

## Draft 2016 National Research Infrastructure Roadmap Submission Template

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**Charles Sturt University (CSU)** appreciates the opportunity to provide input and our comments are structured below according to the Key Recommendations.

**Key Recommendation 1:** across the nine proposed focus areas there should be special attention paid to

1. **Integrated and coordinated HASS platforms**, developing and enhancing national cultural databases such as Trove and the Australian Living Atlas. Access to significant data sets that go beyond the HASS disciplines is critical for the facilitation and operationalisation of transdisciplinary research, integration of social sciences data from multiple sources together with tools for analysis and visualisation and access to significant data sets from outside HASS disciplines.
2. **Digitisation and integration of significant collections** of historical and material artefacts including collections of physical artefacts that require infrastructure supporting first class conservation and access. Many smaller collections exist in regional centres across Australia, capture a strong connection to place and are of national significance. The infrastructure needs include housing, conserving and making available such collections to researchers while retaining the geographical distinctiveness and sense of place that many regional archives and collections offer.
3. **Harmonised platforms for Indigenous research** and integration of existing institutional level capabilities across a range of data platforms: AIATSIS, ATSIDA PARADISEC, NCIG and AURIN linked to wider platforms for integration across all digital collections and portals. The Roadmap should explicitly recognise that Indigenous research is not confined to research about Indigenous people and culture. Indigenous knowledges can make a significant contribution to research in both HASS and science. Infrastructure that can harness and communicate Indigenous knowledges, language, and cultural artefacts as significant



approaches to researching and understanding the world, will also benefit non-indigenous research communities.

4. **Environmental systems** including agro-ecosystem data systems to specifically support Australian rural producers and associated value adding enterprises (e.g. food processing, specialist high technology quality control systems) to improve their productivity and sustainability. Development of devolved and multi-nodal analytical facilities would support community, agricultural and environmental analysis using new and innovative technologies to ensure rapid feedback and take-up for land, water and food sustainability.
5. **Therapeutic development** noting the need for standardisation nationally, higher level access to clinical trial participation in regional centres, inclusion of the social determinants of health within the models chosen and sensitivity to the challenges that Western-only approaches can be for Indigenous communities.

**Key Recommendations 2, 3, 4 & 6** outline the need to have an Advisory Group, an Investment Plan, a connection to Complementary Initiatives and the need for ongoing investment in existing infrastructure. All aspects are essential but one of the weaknesses in the Australian Innovation System as a whole is a lack of connectivity. Consideration should be given to whether or not the NRIR can be driven by an existing Advisory Group, or a cohort of an existing Advisory Group to enhance connectivity, reduce duplication and ensure and complementarity of funding and mission by design an at earlier stage.

**Key Recommendation 5** must be informed by reference to the November 2016 and previous Australian Innovation System Reports (AISR) where it has been noted that skills shortages are not only of scientific, engineering or technical expertise but across all skillsets including marketing and logistics. This requires skills development not only within the universities but through partnership within industry also. The data from the AISR consistently shows that it has been very difficult for universities to collaborate and partner with Australian business and industry who are process innovators adopting innovation derived from others to be marketed and distributed within Australia. Innovation that has been adopted is almost impossible to export.

**Key Recommendations 7 & 8** refer to international engagement and raised awareness nationally and internationally. These are inherently linked and require coordinated governance to provide Australian access internationally and attract international research to Australian facilities. Since 2010 the AISR has reported progression from 'early adopters of new ideas rather than inventors' to 'process innovators'. Given less than 3% of innovation active businesses access innovation from universities and do not, according to the Government's own ASIR metrics, 'innovate', then NRIR Key Recommendation 8 needs some instruments to effect collaboration before it monitors progress.

In closing, noting we have not commented specifically on Key Recommendation 9, there is a sense of urgency which cannot be ignored. The Australian Synchrotron was at risk only a few years ago of losing continued funding and in every aspect the NRIR needs to be provide a foundation of long term vision, sustainable facilities and infrastructure and an ability to remain highly innovative and sought after in its offerings. This also requires that every asset is valued, regardless of location or management within a particular university or organisation. One of the fundamentals behind the



success of the Israeli Start Up Nation is the seamless integration of assists and connectivity between governance and funding which are invisible to the advancement of innovation in its various forms. This is what Australia needs to strive for and the NRIR is a linchpin in achieving that goal.

