DRD1 H4(PPE134) 2024 Test Beam

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Generic and Application driven R&D

Technologies: Micromegas, uRGroove, GEM
Application: High Rate, Timing, Calorimetry, Magnetic Field
Readout: Capacitive Coupling, Resistive Sharing

Project driven R&D

?

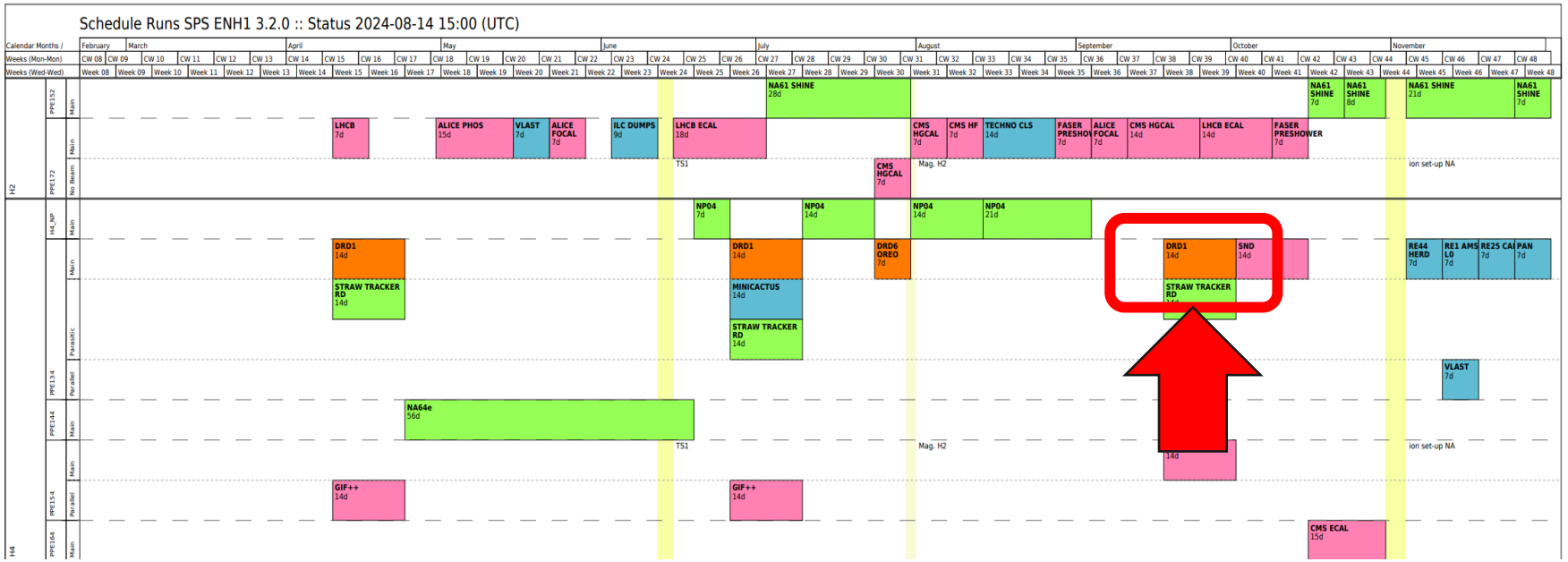
Detector Commissioning

Cylindrical GEM TPC

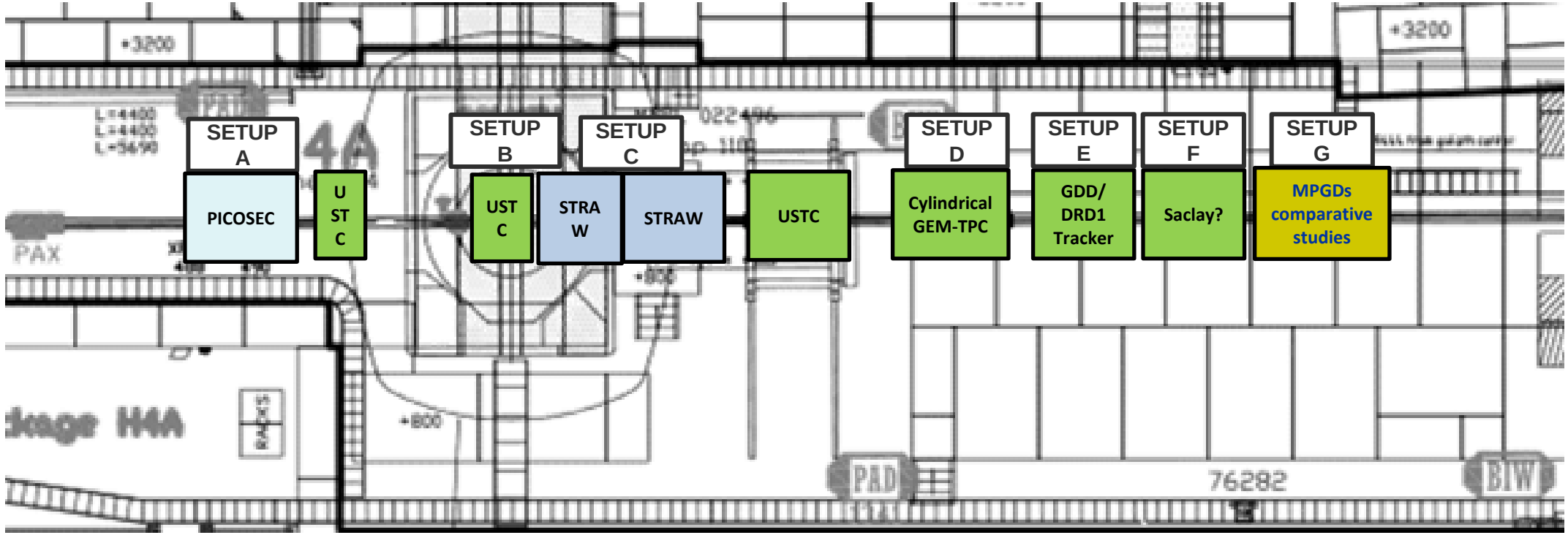
