



art

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9 March 2023

CSAID Roadmap Meeting/Software Evolution



Over the last few years

art framework development has been largely frozen, but still non-negligible:

- Migrations to GitHub
- Significant steps forward with build system and Spack
- Upgraded software stacks and compilers (support C++20, modulo ROOT)
- Minor enhancements in framework functionality
- Facelift of some art interfaces
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Before restarting development, we need to understand where we are.

- art's development is more integrated with LArSoft than it used to be
- New ideas, technologies, constraints (etc.) have arisen in the last 4 years
- Some of the ideas we had 4 years ago may not make sense to pursue

art support model

Decisions are jointly made by the developers and stakeholders

- Representatives that convey the needs of the experiment/project.
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Potential for experiments to want conflicting framework behaviors/features

- True in principle, but it has not happened in the lifetime of the project.
- We strive hard for stakeholder consensus on any given feature.
- There is enough flexibility in the framework that each experiment's needs are met.

Who uses art?

ArgoNeuT

artdaq

DUNE FD

EMPHATIC

ICARUS

LArSoft

MicroBooNE

Mu2e

Muon g-2

NOvA

ProtoDUNE I/II

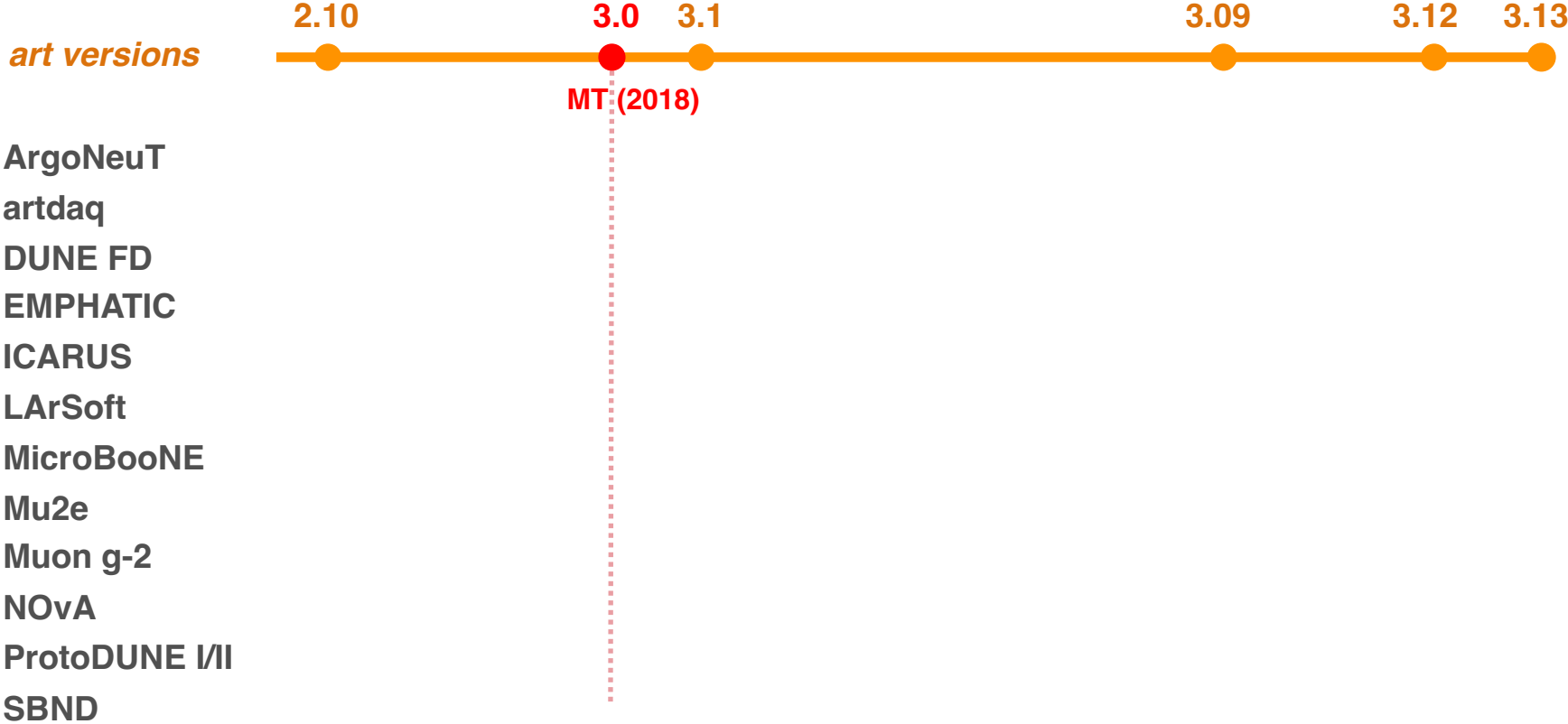
SBND

