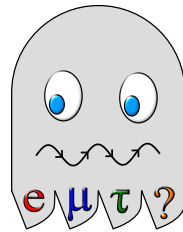


Calibration system installation and sources

Pablo DEL AMO SANCHEZ

(see next page for full credits)

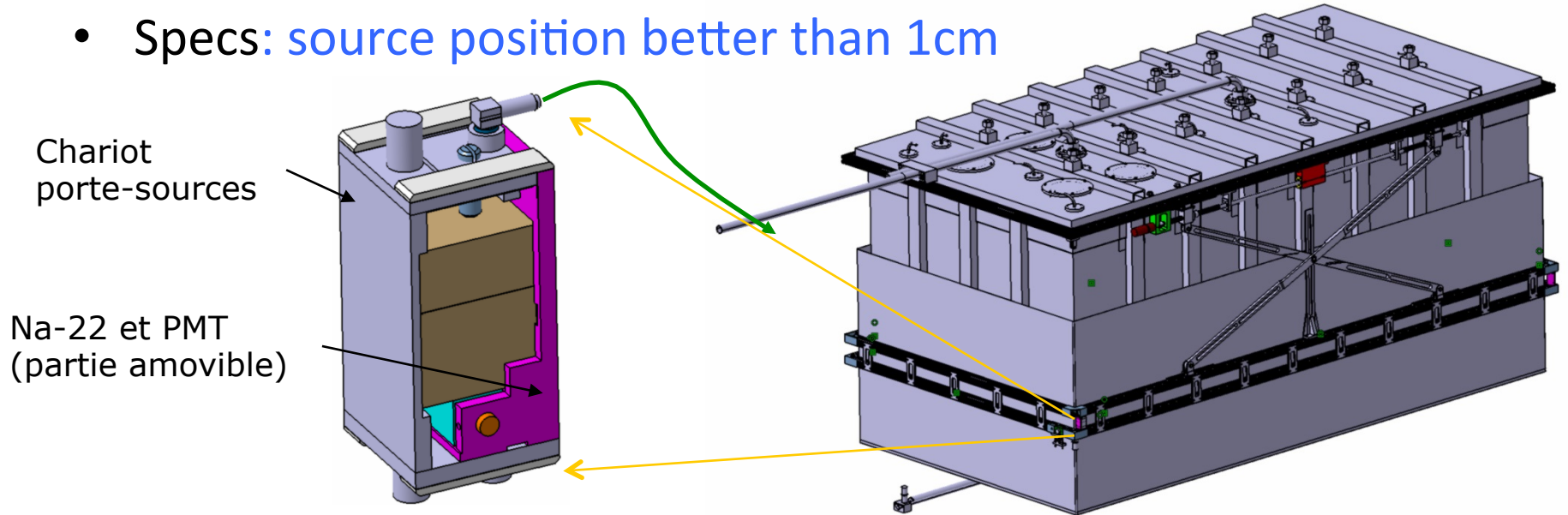


11/10/16

LAPP team

- Mechanics: G. DELEGLISE (pantograph),
N. ALLEMANDOU (lower system)
- Automatism: I. MONTEIRO
- Physicists: P. DEL AMO SANCHEZ
W. EL KANAWATI
J. FAVIER
L. MANZANILLAS
H. PESSARD

