



Push-pull solution Motivations for moving platforms

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- It is difficult to equip ILC with two independent IRs, thus the desire to be able to exchange experiments **frequently**, say every month or so.
- This exchange must be done **quickly**, say within one week.
- **I consider these goals extremely ambitious**, however I tentatively concluded that they can be met, but this cannot be for free. **Part of the economy gained from doing away with a second IR must be invested to provide an efficient and safe push-pull system.**



Hypothesis

- To get a successful concept, it is necessary to design experiment layout, experimental area, and last part of the machine as tightly connected projects..
- I imagine this is the main goal of the coming September workshop.



A moving platform is the technically safe solution

- To move quickly and safely a 12'000-ton (or so) large composite object is not easy and a dedicated platform would do the trick.
- The two experiments will certainly be two projects largely independent from the machine, in organization and financing.
- It is thus very important to provide a well defined interface from which all parties can design with different time scales (Civil Engineering wants to go in construction faster than experiments).
- A moving platform for each detector will also provide a nice and clear interface for detectors of different sizes.



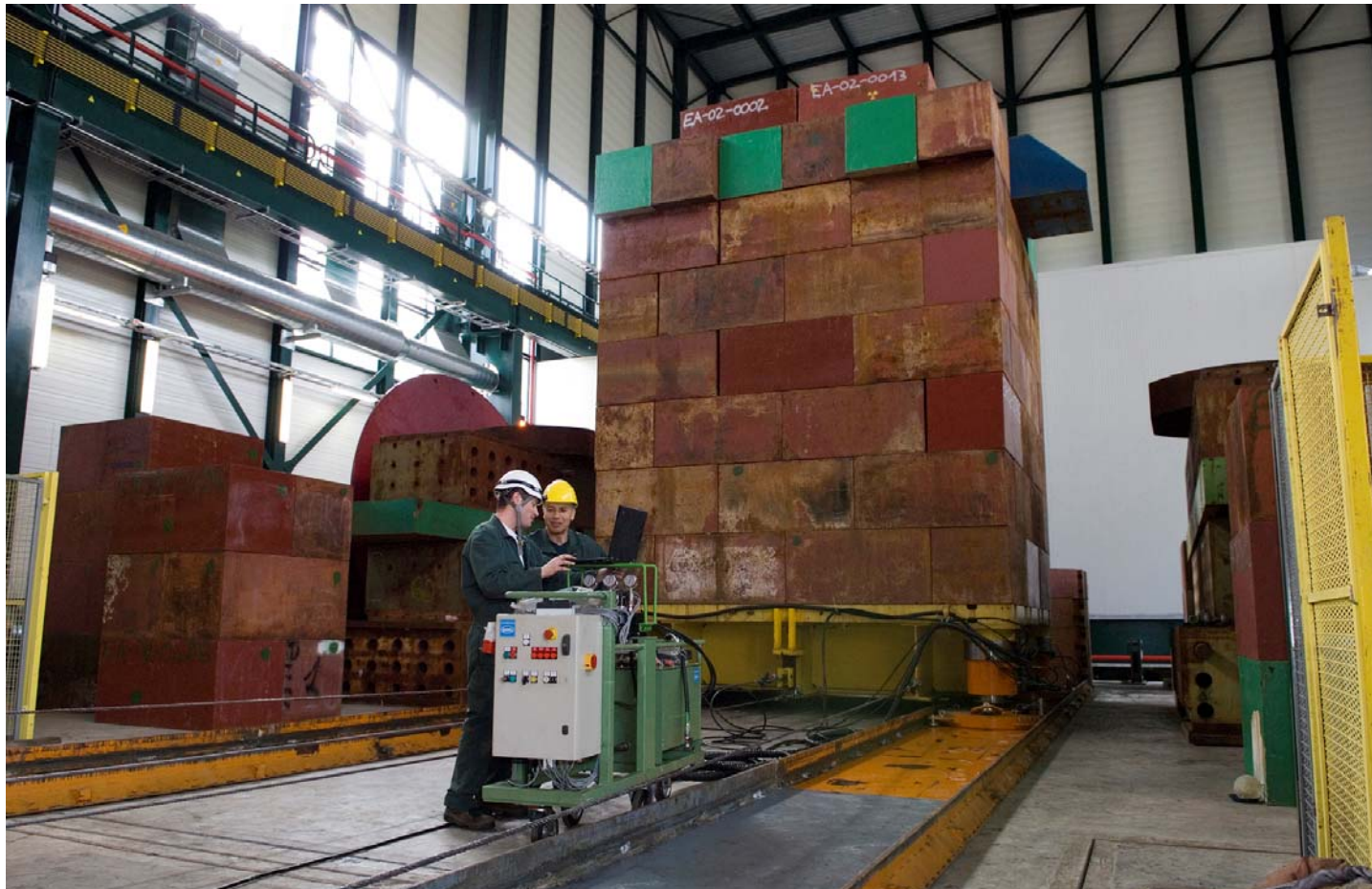
A clear interface also for organization

- Collaboration would be responsible for opening, maintaining, closing, and operating the experiment above the platform
- ILC machine would be responsible for moving the platform (carrying the detector) to the beam position, and from it to the garage position.
- This scheme would allow the detector to be commissioned in the garage position and moved in a nearly working state towards IP.
- Mainly beam line would need to be re-connected (and re-aligned), together with the electrical circuits of the main solenoid (and machine elements).



A 2'500-ton load on the CMS cover with 20 m between supports and 3 mm sag

- From constructions we have done for CMS, we have convinced ourselves that a platform in reinforced concrete would be stiff enough to carry a detector, even as heavy as GLD, and this will be shown by Hubert right after me.





Main implications of a platform concept

Detectors need to be opened by something like 2 or 3m on the beam line to give access inside when needed.

There is no need to split the doors vertically which should ease the construction of magnetic endcaps submitted to high magnetic field .

In the garage position the opening, on one side at least, must be sufficient to extract the TPC or Tracker (for example).

Large cable chains are used below the platform, occupying the space provided by the bottom invert vault of the cavern construction .

A service tower follows with the detector, supporting cold box, pumps and local services; it is completely separated to insulate from vibrations.

Points to worry have been largely identified already and are mostly connected to the beam line, including the last quadrupoles, and alignment questions.



Problems and conclusion

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