

Contents-oriented Dynamic Service Composition Framework for Networked Cognitive Robots

Woo Young Kwon¹⁾, Gi Hyun Lim¹⁾, Il Hong Suh¹⁾, Kyoung Jin Kim²⁾, Klas Nilsson³⁾

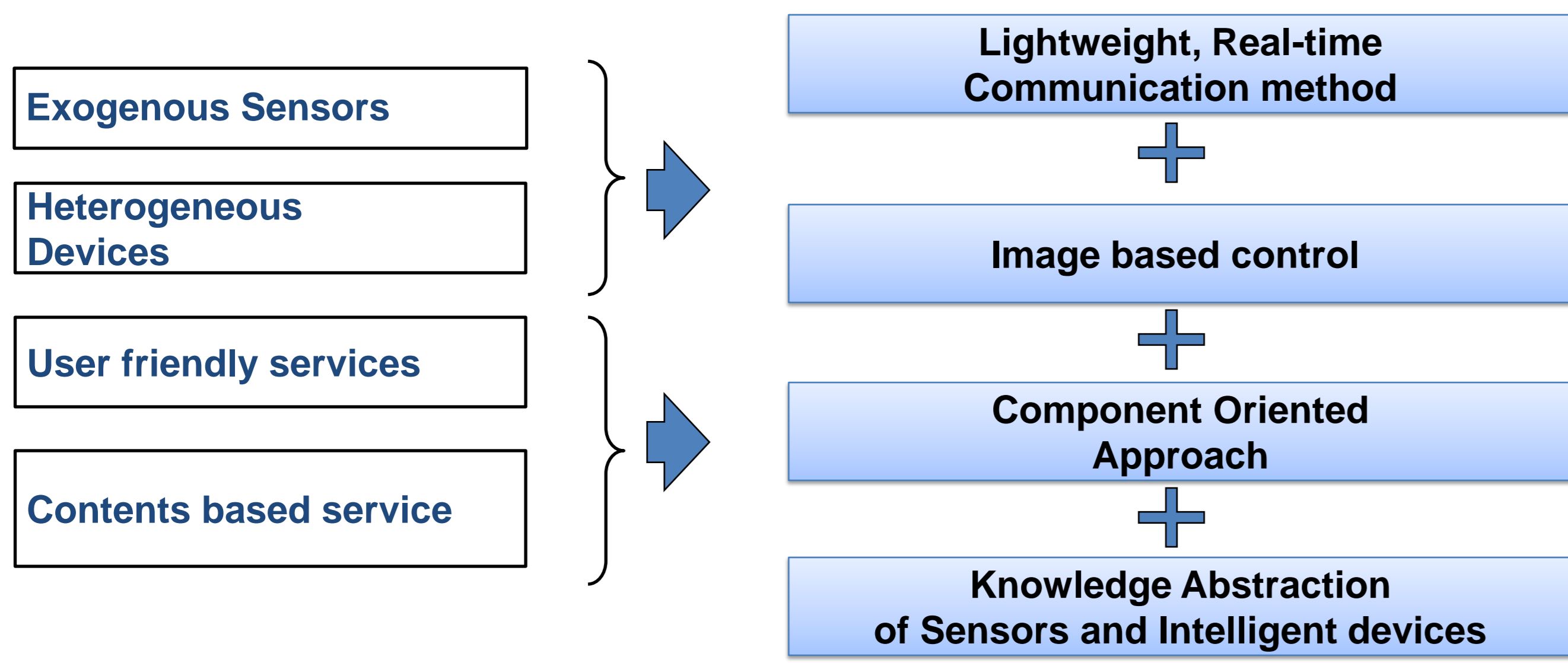
¹⁾ Department of Computer & Communication Engineering Hanyang University, Korea ²⁾ Robomation Co., Korea

All correspondence should be addressed to I. H. Suh (ihshuh@hanyang.ac.kr)

