

TELEOPERATION SYSTEM USING ATM NETWORK

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ABSTRACT

The solution to today's for safety in industrial processes and plants involves more and more the use of teleoperated devices to avoid human exposure to hazards. Such hazards occurs during operation and maintenance, in normal or accidental conditions, and during decommissioning at the end of the life time of installations.

The year 1989 has represented, for teleoperation an important landmark with closure of the first commercial nuclear power stations which have reached the end of their life time. At the same time, a growing concern has generated support for the developments of teleoperation devices which could be used in disordered environments. For example, these could be Euro - Chernobyl, where routinely employed remote handling equipment could not cope.

Progress in the controlled thermonuclear fusion programmes ^{by near total fusion} demonstrates the importance of teleoperation in the assembly phase of future reactors as well as in the maintenance and decommissioning phases. The design of fusion reactors is probably the first example to be driven by remote handling concerns.

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Chapter One

Teleoperation System

1.0 Introduction.

Robots have come to symbolize high level industrialisation of a society. It appear that industrial robot are wave of the future when it comes to manufacturing and the perceived demand for greater industrial productivity. Improved productivity, reduced costs and better manufacturing quality are the objective.

In working towards these objectives, robot quietly take their places alongside human on the production line to raise productivity and to do the 'dirty work'. They can do most of the work still performed by human, even in plants filled with automated heavy machinery. They can handle material, load and unload, sort, stack and do assembly operations. They can position workpieces on machines, weld, spray, rivet, rout, sand and grind. They can do many of the monotonous, hot, disagreeable, dangerous tasks formerly assigned to human. They can do work for thousand of hours with, typically, less than two percent downtime. Robot can be reprogrammed to do different tasks and the digital electronics of their control system places them squarely within the computer manufacturing area.

Robot had their origin with the creation of the first tools. By the eighteenth century, the industrial revolution was fully under way. With its proliferation of new power