FE electronics and DAQ

Straw, VMM3a and Pad R/O TPC

Wed. 18/09/2024 – Wed. 02/10/2024

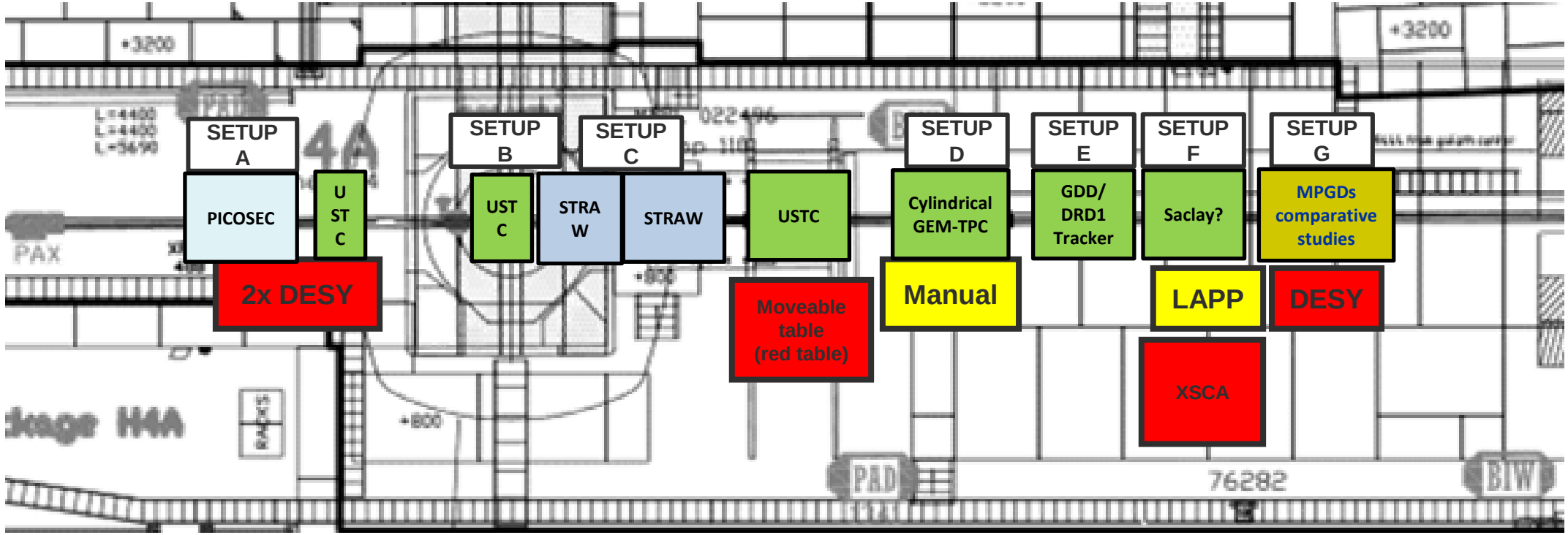


BEAM H4, PPE134 – INSTALLATION (DRD1, Sept 18 – Oct 2)



- SETUP A: PICOSEC (F. Brunbauer)
- SETUP B: USTC (Y. Zhou)
- SETUP C: STRAW (T. Enik, K. Kuznetsova)
- SETUP D: GEM-TPC (F. Garcia)
- SETUP E: GDD/RD51 Tracker (L. Scharenberg, K. Floethner)
