

The WMO supporting maritime safety in Polar Regions

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IMO-NI Polar Maritime Seminar



WMO OMM

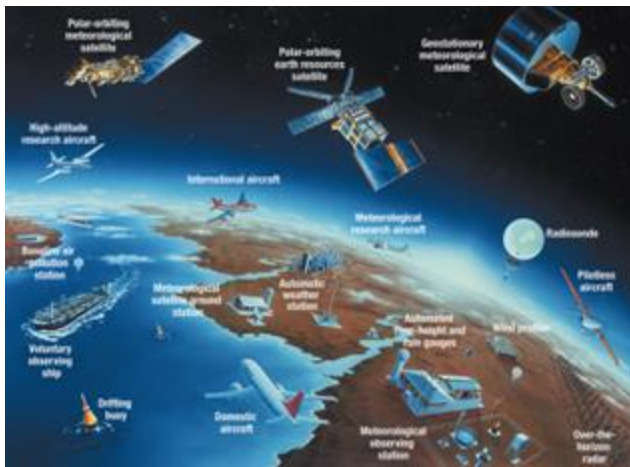
World Meteorological Organization
Organisation météorologique mondiale



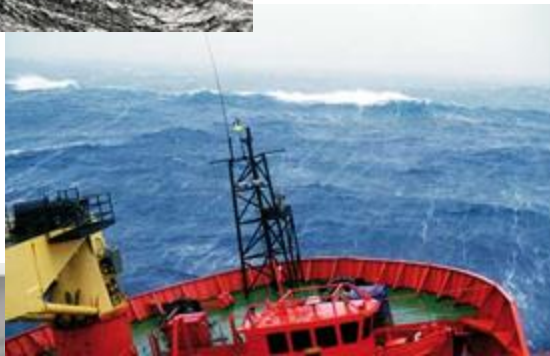
World Meteorological Organization (WMO)



- UN Specialized Agency: **weather, climate, water and environment**
- 193 Members, HQ in Geneva
- 2nd oldest UN Agency, 1873-
- Coordinates work of ~200 000 national experts from meteorological & hydrological services and academia
- Co-Founder and host agency of IPCC (1st World Climate Conference, 1979)
- Co-Founder of UNFCCC (2nd World Climate Conference, 1990)
- **Observer of Arctic Council - since 2017**
- Major Contributor to Sendai Framework on DRR, active role in Paris Agreement and SDGs
- Annual State of Global Climate Report
- United in Science report



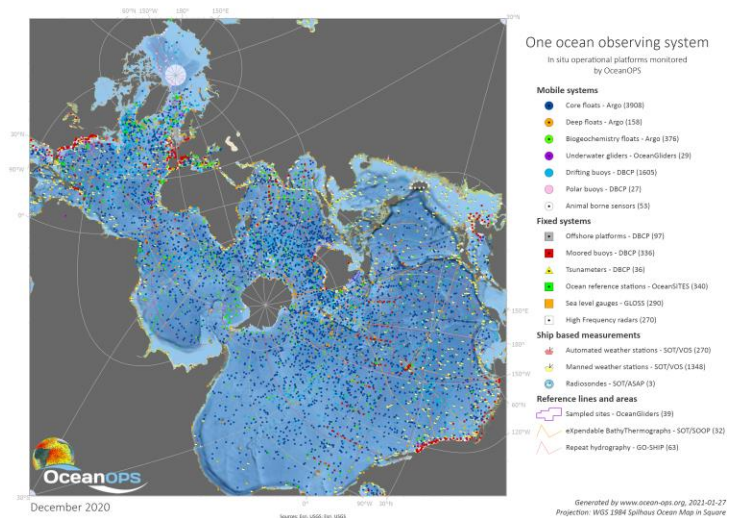
History of IMO/WMO – Safety at sea



- Original driver: **predicting weather over the sea, for maritime safety**
- **Reliable and regular weather information** over the global seas led to recognition for **international cooperation**
- First International Meteorological Conference, Brussels 1853
- **IMO !!** International Meteorological Organization (1873) – facilitate exchange of weather information across national borders
- **150th anniversary in 2023**

