

Automation Mobility Challenges by Urban Connected Automated Shuttle in “*Sejong*”

Aug., 2019

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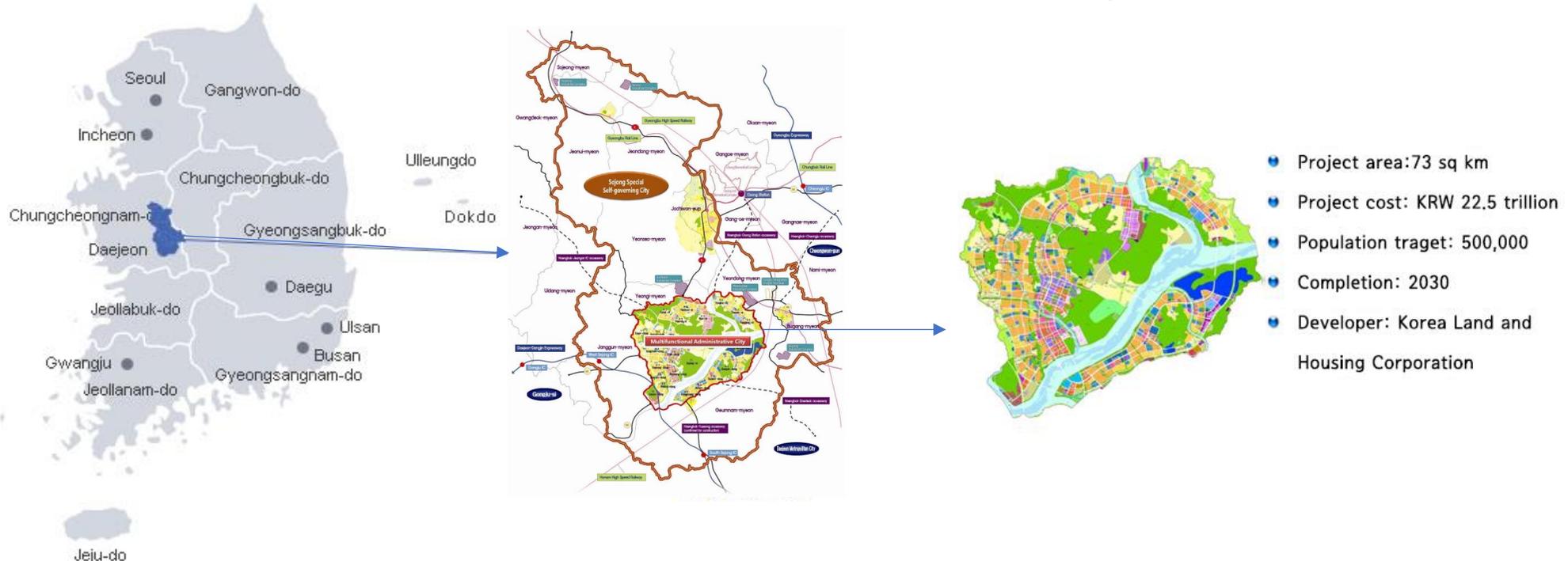
ISO/TC204 WG17 Convenor



Sejong : Government Complex City

➤ Political & Artificial

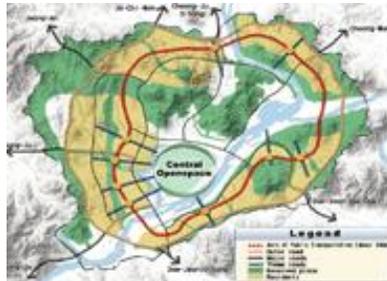
- ✓ The Government of the Republic of Korea enacted a Special Act on the Administrative City Construction on March 18, 2005 to develop this city.
- ✓ The new city plan aims at 1) eliminating urban sprawl of the capital region, 2) strengthening the national competitiveness and 3) balancing national development.
- ✓ The Administrative City has been constructed in the City of Sejong since 2006.



