

CARIS' Raster Surface Products

Prepared for new standards

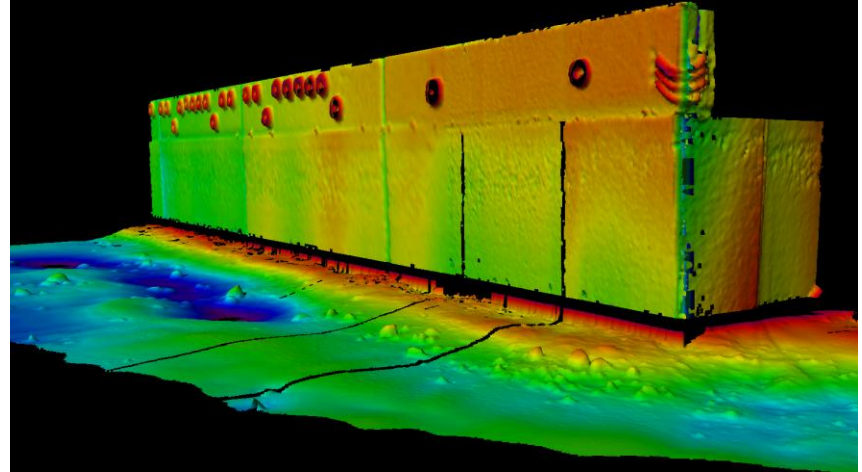


Raster surface product experts

- CSAR
- Product exports
- Working group involvement
- Past oceanographic experience
 - CARIS MetOcean
- Present support
- Future expectations
 - Optional symbolization of raster data

CSAR – CARIS spatial archive

- Scalable
 - Supports large volumes of data
- Efficient
 - Data is retrieved quickly
- Flexible
 - Stores various types of data
 - Raster surfaces, point clouds, raster imagery, vector data boundaries
 - Will soon support vertically gridded data
- Open
 - Available for read / write through a GDAL plugin and Python APIs
- Discoverable
 - CARIS SFE OGC-compliant web services can browse and display this content



Raster surface product export

- User definable templates
- Can be used for standard products, like S-102
 - Raster surface and/or metadata exports supported
 - Multiple potential carriers of data supported
 - BAG, GeoTIFF
- Supports products based on international standards and organization-specific products
- Can be used for evolving product specifications

