

Fiji's Geospatial Reference System

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SUMMARY

This activity of “Geodetic Data Compilation” was generously successful through the COSPPac program staff; the Geodetic Unit, based in the Oceans and Maritime programme at the Geoscience, Energy and Maritime Division of the Pacific Community (SPC) and this was accomplished during the COVID-19 lockdown. □ Fiji is advancing from the geodetic datum (mapping reference system) defined in 1986 based on World Geodetic System 1972 (WGS72) ellipsoid, to a modern datum, that is globally recognised. In doing so it would be introducing a datum which is totally compatible with the rest of the world and has been adopted by other countries in the region too, such as Australia, New Zealand, Niue, Samoa, Tonga. The new datum has a range of socio-economic benefits and opportunities to the wider communities. □ A diverse range of stakeholders relies on geospatial data and information, that must be aligned to the global geodetic reference frame and in Fiji's case, that comes as a challenge to align the two different system, one good example is that all the land parcels in Fiji, is on the Fiji Map Grid reference system and as such, when overlaid against the Google Earth, there is a displacement in positioning. □ With the government endorsement and funding, Fiji's Lands & Survey Department in collaboration with the Fiji Hydrographic Office, Pacific Community and Geoscience Australia carried out the geodetic surveys in Fiji's archipelago, Rotuma and Ceva-i-ra with the utilization of the Global Navigation Satellite System (GNSS) Technology, in this modern day and age. Many of the remote areas and the maritime islands have insufficient or no geodetic stations at all and that could deprive them of land development works, cadastral surveys, and mapping. □ In the course, of the modernisation of Fiji's Geodetic Datum, the Control Section of Lands & Survey Department has established eight (8) GNSS COR Stations in Vanua Levu, Taveuni, Kadavu, Rotuma, Lakeba and Ono-i-lau, to strength the geodetic reference frame in Fiji. In addition, the GNSS CORS in Lautoka and Suva, which has been in operation for more than a decade, will add further value to define the parameters of Fiji's new geodetic datum. □ The Fiji Geodetic Datum Surveys project involved more than 60 personnel for this campaign and was

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undertaken cooperatively by the Department of Lands and Survey, the Fiji Hydrographic Service, the Fiji Navy, and the Geoscience Energy & Maritime Division of the Pacific Community. The geodetic surveys commenced in November 2019, and a total of one hundred and ninety-three (193) geodetic control stations were occupied using the GPS/GNSS technology. □ A number of these stations are existing Doppler stations and first order trig stations which were observed in the early 1980's. Integrated with the observation of these stations were many selected first order trigonometric geodetic stations on Viti Levu and Vanua Levu and the mentioned maritime islands with a lot of selected standard survey marks in major towns and cities.

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