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SUPERCOMPUTER "GOVORUN" —NEW PROSPECTS FOR HETEROGENEOUS COMPUTATIONS AT JINR

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The report provides description of the "HybriLIT"heterogeneous platform that is a component of the Multi-purpose information and computing complex (MICC) of JINR. HybriLIT includes "GOVORUN"supercomputer and education and testing polygon; its platform is based on the latest computation architectures (processors; co-processors; graphical accelerators), and also modern software such as Intel Cluster Studio, CUDA, Matlab, etc.; thus, allowing to carry out extra-massive computations and reach sufficient acceleration. "GOVORUN" supercomputer meets all the requirements for modern HPC systems:
1. Possibilities for dynamic expansion of the cluster by means of adding new computation nodes;
2. Possibilities for synchronous updates of the software on computation nodes;
3. Swift installation and maintainability of nodes on the cluster after failures and reloads.
For efficient use of computation resources of the supercomputer, information environment has been developed. It includes services that provide possibilities for interaction with users, development of applications, notifications on the upcoming events, and organization of tutorials on parallel programming technologies.
Also, the report provides information on the current use of the "GOVORUN"supercomputer resources for the tasks being solved at JINR.

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