

# THE 4 G's IN PRACTISE

## Report on SUT Perth Branch Evening Meeting

Wednesday, 14 August, 2013

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The OSIG Perth SUT Sub-Committee organised a fast pace five presentation technical programme investigating how the 4 G's, Geology, Geophysics, Geomatics and Geotechnics, are applied in the Oil & Gas Industry. The evening was held at the Parmelia Hilton, opened by SUT Chairman, Ray Farrier and chaired by Andy Lane. The presentations which have distribution rights are available on the SUT Perth branch website.

In front of a great turn out of delegates Kathleen McMahon, Senior Geophysicist at GroundProbe opened the technical presentations by describing the use of *Geophysics & Port Developments – Exploring Marine and Transition Zones*. Explaining the use of geophysics for pre-dredging and port infrastructure developments how it assists in mapping lithology and estimating material volumes, as well as providing geophysical properties of use for engineering assessments.

Moving on to the next "G"; *Geomatics - How Deep? Rationalising Datum Differences From Multiple Surveys: A Case Study*, presented by Magnus McNeil Windle, Senior Principal Geophysicist, Advanced Geomechanics. When a number of coincident or overlapping depth sounding surveys are conducted over a period of time, discrepancies can occur between the results. Magnus discussed how these discrepancies can be related to datum, tide level errors and dataset specific acquisition and processing artefacts. The presentation, using a case study, examined the contributors to the discrepancies and how they can be resolved to provide the best representation of water depth for a development project.

Matthew Tutton, Principal Engineering Geologist, Golder Associates Pty. Ltd. described *Geotechnics - Ensuring Consistency in Field Reports for Large Ground Investigations*. One of the key challenges on large multi-disciplinary projects with diverse field teams is ensuring a standardised approach to field reporting and material description. This presentation discussed the approach whereby consistency in field reports was ensured on a large geotechnical investigation comprising approximately 5,000m of nearshore and onshore drilling, 88 test pits and over 10,000 laboratory tests.

The last of the 4 "Gs" presentation was *Geology - Sediment Transport on the Continental Shelf – Science and Practical Considerations* by Piers Larcombe, Chief Sediment Scientist, RPS MetOcean. Piers introduced the dynamic oceanographic and sedimentary setting, at a range of timescales describing a specific case study. The relevance of understanding sediment transport through the various projects stages and infrastructure, including pipelines and port developments in coastal environments. The key sedimentological aspects and unknowns were described, including the effects on and the disruption to coastal sedimentary regimes.

The final presentation described a fifth and possibly the most important "G" covered by integration. Xander Van Beusekom, Geotechnical Manager, RPS Australia Asia Pacific discussed *How the 4G's Come Together for Construction*. It was acknowledged that Site Investigations are setup with the best intentions. But the funding depends heavily on the project phase. It was explained that in the early stages budget is limited and the staged acquisition can result in a patchwork of Geo data acquisition as finance becomes available. Data consistency between stages is the key parameter to allow full and meaningful data integration.

The presentations concluded at just before 7:30 pm at which time, Ray Farrier, SUT Chairman, thanked Lisa Gagiero for her contribution to the society as Membership Secretary/Branch Administrator for the last four years. Ray took the opportunity to introduce Carolyn Iddles who has replaced Lisa. Following which the participants enjoyed networking over drinks and nibbles provided by the evening's sponsors: Advanced Geomechanics, Furgro, GroundProbe and RPS Metocean.