7th EU-Japan Symposium on ICT Research and Innovation

Culturally-Aware Robots and Environmental Sensor Systems for Elderly Support

Antonio Sgorbissa, CARESSES EC Coordinator, University of Genova

Nak Young Chong, CARESSES Japan Coordinator, JAIST

Wien, 3rd November 2018

MIC

Ministry of Internal Affairs and Communications

UNIVERSITÀ DEGLI STUDI DI GENOVA

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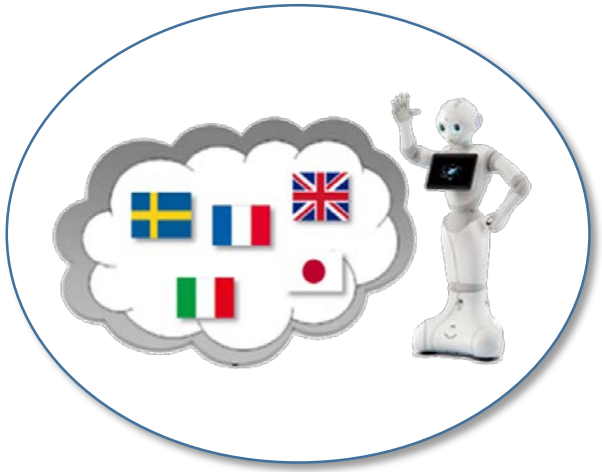
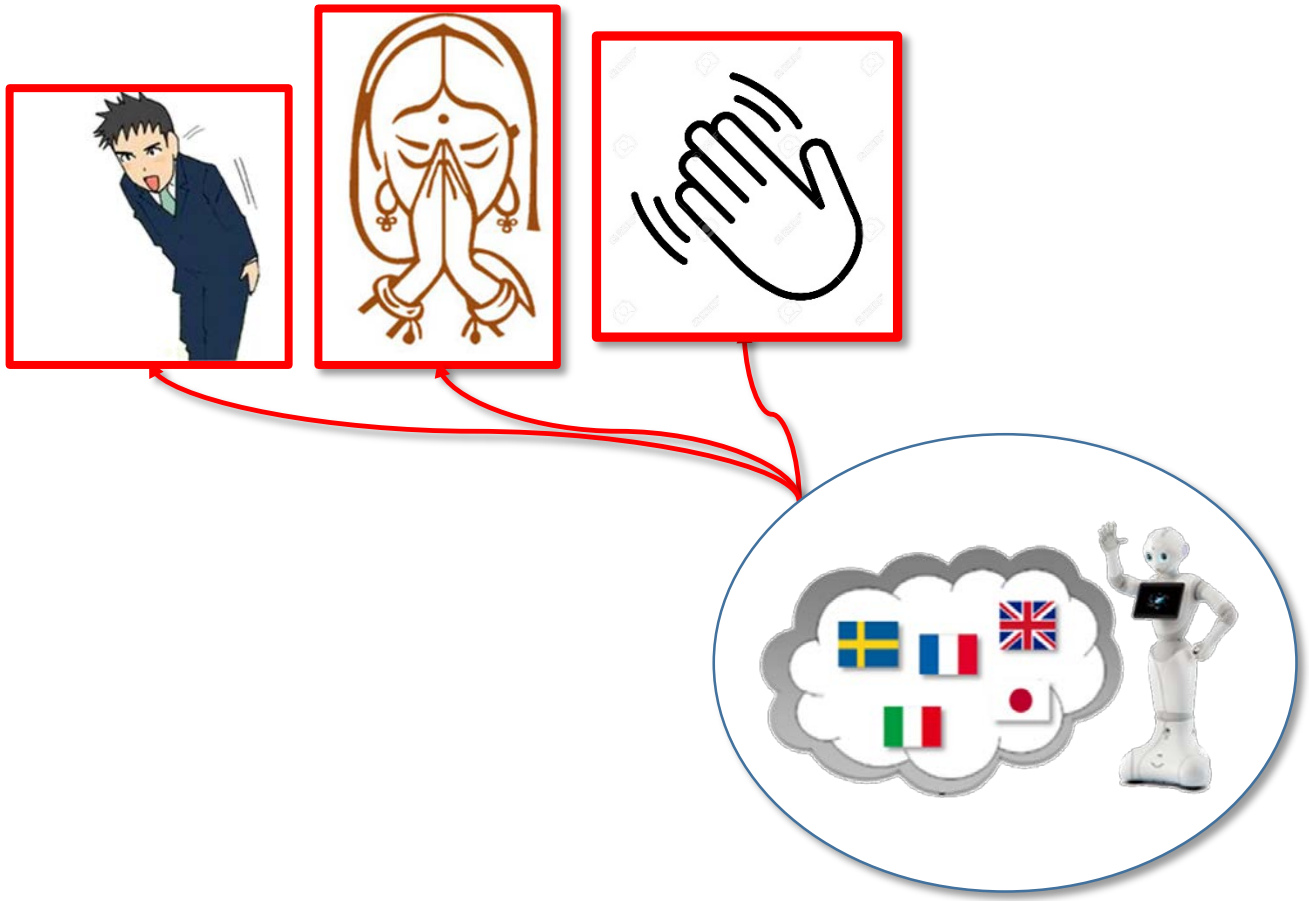