WMO – working at various timescales

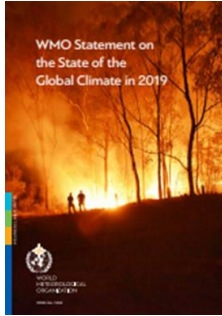
- Weather (days), seasonal (months), climate (years)
- Observations: In situ & Satellite
 - Global Ocean Observing System (GOOS) co-sponsored by the IOC/WMO/UNEP/ISC
 - Voluntary Observing Ships Scheme (VOS)
 - Data Buoy Cooperation Panel (DBCP) sub-groups: Arctic (IABP) and Antarctic (IPAB)
 - Global Cryosphere Watch (GCW)
 - Polar area - large gaps :(
- WMO Data Policy – Earth System
 - Incl. Cryosphere and Ocean domains
 - Commitment to free, unrestricted data
 - Core/recommended data for end-users
 - Supported by
 - Global Basic Observing Network (GBON)
 - Systematic Observing Financing Facilities (SOFF)



OceanOPS/GOOS



WMO's role in Polar: seamless forecasting & services



Climate

- **WMO State of Global Climate**, and **United in Science: climate indicators**
 - include **temperature, glacial mass extent, ocean heat content and sea-ice extent**, among others.
- Temperature- 2018-2022 was the 4th warmest 5-year period on record, and 2015-2021 were the seven warmest consecutive years on record

Seasonal/Sub-seasonal Prediction

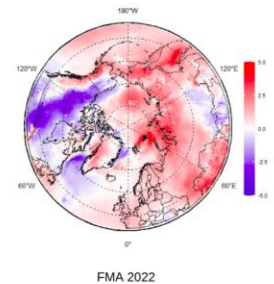
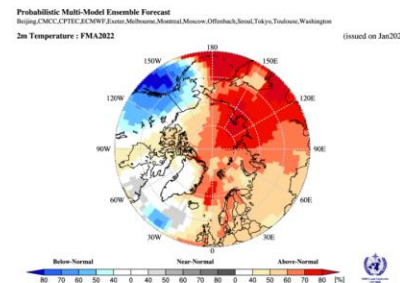
- **Arctic Climate Forum**, and **Consensus Statements** plus regional summary for **ship routing in Arctic Waters**
- **Arctic Regional Climate Centre (RCC) Network** <https://arctic-rcc.org/>
 - North EurAsia, North America, Northern Europe (Nordic) nodes
 - provides pan-Arctic climate services: data, monitoring, LRF
- **Antarctic RCC in preparation**

Weather Warnings & forecasting

- **Meteorological maritime safety information (MSI):** forecasting/sea ice info issued twice daily by met MSI providers; warning issued when there is a need

Forecasted temperature for February, March and April 2022.

Temperature summary for the same period.



