

An Exploration of the Future Co-Existence with Intelligent and Gentle Robots – Current Status & Future Direction

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With the aging of society, we believe there will be increasing need to secure a stable labor force and alleviate workloads, and, as lifestyles change, people will desire relief from the pressure of household chores. We feel that enhanced mobility will also be in demand, using compact personal mobility systems that can move freely both indoors and outdoors, expanding the functions of present-day vehicles. To respond to these future demands, we started the development of Toyota Partner Robots (TPRs), designed to support human beings. The development of Toyota Partner Robots which possess the two key technological elements, “intelligence” and “gentleness”, necessary to serve and co-exist within society is demanded in order to place these Toyota Partner Robots or service robots under symbiotic environments. There are several directions in which Toyota would like to take the development of “Toyota Partner Robots” as mentioned below, and the main four directions are:

1. *Assistance* – help human-beings in housework and chores.
2. *Welfare* – care for the elderly and disabled at hospitals, nursing homes, hospices.
3. *Manufacture* – support machine operators with dangerous or strenuous tasks, such as the transportation of heavy objects.
4. *3-dimensional mobility* – move around freely and easily whenever and wherever desired.