Sejong : Government Complex City

➤ “Being Green”

- ✓ Sejong wants to be a fore-runner in the worldwide conversation about going green.
- ✓ Aiming at reducing 70% CO2 emission by 2030, Sejong plans to replace 15% of total energy usage with renewable energy.
- ✓ More than half the size of the whole city will be green.



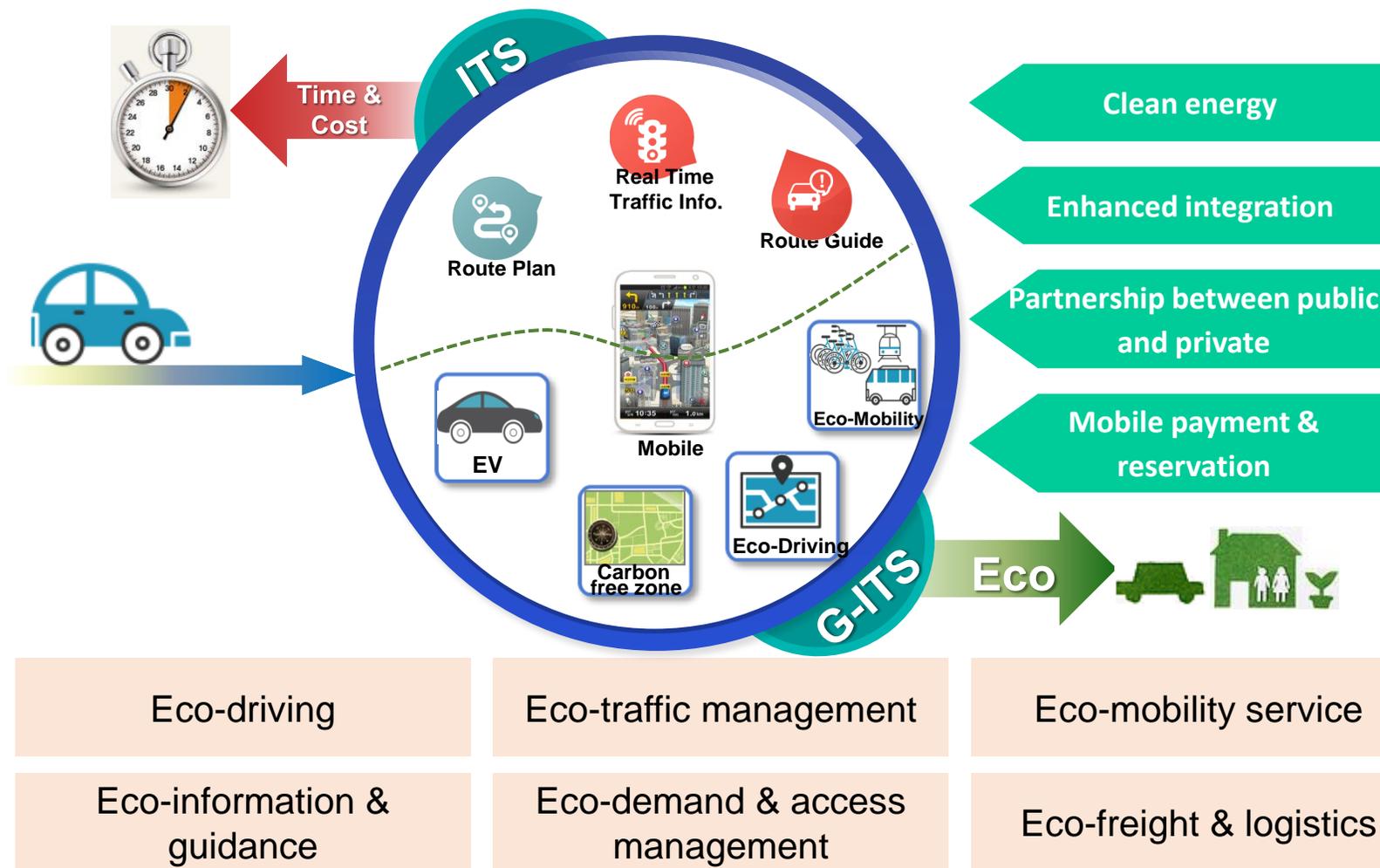
Transportation Issues in Sejong

Sustainable Transport

- To be Safe, Accessible, Affordable, & Environment Friendly

- Paradigm Shifts for Reducing
 - ✓ Congestion, Road Accidents, Emissions & Air Pollutions, Parking Problems
 - ✓ by
 - Avoiding the Needs to Travel by Driving
 - Shifting to Sustainable Transport Modes
 - Improving Efficiency of All Transport Modes

