13. Department of Information and Communication Systems

Inside the NIFS, the information on various forms is processed in large quantities in all divisions including the experimental data of a Large Helical Device. Also, since the NIFS is an inter-university research institute, we need to inform the collaborators on the current status of devices for joint use, or collaboration research programs. On the other hand, through the many research collaborations with universities, the information on hundreds of researchers is stored in the NIFS, and the exchange of this information from and to the outside of NIFS occurs frequently. Under such circumstance, it is necessary for us to keep a firm security protecting from leaking out the private information.

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 can 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. Although 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 money. 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. Therefore 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 or 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 this situation 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 Systems (ICS) has been founded for this purpose in this year. 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 (see in the figure below). The Network Operation task group manages and maintains the communication systems in the NIFS such as E-mail system including the security issues. The Experiment Data Systems 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. The 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 or 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 priory 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 a prescribed period so as to finish the job.
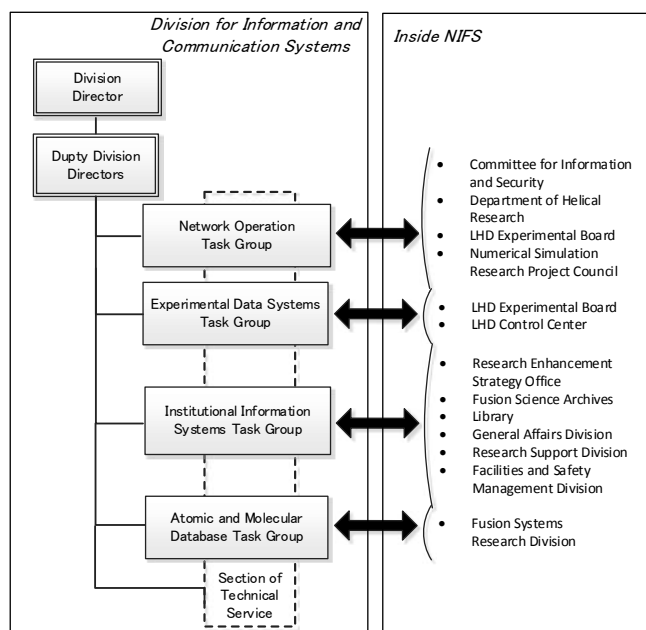

Fig. 1. Structure of Division for Information and Communication Systems

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.

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