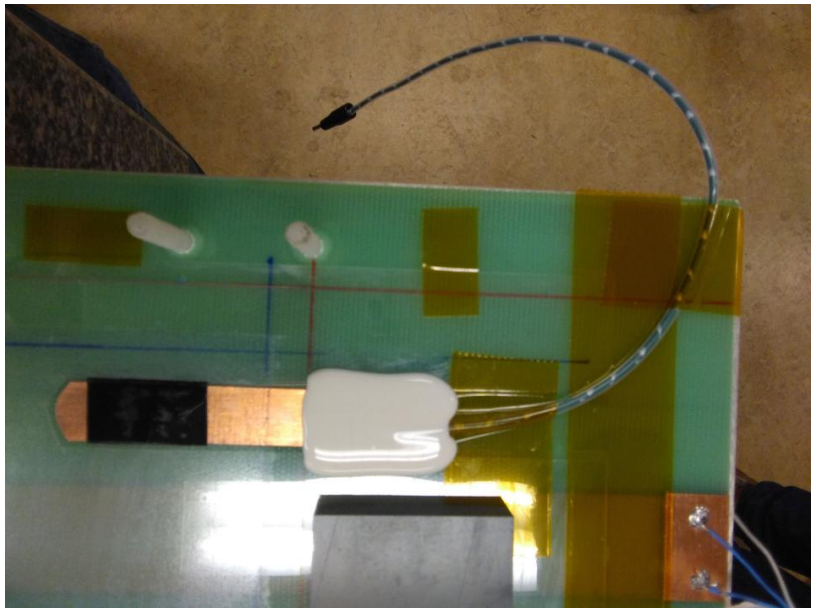
EEE Observatory Upgrade

possible improvements

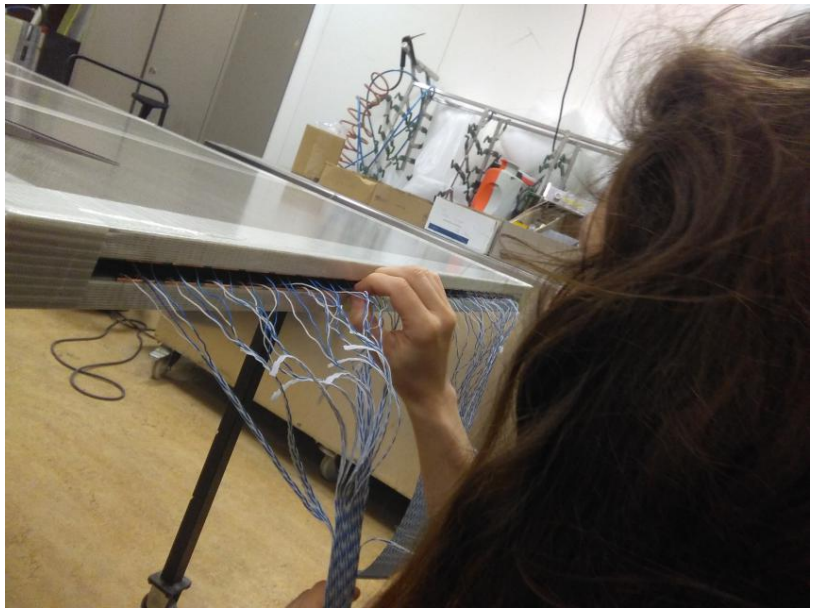
for better Duty Cycle and lower time-to-operation

