



IRUVX-PP

Preparatory phase for the EuroFEL (ex-IRUVX-FEL) consortium



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Intermediate Report on the Progress and Effectiveness of Expert Groups

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INTRODUCTION

The aim of IRUVX-PP's Work Package 3 (WP3) is to identify critical technical issues that are of importance to the EuroFEL consortium, to provide a platform for the transfer of knowledge and to organise long-term collaborations between the EuroFEL partners. These activities fall under the general heading of 'Joint Technical Development' (JTD) although in practical terms they cover only a subset of JTD activities. The distinctive feature of WP3 activities is that IRUVX-PP's main aim in this case is not to define a program of work itself. Instead it is to bring together those who are either already experts in a field or who wish to develop expertise in it, who already have independent funding to work individually in the area and who wish to benefit by sharing and learning from one another's experience. This is different from activities which aim to deliver a specific development program in a particular technical area. Such activities are supported, for example, through WP7 and WP8.

It was recognised from the outset of WP3 that in the absence of a detailed program of technical work issues might arise with motivating participants and with focusing their activities to deliver real common benefits. A structure was therefore chosen which, it was hoped, would address this. WP3 activities are organised by and for the benefit of so-called 'Expert Group' (EG) members. An open call was issued for the formation of these groups. They are self-organised and they have proposed their own workplans rather than responded to external suggestions. Because they have chosen activities which they were already motivated to carry out there should be no need for motivation by the WP management team. Indeed the team's role is not to decide activities in detail, nor to press EG members to do things that they don't want to, nor to enforce adherence to a rigid workplan. Instead each EG agrees its activities collectively and these are managed 'lightly' by a spokesperson selected by the group. There are as few constraints on activities as is reasonably practical, given the overall aims of WP3.

The WP management team is small (leader, deputy and administrator, all part-time) and it has had three roles. The first (now complete) was to run the process which defined the key technical issues and set up the EGs. The second (current) is to facilitate the EGs' activities. This is done mainly by supporting financially and administratively the *collaborative* parts of these. In particular funds are made available for travel and subsistence (T&S) so that individuals can visit one another to share knowledge and work together. The funds can also cover the procurement and/or transfer of common pieces of equipment, with the emphasis being on the *common* benefits of this process (the purpose of WP3 is very definitely not to support individuals – either people or institutions – in their own stand-alone activities). Likewise documentation and processes suitable for common use are eligible for support. There are also funds to support meetings and workshops. In addition there is administrative help for activities such as managing the funds, organising EG activities and improving communications between EG members. The third role of the management team is process monitoring and, if necessary, adjustment. It is fundamental to the nature of a Preparatory Phase (PP) project that it involves devising new kinds of process, testing these in practice to see which aspects work and which don't and, on the basis of this, modifying the processes in advance of the program proper beginning. This report is itself an example of process monitoring. Its aim is not to concentrate on the details of the individual EG activities but to try to identify common features. Positive ones should be supported and negative ones should be identified with a view to eliminating them or at least minimising them.

PROGRESS

The intermediate review meeting was held over two half-days in Project Month 19, 10 months after resources were allocated to the EGs to allow them to begin work. Given that the EGs are planned to outlive the IRUVX-PP project this is, in practice, an early stage review of their progress and effectiveness. However their members have been involved in this aspect of the project since before the EGs themselves were formally set up. So sufficient experience exists to justify a report at this stage.

The first phase of the WP3 activities involved identifying the technical issues, setting up the EGs and agreeing their spokespersons, producing workplans and allocating resources. In the original proposal this had been scheduled for completion in stages, with the groups and spokespersons identified in Project Month 9 (milestone M3.2) and the workplans finalised in Month 12 (M3.3). In fact both of these activities were completed ahead of schedule with the whole process over before the end of Month 9. There is an obvious general explanation for this which might be applied equally to all discrepancies between the project plan and eventual outcomes. This is simply that PP activities are inherently novel, so estimates of how long they will take can't be based on a large body of experience. However there are also some detailed factors which affected the delivery of this phase.

