Yangon Urban Development Management Project -Implementation of Building Survey and Mapping in Yangon by Utilization of ArcGIS Online-

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○ Keywords
ArcGIS Online, Existing Building Survey, Zoning Regulation, Building Permit

○ Summary

Japan International Cooperation Agency supported Yangon City Development Committee on zoning regulation and building permit system formulation. It aims to improve urban development management capacity in Yangon through a technical cooperation project. One of basic information to formulate the regulations is current building information such as building use, floor number, building structure, etc. Conducting survey in a large coverage area with 967,454 target buildings in less than one year is very challenging. This project proposed an effective and efficient methodology to conduct building survey by utilization of ArcGIS online.

This article introduced the successful of this method in collecting building information in Yangon. Using ArcGIS online for the field survey has the potential on saving critical human resources, time and reduce paper works. In this project, 42 surveyors were able to finish the building survey in eight months without any accidents happened in the field.

○ Technical points

The following experiences will serve as reference for future similar works both in Yangon and other areas to improve efficiency and effectivity on a field survey.

1) Significant time saving on the implementation.
   Inputted field survey data in mobile phone will be inputted in GIS simultaneously. One the field survey finished, data input in GIS also finished. In conventional method, GIS input can be done only after the field survey.

2) Significant human resources saving.
   Using ArcGIS online, 1 surveyor was able to input 150-200 building information (building use, floor number, building structure and car parking availability) per day. While in conventional survey 1 surveyor was able to input only floor number information.

3) Survey progress and data quality can be monitored easily.
   Progress of inputted data in mobile phone at the site can be monitored from ArcGIS online dashboard in computer anywhere. Incomplete data, error data, edited data and not yet inputted data can be tracked in the ArcGIS online dashboard.

○ Photo and Figure

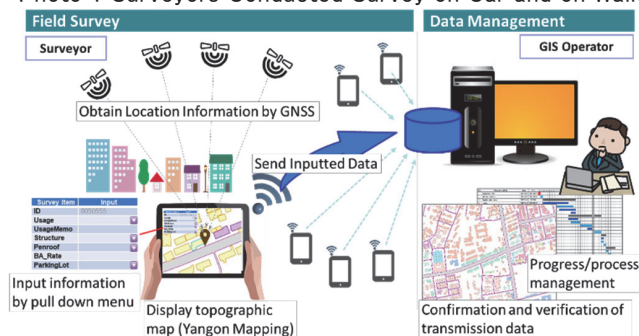Photo 1 Surveyors Conducted Survey on Car and on Walk

Fig.1 Field Survey Progress Monitoring Dashboard

Field survey implementation:
- 2 surveyors in each team conduct building survey in each side of road.
- Surveyors input building use (51 types), building structure (4 types), car parking (2 types) and floor number directly by pulling down the category choice in the mobile phone.
- Surveyors do on walk survey for areas that cannot be accessed by car.

Data management and monitoring:
- It will be difficult to monitor a huge number of data manually. Through ArcGIS online dashboard the consultant team was able to manage field survey data daily and pointed out error data (if available).
- If there was error data will be informed to the surveyor and revised accordingly.