

The Practical Limitations of a Semi Dynamic Datum – Is There a Better Solution?

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SUMMARY

In 2000 New Zealand adopted a Semi-Dynamic Datum, NZGD2000, which was aligned with ITRF96 at reference epoch of 1 January 2000.0. These coordinates are approximately fixed in relation to the ground, which means the datum is deforming with the land mass of New Zealand. The datum incorporates a deformation model that defines the relationship between the NZGD2000 coordinates and ITRF96 at any other epoch. In the 15 years since the datum was established this deformation has accumulated so that now the NZGD2000 coordinates include up to 15 part per million distortion and are offset by up to 0.75 metres from the corresponding ITRF and WGS84 coordinates. This can cause significant problems for high accuracy users of the datum including surveyors and GIS users if they do not properly account for deformation. This paper details how these differences and the impacts of them can be minimised and managed for users. However, is there a better solution? Is it time to consider the adoption of a dynamic datum or the adoption of ITRF as the official datum that changes as ITRF changes? This presentation will explore some of these issues.