

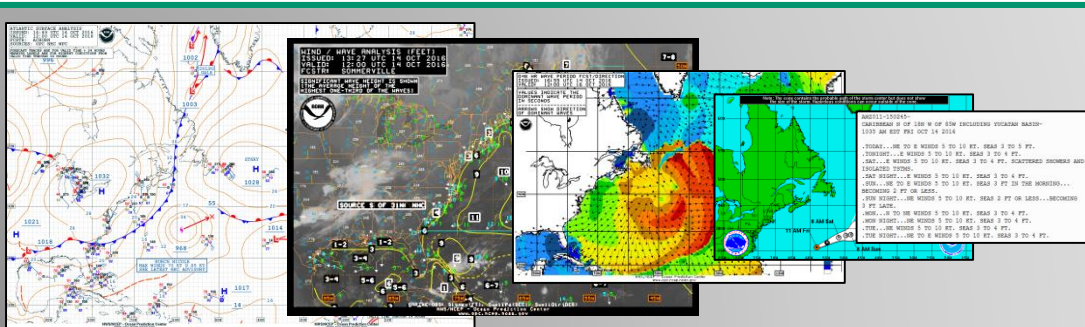


S-41X: Marine Weather Overlays

Update for TSM-WG5

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Ocean Prediction Center, National Weather Service





Vision and Desired Outcome

S-41X Weather Overlay Product Specifications



S-412	S-413	S-414
Wave and Weather Hazards	Wave and Weather Conditions	Wave and Weather Observations
Polygons	Features (e.g. fronts) Graphics & Gridded Data	Point Based Data

*Separation of product specifications
approved as of May 17, 2019*



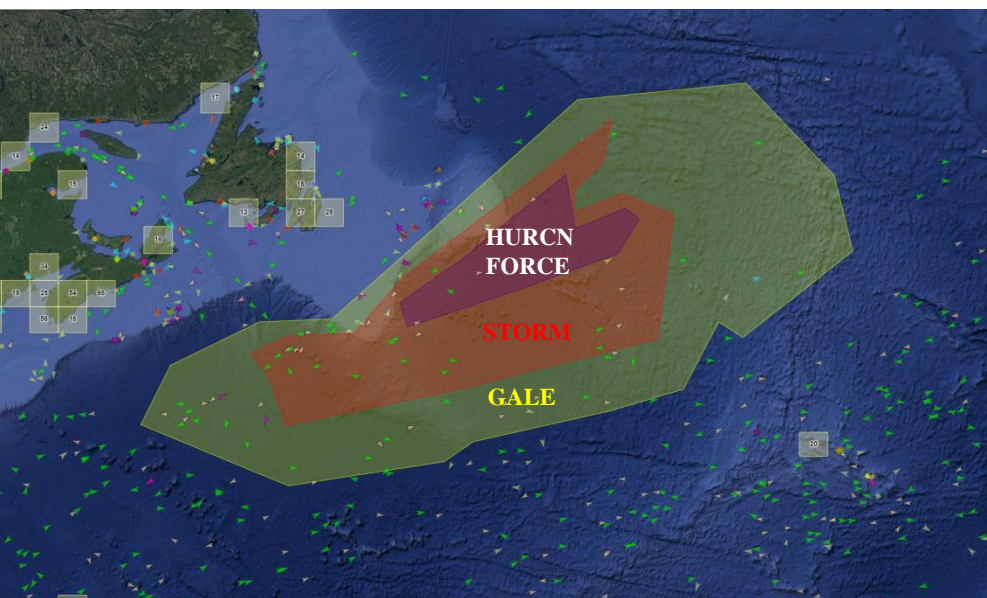
Portrayal of S-412 Weather and Wave Hazards



Registered Features

2004157 90WeatherHazardMessage	A written communication about a specific weather scenario, event or hazard.
2004158 90WeatherSystem	An atmospheric phenomena involving perturbations of the prevailing pressure and wind fields.

