

Accelerating the discovery of Australia's mineral resources

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AuScope partnership boosting successful mineral exploration

the challenge

The long term future of mining in Australia depends on finding and successfully targeting new resources to extract. Demand for Australian minerals remains strong, but there has been a decline in successful exploration, because of the difficulty involved in discovering what lies beneath the highly weathered rock and sedimentary basins that cover approximately 80% of Australia. There are also difficulties with the geoscientific data required for successful exploration: much of it is in different formats, collected using different measurement techniques, housed in disconnected datasets and literature, and usually only collected for specific regional projects. These valuable data are seldom available on a continental scale or aggregated in a consistent way.

the response

As part of the AuScope National Infrastructure Program, CSIRO has developed the Spatial Information Services Stack (SISS), which enables seamless access to the distributed, heterogeneous datasets of Australian Geological Surveys. AuScope is now the key portal for accessing data from several CSIRO exploration technologies, including:

- Laterite chemistry, which enables underground gold deposits to be identified through analysis of surface soils chemistry
- Hylogger™, which generates data from borehole cores, providing a new 3D perspective on mineral distribution associated with high value ore deposits
- Aster Atlas, which comprises maps of the earth's surface mineralogy, focussing on iron oxides, clays, carbonates, quartz, muscovite and chlorite.

the engagement

To improve the availability and accessibility of comprehensive geoscientific data, CSIRO collaborated with 22 organisations, including Geoscience Australia, 11 universities, and state and territory government agencies, through the AuScope National Infrastructure Program. There is now seamless access to important geosciences data, regardless of the original form or the organisation from which it came. The data is served live from the Geological Surveys and is the most up-to-date source of information available.

the impact

AuScope will allow exploration companies to bring forward new mineral resource discoveries – over and above the \$458 million in gold discoveries annually enabled by CSIRO's laterite chemistry research¹. In addition, the cost savings associated with AuScope, through a more targeted exploration effort, are \$35 million per year². Additional impacts include environmental benefits from avoiding fruitless exploration. These include reduced carbon dioxide emissions, and the ability to provide important geoscientific data for use in other fields, such as to analyse desertification, dust storms and soil quality.

^{1,2} Deloitte Access Economics. 2014. Evaluation of CSIRO's research impacts – Impact Case Studies



FOR FURTHER INFORMATION
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