Working group involvement

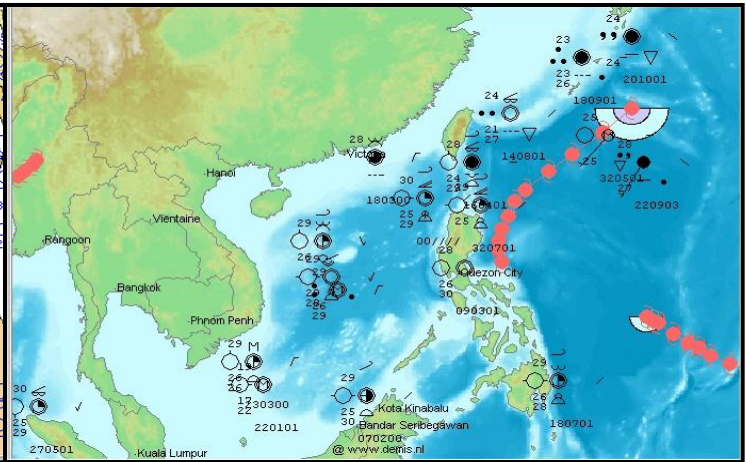
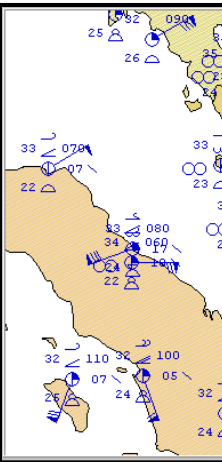
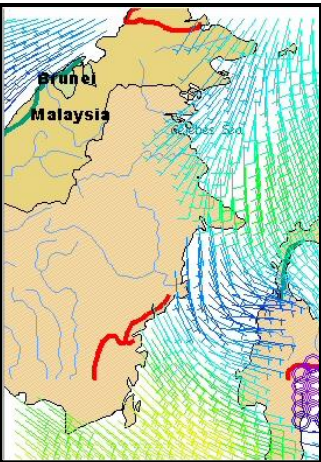
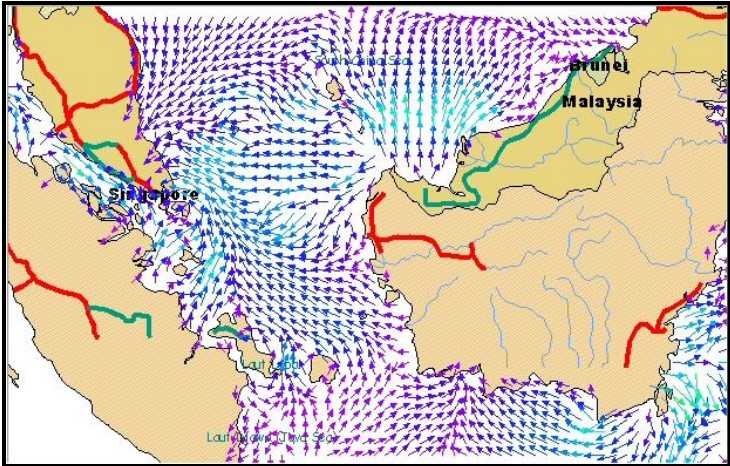
- TSMAD
 - S-100
 - S-101
 - S-102
- DQWG
- MSDIWG
- SNPWG
- DIPWG
- ABLOS
- SCWG

Past experience - CARIS MetOcean

- For visualising oceanographic information and weather forecast
- Based on a database updated hourly
- Data was NetCDF with ISO 19115 metadata plus background chart data
- Used standard WMO symbology

