Asset Health Management

URD Cable Fleet Maintenance Optimization

m*Prest*

CONNECTING THE DOTS

URD Cable Survivability Analytics

Based on a broad range of parameters (e.g., installation date, cable type, insulation type, soil type, loading history and more), mPrest algorithms calculate each cable segment's operational age, which enables a more accurate prediction of failure than chronological age. Graphs and heat map visualizations of the entire cable fleet provide clear and detailed insight into cable survivability at the segment and system levels. Cable segments can be ranked by age reliability impact or replacement priority (ROI).
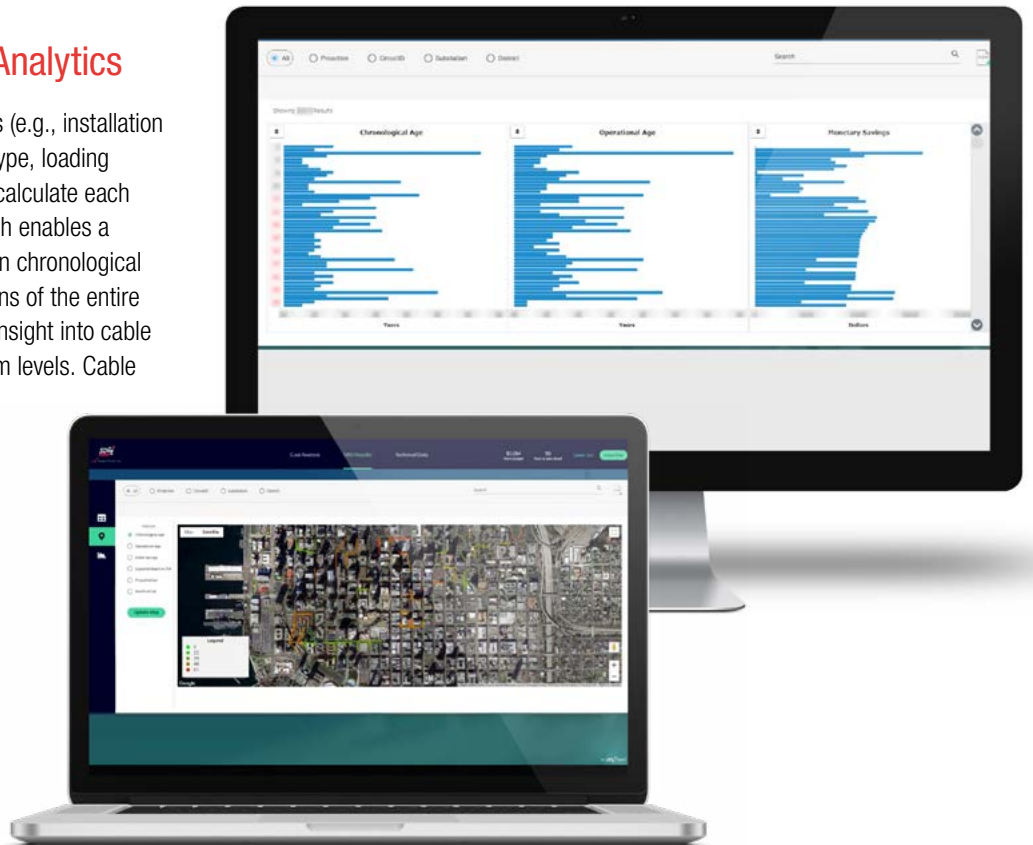
Maintenance Program Cost Optimization

URD Cable Fleet Maintenance Optimization features an interactive budget optimization tool, which allows utilities to analyze the impacts of proactive and reactive URD cable maintenance/replacement plans. It provides cost and reliability analysis for a given budget or multi-year spending plans. This tool visualizes the cost implications of reactive vs. proactive maintenance or replacement, including predicted savings, forecast cable, material, vehicle and crew needs for any given plan.

Key Benefits

- Significant savings from day one by reducing costly reactive maintenance
- Greater predictability of URD cable fleet performance based on self-learning, self-improving data analytics model
- Optimal maintenance planning and enhanced decision-making minimize cable failures and outages
- Predict reliability improvements or degradation based on forecast replacement spend

Overcoming the Barriers of Predictive Cable Fleet Maintenance

Underground Residential Distribution (URD) cable fleet maintenance is a challenging and critical task for distribution utilities. Beyond the heavy replacement costs, URD failures impact system reliability and may cause outages that damage brand reputation.

