

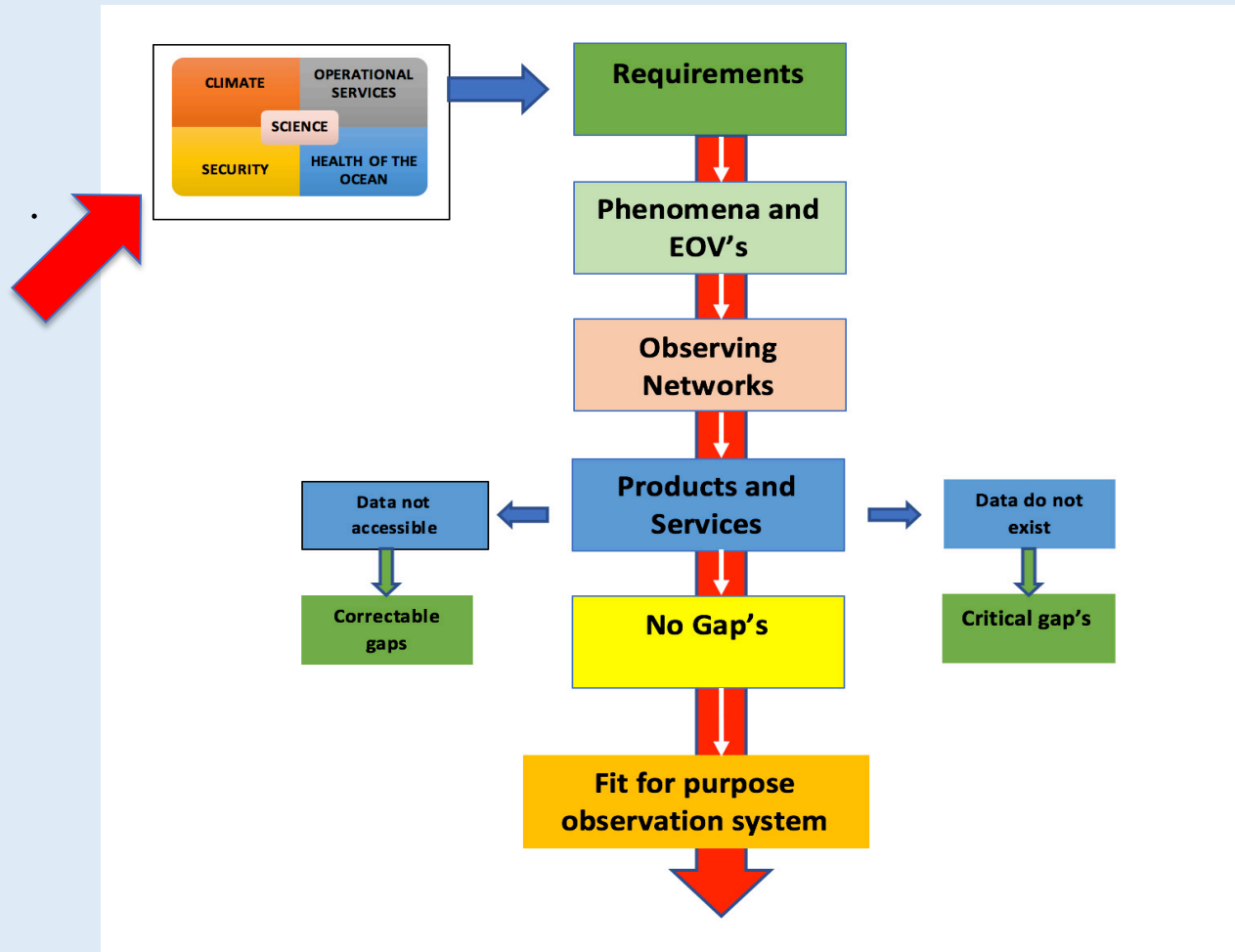
Users and Requirements

INTAROS Final Meeting

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EuroGOOS

Observing System Design Value chain



USERS



- **Focus groups**
 - **Private sector**
 - Transport
 - Tourism
 - Fishery
 - Energy – oil, wind
 - Instrument producers
 - Service providers
 - **Public administration and decision making**
 - Environment – EEA, AMAP
 - Climate change
 - Fishery – ICES
 - Natural hazards
 - Met. Services
 - Ice services
 - **Search and rescue**
 - **Science community**
 - Copernicus services
 - ESA and EUMETSAT
 - EU Polar Expert Group
 - EU polar cluster projects
 - Research Infrastructures
 - Selected universities
 - **Indigenous people organisations**
 - **International bodies**
 - WMO, IOC/GOOS + ocean Decade, GEO, GCOS, GCW,

