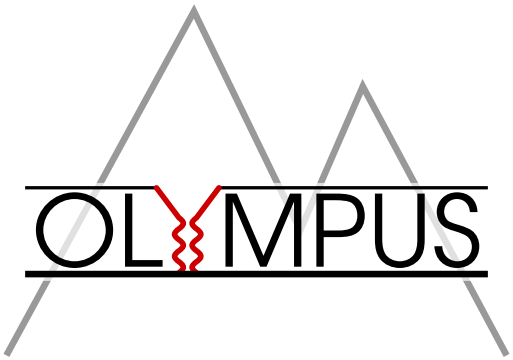
Target vacuum and gas system

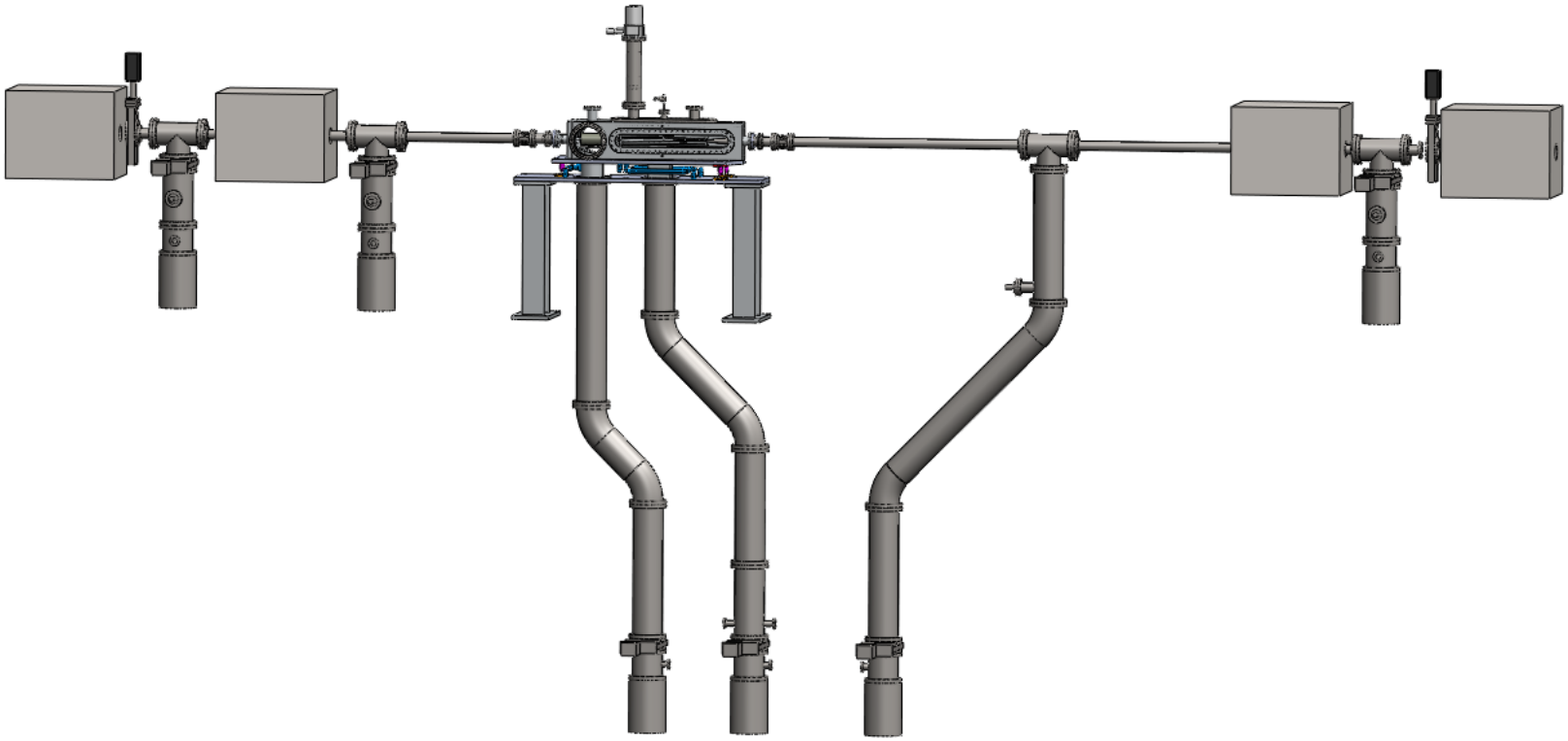
Jan C. Bernauer



Collaboration Meeting Nov. 2010

