

Joining New Zealand's Land and Sea Vertical Datums

Graeme Blick (New Zealand)

Key words: GNSS/GPS; Positioning; Reference systems; Datums; Transformations, Tidal models

SUMMARY

Height and depth datasets are captured, reduced and disseminated in relation to a range of reference surfaces or datums. In New Zealand, terrestrial measurements are referenced to the GRS80 ellipsoid of New Zealand Geodetic Datum 2000 (NZGD2000) or one of 13 local MSL vertical datums based on a single tide gauge. Marine boundaries and depths are defined in terms of marine tidal levels or datums such as Mean High Water Springs (MHWS) or Lowest Astronomic Tide (LAT). Increasingly height information is being determined using GNSS, and consequently the ellipsoid, for vertical positioning. Recently New Zealand implemented its new national geoid-based vertical datum, New Zealand Vertical Datum 2016 (NZVD2016), which also enables transformations between the land-based datums. Land Information New Zealand's Joining Land and Sea (JLAS) project aims to develop transformations between the land and marine datums using NZVD2016 as a common reference surface thereby enable the integration of land and sea spatial datasets. The project will also include the integration of an improved New Zealand tidal model to enable the determination of marine datum, eg MSL, values away from tide gauges using GNSS. This talk presents the challenges and current status of this programme of work.

Joining New Zealand's Land and Sea Vertical Datums (9338)
Graeme Blick (New Zealand)

FIG Congress 2018
Embracing our smart world where the continents connect: enhancing the geospatial maturity of societies
Istanbul, Turkey, May 6–11, 2018