Climate Summary FMA 2022 in Arctic

WMO, maritime safety and Polar

LIMITS OF METAREAS



21 METAREAs in WWMIWS in support of GMDSS

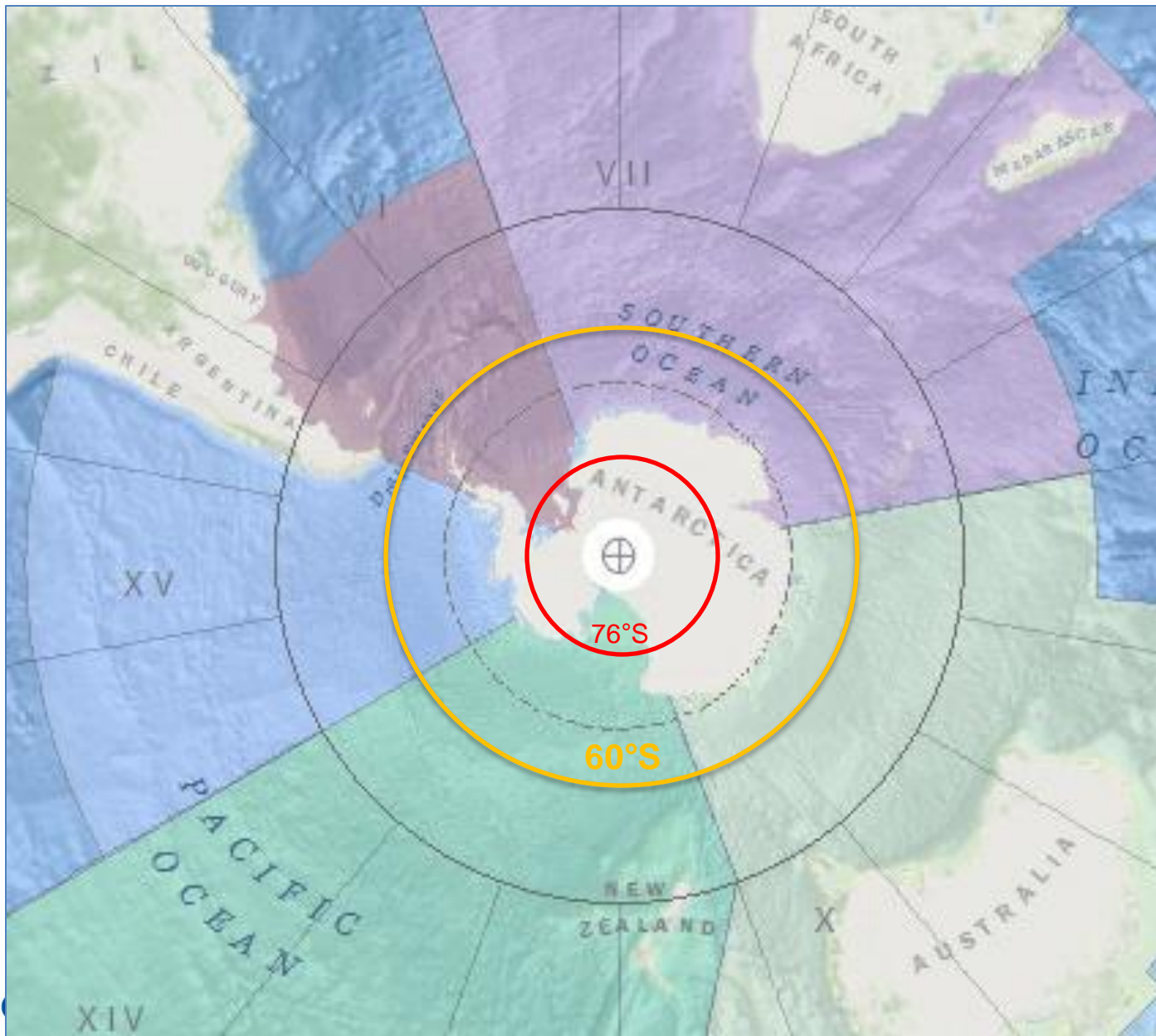
WWMIWS web portal <https://wwmiws.wmo.int/>