Construction / Test actions

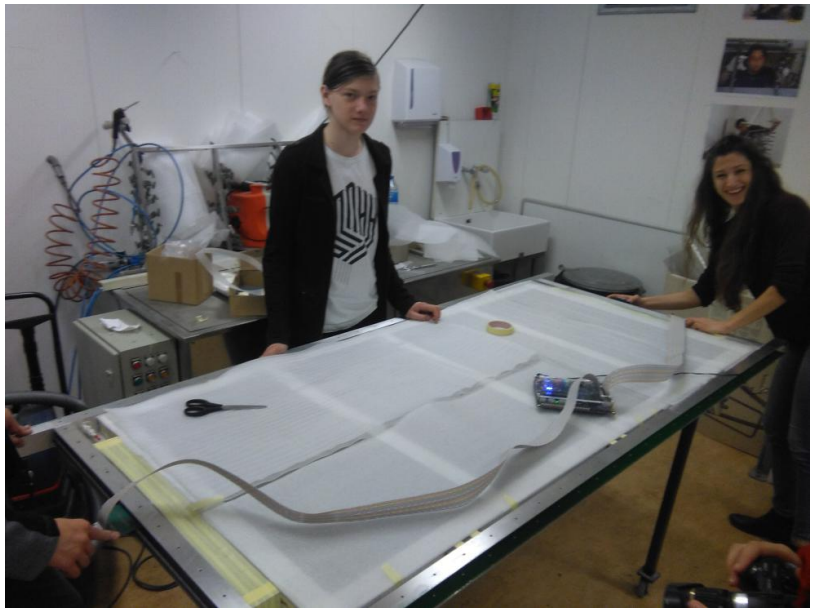
Test flow during construction



HV electrode



strip solderings



strip connectivity

Test during construction do not delay the procedure.

Test flow after construction

- Gas Leakage
  - 2h/chamber
  - not possible to perform parallel measurements

- Efficiency
- Dark Rates
- Dark Currents
- Cluster Size

3 days/chamber

Test flow after construction

Possible actions (1/2):

--> a EEE Upgrade group member will be at CERN

- during construction
- the week after construction

--> we'll try to test

- **first chamber during construction week**
  (starting on wednesday evening flushing the chamber)
- **the second (and maybe the third) during the following week**

Test flow after construction

Possible actions (2/2):

--> **additional students** and teachers (payed by schools)

- can be involved in **tests** during the construction week

--> **spare chambers** built during the same week

- can be tested afterwards

Test flow after construction

School	Slot	Teachers [in charge to CF]	Students [in charge to CF]	contacts
Liceo Amaldi - Bitetto	13/1	2 (0)	8 [0] (6 m + 2 f)	Antonella Azzone allenotna76@virgilio.it
Cagliari	19/1-9/2			Corrado Cicalò
Liceo Giolitti Gandino - Bra	10/2	1 [1]	6 [0] (4 f + 2 m)	Elisabetta Fioramonti elisabettafioramonti@libero.it
Liceo Calasanzio - Carcare	24/2	1 [1]	10 [4] (6 f + 4 m)	Michela Occhetto michelaocchetto15@gmail.com
Liceo Volta - RC	10/3	2 [1]	6 [4] (4 m + 2 f)	Carmen Petronio petroniocarmen@gmail.com

Delivery chain actions

Delivery chain: space issue

20170222001	LAMP-01
20170223002	LAMP-01
20170225003	LAMP-01
20170314004	GENO-01
20170316005	GENO-01
20170317006	GENO-01
20170405007	SIEN-02
20170406008	SIEN-02
20170407009	SIEN-02
20170425010	CARI-01
20170426011	CARI-01
20170427012	CARI-01
20170509013	TORI-05
20170510014	TORI-05
20170511015	TORI-05
20170523016	LODI-03
20170524017	LODI-03
20170524018	LODI-03

20170926021	CAGL-04
20170927022	CAGL-04
20180221028	CAGL-04
20171121025	BOLO-05
20171123026	BOLO-05
20171124027	BOLO-05
20170719019	spare – ROMA-01
20170921020	spare – FRAS-01
20170928023	spare
20171026024	spare – COSE-01
20180222029	spare – REGG-01
20180227030	spare – SAVO-03
20180228031	spare
20180320032	spare – CARI-01 to be sent
20180322033	spare
20180515034	spare – to be tested
20180515035	spare – to be tested
20180727036	spare – to be tested

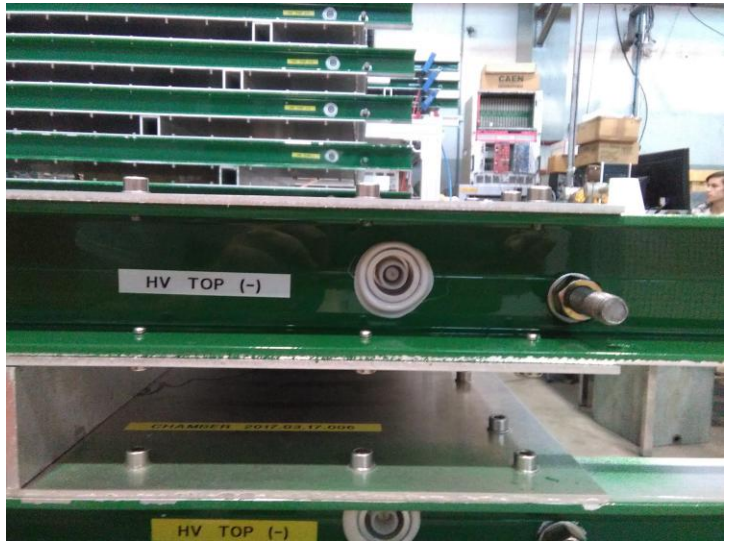
Delivery chain: space issue

asked for a **storage place** for spare chambers at CERN.

