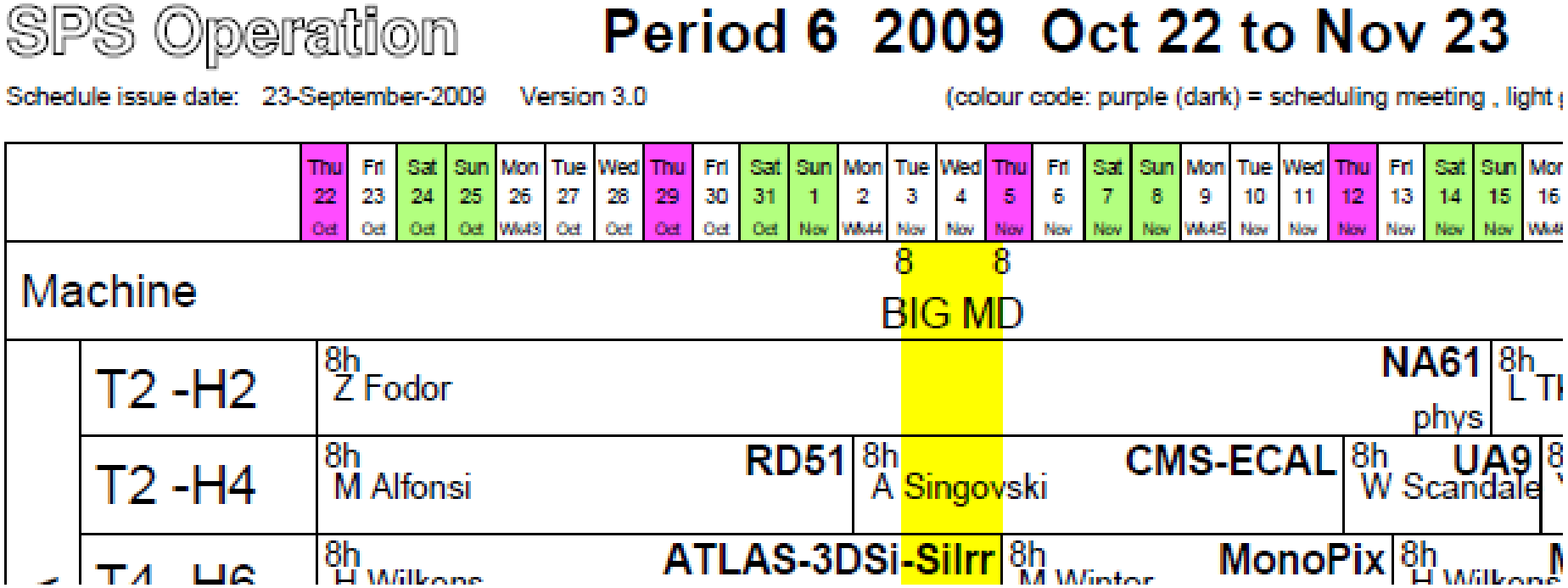
RD51 Test Beam
22.10 to 2.11.2009

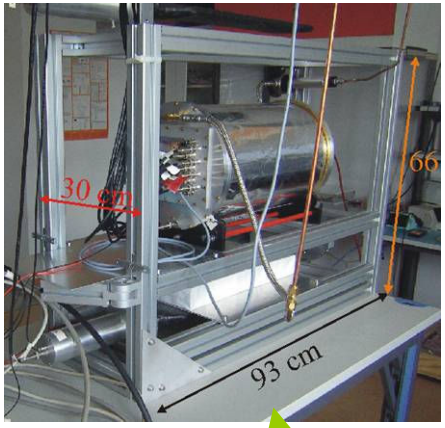
Setup Proposal

Updated schedule



- If necessary, I'll try to ask to arrive up to the beginning of MD (3rd of Nov, 8h00)

Tentative setup



Goliath

(2 Saclay groups)

TS

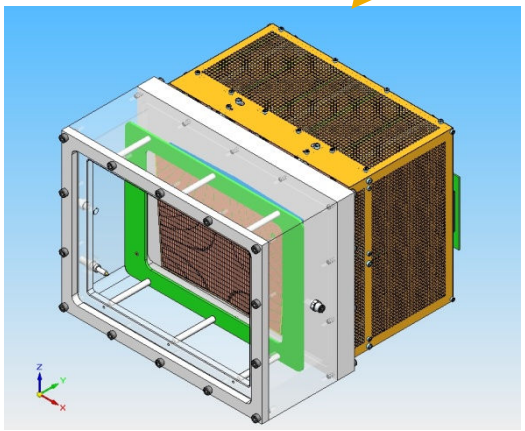
TPC

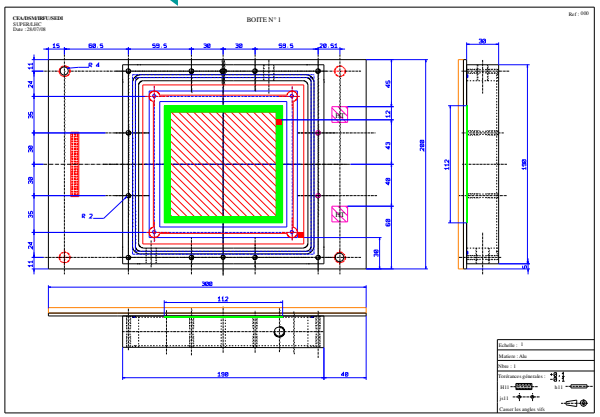
R-MM

Bonn

CERN

beam





Tentative programme schedule

- Mount all the setup the first day (one group will start to mount on the MD 5-8 Oct)
- Define a short period (2nd day?) of easier access to the experimental area
- For the rest of the time, define a “main user priority” list of the 5 involved groups, that change every 8 hours. The user with higher priority decide the access on the area, the beam settings, the magnet setting, etc..