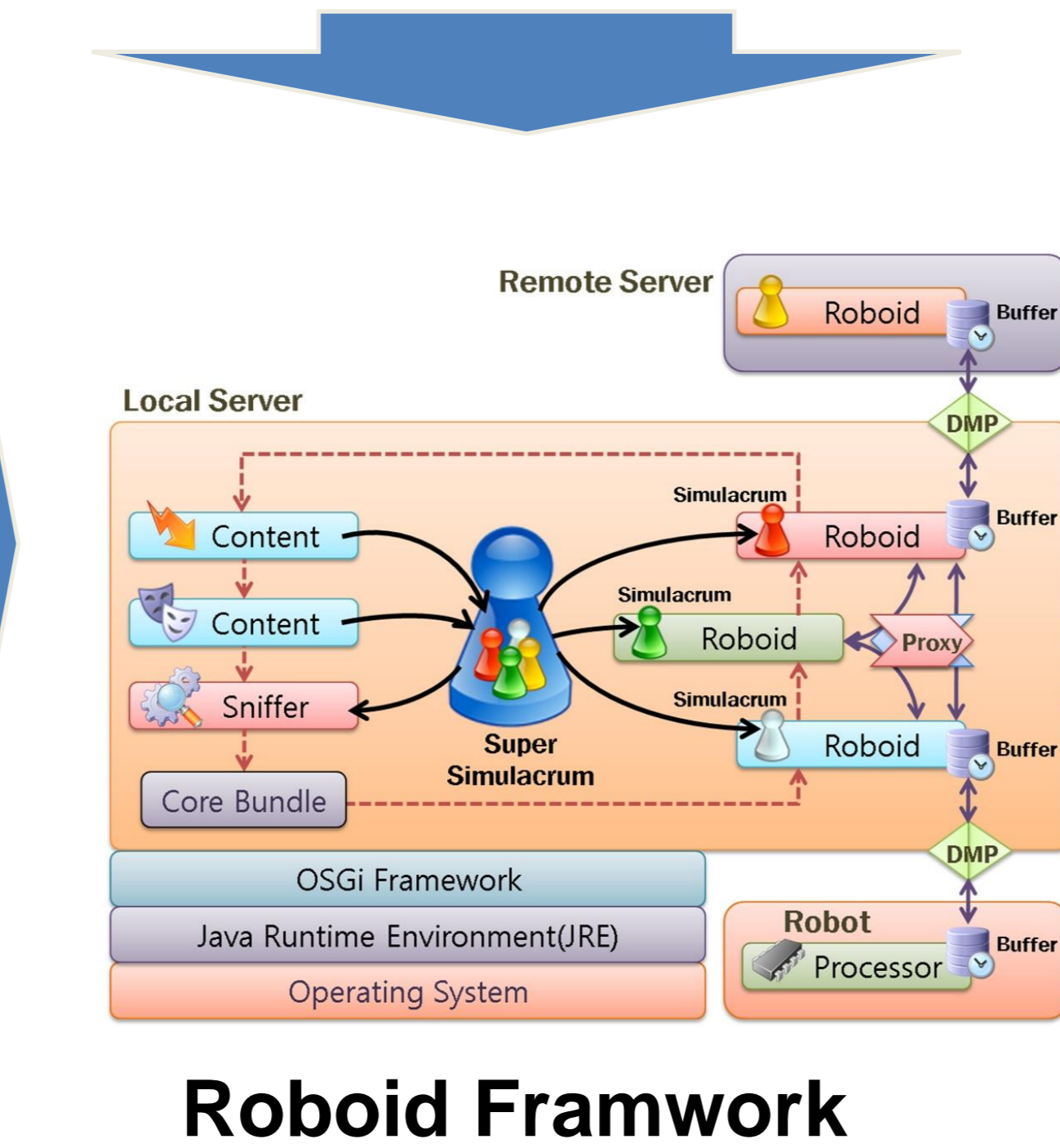
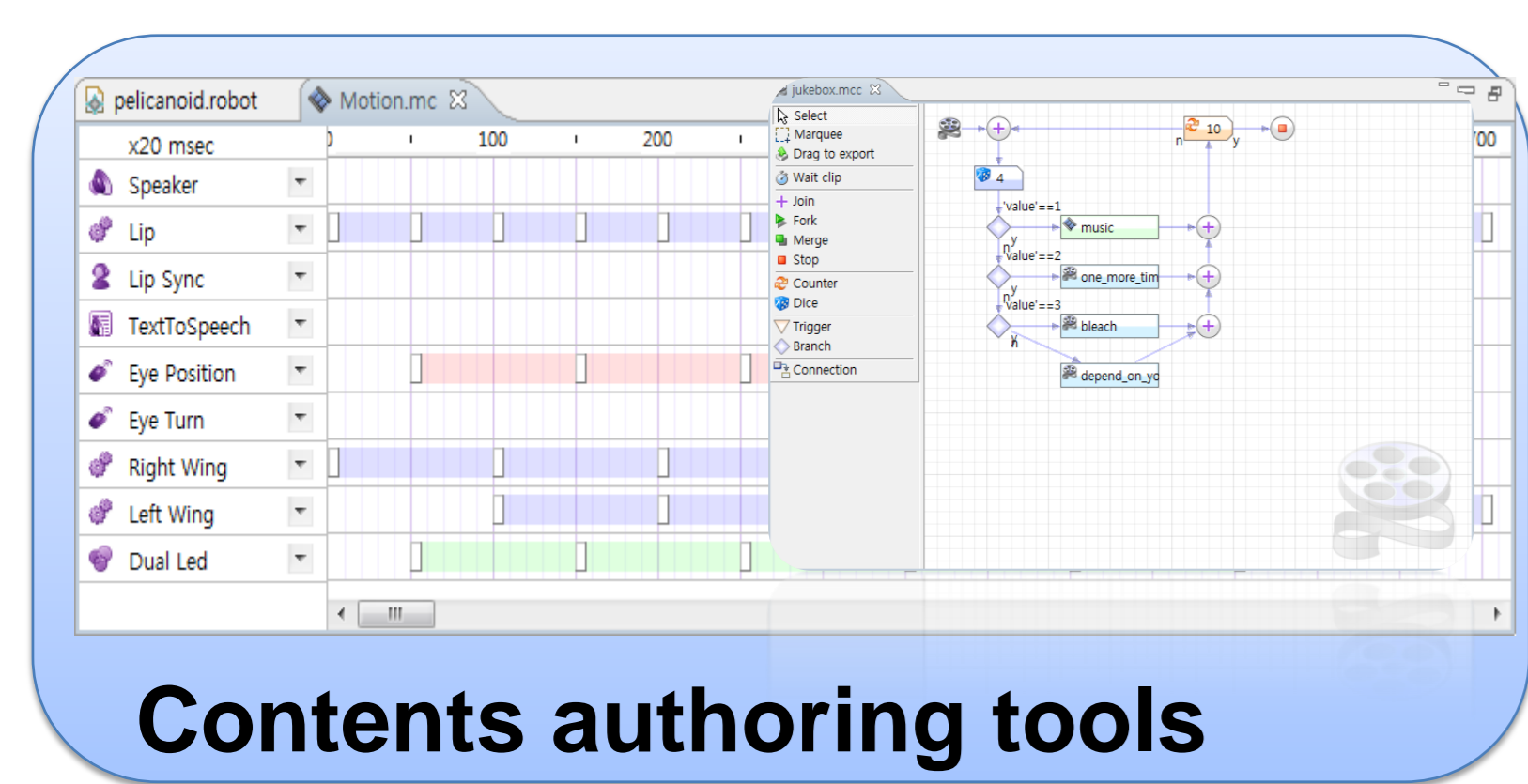