User Requirement collection

- INTAROS has been very active in meeting with users and collecting their views and requirements
 - Task 1.2 responsible for three stakeholder meetings
 - WP4 – several activities toward indigenous people groups and organisation
 - WP6 – several Tasks had obligations to contact and meet with dedicated stakeholder communities
 - Generally, INTAROS have had an obligation to inform on its activities and achievements and specially to promote the importance of a sustained Arctic Observing System towards authorities in nations with an Arctic interest and international cooperative bodies

INTAROS User Activities

- Overview of events:
 - Over 300 events reported
 - It will be a powerful demonstration in our final report

Activity	WP/Task	WHO	WHY	WHEN	HOW	Responsible	Impact
Series of meetings	6	the Greenland Ecosystem Monitoring (GEM) community in Disko Bay	Presentation of modelling results and potential collaboration	Autumn 2020	Meeting in Denmark	AU	Has resulted in an application for improvement of the marine biodiversity
EU Polar Cluster	1	EU funded polar projects	Coordination with other EU funded projects	27 October	workshop - an open part and a closed part	NERSC, EUROCEAN, EuroGOOS	Coordination between projects as well as dedicated focus on Stakeholder-, information, and data work
EO4 Arctic Science organised by EU and ESA	1	Scientific community	Overview of status and plans for European scientific research in the Arctic : focus on remote sensing combined with in situ observations and modelling	26-30/10/2020	Virtual conference	Several INTAROS partner attended and contributed actively	GOOD inspiration for the ROADMAP process.
SEATECH WEEK International Marine Sciences and Technology week	3.3	Scientific community	laurent chauvaud organised an ecological- acoustic conference session at the 2020 sea tech week	12/10/2020	Virtual conference	CNRS	The conference has an impact on both scientific and technology communities

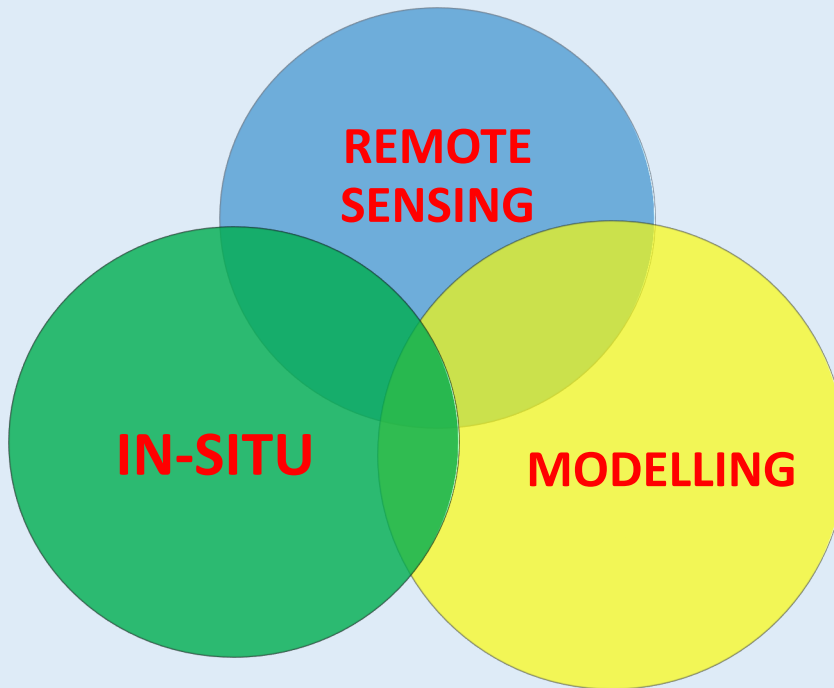


User requirements

- User requirements develop and change constantly
 - User consultation must therefore be an integral part of integrated Arctic Observing System



Production system



- Experts define the best solution
 - Phenomena
 - Essential variables
 - Data – remote sensing and in-situ incl definition on **requirements to data** (resolution in space and time, quality, timeliness etc)
 - Model resolution



