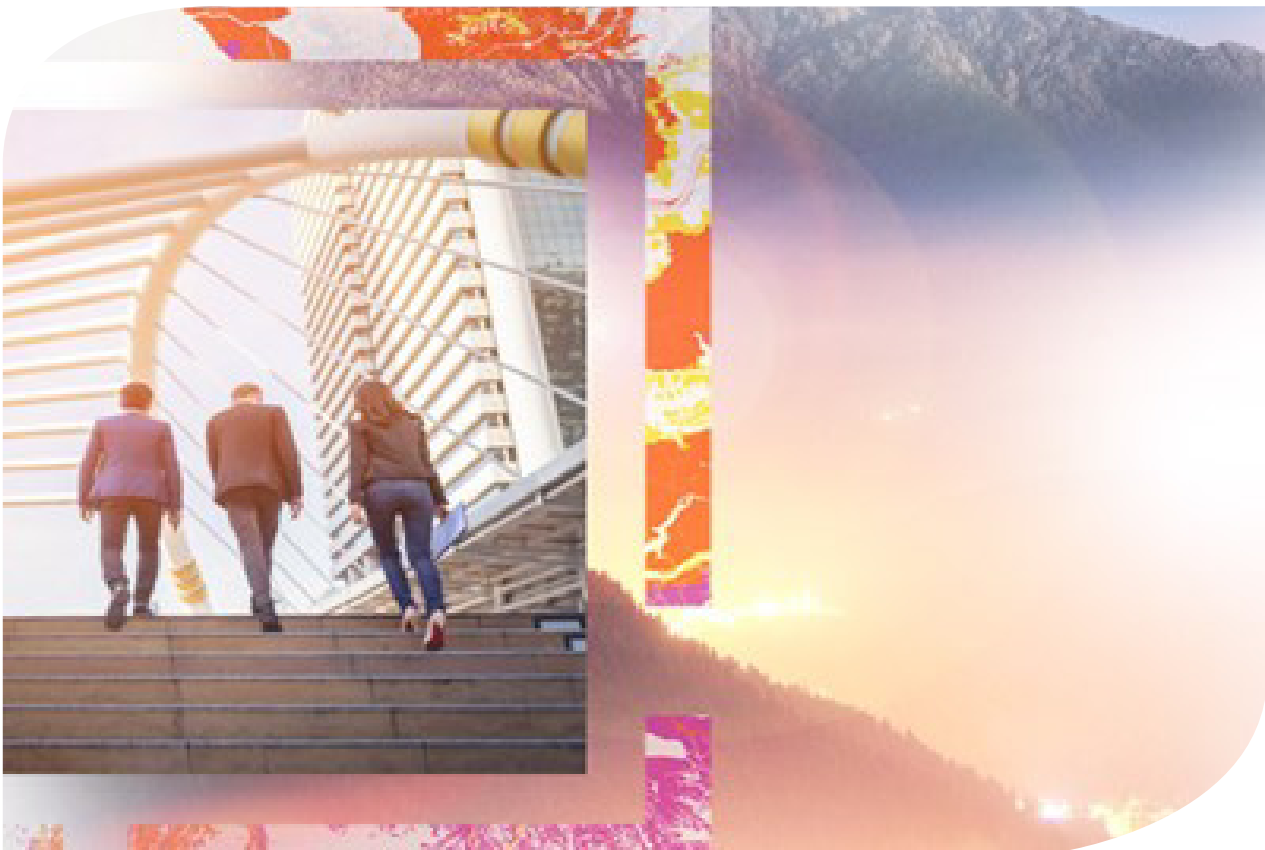




GIS Web Portal Development

(ESRI ArcGIS Enterprise Upgrade and Data Modelling & Designing)

Case Study



Client: Confidential (Non-Disclosure due to Client Guidelines)

