SPOTLIGHT ON

SOS beamlines:

the hall coordinators are on hand…

There are six of them, and during beamtime operations when the beamlines are functioning, they work in eight-hour shifts, twenty-four hours a day, six days a week. Their mission is to help beamline personnel and users with problems that they may encounter with their experiments at SOLEIL. Make a note of their phone number: 9797!

The team of six hall coordinators, from left to right: Didier Trévarin, Julien Pinon, Bruno Cortès, Rodney Redman, Philippe Maugan and Michel Dot with their manager in the centre, Pascale Prigent.

Analysis, diagnosis and then decision-making: repairs, if possible, or a request for help from the «local contact» scientist for the experiment or one of the SOLEIL support groups, as required. When the technical issue is beyond their skills, the hall coordinators set up a link between the user and the appropriate resource(s)-person(s) – they are ¨signalmen¨ who know how to deal effectively with requests. This involves a global view of the workings of the equipment inside the beamlines, and a wide and varied technical knowledge including but not limited to mechanics, electronics, instrument techniques, vacuums, cryogenics, infrastructure, robotics, the use of I.T. tools. It would be hard to find more varied fields than those concerned by the hall coordinators' work. So curiosity and a thirst for knowledge are necessities, as there will always be something new to discover and learn no matter what the educational background. The coordinators have several years' training or experience in the different specialities linked to the range of instruments used on the lines – that is why each of them has their own strengths depending on their past experience or the training received at Soleil in the techniques they are less familiar with. This ensures versatility in problem-solving. They also have extensive experience in maintenance and in installing equipment onsite in France or abroad.
Versatility is required: all the team must be able to intervene irrespective of why a call is made, when they are on duty. That is to say, in the morning (6.30 a.m. to 3.00 p.m.), the afternoon (2.30 to 11.00 p.m.) or at night (10.30 p.m. to 7.00 a.m.), during the week or on weekends. So there is always a half-hour tie-in period for passing on information from the finished shift to their replacement.
Making the timetable for the team is a real puzzle, which Philippe resolves for each beamtime session, which is called a run. For the six coordinators the right balance must be struck between the 11 hours minimum recovery time between shifts, without going over 40 hours on average per week, while alternating on-duty shifts during the week (nights/mornings, etc.). This is a complex exercise, and the success of which is based on each individual's flexibility and adaptability. It is very important to be able to count on one's colleagues, in the event of personal constraints, in particular, to «fix» the timetable. In other words: here, probably even more than elsewhere, a good understanding within the group is primordial.

Technique and psychology...

The hall coordinators must act fast in the event of a problem, but without rushing: they need to have the necessary distance to assess the situation correctly, even when faced with scientists whom might be overwhelmed by stress due to a halted experiment. That is to say that a sense of contact and service, together with (almost) boundless calm are indispensible advantages in this job. Setting up procedures for some equipment, alongside the line teams and the support groups, helps simplify and speed up the coordinators' work. The 29 beamlines are shared out between them, and each of them knows the lines – this facilitataes where they can or cannot intervene and how, what their «weak points» are, where a breakdown is likely to occur, etc. From the robots transferring crystals on the PROXIMA lines to the helium compressor to cooling down the DEIMOS magnet, via the laser used on the FemtoSlicing facility, they have been trained to know how to react in the event of an incident. And it was logical that the coordinators should put forward ideas about computer monitoring of the lines («Global Screen»): even if they must and can adapt themselves, it is obviously easier and quicker for them to identify a problem if the monitoring systems are standardised and do not vary from one beamline to another.
All this information and knowledge, as well as reports on their interventions, are of course transmitted to the colleagues in the group, in particular via dedicated e-log and a wiki programs.

To these multiple technical interventions is added a safety role. When the beamtime is attributed, all experiments are assessed by the SOLEIL Safety group according to their danger level (green/yellow/red rating) and, for each experiment, a document, called the Safety Approval Shift (SAS), is placed on the corresponding line on the first day of the experiment to warn scientists of potential risks. For the past few years, the coordinators distribute the green, yellow and red SAS rating, while the Safety group takes charge of all the explanations linked to to the red and yellow SAS rating. Since they are often the first ones to intervene when a problem is signalled on a line, it is particularly important for the coordinators to be informed beforehand about the

potential risks in the various ongoing experiments. They have also all taken an official workplace first-aid course. In fact, the users are now so used to contacting the coordinators in the event of an incident that they sometimes call them for problems that are the responsibility of the Safety group.

Transversal knowledge

The coordinators make sure they maintain wide-ranging and continually updated information about the «health» of the lines; their interventions are a good way to update it, but prevention is better than cure. This is why they regularly share information with a number of SOLEIL support groups during meetings that need to be scheduled, despite the complexity of their timetables and possible interruptions because of calls for help.
Information is also pooled at the cluster meetings, the laboratories and beamlines support groups that have given structure to the Experiments Division since the groups were reorganised to adapt to the development of SOLEIL (*cf.* portrait of L. Barthe, page 15). The coordinators make sure that there is a coordinator present at the meetings of the six clusters. It's a chance to learn if technical developments or new instruments are planned and maybe even to foresee shared work with the engineering assistants on these projects.
Another of their tasks is to take charge of the mechanics workshop, located in the synchrotron, where repairs, adjustments or minor mechanical work often needs to be carried out on the lines, but which is not under the responsibility of the mechanical engineering department. The equipment available (vertical milling machine with horizontal milling table, lathe, and drill press) can only be used by trained and authorised staff – including three coordinators. In a second workshop with an electronics section they can carry out minor electronics repairs with equipment that is independent of the tools used by the Electronic Control and Acquisition group – a highly useful laboratory when work needs to take place, for example, on the FemtoSlicing laser system or on repairs to the lines.
Lastly, they manage the stocks of certain specific spare parts that are not supplied by the other support groups: XPS diffractometer cards, monochromator coders, computer cables of varying lengths, special connectors, power supplies for monitors on the beamlines, cryogenic heater modules, cryo keypads, exhaust pipe fittings, inlet hoses, electronic fuses, etc.

Victims of their success

So being a hall coordinator is a demanding job, in terms of work rhythm and technical awareness: their versatility must go hand in hand with curiosity and a desire to always learn new things. As a result, users are often positively surprised by the level of skill of the group's six members, who can be contacted evenings, nights and weekends. So much so that some things needed to be made clear: no, they can't take a look at your experiment once it's been launched, even though there's no reason to do so, nor repair your shower if you are staying at the SOLEIL guest house!

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