OceanOPS Report

Progress on 2021-25 strategic plan

Workplan, Budget

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2021-2025 Strategic Plan

- 5 strategic goals to achieve OceanOPS vision, framing its activities and report to GOOS OCG.
  - Improving and focusing on core functions
  - Addressing evolving needs of the OO community
  - Identifying internal evolutions needed to achieve our vision

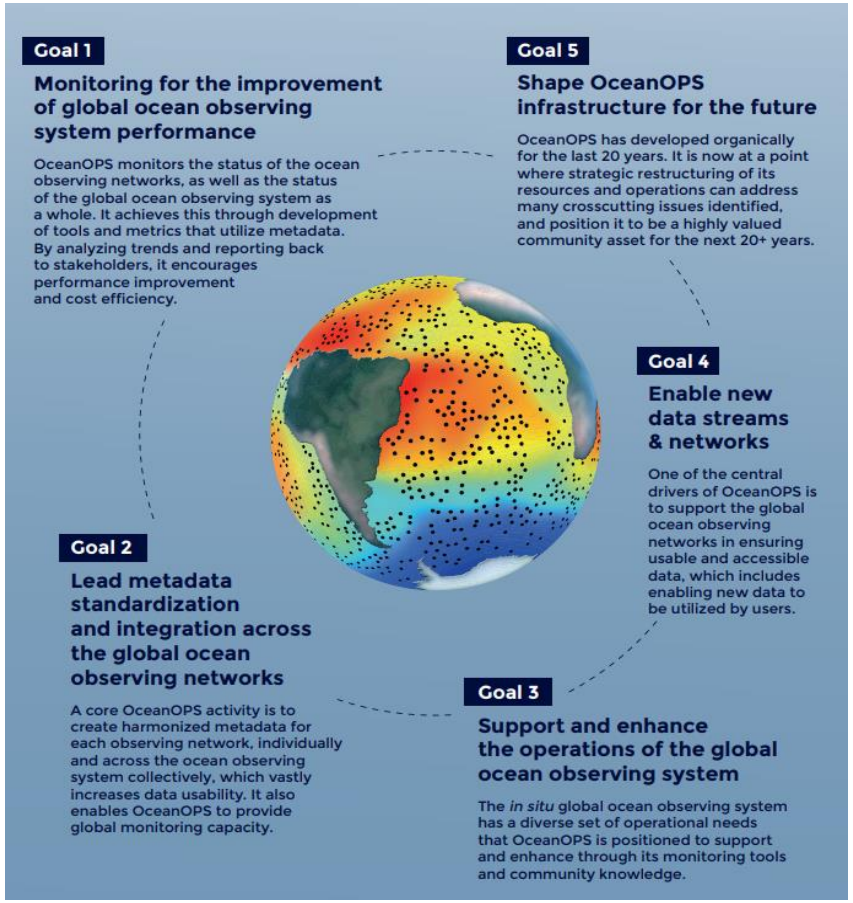
- OceanOPS is the “GOOS operations monitoring and support centre”

- VISION

To be the **international hub and center of excellence** that provides vital services **in monitoring, coordinating, and integrating data and metadata**, across an expanding network of global oceanographic and marine meteorological observing communities.

- MISSION

To **monitor** and **report** on the status of the global ocean observing system and networks, to use its central role to **support efficient observing system operations**, to ensure the transmission and timely exchange of **high-quality metadata**, and to assist free and unrestricted data delivery to users across, operational services, climate and ocean health.



OVERVIEW ON STRATEGIC GOALS ASSESSMENT

- A productive year with progress on goals, and through a highly committed and motivated Team.

Strategic Goals	Achievements (Years 21–23)	Challenges/Workplan (OCG-14; Years 24–25)	Risks
Monitoring	Regular reporting/monitoring , web, Report Card	Fixed platforms/MB/GLOSS, EOV KPIs, Bulletin, National reports, integrated website	Lack of I.T. resources
Metadata	Standard & API released/documented, ID allocation API/Web, metadata WIGOS sync (80%)	Fixed platforms/MB/GLOSS, WIGOS completion, API input, link to IODE	Miss operators' prioritization. Lack of I.T. resources
Operations	Web toolbox/notifications, basin coordination, MFP, Atlantic charter	QR codes on instruments, complete MFP synch to all Members	Share responsibilities for operations (charter, opportunities)
New Networks	OceanGliders, AniBOS, Med. Sea	Regional, HF Radars, IMDOS, BioEco, Odyssey, etc.	No much resources to follow up. OceanOPS & OCG expansion
Infrastructure	Most of positions stabilized, reduced budget fragmentation	Staff & budget stability, IT infrastructure, Host agreement, EU support	Flat budget. Few days of system downtime with migration/upgrade

MONITORING

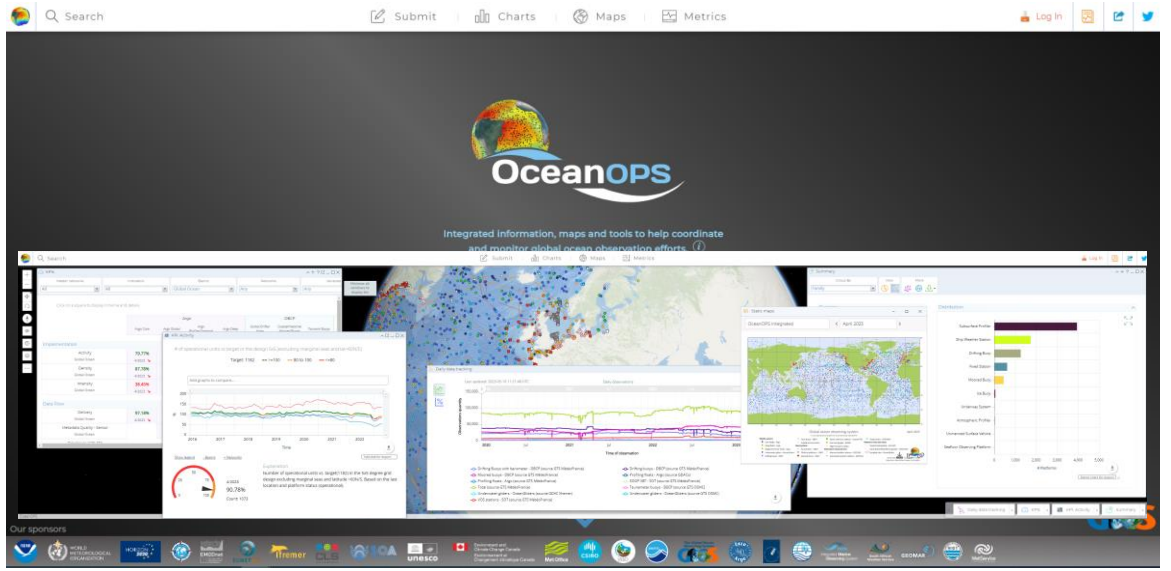
Goal 1

- Capabilities gradually improved, responding to evolving needs.
- Deliverables rationalized on the web developments, and in stable and routine reports.
- Regional/National monitoring and reporting capacity tested (EuroSea, SOT national reports) - to automate.
- EOV/ECV gap analysis tools development – postponed 2024/25 - need IT bandwidth

