

## **TSAT 24.0 Release Notes**

This document summarizes the new features and enhancements available in TSAT version 24.0. All changes included are from TSAT version 23.0. For more details on these changes, please refer to the TSAT documentation.

1. Add support for PSLF models
  - esdc1c
  - esdc2c
  - esdc4c
  - esst1c
  - esst5c
  - esst6c
  - pss7c
  - reec\_d
  - wtgp\_b
  - wtgt\_b
2. Add support for PSSE models
  - DC4C, DC4CU1
  - REECC1
  - USAC6AU
  - PSS7C
3. Support subsystems in AC user-defined models
4. Show active and reactive power deviations at generators (renewable and conventional) for no-disturbance test
5. Support ramp tracking filter block
6. Support IEC 61400-27-1 DLL interface
7. New monitor block types and quantities:
  - MVA quantity for branches
  - To-side quantities for branches
  - To-side quantities for interfaces,
  - Metered end flag for interface branches
  - Transformer off-nominal ratio and phase angle (in branch type monitor block)
8. Dynamic representation file enhancements
  - Support for model netting based on initial output of a generator
  - Match custom instantiation template model names
  - Ignore VTGTPAx, VTGDCAx, FRQTPAx, FRQDCAx models if generator simplified to infinite bus

9. Support PSSE revision 34 format sequence files
10. Head-tail option for rate of change of frequency (ROCOF) calculation
  - Include ROCOF criteria quantities in binary file if average frequency in window method used
11. Record voltage/frequency profile criteria curves in binary file
12. Dependency contingency command enhancements
  - Logic groups to allow dependencies to be AND'ed, OR'ed, or NOT'ed
  - False flag to force a dependency to be evaluated as False
  - Exec and NotExec flags to check if contingency is executed
  - Flags for real-time and forecast mode in Online DSA
13. Transfer definition enhancements:
  - In group interface participation factor, you can specify the keyword 'auto'. The participation factor will be estimated from the base point.
  - Multiple dynamic transfer step size options can be simultaneously enabled in a group now.
  - Merit order blocks do not need to be consecutive in MW if non-zero Pmin enabled for the group.
  - When dynamic transfer step size is enabled, the power limit search threshold can drop as low as 0.1.
  - Dynamic participation factor adjustment for phase shifters and DC converters to preserve total change per transfer step
14. Consolidated XML enhancements:
  - Report MW & MVA for generator trips
  - Report source relay name for VTGDCA/FRQDCA branch trips, with MINS of model responsible
15. Configuration option to always use local drive folder for working files when running a case
16. Show equipment names in UI's for step response functions if dynamics in equipment name format
17. Export equipment names in snapshot RAW powerflow file
18. Node equipment names of 64-character length are supported
19. Show SUPBUS and SUPUDM models in dynamic data editor
20. Limited support for editing dynamic representation files in equipment name format
21. Contingency editor window is resizable
22. Auto Option to always include load shedding summary tables in progress report for DSA Manager
23. UDM Editor is now a 64-bit application
24. Inclusion of Model Quality Testing tool to automatically generate TSAT cases based on standardized model quality tests. See MQT Tool documentation and examples included with TSAT.