Safety

Robots must be safe to use. Safety is a critically important aspect of robot operation, both in an industrial setting and when robots are interacting closely with people. Safety must be designed into a system, and tested according to well defined standards.

State of the Art

Safety is widely implemented through the exclusion of people from operating environments. In most cases physical barriers ensure a safe operating environment. Safety critical software development processes are used in some areas of robotics. The lack of standardised methods, development tools and verification criteria currently limit reusability.

2020 Target

To develop robust safety based design processes including inherent physical robot safety. Development of standards and methods to verify and certify safety in human robot collaboration. To create software development methods and tools which support the creation of solutions under safety constraints. To create software based safety systems providing dependable failure mode detection and isolation. To develop safety systems for multiple distributed robot systems. To develop predictive systems to assess the safety of human interaction.