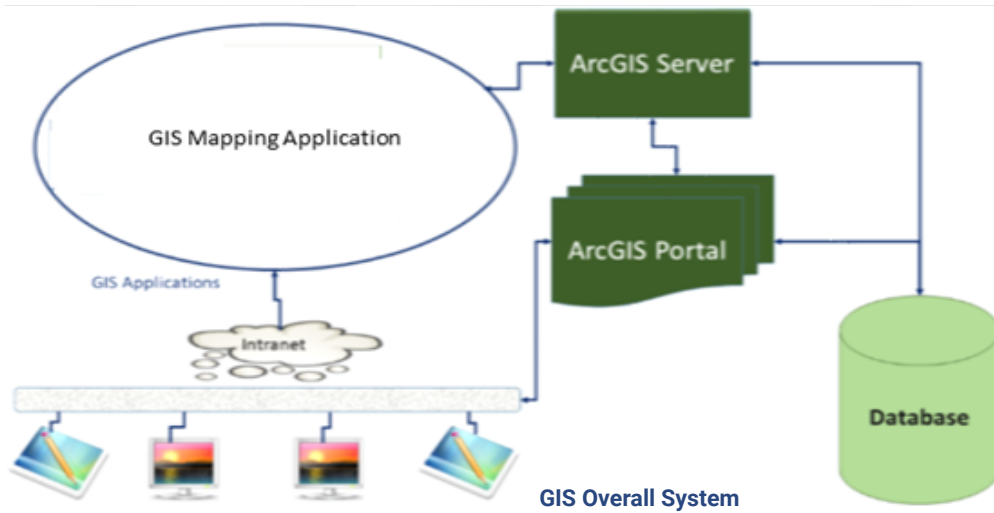
Location: GCC (One of the Government).

Project Overview:

Overall scope of the project is to establish GIS Upgrade for the client requirement from ESRI ArcGIS 9.3 & 10.2.2 versions with Silverlight SDK. And upgrade these applications to latest ESRI ArcGIS Enterprise (10.8), HTML5 and JavaScript.

Application Development - Component Model

Map component library is developed using ReactJS, HTML5 which powered by ArcGIS JS API for GIS functionality. The map components will adhere to Rich UI and responsive design. The following diagram displays the high level component model.



Technology Stack

Database	: Oracle Database 19c
Web UI	: HTML5, Bootstrap, Web UI Framework: React JS
Web GIS API	: ArcGIS Enterprise Portal 10.8.1, ArcGIS JavaScript API4.X,
Services	: Microsoft WebAPI
Server Technologies	: ASP.Net
Application Development	: Microsoft C# .NET, JavaScript
ArcGIS Geodatabase design	: Sparx Systems Enterprise Architect 15.1

Our Application Development Approach:

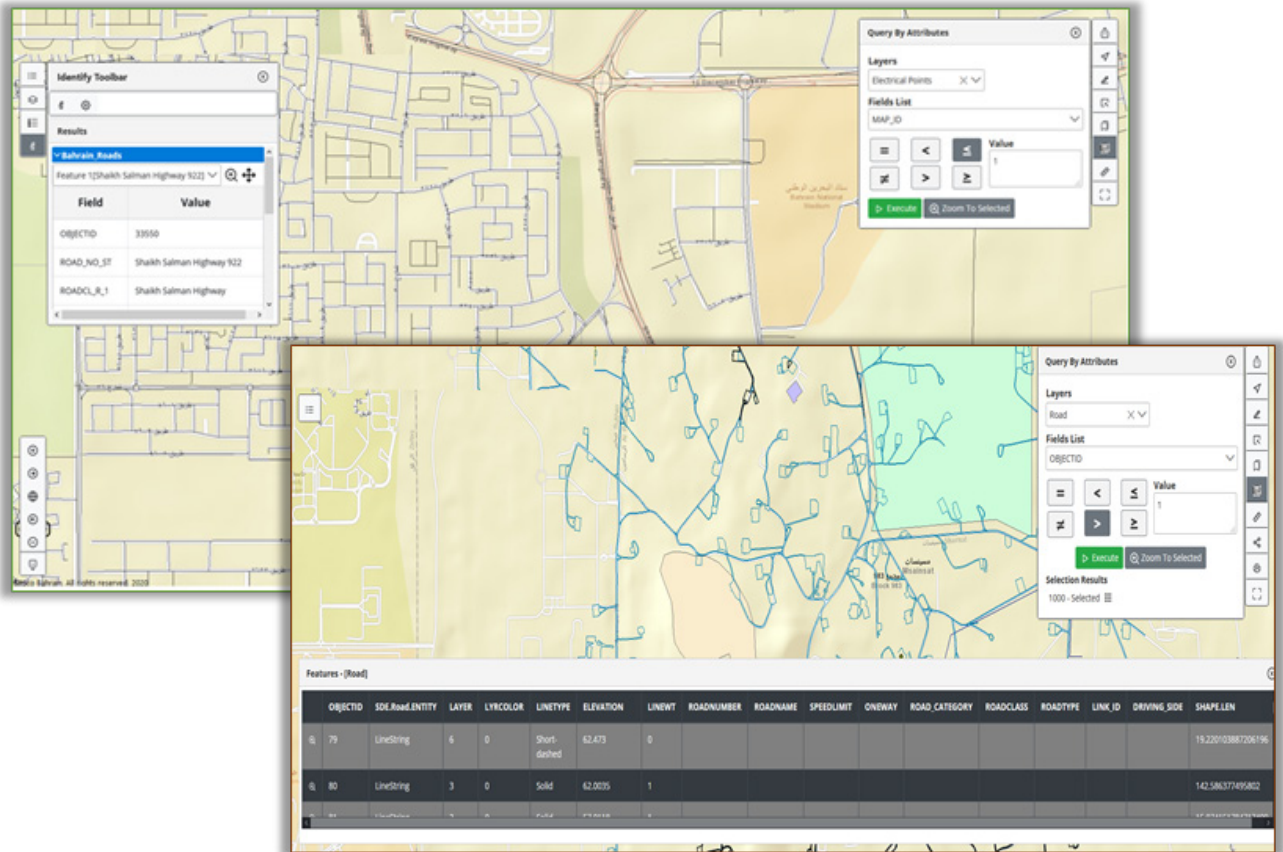
We have implemented Agile Iteration Planning. It has involved Scrum master, Product Owner and Agile Team (defines the tasks & our effort estimates). With respect to the total project we have divided into "User Story" (User Story is a unit of work that should be completed in one sprint.) All the Story will go to product backlog. We have created "Set of Stories" for the project.

