

Possible path forward: IB option

PLAN-A

(conservative, sPHENIX assemblies at CERN)

- Buy “spare” components from CERN
 - No \$\$ commitment to CERN until CD3a
 - payment @CD3a, 11/2017
 - MAPS(~2% ALICE)
 - HDI/Staves (~50% ALICE, 48/120)
 - New Staves/HDI productions needed?
 - MAPS chips available ~6/2018
- We do:
 - New Staves/HDI productions via CERN
 - Reuse ALICE IB assembly lines/tooling
 - Stave assembly @CERN
 - Contract w/ CERN or we provided manpower
 - QA, assembly & testing
 - Setup tooling @US
 - It will take a long time and trainings, experience
 - Develop readout interface (LANL)
 - Copy ALICE RO
 - Mechanical support (LBNL?)
- Full system ready by 12/2020
 - 2018/2019/2020, 3-years
 - Ready for beam 6/2021

PLAN-B

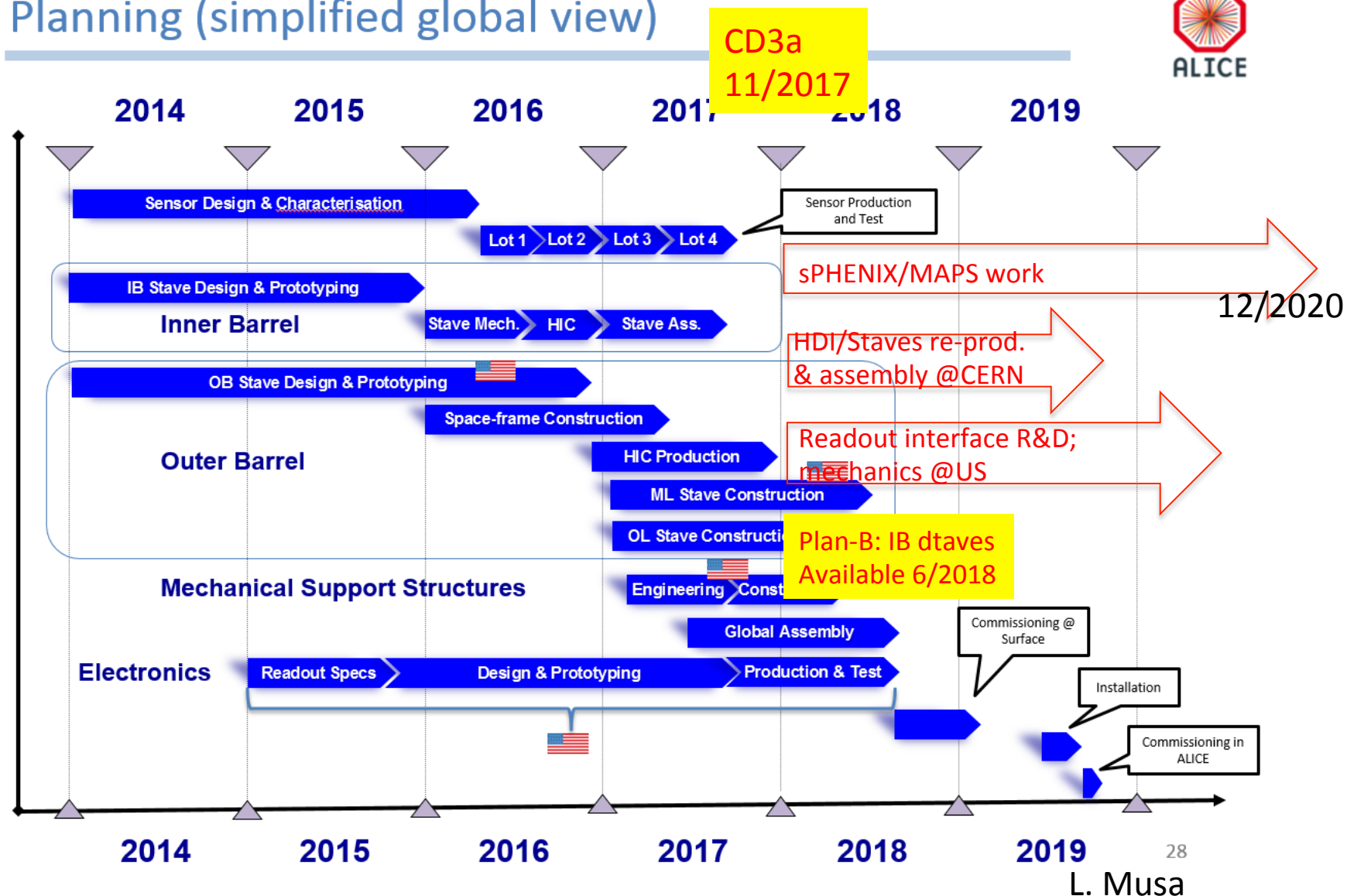
(aggressive, purchase 60+ staves)