Urban Mobility Challenges by ITS



Development of Urban Connected Automated Shuttle in Sejong (UCASS)

Physical Infrastructure

- Vertical & Horizontal Alignment, Lanes, Pavements, etc.

Digital Infrastructure

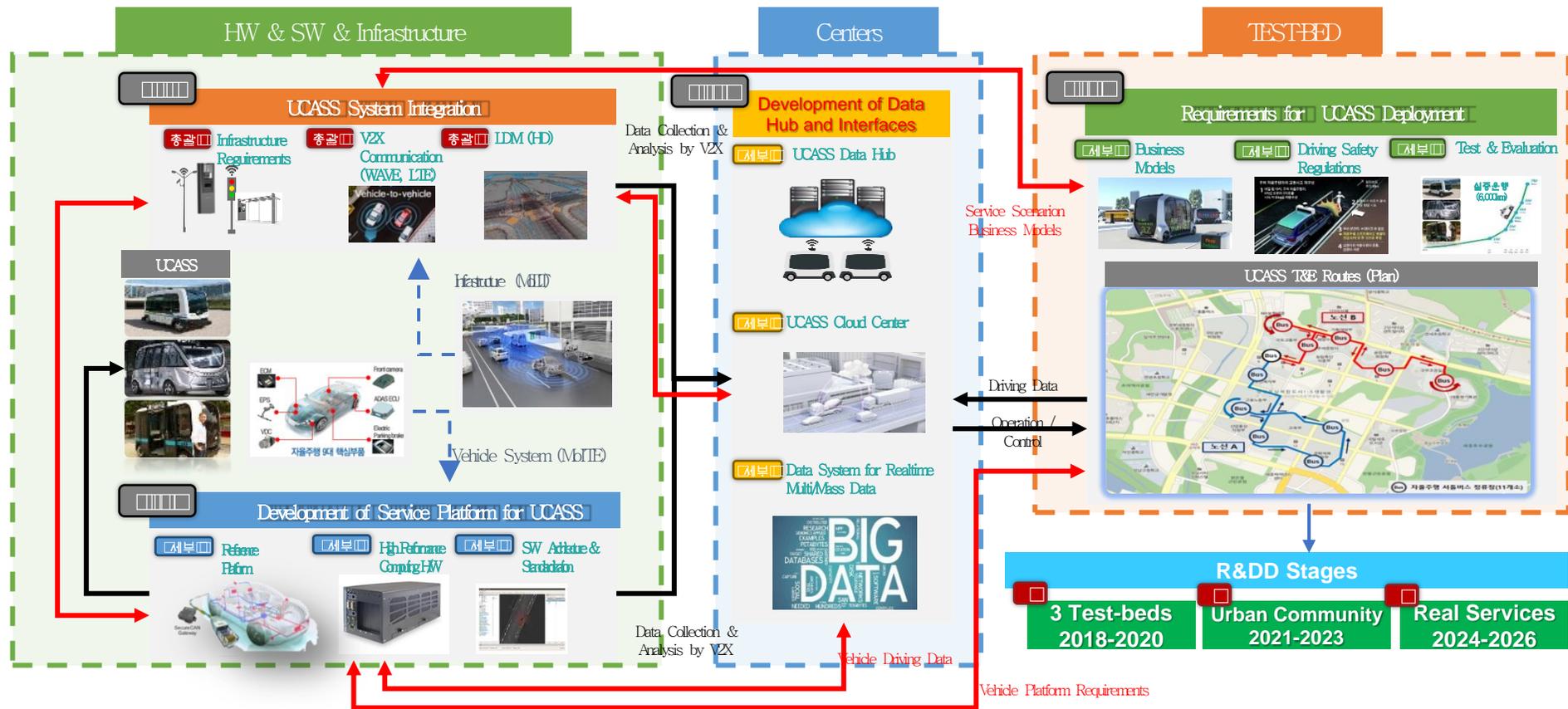
- Digital Signages, Traffic Information, etc.
- V2X Communication Systems, IoT, etc.
- HD Local Dynamic Map & Positioning, etc.

