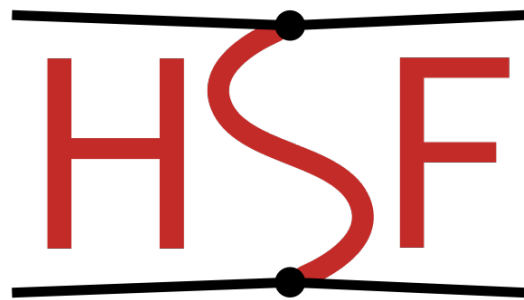


# HSF/DUNE framework requirements review

**Kick-off meeting**  
**10 May 2021**



HEP Software Foundation



# Why are we here?

- HSF has been asked by the DUNE experiment to review a list of requirements for its data-processing framework.
  - Goal: provide a document DUNE can use to inform its framework development and/or selection.

## **DUNE Software Framework Requirements Taskforce Report *Executive Summary***

This taskforce report was commissioned by the DUNE computing consortium. The scope of the report was to provide an enumeration of the needs of the DUNE experiment, as driven by its physics mission, in regards to a software framework for data processing and analysis.

The taskforce was composed of representatives from the different physics missions of DUNE, scientists with extensive experience with large scale data processing and analysis from outside of DUNE<sup>1</sup> and technical experts in software framework design, including the current conveners of the HSF<sup>2</sup> frameworks working group.

### **Task force members**

Co-chairs - Andrew Norman (FNAL) and Paul Laycock (BNL)

DUNE members - David Adams (BNL), Adam Aurisano (U. Cinc), Chris Backhouse (UCL), Mary Bishai (BNL), Claire David (York), Tom Junk (FNAL), Tom LeCompte (ANL), Chris Marshall (LBL), Brett Viren (BNL)

Advisors - Brian Bockelman (Madison), Chris Jones (FNAL), Kyle Knoepfel (FNAL), Liz Sexton-Kennedy (FNAL), Vakho Tsulaia (LBL), Peter Van Gemmeren (ANL)

### **General framework requirements**

For ease of reference, this executive summary lists the enumerated framework requirements defined by the Software Framework Requirements Task Force, more info on the task force can be found here:

[https://wiki.dunescience.org/wiki/Software\\_Framework\\_Requirements\\_Task\\_Force](https://wiki.dunescience.org/wiki/Software_Framework_Requirements_Task_Force)

Brave readers are encouraged to read the full document to understand the context and nuances of each of the requirements, the wording here is the same as the full text. While there may be overlap, the complete set of requirements as derived from various considerations is presented and no attempt at reducing this list is made here, rather that is left to framework designers when drawing up specifications. Considerations on "Utilities" and "Desired Features" are also presented at the end of the document to capture useful discussions and provide additional context.

***We list in the following the formal requirements determined by the taskforce.***

<sup>1</sup> Included scientists from ATLAS, CMS, Belle II, NOVA, MicroBooNE, CDF and D0

<sup>2</sup> High Energy Physics Software Foundation

# Why are we here?

- HSF has been asked by the DUNE experiment to review a list of requirements for its data-processing framework.
  - Goal: provide a document DUNE can use to inform its framework development and/or selection.
- Some questions for the panel to consider:
  - Do the requirements seem appropriate based on physics needs?
  - Using your experience, does it seem feasible to implement such a framework?
  - Are the requirements clearly enough stated for a framework implementer to use?

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# Format of the review

- **Kick-off meeting:** no discussions about specific requirements
  - Introductions
  - Settling on a timetable for the...
- **Mini-workshop:** 2 half-day sessions
  - Date not yet established (week of May 24<sup>th</sup> or May 31<sup>st</sup>)
    - Poll: <https://doodle.com/poll/aa57n9qepbcehvqg>
  - Outcome of mini-workshop will be a document that HSF provides to DUNE

# Important disclaimers

- It is not in the scope of this review to **select** a framework.
- To the extent possible, this review will be public.
  - For the benefit of the HEP community, documents will be publicly accessible.
- This review is meant for HSF to assist DUNE, not the other way around.
  - DUNE should feel free to request of the HSF what is most beneficial for their framework deliberations.
  - DUNE should feel comfortable inviting to the mini-workshop whomever they please.

# HSF Participants

## Review panel

- Charles Leggett (LBNL)
- Giulio Eulisse (CERN)
- Marco Clemencic (CERN)
- Marc Paterno (FNAL)
- Matti Kortelainen (FNAL)
- Christian Haack (Tech. U. of Munich)

## HSF *ex officio* members

- Chris Jones (FNAL)
- Kyle Knoepfel (FNAL)
- Attila Krasznahorkay (CERN)
- Benedikt Hegner (CERN)
- Liz Sexton-Kennedy (FNAL)
- Graeme Stewart (CERN)

# DUNE Participants

- Andrew Norman (FNAL)
- Paul Laycock (BNL)
- Mike Kirby (FNAL)
- Heidi Schellman (Oregon State)
- Brett Viren (BNL)
- Tom Junk (FNAL)
- Adam Aurisano (U. of Cincinnati)
- Chris Backhouse (UCL)
- *Whoever else DUNE wants to invite*

# Today's goal

- Remarks from HSF and DUNE
- Roundtable introductions
- Questions from HSF participants to DUNE (and vice versa)
- Planning (executive) session
  - HSF WG conveners
  - DUNE computing representatives – Heidi, Mike, Andrew, and Paul