Update on SFH and UTS for PRM

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Currently testing detector mechanics and coupling of fibers to SiPM arrays to maximize light yield.

Fiber clamping
SFH Lab Tests: Coincidence

- Temperature controlled environment for dark count measurements
- Temperature dependency and coincidence suppression

Dark count rate can be suppressed via coincidence
- Number of photons per event crucial for threshold
Signal Level Measurement

- Simplified setup with 8 fibers to measure light yield and expected signal height in SiPM
- Fiber length, mechanics for holding and coupling to SiPM similar to SFH
- Stand-alone readout and DAQ (MSADC)
- Production foreseen to start within the next days
- Parasitic test in the first half of May downstream of COMPASS
First vessel prototype here in Munich, second one will be produced soon (dep. on workshop capacity), can then be send to CERN

For UTS test this year still to be clarified:
- Beam windows / flanges to close the volume e.g. milled down aluminum flanges
- Support and holding structure for the UTS
UTS Support

- Most parts for supports are in stock in Munich, some parts need to be produced in local workshop
- Can in principle be finished until test campaign in October
- How much precision and flexibility in alignment required?
Plan for this Year

**Test campaign #1**: Initial tests of end-to-end light yield
- Prototype with 8 channels to test light yield and coincidence trigger rates in beam
- Setup as shown before
- Target location and time frame: beam-dump area, first half of May

**Test campaign #2**: Test of SFH prototype
- Prototype of SFH detector
- Target location and time frame: beam-dump area, earliest end of July

**Test campaign #3**: Integrated testing of prototype UTS
- SFH prototype + SPD prototype
- 64+ fibers per plane, full 4 planes (2 X, 2 Y)
- Target location and time frame: October, dedicated AMBER test

Requirements:
- Campaign 1: only space and electrical power required, downstream of COMPASS
- Campaign 2 & 3: Electrical power, network connection, fibers for connection to DAQ
Thank you for your attention!