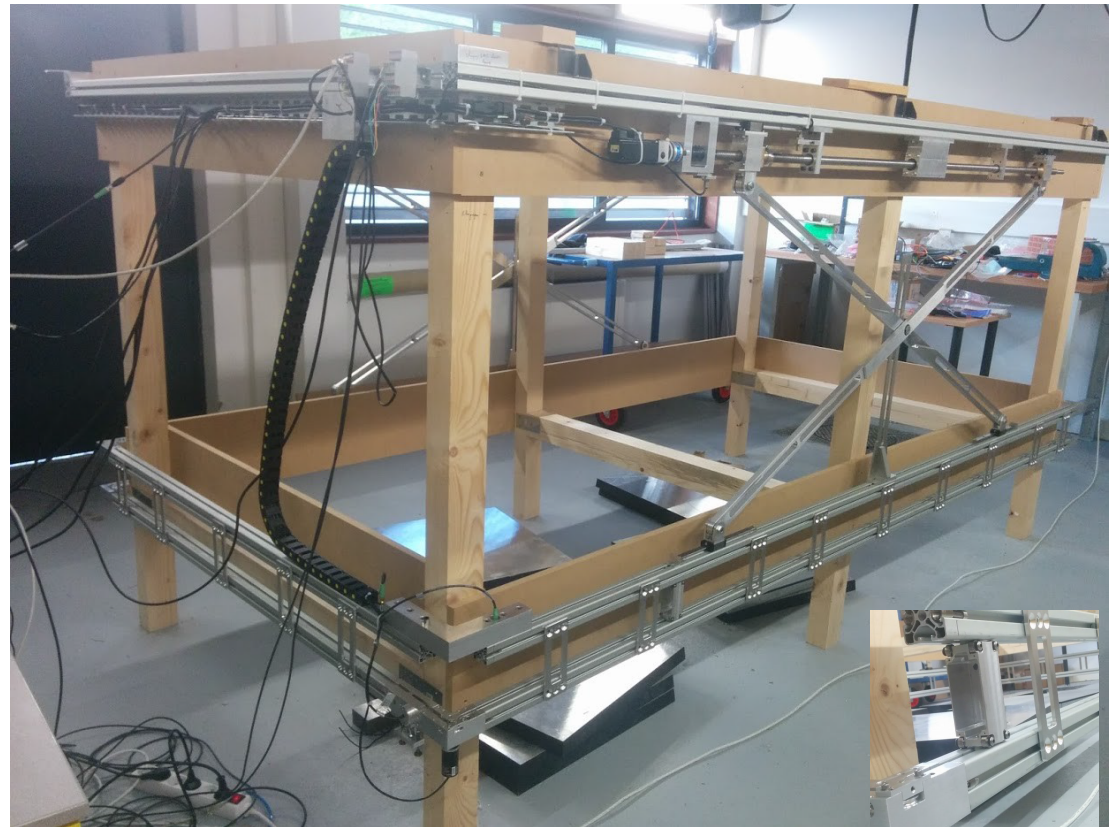
- Three-fold: around vessel, below vessel, within cells
- Specs: source position better than 1cm



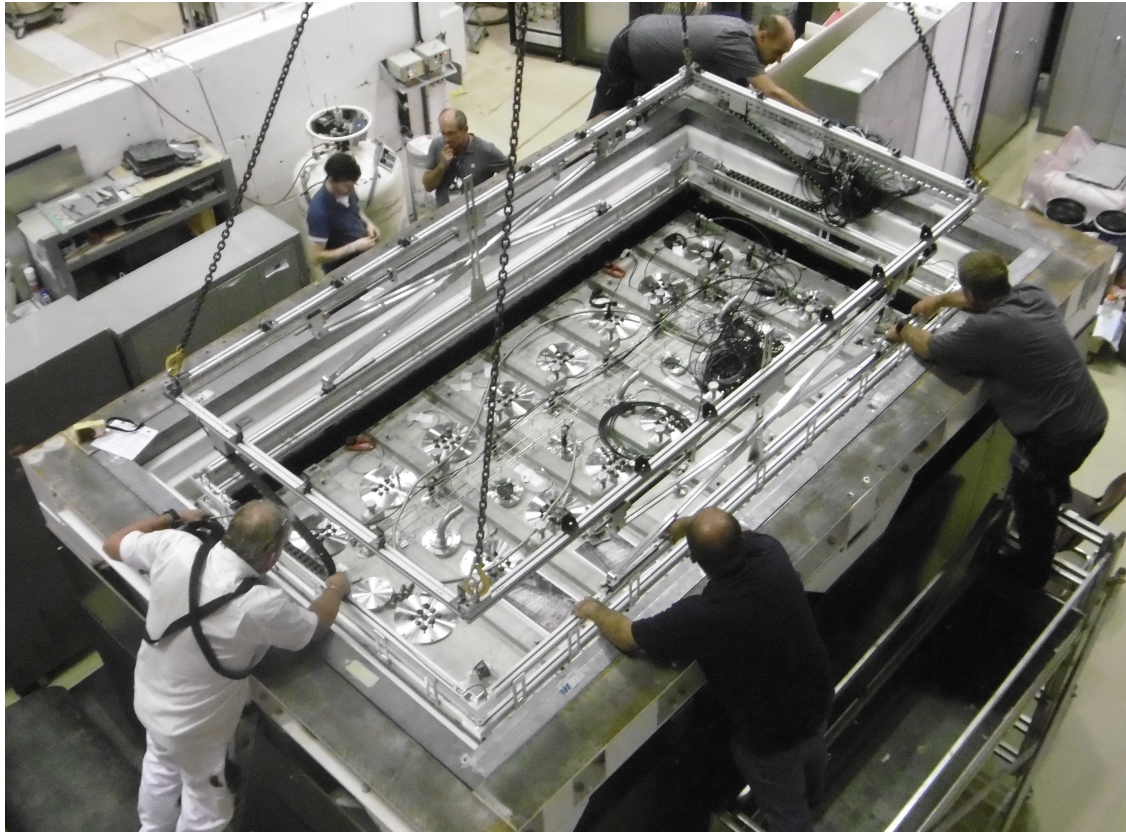
- Around vessel: target energy; GC energy and PSD. Collimation device postponed (mechanical problems due to PMT cable)
- Below : monitoring n eff; energy.
- Within: n capture eff, energy, z dependence

