

# SA07

## Information Network II

10:10-12:10

Room : 1st Floor-Seefeld

Chair1 : Jun-Woo Kang ( Hankuk University of foreign studies, Korea )

Chair2 :

10:10 – 10:30

SA07-1

### Young Youl Ha, In Ho Lee, Min Soo Kim, Jae Hoon Kim(Samsung Heavy Industries Co. Ltd., KOREA)

The position servo-loop in the robot control system must be processed every sampling period by real-time.

- Calculation unit and peripheral units that are used to make the position controller are embedded to one chip FPGA.
- Feed-forward PID controller and interpolator in the calculation unit mitigate frequent context switching.
- The peripheral units reduce the size of the joints position control board.
- Because the calculation unit is designed with pipeline structure, it has the advantages to apply to the multi joints.

10:30 – 10:50

SA07-2

### Using UDP/IP over Ethernet for Transmission of Industrial Real-Time packet

SungSuk Kim, Chong-Sun Hwang(Korea Univ., KOREA), BoKyung Lee, JaeHong Shim(Korea Polytechnic Univ., KOREA)

- Introduction
- Motivation
- EUDP/IP protocol
- Experiments
- Conclusion
- Reference

10:50 – 11:10

SA07-3

### UPS management system in the HFC network

Young-Wha Kim, Jun-Woo Kang(Hankuk Univ. of Foreign Studies, KOREA)

The HFC network is one of the most useful network for high-speed data communication. Optical node unit, Trunk branch amplifier, Tap-offs, and Uninterrupted power supplies (UPS) are in this network. Since power failures of the equipments in the network is crucial, UPS should be periodically monitored and controlled by the Host to prevent long power failures. This paper describes a UPS management system which is to monitor and control UPS to supply electric power to ONUs and TBAs in the network.

11:10 – 11:30

SA07-4

### Development of Message Gathering System for digital electronic switching systems

seung sik Shin, Seung whan Lee, Chan soo Chung(Soongsil Univ., KOREA), Bong sun Yoo, Hoon hak Kim(Induk Institute of Tech., KOREA)

The digital electronic switching system has some problems, when this system processes OAM(Operation, Administration And Maintenance) messages about the fault, the traffic, the account, and the performance, etc., at the present. Therefore, we studied on Methods that could process OAM messages out of all digital electronic switching systems and, first of all, developed the MGS (Message Gathering System) to be able to accept and process the fault message of OAM messages out of all digital electronic switching systems in real time.

11:30 – 11:50

SA07-5

### XML-based Remote Monitoring System Using Fuzzy Control and Image Processing

Tae Geun Oh, Hyoung Bae Kim, Boo Hee Nam(Kangwon Nat'l Univ., KOREA)

1. Introduction
2. Image Transmission
3. Hardware instrument
4. Image processing and control command transmission
5. System Configuration
6. Conclusion

11:50 – 12:10

SA07-6

### Transmission Characteristics in LonWorks/IP-based Virtual Device Network (II)

Gi Heung Choi(Hansung Univ., KOREA), Ki Won Song, JongHwi Kim, Gi Sang Choi(Univ. of Seoul, KOREA)

Web-based virtual machine/manufacturing system (VMS) utilizes Virtual Device Network (VDN.) VDN inevitably involves the implementation of Distributed Monitoring and Control Networks (DMCN). In general, one needs to integrate device (control) network and IP network to realize DMCN over IP network or internet, which can be viewed as a VDN. In this study, LonWorks networking technology is used for device network and the transmission characteristics of LonWorks/IP-based VDN is investigated. A method to minimize the transmission delay in the LonWorks/IP networks is also suggested.