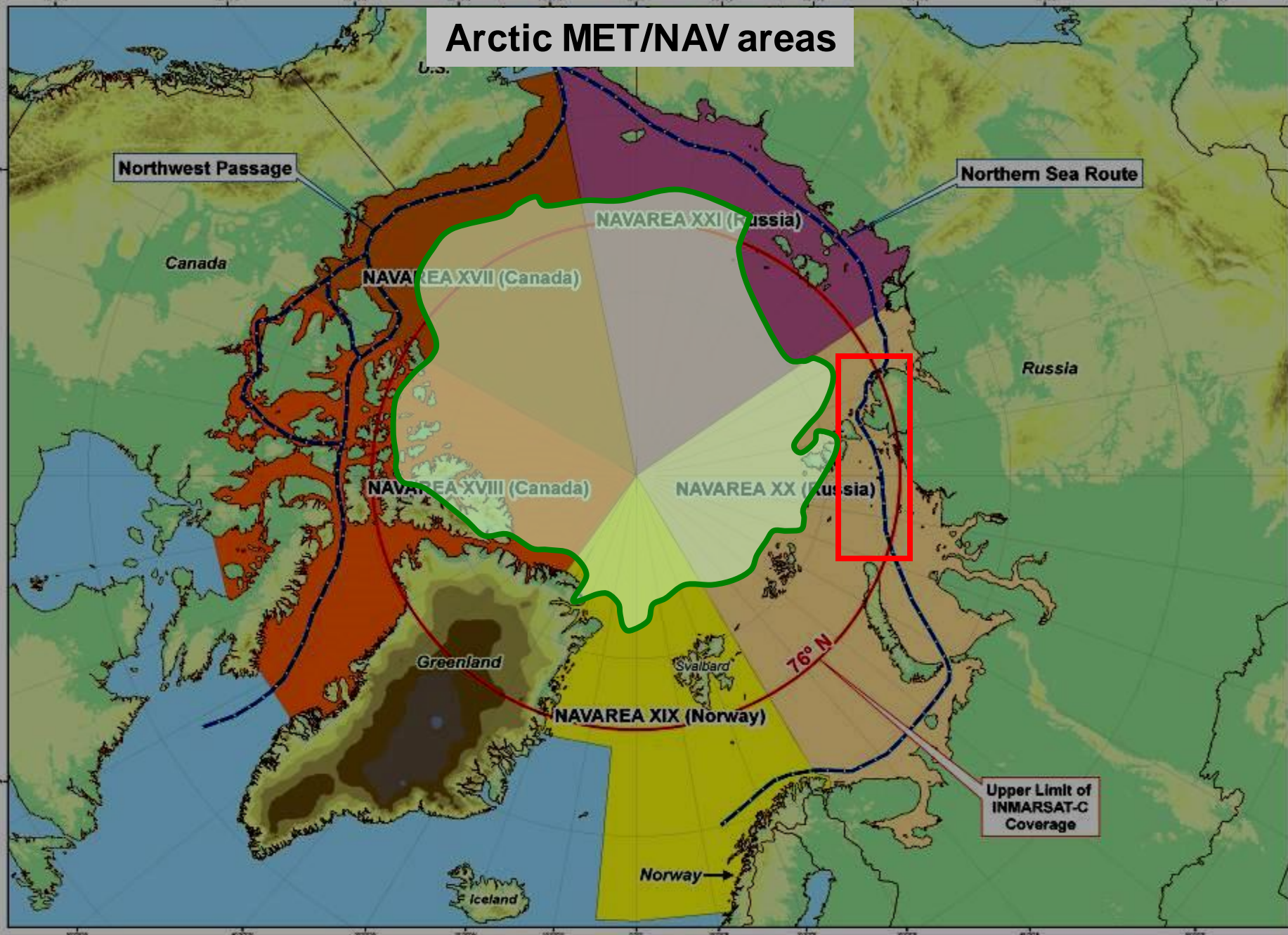
- Guided by UNCLOS, **SOLAS**, **Polar Code**, SAR, and MARPOL
- Supporting IMO's Global Maritime Distress & Safety System (**GMDSS**) with WMO Worldwide Met-Ocean Information and Warning Service (**WWMIWS**), & IHO's Worldwide Navigational Warning Service (WWNWS)
- Arctic METAREA Coordinators: **Canada, Norway, Russian Federation**.
- Antarctic METAREA Coordinators: **Argentina, South Africa, Australia, New Zealand, Chile**

See new release for WMO MSI video !!

