

# Joining Land and Sea using geodesy

Solution - use the geoid as the primary height reference surface and link all other surfaces (ellipsoid, MSL, HAT, LAT, MDT ...) to the geoid.

- **POSITIVES**

- Physical height reference surface - water always flows downhill
- Exists onshore and offshore  
(No other surfaces meet these two criteria)

- **CHALLENGES**

- Global geoid model has absolute accurate of ~20 cm (relative accuracy is better than this)
  - Local / Regional geoid models require airborne and terrestrial gravity data which can be expensive
  - Development of hydroid models to convert between MSL, LAT etc. and the geoid are challenging (but necessary for every primary reference surface)
- UN-GGCE is willing and able to assist Member States with these challenges (and others).
    - December 2-5, 2024 - Joining Land and Sea Workshop (hosted by Indonesia)
    - Capacity Development Workshops in Bonn (2025)

