

Ocean & land, positioning & surveying

[Standardization of ocean & earth information]

Satellite observation technology has enabled precise positioning and surveying of land areas. And, with the advent of AUV, it became possible to obtain another dimensional precise survey result even on the seabed.

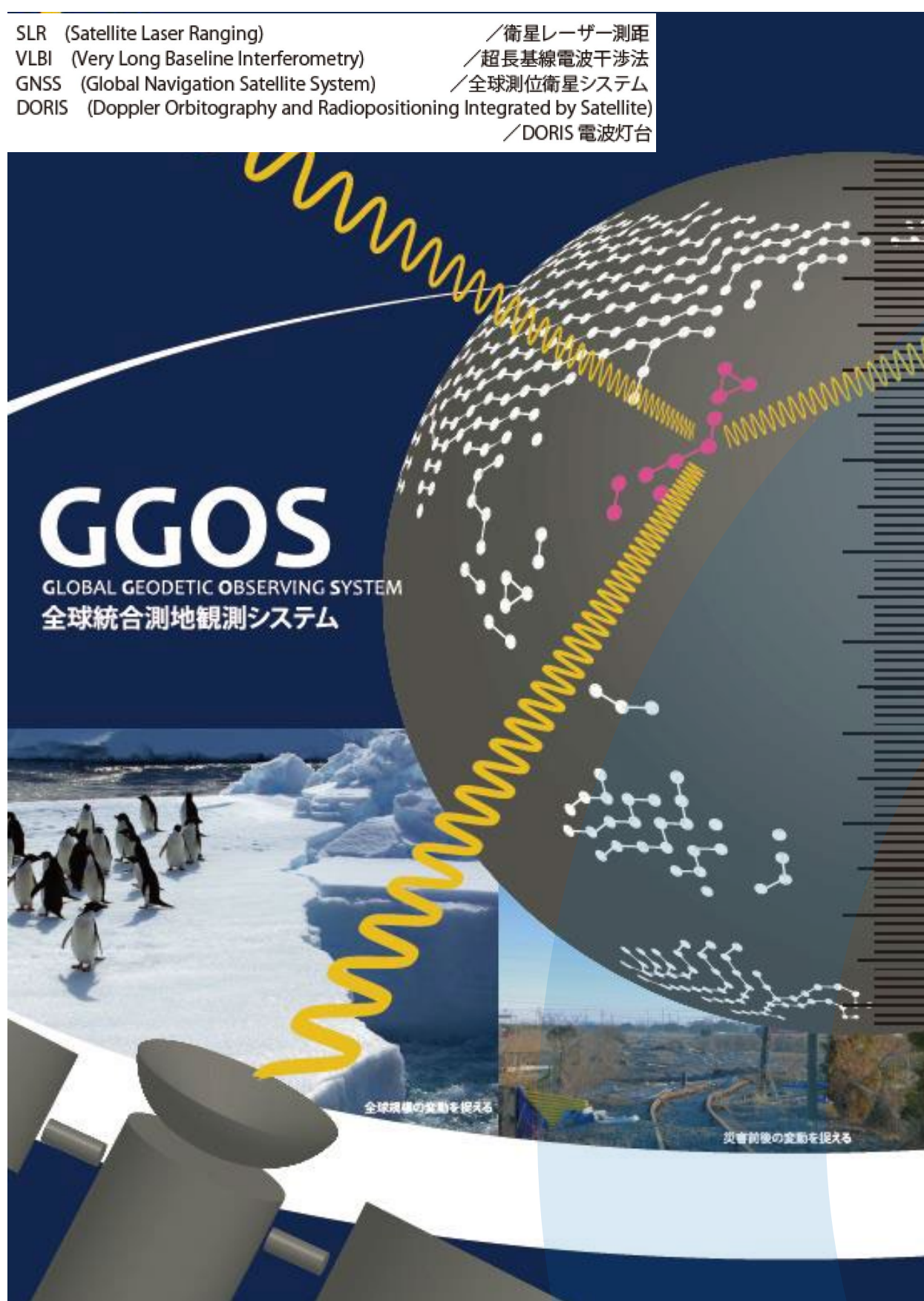
However, does it seem that seafloor surveying that looks high accuracy has enough error and accuracy? At Yokota Lab, along with land-based positioning and surveying information, we will proceed with evaluation and standardization of information and develop next-generation positioning information engineering.

