Virtual Reality and Tele-Existence

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Abstract

"Virtual" is defined as "existing in effect or in essence though not in actual fact or form," and virtual reality enables humans to experience events and act in a virtual environment just as if they were in essence or in effect in the real environment. Tele-existence is virtually the same concept as virtual reality, but takes a different point of view. It represents a new concept that allows humans, who are assumed to be emancipated from the restrictions of time and space, to "exist" in a location defined by inconsistent time and space, or a virtual space. The concept of the tele-existence is proposed by the author in 1980 and played the role of the fundamental principle of the eight year Japanese National Large Scale Project of "Advanced Robot Technology in Hazardous Environment," which started in 1983 together with the concept of the Third Generation Robotics. In this invited talk, a short history and recent progress in the field of tele-existence and/or virtual reality are reviewed with emphasis on national R&D Projects, and future prospect is being sought.