Antarctic METAREAS



Arctic MET/NAV areas

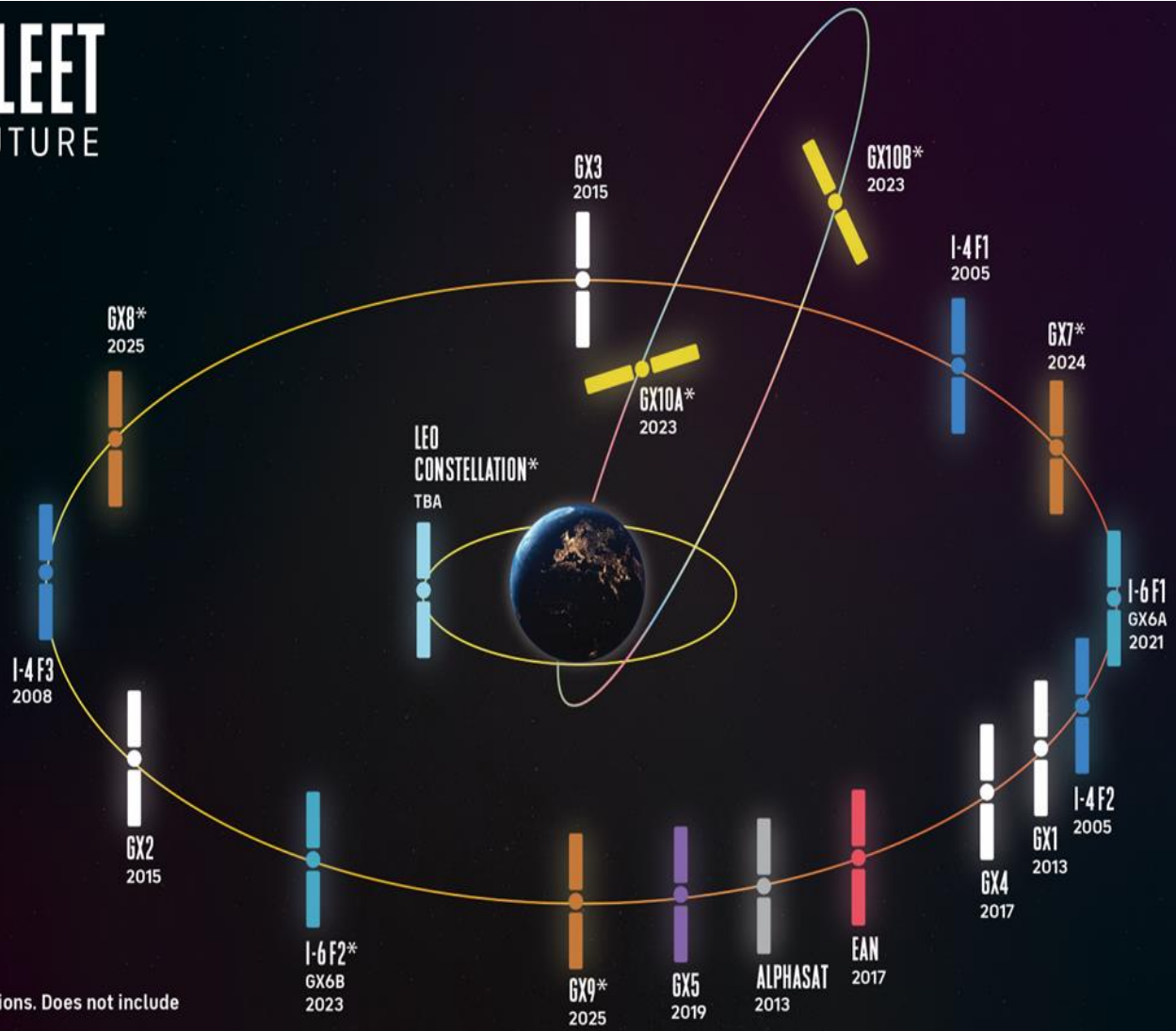


Inmarsat Satellite Services in Polar



SATELLITE FLEET CURRENT AND FUTURE

Updated: 24-02-22



Please note: these are indicative positions. Does not include narrowband backup satellites.

