

Determination of Gravimetric Geoid Model in Kalimantan and Sulawesi – Indonesia

Adolfientje Kasenda, Dyah Pangastuti and Kosasih Prijatna (Indonesia)

Key words: Reference frames; Reference systems; Geoid Model

SUMMARY

At 2013, Indonesia has a new reference system, Indonesian Geospatial Reference System 2013 (SRGI2013). Geoid is used as vertical reference on SRGI2013. Since a few decades ago, many efforts have been made to determine Indonesian geoid by gravity terrestrial measurement. Indonesia is archipelago country with wide area, so gravity terrestrial measurement not effective to cover whole area. To solve this problem, at 2008, we start to using airborne gravity to get gravity data by collaboration between Technical University of Denmark (DTU) and Geospatial Information Agency of Indonesia (BIG). Airborne gravity measurement conducted in the Sulawesi and Kalimantan island. This survey using Lacoste-Romberg airborne placed on the Cessna Caravan. Flight altitude is about 3000 meters above sea level with a spacing 10 Nm. By combine airborne gravity data, global geopotential model and topography model from Shuttle Radar Topography Model (SRTM), we generate geoid model of Sulawesi and Kalimantan with an accuracy of approximately 10-20 cm. The Accuracy is gotten by comparison between our geoid gravimetric and geometric geoid from GPS- leveling measurement in vertical benchmark at Kalimantan and Sulawesi.