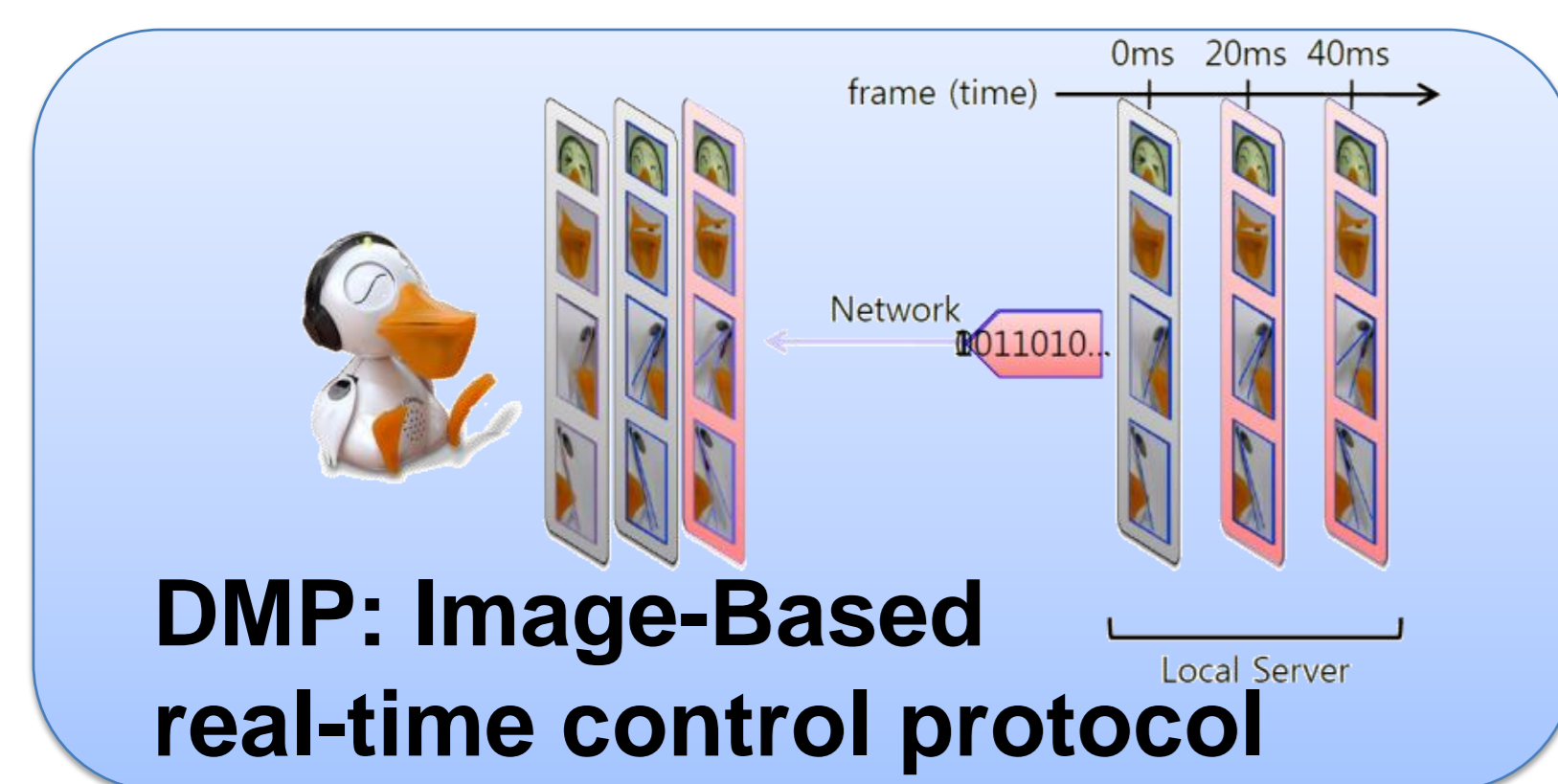
