



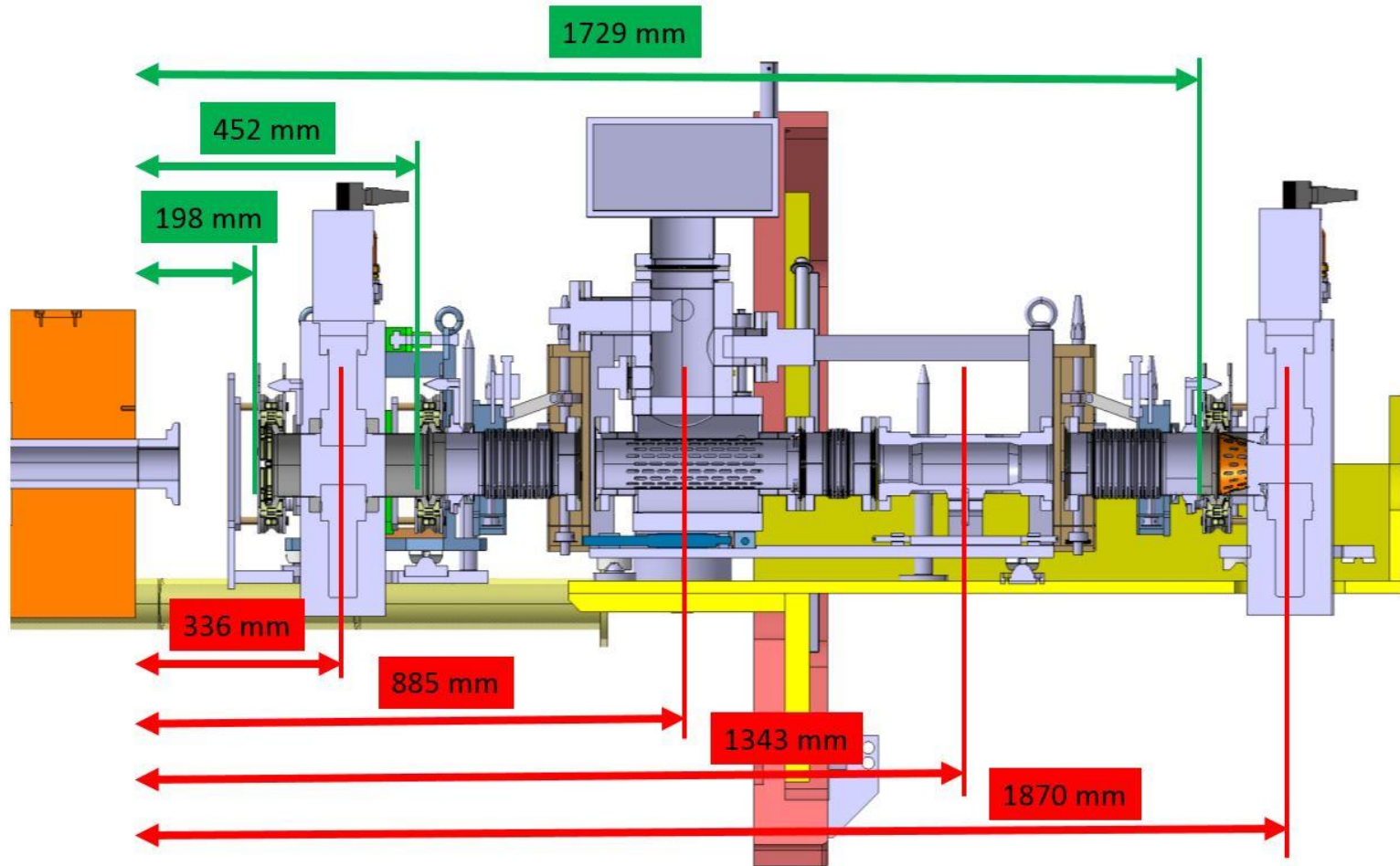
41st Bi-weekly meeting

12 July 2016

News

- TAXS- BPM
- Ongoing work
- EFCA, Annual meeting

Current situation (CMS)



