



MyOcean for the Arctic

*The GMES Marine Core Service
offer in the Arctic*

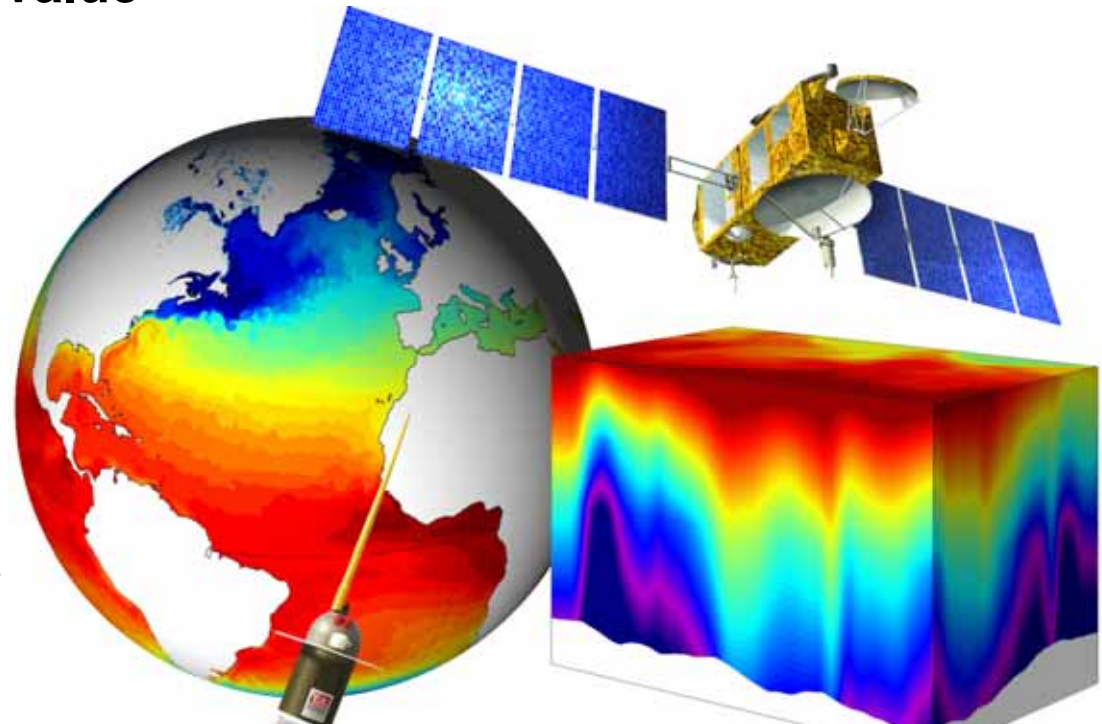
MY OCEAN

Marine
Core
Service



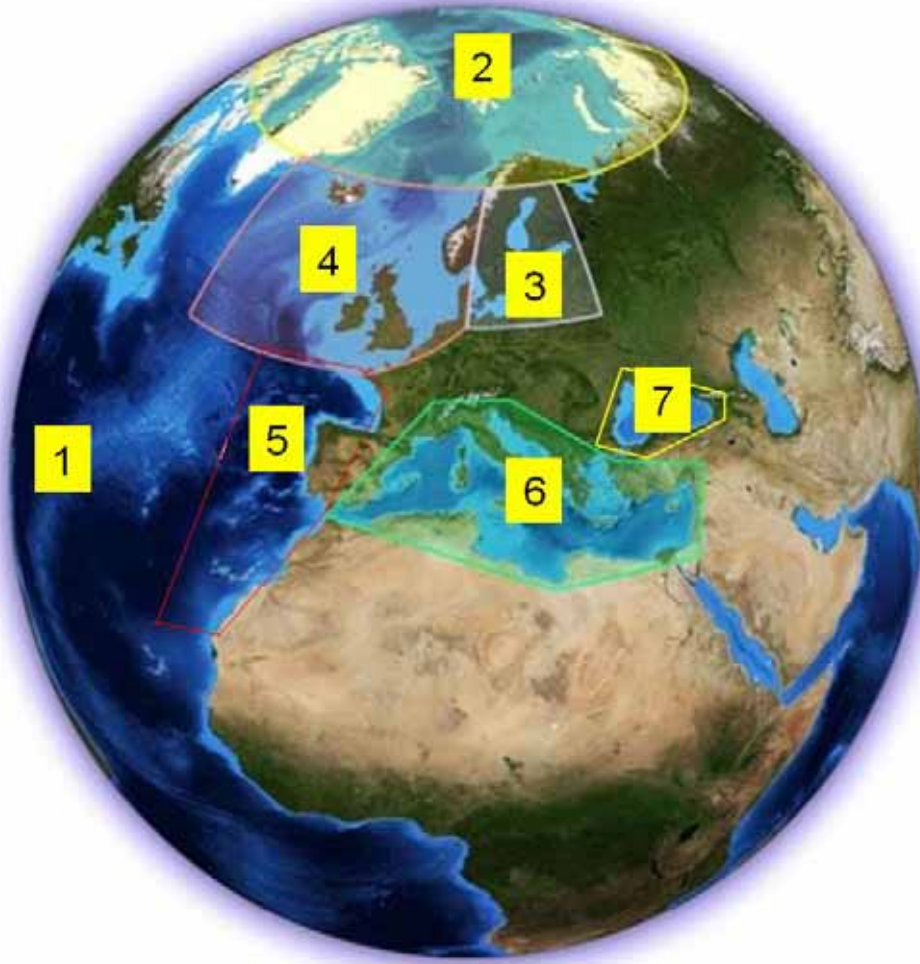
PolarView annual meeting, January 17-18, Bruxelles, Belgium

- **Mission:** « improving the **value** of and the **access** to **core information** on the **ocean** »
- **Space data, In Situ Data and Models** : an integrated approach
- Based on **existing** capacities: the European network
- Focus on the **European value**
- **Open and free** information
- **Operational**
- **Information:** *ocean currents, temperature, salinity, sea level, primary ecosystems, ice coverage and thickness ...*



The MyOcean areas

The Global Ocean + 6 European Seas



- (1) Global Ocean
- (2) Arctic Ocean
- (3) Baltic Sea
- (4) Atlantic North-West Shelves (**NWS**)
- (5) Atlantic Irish-Biscay-Iberic (**IBI**) area
- (6) Mediterranean Sea
- (7) Black Sea

The Consortium



-  Belgium
-  Bulgaria
-  Canada
-  Cyprus
-  Denmark
-  Estonia
-  Finland
-  France
-  Germany
-  Greece
-  Ireland
-  Israel
-  Italy
-  Latvia
-  Lithuania
-  Malta
-  Morocco
-  Netherlands
-  Norway
-  Poland
-  Portugal
-  Romania
-  Russian
-  Slovenia
-  Spain
-  Sweden
-  Turkey
-  Ukraine
-  United Kingdom