- SETUP F: Saclay
- SETUP G: MPGD comp. Studies (Darina Zavazieva)

BEAM H4, PPE134 – INSTALLATION (DRD1, Sept 18 – Oct 2)



- SETUP A: PICOSEC (F. Brunbauer)
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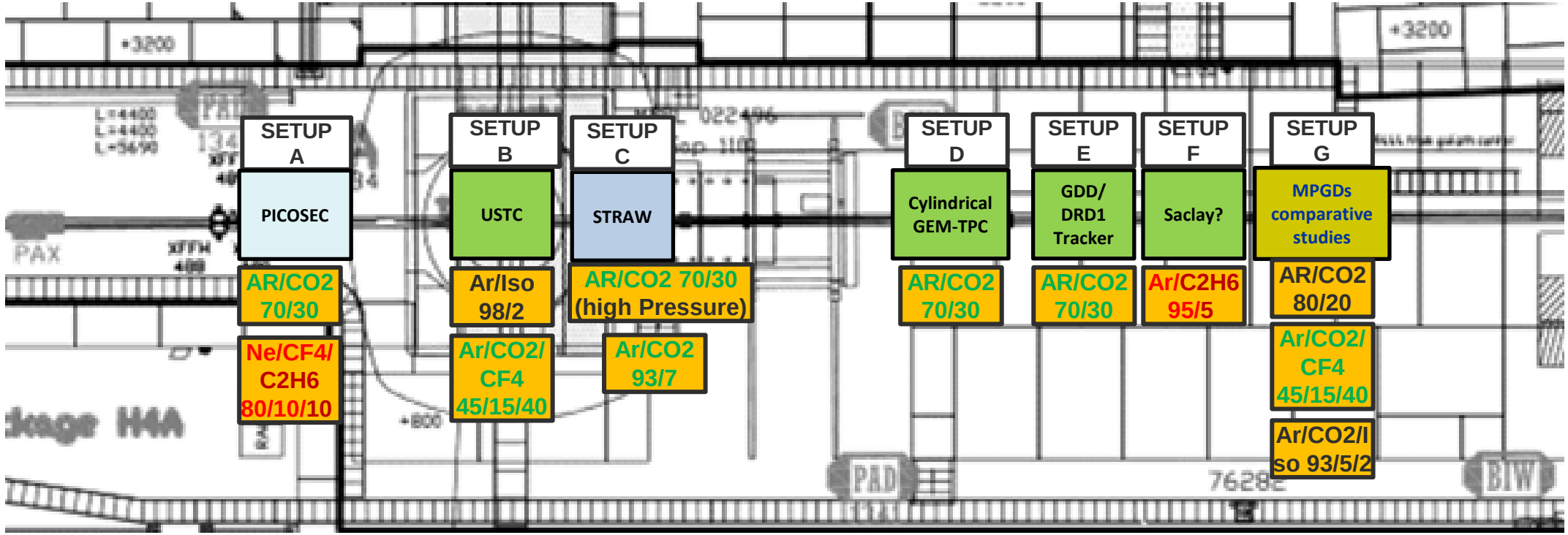
- SETUP D: GEM-TPC (F. Garcia)
- SETUP E: GDD/RD51 Tracker (L. Scharenberg, K. Floethner)
- SETUP F: Saclay
- SETUP G: MPGD comp. Studies (Darina Zavazieva)