Logical Infrastructure

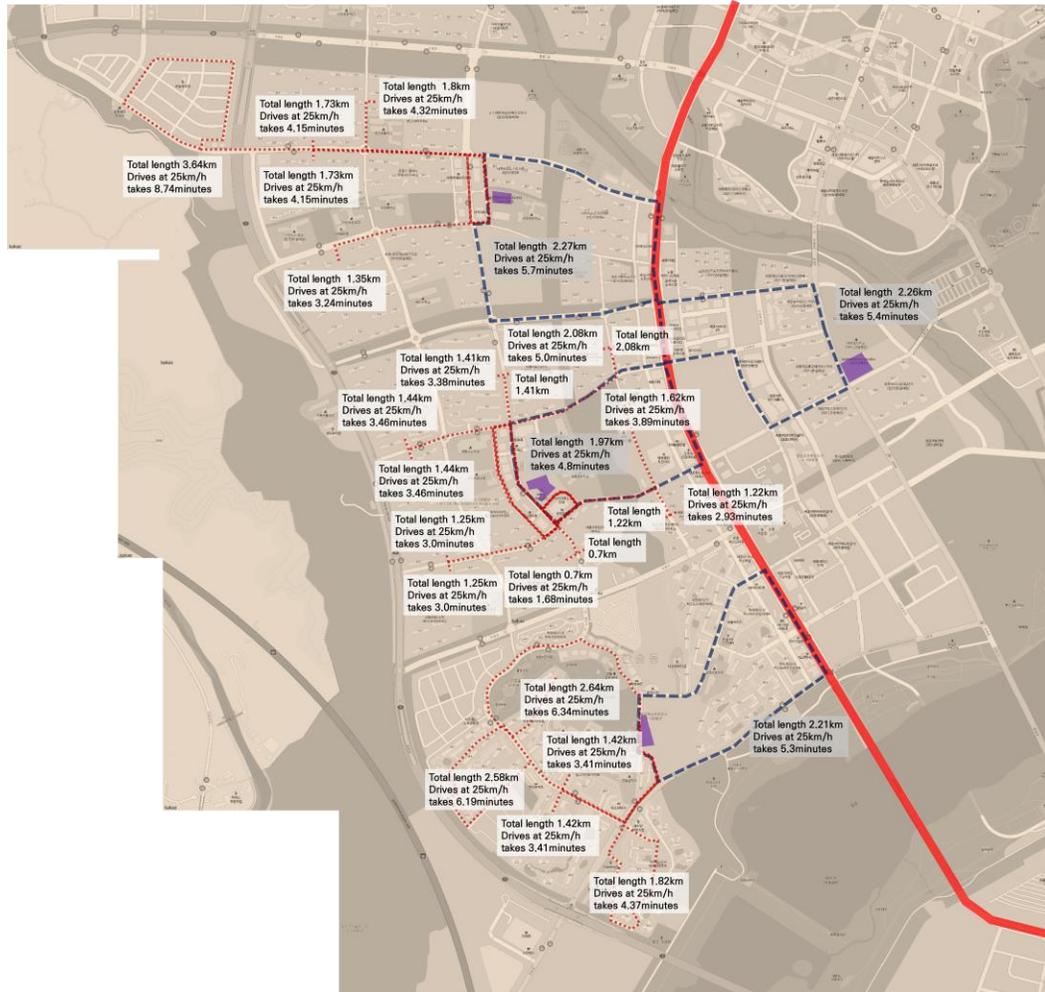
- Urban Mobility Management & Control Systems based on Big Data & AI
- Vehicle Computing, Edge Computing, Local & Cloud Center