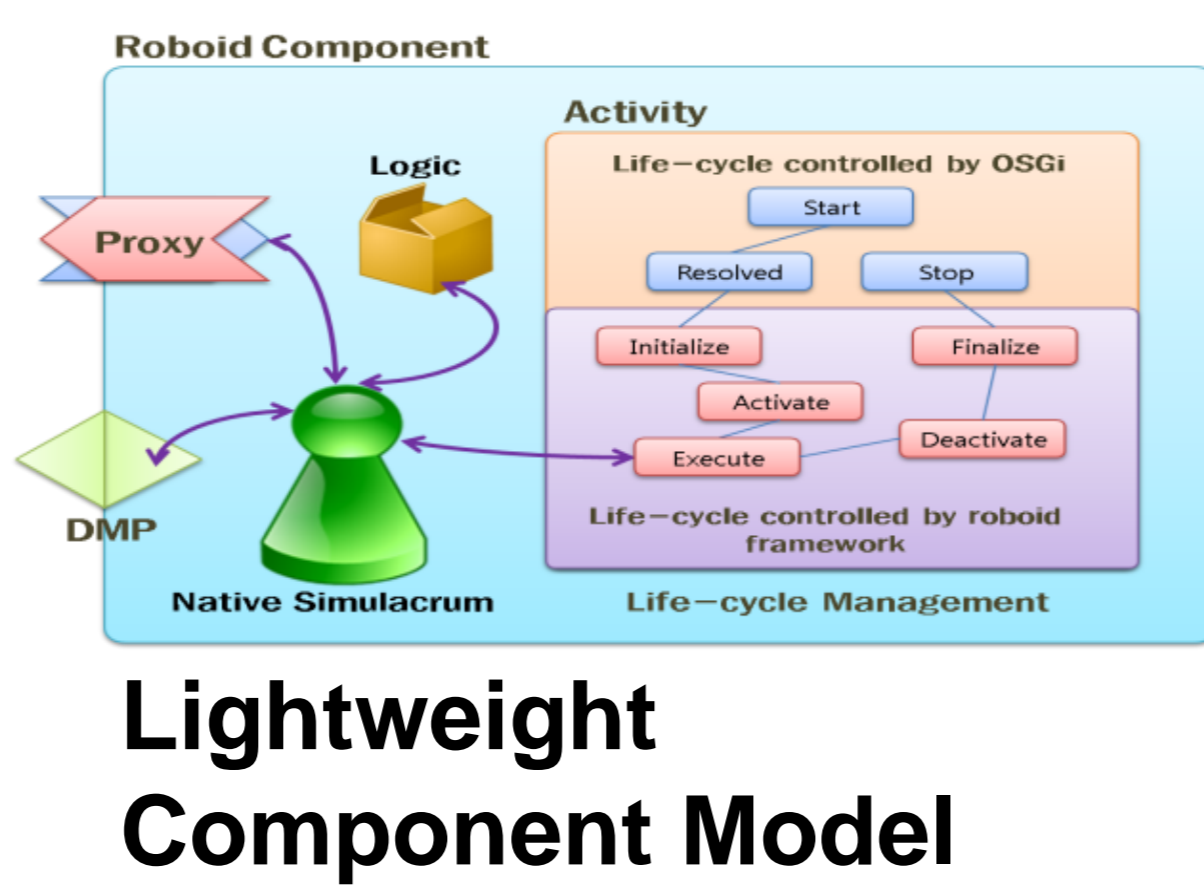
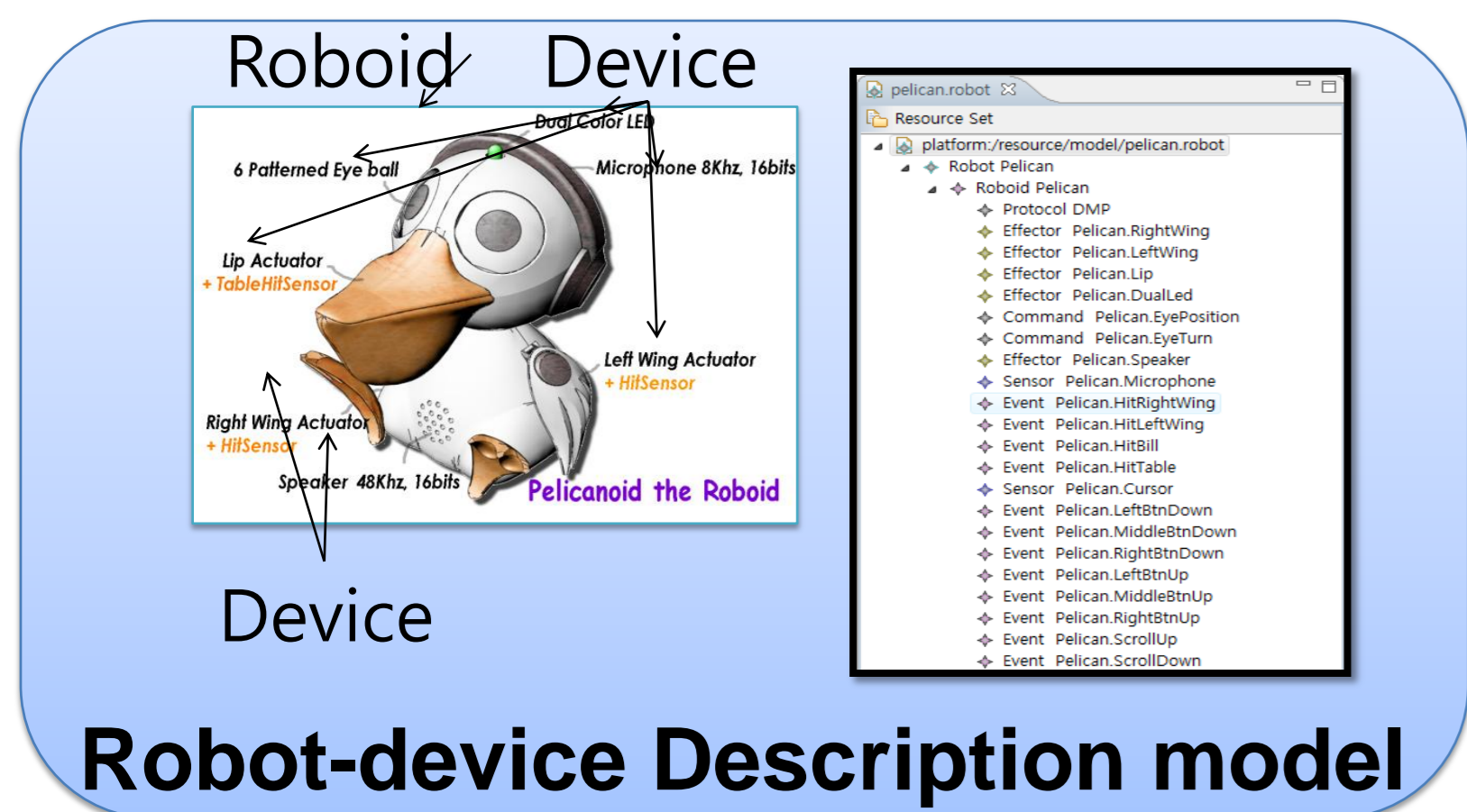
³⁾ Department of Computer Science, Lund University, Sweden