**61 PARTNERS
FROM 29 COUNTRIES**
are involved in the project



The Structure

MY OCEAN

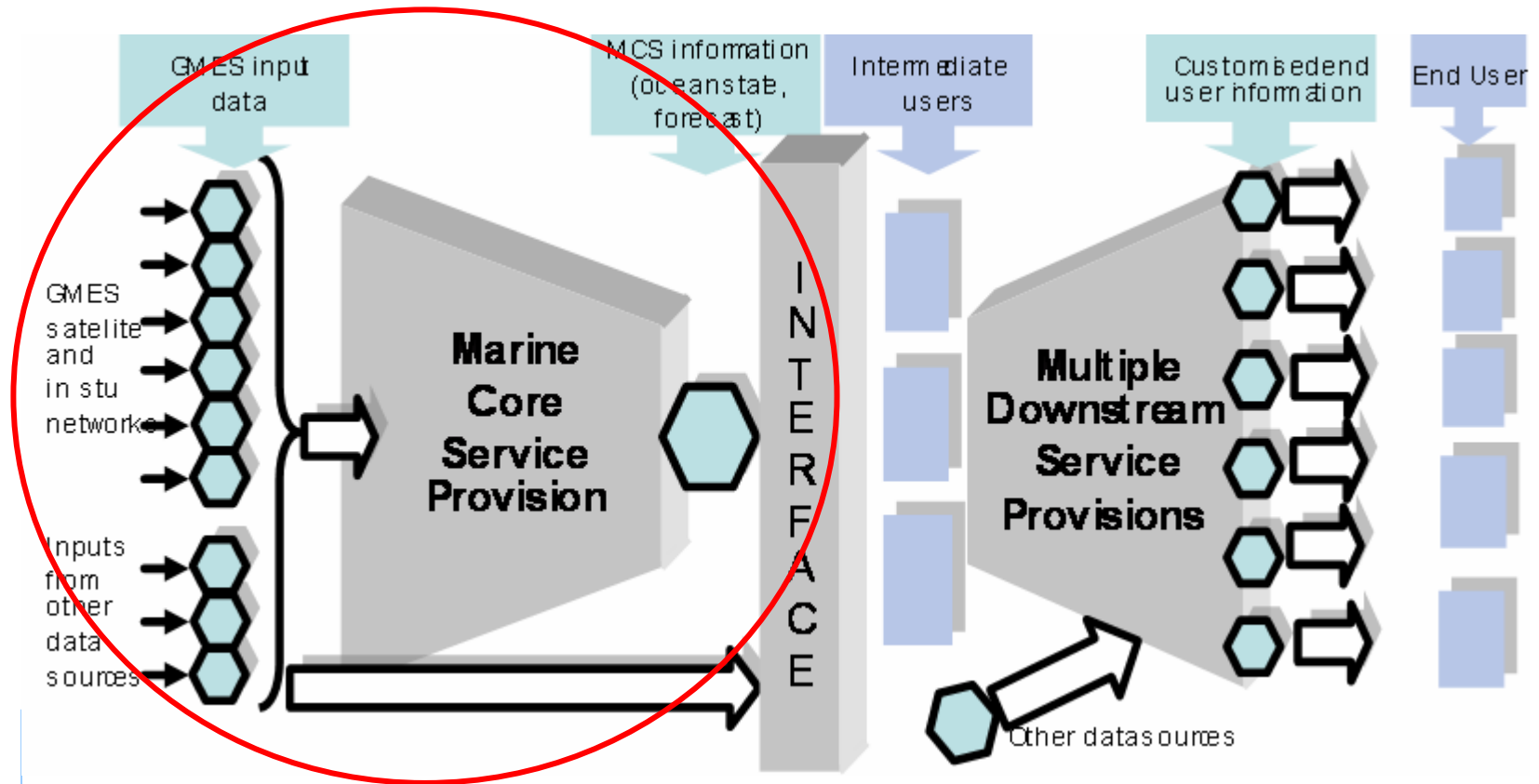
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A Core Service which users are specialized Service providers

Marine Core Service



Users of the MyOcean core service are specialized service providers of the downstream sector.

The 4 areas of benefit driving the MyOcean service definition

Marine Core Service

- The users, their requirements, their assessment

Area 1

« MARINE SAFETY »

(marine operations, oil spill drift, ship routing, defense, search & rescue, ...)

Area 3

« MARINE AND COASTAL ENVIRONMENT »

(water quality, pollution, coastal activities, ...)

Area 2

« MARINE RESSOURCES »

(fish stock management, ICES, FAO, ...)

Area 4

« CLIMATE & SEASONAL FORECASTING »

(climate monitoring, IPY, seasonal forecasting, ..)

