The implementation of IGSN in the Australian mineral exploration context

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The Discovering Australia's Mineral Resources Program of CSIRO is conducting a regional study to define distal footprints of covered ore systems in the Capricorn Orogen – an underexplored area of known mineral potential that lies between Pilbara and Yilgarn Cratons in Western Australia, both known as prolific metallogenic provinces. The data integration theme of the project aims at enabling heterogeneous datasets of regional geophysical interpretations to be combined with hydrogeochemical, regolith, and resistate mineral studies around known deposits to gain insight into the key indicators of mineralisation.

Valuable data is derived from spatially located physical samples, such as water, plants, rocks, and soils. Partner research and academic institutions involved in field sampling campaigns collect large amounts of environmental samples and use different, often overlapping, numbering systems and procedures to document samples. This causes discrepancies between sample information and laboratory measurements and significantly hinders the discovery of samples and their data. A standardised approach to numbering samples and recording sample data has become increasingly important for sample identification and data curation.

The International Geo Sample Number (IGSN) provides an identifier system that is a persistent, globally unique label for environmental samples that are taken out of the natural environment or described in-situ. IGSN is governed by an international implementation organisation (IGSN e.V., www.igsn.org). CSIRO, along with Geoscience Australia and Curtin University, has recently become an allocating agent for IGSN. CSIRO developed an IGSN registration service and a descriptive metadata schema (Devaraju, 2015) to coordinate the IGSN registrations by different groups within the organisation. The Capricorn Distal Footprints project was one of the first projects to integrate the IGSN in its samples curation system. The adoption of IGSN will provide a common platform for referencing physical samples, their derived products and linking to datasets. The project aims at implementing a system that will provide a unified catalogue of samples, linking samples to data collected by researchers and historical data obtained through partner organisations.

The data integration theme of the project continues to work with other research groups and organisations to promote standard methods for allocating, identifying, and citing physical samples. The unambiguous identification of samples ultimately adds to the goal of enabling synoptic integration of heterogeneous geochemical datasets for regional-scale exploration.