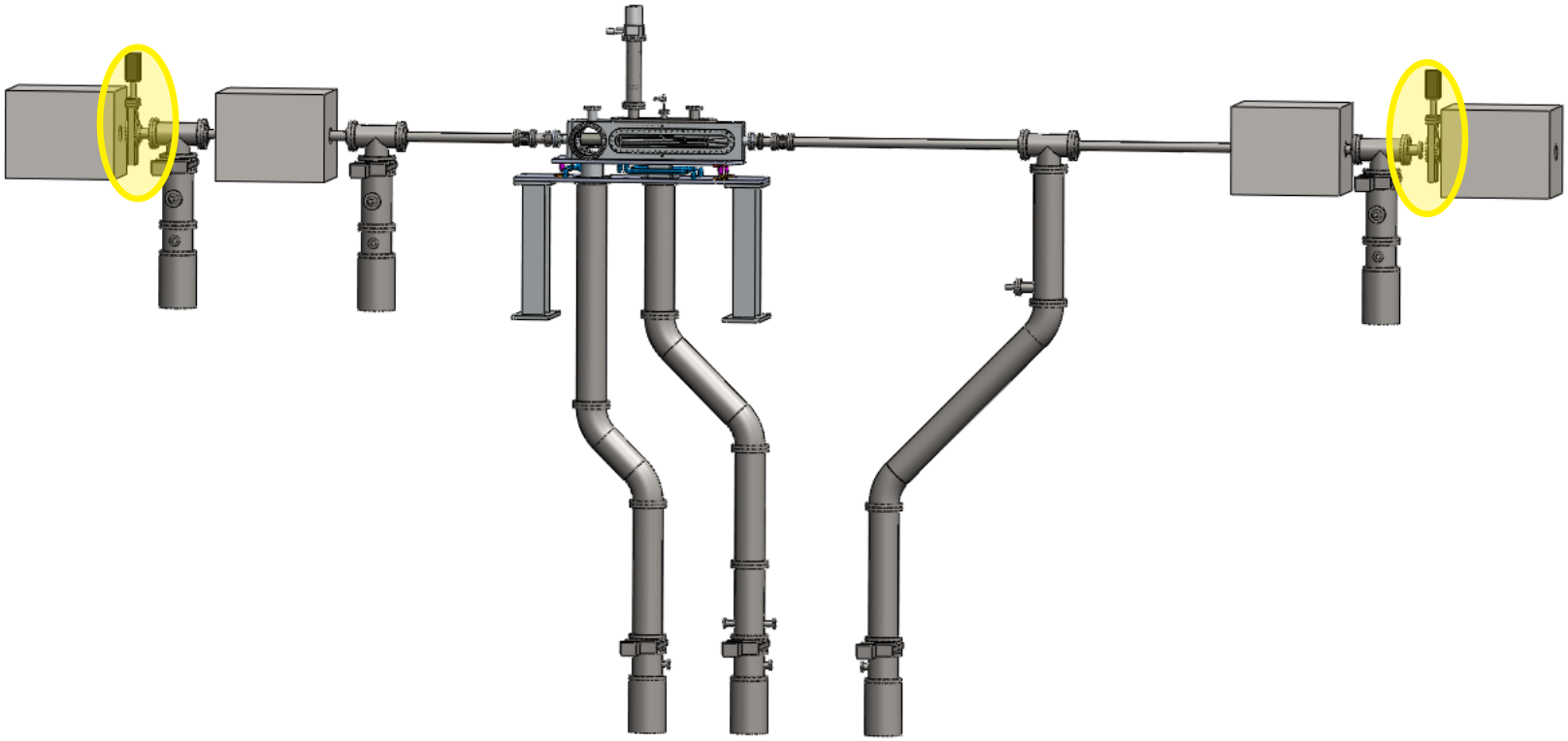
Massachusetts Institute of Technology

Vacuum system



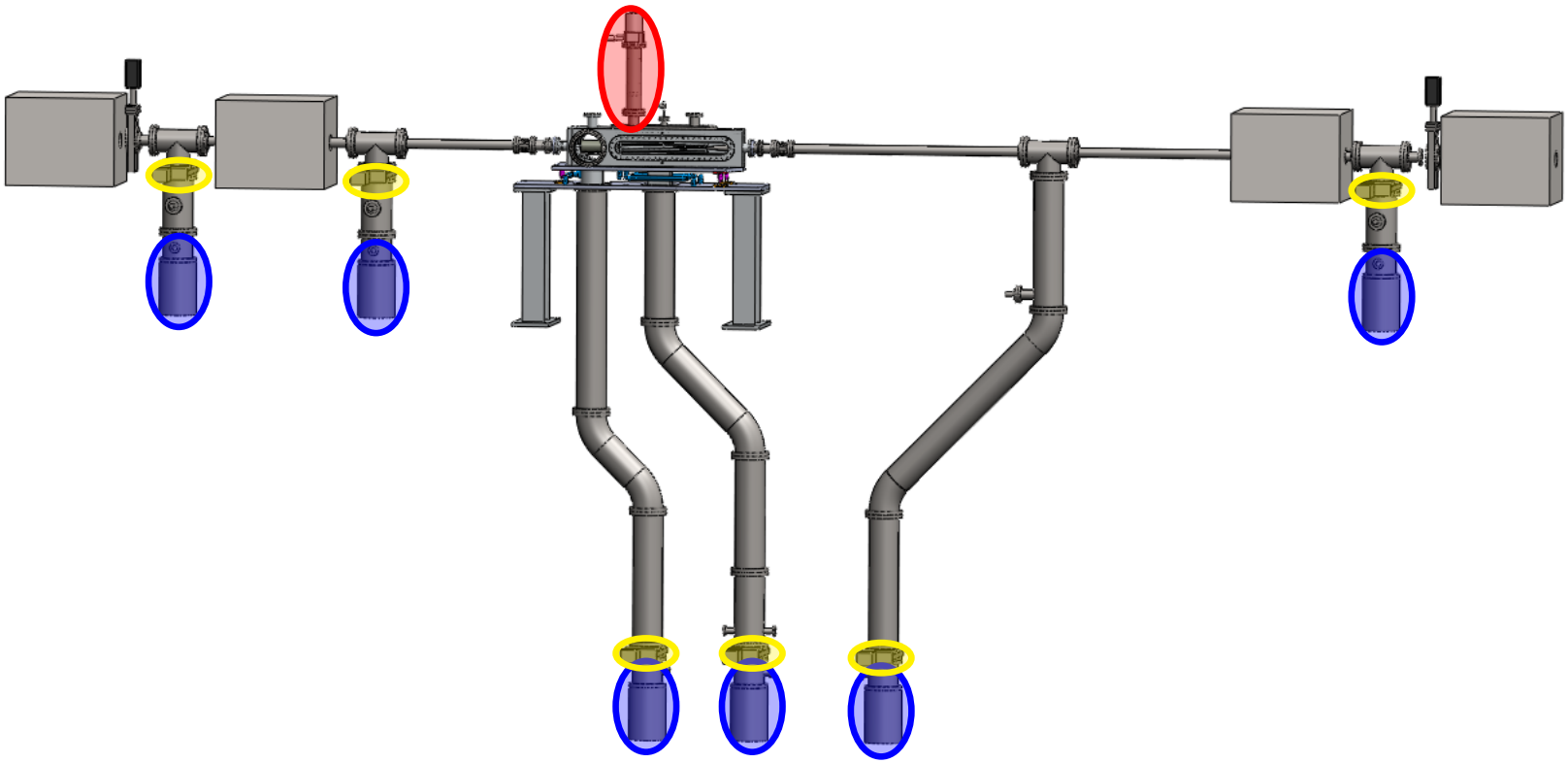
DESY control

- Target is new segment in DESY vacuum control system.
- Beam line valves controlled by DESY vacuum group.
- We provide ports for their instrumentation.
- We can access their vacuum data. (Software)



