

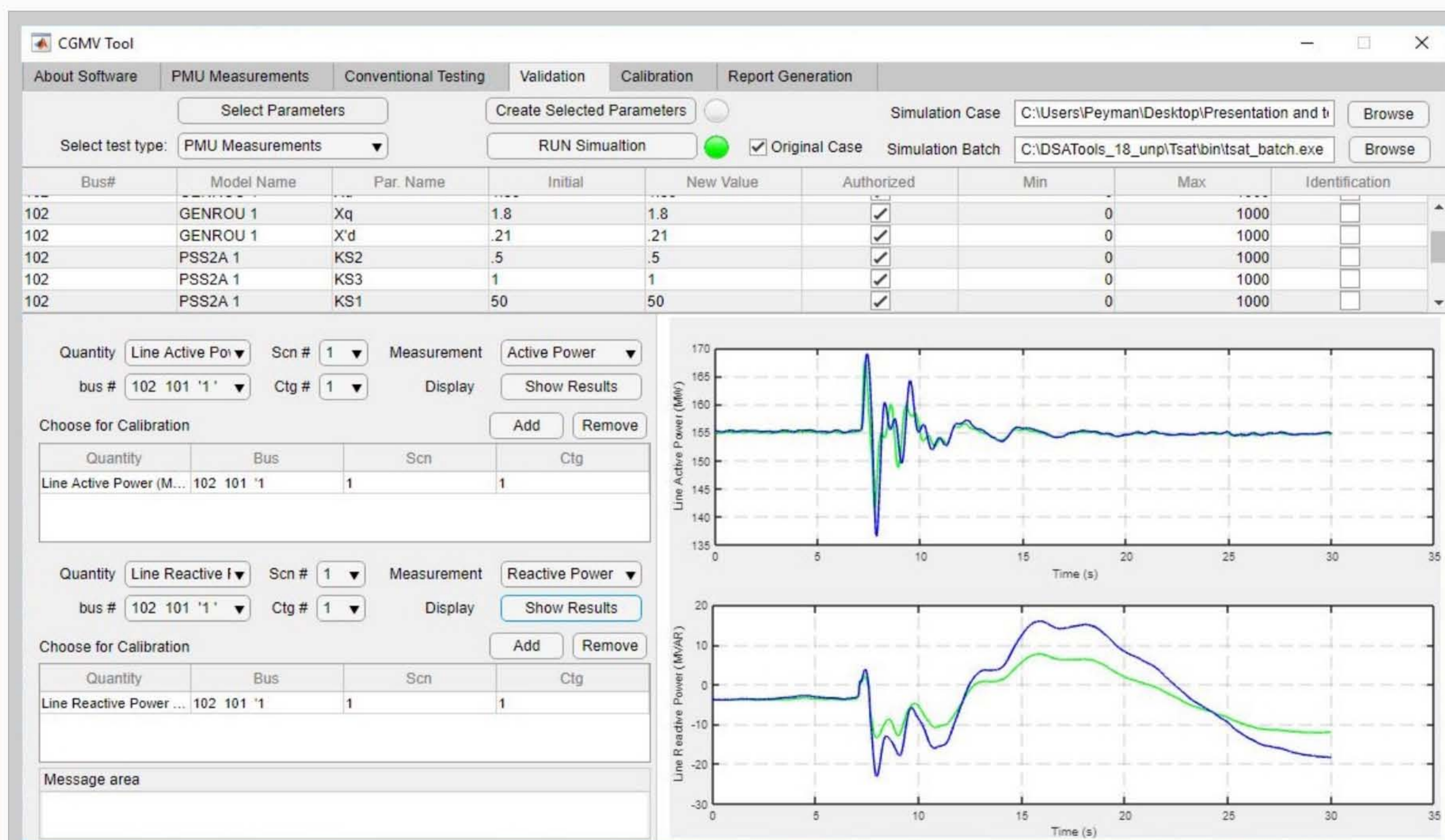


Conventional Generator Model Validation Tool

CGMV is a leading edge software for model validation of the conventional power plants. CGMV includes a rich set of different tests and studies which should be performed to validate the response of the models compared with measurements. CGMV also includes a comprehensive simulation tool for PMU based model validation. CGMV uses the cutting edge technologies such as artificial intelligence for the purpose of model validation and parameter identification.

