

ENHANCING INTERACTION BETWEEN INDUSTRY AND LARGE-SCALE RESEARCH FACILITIES

NMI3 industry events

M. Förster, NMI3 Project Manager



Participants at the first IAB meeting

There are two aspects to the relationship between large-scale research facilities and industry. On the one hand, large-scale facilities rely on industrial suppliers to provide components for their scientific instruments. On the other hand, industry can use research facilities to conduct experiments and develop

Industry as a supplier

The 'Industry as a supplier' workshop was held as a satellite of the ICNS conference (www.icns2013.org) in Edinburgh, in order to take advantage of the presence of the large number of exhibiting suppliers. The meeting brought around 50 participants together: suppliers of key components for scientific instruments, procurement officers of the facilities, and facility engineers and scientists.

For the suppliers, the meeting focused on collective requirements in Europe

new materials. In the first case, interaction could be improved by getting strategic supplier firms involved at an early stage or even by co-innovating. Early involvement and continuous exchange on future requirements and developments would allow the suppliers to respond better to demand. In the second case,

for specialised equipment in the context of a broader and better coordinated European market, as well as the potential difficulties, such as national regulations on procurement that differ between countries. Speakers presented success stories and the obstacles they face in the provision of components ranging from cryogenics to neutron delivery systems or detectors.

Robert McKeag from Centronics presented a successful cooperation project with the Institut Laue-Langevin (ILL) on

industrial users largely under-exploit public research facilities. There are essentially two reasons for this: their lack of awareness of the services available, and the issue of intellectual property rights.

NMI3¹ is a European-funded project which has launched an initiative to explore the potential for interaction between neutron and muon centres and industry. Its first workshop was organised in July 2013, on 'Industry as a supplier'. Another event is planned for 2014 and will focus on 'Industry as a user'. The purpose of these meetings is to define how this interaction between facilities and industry can be improved and developed under the forthcoming Horizon 2020 programme.

¹ Neutron scattering and Muon spectroscopy Integrated Infrastructure Initiative (www.nmi3.eu) is funded under the 7th Framework Programme of the European Commission

detector development, citing the example of an engineer from Centronics seconded to ILL for a year. The experience highlighted the need for cooperation based on mutual trust and commitment between the facility and the supplier. In the same vein John Burgoyne from Oxford Instruments described the firm's involvement in sample environment development at the ISIS pulsed neutron and muon source. The sample environment community is a busy open network and regularly organises international

workshops which supplier firms are welcome to attend, to improve their understanding of the facilities' requirements. The next sample environment workshop is to take place in October 2014 in the UK.

From the facilities' point of view, a collaborative approach to development and procurement would provide long-term stability and enhance the development process for both industry and research, capitalising on the potential of shared innovation and technology transfer.

During the meeting, scientists and engineers from the different facilities discussed the current levels of interaction with industry and the requirements for the future; the purchasing officers, at the interface between the client facilities and the suppliers, highlighted how procurement processes vary within Europe.

Industry as a user

Innovation is nowadays a key driver in the European Research Area, imposing closer interaction between large-scale infrastructures and industry. Neutron scattering and muon spectroscopy have been developed over decades by the academic community and are becoming key techniques in the innovation cycle. However, the possibility of industry access to the different facilities is largely underexploited. The facilities' adaptation to the needs of the academic community has resulted in infrastructure not necessarily well-suited to innovation-driven research. For example, facilities select experiments based on scientific excellence whereas high-throughput screening of samples may be required by industry. Academic users require data that they will later transform into results; industry requires immediately exploitable results and efficient characterisation of materials.

Munich's FRM II facility is currently being extended with a new neutron guide hall requiring some 180m of neutron guides. Peter Link from FRM II shared the experience of the Munich Neutron Optics group, which serves as a technical node for five different projects involving three different guide suppliers. According to Peter, co-innovation will provide the key to the success of the projects. Solid partnerships ensure collaboration from the very start and naturally introduce a concern for standardisation among the different projects.

These presentations were followed by two views from the procurement side, on the difficulties experienced in achieving innovative procurement, and on the management of strategic suppliers. Xavier Philippe outlined the methodology used at ILL for identifying strategic suppliers and Juan Tomás Hernani

It is in this context that NMI3 launched in 2013 its two-stage event for 'Industry as a user' together with the synchrotron consortium CALIPSO². An Industry Advisory Board (IAB) has been set-up composed of 7 experts (mostly from industry) selected by each project. This Board has met on December 3rd and 4th with the business development officers of the photon, neutron & muon facilities to help define future optimal uses for the probes. The aim of the board's first meeting was to prepare an EU-wide industry-facility event in the autumn of 2014 at the EPN campus in Grenoble. The IAB will help define future optimal uses for neutron, muon and x-ray facilities by industry. The focus will be on a) opportunities for industry to engage in research at European facilities; b) promoting new opportunities and provision of appropriate training; c)

presented the innovative procurement approach being taken by the European Spallation Source.

The European Commission was also represented at the workshop. Bernhard Fabianek from the DG Research & Innovation gave valuable advice on funding possibilities for pre-competitive procurement under the forthcoming EU Framework Programme for Research and Innovation Horizon 2020.

Overall, the conclusions drawn in the discussion round underline the request for technology road mapping and, possibly, a central procurement & tendering platform. But it was also highlighted that collaboration always starts with individuals and that success depends on the recognition of mutual commitment.

industry-specific issues related to proprietary and pre-competitive R&D; d) operational industry-oriented strategies for European facilities in areas such as instrumentation, access arrangements, and property rights.

Both the CALIPSO and NMI3 consortia hope to expand their relations with industry. As their research techniques offer industry a range of complementary services it seemed natural to join forces. The members of the IAB are actually industrial users of one or both probes – this should trigger valuable inside views on our current practice and the efforts to be made.

If you are interested in participating in the Grenoble meeting, do not hesitate to contact us info@nmi3.eu. Further information related to industry involvement can be found on: <http://nmi3.eu/about-nmi3/industry-.html>.