Hazard Polygons



Hazard Messages

190000Z OCT 05

METAREA IV 335/19 (tracking number and year)

WESTERN NORTH ATLANTIC

WARNING

1. HURRICANE FORCE 050000Z TO 060000Z FEB

WINDS TO 80 KTS, SEAS TO 45 FT

AREA BOUNDED BY

48-32N 040-34W, 46-46N 040-05W, 47-25N 037-37W, 47-01N 036-55W, 45-52N 30-00W, 44-43N 42-25W, 43-18N 48-20W, 44-10N 48-43W, 45-43N 45-37W

2. DISTURBANCE LOW 41-40N 56 54W, 991 hPa, MOV NE 30 KT

3. CANCEL METAREA IV WARNING 334/19.

4. CANCEL THIS MSG 050000 OCT 19.

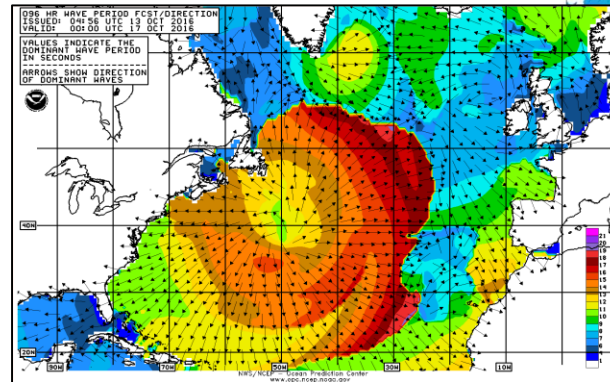


S-413 Weather and Wave Conditions

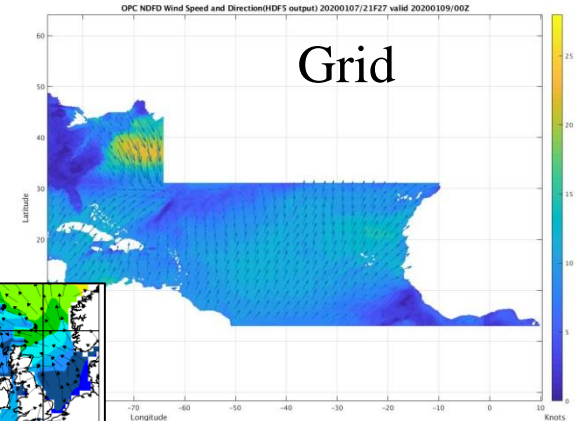
Graphics and Gridded

- Precipitation
- Freezing Spray
- Reduced Visibility
- Wind Gust
- Wind
- Wind Waves
- Primary/Secondary Swells
- Significant Waves
- Atmospheric Pressure
- Temperature
- Minimum/Maximum Temperature
- Cyclone Track
- Cone of Uncertainty

