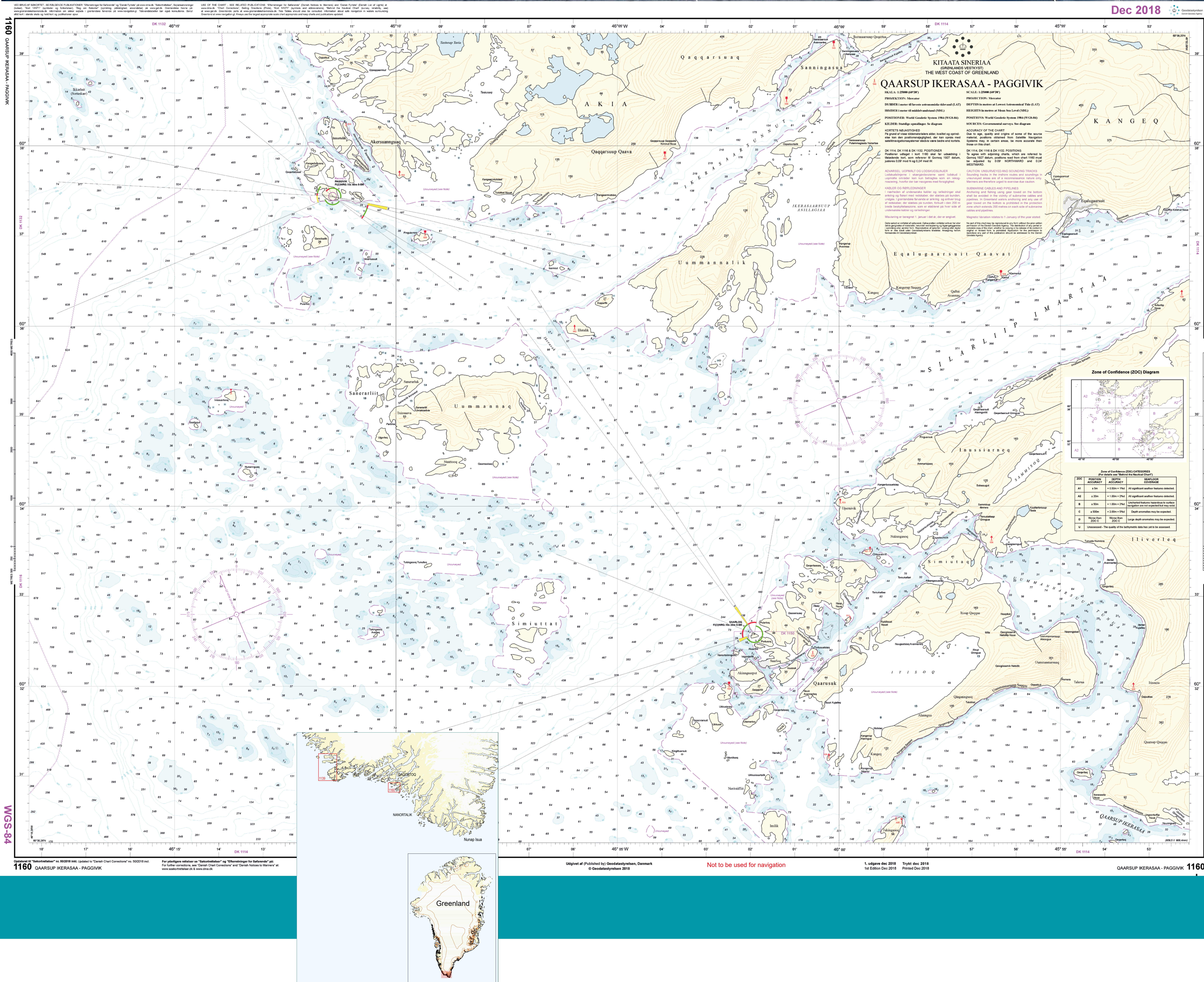# ArcGIS for Maritime Charting


Nuuk fjord
Foto Colourbox

The Danish Hydrographic Office, Aalborg, has produced two charts in ArcGIS for Maritime Charting.

The Arctic Team within the Danish Hydrographic Office has been working to produce new nautical charts for Greenland, using ArcGIS Maritime Solution's Chart Automation Tool to improve the speed and consistency of their chart production.

In 2018 the team produced 2 new charts covering areas in south west Greenland, as part of a production plan of 73 new charts for western and southern Greenland. (almost the same area of coverage as the US west coast).