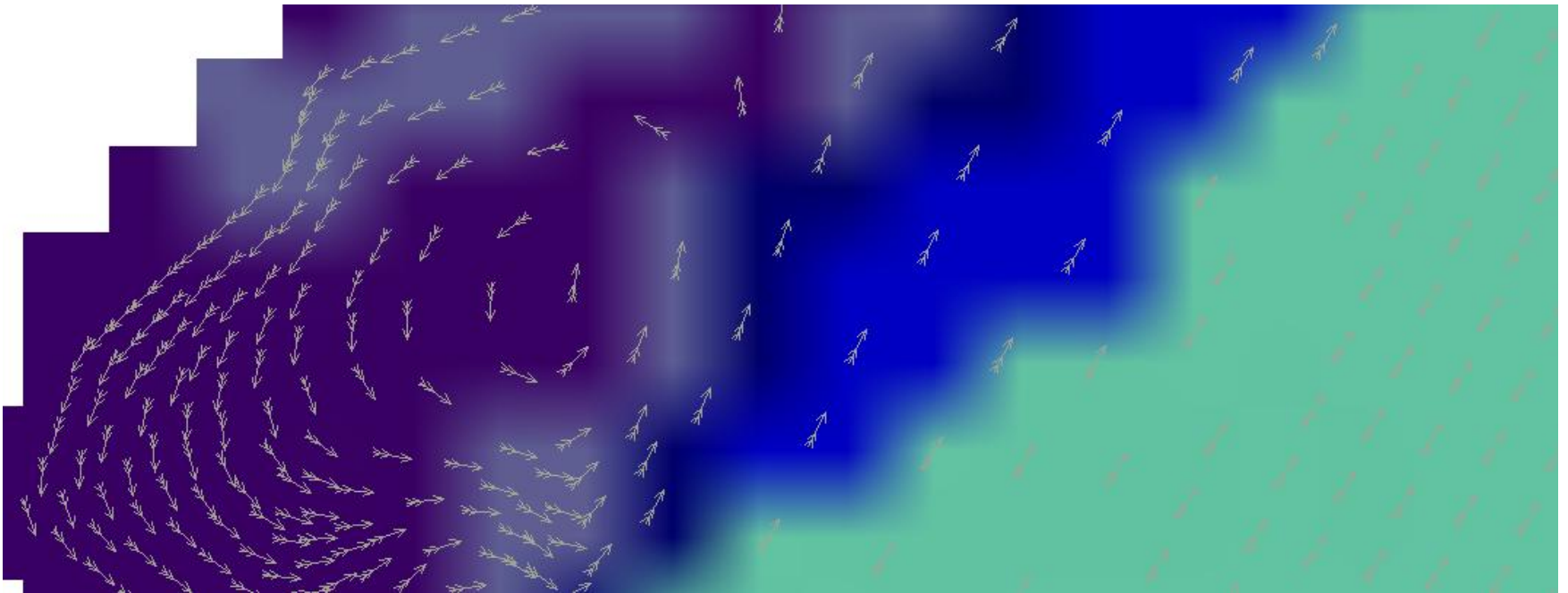
Past experience - CARIS MetOcean

- Currents
- Cyclone tracking
- Wave direction
- Winds
- Sound speed
- Bathymetry
- Tide
- Pressure
- Density
- SYNOP
- Salinity



Current software

- Current strength data can gridded
 - A custom colour map for intensity
- Current direction data as vector
 - Uses standard symbolization for the direction



Current software

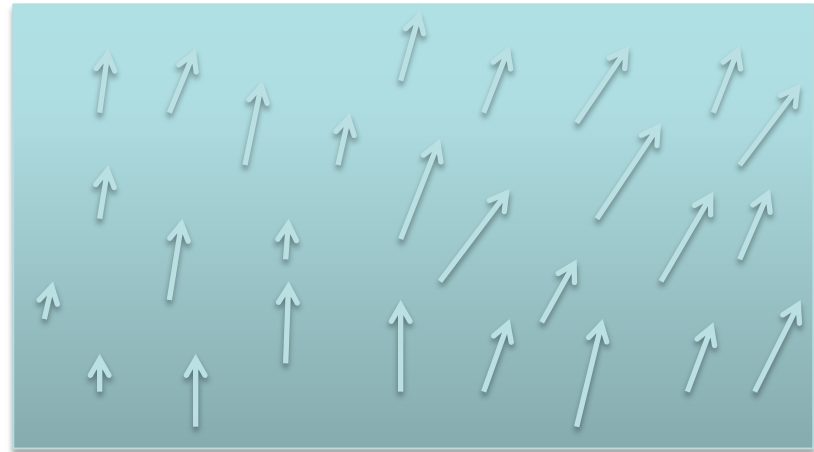
- Limitations
 - Treats current band as an elevation band
 - Two separate files containing distinct data
- Intentions
 - Better support for oceanographic data
 - Do not require an elevation band
 - Integrate vector data directly
 - More than just the data coverage boundaries
 - Also add vector presentation options for raster surface bands

Proposed coverage portrayal in S-100 part 9

- “A coverage is a feature that has multiple values for each attribute type, where each direct position within the geometric representation of the feature has a single value for each attribute type.” [ISO 19123:2005, Introduction]
- Portrayal options include:
 - Colours assigned to ranges of values
 - Colour ramps or gradients based on values
 - Numeric annotation of values per range
 - Choice of symbols based on value range
 - Combinations of above

Proposed coverage portrayal in S-100 part 9

- Symbols are be defined by
 - symbolRef
 - defaultRotation
 - rotationCRS
 - defaultScale
 - rotationAttribute
 - rotationFactor
 - scaleAttribute
 - scaleFactor



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