

WISE-IoT, EU-KR Collaboration

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- Project Name: Worldwide Interoperability for SEmantics IoT
- Project Duration: 2 Years (2016. 06 ~ 2018. 05)
- Partners: KR 10 institutions, EU 9 institutions
- Propose: Globally linking IoT services of goods using semantic technology









WISE INT THE KR CONSORTIUM





- **Demo Coordination**
- Develop Interworking technique



- Recommended service use case definition
- Semantic resource structure design



Cross-platform interworking technology architecture tasks and requirements design (oneM2M to Insator)



Development of Lora sensor and deriving service and use case



GS1-oneM2M Global Use-Related Use Cases and Requirements, Interworking structure design



Demonstrate global interoperability use cases and requirements related to healthcare



Supporting the execution of tests and pilot services on project deliverables



Development of user recommendation service based on context awareness using Big Data



Development of service application software, application of platform demonstration complex and acquisition of empirical data





WISE INT THE EU CONSORTIUM



- Coordination
- **Demo Coordination**
- Semantic mapping technology development based on FIESTA project



- Semantic technology and ontology development
- Semantic annotator and mapper implementation



Design of key interfaces and component structures to ensure interoperability between one-EU test beds



FIWARE adapter maintenance and support



Interoperability validation for an integrated platform implementation based on requirements and technical specifications



Feasibility evaluation of mechanism of user feedback analysis and recommendation system



User-based feedback and analysis techniques



Development and implementation of social IoT function and recommendation service



Development of healthcare sensor and deriving service and use case



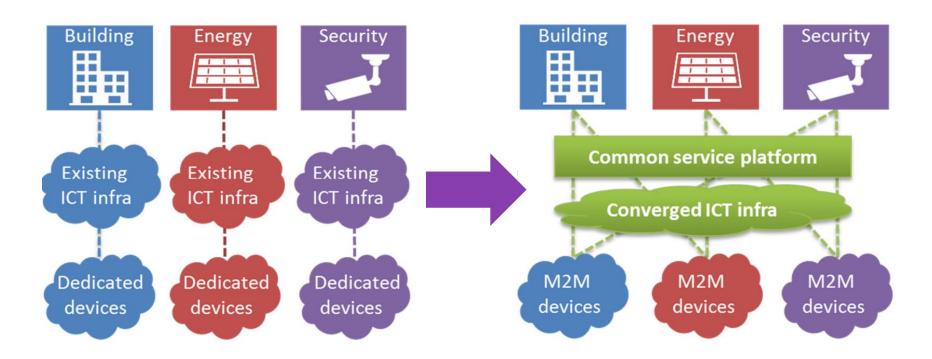




WHY HORIZONTALIZATION IS URGENTLY NEEDED?

- Highly fragmented market with small vendor-specific applications
- Reinventing the wheel: Same services developed again and again
- Each silo contains its own technologies without interop

- End-to-end platform: common service capabilities layer
- Interoperability at the level of communications and data
- Seamless interaction between heterogeneous applications and devices