SUMMARY:

- **3 x Desy Table**
- **1 x Manual**
- **1 x XSCA**
- **1 x LAPP**

BEAM H4, PPE134 – INSTALLATION (DRD1, Sept 18 – Oct 2)



- SETUP A: PICOSEC (F. Brunbauer)
- SETUP B: USTC (Y. Zhou)
- SETUP C: STRAW (T. Enik, K. Kuznetsova) + HP tests
- SETUP D: GEM-TPC (F. Garcia)
- SETUP E: GDD/RD51 Tracker (L. Scharenberg, K. Floethner)
- SETUP F: MPGD comp. Studies (Darina Zavazieva)

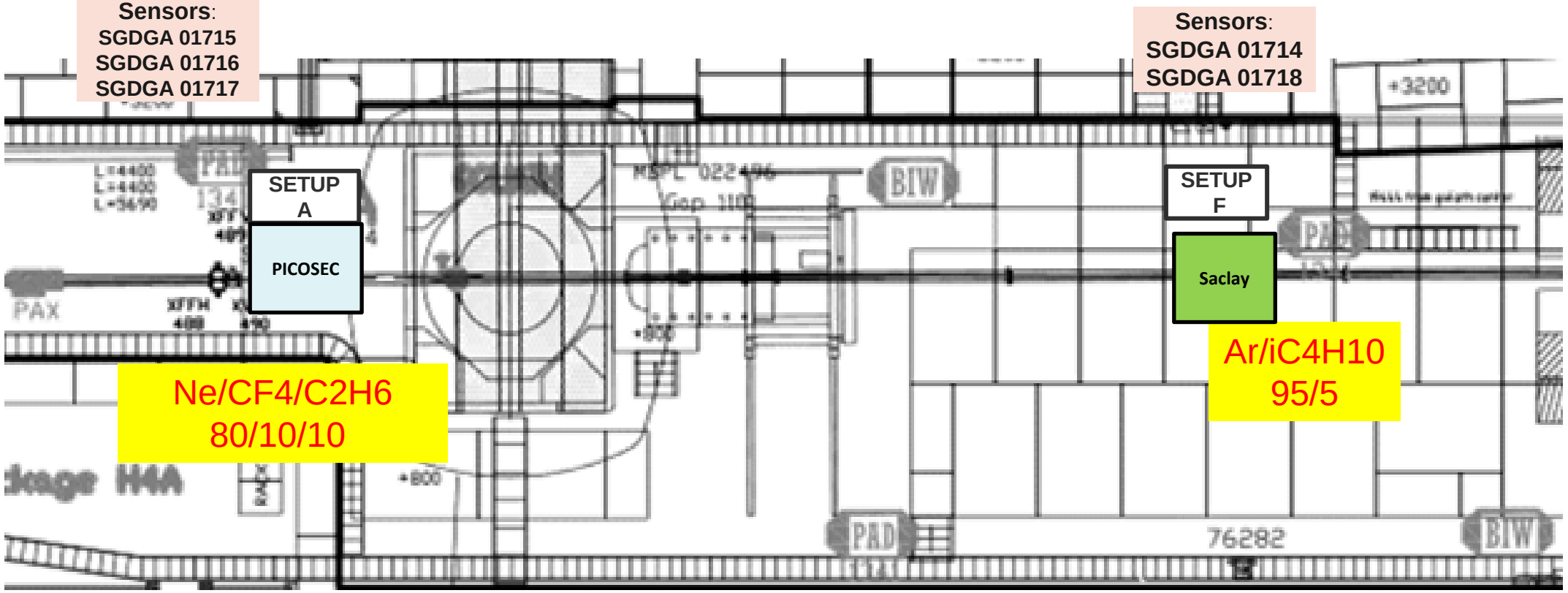
UPSTREAM PANEL

1. Ar/CO2 70/30 (A)
2. Ar/CO2 70/30 (D,E)
3. Ar/iC4H10 98/2 (B)
4. Ar/CO2 70/30 (C) + [HP]
5. Ar/CO2 93/7 (C) + [HP]

DOWNSTREAM PANEL

1. Ne-CF4-C2H6 (A)
2. Ar/iC4H10 95/5 (F)
3. Ar/CO2/iC4H10 93/5/2 (G)
4. Ar/CO2/CF4 45/15/40 (B,G)
5. Ar/CO2 80/20 (G) available?

FLAMMABLE GASES



- SETUP A: PICOSEC micromegas:
  Ne/CF4/C2H6 80/10/10 **(LINE 51 from 909)**
- SETUP F: Saclay:
  Ar/iC4H10 95/5 **(LINE 31 from 909)**

SENSORS IN GAS ZONE (887-R-C47) :