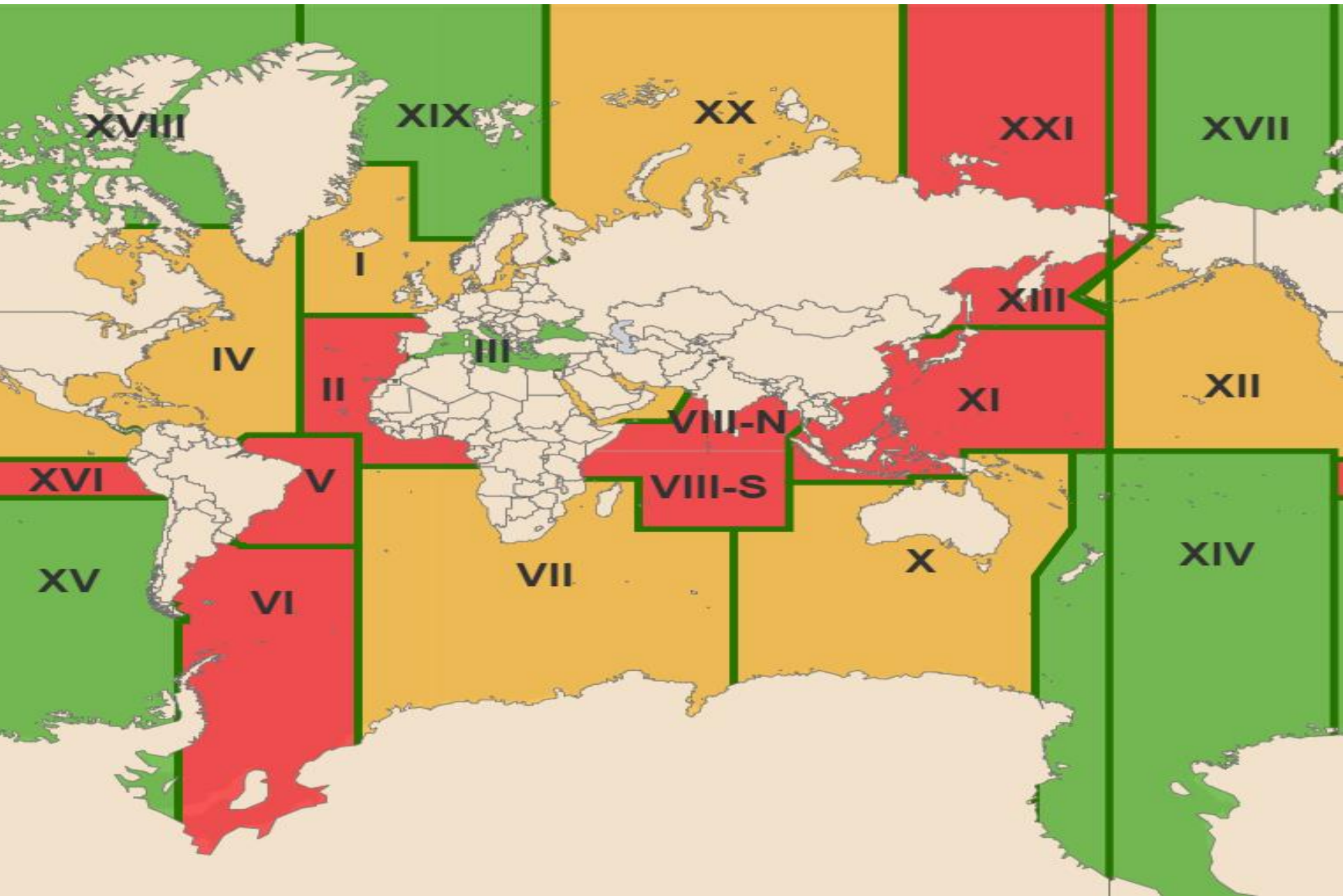
*Future locations and dates subject to change.



Iridium low earth orbit satellite constellation coverage



Status of Iridium SafetyCast availability



Impact of icing



Images courtesy of Meteorologisk institutt (Norwegian Meteorological Institute)



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Thank you Merci



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