Objectives	Achievements	Workplan	Risks
	Years 21 22 23	OCG-14 24 25	
1.1 Tools & metrics for all OCG-networks	Web tools, maps & KPIs for each network	Improve fixed platforms monitoring tools. Introduce emerging networks	Lack of metadata. Lack of I.T. resources. Tools under-used
1.2 Report to stakeholders	Routine reporting to networks, governance, GOOS Report Card	OceanOPS Bulletin, national/regional reports generator	No planning / templates
1.3 System level metrics for monitoring	Integrated website	Integrate website functions (themes) EOV/ECVs metrics implementation	Lack of I.T. resources

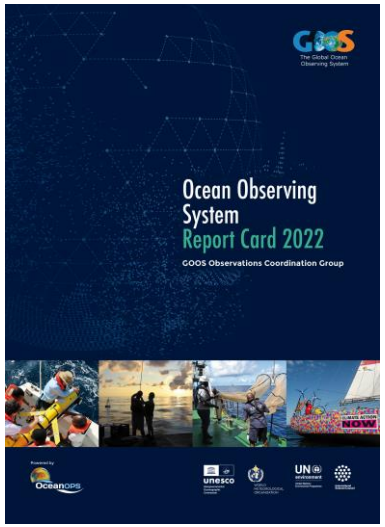
MONITORING

- Asks for OCG:
  - Each Network to regularly work with web tools, maps and KPIs and feedback.
  - OceanOPS has capabilities to support co-design and RRR processes but no much bandwidth to develop the gap analysis tools
    - Major upgrade of our architecture to handle millions of observations
    - Development of an interactive interface to analyze EOV/time/space/depth/quality vs applications target
  - Any feedback on:
    - National/regional reporting generator (Networks, GRAs, GOOS NFP)
    - Report Card
    - Bulletin (see extra slide for content)

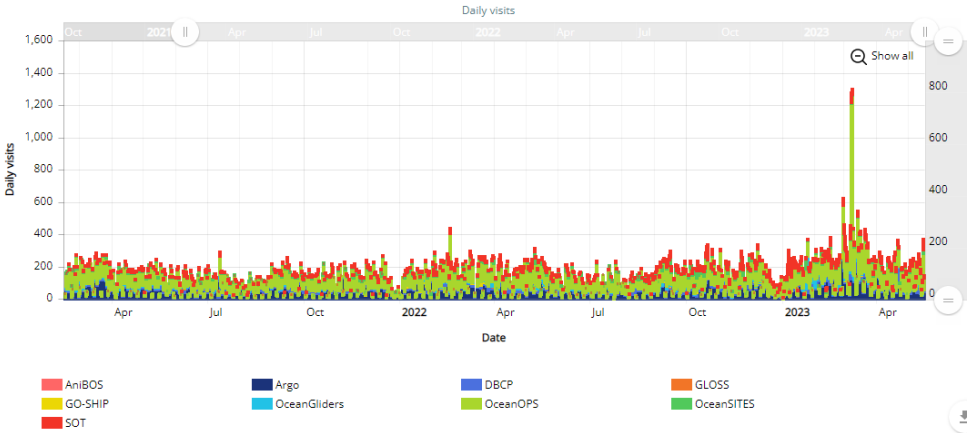


OceanOPS dashboard offers many tools for monitoring … some under-used and offering a big potential for emerging network for a small adaption cost.

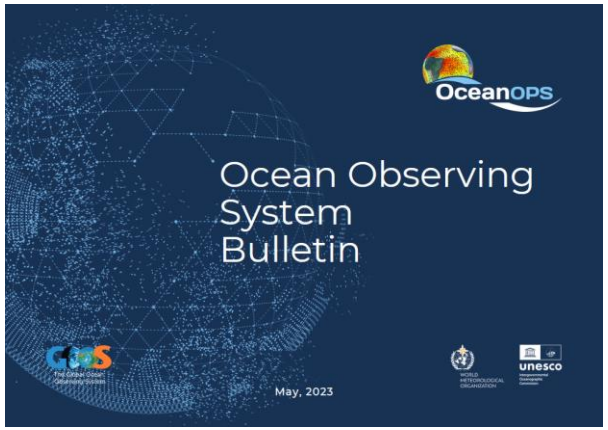
Highlights



From OceanOPS to GOOS report Card

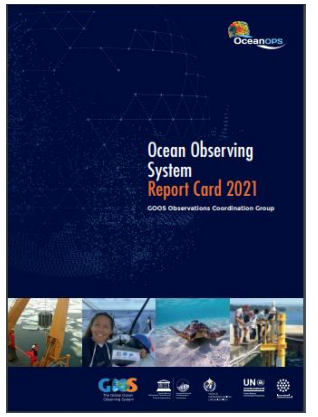


OceanOPS dashboard has a regular audience



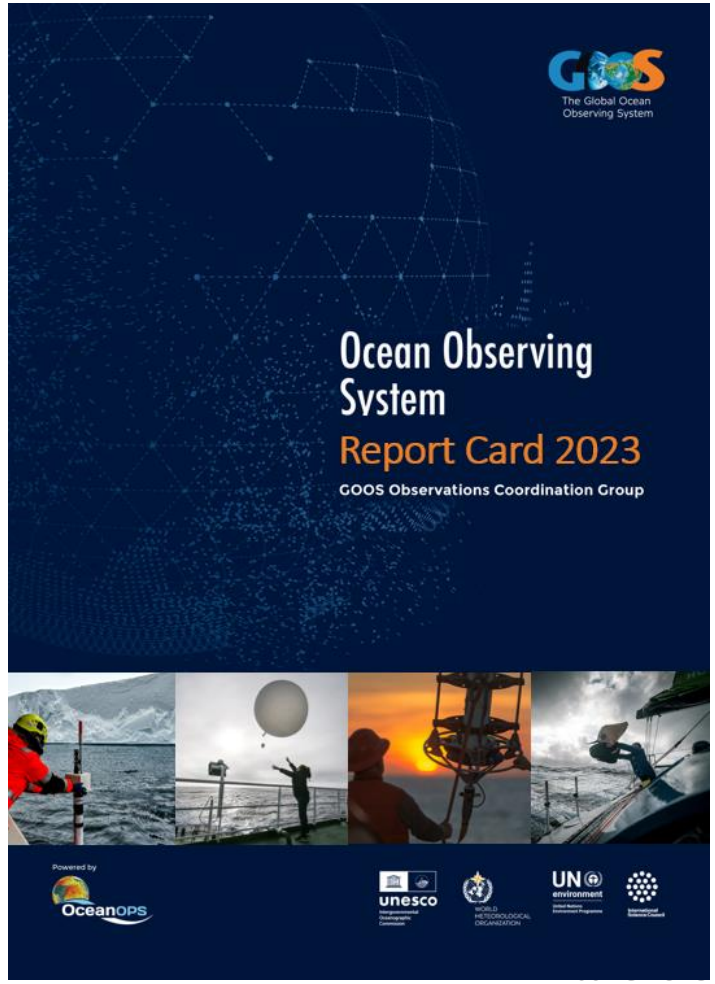
OceanOPS new semestrial technical bulletin

REPORT CARD 2022-23



- **Report Card #6** published Sept 2022, and first truly cross-GOOS (see logos change)
- >2,000 visitors from >100 countries consulted the new interactive web version since publication. web release, video, social media, mail.

