FEATURES	DESCRIPTION
1. Load Flow Analysis (LF)	
Iterative methods	Newton Raphson, Current Iteration (Gauss Siedal), Voltage Drop (for radial networks) and Extended Newton Raphson
Iteration control	Maximum iterations and convergence tolerance
Automatic transformer regulation controls	Tap settings & phase shifting will be adjusted automatically to control terminal voltage & active power at specified values
Distributed slack	Slack powers can be distributed among one or more buses
Control over generator P & Q	Limit checks & control on generator P & Q are provided
Flat start	It is possible to start iterations with initial conditions apart from flat start
Controlled acceleration factor	Acceleration for Current Iteration method can defined by the user
Loss sensitivity calculations	Loss sensitivities wrt bus P & Q injections are calculated to decide placement of generators & capacitors
Load balancing	Helps to decide the loads on distribution transformers when maximum loading on the radial feeder is know
Area/Zone control	Power exchange between areas/zones can controlled with/without wheeling, used in transmission network analysis
Extended Newton Raphson method	Uses detailed models of HVDC & FACTS devices in load flow analysis
Asymmetrical network LF analysis	LF calculations for unbalanced loading and asymmetrical network configurations (including HVDS) are possible
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Mixed voltage levels & network configurations	Networks with different voltage levels and configurations (mesh, loop, radial & etc.) can be analyzed
AC/DC/AC-DC/HVDC/FACTS networks	DC network along with AC-DC/HVDC(including multi terminal)/FACTS networks also can be analyzed
Nominal frequency	Calculations also possible at other than nominal system frequency (50Hz) with detailed equipment frequency models and generators damping (load reduction factors)
Flexible load modelling	Different kind of load models (Const. Z, P, I) & mixed type, exponential load models, voltage & frequency dependent load models can be done
Load scaling	Load (both P & Q and individual) scaling can be done Globally, Zone wise (group)/Individually
Domestic load models	Unit domestic consumption can be defined globally and same can be applied to group of consumptions at transformer secondary with interlacing factor
Voltage limit checks and overloading conditions	Voltage limit checks at buses and overloading checks for equipment is provided

Individual equipment loss calculations	Loss contributions of individual equipment is calculated & reported
Iron losses	Transformer iron losses are reported in output results
Results in tabular form	Results are listed in tabular form which can be exported to MS Excel
Results reporting for desire elements	User has the flexibility to report the results for selected elements
Results in Area/Zone wise	Output results are reported in area/zone wise
Graphical display	Results can also be displayed on SLD, user has the flexibility in selecting parameters to be displayed
Tripping time for protective devices	Tripping time for all the protective devices (O/C, U/V, RPR and etc.) will be displayed if parameters exceeds the pick up values
2. Load Flow with Load Profiles (LGS)	Used as trend analysis to forecast demands on substations & generating stations and also used for Investment Analysis with yearly demand profiles & generation cost calculations
Defining generation & load curves	All the generators & loads have to defined with individual load curves (wrt hours/days/months/years) or mixed load curves (depending on the type of consumption) for duration under study
Single LF calculation	Single LF calculation will be done for a given time & date from the defined load curves
Time simulation	LF calculation will be done for a given time duration, so that energy calculation can be performed
Calculations for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Results in graphics	The plots of various bus voltages and element currents, power, p.f. and etc are displayed in graphical wrt to time along with violations of limits
3. Short Circuit Calculations (KS)	
Calculation methods	IEC60909, 2001/1988, ANSI C37.13/C37.10 & Superposition with/without Load Flow
Fault types	LLL, LL, LLG, LG, Special Faults (Open Conductor & Flashover between two different lines/points) and At all existing phases (if multiphase circuits are used)
Flexibility over DC, Thermal & Breaking Current calculations	User has the flexibility to specify the time duration to calculate DC, Thermal & Breaking Currents along with other factors defined by respective standards
Equipment adequacy checks	Equipment adequacy can be checked for calculated currents
Tripping times for O/C protection	Tripping time for all the protection relays will be displayed
R/X calculation	Calculates & reports R/X values at fault locations
Tripping time for O/C protective devices	Tripping time for O/C protective devices will be displayed if parameters exceeds the pick up values
Sequential current calculations	All the sequential currents (I_1, I_2 & I_0) will be calculated & reported
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Results	Results will be displayed on SLD and in tabular form

