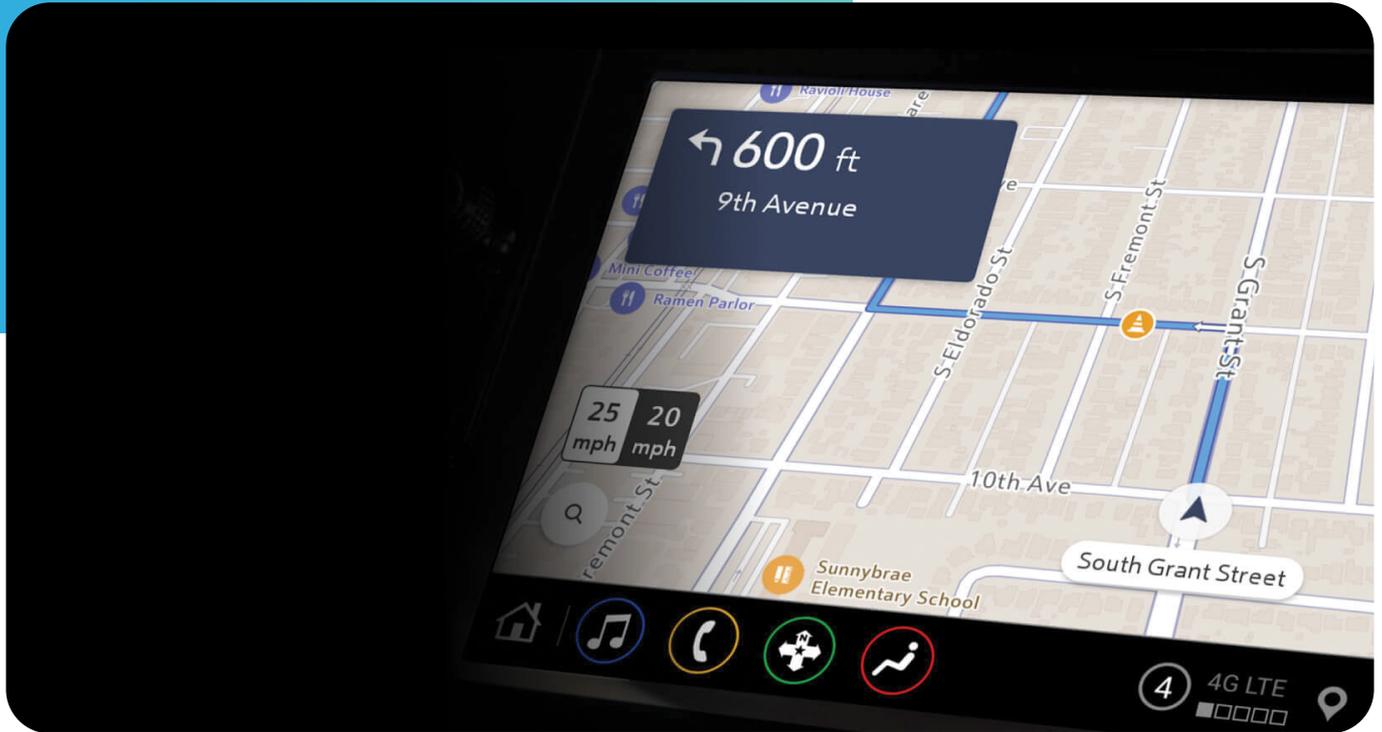


## SUCCESS STORY



# GIS-BASED LINE MAPPER APPLICATION DEVELOPMENT IN THE UTILITIES DOMAIN

## PROJECT OVERVIEW

Developed a Line Mapper application to aid the user to locate the transmission tower and feed-in the tower details after examining. Features like Multi-tenancy, Multi-threading, data compression, effective handling of Geo JSON file, efficient processing of data for performance enhancement etc., were implemented to replace a legacy system.

## SOLUTION DELIVERED

Application Development

## CLIENT DOMAIN

Utilities

## KEY HIGHLIGHTS

- Time consumed for the map loading minimised by over 50%
- Instant offline data synchronization when the application is online
- Performance is enhanced by 40% by adding mobile DB data

## ABOUT CLIENT

The client is a pioneer in providing technology related services and consulting to the power and utility industry. Their functional areas include transmission, distribution, line construction inspection, material inspection and so on. To enhance the construction and maintenance of the transmission line and feed-in the details of each transmission towers, the client requested for an application overhaul.

## BUSINESS CHALLENGES

- When Sync was initiated, a full set of information was being transmitted, requiring a lot of time to load the map Geo JSON
- Geo JSON updates happen based on the time of sync, instead of last updated time of records
- Download of data associated to each point was not supported for document related data sync
- Severe performance issues existed in the legacy system

## SOLUTION HIGHLIGHTS

Indium proposed the following solutions to overcome the business challenges of the existing application.

- The architecture was designed with a centralized API backend, with all features integrating with it in a seamless manner
- Leveraged Auth0 to create a multi-tenancy structure based on the company profile attached to the logged-in user
- Created dynamic JSON files and a single JSON file based on points count, along with cluster loading of GeoJSON for loading map and points
- Dynamic Geofencing based on number of points and boundary data load related to customer location, implemented in offline mode
- Data download accompanied with compression download frameworks made available across, using lazy loading techniques
- Multi-Threading by creating threads when plotting in map, within a cluster
- Mobile DB Data added after plotting the point in maps, to enhance performance

## BUSINESS IMPACT

- The time duration for loading the maps reduced by over 50%, owing to the creation of dynamic and single GeoJSON files along with the cluster loading of GeoJSON
- Implementing dynamic Geofencing in the application allowed the user to feed-in the data even in the offline mode and instantly synchronise when the application switches to online mode, improving on-field efficiency
- Lazy loading techniques enabled the data download with the compression download frameworks
- Performance is enhanced by 40%, by adding mobile DB data after map plotting

## TECH STACK



# ABOUT INDIUM

Indium Software is a fast-growing Digital Engineering company, focused on building modern solutions across Applications, Data, and Gaming for its clients. With deep expertise in next-gen offerings combining data and applications, Indium offers a wide range of services including Product Engineering, Low-Code development, Data Engineering, Ai/ML, Digital Assurance, and end-to-end Gaming services.



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