Firstly the process of identifying the issues was extended to include all of the parties who were involved. This allowed everyone to see that it was carried out fairly and led to a consensus relatively quickly. Secondly there was actually a good degree of agreement about priorities from the very beginning of the proposal process. This is not to say that no changes were made. In fact several proposals were consolidated to produce the ones which eventually went forward. But this was done without significant dispute so again the final list could be produced quickly. In the end it proved impossible to put together a viable EG to cover one of the technical areas which had been identified. At this stage the principle that the WP management would not press an activity onto a community which didn't want to carry it out was applied and this activity was simply allowed to lapse. A third reason why the first phase moved faster than expected was that the EGs understood how much funding was available and limited their workplans so as not to exceed this by a large amount. With some small revisions, both to plans and also to the allocation of resources centrally, it was possible to fund all of the EGs' programs. Had this not been the case further rounds of negotiation and decision making would have been needed which would inevitably have lengthened the process.

Progress with the second phase of the WP, where the EGs start to carry out their workplans, has been more variable. There are a number of reasons for this. Some of these are simply 'external' and will be covered in this section. Others are 'internal' i.e. the fundamental problem is one of effectiveness, leading to delay as a side-effect. This type of issue will be covered in the next section.

A serious problem which blocked progress for some EGs was purely bureaucratic. Two of the project's members acceded to it after it had begun. In principle their accession was uncontroversial, so it should have been straightforward. However for reasons which are not clear completion of the paperwork within the EU has been delayed for months. Some of the EGs' activities depend on the participation of experts from the affected institutions. Without a guarantee of funding their management has, entirely justifiably, limited the amount of resource they can contribute to the project. While this has had a significant impact on progress within

IRUVX-PP it should not be a serious problem for EuroFEL. EuroFEL will be supported by its members who will, by definition, have committed to the project's procedures when they join it. It will be in their direct interest for it to run smoothly and efficiently and they will act to minimise bureaucratic delay.

The program of one of the EGs includes activities which require access to a major experimental facility, operated by one of the IRUVX-PP members. It has proved difficult to get this access. Such problems are not unusual when the funding of a research program comes from a source which is separate from the facility provider. IRUVX-PP is not sufficiently well established, nor is its status sufficiently high that it can influence decisions about beamtime allocation on major facilities. The lesson to be learned here is that program activities like this need to be negotiated at the earliest possible stage with the facility provider. As the EuroFEL program becomes better established its reputation should grow and its support for a bid for beamtime in the usual semi-competitive process should add significant weight to that bid. An option might be to put a clause into the EuroFEL internal regulations which encourages member institutions, including facility providers, to prioritise EuroFEL bids. But whether this is really appropriate will be a matter for discussion.

The general point that novel (e.g. PP) processes tend to suffer unforeseen delays has already been made. One way to address this is to require that EGs make more detailed plans before beginning their programs. The current EGs presented workplans which contained target dates for activity completion. But the level of detailed planning behind these was not high. In particular the plans tended not to include concrete commitments from named individuals to deliver their contributions to each activity. It could be argued that such a rigid approach would discourage collaboration, especially at the early stages when members do not know one another well and the process is unfamiliar. Perhaps the detailed approach is more suitable for activities at the scale of WP7/8 rather than WP3 ? Where the correct balance between flexibility and commitment should lie will, once again, be a matter for further discussion.

EFFECTIVENESS

The first phase of the WP3 process was relatively effective. Technical issues were identified and proposals were sought. These were consolidated into agreed areas and EGs were set up, with spokespersons, to cover them. Workplans were produced, approved and resourced without any major problems. Given the success of this phase perhaps the only question which needs to be addressed is whether it could have done more. Should more proposals have been encouraged ? Should the proposals have been more challenging i.e. closer to the scale of those supported through WP7 and WP8 ? These issues will be dealt with when the overall EuroFEL JTD policy is formulated. But since they do not relate to the effectiveness of the EGs themselves they will not be considered further here.

The EGs' performance in the second phase of WP3 has been affected by quite a large number of different factors and at this stage it is difficult to see any strong patterns or draw any overarching conclusions. For the time being the more prominent factors will be noted. In no particular order they include:

Management EGs are self-organised and their workplans are set and then progress and develop by consensus of their members. The spokesperson manages this process. In cases where the members already know one

another and where relationships are well established it can move smoothly and relatively easily. When this is not the case the EG will form following the usual “group dynamics” routes. This takes time and in the early stages the group’s effectiveness can be lower than it later becomes. The process can be speeded up by adopting standard group organisational structures with well understood roles for individuals. For the current EGs this level of complexity is not justified. But as JTD activities increase in scale and importance a threshold will be reached where, at the minimum, an executive project leader and a project oversight board will be needed.

