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Oggetto: release of public version of DRD5 proposal for R&D on quantum and emerging technologies: request for input and participation

Data: venerdì 2 febbraio 2024 18:22:13

Allegati: [quantum_ECFA_proposal_v1.0.pdf](#)

Dear colleague,

Thank you for your past interest in the ECFA*-initiated effort to coordinate the different developments happening on a global scale towards R&D on particle physics detectors based on quantum and emerging technologies which were summarized in the 2021 ECFA Detector Research and Development Roadmap. After a series of workshops, the most recent of which was an open workshop in October 2023, the conveners of this effort (around 30 experts from a wide range of quantum sensor technologies from around the world) have completed the draft of a proposal to be submitted to a new committee at CERN, the Detector R&D Committee (DRDC) in the near future. A copy of this draft is in attachment, but it can also be found at https://doser.web.cern.ch/quantum/quantum_ECFA_proposal_v1.0.pdf. Additional information is also available at <https://doser.web.cern.ch/>.

The goal of this proposal is to define a set of milestones and work packages that such a global effort towards quantum sensor R&D for particle physics should comprise, and which hopes to unite a broad

community under a common umbrella. If this proposal is approved, a new CERN collaboration, which will be called DRD5 (or informally, RDq), will be created and will have the role of carrying out the underlying R&D. The proposal corresponds to the synthesis of a large number of inputs and opinions, and tries to highlight both the most pressing challenges and a reasonable approach to tackling them.

Naturally, such a proposal will never be complete. At this point, we are thus reaching out broadly to ask for your input on two areas: suggestions for (minor) modifications or oversights; and an indication of your willingness to be involved in the future effort as outlined in the proposal (if it is approved). Note that contrary to many other similar collaborations, we have decided that in order for this effort to be able to federate groups from around the globe independently of their means, there is no membership or annual fee. By signing up, you will mainly commit to working (as you already do) towards the common goals outlined in the proposal. More details on the collaborative aspects are provided in the last chapter of the proposal.

Please send any feedback, requests for (minor!) changes, and most importantly, a statement of support along with an indication of which WP's you would be interested in contributing to either Marcel or myself by February 25. We will then tabulate all supporting groups in the final version of the proposal that will be submitted to the DRDC. Please also share this email and the proposal with any groups that you think might be interested.

Looking forward to hearing from you!

Marcel Demarteau and Michael Doser (marcel.demarteau@cern.ch, michael.doser@cern.ch)

* ECFA: European Committee for Future Accelerators