National Digital Twin Projects based on K-Standard

Chun Su Park (General Director, LX)
Digital Twin

Technology to predict results in advance by creating twins of real things in digital space and simulating situations that may occur in real life.

**LX Digital Twin Dept.**
- **Experimental**
  - LX-Jeonju Cooperation
  - DT model for Jeonju (Whole area)
- **Proliferation**
  - 21. 6. ~ present
  - Support for a local government Pilot projects of NDT by MOLIT (17 regions)
- **Platform**
  - 21. 7. ~ 22. 9.
  - Urban Data Management And Implementation of Digital Twin Simulation
- **Public Platform**
  - 23. 1. ~ present
  - Designation of NDT Platform Specialized Support Government (MOLIT)

**LX Standard & Quality Dept.**
- **Roadmap**
  - 20. 9. ~ 20. 12.
  - Direction of Geospatial Standard for National Digital Twin
- **Reference Model**
  - 21. 6. ~ 22. 12.
  - National Digital Twin Reference model and Building
- **Domain Extention**
  - 22. 6. ~ present
  - Transportation, Indoor Space, Underground, DEM
- **Demonstration**
  - 22. 9. ~ 23. 4.
  - National Digital Twin Building Domain 4 standards
National Digital Twin Reference model, Building Transportation, Indoor Space, Terrain, Underground
ISO/TC 211 56th Plenary Meeting

National Digital Twin KS

National Digital Twin 21ea

Geospatial Information Interoperability
ISO/TC 211 56th Plenary Meeting

“LX Platform?”

To support the application of Geospatial
ISO/TC 211 56th Plenary Meeting

LX Platform: Digital Twin Function & Service

- Basic Functions (26)
  - Spatial Measurement
  - 3D Library
  - Layer Management
  - 3D Modeling Automation

- Analysis Functions (22)
  - Gradient Analysis
  - Sunlight Right Analysis
  - Visibility Analysis
  - The View Analysis

- Generic Services (10)
  - Road occupation Licensing
  - City space Analysis
  - River Monitoring
  - Disaster Analysis

- Specialized Services (9)
  - Floating population Monitoring
  - Parking Simulation
  - First-aid station Management
  - Support for Land development
Digital Twin Services with LX Platform

※ Example of developing a demand-specific service model based on a platform development environment
LX Platform: Land and Urban Management

Demand-specific Service model Based on LX Platform

Support for optimal decision making for Efficient Urban Management based on Data

- Facility Management
- Road Occupation Permit
- Cultural Property
- Construction Permit

Urban Facility Management
Urban Data Management
Cultural Property Management & Protection
Administrative Decision-making
Construction Permit decision-making
LX Platform: Disaster Response

Demand-specific Service model Based on LX Platform

LX Platform service for Pre-response and Management of Disaster situation

River Monitoring
Flood Analysis
First-aid Station
Disaster Info

Real-time River Monitoring
Disaster prediction Simulation
Pre-response of Disaster based on Data
Integrated Management of Disaster Data
하천 관계 서비스

실시간 CCTV 영상

실시간 수위 측정 정보

서비스 > 하천 모니터링 > 실시간 하천 모니터링 > 실시간 하천 모니터링

Real-time River Monitoring
LX Platform: Regional revitalization

Twin Simulation to improve Quality of Life and revitalize the Local Economy

- Urban Wind Road
- Urban Forest
- Sunlight & Shading
- Regional Decision-making

- Analysis of Urban Atmospheric Flow
- Analysis of Urban Atmospheric Environment
- Analysis of Residential Environment Impact
- Tourism policy and Revitalization of local economy
Wind Road Simulation
Floating population Monitoring
Strategy

Specialized model for Government with LX Platform

LX Own Biz
3ea

‘21 NDT Pilot Projects of Local
10ea

‘21 NDT Pilot Projects of Local
7ea

Demand-tailored DT service with LX Platform Development Environment
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Demonstration of NDT Building Domain Standards

UML

XML Schema based on UML

Data Construction Methodology for Application of Standard & NDT Data

Standard Conformity Review
National Digital Twin, KS, and LX
Thank You
감사합니다.