How Accurately Can the Relationship Between a VLBI and a GNSS Antenna Be Determined?

Paula Gentle, Chris Crook (New Zealand) and Ryan Ruddick (Australia)

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SUMMARY

The Warkworth Radio Astronomical Observatory is home to two Very Long Baseline Interferometry (VLBI) radio telescopes, one of which contributes to the International VLBI Service, and an International GNSS Service continuously operating reference (CORS) station. It is the only facility on mainland New Zealand capable of observing more than one geodetic technique.

Land Information New Zealand, with assistance from the Auckland University of Technology and Geoscience Australia, has undertaken two local tie surveys to determine the relationship between invariant reference points of the radio telescopes and the antenna reference point of the CORS station, two points that cannot be physically occupied. This paper will discuss how conventional survey methods and an indirect survey technique was adopted to undertake the survey and how the data was processed to assess the accuracy achieved.