--> at bldg 899
--> Hope it will be given. More news this week.

--> otherwise we can go for

- sending spares to CF
  - means extracosts for transport
- somewhere else
  - if outside CERN again is an extracost



Delivery chain: boxes issue

- 2 purchases:
  - no info about the boxes
    bought with the first purchase
  - second purchase (2/2015):
    --> 4 boxes

CENTRO FERMI
Museo Storico della Fisica e Centro Studi e Ricerche Enrico Fermi

Spett.le Legnofà di Domenico Esposito
Via Portella n° 57
67100 Assergi (AQ)

ORDINE n° 15/15 del 26.02.2015 **Prot. n° 262/15 del 27.02.2015**

CIG: ZAD131C831
CUP: F62I14000120001
CODICE UNIVOCO UFFICIO: UF5JTW

Con la presente ci pregiamo ordinarVi, alle condizioni sottoindicate:

	Prezzo unitario	Prezzo totale
Fornitura di 4 casse in legno multistrato, spessore 20mm con rinforzi negli angoli (raddoppio di spessore) e con traverse di irrigidimento, conformi alle foto allegate. Dimensioni 231 x 111 x 40 cm	420,00	1.680,00
Totale		**1.680,00**
I.v.a. 22%		**369,60**
Totale generale		**2.049,60**

Termini di pagamento: 30 gg dopo ricezione fattura

Il materiale deve essere spedito a:
Dott.ssa Despina Hatzidotiadou presso PH Department – CERN
Organisation Europèenne pour la Recherche Nucleaire
F – 01631 CERN Cedex
France

Per qualsiasi chiarimento potete contattare il Dott. Marco Garbini:
Mail marco.garbini@bo.infn.it

La Fattura dovrà essere spedita a:
Museo Storico della Fisica - Piazza del Viminale 1(Ministero Interno) - 00184 - Roma
La fornitura dovrà essere conforme alle legislazioni vigenti in materia di sicurezza sul lavoro.

Il Presidente
Prof.ssa Luisa Cifarelli

Delivery chain: boxes issue

2019-01 status:

- 1 at CERN
- 1 in Cagliari
  (Corrado is taking care of resending it back to CERN)
- 1 in LECCE
  (being used on Jan 24th to move a LECCE telescope to UNICAL)

--> **no info** about the other boxes
--> should we **buy new ones**?
--> change them with something else?

Delivery chain: MRPC damage issue

few chambers seems

- to be **damaged**
- went through something during the transport

- **SIEN-01**: Edo reported a operating HV=18kV
  --> the test gave 15 kV
- **CARI-01**: Seems to be broken
  --> several tests done:
    - FE problem excluded
    - trigger card problem excluded

Last mile transport is sometimes **outsourced** to small companies.
The passage between the company appointed by CERN and the local one is not under our control.
We had some experience (Tromso/Cariati)

