

## II.7. SYSTEM ANALYSIS

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### PLANNING AND MANAGEMENT OF THE EXPERIMENTS («System» Project)

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### PLANNING AND MANAGEMENT OF ON-BOARD EXPERIMENTS AT THE SCIENTIFIC ORBITAL LABORATORY IN THE STRUCTURE OF THE ISS

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**Introduction.** Various research modules (RM), i. e., scientific orbital laboratories, are assumed to function as the components of the ISS. It is also assumed that a considerable number of simultaneous experiments should be completed at every RM, while a relatively small number of astronauts are participating aboard. In addition, a RM operating term is supposed to be long in orbit, and long-term experiments are intended to be carried out by astronauts in accordance with a program, which is quite complicated and changes periodically.

These features show that planning and implementation of experiments should be arranged in a new way. The possibility to create a mode of virtual on-board presence of the authors of these experi-

ments at the RM, in order to provide efficient control of the experiments up to implementation of a tele-control mode, is of importance.

The problem of the virtual presence of an expert close to the experimental installation, which may be located at a long distance from a researcher for some reason, and the problem of an expert's ability to be involved in an experiment, are urgent. The users and designers of experimental installations are just beginning to realize this importance. The virtual presence of the authors of the experiments means in many cases a possibility to revise the conditions, under which these experiments are carried out, and to essentially broaden the scientists' abilities. In this case, a space crew, working at the RM, seems to