- Report Card 2023 plan (September):
  - New topical stories to illustrate cross-network/cross-GOOS integration:
    - Marine heat waves, Safety at Sea, Seagrass
    - Community collaboration & capacity development stories
    - Cyclone forecasts Co-Design exemplar
  - Continue developing the interactive map and improving the network status table (see slide #10)
  - Highlight Networks contribution to WMO application areas (in web version ?)



- Production cost (without FTE involved) is rather low (15k$) but challenging to secure with tight budget.
- Please get involved and send recent photos of your operations

METADATA

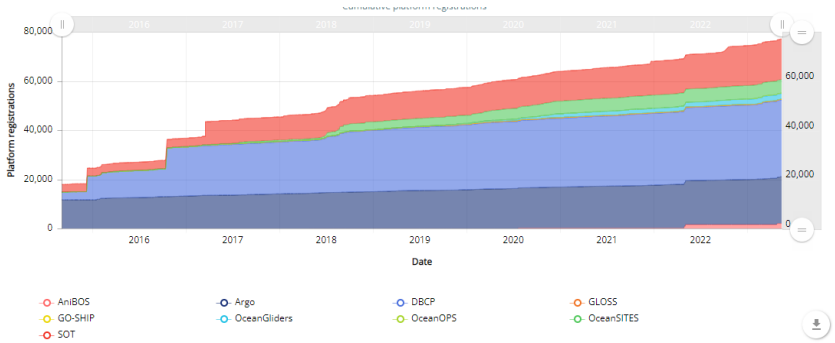
Goal 2

- Metadata "gathered" by OceanOPS are key for monitoring and decision making, and greatly enhance data value for users.

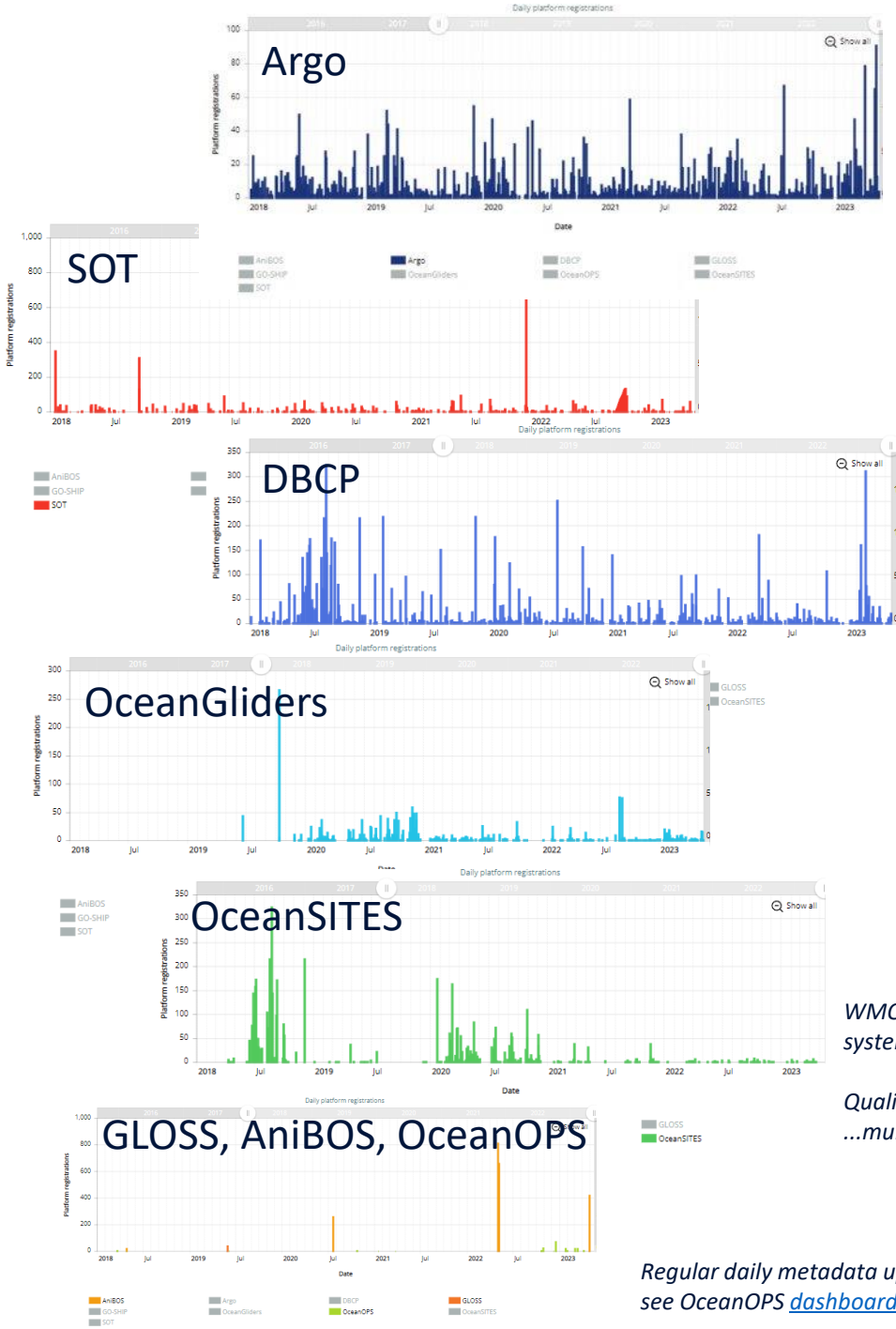
Objectives	Achievements Years 21 22 23	OCG-14	Workplan 24 25	Risks
2.1 Standard and BP for metadata harmonization	Metadata standard released - evolving		Reviewed by MB TT – to be continued on all fixed systems – improve GO-SHIP	Operators inputs to finalize standard. Lack of IT resources
2.2 M2M web services metadata exchange and access	Output API (WIGOS compliant) API for WIGOS id allocation		Input API, more formats (JSON), ontologies	Lack of I.T. resources
2.3 Harmonized & high-quality metadata standard	Argo (Core, Deep, BGC), OceanGliders SOT, GDA, TMA, some fixed platforms		DB (sensors), MB (beyond TMA), OceanSITES, GO-SHIP, AniBOS, GLOSS, HF Radars	Operators to adopt standard and deliver metadata
2.4 Assist user on data access and available data services	Routine activity. Data mapping, OCG roundtables		OCG Data Strategy, federated/integrated data/metadata access	Unable to respond to growing needs
2.5 Connect OceanOPS with IOC and WMO data systems	82% of operational platforms synch with WIGOS. Link to GTS data		WIGOS std to be completed and improved - link to IODE to be discussed	Lack of bandwidth to discuss with IODE

