

DUNE-SP

Technical Integration: Interfaces

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APA to HV Interfaces 2088738

- Advancements have been made on an interface drawing between APA and HV. This draft drawing has been sent to individuals involved. Posted to EDMS without comment.
- Started looking into the APA to End Wall Field Cage mechanical interface.

APA to HV End Wall Field Cage (1/3)

- From 2088738

Hardware:

The APAs support half the weight of the top/bottom field cage modules in the SP TPC. The APAs and the end wall field cage modules are constrained in the drift direction to maintain uniform drift field. The field cage termination voltages are provided through filter networks and cables mounted on the APAs.

The hardware interface between JT-HV and APA has two components:

1. Mechanical:
 - a. Upper field cage support assemblies (Fig.1)
 - b. Lower field cage support assemblies (Fig. 2)
 - c. End wall field cage support assemblies (Fig. 3)
2. Electrical:

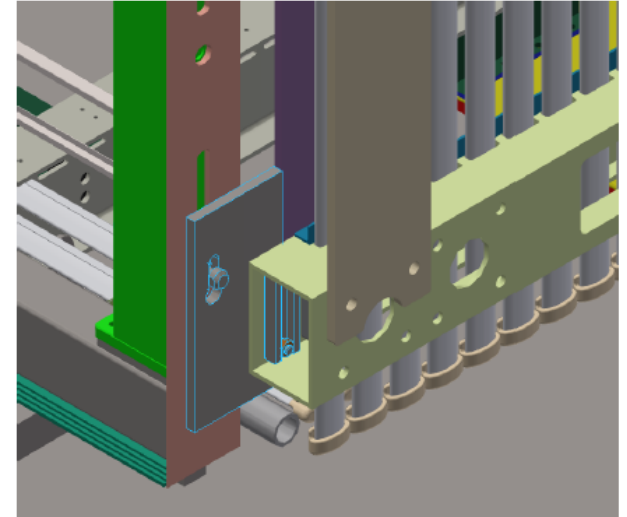


Fig. 3. Endwall field cage Guiding Plate. Shown here is the NP04 implementation of the design. FD specific design is expected to be similar, with one plate at the bottom of the TPC and one at mid-height.

APA to HV End Wall Field Cage (2/3)

- An end wall is a field cage. A field cage is not necessarily an end wall. Keep in mind to avoid confusion.
- Interface document plan is to use ProtoDUNE design and adjust to DUNE FD
- Note the cables routed through the conduit and side tubes were not present for ProtoDUNE.
- As expected the interface is handed.

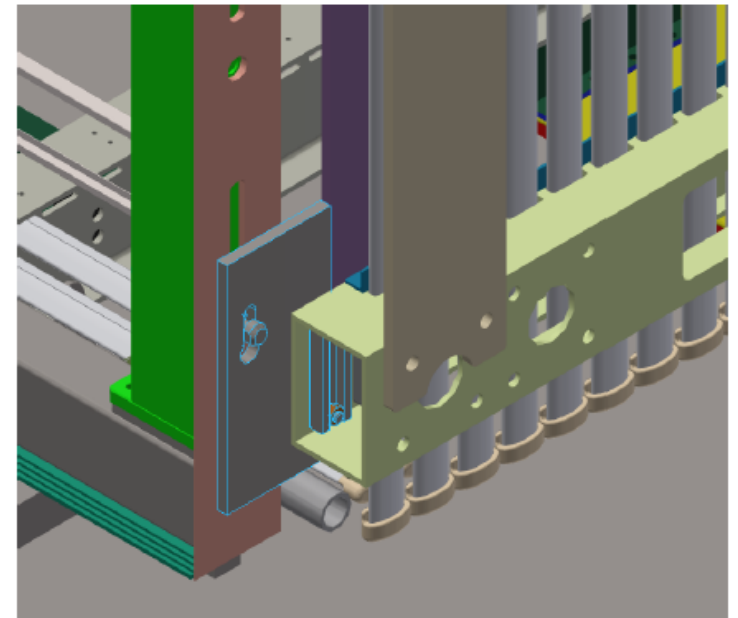
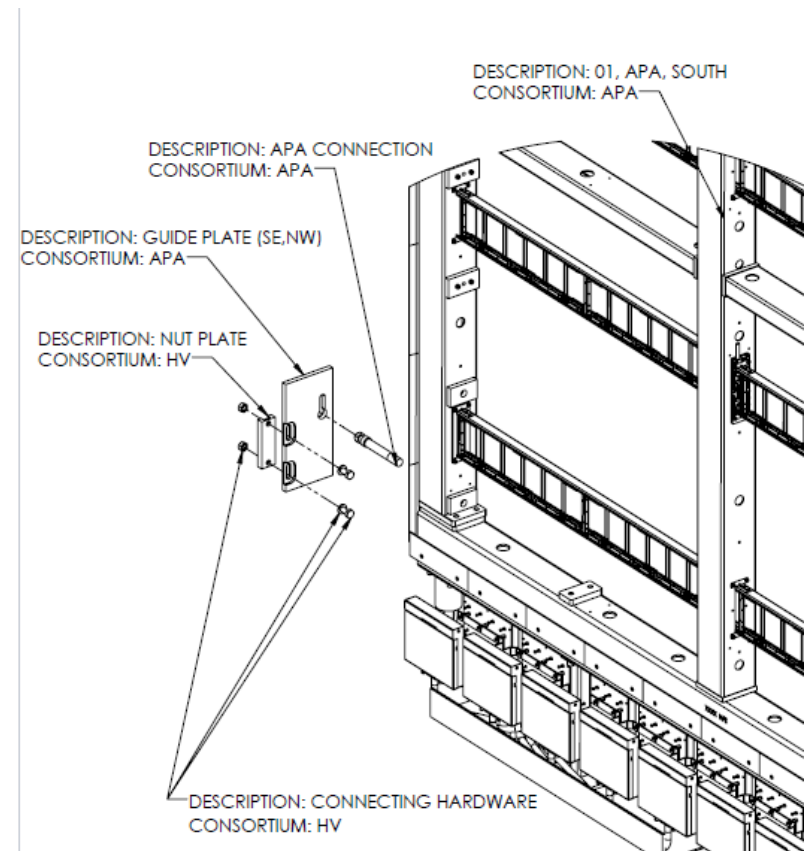


Fig. 3. Endwall field cage Guiding Plate. Shown here is the NP04 implementation of the design. FD specific design is expected to be similar, with one plate at the bottom of the TPC and one at mid-height.

APA to HV End Wall Field Cage (3/3)

- Proposed assignment of hardware draws from the interface document pulled from an in progress drawing.
- Note what is shown in the image would be used at either the SE or NW corner of the detector



Summary of Detector Mass Data

Consortia	Mass Data
TPC CE	Mass Data Received
HV	Mass Data Received
PDS	Not Received
APA	Not Received

- Information will be kept and maintained at EDMS 2281422

Updates and AOB

- I do not plan on hosting meetings on Dec. 26st and January 2nd
- What are your priorities for interfaces over the next few months?