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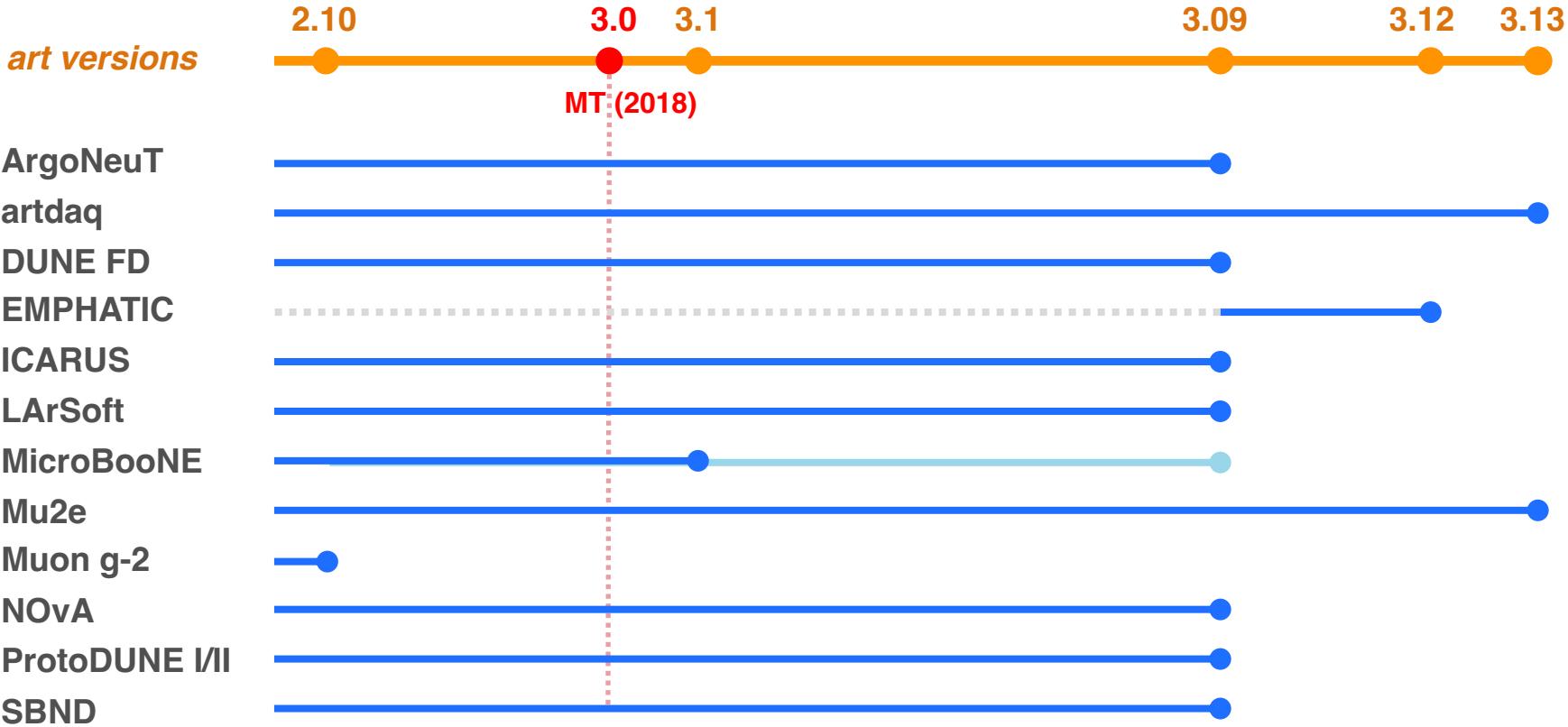


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Items on the near horizon

- **Token support with art/ROOT**

Details given at FIFE meeting (see <https://indico.fnal.gov/event/58769/>)

Short form: requires a rebuild of experiment software stacks that use ROOT/XRootD

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Our AL9 software will not support native UPS products

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Neither of these is framework-related per se.

Substantial non-framework effort expended by our developers.

Items further out

- **Possible action items based on LArSoft MT and Acceleration workshop**

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Decomposition of “events” into more helpful units of processing for DUNE's use.

How will this influence art development?

We don't know yet.

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- **More items to be determined from frameworks workshop...**

Frameworks workshop

- Each art-using experiment has been notified about a frameworks workshop.
Will likely be sometime in June
- **Workshop scope:** elicit unmet framework needs of art-using experiments.
We expect talks from several experiments/projects
We also plan to have topic-based discussions (e.g.):
 - Environment issues*
 - Task-scheduling improvements*
 - Configuration*
 - Memory management*
 - etc.*
- We are in the planning phase but expect to hear more soon.