

VSAT 23.0 Release Notes

This document summarizes the new features and enhancements available in VSAT version 23.0. All changes included are from VSAT version 22.0. For more details on these changes, please refer to VSAT manuals.

1. Modeling

- Support phase shifter in series logic – automatically synchronizes phase shift angles of MW controlling phase shifters during powerflow solutions

2. Solution

- Support 'Adjust PPC' global on/off switch in solution parameters
- Support 'Voltage-Q Droop' control mode of Power Plant Controller (PPC)
- Support new options to reduce node-breaker topology analysis message output volume

3. Contingency

- Support 'contingency description' in VSAT contingency file
- Support 'append' mode in VSAT contingency scripting function
- Energizing switchable shunts (Energize bus for 'Turn on Switched Shunt' contingency)

4. Transfer

- Support a new transfer analysis option - To First Voltage Stability Limit
- Allow dynamic transfer step sizes:
 - Option to turn on/off units at non-zero Pmin outputs (for generation schedule and merit order dispatch transfer groups only)
 - Option to dispatch to generator max output (for generation schedule groups only)
- Allow saving powerflow at maximum pre-contingency transfer point
- Support source/sink based on interface boundary
- Option added to allow use of governor response to balance loss during transfer

5. Criteria

- Support 'Include/Exclude contingency' command in VSAT criteria groups (Wildcards may be used to include/exclude all contingencies with a common prefix/suffix)
- Support 'Include/Exclude 3-winding transformer' command in thermal criteria
- Support 'Exclude branches with low impedance' command in thermal criteria

6. Special Protection Scheme (SPS)

- Support TSAT SPS in VSAT
- Energizing switchable shunts (Energize bus for Turn On Switched Shunt SPS action)
- Support 'Change Transformer Tap Ratio' SPS action type
- Support 'Change 3w-Transformer Tap Ratio' SPS action type
- Equipment names are now included in SPS action report
- Display converter MVar & DC voltage in SPS editor

7. Load Conversion

- Support wildcard specification for bus equipment names
- Added support for additional group composition options for load groups:
 - Exclude area / zone / bus
 - Include/Exclude kV
 - Include/Exclude load
 - Include/Exclude threshold Above/Below MW/MVar/MVA

8. Interface

- Support weighting factor for interfaces

9. Branch Ratings

- Support default powerflow rating number options for short-term, long-term, and continuous ratings
- Support wildcard specification of equipment name for dynamic ratings

10. Governor Response

- Option to include negative MW generators in governor response actions

11. Modal Analysis

- New options to report branch participation factor and generator participation factor

12. Monitor

- Report the 'Radial Element' column in distribution factor table of monitor variable report
- Report the 'Pre-Contingency MW Flow' column in distribution factor table of monitor variable report
- Display monitored variables even when the powerflow cannot be solved in post-contingency
- Support maximum and minimum MW limits of elements in interface definition

13. Reporting

- Option to log when generators hit a (new) MW or MVAR limit
- Option to log when reactive devices hit a (new) MVAR limit
- Added new thermal overload attributes to consolidated XML file
- Enhancements to the Cascading XML report
 - Report cascading iteration number and reason for contingencies that fail to solve (diverged or hunting)
 - Report Pmax and voltage of generators tripped
 - Report reason for generator trip: islanding or undervoltage cascading

14. DSAOA (DSA Output Analysis Tool)

- Support the function to hide/show selected columns in VSAT monitoring result table
- Support filtering and sorting function in VSAT distribution factor monitoring result table