Collaborating Research Groups

Their role in the financing of enhanced scientific productivity

Grenoble, 16 June 2017

Preamble

- There are many possible ways of running a research facility successfully.
- It is, therefore, not my intention to give lessons of general validity.
- I will, on the contrary, concentrate on the specific context of the ILL.

- It is ILL's mission to provide optimum facilities to its partners' user communities, to ensure that these communities can conduct world-class research with neutrons.

- The statements I will make, therefore, should be transposable to facilities responsible for running extensive, public, open-access programmes, user-oriented, and in an international context.

CRGs: The historical context

- The backbone of the ILL's business model is a suite of public instruments, operated by the ILL, with ILL's own resources.
- Collaborating Research Groups (CRGs) were originally not part of this model.
- CRGs developed when it became obvious that ILL needed to attract additional resources in order to fully exploit its potential.
- Two main types of CRG have emerged:
  - CRGs who take over and operate instruments originally built and operated by the ILL (Example: the three axis instrument IN3).
  - CRGs who build and operate their own instruments (Example: the reflectometers Adam and Eve).
- Today the CRGs are an integral part of ILL's instrument suite, contributing substantially to ILL's scientific output.
- In the future ILL will even operate instruments included as CRG instruments in its upgrade programmes.

The business model of ILL CRGs

- CRGs can only be operated by teams originating from ILL's Associate or Scientific Member countries.

- What ILL provides:
  - Beam position
  - Overall infrastructure
  - Specific services (against payment)

- What the CRG brings in:
  - Staff to operate the instrument (normally 2 scientists plus a technician)
  - Technical support by the home base
  - Financial contribution towards operational costs
  - A dedicated research programme

The business model of the ILL CRGs

In return for providing neutrons for free, the ILL obtains beam time on CRG instruments for its user programme:

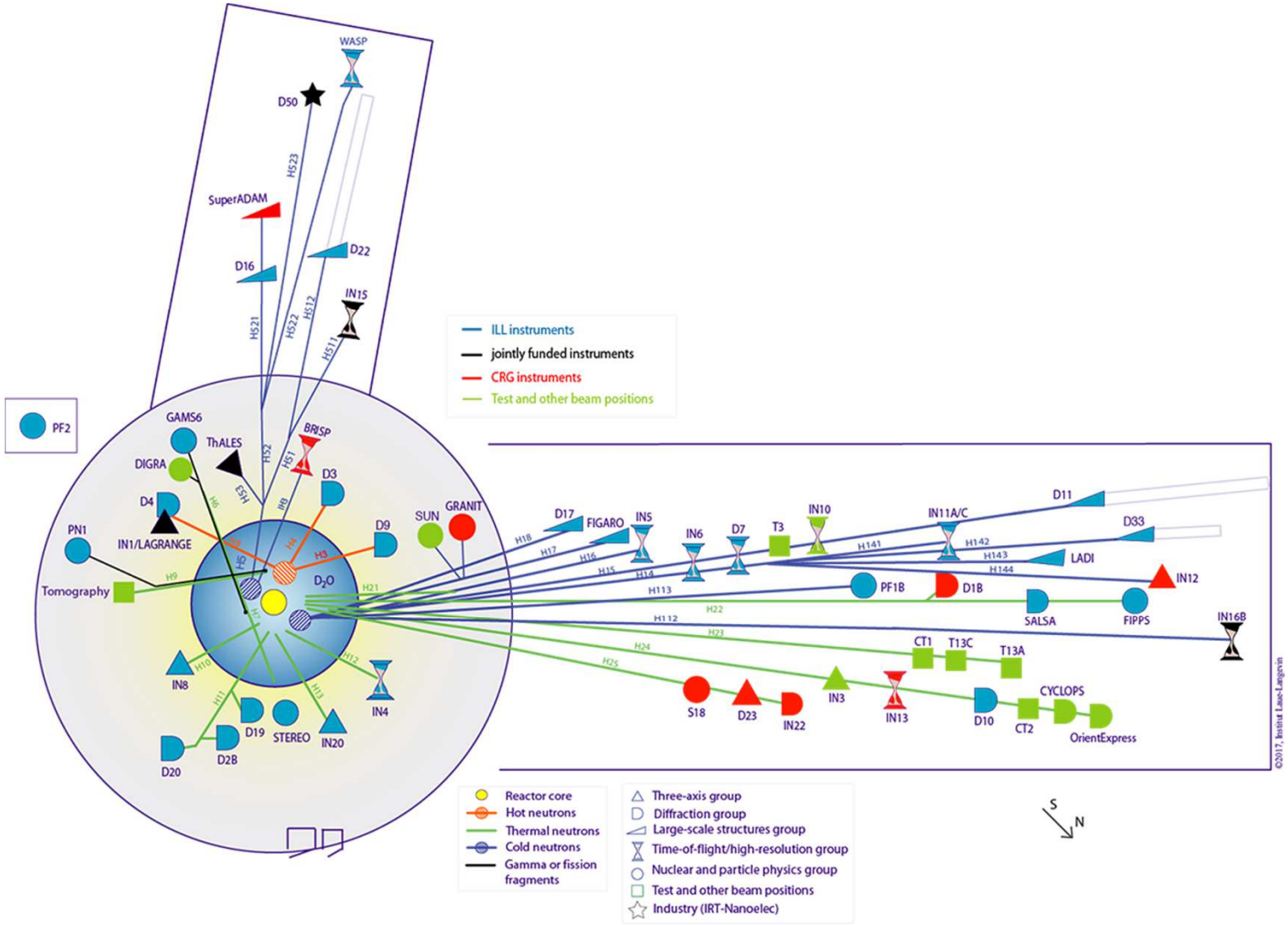
- CRG-A category:
  - The external group leases an instrument owned by ILL.
  - It has access to 50% of the beamtime.
  - For the remaining 50% the instrument is made available for the ILL's scientific user programme.

