Proposed Far Site CAD Integration Process

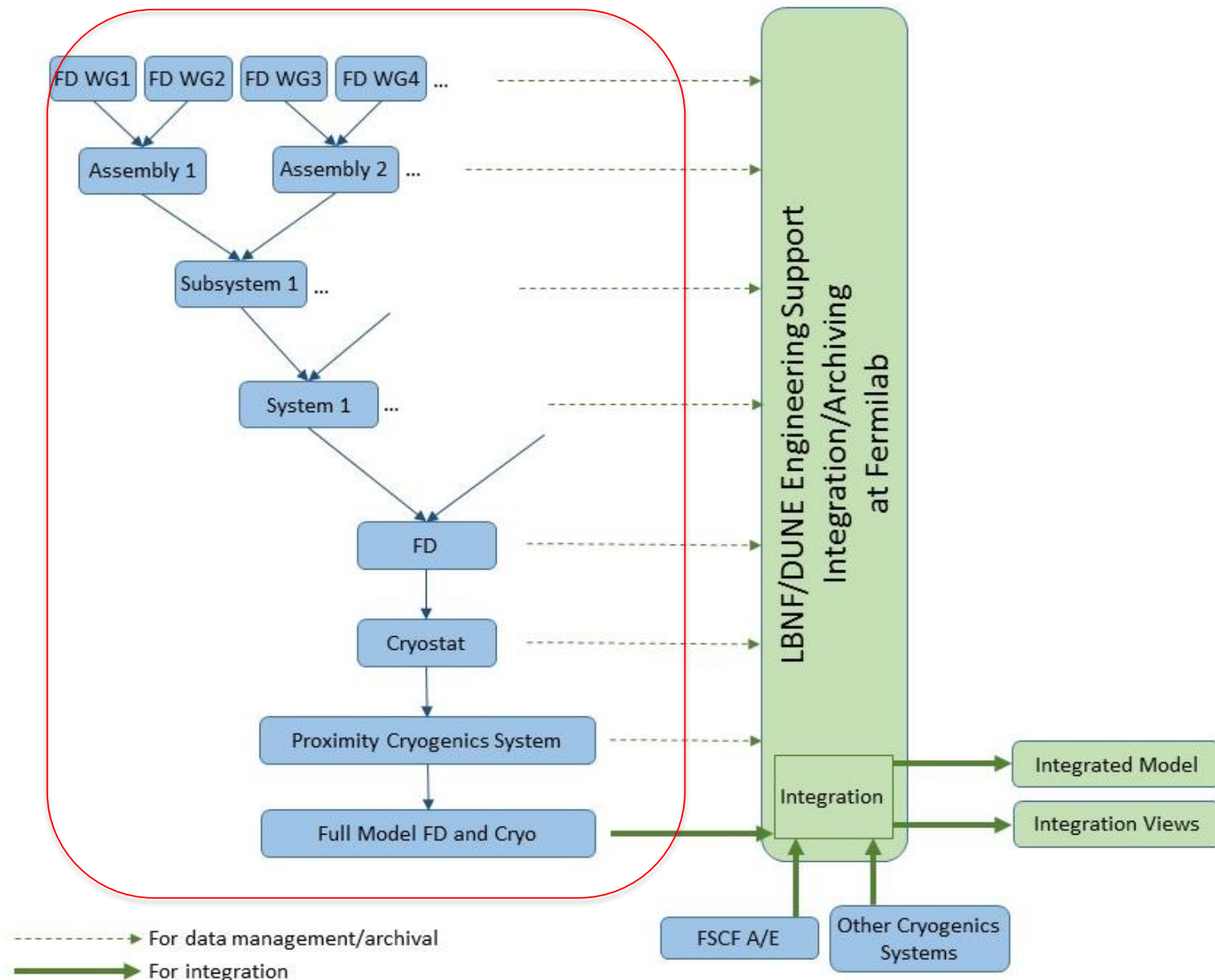FS CF & Cryo Integration Meeting

CERN

6 Dec 2016

E McCluskey

Overall integration goals

- The goal of integrating separate CAD models and designs is to have latest versions of cad models available to everyone in a common format useable to everyone so that

  - clashes and interferences can found and resolved

  - Designs can be coordinated and installation/construction sequences can be planned.

- Issues with getting to this goal include

  - Access for everyone

  - Format

  - Frequency

  - Configuration control

  - Ability to find the latest easily

Proposed CAD Integration Process

- LBNF/DUNE Engineering Support team, sited at Fermilab, proposes to

  - integrate the 3D solid models of the far site conventional facilities, cryostats, cryogenics systems and detector modules into a common format on a consensus periodic basis

  - make it available to the entire LBNF/DUNE enterprise.

  - also make available lighter integrated "views" that contain only "envelope" information of the far site campus that can be generated for certain specific locations if needed, to aid in quick studies of interfaces, clash detection, etc.

- In process of developing a "FS CAD Integration Plan" to describe the process

CERN already doing this

FD WG1 FD WG2 FD WG3 FD WG4 ...

Assembly 1   Assembly 2 ...

Subsystem 1 ...

System 1 ...

FD

Cryostat

Proximity Cryogenics System

Full Model FD and Cryo

LBNF/DUNE Engineering Support
Integration/Archiving
at Fermilab

Integration

Integrated Model

Integration Views

FSCF A/E

Other Cryogenics Systems

------> For data management/archival

——> For integration

Details

- Far Site sub-projects and working groups shall provide 3D solid models and any associated 2D drawings to the Fermilab Engineering Support Team for integration purposes and for data archiving/ configuration control at specific points in time.

  - The input files shall be in the following formats:

    - 3D Solid Models – STEP file format

    - 2D Drawings – Original file format and PDF

  - Propose that starting in early 2017, LBNF/DUNE Engineering Support Team provide far site "Integrated Views" and "Integrated models" to the LBNF/DUNE enterprise available from a consensus location at the following frequency, with the exact timing to be discussed.

  - Integrated Model – Quarterly

  - Integrated Views – Monthly

- Process would provide for

  - Ability to everyone to find latest information easily

  - Configuration control