METADATA

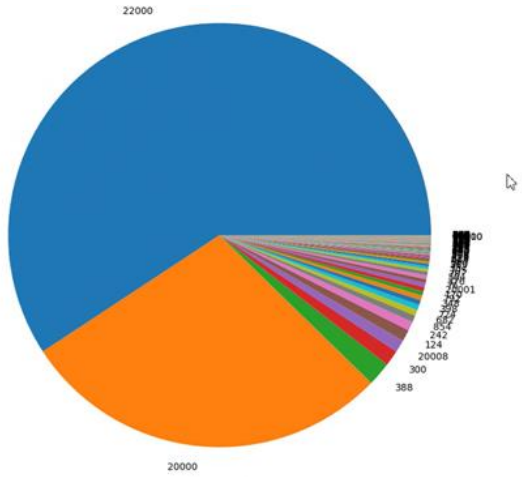
- 82% of the 8,000 operational platforms qualify to WMO/OSCAR and are routinely synchronized
- 20 % for the historical database



Cumulative metadata flow into OceanOPS – 80,000 platform records



Achievements: quantitative



WMO/OSCAR full database distribution across all earth monitoring system domains – 22,000 is coming from OceanOPS.

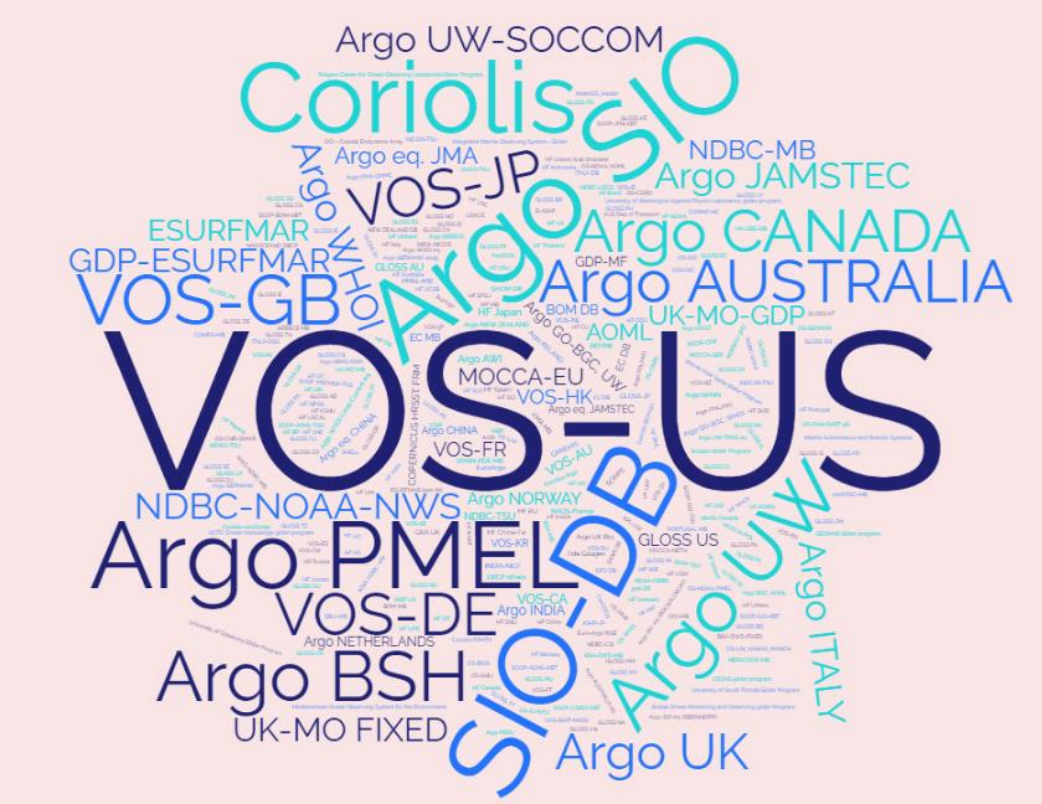
Quality improvements required: sensors accuracy, stability, ...multiple contributors' management (sensors, ship time, etc.)

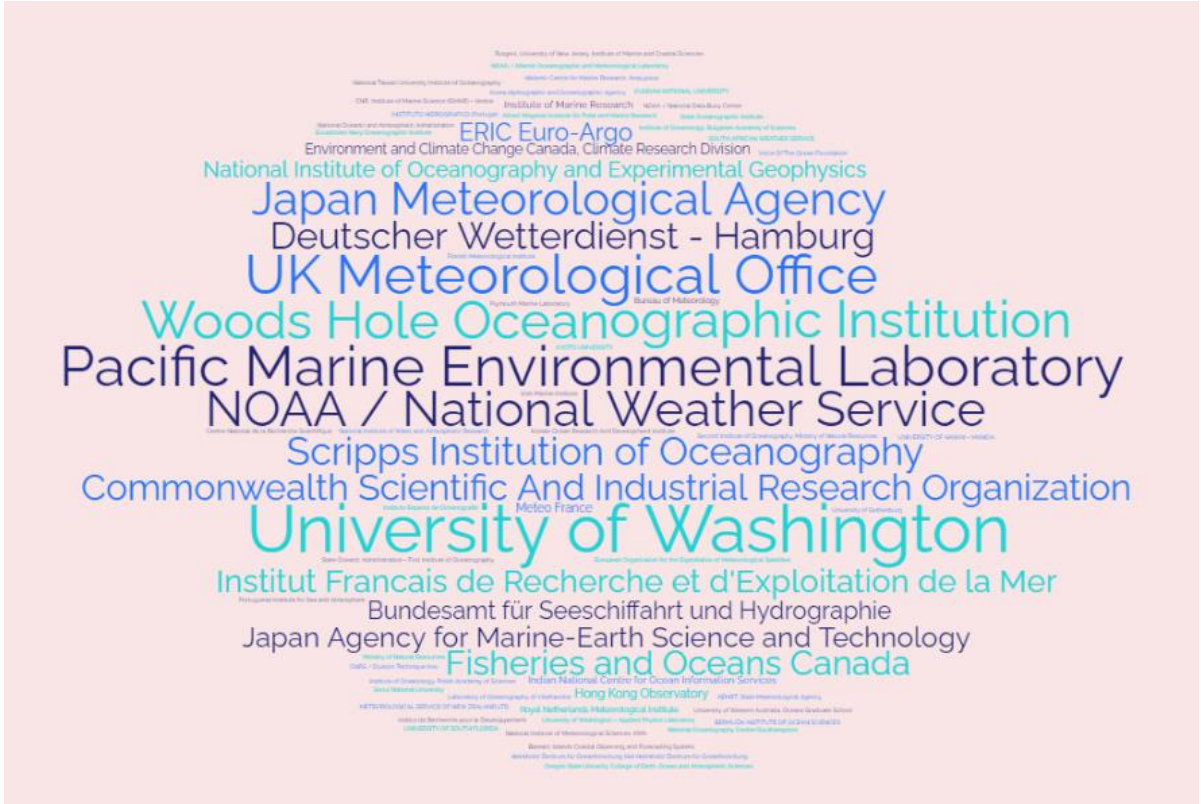
Regular daily metadata update by network
see OceanOPS dashboard Metrics/System Usage

