



Cost-effective FTTH design:

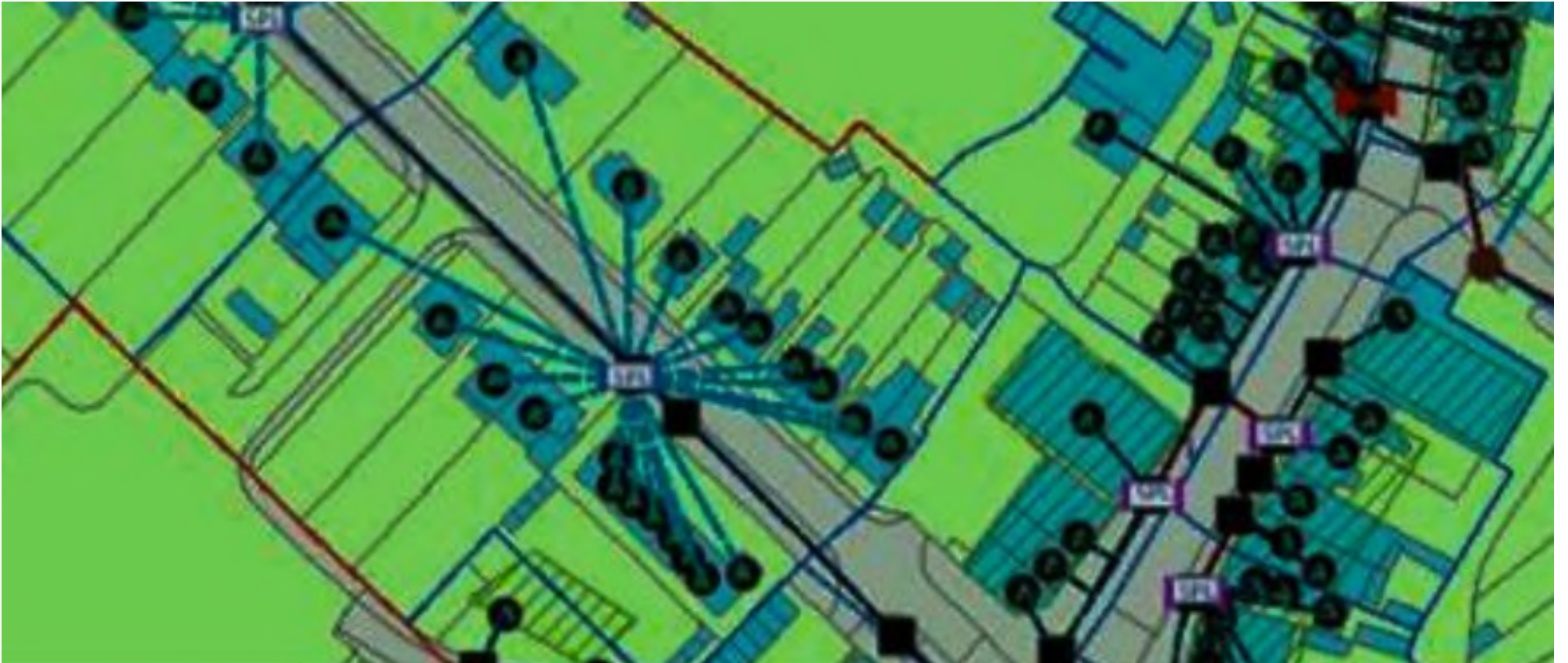
How we optimized the fiber network deployment plan for multi-million THPs

OVERVIEW

Geospatial-based High-Level Design (HLD), Low-Level Design (LLD), field survey, and verification are crucial to the planning and deployment of FTTx technology. They ensure reliable and high-quality connectivity for the consumer by making certain that the network is well-planned and designed, installed accurately and efficiently, and verified to meet performance and quality standards.

The end-user client for this project was a broadband service provider who wanted to deploy FTTH infrastructure to deliver faster and more reliable broadband to multi-million THPs in 2 years.

They needed to execute a geospatial-based FTTx HLD, LLD, field surveys, and verification to enhance the quality of their fiber optic network designs and reduce the cost per premise passed.



Scope of work

- Utilize existing infrastructure to improve the fiber optic network design.
- Implement automation tools to better manage the planning and design of fiber optic networks.
- Create HLD and LLD.
- Use field survey data and conduct verification to enhance the quality of the network plan design while minimizing the cost per premise passed.

PROCESS

Our technology partner shared the input data from various sources, including customer addresses, topographic maps, and base maps. Using this data, our team prepared HLD and LLD to plan an accurate FTTx network layout.