25/04/2016

Damien BRETHOUX EN-EA-EC

BPM in experimental area requirements

- **Assembly length**: At the limit in ATLAS environment due to clash with second JTT ring.
- **Alignment** of BPM wrt Q1. Need to **survey** would imply access through shielding, adjustments through shielding or complicate remote operations.
- **On the good side**: could be done with a ballistic approach, no high precision requirements (< 5 mm)
- **On the bad side** Positioning: movements with openings & closing of forward shielding structures.
- Historic TAS alignment data show that current situation is rather stable. Few re-alignments done in the past in ATLAS, none in CMS.
- **Stability during operation a must** (<10 microns)
- BPM reliability. (Not in secondary vacuum)

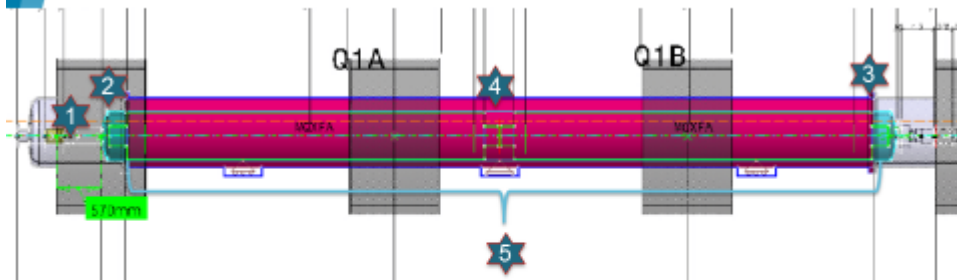
BPM in experimental area requirements

Starting point : in order to place the BPM between Q1 and Q2A in good area it is necessary to displace it of 120 mm towards the IP (dimensions taking into account thermal contraction)

Paolo Fessia,
WP15

Where can we gain?

Min 103 mm, target 120 mm



- 1 Using the distance gained between BPM 1 and the Q1 to approach the Q1 reducing β'
Limiting factor: the 2 phase separators volume, the diameter of the pumping lines and the integration with the beam screen cooling
- 2 Distance between end cover and magnet reducing space for MQXF connection box
- 3 Distance between end cover and magnet reducing space for MQXF connection box and the bus bar compensation loop
- 4 Distance between two MQXF inside the Q1 reducing the space for the end plates and tensioning rods
- 5 Decreasing the magnet lengths increasing the current therefore decreasing the margin

Plan

- Definition of the space between BPM and Q1 front face requires the detailed cryostat design
- Document from the WP9 under preparation due in 1-2 weeks at detail design
- Definition of the space in between magnet(s) and end covers and between magnets require the CM design
- **It has been agreed to come back on mid of June to assess the situation**
- Presently we propose to move in next lay-out the Q1 BPM and leave the other in present non optimal region
- WP2 asked to keep the BPM in the experimental area also if the space would be very welcome from WP8 for the integration in the experimental side and it rises several technical questions
- Postponing the decision till beginning of summer it does not impact WP8 work. Decision limit in September



HiLumi - LHC integration team, dreams that shape the reality

P. Fessia->TCC (28-04-2016)

BPM in experimental area status

WP3 cryostat team (Cedric Francois Eymin, Delio Duarte) **informed that 120 mm can be found** between inside the “QQS” area on the IP side of Q1

WP3 Cold mass and magnet team (P. Ferracin, H. Prin, E. Todesco) **informed that very probably the Q1 (and therefore the Q3) can be shorten of 40 mm** (internal magnet distance)

Paolo Fessia,
WP15

BPM in experimental area status

As consequence it was agreed that

- 1) 120 mm can be found
- 2) **The BPM in Q1/Q2a can be displaced in the good area**
- 3) **The Experimental side BPM will be taken away from baseline/layout**
- 4) WP3 will inform in 3-4 weeks how the 120 mm will be taken over the 160 mm made available (i.e. 80 mm QQS and 40 mm Q1) to allow sta and information for the next lay-out/optic iteration

Paolo Fessia,
WP15

BPM out of experimental area means:

- Fewer interventions

(BPM : Alignment with Q1, BPM is the weakest element in terms of vacuum leaks, to have it in secondary vacuum gives more reliability).

