## Modality of access under this proposal

Within this VA different types of access relevant for the functioning of the European lattice hadron physics community are bundled together. The access is not restricted.

1. Access for uploading gauge ensembles for collaborations/researchers that register as members of one of the regional ILDG subgrids LDG (continental Europe) or UKLFT (UK), see https://mdc.zam.kfa-juelich.de/ Access to configurations within these ensembles will be according to the conditions specified in the respective metadata by the collaboration/researcher (mostly open).
2. Schools for early researchers will be organized.
3. Lattice Virtual Academy. Online teaching material will be provided via a web interface (at present https://sites.google.com/view/lattice-virtual-academy), open access.
4. Benchmarks of common LQCD kernels on different HPC architectures will be published in proceedings of Lattice conferences (open access).
5. Two town meetings of the EuroLFT (European Lattice Field Theory) Community will be organized, in which all members of the field can participate.

Units of access: Actual costs are given. The usage will be monitored. The costs only marginally depend on the number of accesses, which is why actual costs are preferable over unit costs. i) The uploaded data volume will be measured. FZ Jülich will provide storage for LDG. The disks, tapes (including redundant storage) and infrastructure will cost at least Euro 50000 per year. One person-month of a software engineer for liaison with the users and improvement of the services will be provided and costs about Euro 12500. ii) The number of participants will be reported. Each of the two Lattice Practices schools will have about 6 speakers and about 20 participants. The speakers (travel and accommodation) will cost about Euro 1500 each: over four years these two schools will therefore cost at least Euro 4500/year, plus support for the participants. Additional schools for early researchers will take place, preceeding other workshops. iii) The provision of updated training material and maintenance of LaVA will cost at least Euro 5000/year. Accesses to the web portal will be counted. iv) The provision of this service incurs costs (person months). Access cannot easily be monitored. v) We expect about 50 participants. The number of participants will be reported.

The funds requested for travel and subsistence are necessary to enable the virtual access. Without this coordination the VA would not be possible. The virtual access itself will be financed mostly through other resources.

## Support offered under this proposal

This proposal enables the VA modes described above. In addition, the VA provides a platform for identifying novel observables amenable to Lattice QCD methods through discussion with scientists involved in the TA activities and with other theorists. The proposed meetings and exchanges will link European lattice hadron physics research groups to broader expertise in hadron phenomenology, enabling them to react timely to new developments of relevance to the Hadron Physics Research Infrastructures.

With respect to the access modes described above, support and liaison will be provided for users of the LDG and UKLFT. Moreover, storage elements will be made available at FZ Jülich for LDG. The usage of the LDG and UKLFT will be monitored and, in coordination with the ILDG Metadata Working group, the standards will be evolved, reflecting the needs of the European community.

Organzing Hands-on “Lattice Practices” schools, the VA will train the next generation of researchers in the field. In addition the VA will allow to maintain and evolve the LaVA online collection of training materials.

High Performance Computing is of fundamental importance for any lattice hadron physics calculation. The suitability of emerging architectures for the most commonly used Lattice QCD kernels needs to be evaluated and, in some cases these kernels need to be adapted. The VA will carry out such tests, collate and publish the results.

A new body, EuroLFT, representing the European Lattice Field Theory community (mostly Lattice Hadron Physics), was formed recently. This proposal will enable this coordination activity to evolve by supporting corresponding town meetings and exchanges. This is particularly important for the optimal usage of the EuroHPC resources and the AI Gigafactories, with benefit both for hadron physics research and European HPC.

## Outreach to new users:

The new possibilities will be advertized through mailing lists, workshops, research visits and web pages, increasing the number of users. Some of the access modes already exist, e.g., LaVA, or were recently revitalized, e.g., LDG. However, the access also requires user support and continuous maintenance and development. This was not possible previously and enabling this is the most important aspect of this proposal. Some modes are new and existing access modes have not been monitored previously. Therefore, we will not be able to quantify the increased usage, directly linked to this proposal. However, the usage will be monitored as described above, and we expect to see a significant increase of the number of accesses between year 1 and year 4.

## Review procedure under this proposal:

An international review panel of six experts will be appointed. This panel will include members from both EU and non-EU countries.

Remote meetings will be organised on a yearly basis, during which the spokesperson will provide the panel with a comprehensive list of achievements, access statistics, and user feedback.

The committee will then draft and submit an assessment report.