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Challenges in Advancing IoT and Smart Cities

Hideyuki Tokuda Faculty of Environment and Information Studies, Keio University Chairman of Smart IoT Acceleration Forum *hxt@sfc.keio.ac.jp http://www.ht.sfc.keio.ac.jp/~hxt*



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Accelerating Convergence of IoT and Connected Services for Creating Smart Cities





Smart City Projects

Advancing ICT in Smart City Context Solving City Issues by ICT





Two Types of Smart City Projects



Advancing ICT with Smart City Context FP7/H2020 NSF/NIST/US IT Companies MIC/NICT EU-Japan Projects



Smart Cities/Towns by ICT MIC's Smart Town Projects Yokohama Smart City Project/METI Fujisawa SST by JP Companies



Future Internet IOT, IOE, M2M **Cloud/Fog/Mist CPS Big Data Social Open Big Data** ML/DL/AI





IoT Acceleration Consortium@Tokyo (10/23/2015)









Smart IoT Acceleration Forum (as of 10/1/2016)

- Technology standards committee



技術・標準化分科会

Technology standards subcommittee



テストベッド分科会

Testbed subcommittee



Subcommittee for IoT human

resource development



Comm. Protocol Stack subcommittee

- R&D and demonstration project





IoT Project for Daily Living

Autonomous Mobility Project



Smart City Project hide tokuda lab. 8





Smart City Projects





List of Japanese Smart Town Projects (2012–2013)



FI-PPP

(Future Internet-Public Private Partnership)

Public Private Partnership for developing Future Internet Improving Business Process and Infrastructure in Mobility, Green Energy, Healthcare, Governance.

Infrastructure, Devices, Software, Services and Media are also included.



FINEST: Logistics and Transportation OUTSMART: Smart Cities INSTANT MOBILITY: Travel and Trans. SMARTAGRIFOOD: Smart Food SAFECITY: Safe and Secure City ENVIROFI: Env. for Earth FI-CONTENT: Large Scale Media Contents

FI-WARE: Platform and Tools Development



Global City Team Challenges https://us-ignite.org/globalcityteams/







What is a Problem?





Vertical vs. Horizontal Silo vs. Open IoT Platform



Integration of Vertical Solutions and Creation of Open IoT Platform







BigClouT Project





EU-Japan Project: ClouT Project





Cloud of Things for empowering the citizen clout in smart cities





BigClouT: IoT, Big data and Cloud for answering Smart City challenges





BigClouT: Big data meeting Cloud of Things for empowering the citizen clout in smart cities hide tokuda lab. 19

What are Challenges? for Accelerating IoT Development





Technical Issues in IoT/CPS

Important Property of Systems

- Predictability & Adaptability
- Safety & Security
- Dependability & Autonomy
- Usability

New control model

- Feed forward vs. Feed back
- Model builder

Big Data Analytics

- ML, DL, Visualization, Edge analytics vs. Core analytics
- Privacy Enhancement Technology





IoT Data

Privacy Enhancement and Ownership of Data Data Literacy

Open IoT Platform Edge vs. Core

IoT Security Guide Line



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Threats in IoT Environment

Connected Services DOS/DDOS Connected ID Spoofing

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