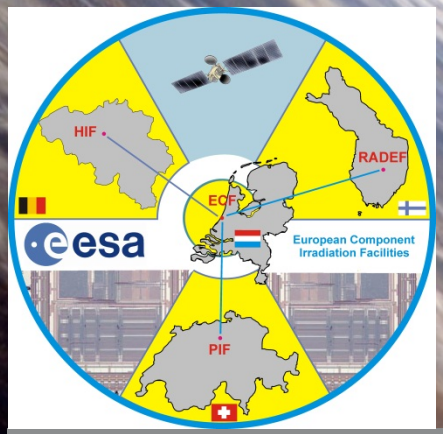


ECF Esa estec 60Co Facility

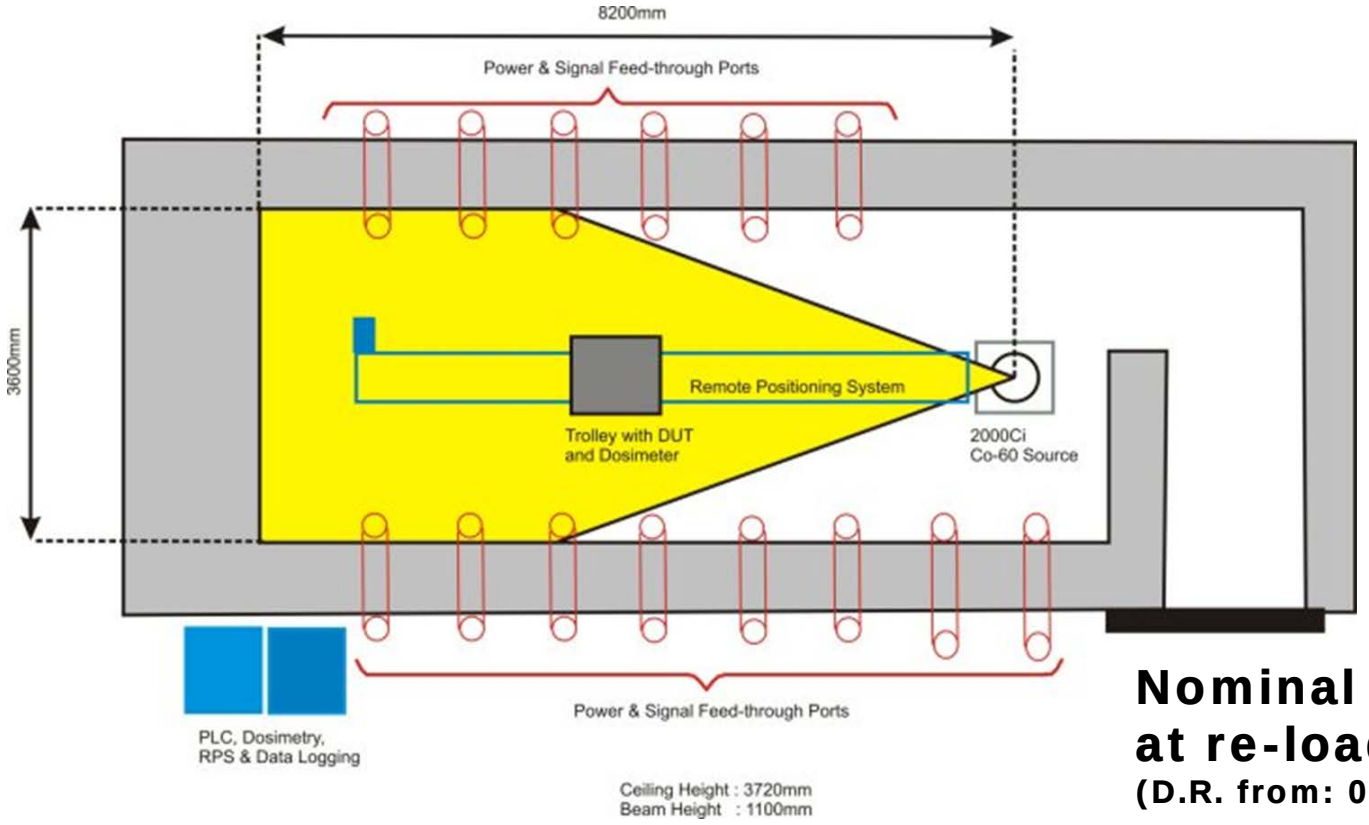
ESA – CNES final presentation days

ESTEC 5-6 June 2013

Irradiation Room layout

Source Activity: 63 TBq (today)

The Dose Rate can be varied from: 0.28 to 115Gy/h (28 –11500 rad/h)



Source Last Reloaded in November 2011

Nominal Source Activity at re-load: 75 TBq
(D.R. from: 0.33 to 129 Gy/h)

