

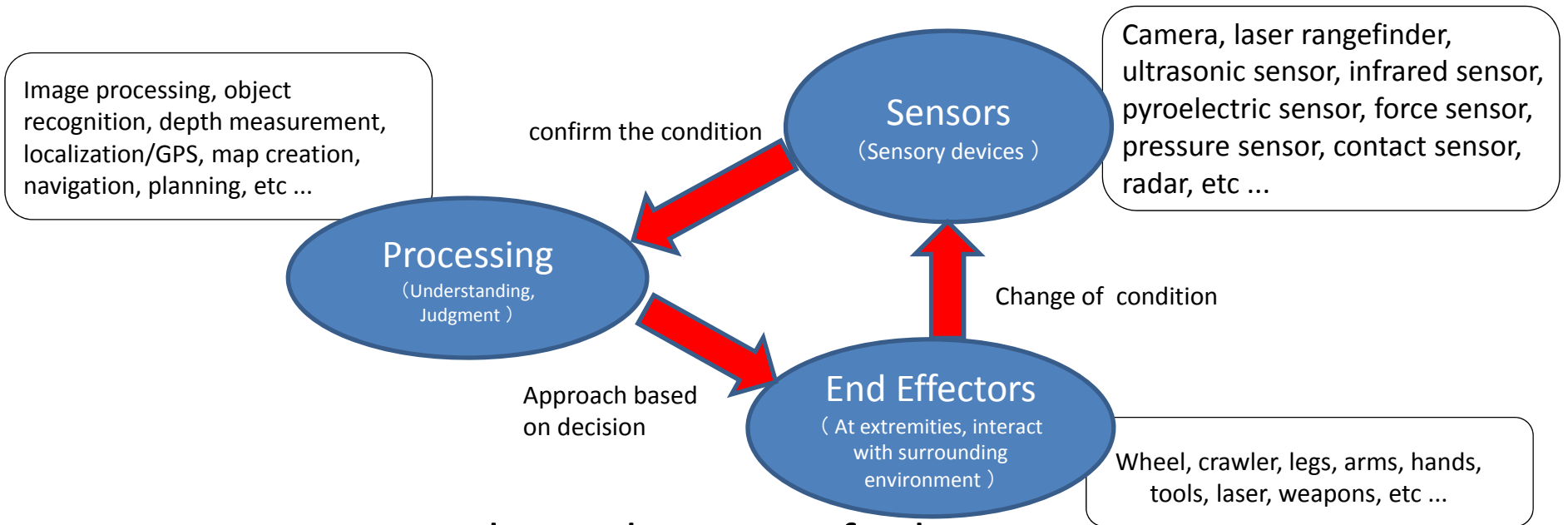
Robotics and Applications

14 May 2014

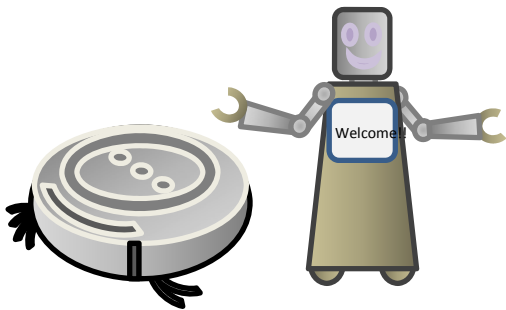
Hajime Wakuda

Director, Aerospace and Defense Industry Division,
Manufacturing Industries Bureau
Ministry of Economy, Trade and Industry,
Japan

The elements of the robotics technology



Three elements of robots



Livelihood support robots



Collision avoidance systems



Surveillance cameras (human recognition)



Weapons systems

Robotic technologies in commercial products

Dual-use technologies that contain many commonalities between civilian and military applications