Setup discussion, group by group

INFN-Trieste et al. - Mechanics

- They will mount their setup on the platform after the Goliath magnet
  - They take data only when magnet is off
- I need the details of their mechanics
- They plan to install the detector and the all the additional cables and service during MD 5-8 Oct
  - The table will be on the side of the beam
  - The detector will be flushed in nitrogen

INFN-Trieste et al. – Gas system

- They have ordered the Ar/CH_4 50/50 gas bottles (gas point 909-GO-921), that MUST (flammable mixture!) be placed in the competent gas building.
- From that building the gas will arrive to the our gas distribution area: a pressure reducer (around 5 bar to 1.5bar), a flowmeter, and short metal piping is required to connect to the copper line that goes inside experimental area.
  Still in our gas zone, they have to connect the line coming back to the exhaust.
- These two copper line (diameter to be checked) has been provided by the gas responsible group in the building (so not RD51 lines).
- In the experimental area they have to connect to their detector with metal piping
- Alarm gas sensor will be placed on the detector and at the connection with copper pipes. They have to build 3 “roofs” where the sensors will be placed, one bigger for the whole detector setup, the other 2 smaller for the connections

INFN-Trieste et al. - Other

- I need to discuss BEFORE NEXT MD the required cabling from the control room to experimental hall, especially if they want to use some fiber lines or ethernet line that is already in place.
- I need to discuss the racks requirement in the control room as well as the experimental hall
- They have their own HV and LV systems.
- I need the filled ISIEC form.

Saclay – Mechanics et al.

- The two Saclay group will mount their setup in the table inside Goliath magnet, the TPC downstream.
- Due to the weight of the mechanics, the table will be dismounted by the rails (if possible during the next MD)
- They are ok for cables and rack requirements

Saclay res-μM – Gas system

- They have ordered the Ar/C_4H_{10} 95/5 gas bottles, that MUST (flammable mixture!) be placed in the competent gas building.
- From that building the gas will arrive to the our gas distribution area: a pressure reducer (around 5 bar to 1.5bar), a flowmeter, and short metal piping is required to connect to the one of the RD51 lines (diam. 6mm) that goes inside experimental area.
  THEY WILL NOT COME BACK TO THE GAS ZONE, BECAUSE THE OTHER EXHAUST IS DIRECTLY INSIDE THE EXPERIMENTAL HALL
- In the experimental area they will connect to their detector with flexible stainless steel pipes.
- Alarm gas sensor will be placed on the detector table. They are already available at the connections.

All other mechanics

- CERN GDD & CMS will use the table already used in June test beam
- Bonn will use the big mechanics used in June for large detectors:
  - lateral movement range and compatibility with beam height must be checked (next MD)
  - the total weight must be checked
  - The use of remote controllable step-motors must be checked

All the other gas system

- They place a premixed gas bottle or (CERN GDD & CMS) a mixing system in our gas area.
- They connect to one of the RD51 lines (6mm).
- To make a summary:
  - 1 line for BONN (He/CO2 70 / 30)
  - 2 line to flush CERN table (Ar/CO_2 70/30, variable Ar/CO_2)
  - 1 line for res-µM (Ar/iso 95/5)
  - 1 line for Saclay TPC (T2K gas mixture) and NTUA tracker
- They connect to their detector and back to the RD51 return lines (10mm diam.)
- Saclay TPC and NTUA tracker will split the line in the area, since using the same gas mixture (parallel or serie.. To be decided)
  To go back there is an additional free return line, because Saclay res-µM will use the exhaust present in the experimental hall

Common racks and electronics

Racks in the experimental hall

- Saclay R-MM: 1 NIM (+1 VME?)
- Saclay TPC: none

- CERN: 2 NIM + 1 VME
- BONN: 1 NIM?

- Trieste ?

Racks in the barrack

- Saclay R-MM and TPC: 1 NIM if no SY1527 for HV
- CERN: 1 NIM for HV, counters and other modules for monitoring
- BONN: none
- Trieste ?

→ Maybe one or two common NIM crates are enough

SYx527 for HV and LV

- BONN: they use their own system
- CERN: maybe the A1526N board (6ch, occupy two slots), if noise level acceptable
- Saclay R-MM: 8 HV channel, 2nA resolution
- Saclay TPC: 2 HV channel, 2nA resolution
- NTUA tracker: 9 HV channel, 2nA resolution
- Trieste: they have their own system

Backup slides