Concept



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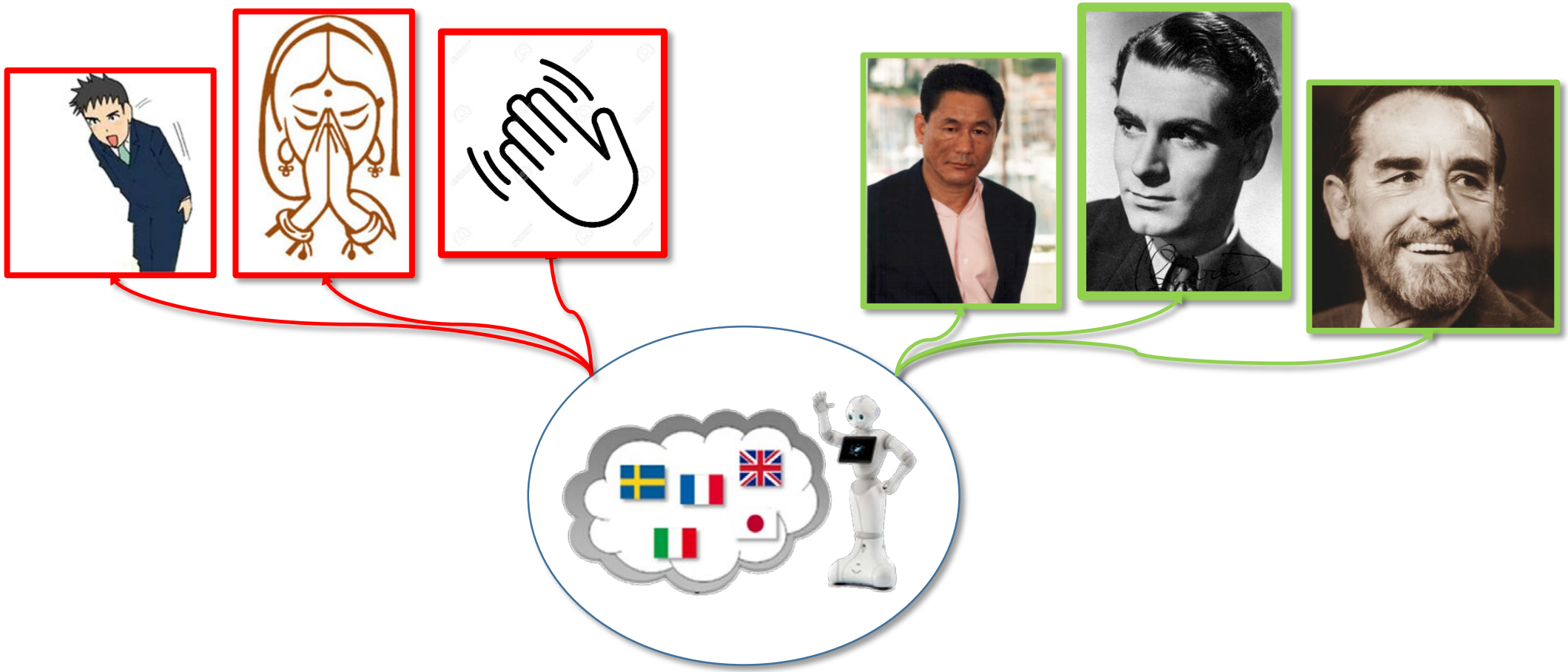

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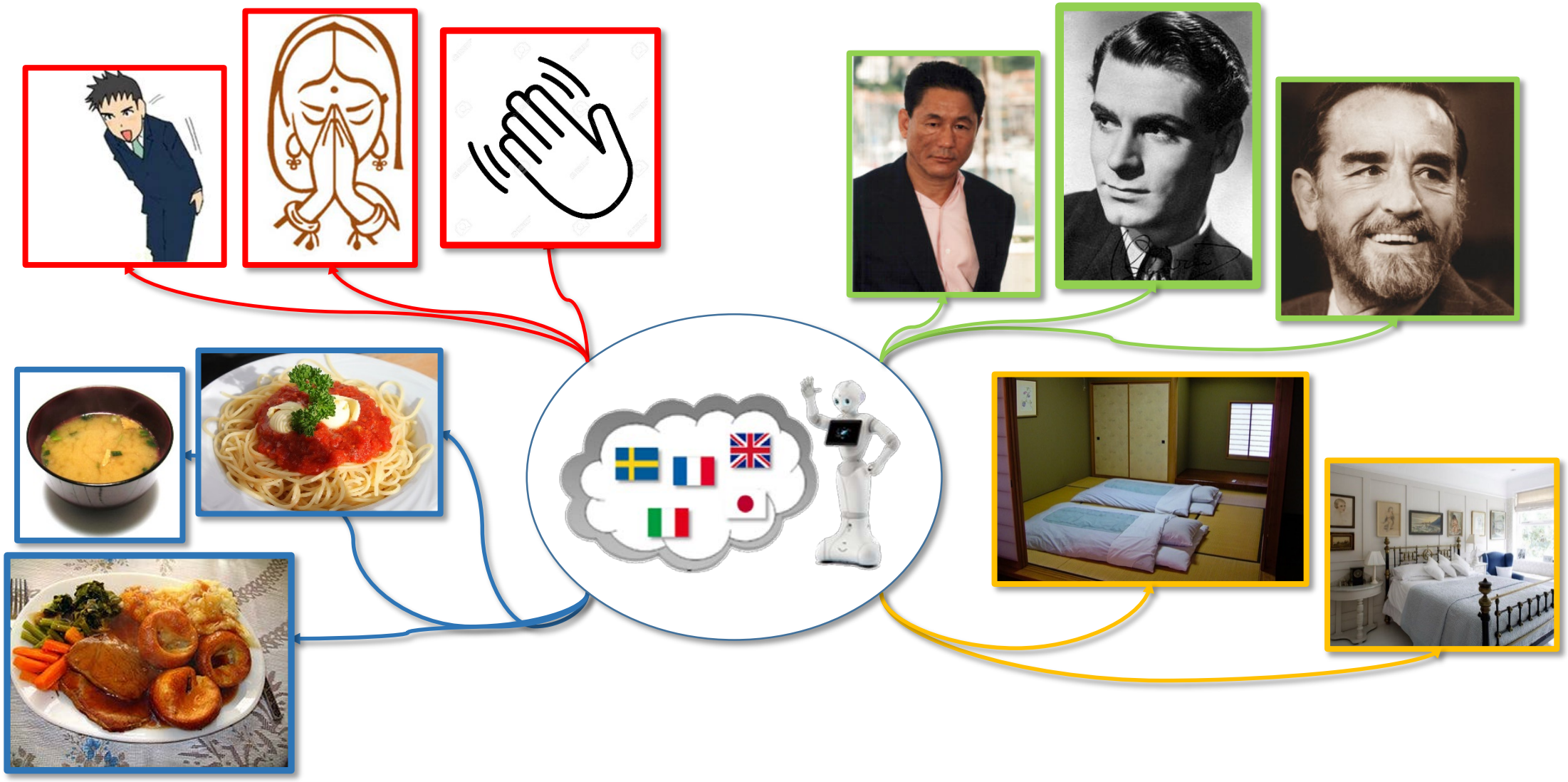