- Relaxed need of re-alignment for the rest of VAX , similar to current system used for VJ chamber
- VAX length decreased:
 - extra rigidity
 - ATLAS: Reduced needs of JTT machining
 - ATLAS: Extra space for opening
 - ATLAS: no interference with second JTT

News

ECFA High Luminosity LHC Experiments Workshop - 2016

3-6 October 2016
Aix-Les-Bains
Europe/Zurich timezone

Overview

Timetable

Registration

Participant List

Accommodation

Payment Options

Support

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✉ connie.potter@cern.ch

☎ +41754115267, +41754...



Starts 3 Oct 2016 08:00
Ends 6 Oct 2016 18:00
Europe/Zurich



Aix-Les-Bains



Kevin Einsweiler
Didier Claude Contardo



The third ECFA Workshop will gather again the theory, accelerator and experiments communities to discuss the future experiments at the High Luminosity LHC. While the previous workshops, provided a panorama of the exciting physics goals and challenges for the experiments, the project is now entering a new stage with the preparation of Technical Design Reports for ATLAS and CMS upgrades and with the execution of the ALICE and LHCb upgrades. The emphasis of this meeting will be on: the progress in the theoretical concepts and the framework developed to assess the physics reach of the experiments, including experience with the run II data analyses; the discussion of accelerator options to facilitate the experiment operation and enhance the performance; and the optimization of the detector design and related techniques. Progress in common experimental developments will also be reported, along with new ideas to operate at the extreme rates and collision pile-up conditions.



Registration

Registration for this event is currently open.

[Register now >](#)

<https://indico.cern.ch/event/524795/>

News

6th HL-LHC Collaboration Meeting



14-16 November 2016
Paris, Espace St Martin
Europe/Zurich timezone

Overview

Collaboration Meeting
website

Timetable

My Conference

Participant List

HL-LHC Secretariat

✉ cecile.noels@cern.ch

The 6th HL-LHC Collaboration Meeting jointly organised by CEA and CERN will be held in Paris, France from 14 to 16 November 2016, and marks the beginning of the construction phase of the project.

This meeting will see the participation of all major HL-LHC collaborators from the US (LARP), Japan, France, Spain, Italy, the UK, Sweden and from many Institutes worldwide.

This year, the meeting will be based on the traditional format of plenary and work package parallel sessions, and aims to review the technical progress, the performance reach and coherence of the project baseline after the configuration changes carried out in June this year, and in view of the recent LHC luminosity performance at 13 TeV. The outcome of the 2nd Cost and Schedule Review will be discussed and the process to launch the Technical Design Report (v1), the future base of the project construction, will also be initiated. Additionally, this Annual Meeting will host the 6th meeting of the newly structured Collaboration Board.

Besides, a visit and a satellite meeting will be organized at CEA-Saclay on Thursday 17 November 2016. Transportation to/from CEA-Saclay will be provided.

Participation is by invitation only, and registration is mandatory and without fee.