METADATA

Achievements: diversity

- 308 programmes (having operational platforms) contribute metadata to OceanOPS!
- Operated by 69 Agencies (20 % missing - agencies database being completed)





An extract of operational platforms programmes and lead agencies represented through a word cloud generator

METADATA

	A - ID	B - PROG.	C - OP.	D - SENSORS	E - OTHER	α	SCORE	COMMENT
Argo	20	20	20	20	15	100%	95	near perfect.
Tropical Moored Array	20	20	20	20	15	100%	95	near perfect.
VOS	20	20	15	15	10	90%	72	on track. light progress needed on operations, sensors, and others.
ASAP	20	20	20	5	5	100%	70	missing sensors, others
Global Drifter Array	20	15	15	10	15	90%	68	progress needed on sensors (mostly generic) - some programs to clean up
SOOP - XBT	20	20	20	15	5	80%	64	missing some sensors, others
OceanGliders	20	20	15	15	5	80%	60	on track. light progress needed on operations, sensors, and others.
Tsunameters	20	20	10	15	10	80%	60	missing operations, additionnal sensors, others
GO-SHIP	5	20	20	5	0	100%	50	need stations/platforms and sensors/variables (beyond cruises)
Coastal/Ntl Moored Buoys	20	20	5	10	5	50%	30	missing operators inputs (50% ?) - progress needed on sensors (mostly generic)
OceanSITES	10	20	12	15	5	30%	19	no inputs from 70% of operators
AniBOS	10	5	5	5	0	30%	8	starting & progress anticipated
GLOSS	0	5	0	0	0	100%	5	no inputs (only one-off for report card)
HF	0	5	0	0	0	100%	5	no inputs (only one-off for report card)

- OceanOPS is stabilizing a metadata scoring system.
  - to implement the related metrics/indicators.
  - to check OSCAR quality flags as well.
  - To monitor sync means (web, m2m, etc)

- The report card rating is broader and might not be fully adapted
- To phase with OCG Data strategy
- New reportcard scoring to be finalized
- Add line for TMA (not mixed up with NTL MB)
- New scores: OceanSITES -, Tsunameters +, GLOSS -, HF -, MB +/-)

OceanOPS metadata score including:
***quantitative factor**: do we monitor all Panels/Steering team operators' platforms ?*
***qualitative factor:** are mandatory metadata made available (vs standard) ?*

score/100=
(A+B+C+D+E)*α

GOOS *in situ* networks [1]	Implementation STATUS [2]	Data & metadata REAL TIME [3]	Data & metadata ARCHIVED DELAYED MODE [4]	Data & metadata META-DATA [5]	Best practices [6]	GOOS delivery areas [7] OPERATIONAL SERVICES	CLIMATE	OCEAN HEALTH
Ship based meteorological - SOT	★★☆	★★☆	★★☆	★★☆	★★☆	✓	✓	
Ship based oceanographic - SOT	★★☆	★★½	★★★	★½☆	★★☆	✓	✓	
Repeated transects - GO-SHIP	★★½	Not applicable	★★★	½☆☆	★★★		✓	✓
Sea level gauges - GLOSS	★★½	★★☆	★★★	★☆☆	★★☆	✓	✓	
Time series sites - OceanSITES	★★☆	Not applicable	★★½	★★☆	★★☆		✓	✓
Moored buoys - DBCP	★★½	★★★	★★★	★★☆	★★½	✓	✓	✓
Tsunami buoys - DBCP	★★☆	★★★	★★★	½☆☆	★★★	✓		
HF radars	★½☆ Emerging	★½☆	½☆☆	★☆☆	★★★	✓	✓	
Drifting buoys - DBCP	★★★	★★½	★★½	★½☆	★★★	✓	✓	
Profiling floats - Argo	★★★	★★★	★★★	★★★	★★☆	✓	✓	
Deep & biogeochemistry floats - Argo	★☆☆ Emerging	★★½	★★½	★★★	★★☆	✓	✓	✓
OceanGliders	½☆☆ Emerging	★★☆	★☆☆	★½☆	★★☆	✓	✓	✓
Animal borne sensors - AniBOS	½☆☆ Emerging	★☆☆	★★☆	½☆☆	★★☆	✓	✓	✓

This score is based on 3 categories which can be rated 0 to 1 each (i.e. score 0-3)

- **Metadata made available to OceanOPS according to its standard**
- **Metadata are transmitted machine2machine**
- **Networks serve additional metadata beyond OceanOPS**

METADATA

- Asks for OCG:
  - Priority – Responsiveness – Engagement from Networks & Operators
  - Communicate on benefits (integration, quantity, quality, coordination tool, visibility of system and components, interoperability, efficiency/optimization, reporting capacity, etc.)
  - Engage further with GLOSS and new/emerging Networks
  - Go beyond generic sensors (brand, serials, specs, etc.) - quality criteria
  - Any format/protocol, any initial provision of metadata will help - flexibility

- Recipe for success:
  - Fit for purpose tools (for operations, planning, monitoring) gathering metadata gradually along platform lifecycle (see extra slide)
  - "Mandatory" requirement in the network, in OCG (attributes and Data Strategy, in WMO/IOC decisions and resolutions (JCOMM/INFCOM, IOC XX-6)
  - Progress evaluation
  - Collective thinking and ambition to give body to the GOOS

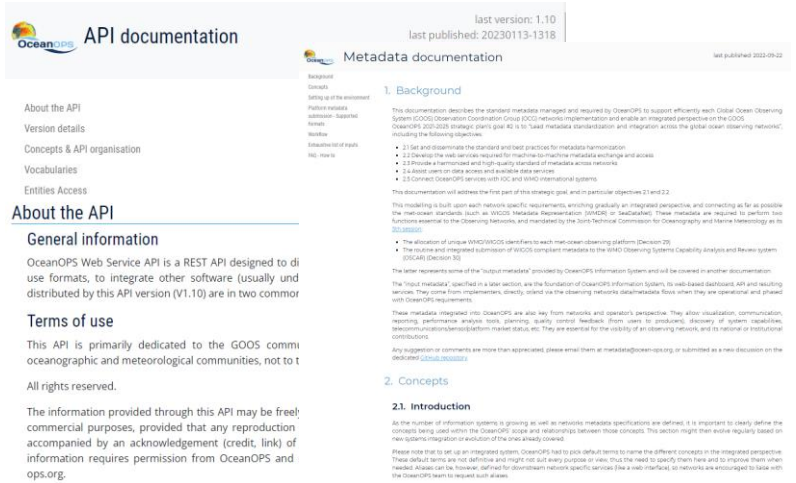
Highlights

Ensures metadata quality and delivery - Complete platform metadata is submitted to OceanOPS in a timely manner.