Various positioning and surveying techniques on land

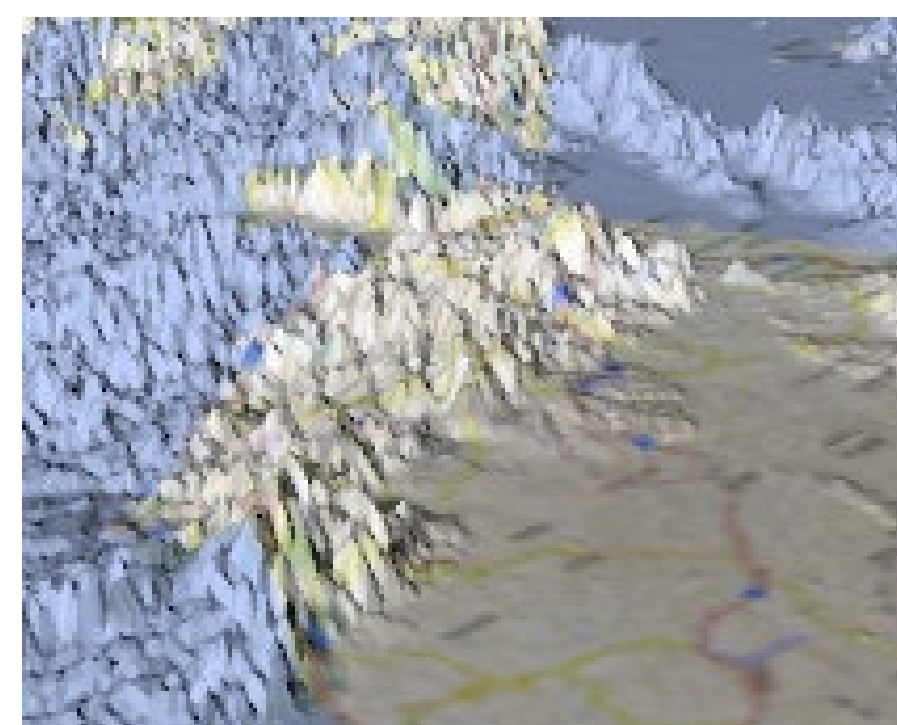
Earth geodetic system construction by space geodesy



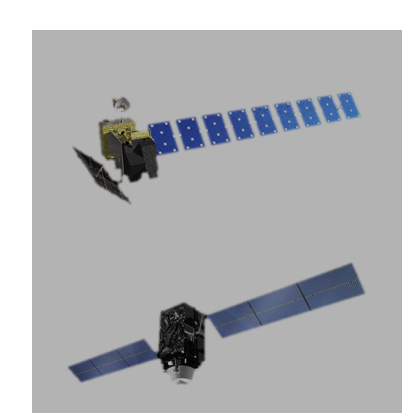
SLR (Satellite Laser Ranging)
VLBI (Very Long Baseline Interferometry)
GNSS (Global Navigation Satellite System)
DORIS (Doppler Orbitography and Radiopositioning Integrated by Satellite)



