GridOS®

INTEGRATED DISTRIBUTION PLANNING

What differentiates GridOS-IDP?

Scalable and secure web-based enterprise solution

Control all vital planning data in a single platform

Built on open standards to help you integrate and exchange vital planning data across systems more easily

Control who sees and does what through role-based access control

Save money by only ever paying for resources used through auto-scaling

Layer-based visualization turns data into actionable information for faster and easier decision-making

Openly collaborate across departments and vendors with specific data sharing capabilities

Native parallel computing helps cut down your analysis time

Solving Emerging Planning Challenges

Managing aging infrastructure while simultaneously pursuing grid modernization is becoming progressively complex and resource-intensive for utilities. The continued price decline of renewables, new clean energy targets, accelerating DER adoption rates, evolving regulatory mandates, electrification of transportation systems, and growing customer needs all affect the distribution grid. This more dynamic system requires a modern planning solution that moves away from the desktop-based, proprietary format infrastructure of the past to one allowing utilities to focus on locational and temporal-based network analyses rather than worst-case scenarios. Although challenging, a scalable, enterprise-level planning platform with advanced analytical capabilities can make strategic distribution planning easier, faster, and more responsive to customer needs.

A Platform-based Solution to Modernize the Grid

GridOS® is an award-winning, advanced analytics platform, designed to drive the evolution of the electricity grid. Its Integrated Distribution Planning (GridOS-IDP) application helps distribution planners complete strategic technical evaluations, planning scenarios, and case studies. It provides repeatable, scalable processes across strategic organizational functions and for regulatory filings. By creating a digital twin of utility's network and incorporating data such as system forecast, historic SCADA information and AMI measurements distribution planners can easily and quickly carry out complex analyses. By relying on GridOS' modelling, power flow, and optimization capabilities, a bridge between distributed energy resource management, advanced distribution system management and transactive energy market systems is achieved.

Relying on Physics, Not Rules of Thumb

Traditional planning analyses and processes rely on rules of thumb that only take you so far. As more DER assets are added to a utility's network, locational and temporal analyses are critical to ensuring that the assets can be safely connected to the grid. GridOS-IDP leverages the actual physics of the distribution system to identify common technical constraints, determine when and where they may occur, and run what-if scenarios for potential solutions. Powered by the platform's Optimization Engine (OE), GridOS-IDP can fully model 3 phase AC unbalanced networks in their as-operated state. Simulating peak shaving events, switch operations, or energy market participation by flexible assets enables full understanding of all possible future scenarios and their impact on the distribution system.

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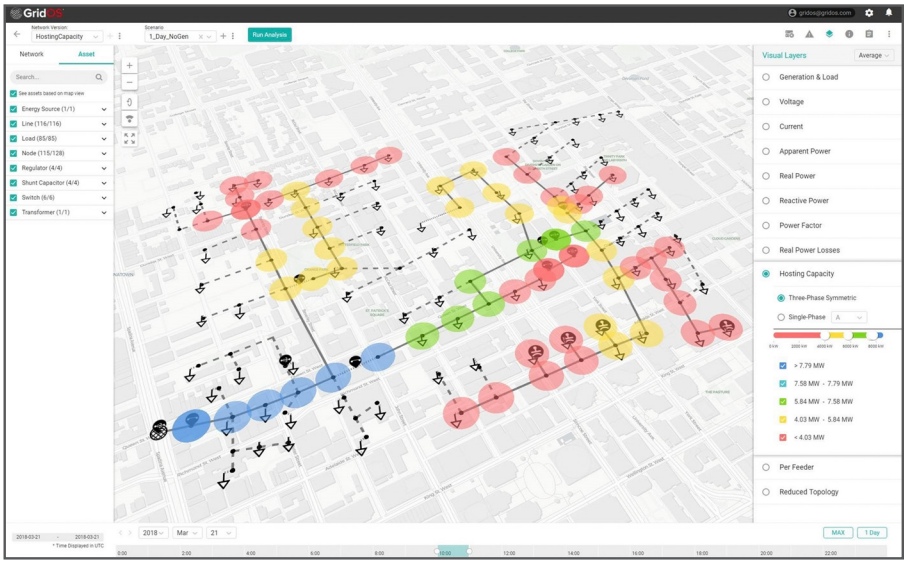
Key Functions of GridOS-IDP



Network Model Inspection - Create complete electrical models of your network by merging siloed data using advanced validation and fixing methods to automatically detect and correct errors.

Editor - Build, edit or delete network models using state-of-the-art world map views.

System Builder - Build entire power systems from sub-transmission down to secondary networks and link power flow results between the various voltage levels.

Hosting Capacity - Use time-series, nodal, balanced and unbalanced hosting capacity for every type of DER during interconnection approval or non-wires alternative evaluation.

Non-Wires Alternative Evaluation - Evaluate flexible solutions such as storage systems to offset capacity constraints using both technical and economic impact evaluation.

EV Capacity Analysis - Calculate available system capacity for new EV charging infrastructure at every possible point of interconnection.

Economic Scheduler - Optimize dispatch of resources around economic objectives and evaluate run-cost of assets, feeders, or entire systems.

Project Costing - Track system changes/upgrades and assign Op-Ex and Cap-Ex cost to evaluate economic impact of different solutions.

Results Comparison - Determine the aggregate technical, economic, reliability and emissions performance of operating your network for various future state conditions. Conduct cost/benefit based options analysis to pursue no-regrets investment in the new build that best suits your network needs.

Topology Analysis - Run through contingency situations and evaluate planned switch operations.

Smart Inverter Basics - Define smart inverter capabilities with the help of 4-quadrant P/Q diagrams and Power Factor limits.

Network Reliability - Import and visualize asset health, age and failure rate data to drive decision-making on investments.

Optimal Power Flow - Evaluate VVO or CVR schemes and find your ideal dispatch schedule for utility-scale storage to improve grid conditions.

GIS - Navigate network models on actual maps to better understand their real-life position and reference.

Life Cycle Management - Store life cycle information such as commission dates on all network assets.

Version Manager - Maintain unlimited network versions next to your “As Build” model to ensure proper change tracking.

Scenario Manager - Create scenarios with forecasts and store all results for a full and transparent scenario comparison.

Collaborator - Share pictures, spec files, reports or work orders on network assets with your colleagues, or simply leave them a note from your desk or in the field.

Technical Specifications

Secure, encrypted information exchange in-transit over https (http via SSL) and at rest (AES-256)

Data segmentation and isolation at the user level, ensuring controlled access to workspaces

Data residency in country of operation (or closest location available)

Secure user access via built-in authentication service or 3rd party integration (i.e. Active Directory, LDAP, or SAML), and Multi-Factor Authentication

Network data modeled natively in Common Information Model (CIM)

Flexible and scalable microservices-based application architecture

Built using the latest web technologies (e.g. react, deck.gl, min.io, Julia etc.)

On-premise solution available with the GridOS Server

Start Your Advanced Planning Journey Today

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