Development of Urban Connected Automated Shuttle in Sejong (UCASS)

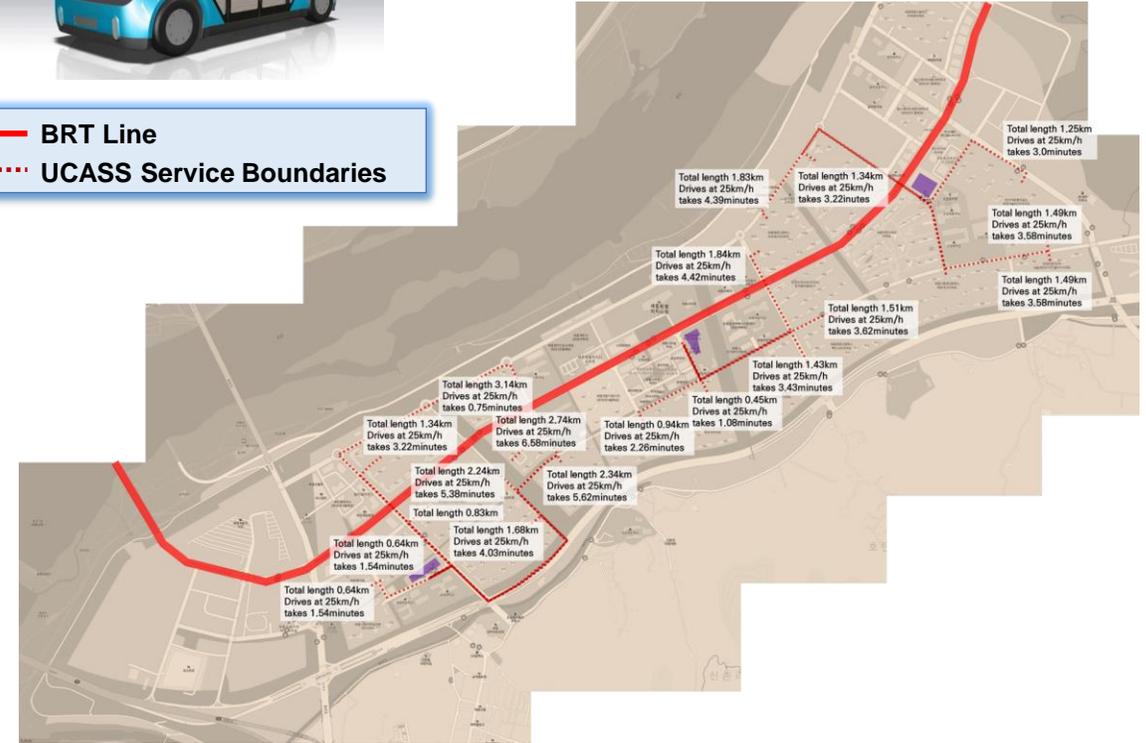
Structure of UCASS Project



