

TUKE SJF-MinebeaMitsumi Soccer-Humanoid Robotic Systems

The aim of the department is the development of a network mechatronic system controlled by a microcontroller, enabling the best possible solution of the 3D movement of the humanoid robotic platform within distributed robotic networks. The platform should be implemented in pilot samples, which would meet the requirements of the RoboCup Humanoid League of the so-called "KidSize" humanoid robots. The project involves not only the research of suitable lightweight electric drives, motion algorithms and the theory of distributed robotic network control, but also the definition of properness of the robotic behaviour, especially depending on the chosen strategy of collaboration, e.g. teamwork, clustering, mutual responses, estimation and analysis of obstacles and limitations, as well as tactics to achieve the objectives.