Due to difficulties in connecting surveys through the Amazon region, the Brazilian height system was materialized by two vertical networks, with their origins, one at the Imbituba tide gauge, south of Brazil and the other at Santana tide gauge, north of Brazil. This imposes difficulties in gravimetric geoid modelling mainly at the river mouth of the Amazon River (wetland region), where a gap of gravity measurements of about 350 km exists. Today, with the modern techniques of satellite gravimetry, developed through the missions CHAMP, GRACE and GOCE, it is possible to explore new Global Geopotential Models (GGM) based only on satellite measurements, associated with Digital Terrain Model (DTM). This allows the refinement of the geoid based on the Residual Terrain Model (RTM) without geodetic reference conflicts. The proposed approach is an alternative for filling the gap of information not provided by the GGM (mainly error of omission). The proposed methodology seeks the modelling for integrating two vertical datums to a more realistic model, without being linked to local frames. This paper presents a solution based on the indirect connection of the fundamental vertical networks of Brazil using RTM and GGM, obtained from the GOCE mission and the DTMs DTM2006 and SRTM. The effect of high topography frequencies on the potential reached several decimetres in height anomaly in the region of connection. As a result, the use of high frequency information of the gravitational field fills a large part of the error of omission of the GGM, making the connection between such vertical data possible.