Ocean Requirements 2020

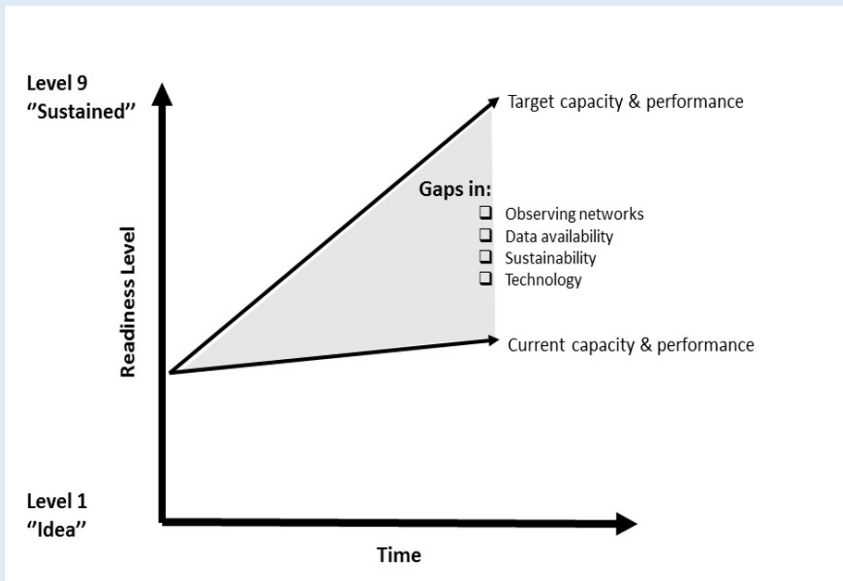
Name	Uncertainty	Update Frequency	Timeliness	Horizontal resolution	Vertical resolution
Oxygen	Threshold: 25% Breakthrough: 10% Goal: 10%	Threshold: 90d Breakthrough: 30d Goal: 7d	Threshold: 7d Breakthrough: 3d Goal: 1d	Threshold: 500km Breakthrough: 400km Goal: 300km	Threshold: 10m Breakthrough: 5m Goal: 1m
Subsurface currents	Threshold: 5cm/s Breakthrough: 2cm/s Goal: 1cm/s	Threshold: 7d Breakthrough: 3d Goal: 1d	Threshold: 3d Breakthrough: 2d Goal: 1d	Threshold: 500km Breakthrough: 400 km Goal: 300km	Threshold: 100m Breakthrough: 50m Goal: 10 m
Subsurface salinity	Threshold: 0,1psu Breakthrough: 0,07psu Goal: 0,05psu	Threshold: 7d Breakthrough: 3d Goal: 1d	Threshold: 3d Breakthrough: 2d Goal: 1d	Threshold: 500km Breakthrough: 400km Goal: 300km	Threshold: 10m Breakthrough: 5m Goal: 1m
subsurface temperature	Threshold: 1k Breakthrough: 0,5k Goal: 0,1k	Threshold: 7d Breakthrough: 3d Goal: 1d	Threshold: 3d Breakthrough: 2 d Goal: 1d	Threshold: 500km Breakthrough: 400km Goal: 300km	Threshold: 10m Breakthrough: 5m Goal: 1m
surface currents	Threshold: 5cm/s Breakthrough: 2cm/s Goal: 1cm/s	Threshold: 7d Breakthrough: 5d Goal: 1d	Threshold: 3d Breakthrough: 2d Goal: 1d	Threshold: 500km Breakthrough: 400km Goal: 300km	



Number of required and actually available T/S and oxygen profiles for 1 year in the Arctic Ocean

	Horizontal resolution	Time resolution	Number observation per year	Actual observations*
T/S profile	100	7d	72.800	33.637
	100	1d	513.190	
	300	7d	8.060	
	300	1d	56.575	
Oxygen	100	90d	5.600	3.100
	100	30d	16.800	
	300	90d	620	
	300	30d	1.860	

GAP ANALYSIS



- Missing Observations
- Missing Data
- Sustainability gaps
- Technology gaps



Integrated Arctic Observation System

Research and Innovation Action under EC Horizon2020
Grant Agreement no. 727890

Project coordinator:
Nansen Environmental and Remote Sensing Center, Norway

Deliverable 1.9

INTAROS Revised Requirement Report

Requirements for atmospheric, ocean and land environmental in situ
observations

Start date of project:	01 December 2016	Duration:	60 months
Due date of deliverable:	31 August 2021	Actual submission date:	30 September 2021
Lead beneficiary for preparing the deliverable:	EuroGOOS		
Person-months used to produce deliverable:	4.3 pm		

https://intaros.nerisc.no/sites/intaros.nerisc.no/files/D1.9_Revised%20requirement%20Report_sub.pdf

