RioTinto

Expression of Interest
Koodaideri Project – Phase 1

Project Overview:

The Koodaideri Project (Project) will develop a new iron ore mine located approximately 110km west-northwest of Newman, in the Pilbara Region, and associated rail infrastructure that extends from the Koodaideri mine to Rio Tinto's existing rail network at Lyre.

The mine will consist of a dry crushing and screening plant, non-process infrastructure, product stockyards, rail loop and load-out and a rail link to Rio Tinto's main rail line.

Package Title: **Advanced Data Analytics - Plant**
Package Reference: **KD1/I/SO/4046**

Package Description:

The Project has a focus on the implementation of advanced technologies. Technology will be incorporated into the facility to enable whole-of-life efficiency gains in operations and maintenance. Two areas under investigation are the application of Advanced Analytics,[1] to improve quality and reliability, and the development of an offline Digital Twin (also referred to as an Operations Simulator).

The scope of work is for the design, development, integration, testing and deployment of the following:

Advanced Analytics
  Plant-related algorithms that:
- predict failures and undue wear of critical equipment in the plant, such as the Primary Crusher, Conveyors, Apron and Belt Feeders, Stackers and the Reclaimer;
- monitor plant performance across all circuits and provide real-time, contextual set points;
- dynamically determine the most effective way of stacking stockpiles;
- forecast train loading times; and
- optimise dust monitoring and management.

Digital Twin
  A model that simulates plant operation using the same datasets and outcomes that support near-real time plant performance optimisation. Key characteristics include:
- 3D models contained in the Digital Asset.
- Simulation from the primary crusher to the train load out area.
- Ability to predict throughput of the plant based on a number of variables including historical and actual weather data.

The solution will leverage existing data and models to ensure that implementation costs for the Digital Twin are minimised.

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[1] Advanced Analytics is the autonomous or semi-autonomous examination of data or content using sophisticated techniques and tools, typically beyond those of traditional business intelligence (BI), to discover deeper insights, make predictions, or generate recommendations. Advanced analytic techniques include those such as data/text mining, machine learning, pattern matching, forecasting, visualization, semantic analysis, sentiment analysis, network and cluster analysis, multivariate statistics, graph analysis, simulation, complex event processing, neural networks. Gartner, 2018

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Specific Scope Requirements: Suppliers must have demonstrable experience in the natural resources sector in the following areas:

- demonstrate strong subject matter expertise in the package scope and the associated technologies;
- demonstrate experience of successful completion of similar projects;
- demonstrate ability to work with Engineering and Asset Management stakeholders to understand requirements and translate them into technical solutions;
- demonstrate strong capability in the design and engineering of technical solutions to meet or exceed Project quality requirements and specifications;
- demonstrate ability to deliver scope in a flexible and timely manner with minimal risk;
- demonstrate capability in the management of data and mitigating the risks associated with data;
- familiarity with, and the ability to fully comply with, the technical requirements of RTIO specifications; and
- demonstrate ability to provide ongoing professional and support services.

Forecast Award Date: September 2019

Package-Specific Criteria: Ability to design and supply the technical solutions in line with documented specifications, the scope of work and other requirements stated in contract documentation.

Expression of Interest: Suppliers and contractors are invited to express an interest in this scope of work by registering on the ICN Gateway online platform. Please ensure;

- The company profile on ICN Gateway is complete, up-to-date and accurate;
- Interest is registered as full-scope or partial-scope supplier (where applicable); and
- Responses to the generic pre-qualification criteria (questions) via the ICN Gateway, is provided.

EOI Commencement Date: 24th January 2019
EOI Closing Date: 14th February 2019

Contact: Industry Capability Network of Western Australia. (+618) 9365 7556
More information about Pilbara projects at Rio Tinto is available at
http://www.riotinto.com/australia/pilbara-4691.aspx

Disclaimer: *This package description and target award date is indicative only and subject to change. It is intended to provide a brief outline only of certain works that may be required for proposed Rio Tinto projects and should be read in conjunction with the Rio Tinto project description on ICN Gateway. Full scopes of work will be made available to parties invited to tender. There is no undertaking to contract or proceed to a competitive process implied by this form. Further contact with interested suppliers will be at Rio Tinto's discretion.*