A single service desk ... easy access to users



- One **single** service desk
- One entry point to the MyOcean pan-european information
- Connected to all production units in Europe

- Open and free **data policy**
- **Open** access, **Free** access

- Commitments through **Service Level Agreements (SLA)**



- Project
- Products & Services
- User's Feedback

MyOcean Products & Services

SERVICE ONLINE CATALOGUE SERVICE DESK DATA POLICY

MYOCEAN INTERACTIVE CATALOGUE

Search mode: multi-criteria or full catalogue

Full Catalog **GO >>**

SELECT AN AREA

SELECT A PHYSICAL PARAMETER

SELECT A PRODUCT

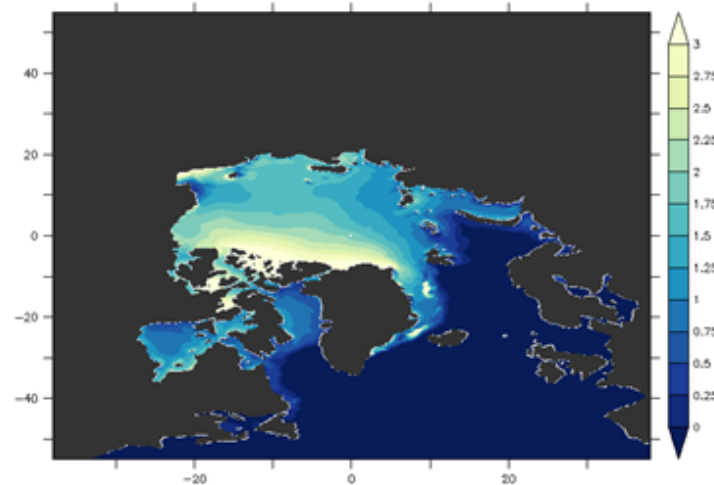


- Temperature
- Wind
- Sea ice
- Salinity
- Current

Observation



Ice Thickness (Arctic)



01/04/2009, Ice thickness

CONTACT CREDITS LEGAL NOTICE





The operation

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The Production Units

5 Thematic Assembly Centres

Observations

Sea Level

Ocean Color

Sea Surface Temp.

Sea Ice & Wind

In Situ

7 Monitoring and Forecasting Centres

Models

Global Ocean

Arctic Ocean

Baltic Sea

Atlantic NWS

Atlantic IBI

Mediterranean Sea

Black Sea

Service Desk

TAC

- Sea Level
- Ocean Color
- Sea Ice & Wind
- In situ
- Sea Surface Temperature

MFC

- MFC Global
- Artic
- Baltic
- NW Shelves
- IBI
- Med Sea
- Black Sea

OBSERVATIONS



The MyOcean Sea Ice Thematic Assembly Centre ... for the Arctic

Lars Anders Breivik, met.no



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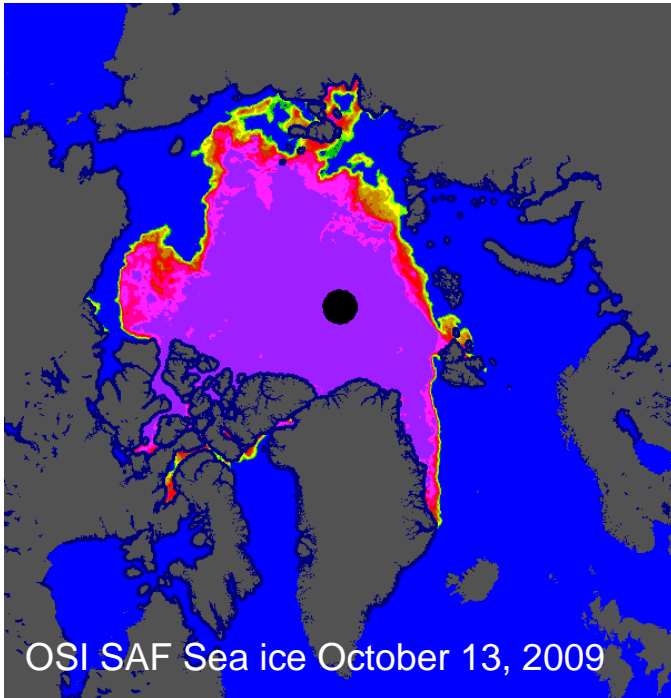
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Sea Ice & Wind TAC