Dosimetry at ESTEC ^{60}Co Facility

✓Three Independent Dosimetry Chains available

✓ each chain consists of a Farmer 2670 electrometer equipped with a 2571 type 0.6 cc ionization chamber

✓Dose measurements are compensated against environmental temperature/pressure fluctuations in the irradiation room

The facility management and dosimetry have been **ISO 17025** accredited by RvA (Raad voor Accreditatie) on date 25 May 2011.
The following procedures have been accredited:

- ✓Total Ionising Dose
- ✓Dose rate (in the range 0.36 – 72 Gy/hrs)

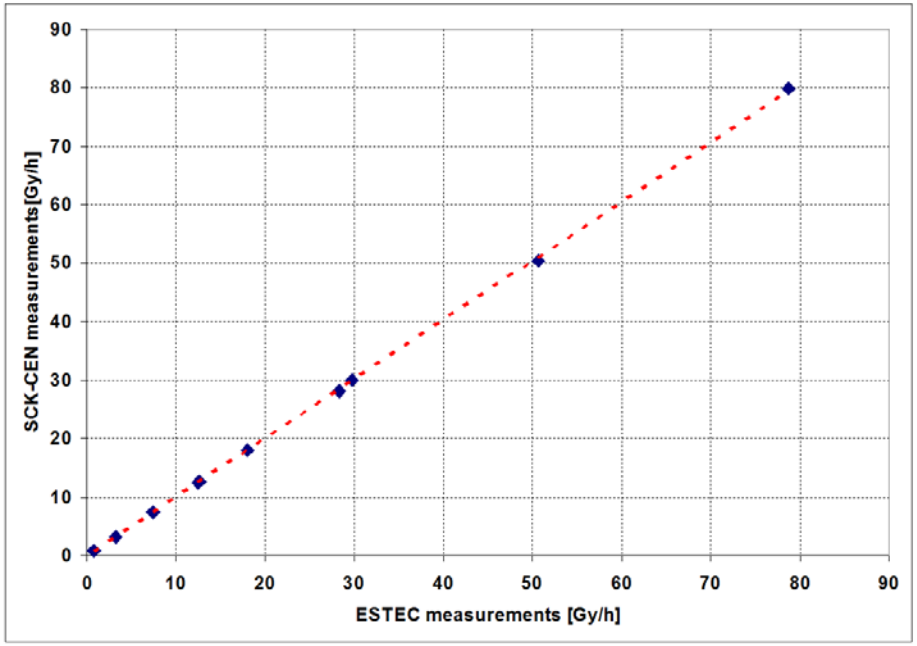
Dosimetry Uncertainties

According to TEC-QEC-PR001 60Co Facility Dosimetry Procedure:

- ✓ **The uncertainty of the measured TID [Gy] is 4.2%**
- ✓ **The uncertainty of the measured D.R.[Gy/h] is 4.4%**

Laboratory Inter-comparison experiments, conducted in conjunction with **SCK·CEN** (Belgian Nuclear Research Centre), showed excellent agreement between dose rate figures.