Distribution rack of gases coming from 909
SGDGA-01710 (middle)
SGDGA-01711 (bottom)

(New) Gas barrack with distribution panel (887-R-C47):
SGDGA-01712 (bottom)
SGDGA-01713 (top)

Beam Requirements

- Mostly muons (highest intensity as possible)
- Pions shifts rate scan

GOLIATH

- 1-2 shifts Straws
- µGROOVE - USTC – 1 shift testing + 1 shift measurement
- Ask Nikos&Bastien to make test before - Done

Transport GDD

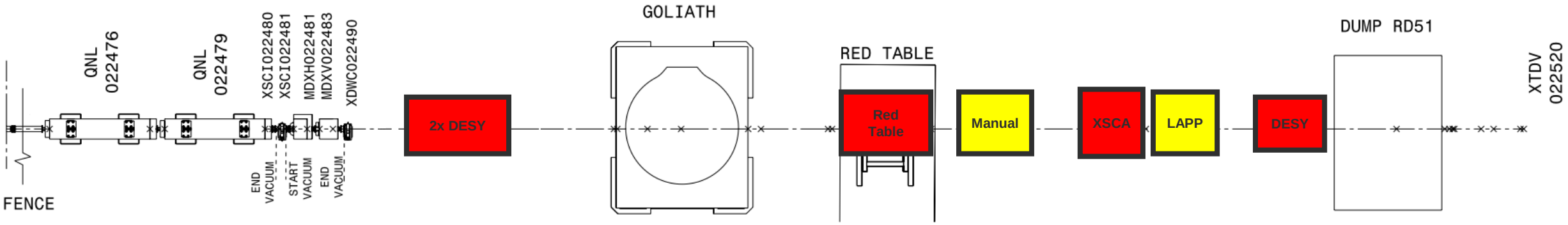
- One day before setting up from GDD
- Check SPS coordinator for installation one day earlier - Done

Backup

Overview Gas

- **Standard gases**
  - **4x Ar/CO2 70/30**
  - **5x Ar/CO2 93/7**
  - **6x Ar/CO2/CF4 45/15/40**
- **Additional leftovers**
  - **1x? Ne/CH4 95/5**
  - **15bar Ar/Iso 95/5**
- **User specific**
  - **1x Ne/CF4/C2H6 80/10/10 - Picosec**
  - **2x Ar/Iso 98/2 - USTC**
  - **0x Ar/CO2 80/20 - MPGDs**

