Implementation of Unmanned Remote supervisory System having Multipurpose Measuring Modules
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In this paper, we have studied for development of unmanned remote supervisory system using mobile communication network, not wire network, not to be affected by space or distance. The unmanned remote supervisory system consists of data processing unit (main part) and measuring systems (modules part)-temperature measuring module, humidity measuring module and human body sensing module. The data processing unit to collect and process informations of each measuring module has the functions of data communication between a mobile cellular telephone and measuring systems. Each measuring module has supervisory and warning functions for a target of supervision. And then we have designed each system and evaluated accuracy and reliability of the combined total system.

Slices Analysis Method of Petri nets in FMS Using the Transitive Matrix
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In this paper, we focus on the analysis of the scheduling problem in FMS after slicing off some sub-nets using the transitive matrix. This class of Time Petri nets is obtained by merging subnets based on the machine's operations. We can divide original system into some subnets based on machine's operations using Time Petri nets slice and analyze the feasibility time in each schedules. In this paper, we show the usefulness of transitive matrix to slice off some subnets from the original net, and explain on an example.

Development of Force Reflecting Joystick for Field Robot
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In teleoperation field robotic system such as hydraulically actuated robotic excavator, the maneuverability and convenience is the most important part in the operation of robotic excavator. Particularly the force information is important in dealing with digging and leveling operation in the teleoperated excavator. Excavators are also subject to a wide variation of soil-tool interaction forces. This paper presents a new force reflecting joystick in a velocity-force type bilateral teleoperation system. The master system is electrical joystick and the slave system is hydraulically actuated cylinder with linear position sensor. Particularly Pneumatic motor is used newly in the master joystick for force reflection and the information of the pressure of salve cylinder is measured and utilized as the force feedback signal. Also force-reflection gain greatly affects the ...