NATURAL RESOURCES
CENTER OF EXCELLENCE

MELBOURNE,
AUSTRALIA

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CSC's Centers of Excellence help clients explore state-of-the-art solutions with minimum up-front investment, leveraging CSC's top talent to maximize innovation and results. Each center has a designated facility and staff who demonstrate and deliver solutions and evaluate products, methodologies and concepts.

CSC's Natural Resources Centre of Excellence (NRCoE) harnesses the knowledge of CSC's operations, other centres of excellence, alliance partners and academia to take creative ideas through to on-site reality. In recent times, resources companies have attracted considerable business media focus due to the dynamic, high growth nature of their operations, and their centre stage role in global development. Volatile markets, competition for resources and shareholders with high expectations have called for a far more agile approach to operations and a greater focus on working smarter.

The competitive environment is stressed by infrastructure bottlenecks, long lead times, supply constraints, expertise shortages, escalating costs, safety issues, environmental controls and climate change concerns. These challenges heighten the importance of systems that optimize production capabilities while improving worker safety and lowering costs.

The NRCoE, based in Brisbane Australia, provides thought leadership in the mining and metals industries and as one of only a few CoEs that are focused on an industry vertical, our mission is to be a bridge to broker and develop innovative solutions to benefit our clients, our partners, and so to position CSC as a partner of choice.

The CoE works with clients, internal consulting and lines of service and alongside technology partners to create novel solutions that meet today's needs and tomorrow's challenges.

Current areas of work include:

WORKFORCE MANAGEMENT

The largest and most complex asset in heavy industry is its workforce, with safety and coordination a priority. An integrated Workforce Management solution enables safe, streamlined mobilisation of the workforce, and controlled, efficient management of people. CSC's framework can be integrated into IT plans to bring business efficiencies to life.

WIRELESS COMMUNICATIONS

Our Remote Communications specialists have installed advanced wireless networking solutions, optimising end-to-end processes in mining, including workforce and tools/equipment mobility functionality. Our team has consulted with the mining community in techniques such as WiMAX and Ultra-Wideband Radar, which will bring sustainable improvements to operational systems. Working closely with Motorola we have developed IWS, an Industrial Wireless Solution, a fully-supported wireless mesh solution designed for the harsh, complex topographies of mining environments.

STRATEGIC ASSET MANAGEMENT

Integrating manual and automated data collection optimises the whole-of-life performance of mobile and fixed machinery. This maximises duty rates of plant and equipment by using best practice in condition monitoring, asset management and planned maintenance; delivering big production benefits.

INTELLIGENT SENSORS IN MINING

Smart wireless and location aware technologies are capable of providing connectivity in the harshest of remote and underground locations. Smart particle sensors, nano technology and self-organizing networks will evolve and enhance the application, reach and reliability of technical solutions. We believe intelligent sensors will drive the next technical evolution and be one of the foundations for more highly automated mining.

REMOTE OPERATIONS CENTRES

Our mining and petroleum clients are interested in remotely operating and/or monitoring many of their business functions to improve production with fewer people in dangerous situations on site. We have developed a remote operations architecture by leveraging our learning from other industries and by conducting assessments and workshops with clients.

ADVANCED ANALYTICS

By assessing different approaches to analytics in a range of industries, we have unearthed potential for significant improvements in mining and petroleum applications. Techniques include multivariate statistical methods, intelligent agents and expert systems, all suited to unattended operations and handling large volumes of data.

CRCMining

The NRCoE has a strategic partnership with CRCMining, an internationally recognised multimillion-dollar mining research centre, established by the Australian Commonwealth Government under the Cooperative Research Centres Program. The NRCoE is one of 17 industry and university partners of CRCMining. Others include Anglo American, Anglo Gold Ashanti, BHP Billiton, Caterpillar, Komatsu, Newcrest, Sandvik and Xstrata. The NRCoE Team is leading the development of a "Future Reference Architecture for Automation" on behalf of the CRCMining members. By adopting this architecture equipment and applications from different suppliers will be more interoperable, data flow, collaboration and decision making will be faster and more accurate; productivity and quality will be improved. (www.crcmining.com.au)

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