Land area survey by space geodetic technology
@GSI



Satellite @JAXA

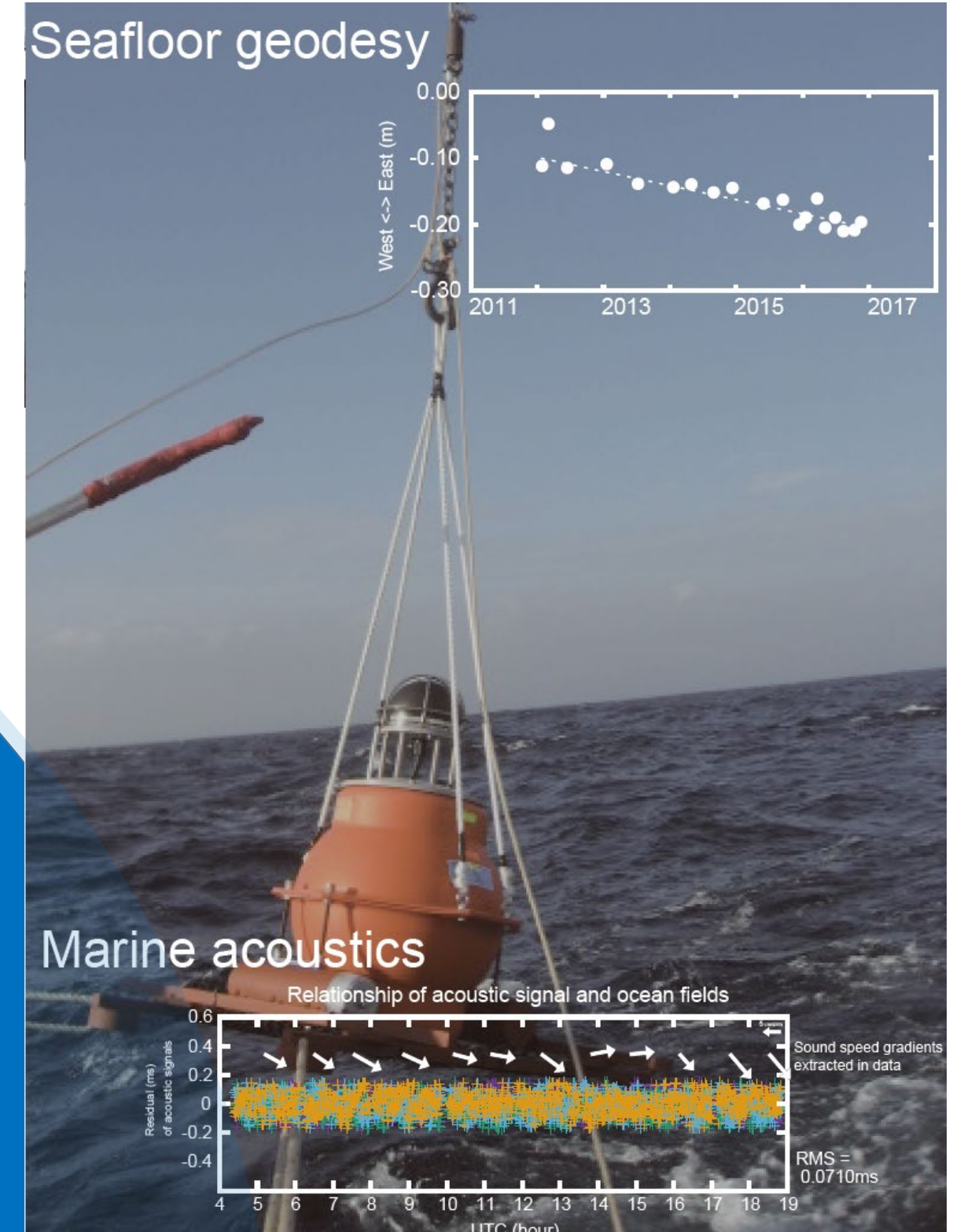


Daichi

Michibiki

Evolution of seafloor positioning and surveying technology

GNSS-A positioning



$$\text{Error information } E = \sum_n \sigma_n^+ + \sum_n \beta_n$$

