Some thoughts on the list of requirements

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WIB: Functional description

- The WIB is the interface between the DAQ system and Cold Electronics (FEMB).

- Receives the system clock and control signals from the timing system and provides for processing and fan-out of those signals to FEMB(s).

- Receives high-speed data signals from FEMB(s).

- Performs data manipulation/formatting to match the protocol of links to DAQ.

- Transmits data to the DAQ system.

- Provides power to Cold Electronics.

- Provides monitoring functionality.

- Provides recovery functionality.

WIB: Interfaces / functional dependencies

- Cold Electronics (incl. signal feed-through flange board and cold cabling).

- Timing system.

- DAQ system.

- Slow Control.

WIB requirements

1) Functional requirements.

2) Mechanical requirements.

3) Electrical requirements.

4) Hardware architecture.

5) Software architecture (if any).

6) Firmware requirements.

7) Communication interfaces (mechanical, electrical, protocols, etc.).

8) Environmental requirements.

9) Failure contingencies, backup and recovery requirements.

10) Test, diagnostic, calibration, etc. requirements.

11) Installation and integration requirements.

12) Other special requirements.

13) Constraints.

14) Requirements on external system, assumptions, dependencies.

15) Customization and flexibility.

16) Cost considerations.

17) Timeline.

Some observations

- The design of Cold Electronics has not been finalized yet. WIB has to be flexible enough to accommodate a wide range of possible FEMB solutions.

- A mechanism is needed to identify WIB/FEMB/APA combination (geographical addressing).

- Extremely valuable experience was gained by the collaboration during ProtoDUNE Cold and Warm Electronics installation, commissioning and operation. It seems natural to capitalize on the existing expertise and extend it to wider collaboration for DUNE far detector.

Requirements collection process

- Procedure to obtain external requirements (formal request, timeline, who talks to who, etc.).

- Collaborative work on the Requirements Document (repository/Word/LaTeX).

- Action items?