Mounting and Operation

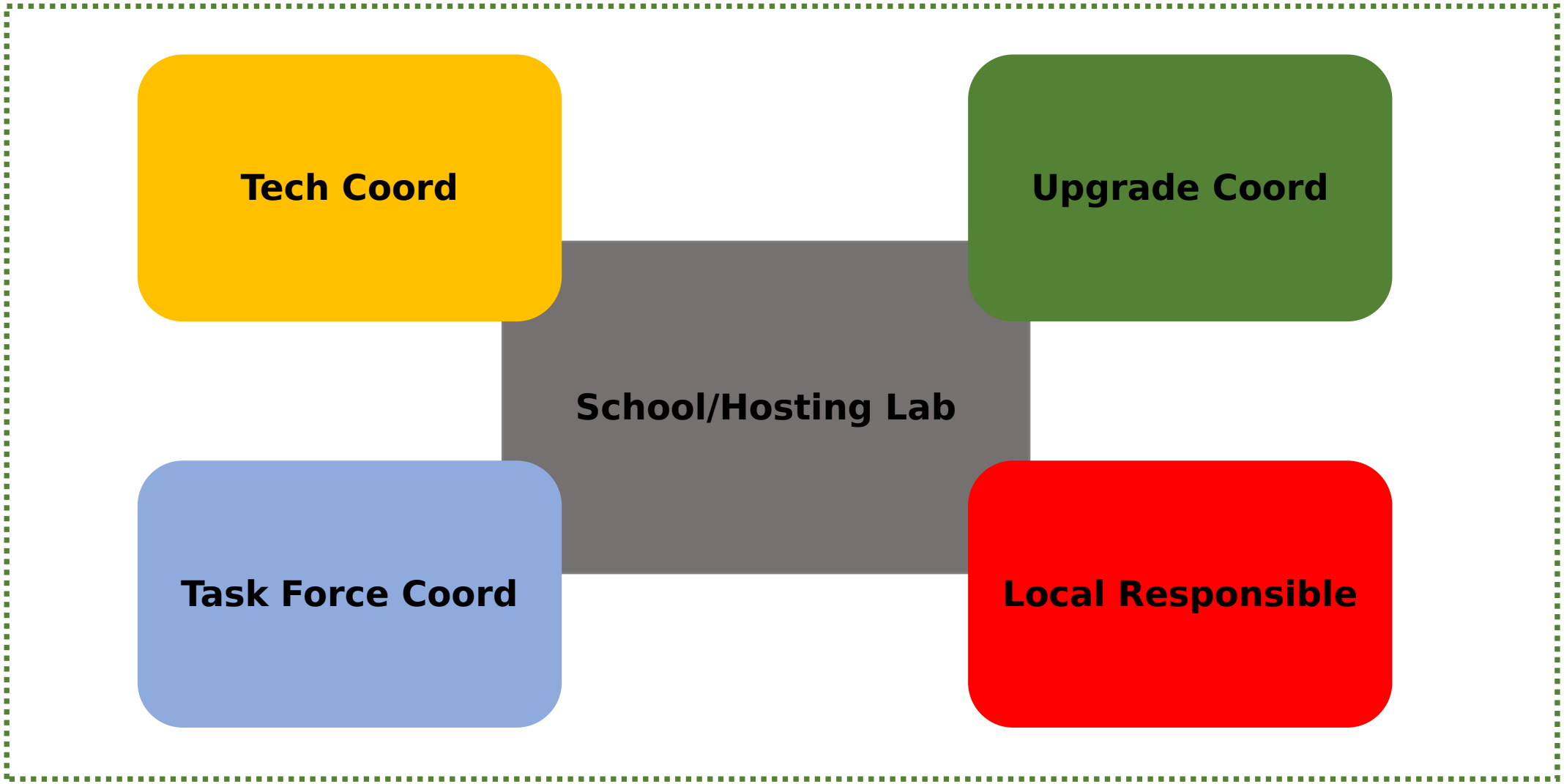
Mounting and Operation

- school should prepare
  1. the structure
  2. electrical system and wiring
  3. PC
  4. UPS
  5. Net connection
  6. Clima

- we should prepare
  1. whole electronics
  2. gas system
  3. LV/HV
  4. wiring
  5. weather Station

before the school goes to CERN for construction

Mounting and Operation



Mounting and Operation

A very important bottle neck
is the mounting.

The proposal is to involve

- Local Responsible
- Teachers and students

- **Task force** (4 people + 1 tech)

2 days/telescopes

Marco G.
Fabrizio C.
Daniele D.
Edoardo B.
Stefano B.
Stefano G.
Lorenzo G.
Ivan G.
+2?

10 telescopes/year means
4 days/year
per Task Force member

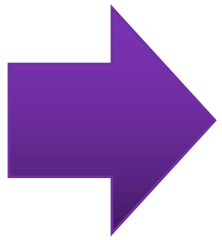
Manteinance

Manteinance: teacher's TF

Fast reaction at schools

--> **Local Teachers Task Force**
with a **teacher** as **responsible**

local meetings chaired by the
resp. teacher
+ reporting to the **CF responsible**



Several actions:

- switching on/ff
- bottle change

--> **basic debug and problem solving**

would be strongly speed-up

Manteinance

Storage of **spare parts**

- locally for things charged to the school
- at the INFN/University

Thesis and students.

We have
too few thesis
with EEE subject

- hw/sw
- didactics