The NSW Gravity Model: Australia's First State-Wide Airborne Gravity Model

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Key words: Capacity building; GNSS/GPS; Reference frames; Airborne gravimetry; Datum modernisation; heighting

SUMMARY

The NSW Gravity Model is Australia's first model produced from a comprehensive, state-wide gravity survey captured in a single airborne campaign. This high-quality, high-density dataset delivers critical geoscience information, enhancing outcomes for infrastructure planning, land management, natural hazard assessment and resource development across New South Wales (NSW). It was delivered on time, within scope and budget, in collaboration with the Geological Survey of NSW and Geoscience Australia. The NSW Gravity Model will help surveyors measure height more accurately, assist land managers in understanding groundwater reserves and enable engineers to identify where major natural hazards may occur. It will also drive future resource investment opportunities in NSW by expanding the discoverability of high-value and critical minerals and reduce the financial risks associated with mineral exploration in unexplored or undeveloped areas. This paper presents some background on airborne gravimetry surveys, introduces the NSW Gravity Model, discusses the data collection and processing, and outlines the benefits this model will provide to the surveying profession and wider community, with gravity data made freely available to the public for the benefit of all. This contribution directly supports the FIG Commission 5 goal of building capacity and competence together in the science and application of where, particularly regarding vertical datums and the many applications associated with accurate heighting.