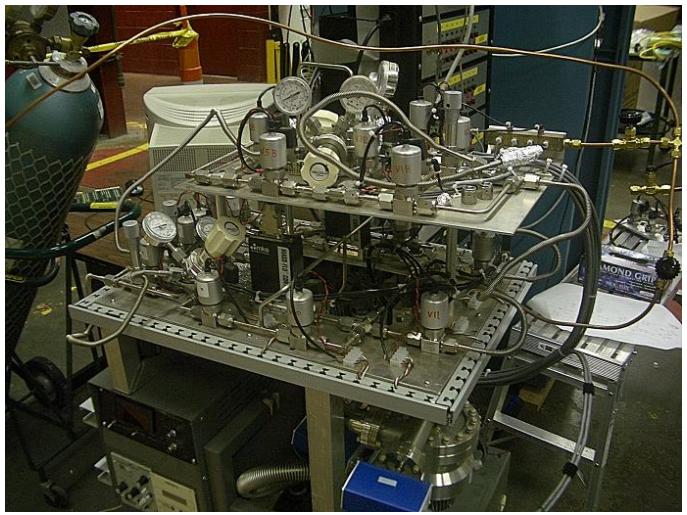
Controlled by Olympus

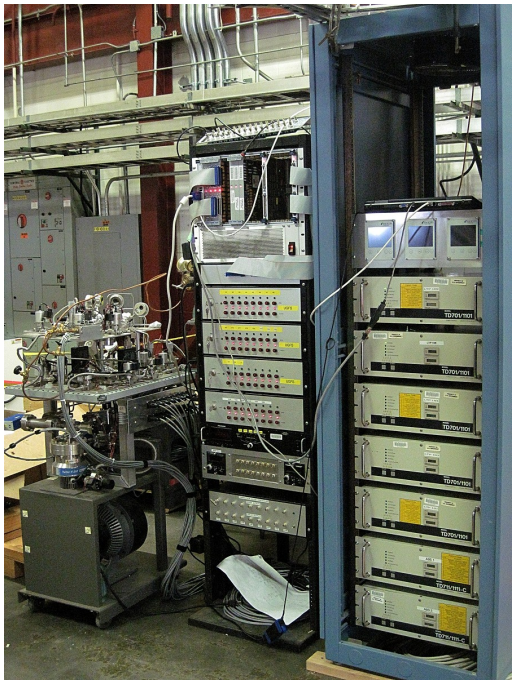
- Turbo-pumps
- Valves controlled.
- Gauges read out (7 channels, up to 9 possible).
- Cold head.



Gas system

- Allmost identical to Blast system.
- Buffer system new.
- Hardware operational (except buffer).
- Software operational, ”expert mode” tested.
- Full test this/next week.
- Placed in the pit below target.





Slow Control

- EPICS based
- Old gas system control used EPICS on MVME167+VxWorks, both “old”

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- Two platforms with newest EPICS:
  - MVME167 (Motorola 68030)+RTEMS
  - GE VME CPU (Intel Core Duo, UniverseII) + Linux
- Drivers ported to both. Will go with Linux version, but have MVME167 as backup.
- On the Wire: "Channel Access". Libraries exist for many languages.
- GUI: CSS (DESY, Eclipse based) and Web gateway (JCB)

Hydrogen source?

- Three month of target operation ≈50 l at 1 atm.
- Big bottles: Easiest. Problem: Where to place, safety?
- Small bottles: Less savety concerns, but has to have at least 4 l at 1 atm (1 week).
- Generator: Only has much gas as we need. Bates has one, but ≈ 3000$ to refurbish. Under investigation.