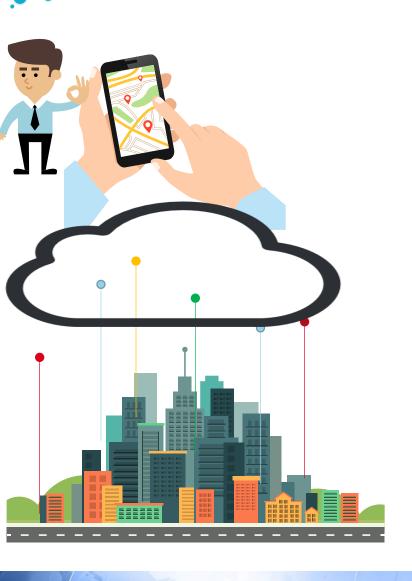








WISE INT BUILDING GLOBAL IOT: GLOBAL MOBILITY



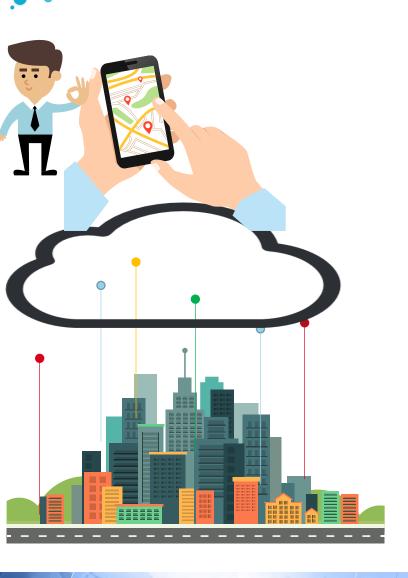








WISE INT BUILDING GLOBAL IOT: GLOBAL MOBILITY



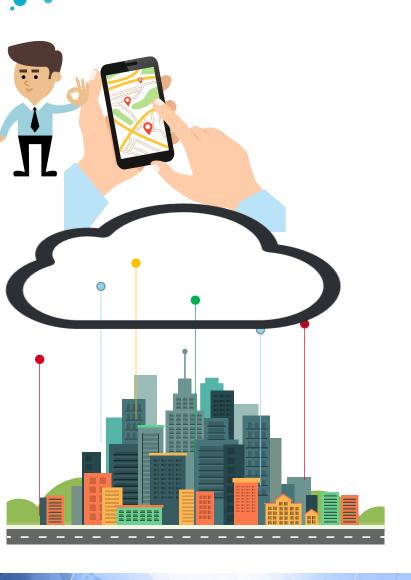








WISE INT BUILDING GLOBAL IOT: GLOBAL MOBILITY



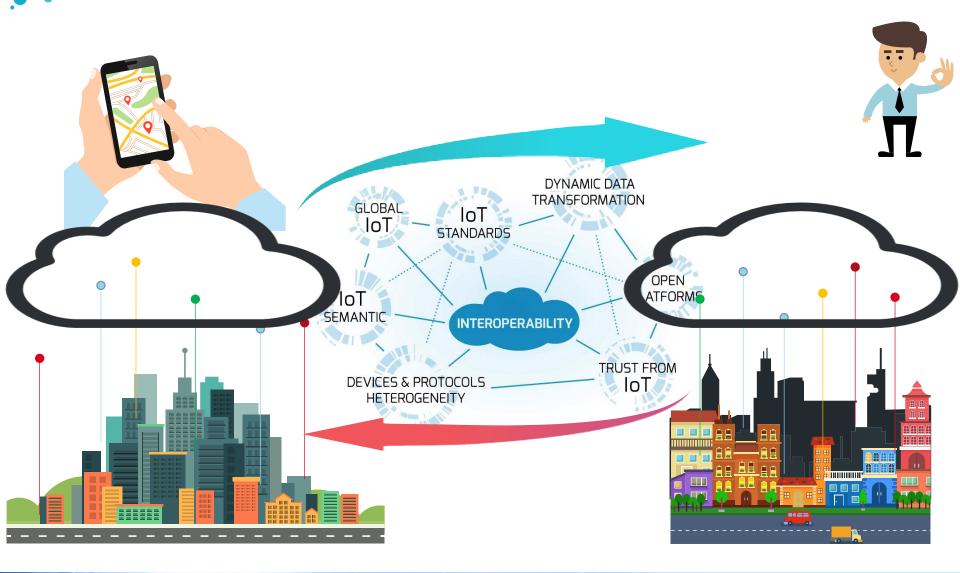








BUILDING GLOBAL IOT: GLOBAL MOBILITY









CHALLENGES & OBJECTIVES

- Security interoperability
- Privacy awareness
- Achieve use of the GIoTS

Openness & scalability

Application and service portability in complex scenarios

- **Smart objects and semantic** interoperability

Standards Interoperability & Interworking

- Replicate services across the test sites
- re-use enablers across eco-systems
- Roaming of applications and services
 - Include intelligence on the edge
 - Achieve semantic interoperability
 - Demonstrate added value
 - Multiple test sites & protocols
 - **Research integration methods**
 - **Cross-testbed scenarios**

Common IoT reference architecture

- ✓ Integration of IoT systems
- **Standard Inclusiveness**
- **Contribution to Standards**