Prioritisation EG members are typically busy people with a range of other commitments alongside those in their EG programs. It is in the nature of technical development work that these commitments can change as progress is made. It is sometimes the case that a single member is critical to an EG activity and without him/her the activity does not move forward. The effectiveness of the groups can be compromised if their members cannot give the programs high enough priority. Given the novelty of the EG approach it is not surprising that IRUVX-PP participants did not immediately use it to meet their most critical requirements. So issues of prioritisation have arisen which have to be resolved by negotiation. Part of this process involves each member understanding how important the activity is to other members as well as to the success of the EG as a whole.

Program changes The EGs have discretion to modify their programs. This allows them to respond to the outcomes of their work. At this early stage there have been few, if any, instances of changes resulting from technical developments. But changes can also be made in response to practical problems which arise. It needs careful judgement to decide whether, in this case, changing the program is a wise response to an unforeseen difficulty which will allow progress to be made along an alternative route, or whether it is simply a ‘convenient’ way to avoid dealing with a problem. Again this might be easier to resolve within a more formal and accountable project management structure. The general agreement of the whole EG might also be assured this way.

Communication The need for good communication between the EG members, whose home institutions are typically widely separated, is obvious. Various channels are in use, each with its pros and cons. Face-to-face contact is most effective and when practical work is involved there is essentially no alternative. Face-to-face technical meetings seem to be popular with EG members who have commented enthusiastically about them. But this approach comes with the largest cost overhead. The availability of IRUVX-PP funding for T&S has been very important, particularly given the pressure on institutional travel budgets. But the cost in terms of travelling time can be high for short visits and environmental considerations are now discouraging unnecessary travel. Videoconferencing and teleconferencing can be low-cost alternatives to travel when meetings are involved. They are effective ways of transacting business. But the opportunities for informal exchange are limited. There are significant technical barriers to videoconferencing in some institutions and EG members have occasionally asked if WP3 and/or other parts of the IRUVX-PP project might be able to help with this. So far this has not happened. From the project’s outset a dedicated WP3 website was

planned. This has been implemented in the form of a Wiki site which is technically robust and accessible to all EG members. It is used for recording EG activities and for providing forms etc. However its take-up has not been nearly as wide as was hoped. One issue seems to be that EG members are not familiar enough with using the Wiki for it to be 'second nature'. The EG activities do not take up enough of their time for them to need to interact with one another very frequently. When they do need to interact they can fall back on the everyday channels of e-mail and phone. These work well enough that they are rarely forced onto the Wiki, so they never become really familiar with how to use it. This barrier could be broken down if the Wiki was active enough to attract regular attention. But this is a 'chicken-and-egg' situation of course. A consequence of the low levels of activity is that those who write reports for the Wiki perceive that these are 'never read'. This discourages them from investing significant effort in the reports, making them less attractive to potential readers and reinforcing the problem. It seems likely that the web-based approach will be more effective on larger-scale projects and will grow as the web culture penetrates society as a whole (as it seems to be doing). In the meantime it is encouraging to note that e-mail and phone seem adequate for the present needs. External communications are covered by WP5 but one aspect of them will be mentioned here. The publication of EGs' activities through conferences and journals seems to be an effective way of attracting the interest of potential new members.

Standardisation of practices There have been occasions when collaboration has been obstructed by differences between individual institutions' practices. Issues have ranged from the details of T&S arrangements to the procedures for insuring equipment in transit and on loan. Some EG members have asked whether IRUVX-PP might be able to influence institutions to resolve these differences. This has not happened so far, and institutions seem reluctant to change their long-established rules. But it may be that the EuroFEL statutes and/or regulations, which involve formal, long-lasting agreements, could include measures to ease such problems.

Administration overhead In some cases EG members had not foreseen the administrative work that would be required to manage the EG's affairs. However these issues did not seem to impede the groups' progress significantly. On a positive note several EG members have been very appreciative of the administrative support which WP3 has supplied. In particular it has been noted that the T&S arrangements were soon working smoothly and efficiently. And organising a technical meeting through WP3 is very effective, when alternative routes are either cumbersome or simply unavailable. There have been calls to find some way of continuing these arrangements under EuroFEL.

External involvement EGs are permitted to involve individuals from institutions outside IRUVX-PP in their activities when doing so would advance those activities. It is possible to foresee potential difficulties with this, and indeed issues did arise with the involvement of commercial organisations in another WP. But the experience within the WP3 EGs has been entirely positive and very welcome. In particular the ability to pay T&S costs to external participants, when it is appropriate to do so, has been much appreciated and again there have been calls to continue this under EuroFEL.