4. Contingency Analysis (LF)	
Contingency modes	Both single mode as well as multi mode contingencies can be simulated
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Results	Tabular results will be displayed with element limit violations during each contingencies
5. Optimal Separation Points (TO)	
Optimization technique	Optimal opening points of Ring Mains to operate in radial will be calculated for loss minimization, algorithm do calculates losses by opening each element (lines/cables/transformer) and selects minimum loss path
Options	Options are given for switchable elements which will be considered as opening points
Voltage level	Optimization will be done for specified voltage level in mixed voltage network
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Results	Optimal opening points will be reported in tabular form along with existing opening points and reduction in losses. Also reconfigures the network graphically (optional) as per calculated opening points
6. Optimal Distribution Network (OV)	Network optimization will be done at specified voltage level with normal condition/(n-1) contingency wrt to different objective functions and constraints (optional)
Objective functions	Loss minimization/load power factor correction
Optimization/constraints techniques	Optimal separation points, transformer tap settings, bus voltage limits, element loading limits, dispersed generation P & control and transformer compounding
Normal condition	Optimization will be done for normal network configuration with total load variation (controlled by global load scaling factors, defined for min & max conditions)
N-1 contingency	Optimization will be done during single contingencies (line/cable/transformer failures) with defined min & max load variations
Analyze	With this option user can analyze the existing system for different load variations & contingency, it is required before going for optimization
Set option	It is possible to make the changes for optimal network operation automatically after calculations (optional)
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Results	Results will be reported in tabular as well as graphical form with limits on parameters

7. Capacitor Placement (CP)	Optimal location of capacitor banks for radial feeders will be calculated with existing capacitor banks in circuit and min & max load variations
Inputs	Maximum number of installations, maximum total kVAR to be installed, step increase in kVAR and load variation (min & max)
Options	User has the options to consider existing capacitor banks, selection of locations to be optimized, checking of over compensations and automatic creation of capacitor banks at calculated locations & ratings
Results	Results will be reported in tabular form with loss reduction and improved voltage profile
8. Overcurrent Protection (SL)	
Protection co-ordination	Co-ordination of Fuses, P/F, E/F, Dir P/F, Dir E/F, Neutral Fault and overload relays are simulated.
Protection library	IEC, IEEE and ASA defined overcurrent characteristics are available along with some international manufacturer's (ABB, Siemens & AEG) characteristics. User also has flexibility to define own characteristics depending on the requirement and it can be exported to libraries.
Fault currents	Calculated short circuit currents at different voltage levels passing through the relays will be exported to co-ordination charts for the purpose of relay co-ordination and creation of charts. Addition of other SC/Inrush/Starting/Unbalanced neutral (zero-sequence) currents (defined by the user) into the charts can also be possible.
Automatic relay settings	Relay settings are calculated automatically from given values of load current, minimum short circuit current and maximum operating time.
Chart editing	Addition/removal of protection devices and currents in the charts are possible for reporting purpose. Also possible to edit chart patterns.
Display & report of operating times	Relay operating times will be displayed and also reported in tabular format for simulated fault condition.
9. Voltage Stability (SS)	Voltage stability of the system is analyzed using eigen values & eigen vectors based on V-Q sensitivities, Q-V modal analysis, V-Q curves and P-V curves.
V-Q sensitivity analysis	Sensitivity of voltage wrt change in bus reactive power injections are analyzed
Q-V modal analysis	Voltage instability of the network is analyzed for large variation in reactive power based on eigen values & eigen vectors
V-Q curves	The U-Q curves are produced by running a series of load flow cases. V-Q curves show the necessary amount of reactive power Q to achieve a specified voltage level V. The weakest bus (instable point) will be decided on one that would exhibit one of the following conditions: a) has the highest voltage