- Elevation:
 - 2 x brushless motor Delta ECMA-C2040 1GS
 - controller Delta ASDA-A2
- X-Y plane:
 - step-by-step motor Phytron ZSS 33.200
 - controller Phytron MCC-1
- RS-485 standard

- Pantograph mechanics and automatism extensively tested 22-28/07/16
- > 72 calib cycles (c.f. ~100 foreseen)
- No synchronisation problems during elevation (industrial solution!)
- Carrier got stuck a few times in corners before alignment; always recovered by reversing
- Not stuck after alignment



- Pantograph system, installed, tested on site 30-31/08/16



- Lower system, installed, tested on site 20/09/16

Repeatability

Pantograph repeatability tests:

- 3-4 mm in the forward direction (after HOMEing)
 - few cm in the backward direction (no HOME)
- Use only forward direction, **within specs**

Lower calibration system tests:

- positioning precision < 1 mm
(cog wheel, industrial solution)

Rack, cabling

- Final rack assembled
- To be installed on 19 - 20/10/16 (+ cabling, positioning checks)

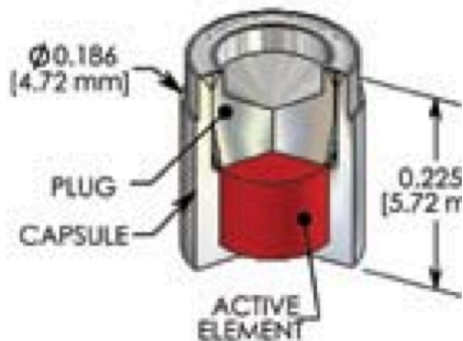
Sources bought

Isotope	Activity	Gamma energy (MeV)	Rate in Target (source inside)	Rate in Target (source outside)	Capsule type
Ge-68	90 kBq	2x0.51	80 kHz	0.25 kHz	3025
Cs-137	37 kBq	0.66	31 kHz	0.5 kHz	3025
Mn-54	90 kBq	0.83	90 kHz	1.1 kHz	3025
Co-60	50 kBq	1.17 & 1.33	50 kHz	2 kHz	3015
AmBe	250 MBq	4.4	15 kHz n, 10 kHz gamma	0.5 kHz gam	N02
Cf-252	50 kBq	?	5.5 kHz n, 1.1 kHz gam		3024

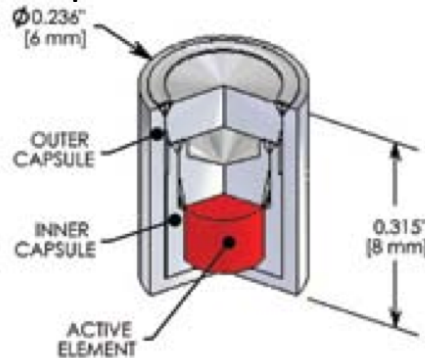
geometry, delivery

- Problems with IRSN licence obtention at ILL during summer -> delivery of sources has been delayed a few weeks
- Final delivery dates:
 - Ge68 and Mn54, 10/10/16
 - Cf252, 12/10/16
 - AmBe, Cs137, Co60, next week (17/10 to 23/10/16)
- Capsule geometries:

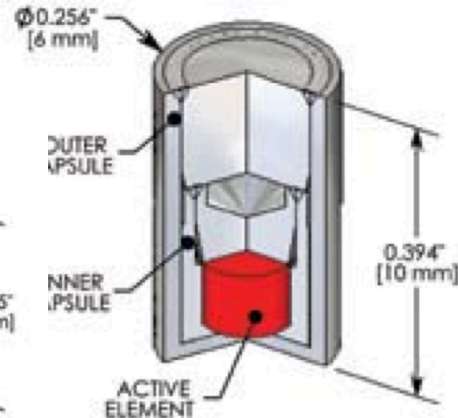
Capsule 3025



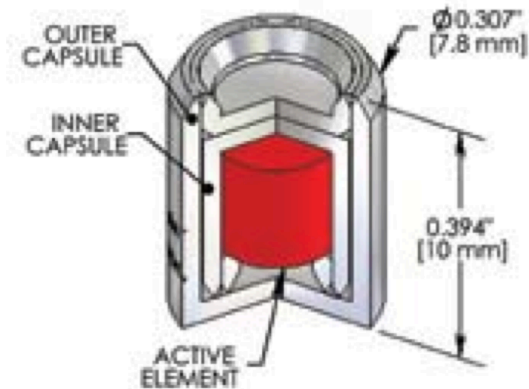
Capsule 3015



Capsule 3024



Capsule N02



BACK UP