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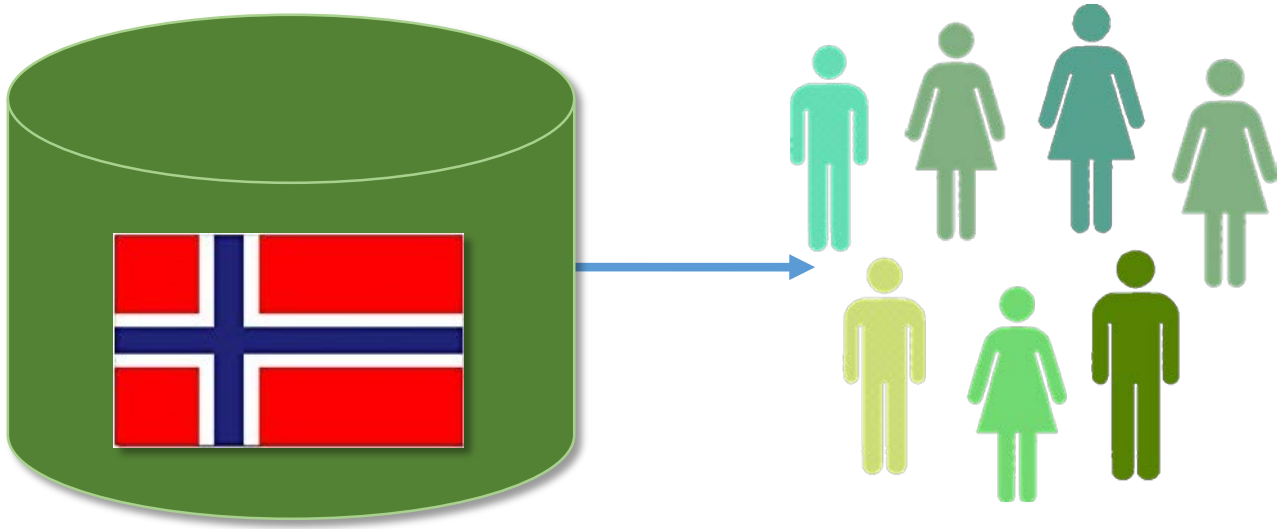

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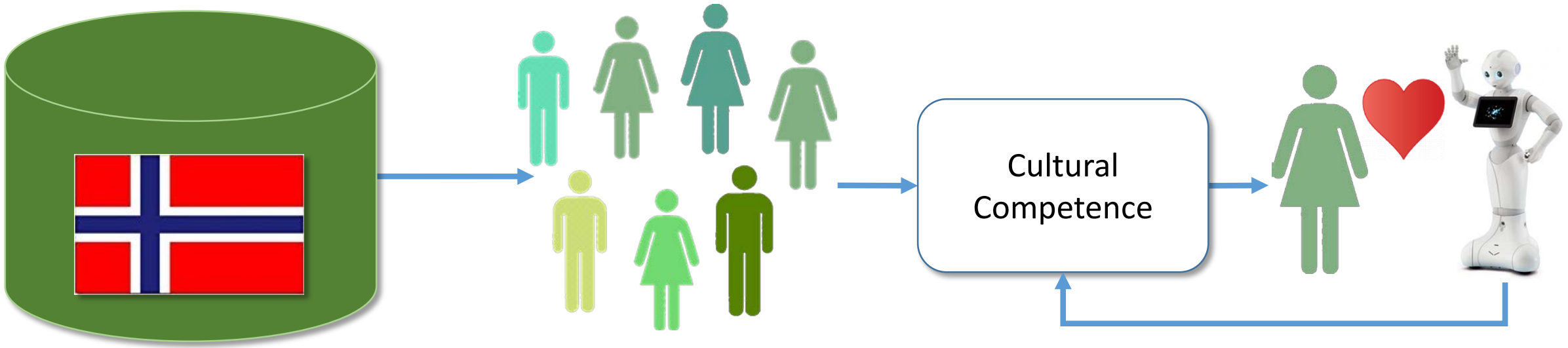

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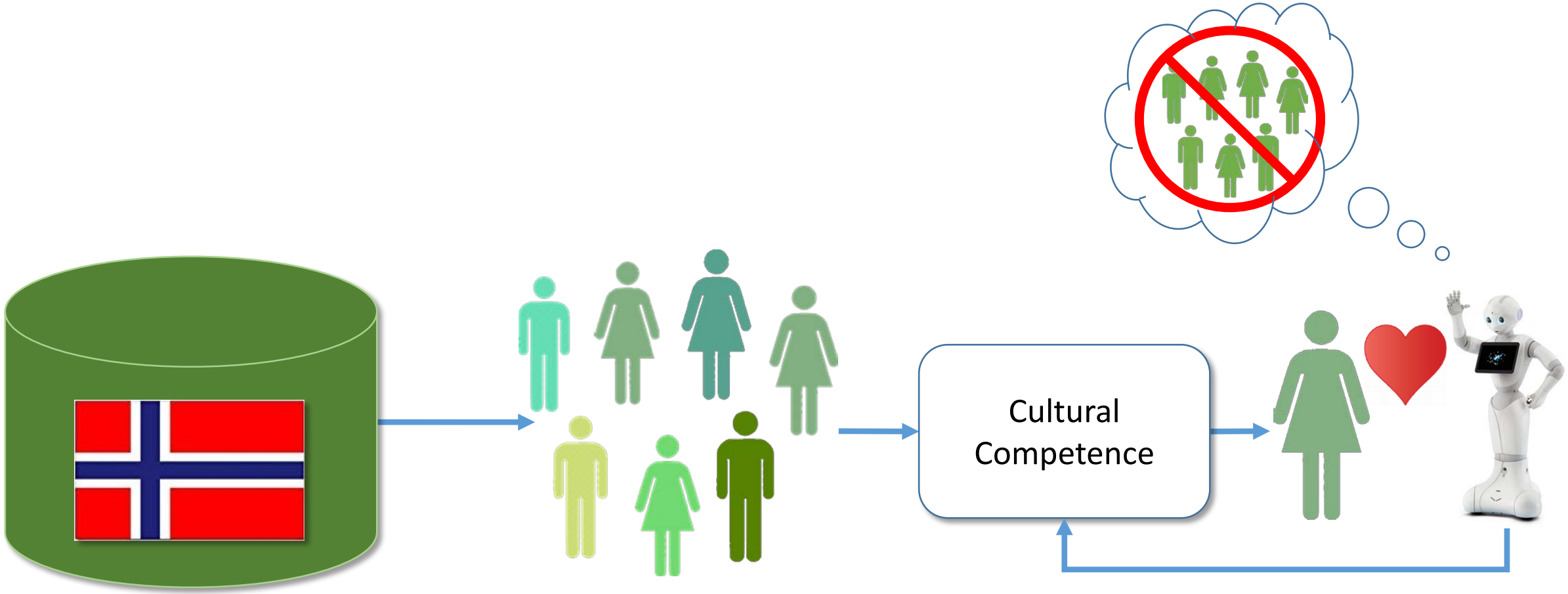

