

# Precision silicon tracking and calorimetry with integrated parallel and continuous readout for an EIC detector



## Contact person for this submission:

Kenneth Read, Oak Ridge National Laboratory, [readkf@ornl.gov](mailto:readkf@ornl.gov)

## Institutions collectively involved in this submission of interest:

Oak Ridge National Lab, Vanderbilt Univ., Univ. of Tennessee

## Items of interest for potential equipment cooperation:

Our interests to realize an EIC detector include the development of large area silicon (MAPS and/or LGAD) tracking and silicon-tungsten calorimetry subsystems, with an integrated continuous readout system and on-the-fly data processing, using a full-systems engineering approach and professional project management planning and coordination. Such an integrated systems management approach is essential to achieve an optimized experiment-wide, common back-end, continuous readout system. It will significantly improve performance and reliability, while reducing overall integrated costs. We have a demonstrated track record of realizing such subsystems in large existing NP experiments.

# Precision silicon tracking and calorimetry with integrated parallel and continuous readout for an EIC detector



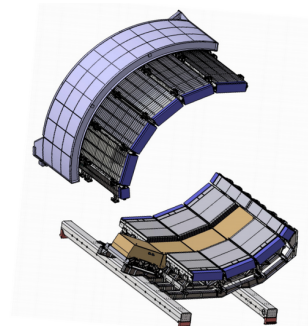
## Opportunities for engagement of other groups:

We would be very pleased to collaborate with other groups on aspects of this work. Please contact us if interested.

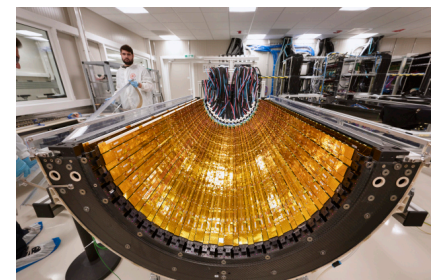
## Additional information you think may be useful for the community to know about your expression of interest:

Our team has decades of experience developing advanced detector and readout systems for major experiments in the field (multiple STAR and PHENIX subsystems, ALICE EMCal, TPC and ITS, sPHENIX MVTX), as well as complex online processing (ALICE HLT and O2 facilities).

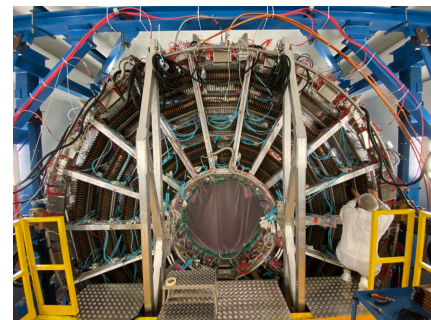
We have significant resources needed for the development and integration of silicon vertex/tracking and calorimeter subsystems, advanced continuous readout with on-the-fly data processing, integrated full-systems engineering, professional project management, and leadership-scale advanced computing with hardware acceleration.



ALICE EMCal, DCal



ALICE ITS and sPHENIX MVTX



ALICE TPC