<https://indico.cern.ch/event/549979>

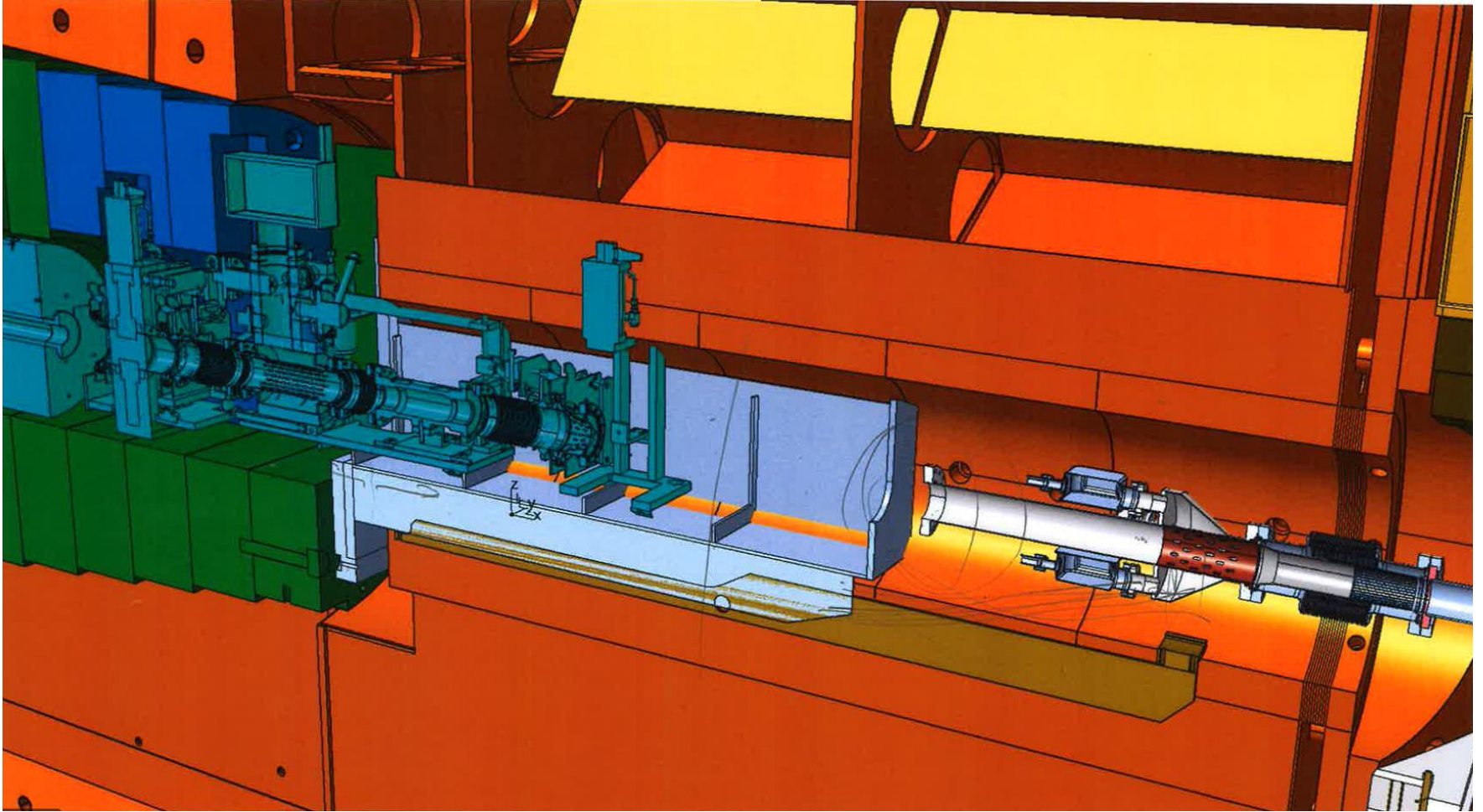


TAXS

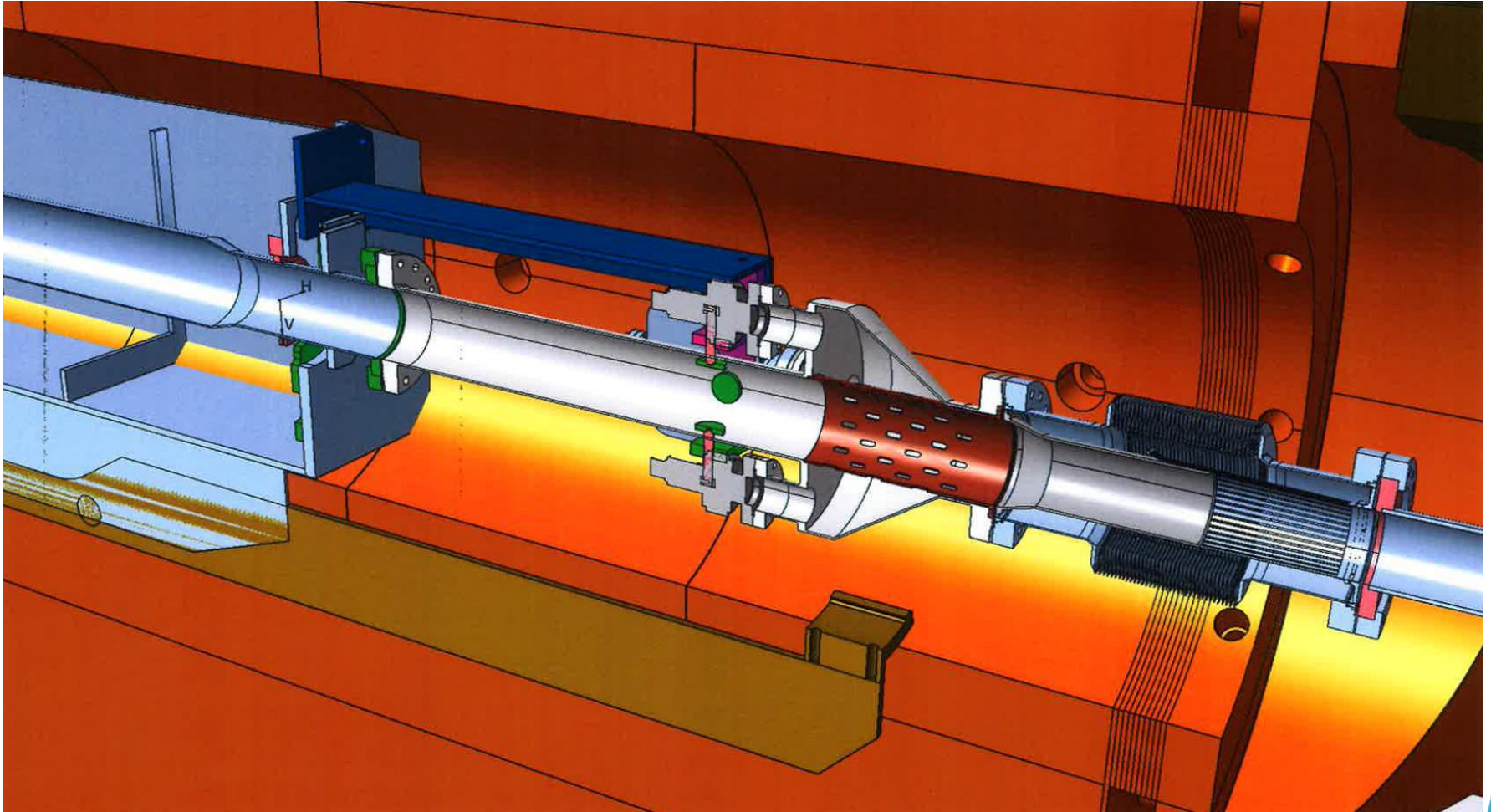
Ongoing work:

- Integration of services and connectors (ATLAS & CMS). Need definition of cabling needs.
- Meetings with Staubli & USITEC
- CMS Beampipe support (LS2)

CMS Beampipe suport



CMS Beampipe suport



TAXS

NEXT:

Vacuum detailed layout.

Dismantling procedures.

TAXS alignment & motorization.

