INTRODUCTION
National Institute of Advanced Industrial Science and Technology (AIST) has been developing Remote synchronization System for Onboard Crystal Oscillators (RESSOX) of Quasi-Zenith Satellites System (QZSS) since 2003. AIST has been designing and fabricating the ground station equipments since 2006, and has been negotiating with Japan Aerospace Exploration Agency (JAXA) and National Institute of Information and Communications Technology (NICT) to realize the ground system of QZSS. In this paper, we will introduce a control system of AIST, a central control unit, RESSOX controller, from mainly software and information flow point of view.

CONTROL STRUCTURE
Figure shows the control block diagram of ground station for RESSOX of QZSS. AIST will have two ground station sets (main and sub) in Time Management Stations prepared by NICT. We will discuss the RESSOX controllers depicted with pink box. In the figure, light blue boxes are hardware and green boxes are simulation tool for RESSOX. AIST will have terminals at AIST Tsukuba. IP-VPN network will used to connect TMS, Master Control Station (MCS) prepared by JAXA, and AIST Tsukuba.

RESSOX CONTROLLERS
The RESSOX controller conducts many things to perform RESSOX experiments. They includes (1) the orbit calculation of the QZS and the delay estimations of Ku, L1, L2 and L5 bands, (2) control of all of ground station equipments, (3) data and status communication with other systems (TMS and MCS), and (4) control voltage calculation of onboard crystal oscillators based on the time comparison results conducted by NICT.

REFERENCES