Tables



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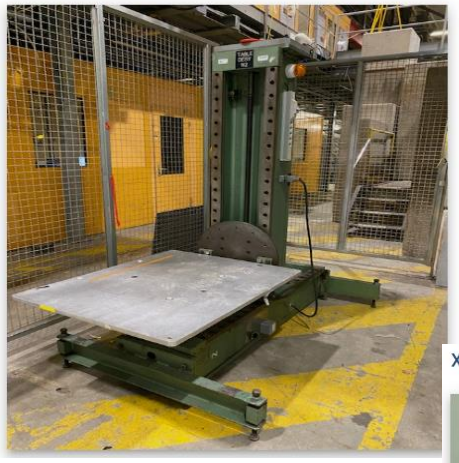
DESY



Name	ID 2	Max Load	Max Height	Min Height	Course Vertica...	Course Horizonta...	Dimension	Place of Usage	Zones	Length	Width	Height
DESY1		1T	1620mm	620mm	± 500	± 500	1000mm X 1000mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	180cm	110cm	245cm
DESY2		1T	1620mm	620mm	± 500	± 500	800mm X 1000mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	180cm	110cm	245cm
DESY3		1T	1620mm	620mm	± 500	± 500	1525mm X 1000mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	180cm	110cm	245cm
DESY4		1T	1620mm	620mm	± 500	± 500	1000mm X 1400mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	180cm	110cm	245cm
DESY5		1T	1620mm	620mm	± 500	± 500	1000mm X 1400mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	180cm	110cm	245cm
DESY6		1T	1620mm	620mm	± 500	± 500	1000mm X 1000mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	180cm	110cm	245cm

XSCA

Name	ID 2	Max Load	Max Height	Min Height	Course Vertica...	Course Horizonta...	Dimension	Place of Usage	Zones	Length	Width	Height
XSCA1		80KG	1250mm	850mm	± 200	± 170	400mm X 400mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	80cm	40cm	125cm
XSCA2		80KG	1250mm	850mm	± 200	± 170	400mm X 400mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	80cm	40cm	125cm
XSCA3		80KG	1250mm	850mm	± 200	± 170	400mm X 400mm	BT:887, BT:157	134, 138, 144, 146, 156, 1...	80cm	40cm	125cm

3 items shown

LAPP

Name	ad	Max Height	Min Height	Course Vertica...	Course Horizonta...	Dimension	Place of Usage	Zones	Length	Width	Height
Table LAPP	O	1020mm	780mm	± 120	NO INFO	1025mm X 800	BT887		135cm	102,5cm	1020

1 items shown

Outlets (PPE134)

EHN1, 887, H4(PPE 134)

Upstream Goliath
https://network.cern.ch/sc/fcgi/sc.fcgi?Action=SearchForDisplay&Location=887-R-001
0887/R-001 3707/01
0887/R-001 3707/02

Downstream Goliath (middle zone)
https://network.cern.ch/sc/fcgi/sc.fcgi?Action=SearchForDisplay&Location=887-R-4010
0887/R-4010 4010/01
0887/R-4010 4010/02

Downstream Goliath (end zone)
https://network.cern.ch/sc/fcgi/sc.fcgi?Action=SearchForDisplay&Location=887-R-001
0887/R-001 4410/01
0887/R-001 4410/02

Outlets (Control Room)

--- CONTROL ROOM ---
https://network.cern.ch/sc/fcgi/sc.fcgi?Action=SearchForDisplay&Location=887-1-A47
887/1-A47 4515/02
887/1-A47 4516/01
887/1-A47 4516/02
887/1-A47 4615/02
887/1-A47 4616/01
https://network.cern.ch/sc/fcgi/sc.fcgi?Action=SearchForDisplay&Location=887-1-B41
887/1-B41 4115/01
887/1-B41 4115/02
887/1-B41 4116/01
887/1-B41 4116/02
887/1-B41 4215/01
887/1-B41 4215/02
887/1-B41 4216/02
887/1-B41 4315/01
887/1-B41 4315/02
887/1-B41 4316/02

Additional tables in 887-R-C41 (storage close to H4)

LAPP Table (Max Chefdeville)

Blue Table

Alu Support