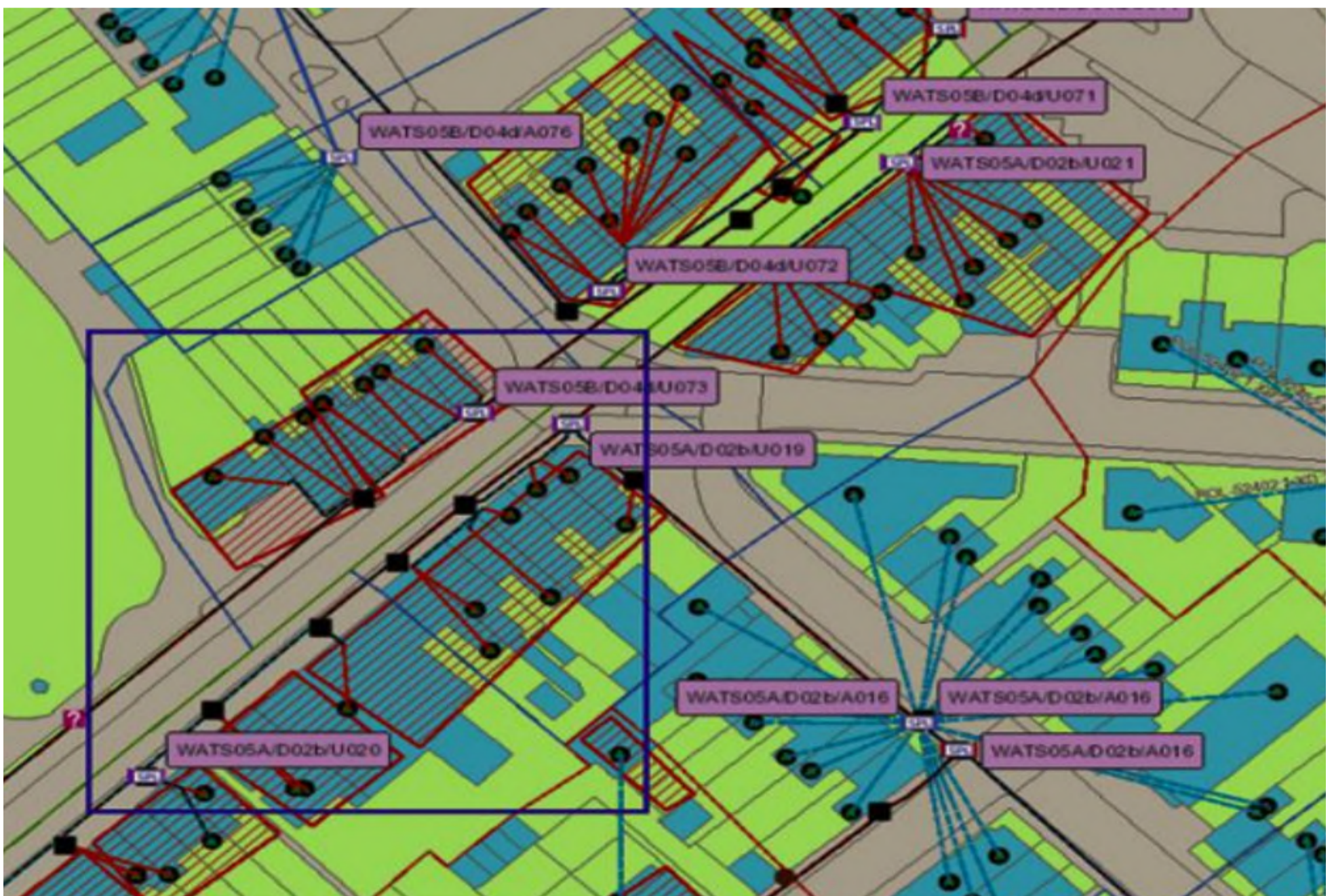
The HLD was prepared in OGIS and included: Input Study, Grouping, Fibre Cable Placement, Equipment Placement, Splice Closure Placement, and Network Labeling Standard.

The surveyors used a mobile application to sync field survey data, which was used to prepare the LLD that included: Field Survey Comment Updation, Splicing, and Equipment connectivity verifying/ checking From Home-to-OLT.

We also developed automation tools to improve the design efficiency of the fiber optic network and reduce deployment costs. The team also conducted extensive testing and quality assurance to ensure the solution met the client's expectations.

CHALLENGES

- Processing a large volume of complex data, which included potential customer homes, existing infrastructure, and other datasets.
- Accurate identification of customers' homes and surroundings to determine the feasibility and reliability of the FTTx network.
- Ensuring that the HLD of the FTTx was flexible and scalable enough to meet future demand.
- Delivering high-quality network design while minimizing costs and ensuring on-time delivery.
- Our GIS technology partner had to conduct detailed field surveys and employ a systematic field verification process to collect accurate data for LLD designing.





SOLUTION

Automate data processing

Our team created training models with various data sets and used M/L algorithms to automate the data processing. It helped us access and process large volumes of data quickly and efficiently.

Implement advanced network planning tools

We implemented state-of-the-art network planning tools to capture the route faster and more accurately.

Generate accurate drawings

Accurate data reconciliation and field survey comment updation mitigated the risk of design errors and improved the quality of our final deliveries significantly.

Conduct rigorous testing and quality assurance

We have a well-defined and robust quality control protocol for projects of this nature. Our team performed extensive testing and quality assurance procedures to ensure the final deliverables matched the client's requirements.

Scale up to meet demand

To meet the requirements of this project, we also scaled up our team with domain experts in infrastructure related to fiber deployment. This enabled us to improve accuracy, accelerate delivery and ensure that the network deployment plans were flexible and scalable.

OUTCOME

Reduced costs

Our plan helped them optimize the fiber network by utilizing the existing infrastructure effectively. This optimization reduced the cost per premise passed by more than 40%.

Improved efficiency

Our solution can help the client reduce project lead time by 50%.

Improved time management

Our solution helped eliminate potential roadblocks and reduced the cost per premise passed by more than 40%. Thus, the optimized fiber network design will also improve time management by more than 30%.

Offer competitive services

The broadband provider can leverage our solution to deliver an efficient and reliable FT Tx network at competitive rates. They can also meet the customer demand for high-speed connectivity by deploying fiber to homes and businesses efficiently and quickly.

CONCLUSION

Our systematic approach to data collection, design, verification, project delivery, and support provided the client with a comprehensive and effective geospatial-based FTTx network solution.

Our innovative solutions to the challenges of high-volume data processing, accuracy in identifying customer premises, flexibility and scalability of HLD, and optimization of the design network have ensured that the broadband provider can meet their fiber deployment targets once the project starts.