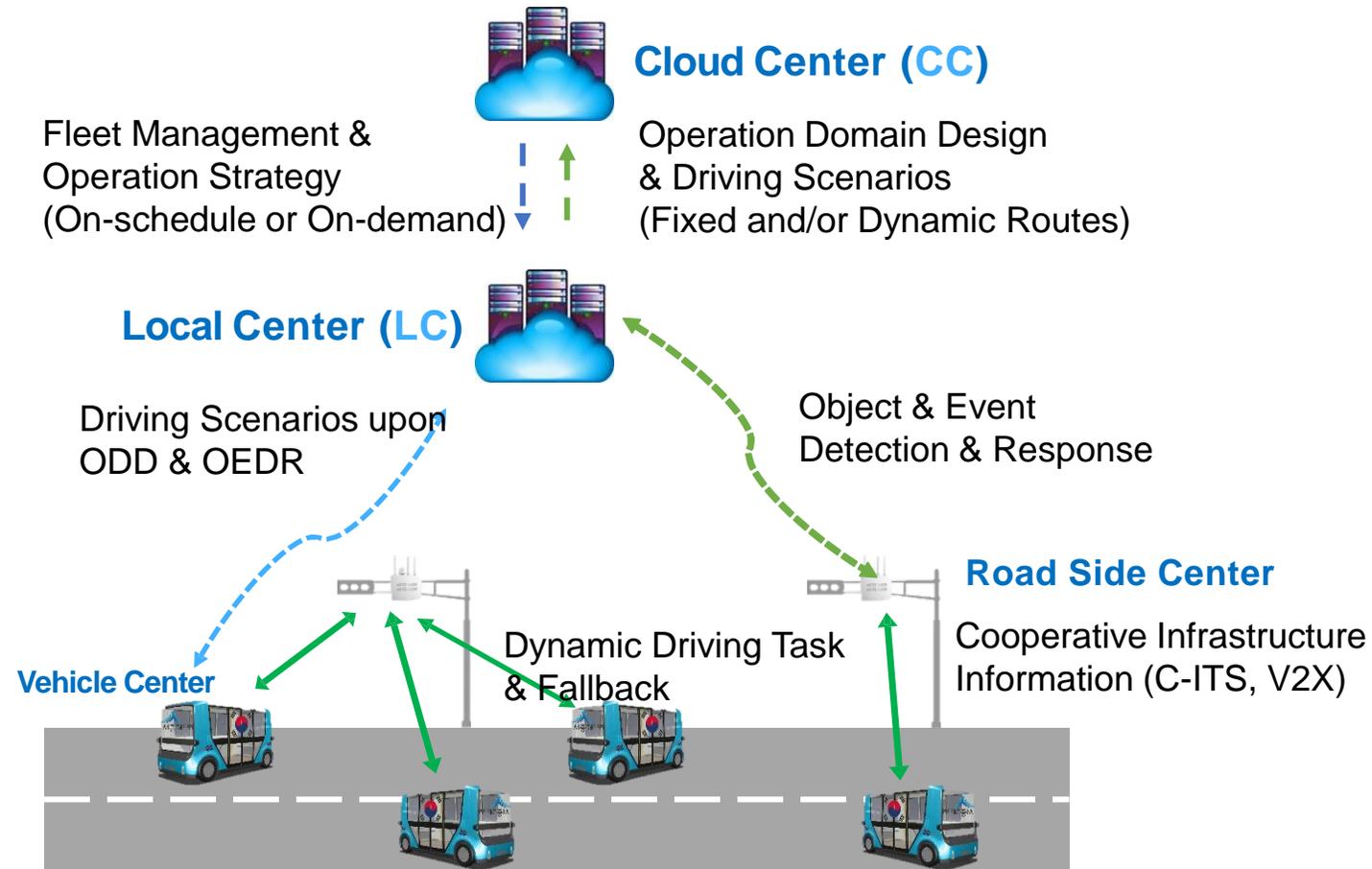
Development of Urban Connected Automated Shuttle in Sejong (UCASS)



