"GOVORUN" STRUCTURE

40x 2x Intel Xeon Gold 6154
1440 cores
140 DP TFLOPS
300 SP TFLOPS

21x Intel Xeon Phi 7290
1512 cores
75 DP TFLOPS
160 SP TFLOPS

5x DGX-1 8x NVIDIA Tesla V100
205000 CUDA cores
26000 Tensor cores
320 DP TFLOPS
630 SP TFLOPS

Total Peak Performance
DP 500 TFLOPS
SP 1000 TFLOPS

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hYBRI

HETEROGENEOUS PLATFORM **HYBRILIT** IN LIT JINR
http://hybrilit.jinr.ru

USER SUPPORT
http://hybrilit.jinr.ru/support

REFERENCES ON TRAINING COURSES
http://indico-hybrilit.jinr.ru

Supercomputer "GOVORUN"

GOVORUN Nikolai Nikolayevich (1930 – 1989)

Corresponding Member of the USSR Academy of Sciences

1966 -1988 – LCTA Deputy Director on research work,
1988 -1989 – Director of LCTA, JINR

Since 1966, JINR has been involved with the overall development of a new scientific branch – informatics, the head of which became N.N.Govorun.

MAIN GOALS

Supercomputer “GOVORUN” is a joint project of the N.N. Bogolyubov Laboratory of Theoretical Physics and the Laboratory of Information Technologies under support of JINR Directorate.

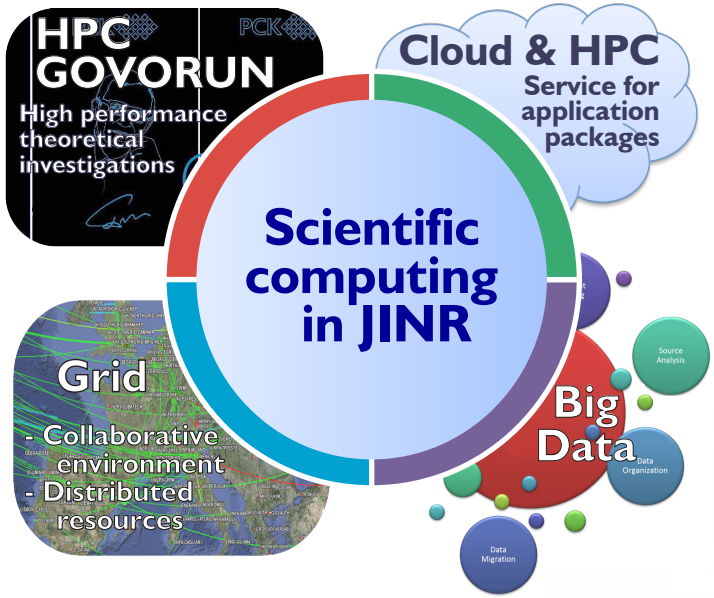
The project is aimed to radically accelerate complex theoretical and experimental studies underway at JINR, including the NICA complex.

Direct liquid cooling

Air cooling

SCIENTIFIC COMPUTING IN JINR: CHALLENGES

Supercomputer “GOVORUN” will increase efficiency of dynamic simulation of collisions of relativist heavy ions, will open new possibilities for investigation of properties of high-correlated systems in the field of new substance physics, and will allow develop and adapt software for the NICA mega-project for new computing architectures from the leading companies – **Intel** and **NVIDIA**. Also it helps to create software environment on the basis of HPC for Grid, cloud and Big Data technologies and trains IT-specialists to learn new hardware architectures and new information technologies.



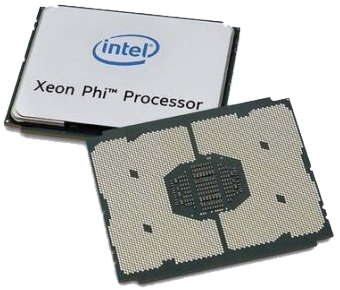
The active participation of BLTP as a user community in the justification of Supercomputer parameters and future research program on it is a good example of new principles of the organization of computations leading to innovative changes in the research strategy.

MAIN COMPUTING ELEMENTS

Intel Xeon Gold 6154

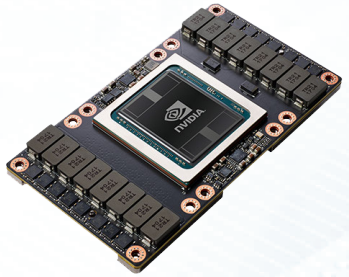
# of Cores
18
# of Threads
36
DP Performance
1.7 TFLOPS

Intel Xeon Phi Processor 7290



# of Cores
72
# of Threads
288
DP Performance
3.5 TFLOPS

NVIDIA Tesla V100



# of CUDA Cores
5120
# of Tensor Cores
640
DP Performance
7.8 TFLOPS
SP Performance
15.7 TFLOPS
Tensor Performance
125 TFLOPS