	collapse point, b) has the lowest reactive power margin, c) has the greatest reactive power deficiency, or d) has the highest percentage change in voltage.
P-V curves	The P-U curves are produced by running a series of load flow cases. P-U curves relate bus voltages to load within a specified region. The point-of-collapse at all buses in the study region, however, will occur at the same power import level, regardless of the specific bus voltages.
Options	Buses without load elements can also be taken in and limits for the generators and curves can be mentioned.
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Results	Results are reported in graphical as well as tabular form with self sensitivities, mutual sensitivities, eigen values, eigen vectors and bus, branch & generator participation factors and also Q-V & P-V curves.
10. Harmonic Analysis (OS)	
Calculations	Frequency scanning of impedance, current and voltage Harmonic Level Calculations Harmonic Load Flow Analysis
Frequency scanning of impedance, current and voltage	Impedance, current and voltage variations of the network will be calculated for given range of frequency. These plots will be helpful to examine harmonics as well as AF ripple control in power networks.
Harmonic level calculation	Total Harmonic Distortion (THD) in bus voltages and element currents are calculated for injected current/voltage harmonics. Network must have at least on harmonic generating source.
Harmonic load flow calculation	Load flow calculation for specified harmonic order is calculated. Network must have at least on harmonic generating source.
Element modeling	Network elements for harmonic analysis have to be modeled as frequency dependent impedance (i.e. resistance inductance and capacitance separately). Representation of line coupling and mutual impedance of lines are also possible.
Options	Analysis is also possible with other sequential system (positive, negative & zero sequence). Phase shifting of transformers can be considered in calculations.
Selection of Filters	Calculations can be possible with three types of filters Tuned Filters (Normal Filters), High Pass Filters and C-Type Filters. Observing impedance response, source of harmonics and requirement of reactive power compensation should make filter design.
Harmonic sources	Both current/voltage sources are available
Calculation standard	IEC 1000-2-6
Calculation for partial networks	Calculations for a (sub)part of the network (partial

	network) can be done
Graphical results	Plots of impedance, current, voltage and their phase angle are displayed. Also frequency spectrum of current and voltage will be displayed.
Reporting	Tabular report will be generated with all calculated parameters along with filter parameters for designing purpose.
11. Motor Starting Analysis (MH)	
Calculations	Voltage Drop and Dynamic Simulation
Voltage drop calculation	The voltage drop at time t=0.0 due to starting motors is calculated. Minimum data of motors to be required.
Dynamic simulation	Time simulation of motor acceleration is done respect to motor and load characteristics. Detailed modeling of motor, load and starting method is required.
Modeling of motors and loads	Motors can be modeled as 1^{st}, 3^{rd} and 5^{th} order and characteristic of the motor will be drawn from operating data. Operating characteristic of the motor can also be entered in the tabular form (if manufacturer data is available). Load torque can be modeled as constant (or) proportion (or) proportion to square of speed with specified moment of inertia and tabular characteristic entry is also possible.
Starting device	Motor starting can be simulated with all possible starting devices, i.e. Direct, Star-Delta, Impedance, Transformer, Capacitor and Rotor Resistance.
Options	Effect of cascaded/simultaneous motor starting can also be checked
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done
Graphical results	Plots showing motor and load torques, P & Q and bus voltage dips wrt time/slip/speed are displayed.
Reporting	Voltage dips at buses during starting of motor (when t=0 sec) are tabulated.
12. Reliability Analysis (RAM)	
Calculations	Voltage sags and probabilistic reliability calculations
Voltage sags	Using load node admissible voltage–time curves and short circuit calculation the frequency of not admissible voltage sags is determined.
Probabilistic reliability	Probabilistic assessment of consumer reliability indices is calculated by considering equipment failures and other alternative power resumption options (automatic switchover, protection operation and remote switching etc).
Parameter calculation	Consumer interruption frequency (1/yr), interruption probability (min/yr), mean time of interruption (min), power not supplied (kw/yr), energy not supplied (kw/yr) and interruption cost (Rs/yr).
Failure Effect Analysis (FEA)	Failure effect analysis is performed on each failure combination. First, the tripping range of the components affected by the failure, as determined by the network protection system, is deactivated. The