Metadata

OCG-R7.	Networks shall have a defined uniform metadata content that includes at least the minimum OceanOPS requirements.
OCG-R8.	Metadata shall be based upon a well-documented community standard, including a persistent WMO/WIGOS identifier and use controlled vocabularies.
OCG-R9.	Metadata shall be exchanged with OceanOPS utilizing machine-2-machine services and avoiding multiple redundant manual transmissions.

OCG Networks Attributes & OCG Data Strategy recommendations



Metadata standard and API documented
www.ocean-ops.org/metadata & www.ocean-ops.org/API

OPERATIONS

Goal 3

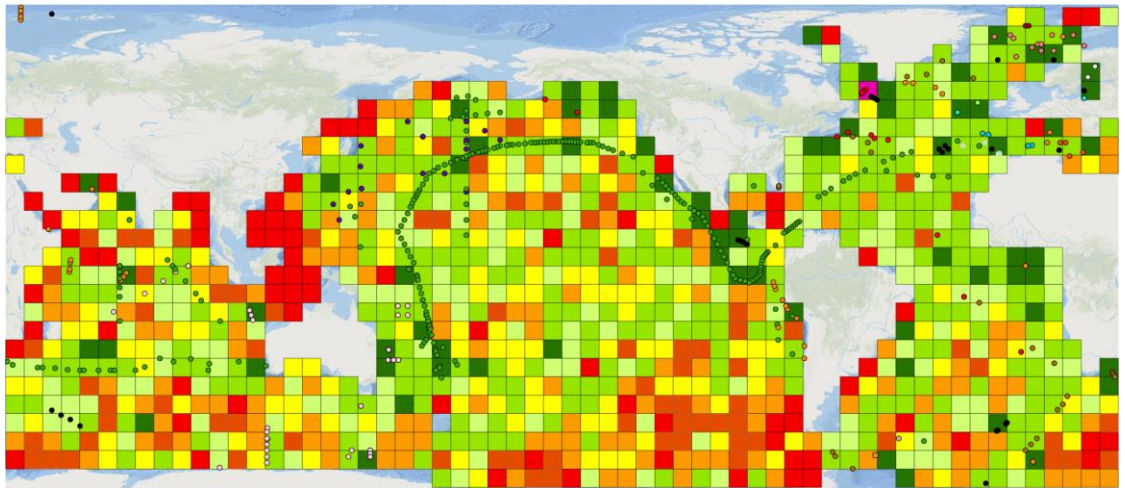
- The international and technical coordination delivered for operations is a major efficiency factor.

Objectives	Achievements (Years 21–23)	Workplan (Years 24–25)	Risks
3.1 Support planning of operations	Regular basin-based roundtables/reports, tools for planning, EEZ notifications	Expand roundtables (basins, networks), improve web tools	Lack of collective thinking for networks using ships
3.2 Develop partnerships and pilot project to facilitate deployment and retrieval of instruments	On going work: academic/sailing/shipping/... opportunities/charter	OceanOPS as hub storing instruments ready for deployment. Donor programmes. SOFF specs. Odyssey new partners potential	Shared responsibilities for deployments. Odyssey stuck – no resources
3.3 Promote standard and BP on instruments	Unique IDs for cruises, Best Practices for EEZ / recommendations for global/regional	Sticker/QR code pilot/mobile app. Introduction of metadata standard at manufacturers	Manufacturers not fully involved
3.4 Maintain web-based services to facilitate routine platform operations	IRSO/MFP pilot achieved for UK	Being expanded. Countries not using MFP consulted. Improve web tools for planning.	Lack of monitoring of R/V schedules through authoritative sources

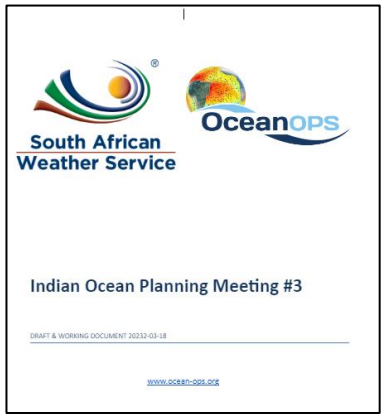
OCG-14

OPERATIONS

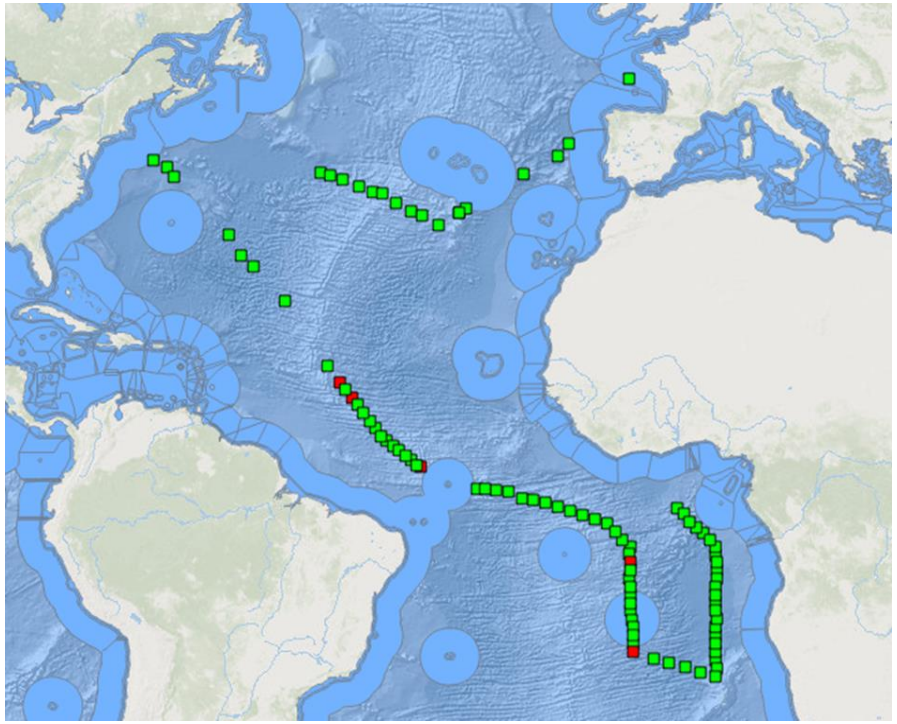
- Asks for OCG:
  - Each Network to use OceanOPS for planning activities (enable synergies) when applicable.
- Recipe for success:
  - Monitoring + planning + dep. opportunities + roundtables = improve coverage
  - Tools fit for operators help to capture metadata (need improvements for autonomous and fixed systems)
- Future work: OceanOPS as a tool to facilitate MSR clearance processes (standard forms, regional plans sent to coastal states)



