



Electric Distribution GIS for Higher Education

Students • Instructors • Researchers

Utility GIS Software

The Telvent GIS software is centered around the ArcFM™ Solution and serves as an extension to ESRI's ArcGIS® platform. It includes:

- A productive environment for electric distribution design and asset management
- Support for building, designing, planning, analyzing, and maintaining electric network models
- Support for understanding outage information, switching operations, and fault location

Using GIS Software for Electric Engineering Education

Graduates in today's market need to learn how to solve tangible real-world problems facing the electric industry. By including the ArcFM Solution in an electric engineering curriculum, educators can provide students the ability to learn how to view and resolve issues of an electric distribution system leveraging the modern tools of a geographic information system.

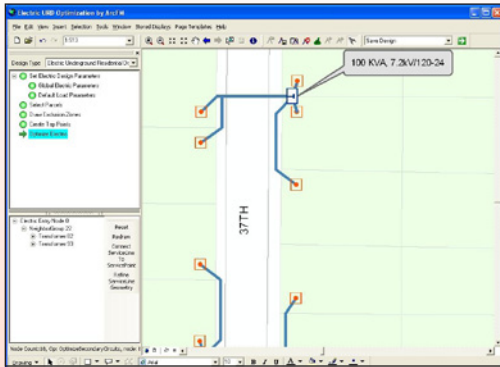
With the advent of smart grid and the emphasis on improving energy efficiencies and reliability in our grid, understanding how to apply technology to solve some of these problems is a valuable and sought-after skill. The ArcFM Solution is currently used in over 500 utilities worldwide and the industry is in crucial need of having a highly trained and educated workforce to support the growing requirements for network improvements. Students who are exposed to such technology within their

degree program will further their education both at the theoretical and practical level.

The following are examples of how the ArcFM software could be applied to facilitate instruction within an electric engineering class program:

- **New electric distribution construction** – designing the network to support commercial, residential, and industrial construction for overhead and underground circuits
- **Service area growth and optimization** – running electric design scenarios to avoid overbuilding
- **Voltage problems** – running studies to rectify voltage drops occurring within a network
- **Mechanical issues** – determining the optimal pole class and height to support specific NESC requirements in different environments (soil classifications, water crossings, etc.)
- **Transformer sizing** – planning a design to understand the correct transformer sizing for additional services
- **Network modeling** – making data model changes to understand the implications on the network
- **Switching of a network** – running switching sequences to understand the steps to re-energize a circuit
- **Reconfiguration of feeders** – opening and closing switches to understand radial and looped feeds





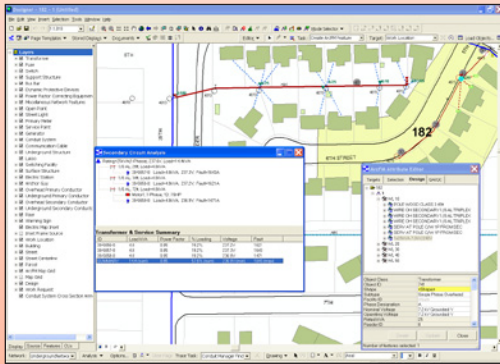
- **Reliability analysis** – identifying network problem areas over time as it affects reliability
- **Spatial analysis** – running various analysis to support engineering and business requirements

Software Products

The utility GIS software includes a number of modules, a few of which are featured here:

Design Optimization

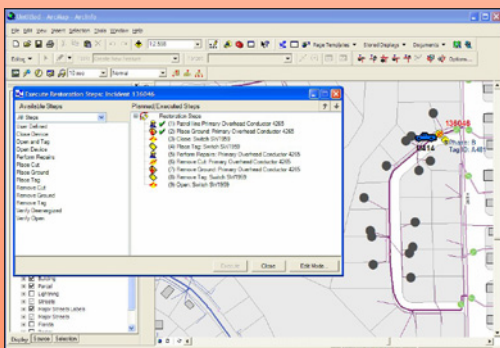
ArcFM™ is a complete GIS utility solution for modeling, editing, maintaining, and managing facility asset data. ArcFM includes electric distribution tracing tasks to automate network operations and an extensive set of editing tools and tools to create and maintenance an electric network model and database.



Designer™ provides the ability to design and track electric distribution projects. Designer supports cost estimating, work flow management, network planning, structural and network analysis, and design optimization.

Voltage Drops

Responder™ is an outage management system (OMS) to enable trouble call and outage incident management. The Responder Trouble Call Analysis (TCA) Engine uses a sophisticated and iterative prediction algorithm to determine which interruptible network device caused an outage and support switch planning and incident management.

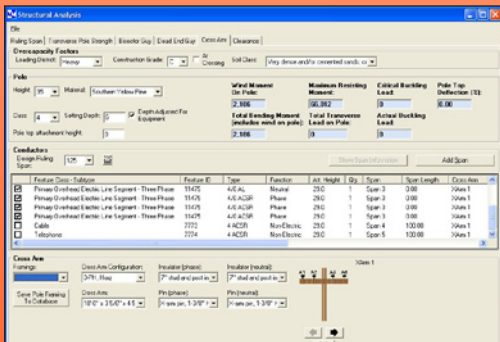


Higher Education License Programs

The ArcFM Solution is available for individual students, instructors, faculty or other educators for academic or research use as well as for an entire classroom or lab setting. Licenses are sold individually or as classroom/lab packs.

Switching Plans

The software is also available in a site license program which is designed to maximize productivity and minimize cost in organizations where GIS is required by multiple instructors across a college or university campus. A campuswide site license can cover a single campus, multiple campuses, a district, or statewide systems for a single annual fee. This fee includes software maintenance and technical support services.



Contact Us

If you are interested in learning more about leveraging the ArcFM Solution within your educational programs, please contact us at:

+1 970-223-1888 or email us at utilitiesgis@telvent.com

Structural Analysis