	software then determines whether the supply of the loads is restricted in this state. If it is, an attempt is made to re-supply the loads at least partially.
Options	Common mode contingencies, time-voltage sag limits, time-load characteristics and short time overloading of lines/cables, transformer and couplers.
Filtering options	Filtering options are also provided to examine the effects of selected outages and loads.
Creation of reliability data files	User has the flexibility to develop own data files wrt equipment type/individual.
Calculation for partial networks	Calculations for a (sub)part of the network (partial network) can be done.
Graphical results or evaluation	Plots showing above mentioned calculations parameters (indices) are displayed.
13. Optimal Power Flow (OPF)	The OPF optimizes (minimizes or maximizes) an objective function subject to a set of equality and inequality constraints. The objective function as well as the constraints can be formulated as non linear equations.
Objective Functions	MW Losses, MVAR Losses, Generation Cost, MW Import and MVAR Import.
Options on Objective Functions	Minimization/Maximization, Zone/Area wise optimization and Multiple Objective Functions with Weight Factors.
Limits	Element loadings, Bus min/max voltages and voltage relaxations at Buses.
Constraints & Options	PQ Generators: P & Q Limits (both min & max) Fix P & Q to operating values Relaxation on P & Q (min & max) by specified % PV Generators: Fix V to specified P Limits (both min & max) Fix P to operating value Relaxation on P (min & max) by specified % Regulating Transformer: Constant Tap Relaxation on Tap by specified % HVDC Converters & FACTS Relaxation on Controls by specified % Slack Bus: Fix V to specified Calculation of sensitivities of Objective Functions wrt bus and line compensations. Optimization with Area/Zone control with/without wheeling.

	Others: Open limits on Buses Open limits on elements Shot down generators at Pmin
Outputs	Outputs will be reported with losses, iron losses, generated power, imported power, reactive compensation (line & bus), cost of generation and etc.
14. Transient Stability Analysis (TS)	
Simulation methods	Fixed step and variable step
Disturbance types	All kind of disturbances, 3L, LL, LLG, LG & open conductor faults, clearing of faults, switching ON/OFF elements, Addition/reduction of % active and reactive powers of loads, Line outages, Loss of generation & Loss of excitation, Change OLTC of transformers, Motor starting with different kind of start up methods, Change of converter or inverter modes of rectifier, insertion of signal generators with step, ramp & sine waveforms, Loss of grid generation. Disturbance of more than one (simultaneous disturbances) can be simulated.
Load models	All kind of load models can be possible to simulate, i.e. static & dynamic and also user defined load variations for Arc Furnace simulations.
Element models	Dynamic models of generators (classical, transient & sub-transient), motors (1^{st}, 3^{rd} & 5^{th} order), converter & inverter firing controllers and FACTS (SVC, TCSC, UPFC & STATCOM) devices with firing circuits.
Generator control circuits	Standard models of Turbine/Governor & AVR/Excitation systems are available in libraries. Also user has the flexibility to simulate own control system models for governor & excitation systems. Those can be exported to libraries. All kinds of function block are available to simulate control circuits including trigonometric function and logical if-then-else condition block.
Control over element parameters	It is also possible to control the element parameters (i.e. conductance, susceptance of loads, capacitors, inductors, SVC/UPFC and etc) through defined control circuits apart from generator control circuits. I.e. Control circuits are not limited to generators.
Protection tripping	During simulation all protection relays will be active and trips if parameters exceed the settings.
Graphical results	Plots of all parameters for given disturbance can be drawn and made documents. Editing of plot patterns is possible for documentation purpose.
Event report	Event report will be shown in tabular format for reporting purpose.
15. Small Signal Stability Analysis (KSS)	Small signal stability is the ability of a power system to maintain synchronism when subjected to small disturbances. Disturbances are said to be small if the equations that describe the resulting response of the system may be linearized for the purpose of analysis