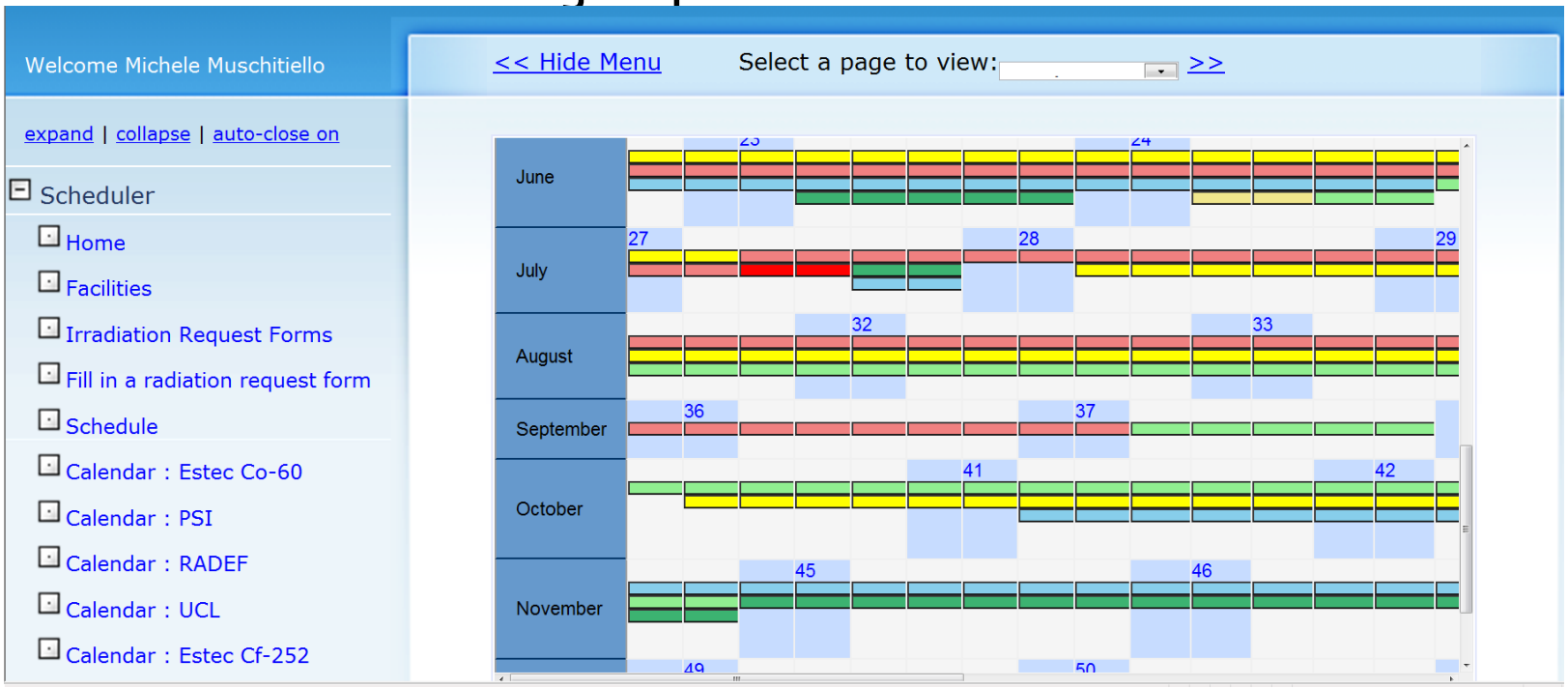
ESTEC	SCK-CEN	Δ[%]
78.680	**79.936**	**+1.57%**
50.628	50.379	- 0.49%
29.797	29.937	+0.47%
28.309	28.227	- 0.29%
18.000	18.026	+0.15%
12.651	12.629	- 0.18%
12.475	12.447	- 0.22%
7.442	7.434	- 0.40%
3.186	3.175	- 0.35%
0.812	0.811	- 0.10%



Test campaigns held in April 2011

Some more numbers

The facility had an high utilization rate in 2012 with multiple irradiation tests running in parallel

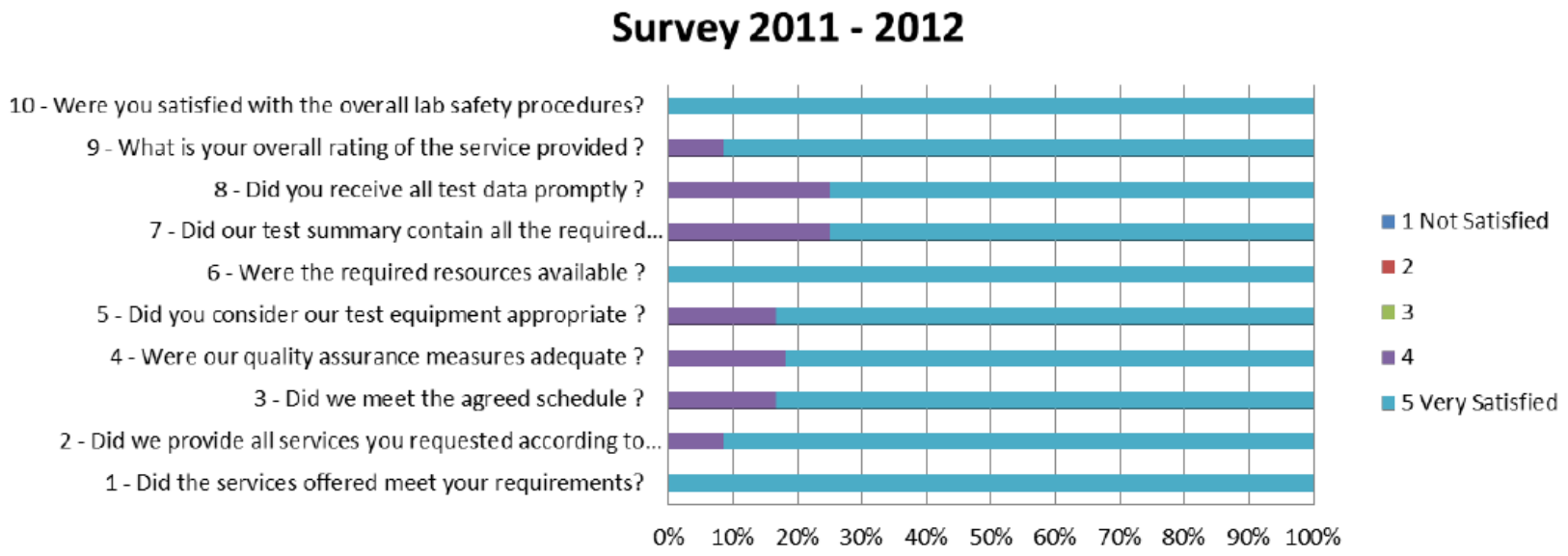


23 different customers performing more than 40 irradiation test campaigns. In 2012 the facility utilisation was more then 83%.