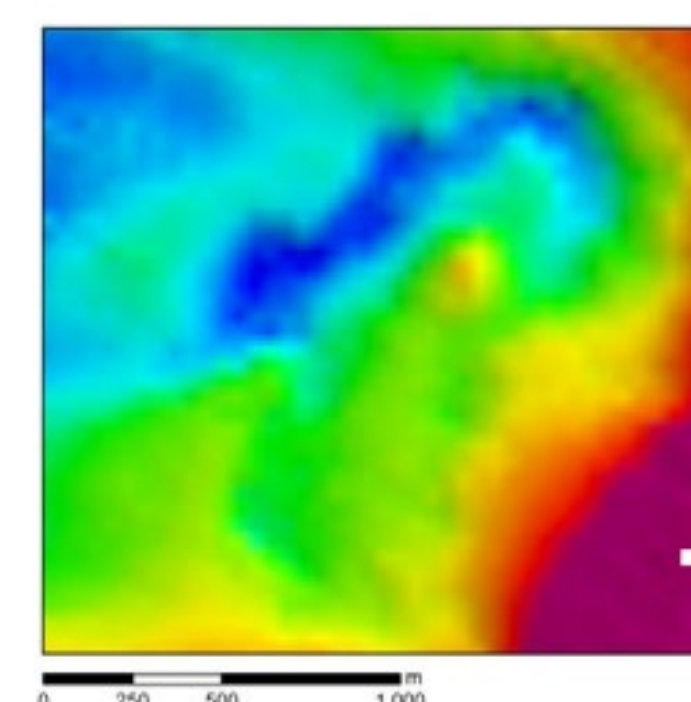
Standard construction of
technology and data

Revolutionary AUV surveying

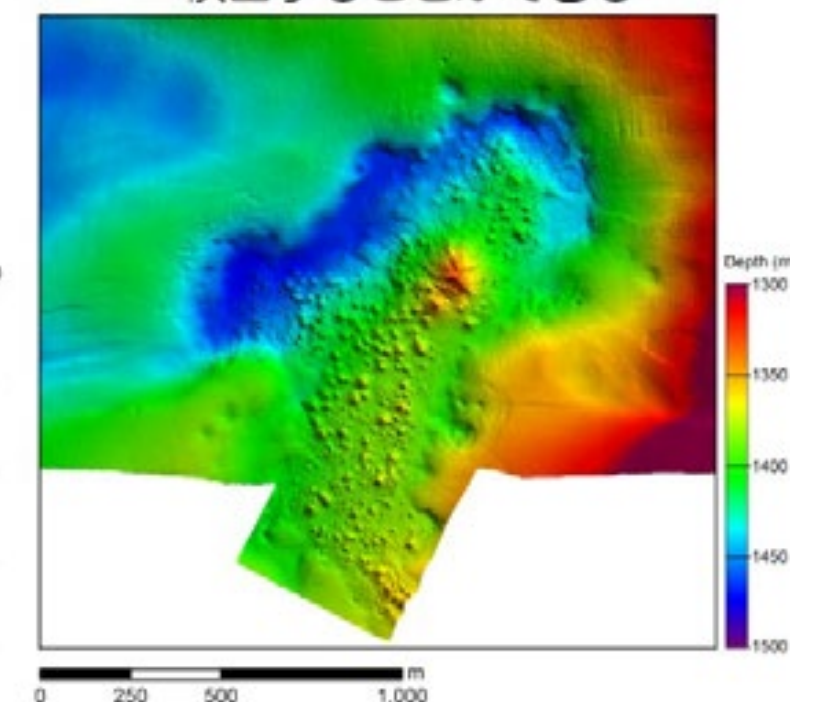


測量船による調査
水深が深いところでは、微細な海底地形は検出することができない

AUVによる調査
海底に近づくことで、水深が深いところでも微細な海底地形を検出することができる



測量船で得た海底地形図



AUV「ごんどう」により
今回の調査で得た海底地形図

Tanaka, Suirou (176)