WISE-IOT VISION

- Problem:
 - Fragmentation of IoT Technologies and Deployments
- Solution:
- Success Criterion:
 - App and device developers may work on one stack
- Trials:
 - Smart Skiing (CEA), Smart Resort (SDS)
 - Rich/Smart Parking (UC, KETI), Bus Management (KAIST, UC
 - Deagu Fitness Testbed
- Validation: cross-cutting global mobility scenarios
 - access to remote IoT data
 - travel of applications and devices to remote places









WISEIRT GLOBAL MOBILITY

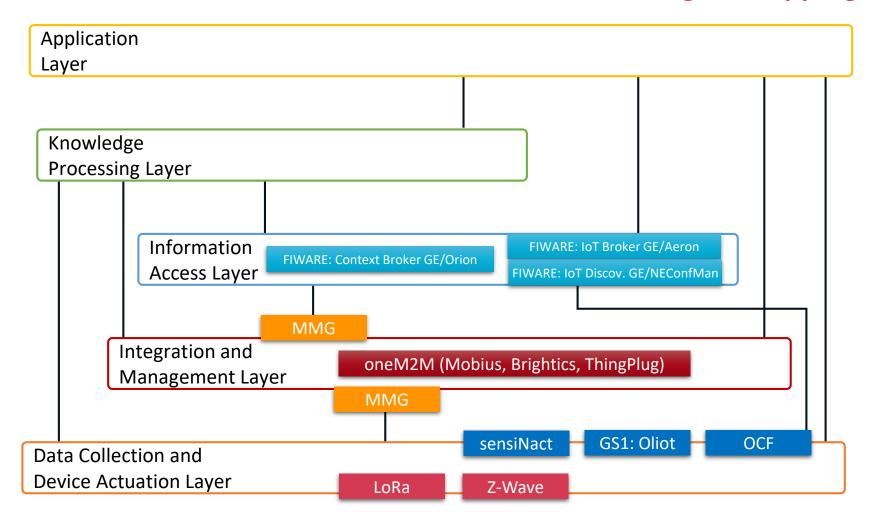






WISE INT WISE-IOT LAYERED VIEW

with Technologies Mapping







WISE INT WISE-IOT USE CASES

Smart City use cases:

- - 2 roaming applications
- > Bus Information System → Busan and Santander and Santander
 - ♦ 1 roaming application



- > Smart Skiing → Chamrousse and Alpensia
 - 1 roaming applications
- > Smart Resort Management → Alpensia (and Chamrousse and I are like the second state of the second s
 - 1 roaming application
- Fitness use case











WISE INT SMART PARKING APPLICATION: EU APPROACH

- Objective
 - Enhance user parking experience in the city by providing information ab out parking spots/areas and routes based on recommendations













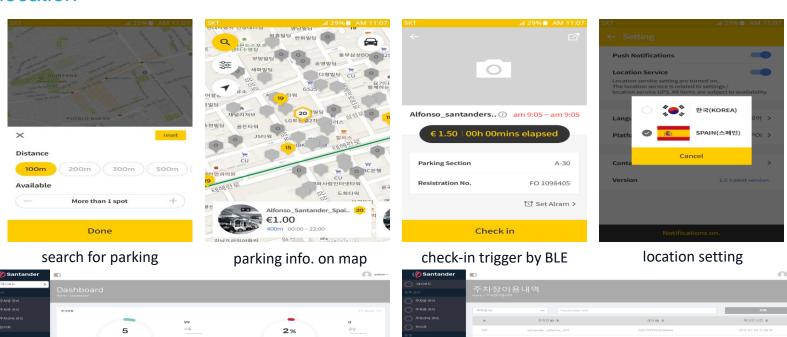




WISE INT SMART PARKING APPLICATION: KR APPROACH

Objective

 Enhance user & manager parking experience in the city by providing information/services related to parking spots/areas, and routes based on geolocation



manager page for overall status



status of parking lots





WISE INT BUS INFORMATION SYSTEM: KR&EU APPROACH



Objective

- Collection and presentation of real-time bus information to stakeholders
- Improving user experiences while using and managing bus and dealing with missing transparency and situation awareness





SMART SKIING: EU USE CASE

Objective

 Provision of IoT services to both skier and ski resort managers to enhance the experience of the user in the resort and improve the effectiveness of the actions taken by the resort managers