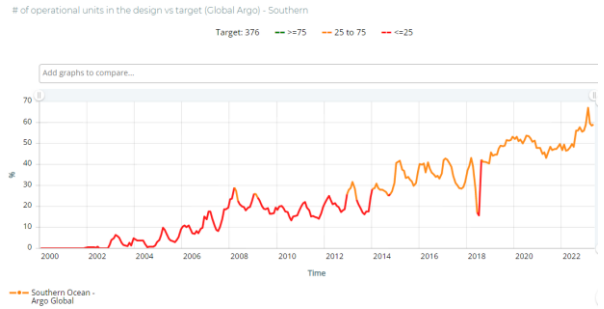
Argo floats density before and after planning



Example of basin-based meeting report



IRIS (Blue Observer) cruise 2021-22 organized by OceanOPS – note how operators avoid EEZs when there is no facilitated access.



Growing Argo activity in SO…

NEW NETWORKS

Goal 4

- The expanding of OceanOPS to new networks must be phased with OCG expansion … and new resources.

Objectives	Achievements (Years 21–23)	Workplan (Years 24–25)	Risks
4.1 Provide basic services to emerging networks	OceanGliders, AniBOS, SOOP TSG, F/V initial discussions with GLOSS (EuroSea)	GLOSS, HF Radars, ship underway (CO2), BioEco, IMDOS, etc.	No financial support – hard to follow up
4.2 Pilot supporting third-party project	Odyssey launched at Brest One Ocean Summit	Odyssey on hold – Huge potential Strategy needed to approach shipping industry cohesively (MAERSK, CMA-CGM, etc.)	No investments, fragmented approach
4.3 Provide services to regional networks	Focal point established in Med. Sea Participation through projects (EuroSea), regional support (GRASP, EuroGOOS, WMO)	To pilot decentralized OceanOPS node. To promote services to regions (GRAs)	Coastal system high diversity vs means

OCG-14

New Networks

Goal 4

- Asks for OCG:
  - Which priorities/guidance for new networks ?
  - Include OceanOPS in projects (beyond EU)
  - Need discussions with ship experts to strategize and prepare one clear ask (OCG/SOT).
    Ground prepared for Maersk, CMA-CGM, Ponant, MSC
  - Help find resources to drive Odyssey (UN Decade project part of GOOS Co-Design)

- **High Priority:**
  - **Networks funding OceanOPS**
  - **Shipping industry**

Observing Air-Sea Interactions Strategy (OASIS)

Integrated Marine Debris Observing System (IMDOS)

SMART CABLES, GRAs, WMO R.A., ...

INFRASTRUCTURE

Goal 5

- Infrastructure was strengthened but some important challenges remain on all objectives.

Objectives	Achievements (Years 21–23)	Workplan (Years 24–25)	Risks
5.1 Develop agreement with OCG networks and other stakeholders to set boundaries and expectation from OceanOPS	Not done formally	Not formalized – question for OCG – new networks' role ?	No formalism or overkilling formalism
5.2 Strengthening infrastructure in host country, workforce and budget	Core workforce strengthened. Discussions with host started	Country agreement (WMO-France) I.S. migration to Ifremer – to formalize Joint strategy Ifremer/ OceanOPS	Miss opportunities with host country and EU – Budget not increased
5.3 Evolve business model, team structure and funding toward integration	Team structure and staff roles clear, stabilized – tight budget well managed	Redirect all funds to WMO. Gain new sponsors	Staff turnover Cut on travel/development/staff
5.4 Enhance communication to foster community understanding	Rebranding, Strategy, deliverables OceanOPS (and WMO) visibility raised	Communicate OceanOPS value and/or keep improving deliverables and services. Clarify OceanOPS position within GOOS.	Fragmentation/confusion of coordination efforts and mechanisms

OCG-14

STAFF: 8-9

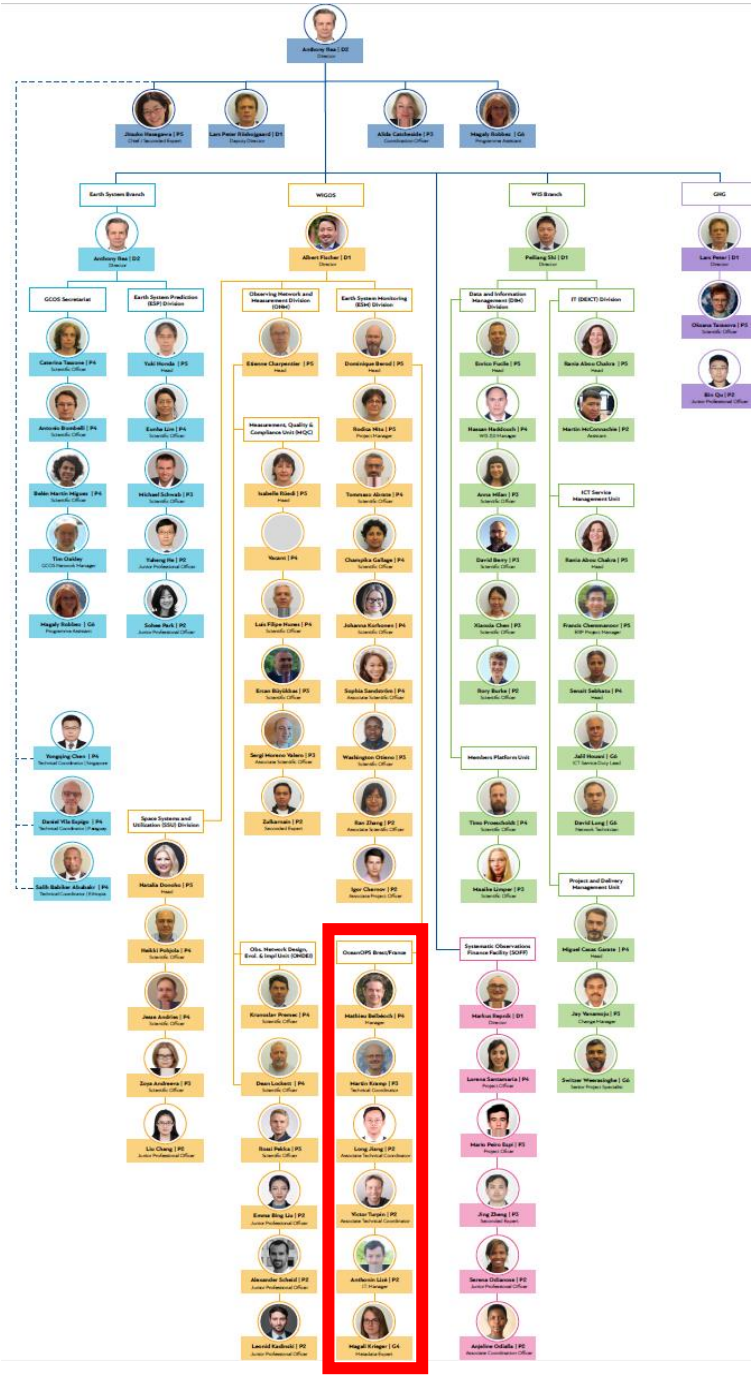
- 7 people in Brest:
  - 6 hired through WMO/Infrastructure Department/ Earth System Monitoring Division
  - 1 hired through IOC/UNESCO
- 1 focal point in Monaco – hired through IOC/UNESCO
- 1 web developer consultant in Toulouse – outsourced
- See extra slides on OceanOPS organizational chart present/future