	(Eigen Value Analysis). Typically used in studies of interarea oscillations (for PSS design).
Calculation	Eigen values, eigen vectors, state variables and participation factors.
Options	Limits on participation factors can be for simulations
Graphical results	Plots showing eiven values, mode shapes (local or interarea modes on S-plane) and participation factors of individual eigen values and state variables can be displayed.
Reporting	Tables listing eigen values, state variables, participation factors for eigen values & state variables and modes will be reported.
16. Distance Protection (DS)	Module allows the user to enter distance protection relays with their settings or characteristics respectively, to get all voltage, current and impedance values (primary or secondary) seen by a relay due to a short circuit, to check the relay settings, to set the relay automatically and to enter the tripping schedules.
Starters	Starter systems can be entered are pure over current starter, undervoltage starter (U/I limits) and R/X-characteristic (polygon or circle) through fault type (L-L or L-G). Starting can be directional or non-directional.
Protection zones	The following zones of protection are available: Zone1, Zone1 extension, Zone2, Zone3, Zone4, Backward, Auto-reclosure.
Overcurrent back-up	Definite time overcurrent back-up protection is available with two stages.
Options	Selected or all lines can be compensated with pre-defined mutual coupling factors. Also calculated zero-sequential currents can be compensated with pre-defined factors (k0) and angles. Arc resistance and tower earthling resistances for LL & LE faults will be considered in calculations & tripping schedules.
Automatic relay settings	User has the option to calculate the relay settings automatically by the S/W.
Tripping schedules	Calculated tripping schedules are reported in graphical format for given fault. These plots can be edited as per user requirement.
Relay characteristics	User can also define own characteristics apart from library-defined characteristics (ABB, Siemens & AEG). These entered relay characteristics will be shown in plots for documentation purpose.
Binary signals	The tripping signals in binary format will be generated by the impedance relays, which can be used in pilot protection and blocking of back-up protections and other interlocks. These signals are used also used in transient stability study module for breaker/element trippings.
17. Fault Location Finding (FL)	Allows the detection of faults in electrical networks. In particular one phase to ground faults in resonance earthed MV networks will be detected.

Method	The value for the reactance measured must be entered in the distance protection relay. The program will make at each network node a short circuit and will calculate the reactance of the positive sequence seen by the relay. The fault location or the faulted element (e.g. line) can be detected by comparing the measured and calculated reactance.
Zones	All distance protection zones, which are in reach, will be displayed.
18. Network Reduction (RED)	This program module allows to reduce any network to any number of boundary nodes, thus the behavior of the reduced network will be the same as the original one for short circuit and load flow calculation. The reduced network will be represented with the help of series and shunt equivalents as well as equivalent infeeds. Useful to analyze the high voltage networks / network of interest (sub-transmission & transmission) having drawn the total network.
Selection for Load Flow & Short Circuit Calculations	All nodes to be reduced will be erased from the project and the series and shunt equivalents as well as the equivalent infeeds or loads are generated. The generated equivalents can be listed in the variant manager. The graphical representation of these equivalents can be done as usual
Important Remarks	If the original network should not be overwritten, the reduced network must be stored with an other file name. Boundary nodes are represented as PQ-nodes without voltage control. The node type and/or the voltage control become active if there is a synchronous machine connected to the boundary node. Reduced automatically regulated tap changing transformers have no influence on changes in the reduced network. If the influence should be considered the initial and ending node of these transformers should not be reduced.
19. Investment Analysis (BAR)	From the given investment proposals Net Present Value of the proposal will be calculated for every year including inflation, tax, maintenance and interests.
Inputs	Tax & maintenance rate, inflation rate, currency, base year for investment, planning period, interest rate, generation cost, energy cost, loss factor, operation period and periodic topology changes.
Outputs	Outputs will be reported with iron losses, copper losses, cost of losses, net present value of losses, investment without inflation, investment with inflation, annuity with inflation, remaining value.
Options	Comparison of various case scenarios with base case as well as within.

