Data Standardization Activity for Urban Revitalization in Japan

Presentation for the “Standards in Action seminar” in connection with the 49th Plenary of ISO/TC 211, Omiya, Japan

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Urban Structure Visualization Promotion Organization
Introduction

- Urban Structure Visualization Promotion Organization
  - Established in 2018 to promote visualization of urban structure in Japan
  - OGC member from 2019
  - Member from various sectors (public, private and academic) join together to develop tools for urban structure visualization
Urban planning has been contributed to healthy urban environments, prevented disorganized urban sprawl, and also encouraged infrastructure development.

However…because of population decline and aging society,

Urban areas are facing a big turning point!

New social issues such as a rapid increase of empty apartments and lands, and non-universal design of facilities depend heavily on the sustainable development, especially in regional areas.
• Efficient urban management is required to address local issues.
• Compact urban development is the way to go from the perspective of administrative costs.
• Information-intensive activities for consensus-building have become very important to call for investment.

What's happening in our area?
How to make a choice?
"i-Urban Revitalization (i-UR)"

• An information infrastructure for urban revitalization:
  – to represent more clearly the situation in a particular region, not just to data experts but also to people without specific knowledge.
  – to encourage consensus-building among relevant stakeholders.

• Japanese government has been working on its development, utilization, and promotion.
  – In accordance with "the Basic Policy for Urban Renaissance amended" in 2014 etc.
"i-Urban Revitalization" (i-UR)

- **Components of i-UR**

  1. Data in each municipality
  2. Data Encoding Specification
  3. Capacity Building
  4. 3D Visualization Tool

Data in each municipality flows into the data encoding specification, then capacity building, ultimately leading to a 3D visualization tool.
Statistics onto Maps

- Municipalities conduct various statistical surveys.
- Statistics are merely strings of numbers and hard to understand.

**Visualization over maps**

- Regional characteristics and topics can be identified with one look.
- Change over the years can be presented.
- Comparisons with other regions is also made possible.
Time-series Visualization
Cross Visualization
3D, Seamless Visualization
Capacity Building

http://www.youtube.com/watch?v=OsBB-GDbz3I
Concept / Direction of i-Urban Revitalization

Each municipality chooses its own future

Data Collection Methods

Motivation to Visualize

Insights from Visualization

Beneficial cycle
Concept / Direction of i-Urban Revitalization

- Information infrastructure for proposals/assessments of policies supporting the development of intensive cities
- Consensus-building tool for varied cooperation between regions, policies, and between people and the government

Propose and implement policies/plans
i-UR 3D Visualization Tool

https://mieruka.city/

https://minna.mieruka.city/main-features/
Data Standardization of i-UR

KML
- Easy to join

CityGML
- Data with “Semantics” and “LOD”

CityGML ADE (i-UR1.0)
- Data for effective analysis for urban revitalization

ADE: Application Domain Extension

9 January 2020
ISO/TC 211 Geographic Information/Geomatics
i-UR1.0 defines objects of 4 categories;

- Detailed information of city objects,
- **Constraints/conditions** (e.g. regulation),
- **Statistical objects (grids)** and
- Global city model for global analysis and visualization
CityGML ADE for Urban Planning

- Conceptual model in UML and implementation model in GML
Continuous Capacity Building and Networking

• 1\textsuperscript{st} CityGML Urban Planning ADE Ideathon
  – Oct. 3-4, 2020 in Chino
  – 20 participants discussed the use and dissemination of CityGML in Japan and the utilization strategies of Urban Planning ADE.

• 2\textsuperscript{nd} CityGML Urban Planning ADE Ideathon
  – Feb. 12-14, 2020 in Tokyo
  – Over 200 local government staff will join and discuss the use of CityGML in Japan and participants of the 1\textsuperscript{st} Ideathon session reported on use cases of CityGML and Urban Planning ADE.
Thank you!

**Urban Structure Visualization Promotion Organization**

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