Concept

Transcultural Robotic Nursing

Middlesex University London

名古屋大学 NAGOYA UNIVERSITY

Methodology

Transcultural Robotic Nursing

Middlesex University London

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Cultural Knowledge Representation

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Culturally sensitive planning and execution

ÖREBRO UNIVERSITET

Culture-Aware Human-Robot Interaction

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中部大学

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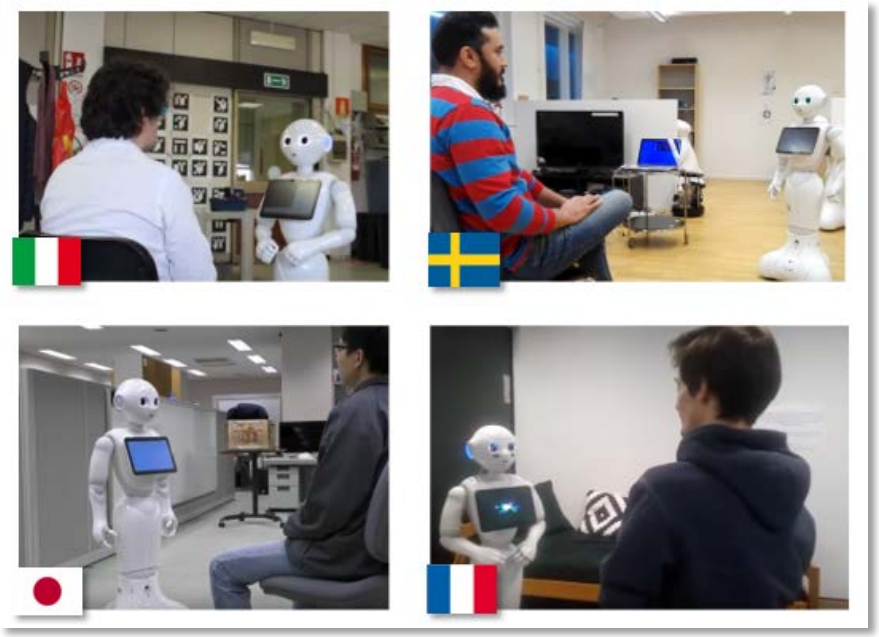
System Integration