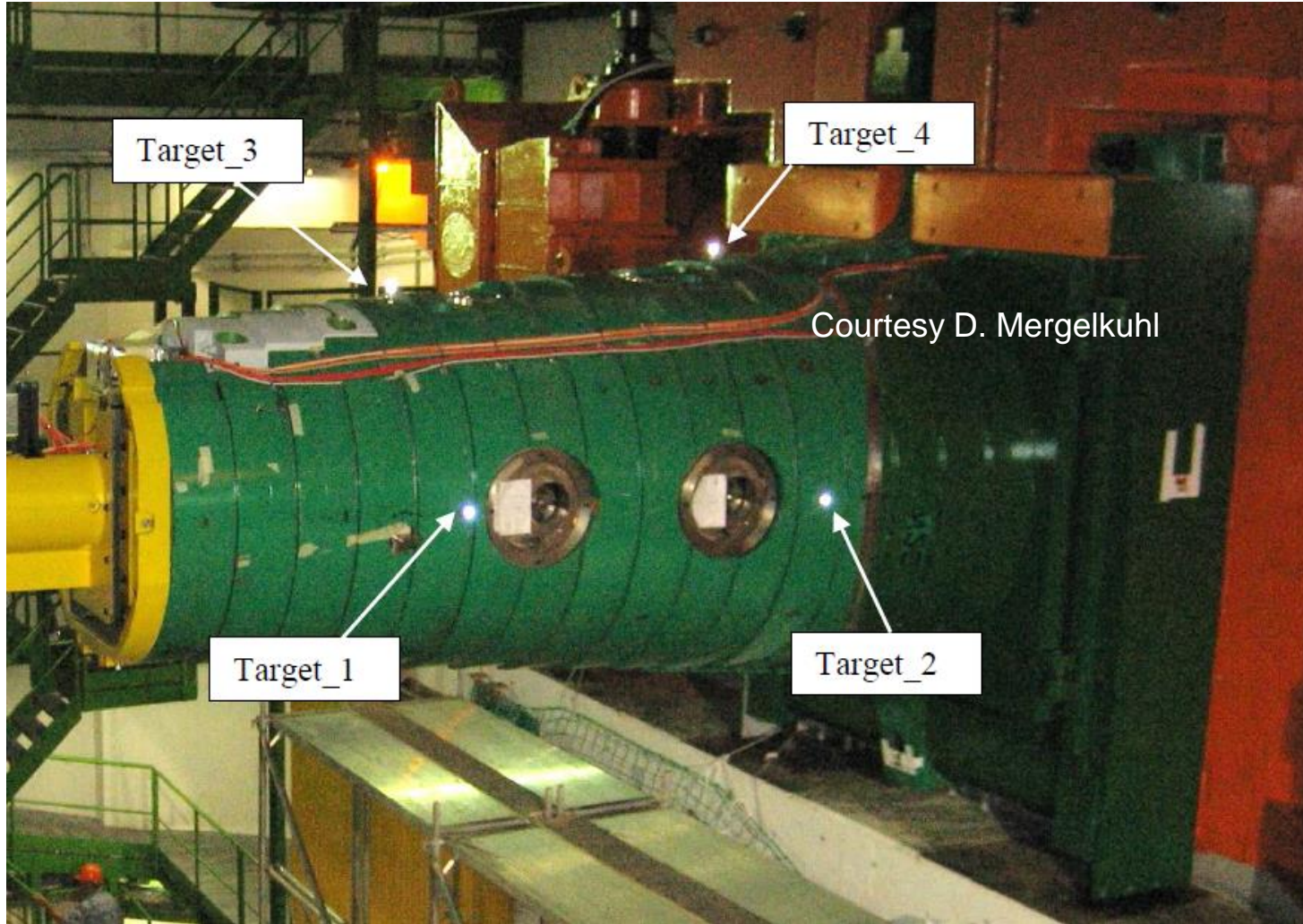
Proof of principle prototype.