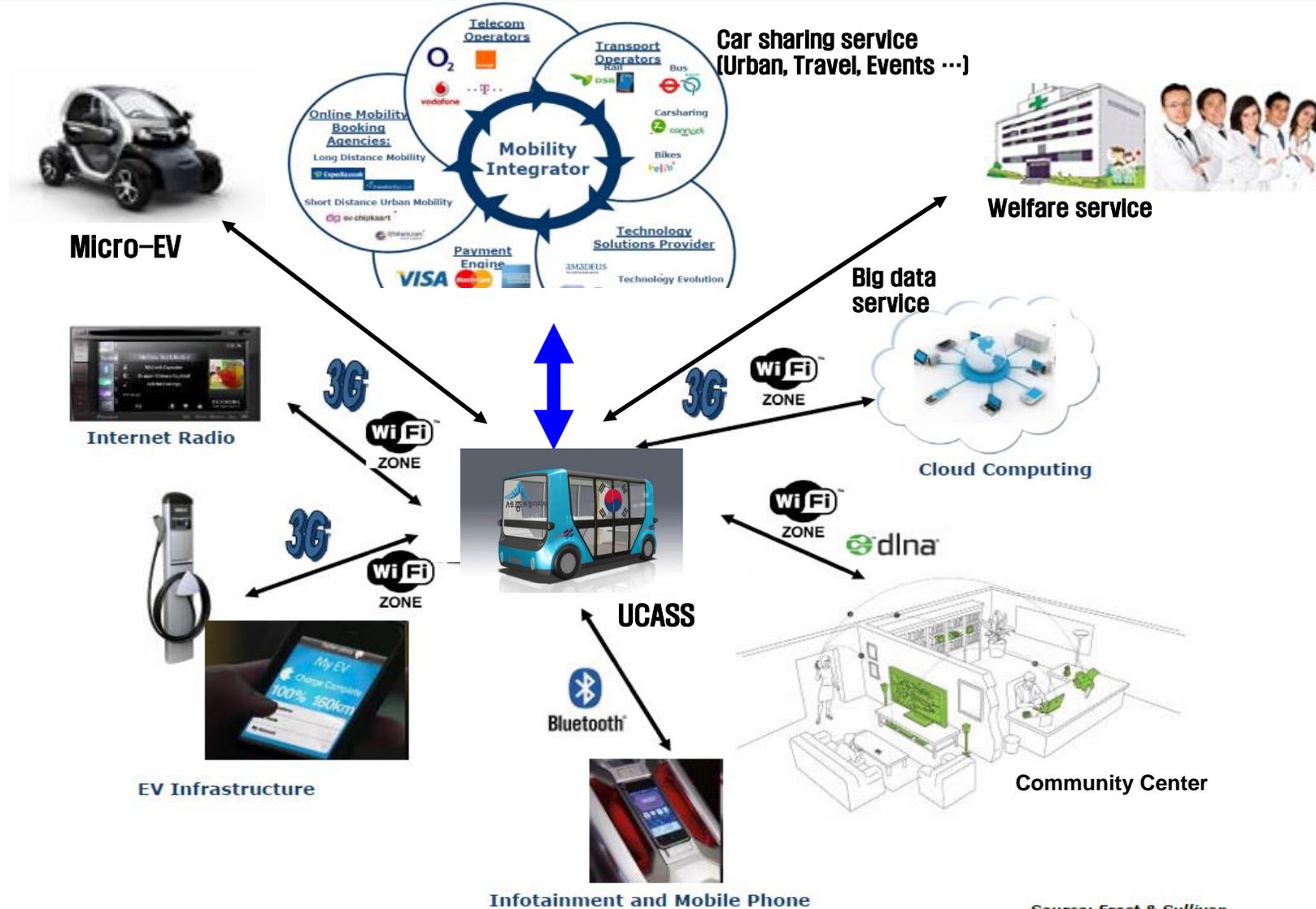
— BRT Line
 UCASS Service Boundaries



Development of Urban Connected Automated Shuttle in Sejong (UCASS)



Development of Urban Connected Automated Shuttle in Sejong (UCASS)



Source: Frost & Sullivan

Challenges & Issues for UCASS

➤ **Challenges to Mobility Innovation**

- ✓ Being Green and Smart
 - Global climate change, Rapid urbanization and Aging society, Sharing economy
- ✓ Planning 200+ UCASS since 2023 in Sejong
 - Last/First mile connectivity from/to BRT & community center
 - Changing citizens' mobility pattern to "Shared & Automated"

➤ **Issues to be addressed**

- ✓ R&DD & Standardization for Level 4 Automation
 - Low speed under 35km/h in urban streets
- ✓ Regulation & Legislation, Procurement Policy
 - Harmonized BM between public transit operators & service providers
- ✓ Infrastructure Deployment for Connected Automated Driving
 - Physical, Digital & Logical Infrastructure
 - C-ITS & A-ITS with Big Data & Artificial Intelligence (AI)

Thank you very much!

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