20. OTHER FEATURES	
20.1 Data Management (GR)	
Graphical element	All equipment can be entered graphically and/or table oriented (like in a excel sheet)
Single line diagram	A single line diagram can easily be generated through very user-friendly CAD systems with drawing scales.
Limitation of drawing size and number of nodes	No restriction on drawing sizes and number of nodes and elements.
Editing functions	Extensive editing functions like undo, redo, delete, copy, move and zoom for processing the network diagrams are available. An element can be moved from one node to an other node without deleting the element.
OLE functionality	Data and graphic can be moved to and from third party software (like MS-Excel, MS-Word, MS-Paint and etc).
Data inputs	The equipment data are entered in dialogs, with plausibility checks provided. A coloring tool helps to show the data requirement for interested analysis (e.g. load flow, short circuit, transient stability and etc.)
Variant manager	Integrated Variant Manager (insert, delete, append, compare variants, compare results, etc.). It is needed in case of studying different case scenarios.
Database connectivity	ASCII file or SQL database oriented import/export functions for exchanging network data; topology data and load data are available.
External program interface	Interfaces to external programs (e.g. measured data acquisition systems) can be implemented.
Import options	Import of a geographic map as a background graphic, for easier schematic capturing. Import of almost any raster and vector graphic files (e.g. PCX and DXF files). Import of standard data formats like IEEE, BPA and UTCE are possible.
Export options	Graphics can be exported as raster files (e.g. JPG, which can be used in any internet web browser).
Network / Zone options	Option for combining and separating networks. Any number of independent network areas and zones are possible. Each element and node can belong to any independent area and zone. So reporting will be done wrt to Area/Zone. Extensive functions for network statistics and network documentations are available.
Library manager	A state of the art library manager with extensive libraries for each element type facilitates user data entry as well.
20.2 Variant Manager (GR)	Various case scenarios can be created in different variant & sub-variants, which can be used in investment analysis for new proposals.
Management & Store	Non-redundant storage and management of variants.

Selection & Loading	For each network, you can select any desired switching states (topology file), and any desired loading states (loading file), can be analyzed simultaneously without changing graphics.
Storage of variants	For each network, you can define and store any desired number of variants and sub-variants (variant tree). In the variant data, only the differences from the parent variant are saved which optimizes the database memory.
Variants operations	Variants can be compared, merged and deleted. The diagrams of different projects and variants can be displayed at the same time. Results from two different variants can be displayed on the diagram in one result label. Results of two variants can be compared in the chart manager.
20.3 Multi-diagram & Multi-layer Technique (GR)	
Multiple diagrams	A network can be entered in several different diagrams, so that the HV network, for instance, is in one diagram, and the MV network in one or more other diagrams. All diagrams will be considered for various analysis (e.g. load flow, short circuit etc.).
Graphic layers	Each diagram can have any number of graphic layers, which are not considered in analysis. These layers can be colored, locked, hidden or shown.
Element graphic representation	One type of element can have more than one graphical representation in the same diagram or in different diagrams.
OLE feature	OLE copy/paste graphic data from and to MS-Word.
20.4 Auxiliary Graphics (GR)	
Auxiliary graphics	Auxiliary graphics can be used for documenting and demonstrations, which will not be considered in analysis.
Various inputs	Input of lines, rectangles, ellipses, arcs, ellipse sections, polygons, poly-lines, any kind of bitmap graphics and user text with selectable character set can be shown on main SLD.
Coloring & pattern	Color for background, foreground, line, outlines and fill patterns is user-selectable.
Other functions	Functions available for rendering overlapped symbol elements, rendering, alignment and rotation.
20.5 Network Diagram Coloring (GR)	
Selection	Colors and line types can be freely selected wrt to element types.
Overloading	Elements overloaded after a load flow or short – circuit current analysis is color-highlighted.
Isolated element	Isolated elements can be highlighted.
Network, area, zones, voltage levels etc.	Coloring options to distinguish user-selectable network areas, zones, voltage levels, earthed or not feeded networks and galvanic separated networks.
Parent variant & root net	Differences to the parent variant or the root net can be colored.

