

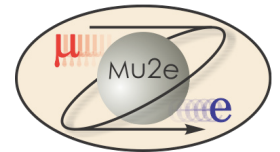


Mu2e Accelerator Installation & Commissioning

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Scheduling Constraints

- **Mu2e Funding Profile**
 - Relatively light funding in FY15 and FY16 has forced us to defer implementation activities to FY17 and later
 - Causes long delays between completion of design and beginning of implementation
- **Mu2e tailoring strategy**
 - Final design is complete in many sub-projects well before CD-3c (early-mid FY16)
 - Note: this is of very small consequence since the funds to begin implementation will not be available until later
- **g-2 run**
 - g-2 beam operations are expected to begin early-mid calendar 2017
 - External beamline installation requires magnet moves from beam enclosures that will be inaccessible during g-2 running – magnet moves must be scheduled to occur during Accelerator Shutdowns

Scheduling Constraints (continued)

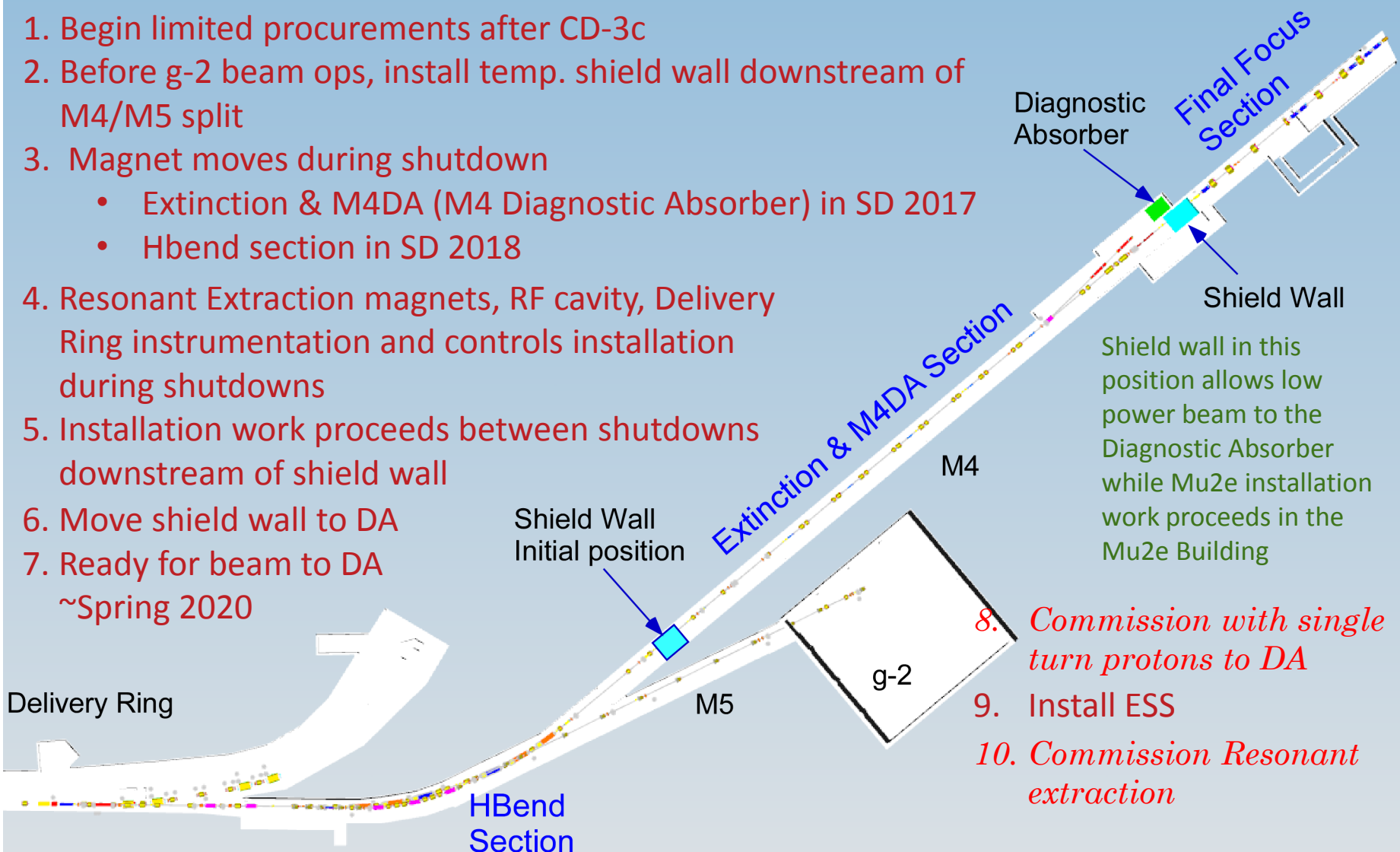
- **Fermilab resource availability**
 - Mu2e Accelerator will be making a heavy demand on Fermilab (particularly AD) engineering and technical resources in FY17 and FY18
 - AD senior management and Mu2e project management are engaged in planning to meet this demand
 - Bi-weekly meetings with AD Division Head Muon Department Head and Mu2e Accelerator L2
- **Solenoid field mapping**
 - Field mapping of the Mu2e solenoids is a task undertaken by the Mu2e collaboration (off-project) that will require an undetermined amount of time
 - The proton target cannot be installed in the Production Solenoid until this activity is complete. Therefore the installation of the target is off-project

Scheduling Constraints (continued)

- **Beam availability**
 - The external beamline is expected to be complete to the diagnostic absorber early in calendar year 2020.
 - The actual commissioning of the beamline to the diagnostic absorber will be performed by the Muon Department (off-project) with single-turn extracted protons from the Delivery Ring.
 - Installation of the Resonant Extraction Electro-Static Septum (ESS) precludes single turn extraction from the Delivery Ring
 - ESS installation must follow commissioning of the beamline with single-turn protons
 - Once the ESS is installed, only resonantly extracted beam will be possible in the external beamline.

General Installation Sequence

1. Begin limited procurements after CD-3c
2. Before g-2 beam ops, install temp. shield wall downstream of M4/M5 split
3. Magnet moves during shutdown
 - Extinction & M4DA (M4 Diagnostic Absorber) in SD 2017
 - Hbend section in SD 2018
4. Resonant Extraction magnets, RF cavity, Delivery Ring instrumentation and controls installation during shutdowns
5. Installation work proceeds between shutdowns downstream of shield wall
6. Move shield wall to DA
7. Ready for beam to DA
~Spring 2020



8. *Commission with single turn protons to DA*
9. Install ESS
10. *Commission Resonant extraction*

Schedule