- Analyse the problem
- Define the system
- Manage the scope of the system
- Refine the system definition
- Manage changing requirements

Functionality in Portal Web development

- Incident Analysis
- Network Analysis
- 3D Visualization and analysis of surface and subsurface facilities and data
- Statistical Analysis
- Report Generation development
- Web Browser GIS Application for 4-D Visualization and Analysis- Time awareness.
- Geo-Processing capabilities - Buffering, Clipping Features.
- Related Table Charts- Chart (bar, pie or polar chart) values from a related table of a feature layer
- Base map - Satellite Imagery and Geometry Layers

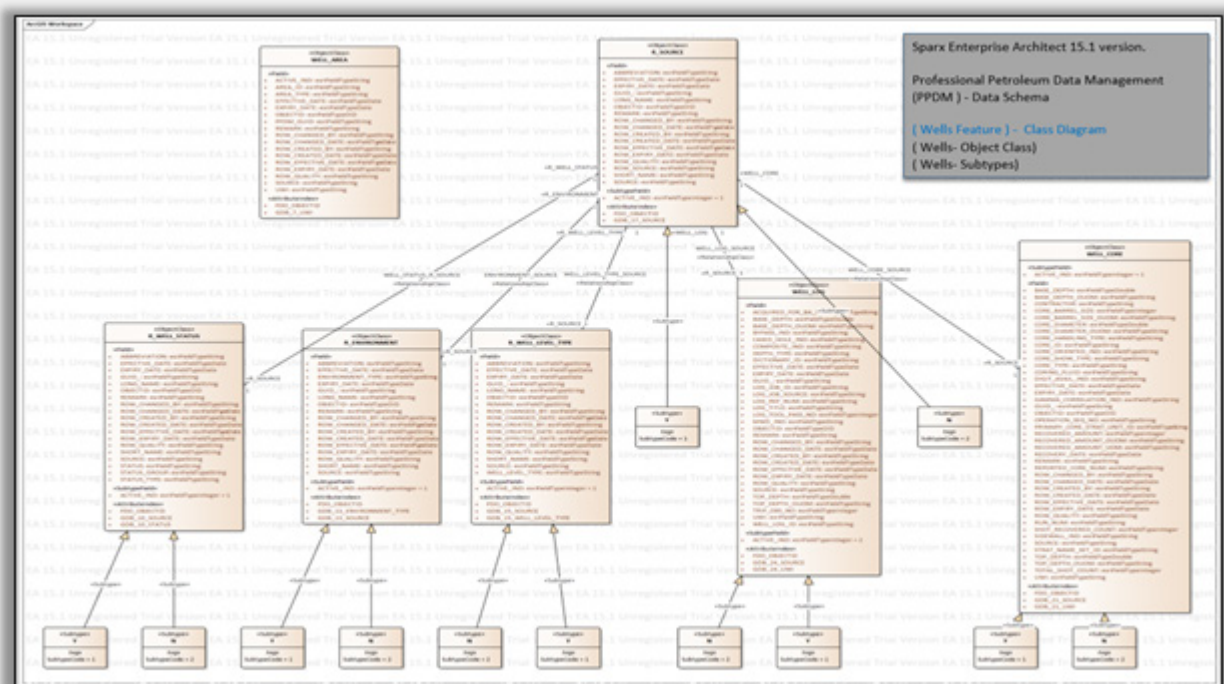
Application User Interface



GIS Data Migration Process & Data Model design

Migrating Maps & Services

The Migration Workflow designed to migrate the data from existing version ArcGIS 10.2 to target new Geodatabase model Enterprise geodatabase (Multiuser geodatabase). And republish the services using ArcGIS Desktop 10.8.1 (latest version)

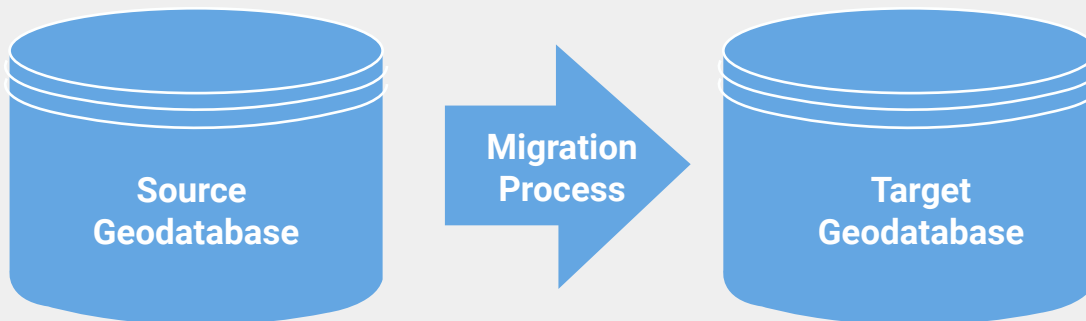


Well Feature Class Diagram – (PPDM) Data model design

- **Geodatabase Migration**

- Personal geodatabase
- File geodatabase
- Enterprise geodatabase (Multiuser geodatabase).

- **Targeted version on Oracle database 19c.**



Microcenter Technology Expertise

- ESRI for Utility Data Conversion (Electric, Water, Gas)
- GIS Data Modelling, Geodatabase Design & Migration
