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Improvement of information systems for online and offline data processing of experimental installations of the NICA complex

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Acquiring, storing, processing and analyzing of experimental and simulated data are an integral part of high-energy physics experiments. These tasks are of particular importance in the experiments of the NICA megaproject due to the high interaction rate and particle multiplicity of ion collision events, therefore the task of automating the considered processes for the NICA complex is a very urgent topic. The report is devoted to the development of new information systems as well as a set of convenient information services for collaboration members to automate the storing and processing data and information on the experiments. The Geometry Information System and Online Electronic Logbook, which are on the final stage of the implementation, are presented. In addition, the design of the Condition Database and Event Metadata System, which are scheduled to be completed next year, are described in detail. The developing systems provide storing information required for event processing and physics analysis and organize a transparent, unified access and data management throughout the life cycle of the scientific researches in the NICA megaproject. One of the key aspects, the integration of the information systems into the experiment workflow is also shown.

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