Process diagram for producing new charts in Greenland
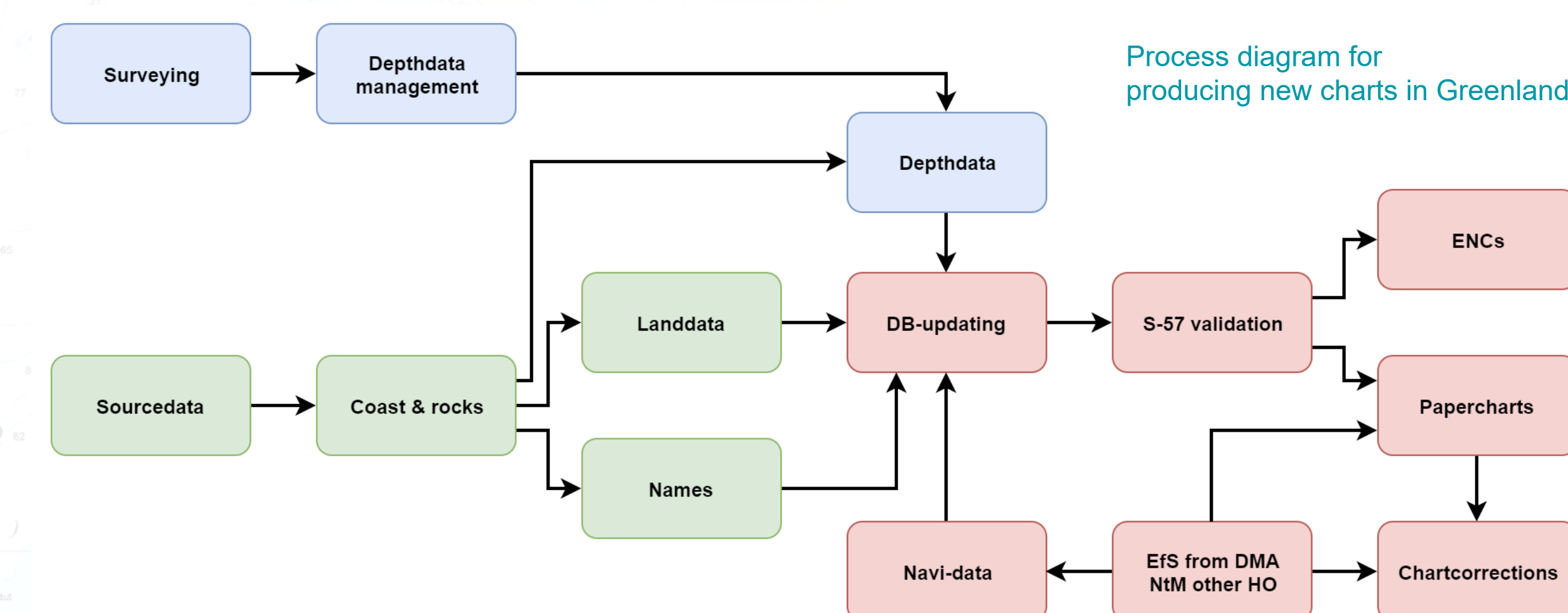
Data Sources

The process diagram above shows the conceptual process for producing new charts in Greenland.

New charts are created using data gathered from a multitude of sources:
- Greenlandic place names (acquired from Oqaasileriffik - Greenlandic Language Secretariat).
- Aids to navigation (Danish Maritime Authority - DMA).
- Bathymetry (Danish Navy Surveys).
- Coastline and land data (Multi-spectral imagery (Sentinal2), existing products, Coast and Rock project).

Sentinel2 data and the new refined coastline (yellow)

ArcGIS Chart Automation Tool

The Chart Automation Tool (CAT) generates and applies the appropriate cartographic symbology to data, captured in the ArcGIS NIS Database, according to pre-defined rules.

These rules are defined in a script and work on a condition basis. The team refined these rules to minimise the amount of manual work needed. The tool is run in an iterative fashion. Repeating the process, changing settings with the configuration files each time, until finally reaching the desired result. This resulted in an approximately 75% automised result of the desired final depiction of the new charts. With the CAT generating grids and graticules, symbology, labelling, masking and Zone Of Confidence diagram.