Utilities maintain thousands of miles of URD cables, some of which are at 30+ years old. Moreover, since these cables are sensor-less, utilities typically have limited visibility into their condition. Lack of insight into cable survivability makes it difficult to prioritize maintenance and replacement activities, predict impending failures, and take proactive steps to prevent those failures.

Another key obstacle in predicting cable condition and planning URD cable maintenance and replacement is the lack of reliable and corroborated data that can provide insight into cable health. Even in cases where large amounts of data exist, this data is typically spread over many systems, in different formats and with varying degrees of information integrity.

mPrest offers a data-driven product that enables utilities to gain visibility into URD cable survivability and optimize maintenance/ replacement planning, resulting in fewer unplanned failures, customer outages, and in savings of millions of O&M dollars on an annual basis.
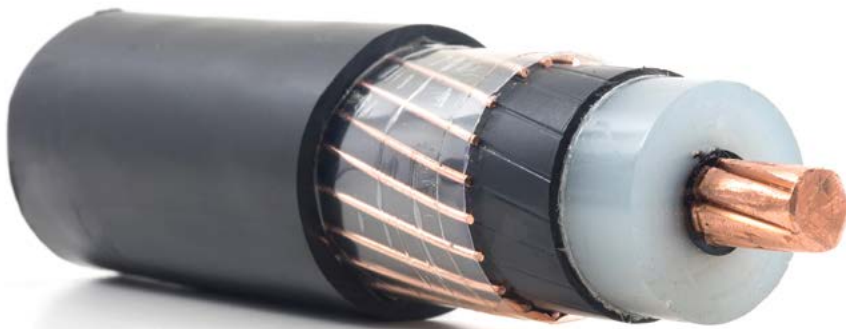
Your Cable Performance Analysis Is Only as Good as Your Your Analytic Techniques

Before statistical modeling and analytics regarding cable health can be performed, the disparate data needs to be compiled, organized, standardized and cleaned. mPrest has developed a highly effective approach for optimizing data related to URD cable fleet performance.

Working with the utility's URD experts, mPrest's data analytics team analyzes the relevant operational systems, extracts the relevant data, and then improves and refines the data in an optimal manner in preparation for analytics. Missing data can be filled in automatically using logic, mathematical techniques and comparison of data sets– for example, if a segment's installation date is unknown, the system completes the data based on the dates of other segments in the same locale.

Big Data Analytics for Predictive URD Cable Maintenance Planning

mPrest's URD Cable Fleet Maintenance Optimization product leverages our AI-driven System of Systems platform and advanced data analytics algorithms. The product extracts URD cable segment data from systems such as enterprise asset management, EAM and/ or GIS. Then, using a self-learning model, and by enabling the user to choose relevant parameters, it discovers key factors affecting the performance and survivability of URD cables and predicts the probability of cable segment failure within the next 12, 24, 36+ months.

mPrest's big data-driven asset health products enables utilities to gain visibility into asset condition and survivability and optimize maintenance planning, resulting in savings of millions of dollars.
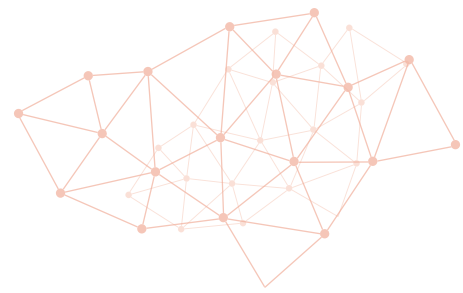
About mPrest

mPrest is a global provider of mission-critical monitoring, control and advanced data analytics software. Leveraging the power of the Industrial IoT, mPrest's integrative "system of systems" is a proven catalyst for digital business transformation. Our management and decision support solutions have been deployed in next-gen IoE (Internet of Energy) applications for utilities, as well as innovative management applications for smart cities, defense and HLS.

By connecting the dots across disparate systems (both legacy and new systems), mPrest delivers unified situational awareness, sophisticated analytics, end-to-end IT/OT integration and process management. Featuring unprecedented interoperability and real-time data optimization, mPrest allows organizations to accelerate time-to-market, improve system performance and reduce operational costs.

For more information, visit us at www.mprest.com or send us an email to info@mprest.com