

Referee Report of The Project “ALICE”

(Theme 02-1-1088-2009/2019: Investigations of interactions of heavy ions and protons at LHC collider), extension for 2020-2022 years.

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The JINR-group of Alexander Vodopianov was part of ALICE from its beginning. The group has been heavily involved in the hardware of ALICE, be it in the magnet design and construction, the testing of TRDs or its contribution in the ECAL project. It had an impact on the IT infrastructure at JINR. Through its standing inside of the ALICE collaboration, it had opened also the pathway for a ‘technology transfer’ from ALICE to NICA projects like MPD.

As requested in earlier PACs, the group turned successfully into an analysis group focusing on the following topics: Femtoscopic correlation study, Study of quarkonia (J/ψ , Υ) production in dimuon decay mode, and Study of ultra-peripheral heavy-ion collisions.

All these analysis activities request a functional IT system at JINR and that is why the group takes on also the responsibility for the Maintenance and development of the ALICE-GRID system at JINR.

So, I can recommend the presented proposal for approval.

However, since ALICE is just making a highly competitive upgrade to meet the challenges for a longer period of research activities, I have to note that the JINR-ALICE group is not taking on new hardware projects, as it did in the last 3 decades at CERN. This could result in a further distancing from the high level technological world of ALICE at CERN in the future.

Therefore, it would be very beneficial if the group would open up – in addition to the above-presented program - to modern detectors, modern electronics as well as modern readout and take on a new responsibility in one of the challenging hardware projects at ALICE. This would reconfirm their standing at ALICE and would attract young Russian scientists to these new fields of detectors. After all, the ALICE group with several seniors from the early 90s, needs a rejuvenation. Finally, JINR and NICA could obtain the needed young experts for the upgrade program of its detectors be it MPD or SPD. Such a JINR participation in ALICE would guarantee the scientific and technological benefits for JINR and NICA during the next research period of ALICE and beyond.

Therefore I encourage strongly the JINR ALICE team to go that way and to define with the ALICE management a new project within ALICE .

I recommend approval of the presented proposal and would like to see an addendum at the next PAC meeting.

Heidelberg, June 10, 2019

Hans H. Gutbrod