- CRG-B category:
  - The external group owns its instrument.
  - It is entitled to 70% of the available beamtime.
  - It supports the ILL programme for the other 30%.

Current situation

ILL today operates 8 CRG instruments			Category
SuperAdam	Reflectomer	University of Uppsala	B
Brisp	Brillouin Spectrometer	CNR-Italy	B
D1B	Powder diffractomer	CNRS-Grenoble/CSIC Spain	A
D23	Polarized 2-axis diffractometer	CEA Grenoble/Jülich	B
IN12	Cold 3-axis spectrometer	Jülich/CEA Grenoble	B
IN13	Backscattering Spectrometer	CNR-Italy/UGA-Grenoble	A
IN22	Thermal 3-axis spectrometer	CEA Grenoble/Jülich	B
S18	Interferometer	Atominstitut Wien	B

Current situation



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Integration is essential

For the CRG model to give optimum return on investment, the CRGs have to be integrated in the best possible way into the facility:

- In terms of governance, for the Institute to be able to run a coherent scientific programme. In the ILL model the Scientific Council plays an important role in this context.
- In terms of operations and maintenance, to minimize costs.
- In terms of service to users, to provide similar interfaces and give access to the widest range of services (sample environment, data analysis etc.)

Folie 8

RC1 If we say "optimum" return on investment, we should say "perfectly":
"For the CRG model to give optimum return on investment, the CRGs should be perfectly integrated into the facility"...

But you may wish to avoid such ambitions.
R Corner; 15.06.2017

The Pros and Cons of CRGs

From the point of view of a facility running a public user programme

- Pros:
  - CRGs broaden the research capabilities of a facility. They open up roads to competence otherwise inaccessible to the facility. In this context the “home base” of the CRG is particularly important.
  - CRGs’ activity at ILL feeds back positively on instrumentation and technological know-how in their home institutions.
  - CRGs are equally an ideal tool for helping the community take ownership of “their facility”. This is particularly interesting for communities from Scientific Member countries that do not operate a neutron source.

  For these reasons there is added value in running instruments as CRGs, even in cases where resources would allow facilities to operate these instruments by themselves.

- Cons:
  - CRGs are not neutral in terms of resources. Adding new CRGs requires investing simultaneously into the facility’s technical services.
  - An elevated number of CRGs can put the business model of a facility’s public-access programme into danger. In particular national balance has to be monitored carefully.

Conclusion

From the point of view of a facility running a public user programme

- A carefully chosen and well-integrated suite of CRG instruments definitely strengthens the performance of a user facility.

- In times of complex business models that have to satisfy the expectations of multiple shareholders it is important to make sure that the CRG part of the business model meets overall acceptance.
- In this context:
  - For an international facility running an open-access programme, CRGs should be considered as complementary to the suite of instruments operated by the facility itself.
  - The effort required for succeeding this integration should, however, not be underestimated.