to zero, and the user should ensure the model does not cause a disturbance to the downstream controls.
    - Allow multiple equations for output expression in MTH block

- Binary result file now includes host block name for monitored subsystem blocks
- User-defined model files can contain plot windows that show output of blocks from a binary file that is also open in UDM Editor
- Allow subsystem blocks to be specified for Change UDM Block contingency command
- When initialization stops due to illegal bypass path, a list of blocks initialized and those not initialized are reported.
- Voltage source interface (VSI) block now supports a current blocking threshold. If magnitude input current orders falls below threshold, current output of generator is blocked
- Tail-water depressed block (TWD) updated to allow additional time constant parameters to be specified

8. Third-party model support
    - PSLF model support
        - esac7c
        - esac9c
        - uel1
        - regc_b
    - PSS/E model support
        - HYGOVR1
        - HYG3
        - AC7CU1
        - H6E1
9. If two VTGTPAT, VTGDCAT, FRQTPAT, FRQDCAT models are read with the same MINS value, only the data from the last one is used. Previous versions of TSAT would use both sets.
10. Type 1 and Type 12 PSS phase compensator blocks are no longer ignored when denominator time constant is small, but the numerator time constant is nonzero. Instead the denominator time constant is increased to the minimum value.
11. Composite load changes:

- MW electronic load lost due to voltage dip when Frcel < 1.0 is accounted in consolidated XML nominalloadtrip attribute
- Progress Report includes count of electronic and static composite load components

12. Output Analysis viewer allows curve data to be copied to clipboard with right-click menu
13. Consolidated XML now includes timing statistics and remote computation server name for contingencies
14. Bus number(s) and name(s) associated with violations from UDM Violation Trigger blocks are now returned to the UI for inclusion in report files
15. New options in TSAT Client configuration
    - Limit total number of servers used by client
    - Spread out servers used by IP address
16. New IDV commands supported:
    - BAT_SWSMOD_CON_CHANGE_2
    - BAT_SWSMOD_ICON_CHANGE_2
17. Python API's provided to perform Prony Analysis on results
18. Auto option to generate partial result files when case is skipped
19. Support HeadCalc=3 option in FIROPT model
20. Flag for $$EQTOGL model to allow a generator to use a different AVR model if the PSS is disabled or missing