

Reliability and Safety Issues of Telepresence and Teleoperated Robots

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Abstract

While telecommuting and teleconferencing started to take root at the end of the 20th century it has only recently started to become mainstream as VoIP solutions have become commonplace and easy to deploy by taking advantage of the ever-increasing bandwidth of users worldwide. Robotics has also enjoyed a similar development with industrial robotics blooming the late 20th century and personal robotics gaining a foothold in both the office and the home environment in recent years. The combination of these emergent technologies are the teleoperated and telepresence robots that are being developed at the moment. Applications range is very wide, from industrial (dam inspection, interventions in hazardous environments etc.), to architectural (inspection, construction), to healthcare (remote visiting) and home or office etc. Along with new technologies and applications come new issues of reliability and safety. Old standards may not be adequate for the new situations that arise not to mention completely new unforeseen challenges that are certain to manifest themselves. This paper analyses the current situation of the field of telepresence and teleoperated robots, highlights potential issues that need to be resolved and proposes possible solutions that can be implemented to assure a high quality and safe experience when using such systems.

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