

Activity of the theme: 06-6-1119-2024/2026

Name of the activity	Leaders	Implementation period
Laboratory Responsible from laboratories		Status
1. Training of specialists in the field of computational physics and information technology	V.V. Korenkov A.V. Nechaevsky D.I. Pryahina O.I. Streltsov	2024-2026 Realization
MLIT	T.Zh. Bezhanyan, O.Yu. Derenovskaya, E. Mazhitova, I.S. Pelevanyuk, A.S. Vorontsov, E.N. Voytishina, M.I. Zuev	
UC	D.V. Kamanin, A.Yu. Verkheev	
Associated personnel	A.V. Bogdanov, V.V. Korkhov, Zh.U. Kiyamov, A.N. Nikolskaya	

Abstract and scientific rationale:

The training and retraining of specialists in computational physics and information technology on the basis of the Multifunctional Information and Computing Complex (MICC) of the Joint Institute for Nuclear Research (JINR) and its educational components are performed for:

- upskilling JINR staff members in order to develop scientific projects, including megascience ones, which are implemented at JINR or with its participation, as well as to create and support the JINR Digital EcoSystem (DES);

- disseminating competencies in computational physics and information technology to the regions of Russia and the JINR Member States to enhance the personnel potential of JINR and organizations cooperating with the Institute;

- the main prerequisite for the creation of the activity is the necessity to form a research environment in order to ensure the professional growth of IT specialists, the creation and development of scientific groups, and the engagement of new specialists in JINR projects. The additional training of the personnel, mainly on request of the JINR Laboratories, should be aimed at developing special competencies, in-depth knowledge and practical skills in computational physics and information technology.

Expected results upon completion of the activity:

Holding events for JINR staff members to study state-of-the-art information technologies and opportunities to work on the MICC components and in the DES.

Forming a set of JINR projects in which students can participate.

Forming a list of competencies and required courses for the implementation of projects.

Elaboration of training courses and educational programmes that will provide personnel training for solving a variety of tasks within projects.

Creation of an ecosystem for the implementation of educational programmes on the basis of the JINR MICC, including the cloud infrastructure, the HybriLIT heterogeneous computing platform, which comprises the education and testing polygon and the “Govorun” supercomputer.

Creation of a software and information environment and a platform for organizing and holding events, lectures, workshops, hackathons, etc.

Involvement of specialists from JINR and JINR Information Centres, researchers from the JINR Member States’ organizations, lecturers from leading educational organizations that cooperate with JINR in order to hold educational and scientific events.

Forming event programmes and organizing interaction with universities and JINR Information Centres.

Expected results of the activity in the current year:

Elaboration of training courses and implementation of the educational master's program entitled "Data Processing Methods and Technologies in Heterogeneous Computing Environments" in direction 01.04.02 Applied Mathematics and Computer Science at the branch of Lomonosov Moscow State University.

Holding the Lomonosov Universiade for students from universities of the Russian Federation and the JINR Member States in order to discover and support talented youth, as well as to attract students to enroll for the master's course at the MSU branch in Dubna.

Holding JINR Schools of Information Technologies.

Training of highly qualified specialists for scientific projects implemented at JINR in collaboration with scientific and educational organizations of the Russian Federation and the JINR Member States.

Conducting educational practices and scientific seminars on information technologies for students from the Russian Federation and the JINR Member States.

Development of the components of the ecosystem on top of the JINR MICC, including the cloud infrastructure and the HybriLIT heterogeneous computing platform, for the implementation of educational programs and the information support of the activity.