SMART RESORT MANAGEMENT - KR

Objective

 Operational information and controllability to the resort managers by providing visualization the location and status data of not only rescue teams, children/elder and disabled visitors, but also valuable belongings of visitors, vehicles and even equipment which belong to the resort









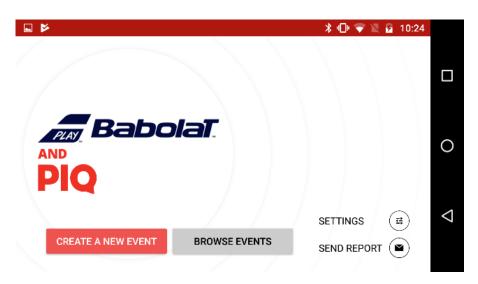


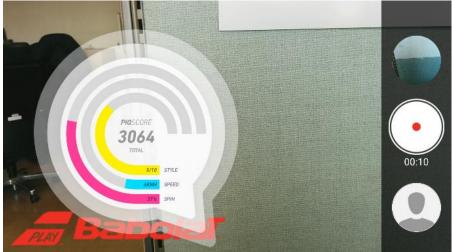




WISE INT FITNESS USE CASE

- Objectives:
 - Analysis on Daegu daily health care smart city testbed to assess the feasibility of using fitness related use cases in both EU and KR
 - Develop fitness related Wise-IoT devices & apps & services and introduce users in both EU and KR













- Demonstration of global IoT services in Korea and Europe
- Global IoT services through semantic data interoperability





www.wise-iot.eu #WiseIoT

감사합니다!

THANK YOU!

Worldwide Interoperability for Semantic IoT





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APPENDIX. ACHIEVEMENTS



WISE INT MEETINGS

- Plenary Face to face
 - 160627 KR Kick Off Pangyo
 - 160711 EU Kick Off Nice
 - 161010 Plenary F2F #1 Seoul
 - 170123 Plenary F2F #2 Grenoble
 - 170606 Plenary F2F #3 Geneva
 - 171013 Plenary F2F #4 Seoul, Alpensia
 - 180130 Plenary F2F #5 Santander
 - + Monthly conference calls
- Ad-hoc technical meetings & workshops
 - 160825 EU Smart City UC Meeting Santander
 - 160823-24 Smart skiing UC workshop Alpensia
 - 160920&21 WISE IOT Meeting minutes Skiing UC Workshop
 - 161013 Smart city workshop Seoul
 - 161016 Use case visit Alpensia
 - 161209 T2.4 Workshop Windisch/Zurich
 - + Weekly conference calls





WISE INT WEB SITE (WWW.WISE-IOT.EU)

Q





What is Wise-IoT?

Wordwide interobability for semantics

Wise-IoT is a collaboration project between Europe and

• Provide a world-wide interoperable Internet-of-Korea. For EU side, it is funded under the H2020 framework program for research of the European Commission. It aims at deepening the interoperability and interworking of IoT existing systems. Use cases driven, the project will use the experiences available in the consortium to build a comprehensive mediation framework that can be used between various IoT systems.

Wise-IoT also aims to build up federated and interoperable platforms ensuring end-to-end security and trust for reliable business environments with a multiplicity of IoT applications. Building synergies with national and international initiatives in both Europe and Korea, the project acts on the field of standardisation, fostering IoT development and interoperability.



Objectives?

The wise-IoT overall objectives are thus

- Things that utilizes a large variety of different IoT systems and combine them with contextualized information from various data sources.
- Prove that this system can deliver securely and dependable dynamic, real-time, and remote IoT services with automatic adaptation to available resources and data lakes at any place in the world.
- Help users to trust the GIoTS and effectively exploit it for international events like the Winter Olympics
- Strengthen the on-going international IoT standardisation based on outcomes from field pilots



Search

- > Digitising the Industry Internet of Things Connecting the Physical, Digital and Virtual Worlds
- > Exploitation of Social IoT for Recommendation Services

Latest events





WISE IoT란?

Wolrdwide interobability for semantics

'WISE IoT'란 유럽과 한국의 협력 프로젝트입니다.

