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Building A Trustworthy Data Repository for Australian Geoscience Research Communities

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AuScope Australia (<https://www.auscope.org.au/>) focuses on delivering data, services, and tools to support the future research of the Australian geoscience research community. As a component of the “Data Lens” of the AuScope Downward-Looking Telescope, the AuScope Discovery Portal (<https://portal.auscope.org.au/>) harvests metadata from affiliated data catalogues to support more comprehensive access. Over time, it has become apparent that the data repositories offered by the AuScope partners and universities need to be improved for curating data from the AuScope projects. Many do not provide structured metadata suitable for harvesting into the Discovery Portal and offer limited data discovery and retention support. Consequently, most institutional data repositories do not support AuScope’s strategy toward making all data from AuScope projects or data collected with AuScope-funded instruments compliant with the FAIR (Findable, Accessible, Interoperable, and Reusable) Guiding Principles for both humans and machines (Wilkinson et al., 2016).

The goal of the AuScope Data Repository is to preserve and offer continued access to data from its communities (e.g., NCRIS-funded data projects and Australian Geoscience research communities) working on fundamental geoscience questions and grand challenges, including climate change, natural resources security and natural hazards. Datasets submitted to the repository will be made openly available where appropriate, with attributions to promote open science. The repository is essential for geoscience research innovation in support of the AuScope 5-Year Investment Plan and Australian Academy of Science Decadal plan for Australian Geoscience: Our Planet, Australia's Future.

This presentation will cover the repository’s scope and design, including non-technical (e.g., practices, governance, and engagement) and practical aspects of the repository (e.g., persistence identification, data discovery, interoperability, workflows and security and architectural requirements). We discuss the key considerations when setting up a data repository for scientific communities. The first release of the repository is now available online to gather early feedback from the selected AuScope data providers and project affiliates. We will summarize the presentation with the next steps of the development process, including engagement activities and

documented data practices.