Source: http://joinspace.org:8080/metaframe/sites/dhw/scheduler/

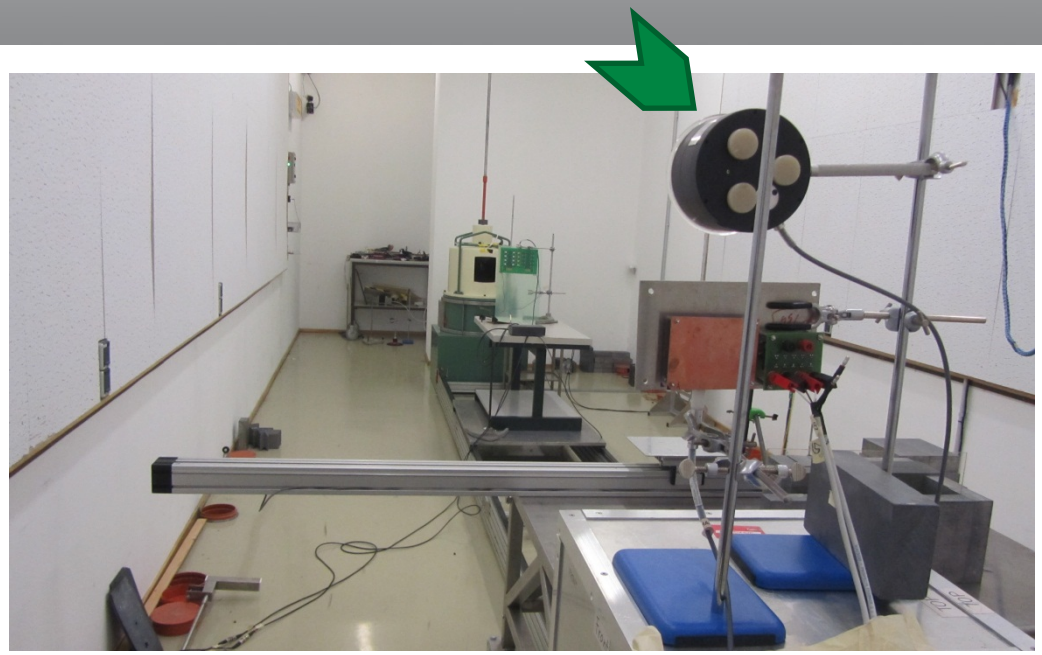
Facility Continuous Improvement

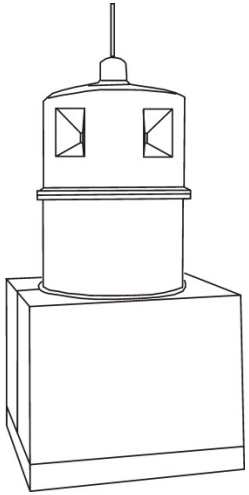
Continuous improvement triggered by customer feedbacks via systematic survey after each test campaign



Facility Upgrade (under evaluation)

New Dosimetry Chain based on a Keithley KE3571A/B electrometer connected to a 600cc ionization chamber for ELDRS tests





Modification of the irradiator head with a new collimator to double the test capacity (mainly for High Dose Rate tests)

How to contact the ESTEC 60Co Facility Staff

Bob Nickson – Radiation Effects Engineer
bob.nickson@esa.int +31-(0)71-565 3455 office room: eg012

N.B. on the 1st of July 2013 Bob is moving to his new office

bob@nickson.nl +31-(0)6-46.343.589

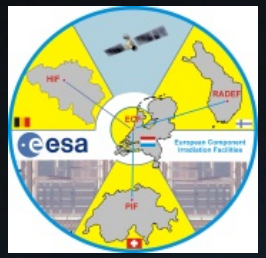
Alessandra Costantino – Radiation Effects Engineer
alessandra.costantino@esa.int +31-(0)71-565 6244 office room: eg012

Michele Muschitiello – Component Engineer
michele.muschitiello@esa.int +31-(0)71-565 4388 office room: eg012

Would you like to know more?

Please visit our website:

https://escies.org/webdocument/showArticle?id=227&groupid=6



or contact us at:

Co60Admin@esa.int

European Space Agency