Graphic



Dominant wave period, dir



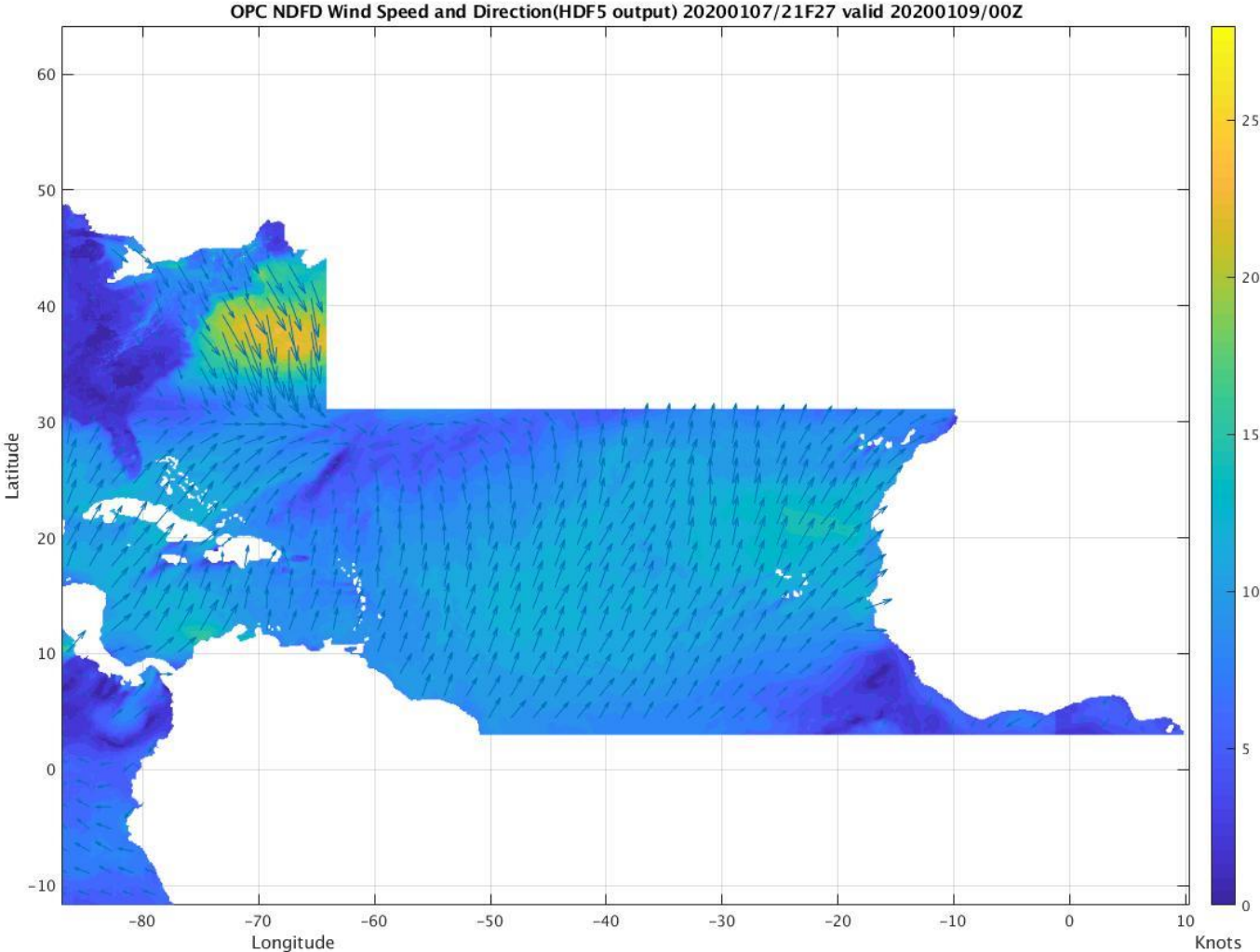
Grid

Data Format:

- Hierarchical Data Format 5 (HDF5)
- Geographic Markup Language (GML) 3.2.1



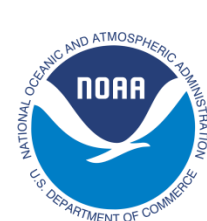
S-413 Weather and Wave Conditions



HDF5 – wind speeds, dir
(from NDFD)



S-414 Weather and Wave Observations



Weather and Wave Observations

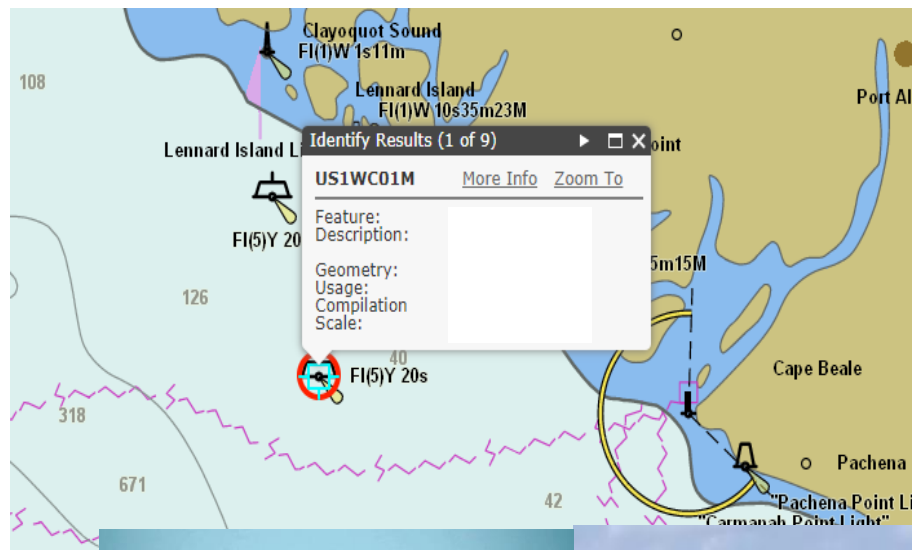
- BUOYS
- AIS/Ships Observations
- Satellite Data