- Spatial Data Infrastructure (SDI)
- Pipeline- As-Built, DB update, Legacy data systems
- GIS Transportation – Traffic Analysis, Road data Networking & Digitization
- GIS for Telecom & Broadband Mapping
- GIS Land Base Management
- GIS for Urban Planning- Web-based 3D application, Building information modelling (BIM)
- Filed Survey & Inventory
- LiDAR Mapping
- AWS Cloud Migration
 - End-End Migration, Transformation and Platform Automation, Obsolescence Remediation.
- Data Analytics & DataScience/ML
- ESRI- ArcGIS Desktop, ArcGIS Pro
- ESRI ArcGIS Online & Portal Development
- ESRI ArcGIS Enterprise Solutions
- ArcGIS Server Application development
- Microsoft.Net/ Web Technology and Software Development
- GIS Customised Development- ArcObjects, ArcGIS for Python
- Autodesk- CAD/ESRI GIS Migration, Micro Station (Bentley)
- Autodesk & ESRI Software Training

Microcenter Group



Founded in 1983, MicroCenter Group is a pioneer in providing information technology solutions in Bahrain. Initially it was started with the aim of providing customized IT solutions to small and medium organizations but today with over 100 customers, both in the Government and private sector it has attained a leadership position in the industry within the country. With four group companies and an office in Saudi Arabia, today it has diversified into various other businesses that include training and engineering solutions

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