SoftBank Robotics



Methodology

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End-User Evaluation

University of Bedfordshire

Methodology

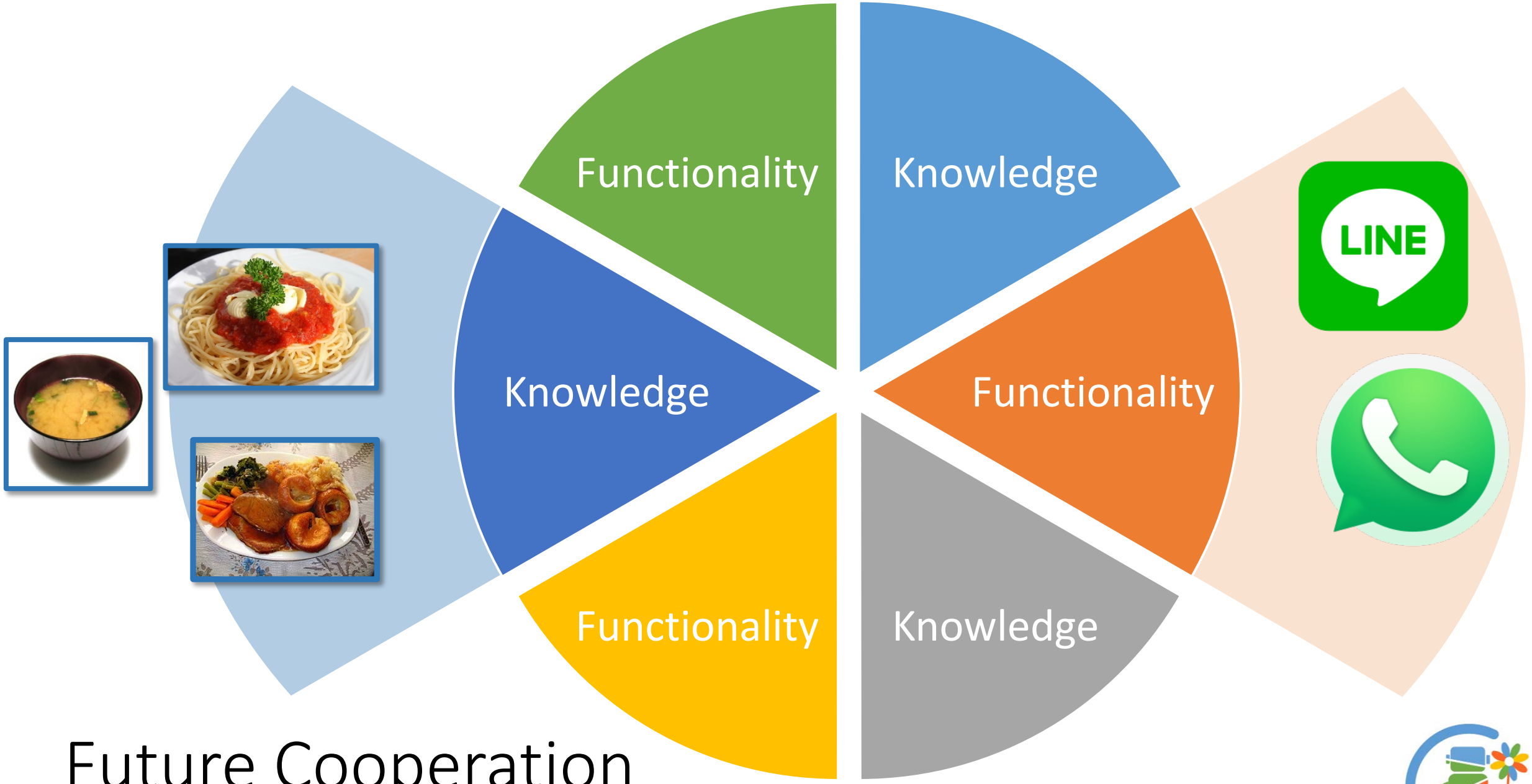
Methodology

European Commission

Community Research and Development Information Service

opean Commission > CORDIS > News and Events > Project of the Month: A world first as EU-funded project robot gives evidence on AI in a parliamentary hearin

Project of the Month: A world first as EU-funded project robot gives evidence on AI in a parliamentary hearing



Future Cooperation

Fully autonomous, not scripted behaviour

Work in progress -26/11/2018

EU Consortium

CARESSES (uAAL)

Cultural background information

uAAL-ECHONET interface

iHouse (ECHONET)

