D-FP01

Remote Sensing and Control

13:00-15:00
Room : 4127

Chair : Park Hong Seong (Kangwon National Univ.)
Co-Chair : Kwon Woo-Hyeon (Kyungpook National Univ.)

13:00 – 13:20   D -FP01-1

Impedance Control for Haptic Interface using Paramater Estimation Algorithm

Park Heon, Lee Sang-Chul, Lee Soo-Sung and Lee Jang-Myung
(Pusan National University)

Teleoperation enables an operator to manipulate remote objects. One of the main goals in teleoperation researches is to provide the operator with the feeling of the telepresence, being present at the remote site. For these purposes, a master robot must be designed as a bilateral control system that can transmit position/force information to a slave robot and feedback the interaction force. A newly proposed impedance algorithm is applied for the control of a haptic interface that was developed as a master robot. With the movements of the haptic interface for position/for ce commands, impedance parameters are varying always. When the impedance parameters between an operator and...

13:40 – 14:00   D -FP01-3

Analysis of Response Characteristics of the CAN -Based Feedback Control System Considering the Network Delay Time

Jeon Jong Man and Kim Dae Won
(MyongJi University)

When building a network-based real-time control system, a network-induced delay time should be surly considered for real time schedulability to be guaranteed. The network delay time on end-to-end communication has been analyzed theoretically and modeled mathematically from many previous works. There also exist any other delay elements not considered before. In this paper, the remote feedback control system using the CAN protocol is proposed to control three axes' manipulator arm and the application layer of CAN is modeled to analyze the delay elements defined by three types of time delay: Software delay time, Controller delay time, and Access delay time, in details. The analyzed results are used as an important component to determine PID gains of the proposed system. The effect of the delay time on the control performance is evaluated by comparing the response characteristics of the control system through simulation.

13:20 – 13:40   D -FP01-2

A study about Embodying an AMR Based on Power Line Communication.

Yoon Gun and Park Hong Seong
(Kangwon National Unversity)

The inspection of a meter is an action that measures the amount of electricity, water and gas used to impose user on a charge. In past days, a meter who visit consumer to look over meter and write data to the ledger and then go back his office to calculates the inspection of a meter. On the other hand, the AMR(Automatic Meter Reading) is remote control system to measure the amount of utility used and monitor a condition of the meter. A study about AMRS is started at 1960 all over the world and a successful application example is presented continuously in American, Europe and Japan etc. In this paper we use a check meter that is used in past days and we add an AMR to it. AMR receives data that is the amounts of electricity from the check meter and stores those...

14:00 – 14:20   D -FP01-4

Implematation of AMR system using Power ine Communication

Park ByoungSeok, Hyun DuckHwa, Jang MunJeong, Lim Young Hoon and Cho Sungu
(KEPRI)

It is the advantage of PLC that digitalization and networking of existing facility can be organized at low price because there is no need further construction of communication line considering that home appliance, information device and various kind of control devices are digitalized at low price. Moreover, AMR(Automatic Meter Reading) is very attractive to utility company because not only does it reduce the cost of reading meter, but also it can control and monitor the demand for energy. So, it can solve the consumers problem best and easily. It also can be easily realized that the utilities can expand there areas to values-added service through existing network. The performance of the PLC modem which is being developed now is not moven enough and much more test for outdoor modem is needed especially. Therefore, we, KEPRI, concentrate our efforts on configuring AMR system for test and investigation of the actual performance of various kinds...