Some cartographic editing was still required e.g label placement, light sectors and some feature masking. However, the more the team uses the tool and refines the rules within the configuration files, the less manual editing will be needed in the product, therefore speeding up the production process and reducing the margin for inconsistency or human error.

Database
CAT Tool
Product
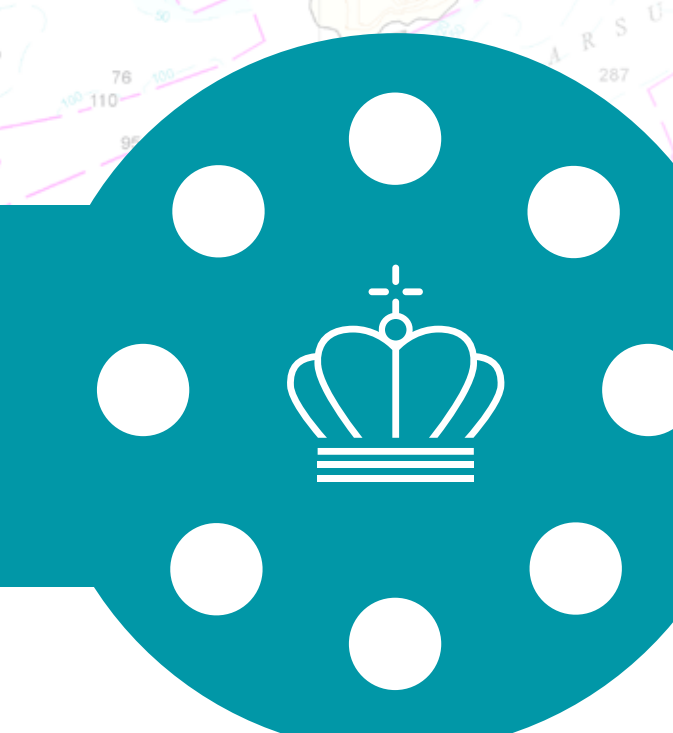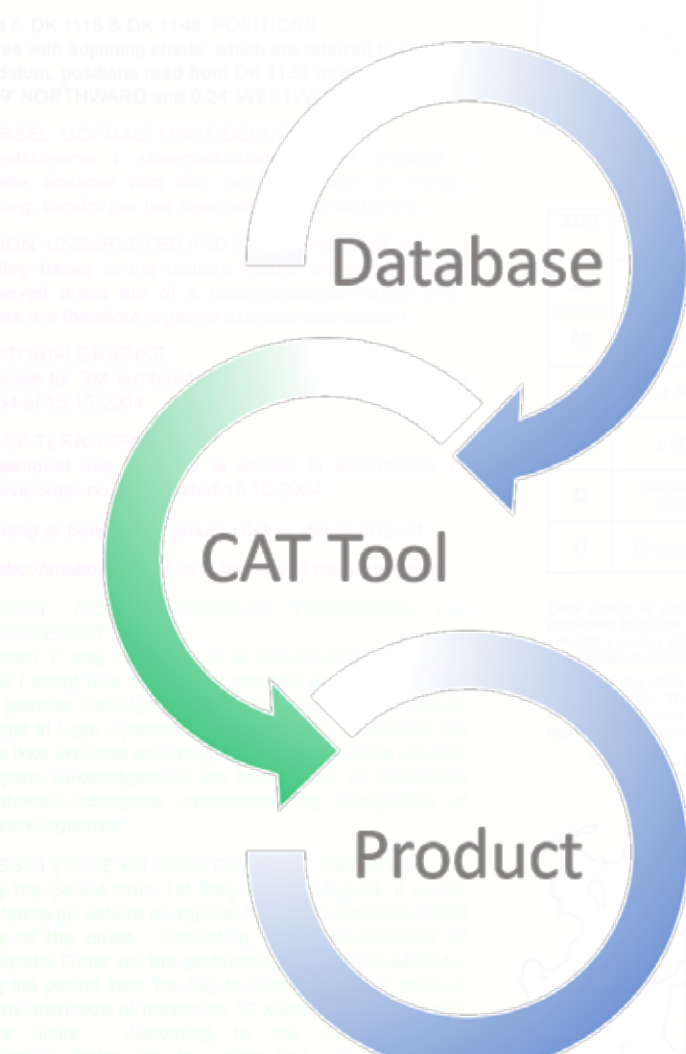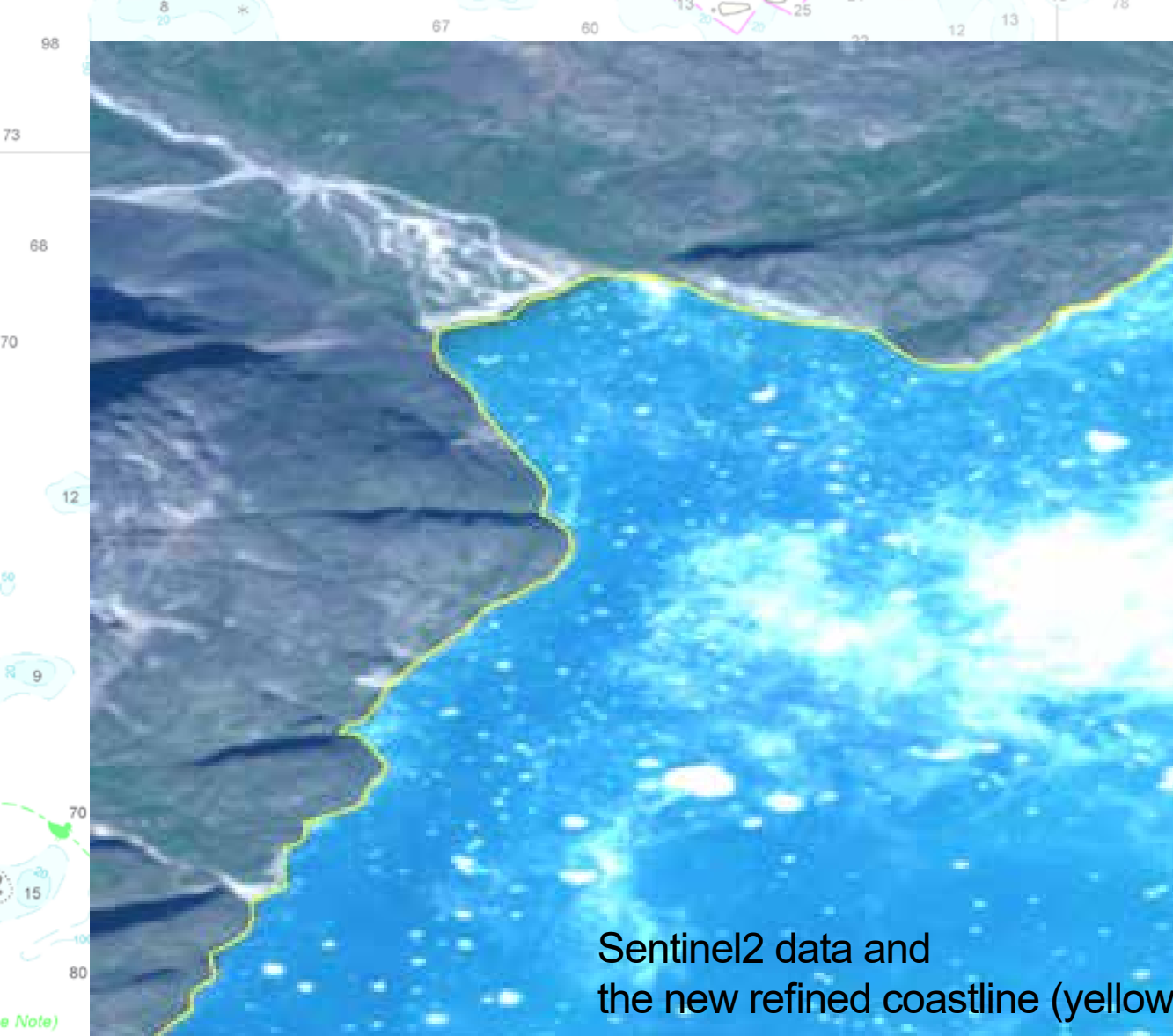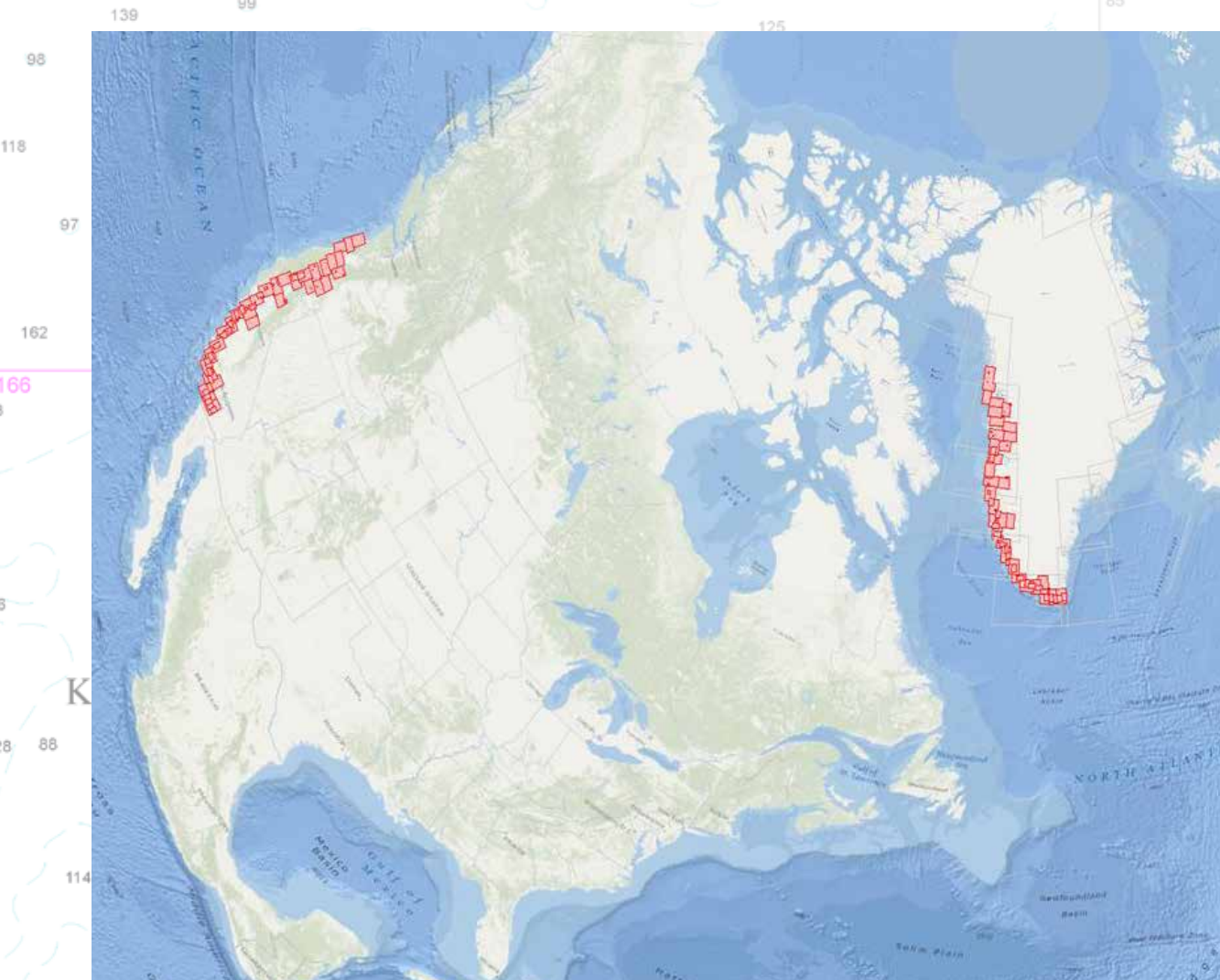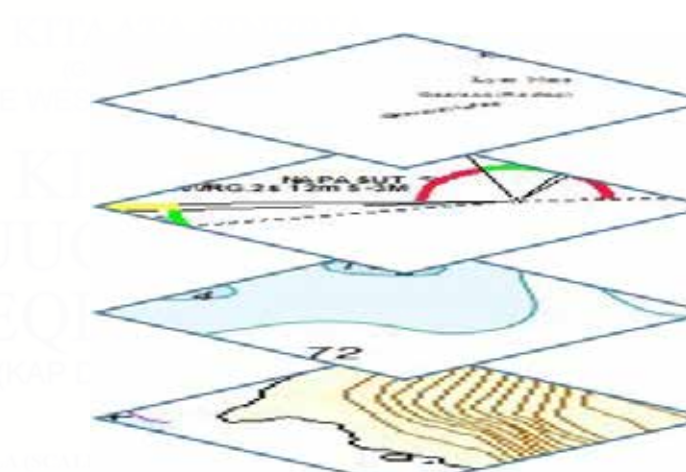
Geodatastyrelsen
Danish Geodata Agency