Introduction & objective

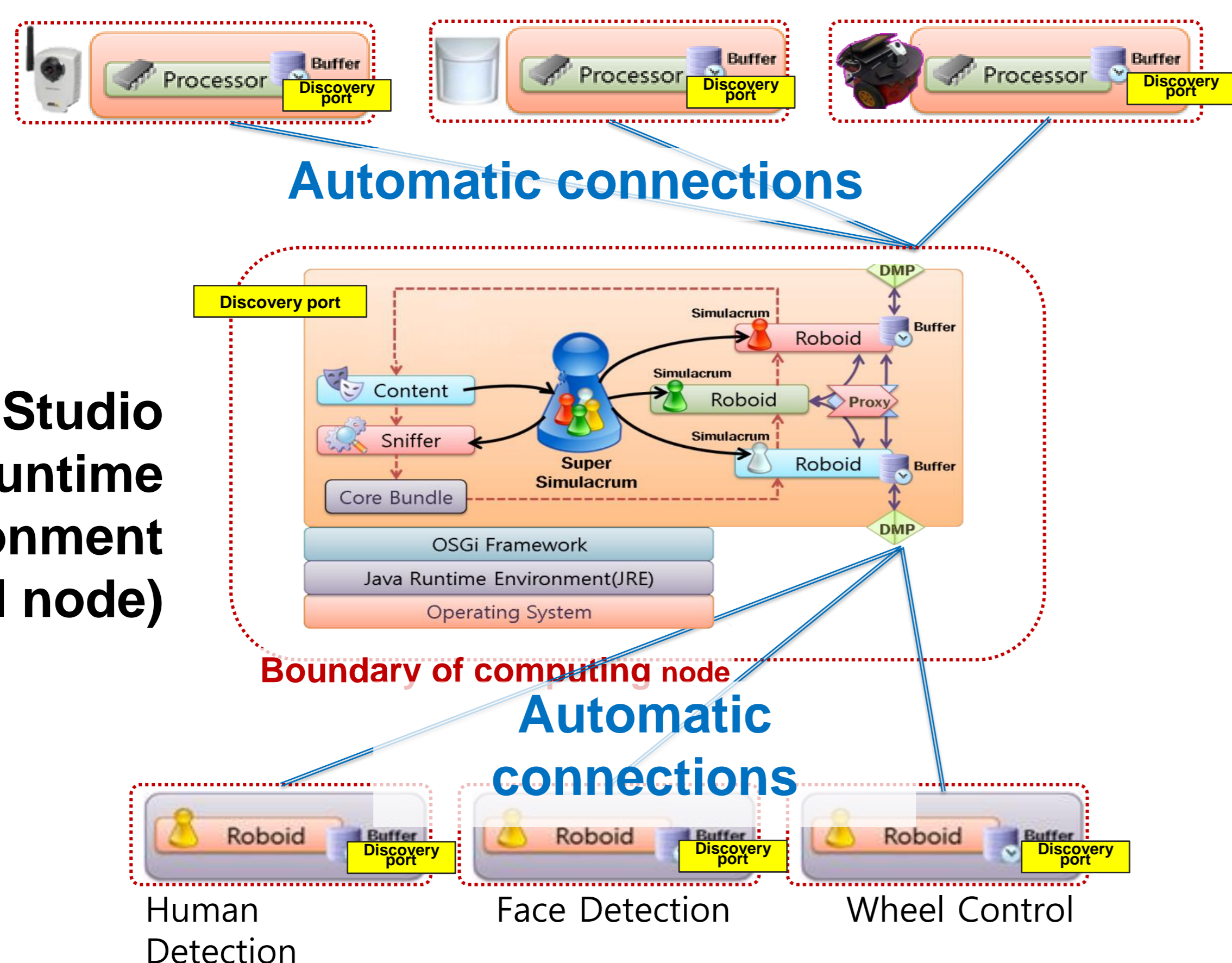
- Users need highly intelligent service robot at low cost
 - intelligence can be realized by using many of perception and actuation devices.
- Robot can not be equipped with all sensors for intelligence because of cost of sensors and spacing problems