Data Format:

- Geographic Markup Language (GML) 3.2.1

Notes

- Interoperability with chart features will be considered
- Uncertainty in data delivery makes modeling difficult

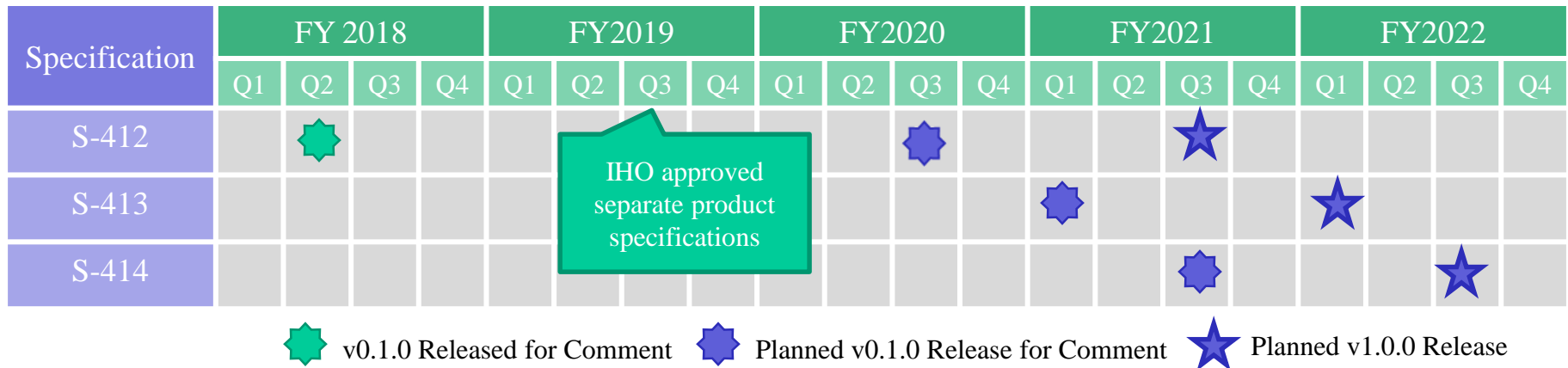




Vision & Desired Outcome



S-41X Product Specification Schedule



Dependencies:

- JCOMM WWMIWS consensus on content (WMO approval of versions)
- Testing relies heavily on internal development and IHO Test Bed activities



Maritime Weather – Challenges – Communication



Global Maritime Distress Safety System (GMDSS)