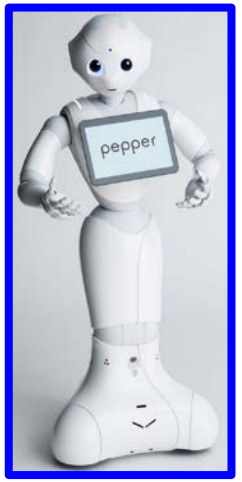
Smart ICT Environment

Culturally competent services

CARESSES Robot

User

Individual information



Culture-Aware
Verbal/ Nonverbal

Human-Robot Interaction

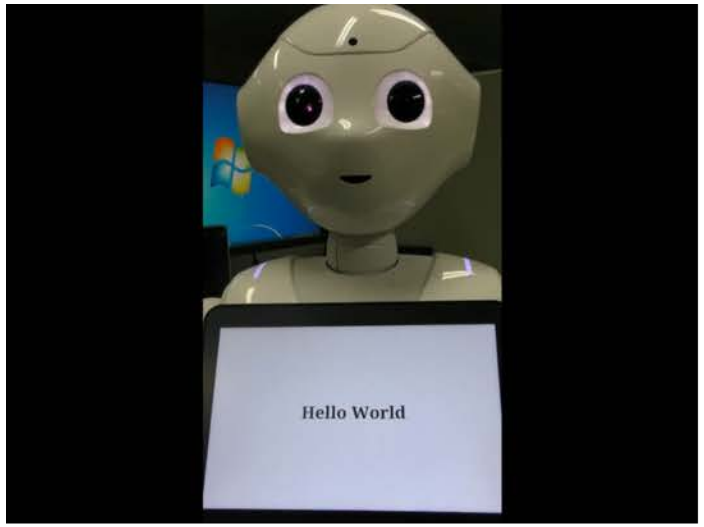
ADL data logs

Personality traits

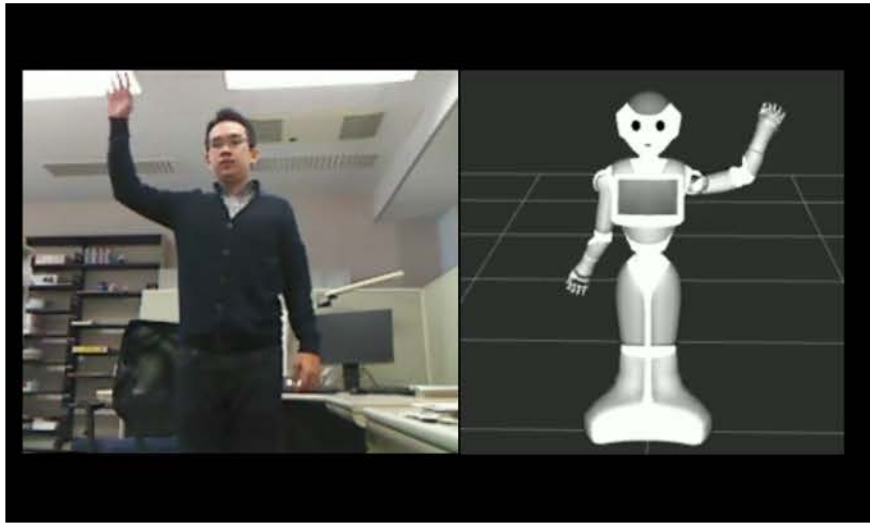
Culturally competent services

Human emotion/intention estimation

CAHRIM

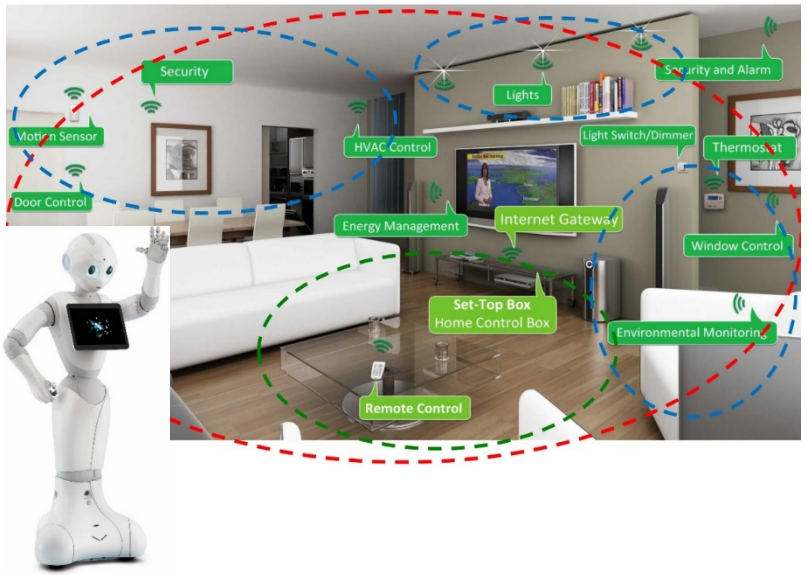


- Bridging the social intelligence gap between people and robots
- Understadning verbal and nonverbal communication