Individual coloring	Each element can be colored individually.
Graphic layers	User defined graphic layers can be colored.
Coloring based on ranges	Coloring according to ranges. Many calculated variables can be colored according to their value ranges (e.g. according to element losses or according to voltage drops)
20.6 Symbol Editor (GR)	
Creation of user symbols	The user can create and define for each element type and node of own symbols or other standard symbols (IEC, ANSI are available in libraries).
Limitation of numbers	Any number of different symbols per element type or node can be defined.
Insertion into diagram	All symbols will be displayed while entering the diagram. Just drag and drop the desired symbol to the diagram.
Symbols features	On the diagram the symbols can be flipped, rotated and resized.
20.7 SQL Database Connection (DB)	
Import/ Export	All element data can be imported and exported to any SQL database (like Oracle, MS-Access, etc.)
Database content	SQL database includes all network equipment. (HVDC, SVC, STATCOM, TCSC, UPFC, protection devices, etc.). The network topology can be stored.
Graphics	Graphics of the elements and nodes can be exported and imported.
Libraries	All data of all libraries can be imported and exported.
Interface with GIS, NIS, SCADA	Can be used as interface to existing GIS and NIS or DMS/SCADA systems.
Flexibility of storing	Very flexible storing and import features, like full import or only updating, storing only variant differences, etc.
Reading of data fields	Partial reading of data fields (e.g. read only the line length but do not read the R and X values)
Up-gradation to NIS	The database can be simply upgraded to form a NIS using the database functions.
20.8 Library Manager (GR)	
Integrated library	The comprehensive library manager is fully integrated.
Equipment library	For each equipment type a library exists or can be created by the user of own project.
Network data	While entering network data the data in the library can be accessed. Further more the data entered in the network can be exported to the library.

Up-gradation	All network data can be updated with changed library data.
Data entering	The data can be entered through excel like table sheets.
Import/ Export to Ms-Excel	Import/export to MS-Excel with drag and drop.
Import/ Export to SQL database	Import/export to any SQL database. Update functionality from/ to database is provided.
Storing in part	Part of diagrams with all technical data can be stored in the library e.g. used for IEEE control circuit model. IEEE models are available in library, other user defined models can also be exported to libraries for future use.
20.9 Chart Manager (GR)	
Result display	The chart manager allows displaying the results in different charts (e.g. line, bar, etc.).
Sub-chart display	Any number of sub charts can be displayed in one chart.
Header logo	A user-defined logo (as bitmap) can be added to the header for documentation purposes.
Comparison with different variant charts	Results from different variants can be compared and displayed in the same chart.
Exporting of chart	Export the chart to *.JPG file for any Internet browser.
Copy / paste	Copy/paste to the clipboard for documentation is available (e.g. MS-Words and MS-Power Point).
20.10 Interfacing (GIS)	
GIS/NMS/SCADA	Dynamic interfacing (automatic up-dation of data at given time interval) with GIS/NMS/SCADA is available for import and export of data.