Quality assurance procedures for SDB

Dr. Thomas Heege, CEO
In 4 dimensions

Seafloor habitats
coastline
bathymetry
infrastructure
obstructions
Surface oil
Water column properties
Vessel traffic
Seastate parameters
Platforms
Surface obstructions
Quality drivers for SDB products

Sensors

• **Spatial resolution**, sensitivity, spectral resolution, capacities
• *Align to requirements (resolution, accuracy, integrated, other)*
Quality drivers for SDB products

Sensors

Data analytics

• Approaches (empirical / semiphysics/fully)
• Align to requirements (accuracy & uncertainties, independent, further products)
Quality drivers for SDB products

Sensors

Data analytics

Production workflow

• Feasibility forecast (environment, data & sensors), scene selection & QC
• Process configuration
• Post-processing, tidal corrections, vali/cali, QA/QC
• Integrated approach / independent source?
RGB satellite image
Land / Water / Cloud & breaking waves mask
Sensor radiance, red band
Adjacency corrected sensor radiance, red band
Subsurface reflection
Seafloor cover
Water depth at record time
NOAA water depth
Comparison: independent fully physics based versus NOAA

Green: NOAA data | Red: EOMAP depth | Blue: 90% uncertainty band
Comparison: independent fully physics based versus NOAA

Green: NOAA data | Red: EOMAP depth | Blue: 90% uncertainty band
Comparison: independent fully physics based versus NOAA data

Example: Area under impact of undercorrected turbidity

Green: NOAA data | Red: EOMAP depth | Blue: 90% uncertainty band
EOMAP’s solution – Integration SDB and single beam
EOMAP’s solution – Integration SDB and single beam

Single beam transects
EOMAP’s solution – Integration SDB and single beam
Integration SDB and single beam

90% of SDB data within 50cm accuracy compared to single beam transects
Quality assurance for SDB products

How to reflect all this in:

- Standards?
- Risk management?
- Tendering requirements?
- Fostering improvements & innovation?
- Knowledge dissemination & Capacity building?