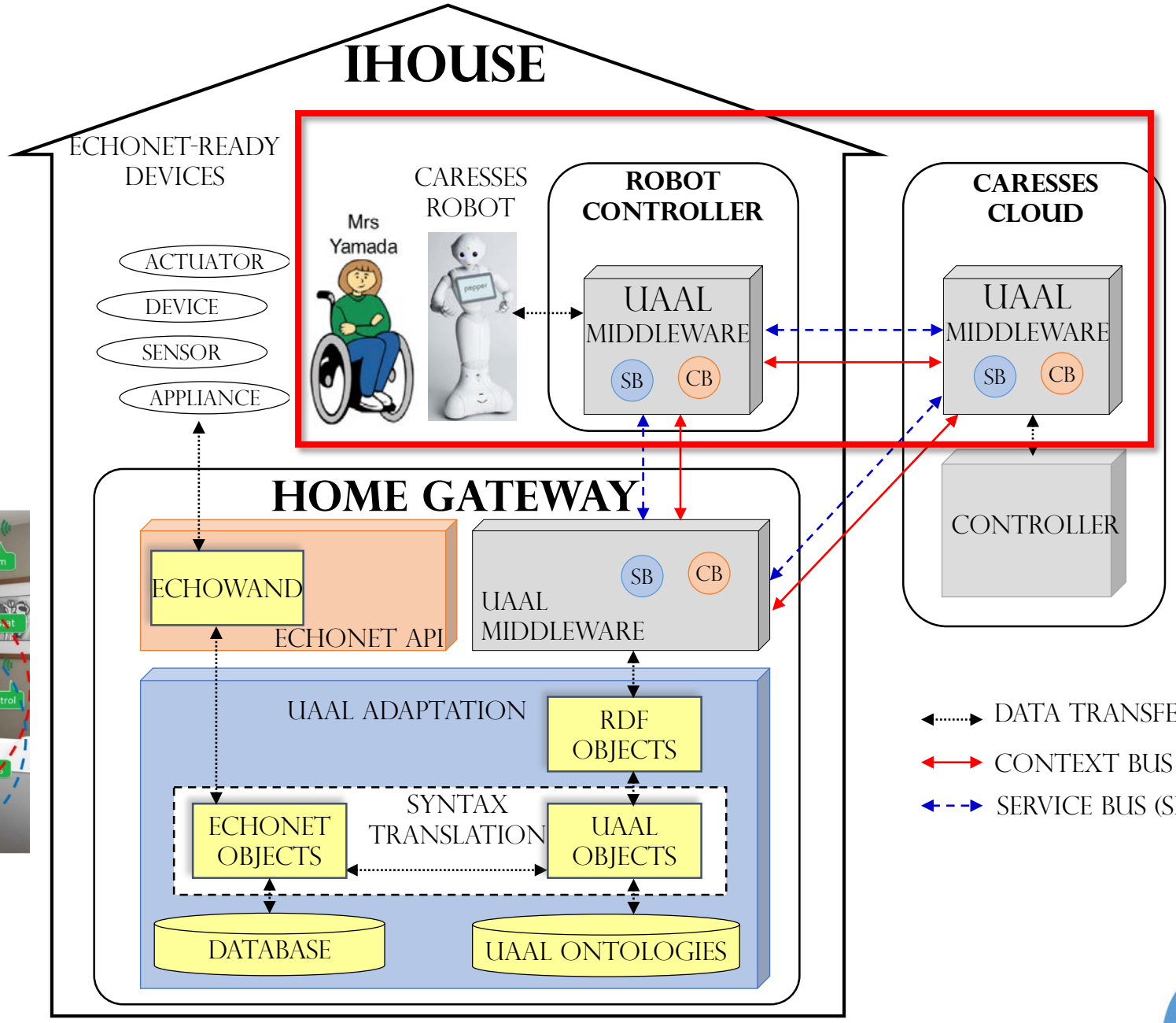


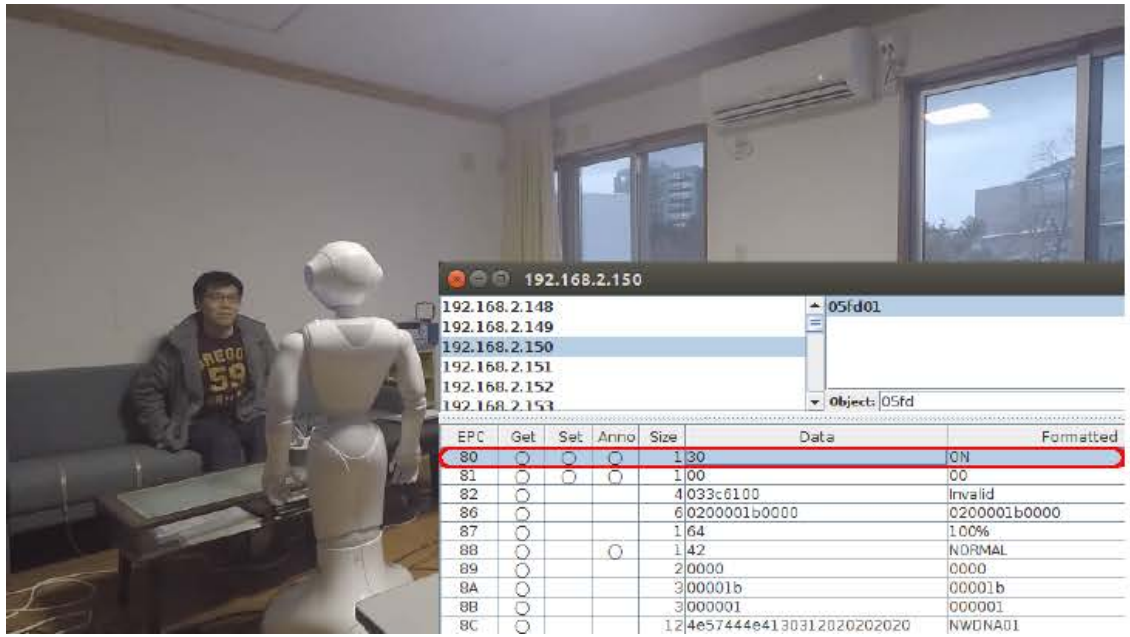
Social Signal Processing

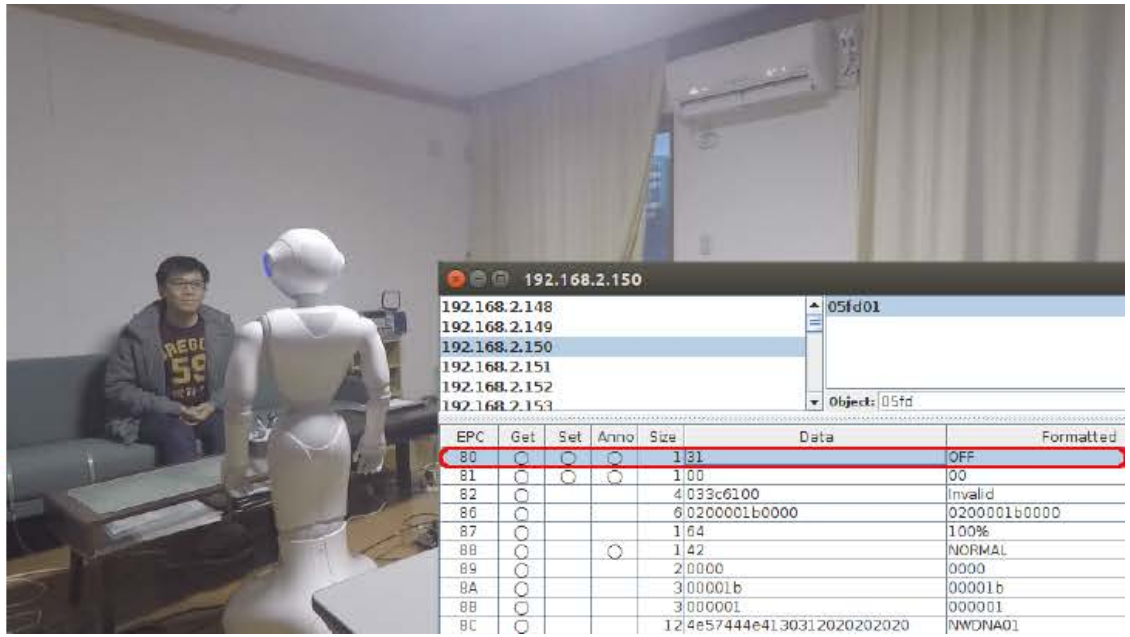
Ms. Yamada Pre-lunch Routine


Security
Motion Sensor
Door Control
HVAC Control
Lights
Light Switch/Dimmer
Thermostat
Energy Management
Internet Gateway
Window Control
Set-Top Box
Home Control Box
Environmental Monitoring
Remote Control