Motorization: ATLAS TAS survey history

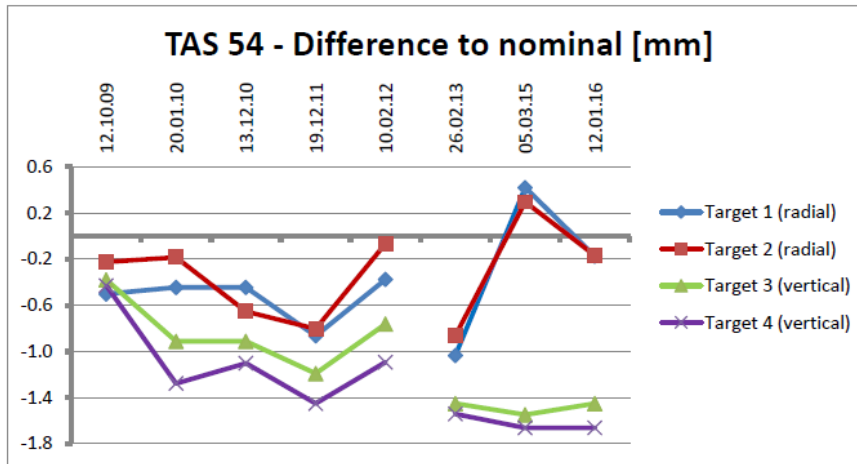
List of measurements	Operation	List of measurements	Operation
ATLAS TAS-A		ATLAS TAS-C	
March 2016	adjust	March 2016	measure
November 2014	measure	December 2014	adjust
February 2013	measure	February 2013	measure
March 2012	adjust	March 2012	adjust
February 2011	measure	28+31 January 2011	adjust
August 2009	adjust	September 2009	adjust
July 2008	adjust	18 July 2008	adjust
June 2008	adjust	04 June 2008	adjust

- Only measurement dates with the possibility (configuration) of adjustment have been taken into account.
- Other control measurements at detector opening or on permanent targets in run configuration exist

Courtesy D. Mergelkuhl



Motorization: CMS TAS survey history



35th WP8 Biweekly meeting
<https://indico.cern.ch/event/512614/>

Figure 6. Coordinate differences to nominal

Courtesy D. Mergelkuhl

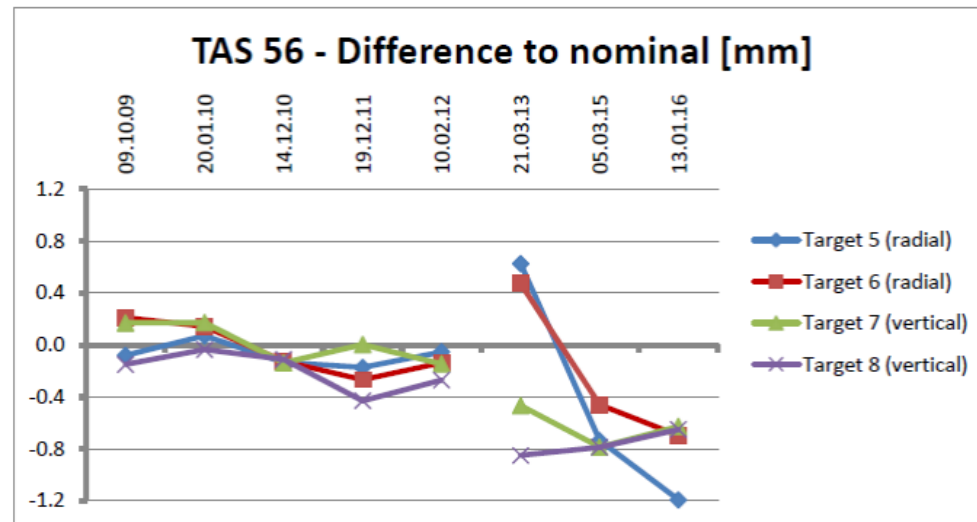


Figure 6. Coordinate differences to nominal