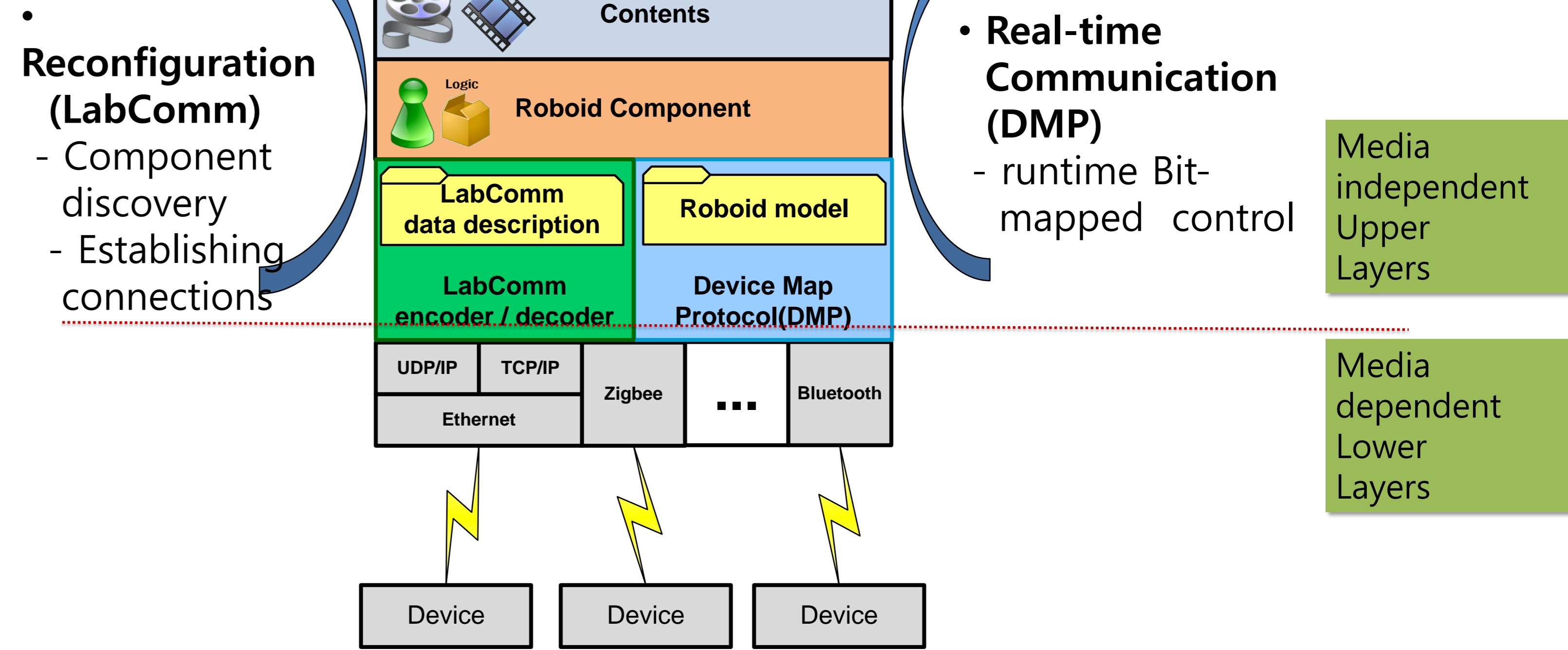
Roboid Framework



Dynamic Service composition for Networked Robot



LabComm on DMP: Dynamic service discovery protocol



DMP(Device Map Protocol)

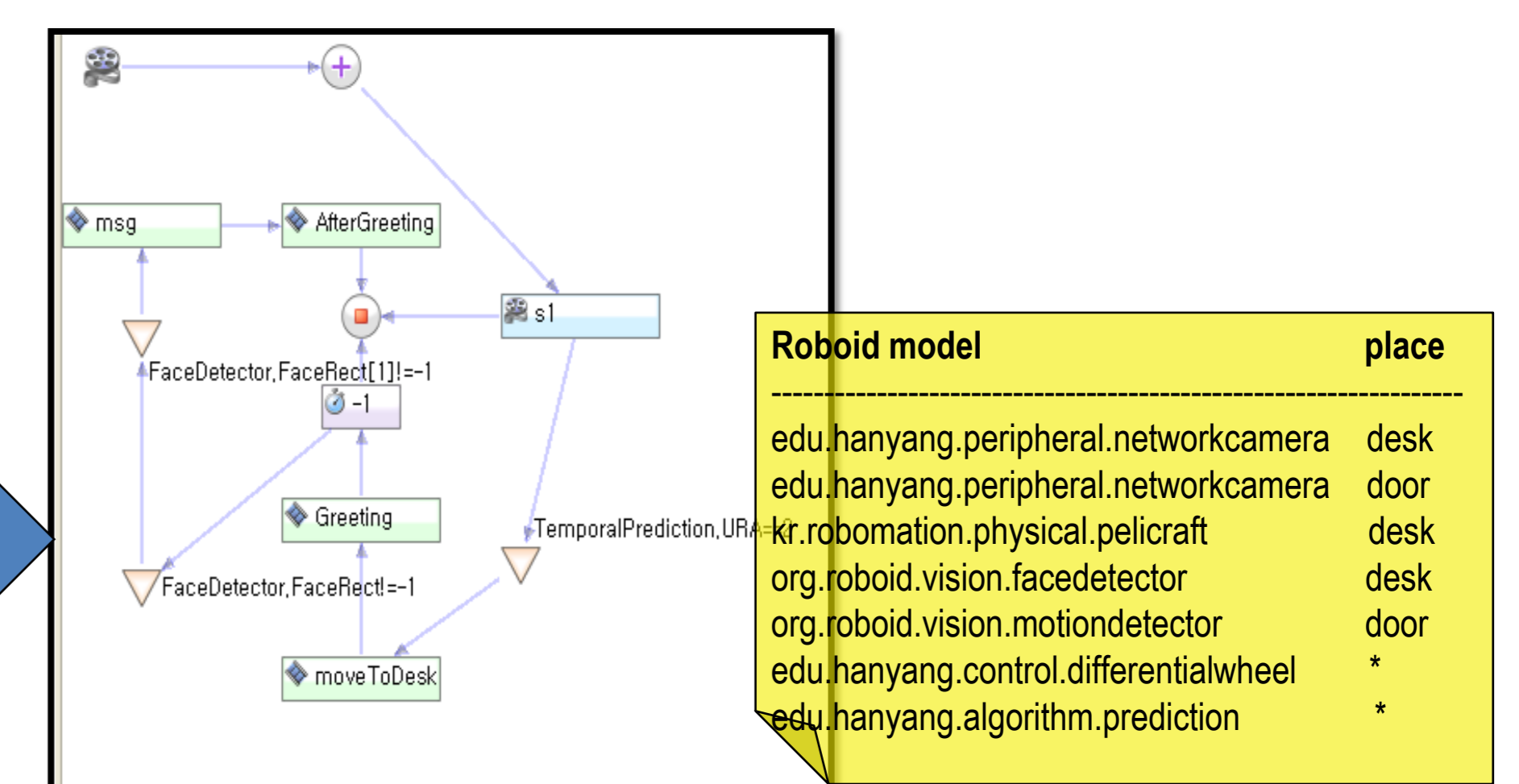
- The real-time protocol for synchronizing multimedia and control data simultaneously
- Support real-time and low latency communication for small devices
- Support bit-mapped control