Applications

- Conventional power plant model validation and parameter estimation
- Baseline test model validation and parameter calibration
- Parameter calibration using a comprehensive engineering judgment
- Parameter sensitivity analysis
- Disturbance based model validation
- NERC compliance studies (i.e. MOD-25-1, MOD-26-1, MOD-33-1, etc.)
- Control systems tuning
- Noise reduction and fault detection on recorded data
- Other



Validation

Calibration

Conventional Plant

Baseline Test

PMU measurements





Key Features

- Modern and user friendly user interface
- Comprehensive test library for conventional power plants
- PMU based model validation feature
- Parameter influence analysis
- Capability to perform simulations using third-party software (including PSS/E, PSLF, DSATools)
- Compatibility with major third-party input data formats (including PSS/E, PSLF, DSATools)
- Perform model validation studies using measurements
- Manual and engineering knowledge based parameter identification and model validation
- Artificial intelligence and optimization based parameter identification and model validation
- Capability to create play-back functions
- Report generation feature to ease with report preparation
- Comprehensive and detailed user manual

The image displays three overlapping screenshots of the CGMV software interface. The top screenshot, titled 'Parameter Selection (CGMV Tool)', shows a file path and a table of parameters for bus 102. The middle screenshot shows the 'CGMV Tool' main window with a 'Calibration' tab, a table of parameters, and two line graphs showing 'Line Active Power (MW)' and 'Line Reactive Power (MVAR)' over time. A progress bar indicates 'Optimization is in Progress...'. The bottom screenshot shows a dropdown menu with various test options.

Bus Numbers	GENROU 1	Parameter	Value	Authorized	MIN	MAX
102	GENROU 1	1 T'do	6.5	<input checked="" type="checkbox"/>	0	1000
102	PSS2A 1	2 T'do	.05	<input checked="" type="checkbox"/>	0	1000
102	GGOV1 1	3 T'go	1	<input type="checkbox"/>	0	1000
102	REXSYS 1	4 T'qe	.05	<input type="checkbox"/>	0	1000
		5 H	8	<input type="checkbox"/>	0	1000

Bus#	Model Name	Par. Name	Initial	New Value	Min	Max	Identification
102	GENROU 1	T'do	6.5		0	10	<input type="checkbox"/>
102	GENROU 1	Xd	1.85		0	10	<input type="checkbox"/>
102	PSS2A 1	KS1	50	31.7719	0	100	<input checked="" type="checkbox"/>
102	GGOV1 1	kturb	3		0	10	<input type="checkbox"/>

Choose one

- Choose one
- Open Circuit Characteristic (OCC) Test
- Field Short Circuit Test
- Direct Axis Test
- Quadrature Axis Test
- Partial MW Load Rejection Test
- Offline AVR Step Response Test
- Reactive Current Compensation Test
- Water Starting Time Constant Test
- Steam Chest Time Constant Test
- Governor Step Response Test

CGMV allows the users to create simulation and powerflow cases in different formats without using the third-party software through a very user friendly interface. Furthermore, CGMV offers an extensive library of different models, including generators, exciters, turbines, PSSs, converters, etc, through the third-party software. For the users without third-party software, CGMV offers development of power system models in a premium CGMV stand alone software.

About Power Grid Innovations

Power Grid Innovations is home to a broad range of scientists, engineers, and technical specialists, with capabilities in power system studies, software development, smart utility services, microgrids, renewable energy, automations and electrical testing. These skilled researchers have decades of collective and real-world experience and often work in cross-departmental teams to investigate, diagnose and solve complex problems.