

NCRIS Exposure Draft: Comments submitted by National Committee for Crystallography

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To: ncris@innovation.gov.au

Cc: Sue Meek; Brendan Kennedy; Jose Varghese; Keith Nugent; Mark Spackman; Ray.Withers@anu.edu.au; Steve Wilkins

Subject: Comments on NCRIS exposure draft

Dear NCRIS Secretariat,

Thank you for the opportunity to comment on the NCRIS Exposure Draft.

Our comments are given below.

Sincerely,

Jenny Martin

Chair, Australian Academy of Science National Committee for Crystallography

Overall Comments

We strongly endorse the notion of supporting major collaborative research infrastructure in Australia. The community that we represent comprises users of landmark facilities such as the Australian Synchrotron and the OPAL reactor, and many of our members will also make use of NCRIS imaging, microscopy, NMR and biotechnology infrastructure and IT infrastructure like high-performance and GRID computing. We suggest that landmark facilities like the Synchrotron and OPAL should not be required to apply for funding through regular competitive rounds like NCRIS or LIEF but that their funding should be through a separate mechanism that recognises the need for stable ongoing operational and development funds, subject to performance and review, as occurs for equivalent overseas facilities.

We support the attempt to instill a more collaborative style in arguing for major research infrastructure. We suggest that an indicator for NCRIS success would be active involvement of CSIRO and/or other publicly funded research agencies, at least half the GO8 universities, and other research players such as medical research institutes or non-GO8 universities. We note that this style of collaboration is a hallmark of national facilities like the telescopes, the OPAL reactor and the Australian Synchrotron.

We note that there is little sense that “the whole is greater than the sum of its parts”. In the Characterisation capability, for example, we strongly recommend that efforts be put towards making the most of synergies BETWEEN electron microscopy, imaging, synchrotron radiation and neutron scattering.

Specific Comments to sections of the document

P17. Section iv. Open access models encourage uptake.

We believe that facilitation of access is crucial to ensure maximum return from individual capabilities. We are concerned that potential users may not take advantage of infrastructure because of a lack of knowledge about the infrastructure itself, its capabilities or of how to access the infrastructure. We recommend that rigorous mechanisms to ensure dissemination of information about the facility as well as plans for training of users should be an integral part of the funding proposal for future NCRIS facilities. We also suggest that NCRIS facilities include remote access capability wherever possible to maximise take-up from across the country.

P24. eResearch Infrastructure

We support the proposed expansion of eResearch Infrastructure including high performance communication networks, high performance computing facilities and long-term preservation of data etc. We believe there is potential for fruitful exchange between the telescopes and the neutron/synchrotron sources regarding archiving of and access to data. NCRIS could play an important role in facilitating this.

P51. Integrated Biological Discovery

We strongly recommend including “protein factories” in this section, that have the capacity for parallel processing of hundreds of target proteins from the early PCR product stage through to protein production on a few litres scale. These factories would enable the production of proteins using bacterial, baculovirus, yeast, mammalian and cell-free expression systems. Such infrastructure is increasingly important for evaluating the function and properties of hundreds of proteins that are identified as important biological entities using other NCRIS capabilities such as phenomics, genomics and proteomics and will be necessary to meet the needs of major infrastructure that are used to characterise biological materials, including the landmark Australian Synchrotron and OPAL reactor as well as high-field NMR spectrometers and cryo-electron microscopes.

P65. Characterisation Support

Is the "characterisation council" the list of people on the NCRIS characterisation capability webpage, identified as contact people for currently funded NCRIS facilities? Details of the selection, membership and affiliations of the “characterisation council” need to be made public.

p73-74. Heavy Ion Accelerators. The Exposure Draft document asks "Should it be considered a sub-element of characterisation?"

Heavy ion accelerators are facilities for low energy nuclear physics. We do not see this as an important contributor to the characterisation capability, and it will have no impact on our community.