LabComm

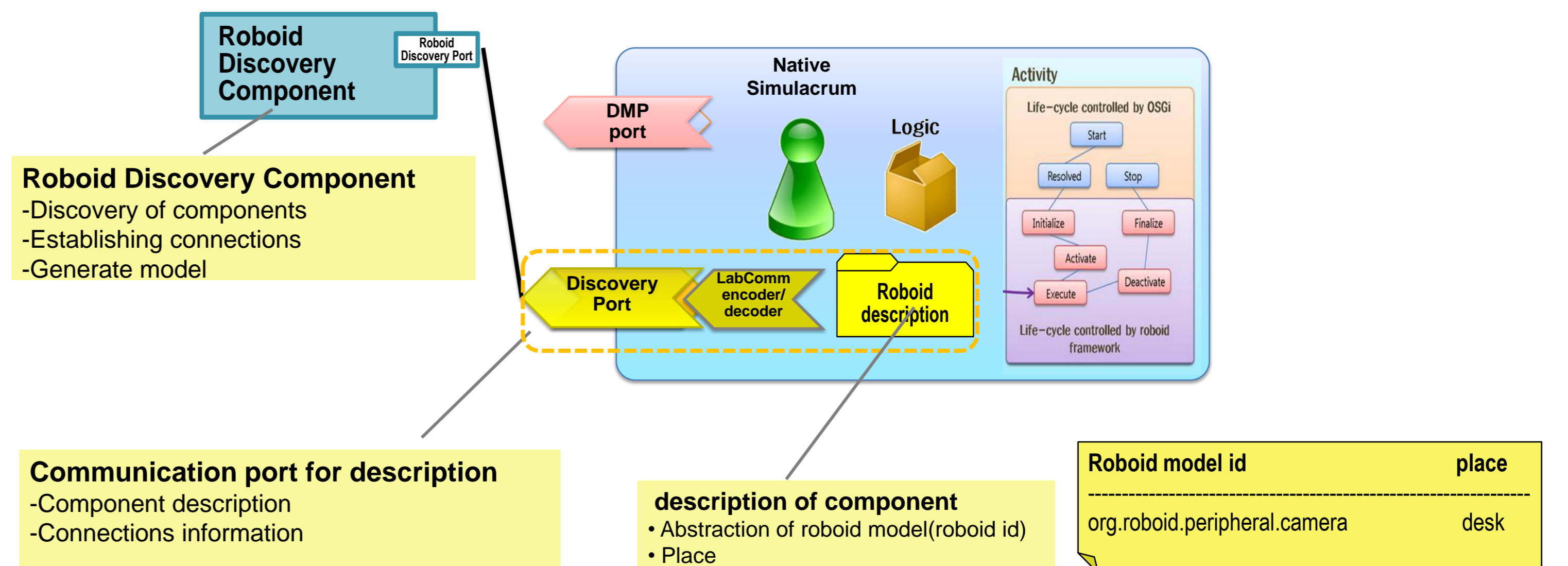
- Including a small language which can define a protocol
- Including a compiler that generates encoder/decoder routines
- Compact and Media/language independent

Contents-oriented Service Composition

- Location matching
- Functionality matching



Service consumer(contents) : Required service-description of a content



Service provider(component) : Functionality-description of a component

Future Works

- Ontology-modeling for functionality of components
- World modeling for service-discovery among components
- General Description of the location