GDA94, ITRF and WGS84 What's the difference?
Working with dynamic datums.

There is a widespread misconception within the spatial science's community that three geocentric datums widely used in Australia; GDA94, ITRF and WGS84 are 'identical for all practical purposes'. This is a fair assumption for navigation and many mapping purposes, however users of wide area differential GPS and precise positioning services with a precision of less than a metre are beginning to notice discrepancies between the datums. This is due to the tectonic movement of the Australian plate.

While all three are geocentric datums, WGS84 and ITRF are dynamic in nature with coordinates constantly changing to reflect tectonic movement on a global scale. Conversely, GDA94 is a static datum with coordinates fixed at the beginning of 1994 to the ITRF realisation at that time. During the intervening 13 years, the Australian Plate has moved by up to a metre and as a consequence GDA94 coordinates are now offset by up to a metre from WGS84 and ITRF.

This paper discusses the implications of use (and misuse) of positioning technology with regard to the integrity and longevity of survey coordination and spatial data. Practical methods of dealing with the divergence of GDA94 and ITRF/WGS84 are also presented with reference to a number of case studies.

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