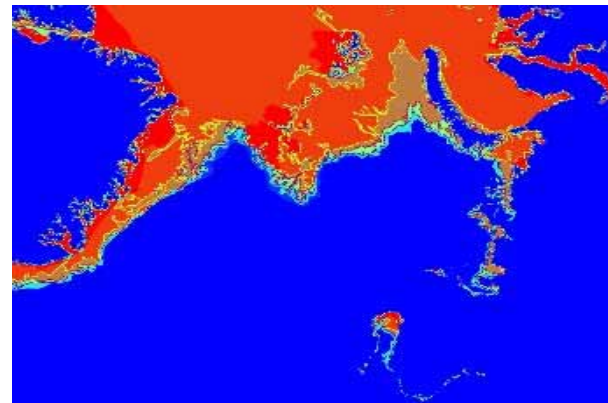
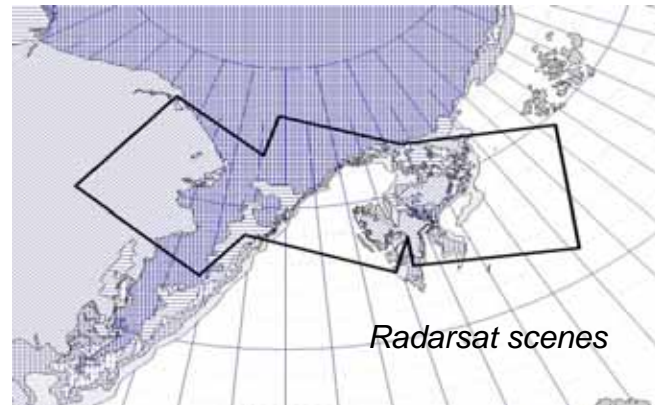
- The SIW TAC is a single **entry point for** satellite derived gridded sea ice data for use in operational ocean and ice analysis and forecast.
- The **main users** will be the Monitoring and Forecasting Centers: Arctic, Baltic and Global.
- The **main use** will be in assimilation and validation of operational ocean and sea ice models.
- Data will also be available to **outside users** through MyOcean service desk.

Example of SIW TAC sea ice products

Marine Core Service



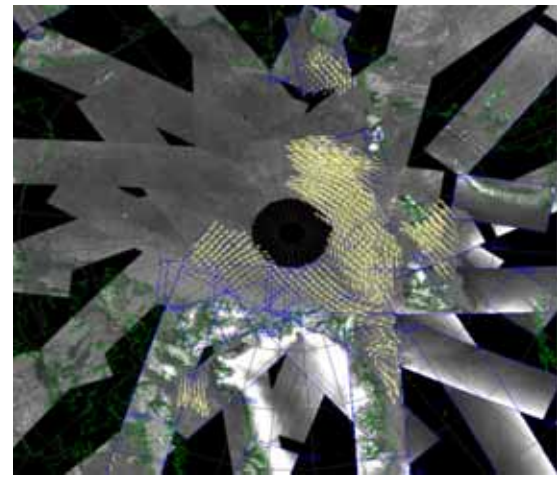
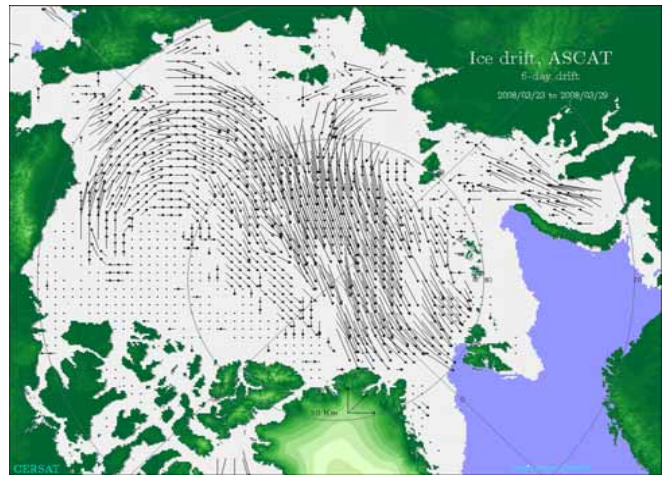
Daily global products



