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An interoperable and secure model supporting data mobility across the research ecosystem

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With the pace of research accelerating into the age of Quantum computing and AI, data mobility has become the lifeblood of modern scientific research. As unprecedented volumes of research data are being created at increasing speed, it is imperative that data can be easily moved and shared to be findable and accessible. Yet achieving data mobility in scientific research faces significant challenges that span technical, ethical, and institutional domains. If moving data from point A to point B is difficult, it undermines all existing investments in the latest instruments, high-performance computing and virtual research environments.

Looking to the future, AARNet is advancing Australia's national digital infrastructure to manage network speeds of up to 400Gbps and meet the evolving needs of modern, data-driven research fields. This poster will present some of the latest case studies from Australia where Globus has been used to drive data transfers and automation across diverse research domains, including Genomics, Astronomy, Advanced Microscopy & Materials Characterisation, Health and Medicine.

AARNet is Australia's national research and education network. For more than 30 years AARNet has provided reliable telecommunications services to the Australian academic and research sectors, along with an expanding range of cyber security, data and collaboration services. More than just a network. AARNet is about providing cost-effective solutions that drive powerful outcomes for research and education. Globus is one such high-value service that AARNet supports in Australia.

Globus is world-leading research cyberinfrastructure, developed and operated as a not-for-profit service by the University of Chicago. Globus allows researchers to easily, reliably and securely move, share, & discover data, no matter where it resides –from a supercomputer, lab cluster, tape archive, public cloud or laptop.

Globus allows users to leverage AARNet's high-speed networks by managing the efficient transfer of data up to petabyte-scale, and orchestrating distributed workflows across multiple facilities. Jobs are scheduled using a simple web interface: a feat that would be impossible using traditional file transfer tools.

Primary author: Mr D'ARCY, Greg (AARNet Pty Ltd)

Co-author: Mr IP, Alex (AARNet Pty Ltd)

Presenter: Mr IP, Alex (AARNet Pty Ltd)

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