Civilian applications for robotics technologies

Care and Life Support



Transfer aids

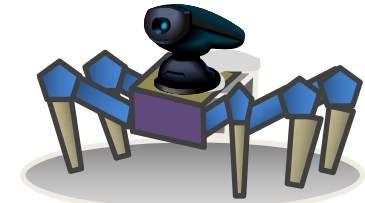


Toilet aids

Disaster response and rescue



Rescue



post-disaster surveillance

Infrastructure maintenance, agriculture

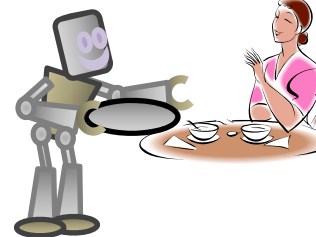


Infrastructure maintenance

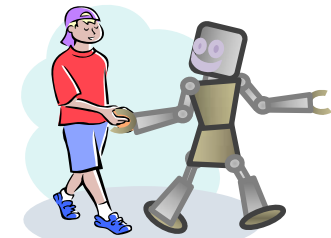


Application of pesticides

Expected service applications



Waiter robot

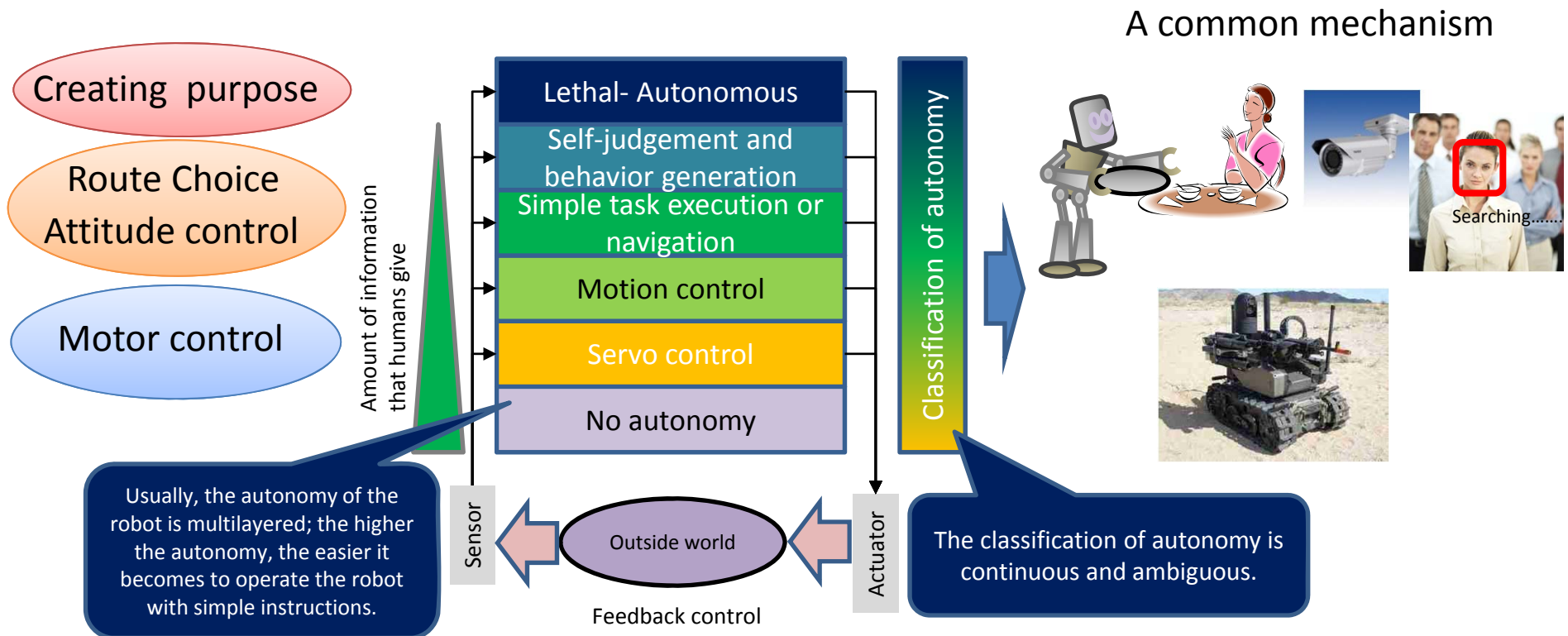


Guiding robot

Solve various challenges with Combination of various technologies.
In the future, it will be increasingly autonomous with robot is required more advanced capabilities. (Labor saving, quick response, etc..)

For autonomous systems

What are autonomous systems?



Purpose is only different from LAWs and civilian robot, Elements of the research and development is the same as the civil use.

Issues to be considered

- How to define the LAWs?
 - Robotics technology itself does not have the function of killing.
 - Robotics technology inherently contains dual-use elements for both civilian and military applications.
- Is it possible to extract the research and development for laws?
 - Elements of the research and development are the same as for civil use.