13．Department of Information and Communication Systems

The information on various forms is processed in large quantities in all divisions including the experimental data of a Large Helical Device(LHD) in the NIFS. We also have to inform the collaborators on the current status of devices for joint use and collaboration research programs since the NIFS is an inter-university research institute. On the other hand, the information on hundreds of researchers is stored in the NIFS and the exchange of this information between inside and outside of NIFS frequently occurs through collaborative researches with universities.

In the research institutes, each researcher has his/her own data having a special structure, and he/she has to build information and communication systems which perform compilation, storage, and distribution of data. Some data may be handled by using commercially available systems, but in most cases a unique system is needed to be developed. While the construction of these systems requires experts who have high technical skill and knowledge on the information and communication system, it is not easy to assign a sufficient number of specialists to satisfy all the requirements. If a requirement is on development of a versatile system it can be ordered to outside, though it costs. However, usually the control system of a measuring device has special specification, and the researcher must be engaged in the development with the assist of an expert on information and communication technology. So the institute needs to employ such experts.

In the NIFS, there are several engineers who have skill and knowledge on the information and communication technology in the Division of Engineering Technical Services. The NIFS also employs a few dispatched experts. So far they belong to the different sections, and work on the regular service of the sections. If the needs for improving the current systems of developing new ones happen to be so large in one section then the shortage of the experts in the corresponding section becomes a problem.

One of the solutions of these situations is that all the experts in the NIFS are grouped in one distinct section, and that they will be redistributed flexibly to the section where the priority of the work is high. The Department of Information and Communication System (ICS) has been founded for this purpose in 2014. All the experts belong to the ICS although they are concurrent. There are four TASK groups which correspond to the classification of jobs in the NIFS. The Network Operation task group manages and maintains the communication systems in the NIFS such as E-mail system including the security issues. The Experimental Data System task group performs operation and development of data acquisition systems for the LHD experiment. The institutional Information Systems task group carries out the maintenance and development of the management systems for collaboration research and its outputs. Atomic and Molecule Database task group maintains the atom and molecule database which is open for the worldwide researchers.

The ICS works as follows; the request for the maintenance, improvement of development of the information and communication system that each section has is submitted to the ICS. The deputy division directors of ICS check all the requests, make the priority among them, and assign them to the appropriate Task Group. Because all the experts belong to the Section of Technical Service of ICS, each Task Group Leader asks the Section Leader to allot the required number of experts for ta prescribed period so as to finish the job.
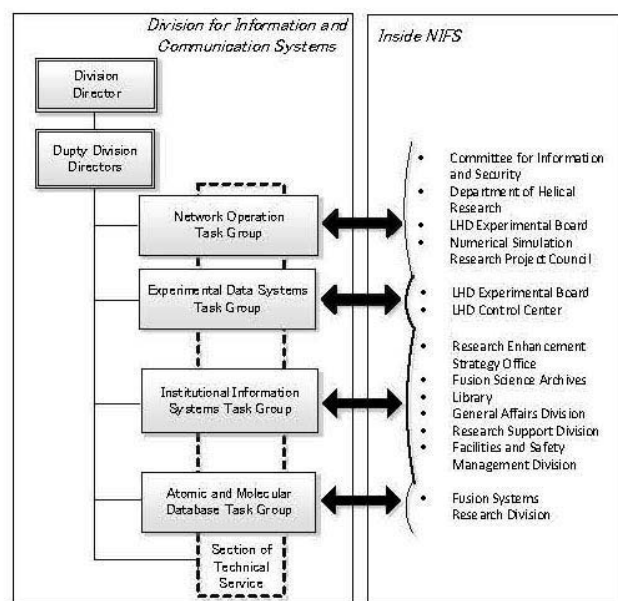

Fig. 1. Structure of the Division for Information and Communication Systems.

In the NIFS, three research projects run across the research divisions. It can be said that the ICS is another "project" which lies across all the divisions in the institute for keeping the information and communication systems stable, secure and up-to-date.

(Ishiguro, S.)