International requirement

Text bulletins for large WMO Metareas

Hazards via warning polygons

Electronic Charting Systems
& other applications

Smoothing of polygons

Ongoing efforts

NOAA OAR/GSD

Hazard Services

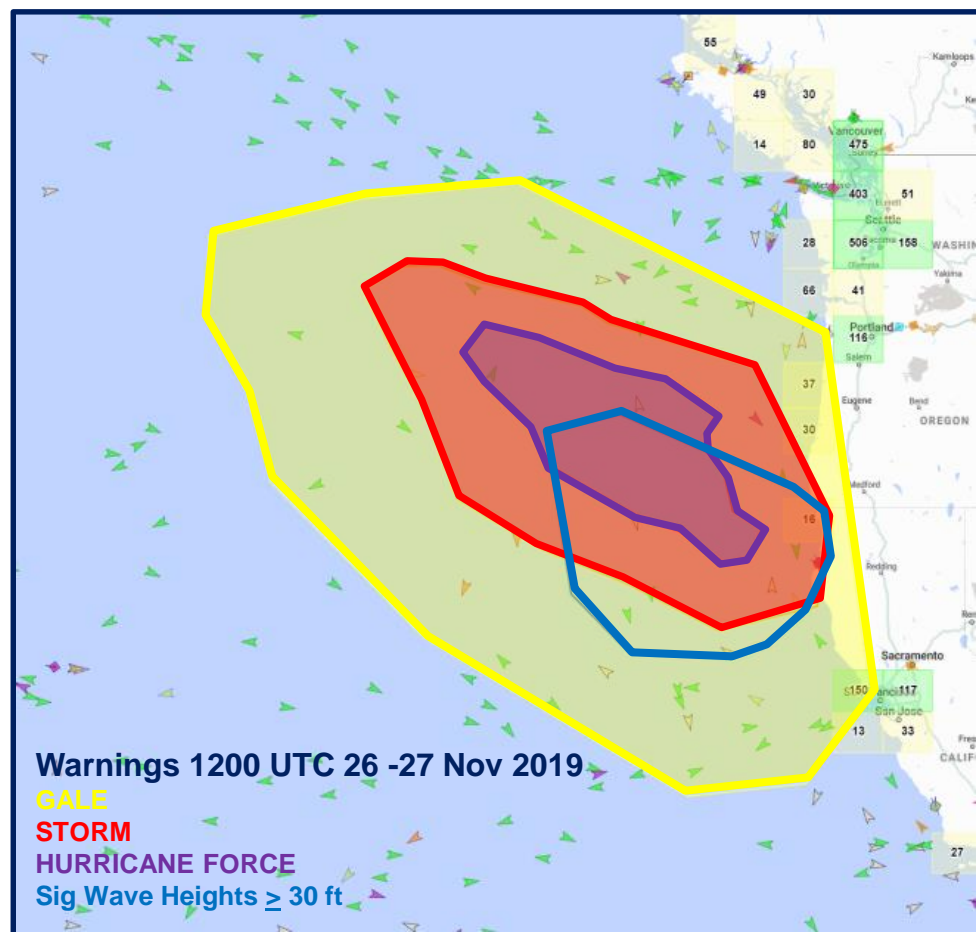
NOAA NOS Office of Coast Survey

PRECISION NAVIGATION

FY20 – demonstrate S-413

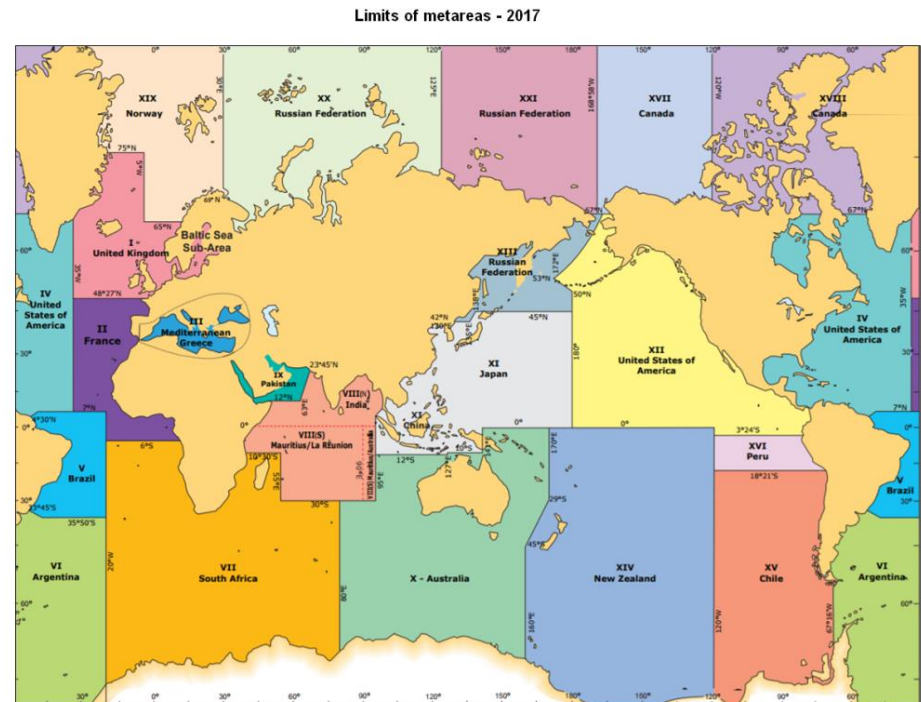
winds and wave heights NWS NDFD

PROTOTYPE - Warning Polygons



Future Considerations

- Opportunities
 - NOAA dissemination
 - Future streamline and standardize outputs on a global level?
- Global Challenges
 - Technology
 - METAREA providers
 - Collaboration
 - Implementation
 - Training





Thank you



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NOAA Commissioned Corps
Technical Operations Coordinator