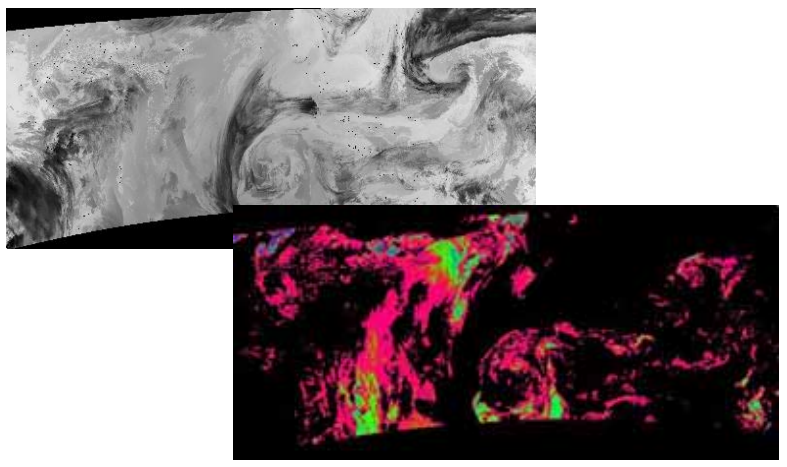
Regional products from national ice services, based on high resolution satellite data.

SIW TAC, V1 product examples

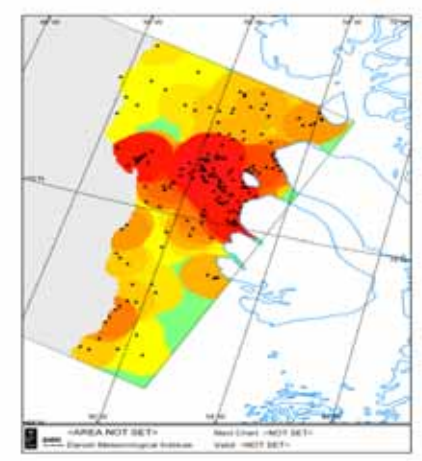
Marine Core Service



Large scale Ice drift (ASCAT, SSM/I), and high resolution ice drift from SAR



Ice Surface Temperature (AVHRR)



Ice berg density product (SAR)

SIW TAC product portfolio

Marine Core Service

<i>Products</i>	<i>Input satellite data</i>	<i>Responsible</i>
Global Sea Ice conc	SSMI, AMSR	met.no / OSI SAF
Global Sea Ice edge	SSMI, scatterometer	met.no / OSI SAF
Global Sea Ice type	SSMI, scatterometer	met.no / OSI SAF
Regional Sea Ice products	SAR, AVHRR (+)	FMI, DMI, Met.no
Global Sea Ice drift	SAR	DTU
Sea Ice temperature	AVHRR, VIRS, Sentinel	DMI
Antarctic products	SAR	BAS
High resolution ice edge	SAR	NERSC
ice berg detection	SAR	DMI
Time series, climate (cons and drift)	SSM/I, scatterometer	IFREMER, OSI SAF



