

## **SSAT 22.0 Release Notes**

This document summarizes the new features and enhancements available in SSAT and OAM version 22.0. All changes included are from version 21.0. For more details on these changes, please refer to the corresponding manuals.

### 1. Modeling

- Support for the following dynamic models in PSS/E format:
  - PSS2C, PSS2CU1
  - ST10C
- Support for the following dynamic models in the DSATools format:
  - GENTPJ
  - ST10C

### 2. User-Defined Model (UDM) Enhancements

- Support DLB blocks with multiple outputs
- Additional functions supported in template UDM's:
  - genmbase (returns generator MVA base)
  - % (modulo operator)
  - atan2
  - log10
- Support two-argument arctangent block 'atan2' block

### 3. Computational Features

- Add option to use Full QR method to calculate eigenvalues for eigenvalues in a frequency and damping range
- Root locus and sensitivity analysis can now be performed on MASS1 model parameters
- If a governor step response is performed at a unit without a governor, the mechanical power is perturbed

- Residues calculation:
  - Enabled for eigenvalue calculation options except for SMIB Analysis, and SMIB Scan
  - Response file defines the response outputs and the response input
  
- 4. Dynamic representation
  - Support model names with up to 20 characters
  - Disable individual devices at a bus
  - Wind generator models are ignored now if generator simplification is applied
  - Support ignoring USRFCT and USRSWS devices
  
- 5. Powerflow solution
  - Added a new powerflow solution parameter ‘Admittance Matrix Singularity Threshold’
  - Support remote control target for the switchable shunt powerflow solution option
  
- 6. Others
  - Support exporting dynamic data in Excel xlsx format
  - Support changing CON and ICON parameters of renewable generator models in PSS/E IDEV file
  - Support BAT\_PLMOD\_STATUS and BAT\_PLMOD\_REMOVE commands in PSS/E IDEV file