Objective: To develop a software package to process, display, manage and interpret drilling data, in order to directly improve drilling performance and to establish an engineering framework to monitor and report performance in a consistent way.

Background and Aims:
Drilling is commonly undertaken on the basis of the experience of engineers and drillers sometime combined with trial and error approach. With digital measurements quite rare, drillers often refer to noise and vibrations emanating from the rig as the main monitoring variable to adjust drilling parameters and optimise drilling performance. Indeed, little effort has been devoted to improve drilling performance using systematic and robust approach, but even simply to document the methodologies followed by drillers or monitor and report drilling performance in a consistent format or document and codify know-how (e.g. via models, best drilling practices and training).

The overarching aim of the project is to combine reliable real time drilling measurements with interpretation tools (software) to improve productivity on the rig by processing, displaying, managing and interpreting drilling data, in order to provide alarms, warnings, and recommendations to drillers and produce a reliable and objective measure of performance.

Service Sector Engagement and Commercialisation:
This project closely involves the operation of drill rigs and drilling companies. Service companies are engaged to accelerate the transfer of knowledge to the industry, for example on drilling best practice, training, software and/or hardware for the monitoring and optimisation of drilling performance and bit life.

Linkages to Other DET CRC Projects:
This project is closely linked to Project 1.4 and Project 3.2 in particular for the design of field experiments at the Brukunga Drilling Research & Training Facility (DRTF) and the real-time information about the rock formation and the bit wear status for the Lab-at-Rig™.