- Get fully assembled staves from CERN (IB)
 - O(\$1M) on material + labor
 - External funding before CD3
 - Nov/2017 (Jul 2018)
 - What if funding fails?
 - Available early 2018 (w/ ALICE IB)
 - Requires early contract with CERN
 - By 12/2016?
- We do:
 - Readout interface
 - LANL LDRD/FVFX setup
 - Copy ALICE RO
 - mechanical support
 - LANL LDRD?
 - Other institution, LBNL?
- Full system ready by 12/2020
 - 2018/2019/2020 3 years
 - Ready for beam 6/2021

\$\$ buy out risks and time

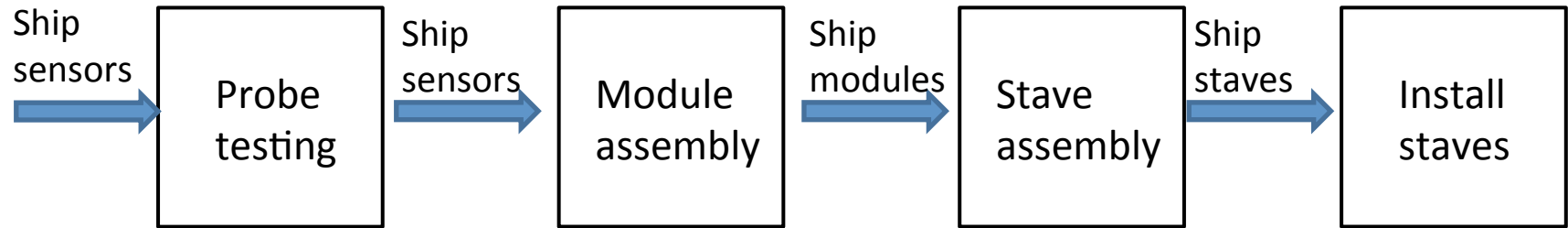
Current Schedule: option-A/B

Planning (simplified global view)



Workflow overview

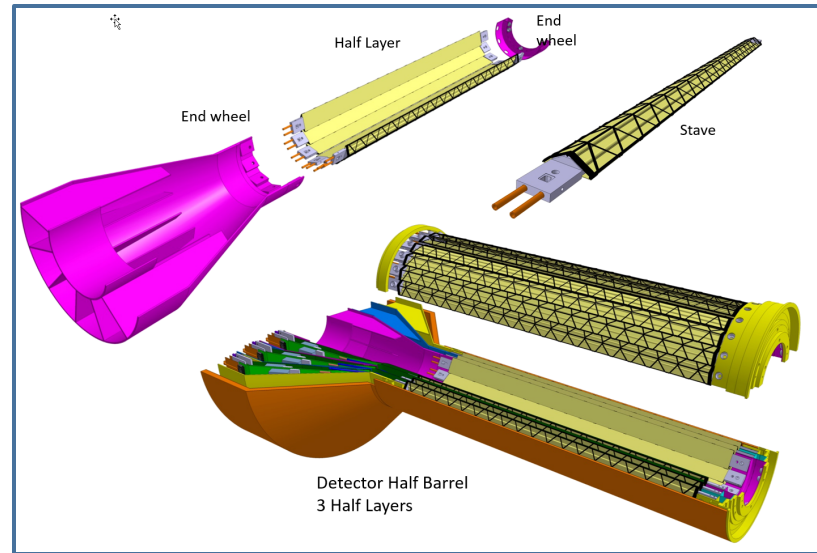
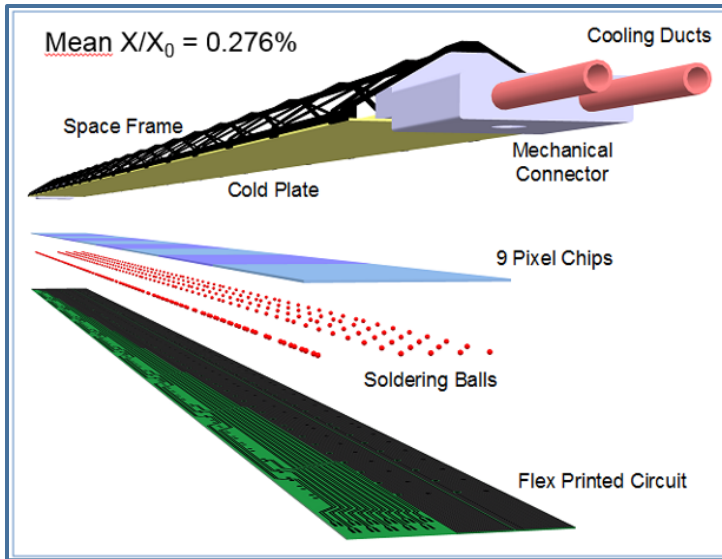
Leo's talk



- This is a draft overview of the workflow for building middle and outer layer staves.
- For this draft, we assume wire bonding for the interconnection technology.
- For this draft, we assume the tabbed version of the FPC.
- We are specifying a baseline workflow and will update as the sequences become more developed.
- Not all processes are fully developed.
- In the shipping stages, the barcode information for each item is stored in the database.

ITS Inner Layers

Leo's talk



48 inner staves

Readout for: ➡

- 432 Sensors
- 226 M pixels
- 0.19 m² of silicon

Very comparable to PXL