OBSERVATIONS



The MyOcean In Situ Thematic Assembly Centre ... for the Arctic



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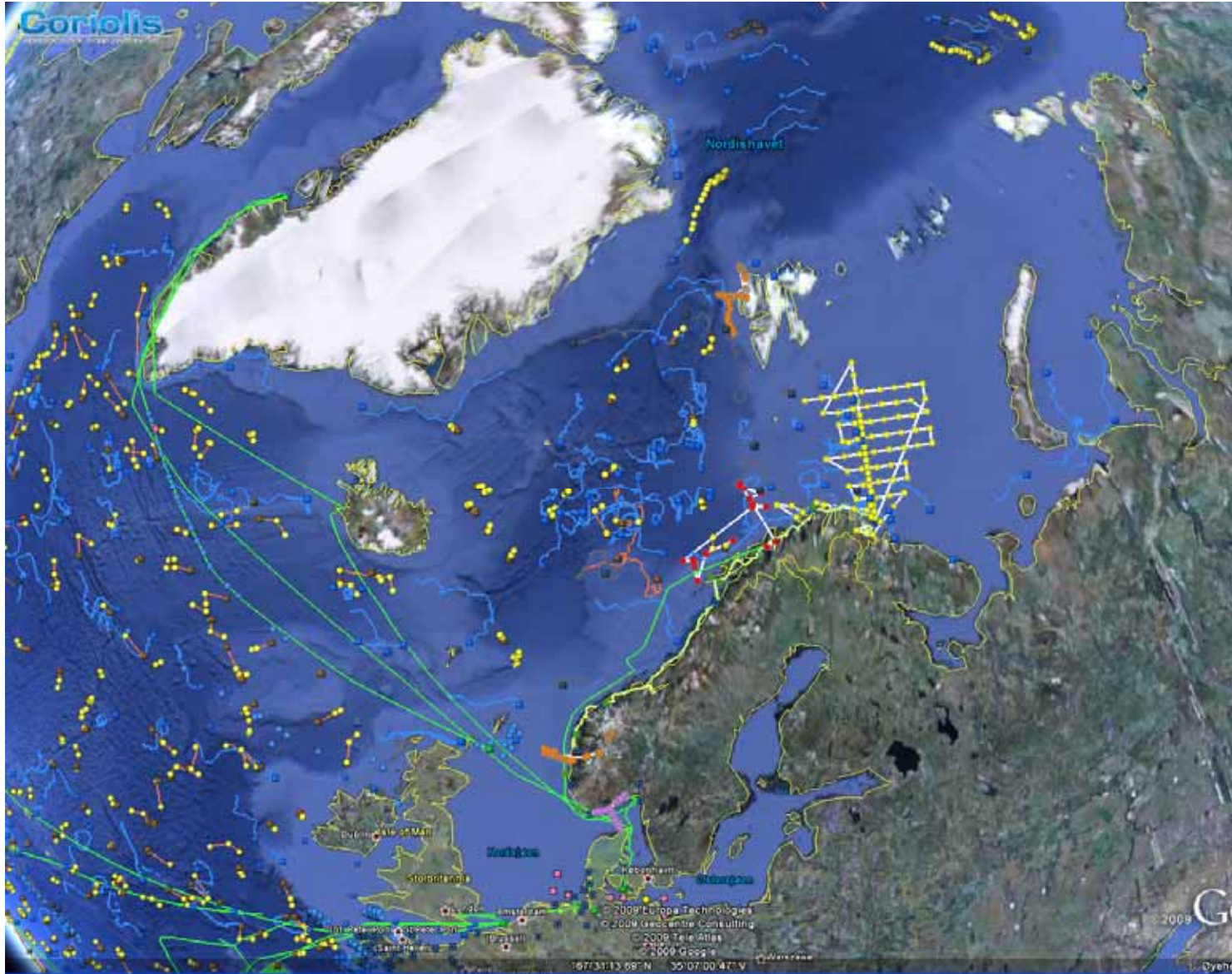
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In-situ data Arctic MyOcean latest month

Marine Core Service



MyOcean

MODEL



The MyOcean Arctic Monitoring and Forecasting Centre ... for the Arctic

Johnny Johannessen, NERSC, Board
Laurent Bertino, NERSC, Lead
Einar Svendsen, IMR, ecosystems



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Arctic MFC products

■ Model

- HYCOM – EVP coupled model
- 12-16 km horizontal resolution

■ Data Assimilation (EnKF, 100 members)

- Altimeter SLA maps (merged, CLS)
- SST (AVHRR, NOAA)
- Sea-ice concentrations (AMSR-E)
- Sea-ice drift (AMSR-E, Ifremer)
- Argo T&S profiles