EU 측은 유럽 위원회(European Commission)의 연구를 위 한 H2020 프레임 워크 프로그램을 통해 자금을 지원 받 고 있습니다. 'WISE IoT'는 IoT 기존 시스템의 상호 운용성 및 상호연동을 심화시키는 것을 목표로 하고 있으며, 유 스케이스를 기반으로 컨소시엄에서 많은 연구 경험들을 통해 다양한 IoT 시스템간에 사용할 수 있는 포괄적인 증 개 프레임워크를 구축할 것입니다.

또한 WISE IoT는 IoT 어플리케이션을 통해 신뢰할 수 있 는 비즈니스 환경에 대한 엔드 두 엔드 보안, 신뢰를 보장 하는 연합 및 상호 운용이 가능한 플랫폼을 구축하는 것 을 목표로 하고 있습니다.



WISE IoT의 목적:

WISE-IoT의 전반적인 목표

- 다양한 IoT 시스템을 활용하고 다양한 데이터들의 맥락적인 정보와 결합하여 전 세계적으로 상호 정 보교환이 가능한 IoT 서비스를 제공합니다.
- 이 시스템이 세계 곳곳의 사용가능한 리소스 및 데 이터 레이크(Data Lake)에 으토매틱 어댑테이션 (Automatic adaptation)을 통해 안전하고 신뢰할 수 있는 동적, 실시간 및 원격 loT 서비스를 제공할 수 있음을 증명합니다.
- 사용자가 GloTS를 신뢰하고 한국에서 개최되는 2018년 동계 올림픽과 같은 국제 행사에 효과적으 로 활용할 수 있도록 지원합니다.
- 필드 파일럿(Field Pilot)의 결과를 기반으로 IoT 국 제 표준화를 더 향상시킵니다.



Wise InT 홈페이지에 오신 것을 환영합

Latest Publications

- Standards-Based Worldwide Semantic Interoperability for IoT
- Digitising the Industry Internet of Things Connecting the Physical, Digital and Virtual Worlds
- Exploitation of Social IoT for Recommendation Services

Latest events

, February 2017

, February 2017







WISE INT DEMO AND INTEROPERABILITY EVENTS

- 2016 and 2017 IoT Week Korea
 - SJU, KETI, EGM, NEC, UC, FHNW, KAIST
- 2016 and 2017 ETSI M2M showcase events
 - SJU, EGM, KETI, NEC, UC, FHNW, KAIST, IMT-TSP
- oneM2M Interop 3
 - 29 Nov.- 2 Dec. 2016, Kobe, Japan
- oneM2M Interop 4
 - 16-19 May 2017, Taipei, Taiwan
- oneM2M Interop 5
 - 04-08 Dec 2017, Sungnam, Korea



< The 3rd oneM2M Interop Event >







WISEINT EVENT PHOTOS



<Wise-IoT Kick off plenary meeting - Nice>



<Wise-IoT plenary meeting - Seoul>



<IoT Week Korea 2016 >



<Joint Workshop in IETF - Managing Networks of Things workshop>











<2017 IoT Week EU - Geneva, Switzerland>







<Wise-IoT KR Review - Seoul>





<Wise-IoT ER Review – Belgium>

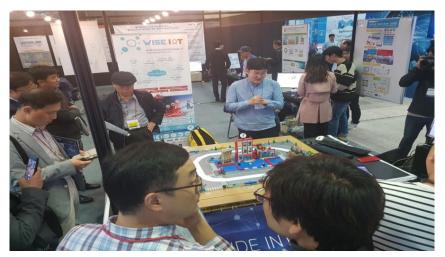


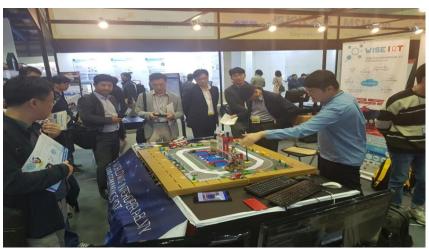
<Wise-IoT Living Laboratory – Daegu, South Korea>











<2017 IoT Week KR- Seoul, South Korea>





<2017 ETSI M2M showcase - Nice, France>







WISE INT EVENT PHOTOS





<Wise-IoT Plenary Meeting, Alpensia, South Korea>





<Wise-IoT Plenary Meeting, Santander, Spain>