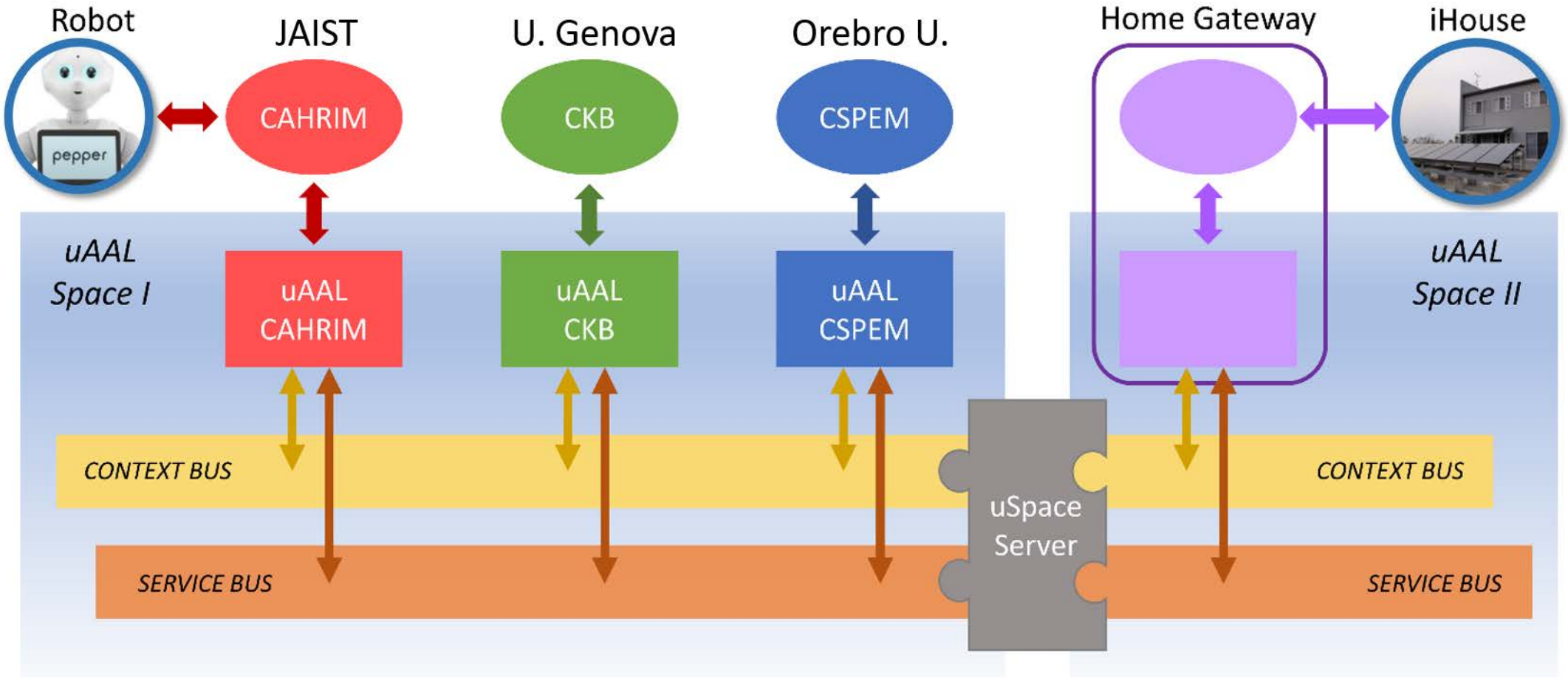
Smart House


IHOUSE
ECHONET-READY DEVICES
ACTUATOR
DEVICE
SENSOR
APPLIANCE
CARESSES ROBOT
Mrs Yamada
ROBOT CONTROLLER
UAAL MIDDLEWARE
SB
CB
CARESSES CLOUD
UAAL MIDDLEWARE
SB
CB
CONTROLLER
HOME GATEWAY
ECHOWAND
ECHONET API
UAAL MIDDLEWARE
SB
CB
UAAL ADAPTATION
RDF OBJECTS
ECHONET OBJECTS
SYNTAX TRANSLATION
UAAL OBJECTS
DATABASE
UAAL ONTOLOGIES
DATA TRANSFERRING
CONTEXT BUS (CB)
SERVICE BUS (SB)

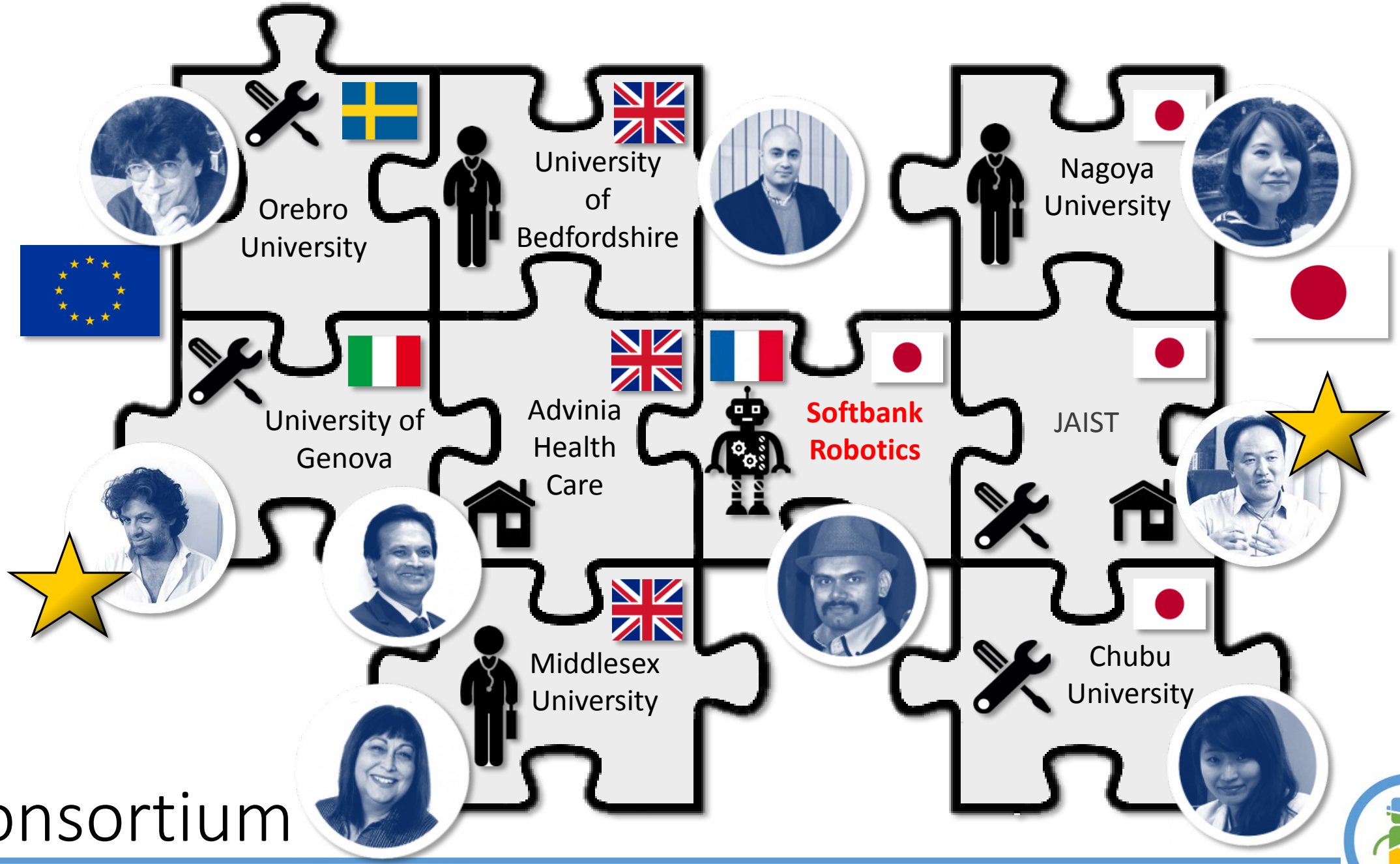




i-House Real-Time Monitoring and Control



System Integration


Orebro University
University of Bedfordshire
Nagoya University
University of Genova
Advinia Health Care
Softbank Robotics
JAIST
Middlesex University
Chubu University

Consortium