■ Analyses and Forecasts

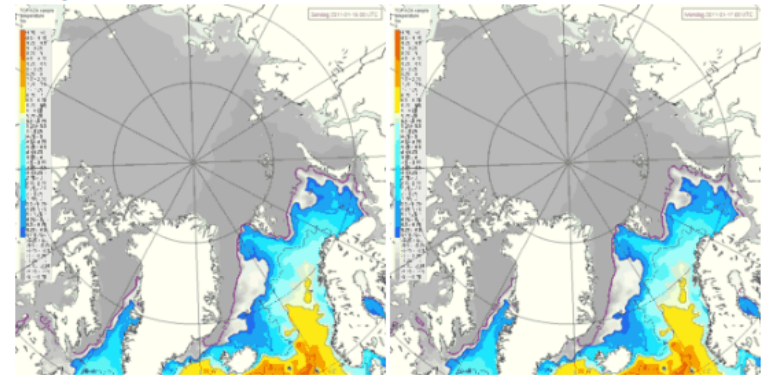
- Weekly runs,
- Updated Thursdays
- 10 days forecasts
- Exploited at met.no

■ Key products

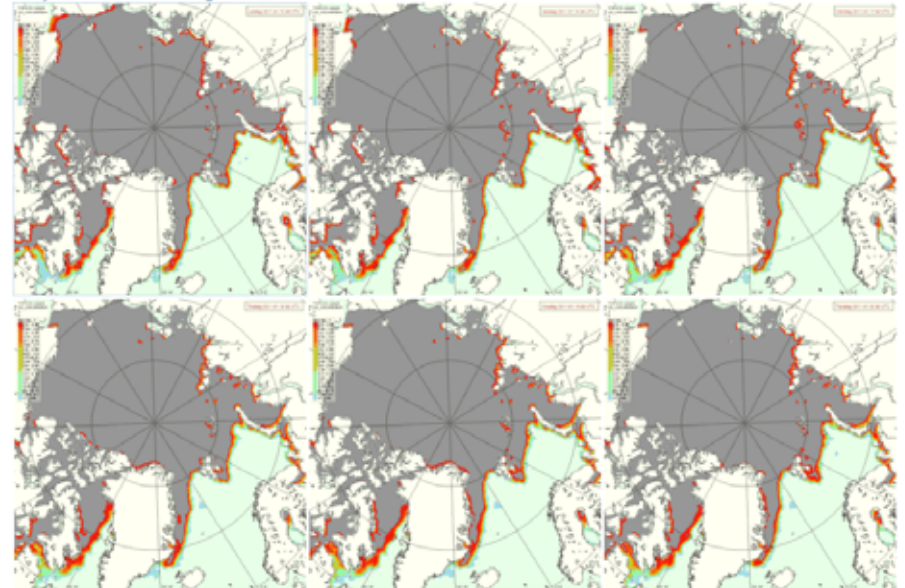
- 3D Currents, S&T
- Ice conc. and edge location
- Ice drift and export
- Long time Trends

IMAGES OF SELECTED PRODUCTS, DAILY UPDATED

Today's and tomorrow's forecast SST and Ice Conc fields from TOPAZ4 Arctic



Daily forecast 'ice coverage' fields from TOPAZ4 Arctic



- MyOcean is implementing the European GMES **Marine Core Service**
- It aims at providing a reference and assessed « **core information** » on the ocean, based on space data, in situ data and models
- Access to the GMES Marine Core Service information is **open and free**
- **Arctic** is one of the important area for MyOcean, and the core service is defined to provide reference monitoring and forecasting information to reference stakeholders
- As a European service, MyOcean serves **Member States** key service providers



- **MyOcean** builds on several **PolarView** datasets
- **MyOcean** is a core service, **PolarView** is a downstream service
- **MyOcean** provides many new data that will be of interest to the **PolarView** user community, in particular forecasts of ice and ocean conditions
- **PolarView** has built the infrastructure to provide a series of downstream services capable of benefitting from the new **MyOcean** data
- **PolarView** has the user base for an efficient downstream service