



symbloTe

Symbiosis of smart objects across IoT environments

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Overview

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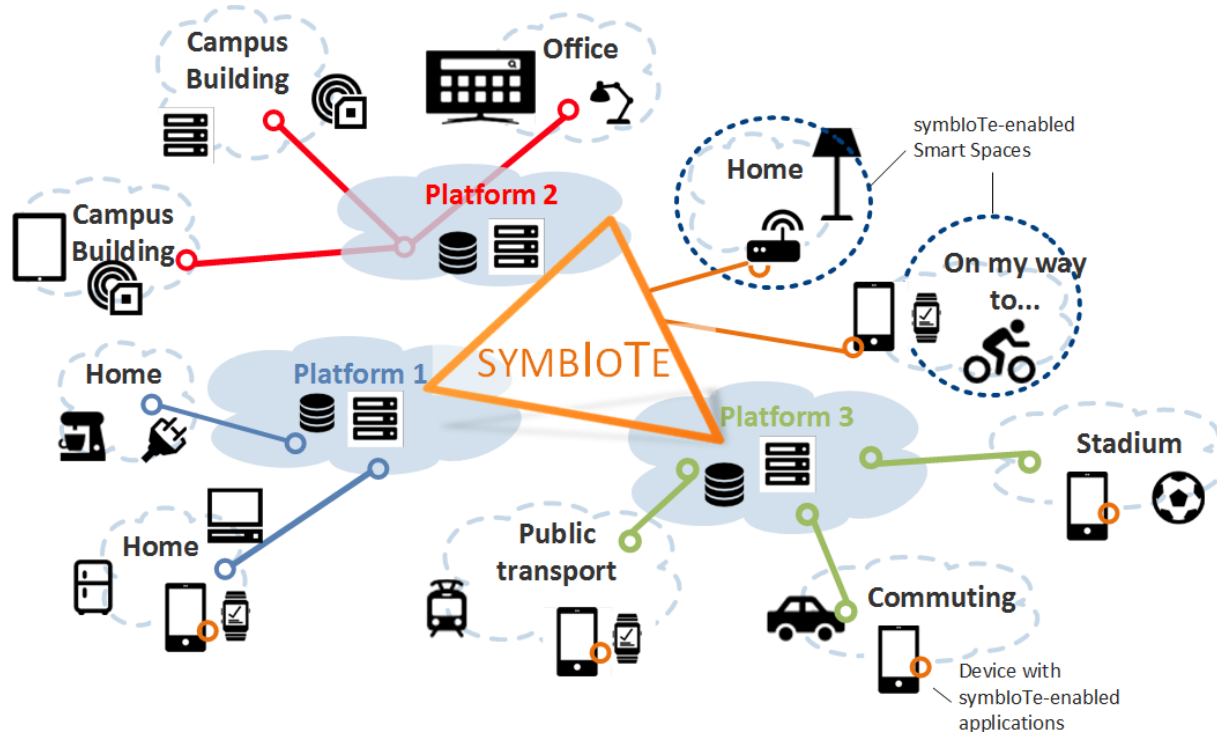


symbloTe in a nutshell

- Motivation: plethora of vertical, isolated IoT platforms
 - high cost barrier to enter IoT markets
- symbloTe: an interoperability framework across existing and future IoT platforms
 - provides unified and trusted discovery and secure access to physical and virtualized sensing/actuating IoT resources for rapid cross-platform application development;
 - offers flexible integration of smart space infrastructure within symbloTe-enabled environments for the benefit of SMEs
 - allows stakeholders to overcome market barriers and assure optimal collaboration and cooperation on top of the available often fallow resources



Vision



- Abstraction layer for a “unified view” on various platforms and their resources → transparent to application designers and developers.
- IoT platform federations → secure interoperation, collaboration and sharing of resources for the mutual benefit
- Facilitate blending of next generation smart (moving) objects with surrounding environments: “smart object roaming”



Objectives

- Objectives:
 - Interoperability of IoT platforms for rapid cross-platform application development
 - Semantics; virtual environments; domain-specific enablers; federation
 - Hierarchical, adaptive and dynamic IoT environments
 - Registration, discovery and interoperability; wireless network virtualization; middleware
 - Security, access scopes and identity management
 - Monitoring; anomaly detection; access scopes; heterogeneous comm. techniques
 - Realistic cross-platform deployments
 - Use cases validated by end users; integrated releases; application development
 - Open source and commercialization
 - symbloTe APIs and middleware components will be published as open source



Use Cases

- Smart Residence
 - smart home/office, local cloud and dynamic service composition under a unified middleware platform across any available devices
- EduCampus
 - extend the well-accepted eduroam initiative to the field of IoT; using the services and infrastructure at a visiting university in a seamless fashion
- Smart Stadium
 - the beacon cloud: a centralized and effective beacon management by infrastructure providers, retrieving information from beacons, e.g., identification, location, battery status, expected time for replacement.
- Smart Mobility and Ecological Urban Routing
 - enrich city-wide services with crowd-sensed air quality monitoring via wearable sensors and mobile devices → collect and share air quality data while in motion
- Smart Yachting
 - automate the information processes between a boat and the mainland, to allow users on a boat to identify automatically the territorial subjects to address the needs



Stakeholders & Benefits

- Innovative **business models**; incrementally deployable
- **Application developers** are able to use physical resources across platforms in a uniform way
- **IoT platform providers** can increase the number of users through multitude on innovative applications being built on top.
- **Infrastructure providers** gain competitive advantage due to dynamically configurable symbloTe-enable smart spaces.
- **SMEs** are symbloTe's primary target group!



Open Calls

Call Type	Topic/Thematic area
1 st Open Call	Development of Level 1 symbloTe compliant IoT platforms (Application Domain)
	Development of Level 2 symbloTe compliant IoT platforms (Cloud Domain)
2 nd Open Call	Development of Level 3-4 symbloTe compliant IoT platforms (Smart Space and Device Domains)
	Development of applications that benefit from the symbloTe compliant platforms
	Deployment of symbloTe middleware in real environment and conduction of small-scale trials
Contest	Offline 'hackathon'-style challenge on specific functionality for Level 4 symbloTe compliant platforms (Device Domain)



The symbloTe Consortium (I)





The symbloTe Consortium (II)

Smart Residence / Smart Yachting

NEXTWORKS
ENGINEERING FORWARD



AIT
AUSTRIAN INSTITUTE OF TECHNOLOGY

sensing & control
Simply Seamless



NAVIGO

Smart Mobility and Ecological Routing

ubiwhere
SUITING THE FUTURE



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ENGINEERING
AND COMPUTING

EduCampus

Fraunhofer
IOSB

symbloTe

Smart Stadium

Atos



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