WMO Infrastructure Department retreat Geneva, March 2023

Staff in Brest: Martin Kramp, Mathieu Belbéoch, Victor Turpin, Magali Krieger, Anthonin Lizé, Long Jiang, Emanuela Rusciano

Thomas Latter in Toulouse

Orens De Fommervault in Monaco



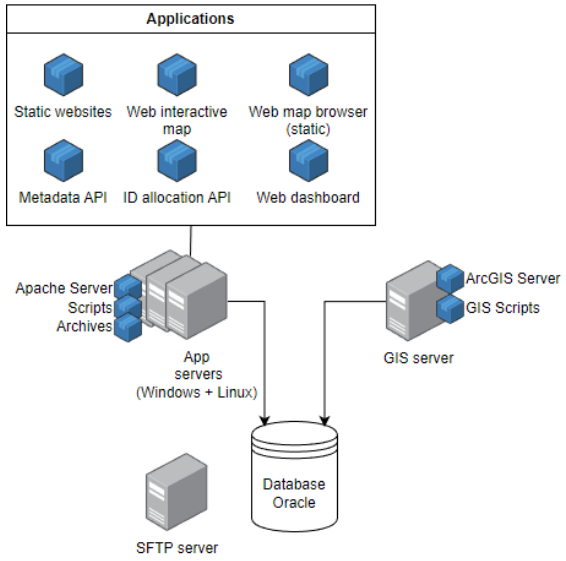
WMO Infrastructure Department

INFRASTRUCTURE

- Every decade needs a major upgrade of IT architecture
- Challenges
  - Technical (many)
  - Contractual (to renew)
  - Financial (savings ?)
  - Timing (2023)

- Emails, www domains, softwares: WMO
- Hardware (desktop): Ifremer
- Hardware (servers): Ifremer

- Benefits
  - Modernization, robustness, modularity, sustainability, ..
  - Closer connection to a major data processing/distribution hub
  - Prepare future collaborative development (decentralized developers pool)



France/Toulouse/CLS

I.T. architecture – migration/upgrade plan

Migration steps (Information System)

1. Migrate database - Oracle to PostgreSQL, incl. applications and scripts adaptation
   - Prob. biggest effort
   - Should be done within CLS to prepare migration to Ifremer
   - Tests on-going
2. Containerize all applications, including scripts, ArcGIS Server
   - Difficult for some apps
   - Tests started
3. Find an alternative to the complexe Apache Server configuration
4. Find an alternative to the archive server (prob. based on GDAC model), incl. FTP server
5. Organize the D-Day transition
   - shutdown to foresee
   - Priority to routine scripts, then APIs, then web dashboard and maps, then all the rest

Migration steps (IT)

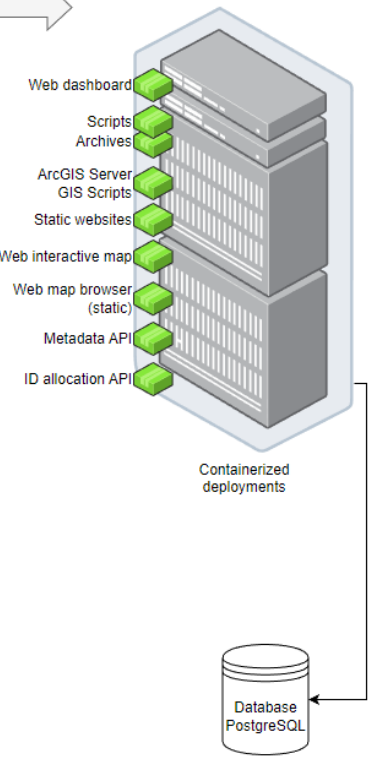
1. Organize transfer of domain names to WMO
   - Emails handled by WMO
   - HTTPS access pointing to Ifremer's gateway
2. Organize email transfer to WMO
3. Formalize sourcing of hardware (from Ifremer)

Benefits of new architecture

1. No more hard IT tasks (server maintenance, network issues, etc.). Everything is containerized and adapted to modern deployment techniques
2. More modern, flexible database management system

After the migration

1. Replace old or deprecated technologies
   - hard to maintain and slowing down developments
2. Toward a microservice architecture
   - applications today are monolythic and hard to maintain. Breaking them down into micro-services, API oriented, will decoupled them and ease developments
   - this will open the path to collaborative developements

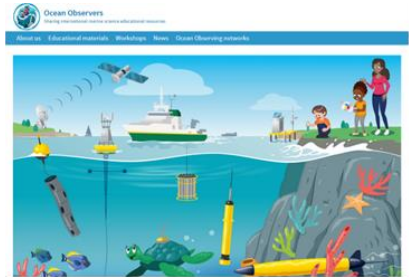


France/Brest/Ifremer

INFRASTRUCTURE

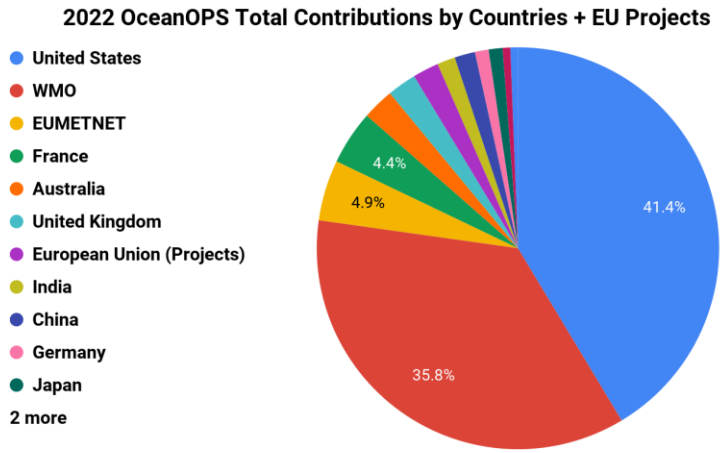
- Many meetings, conferences
- Many publications:
  - Technical reports for global networks
  - EU projects reports
  - High-level reports for governance and external stakeholders
  - Contribution to network newsletters
  - Contribution to peer-reviewed publications
- A few articles, videos and press releases in mass medias from innovative operations with civil society

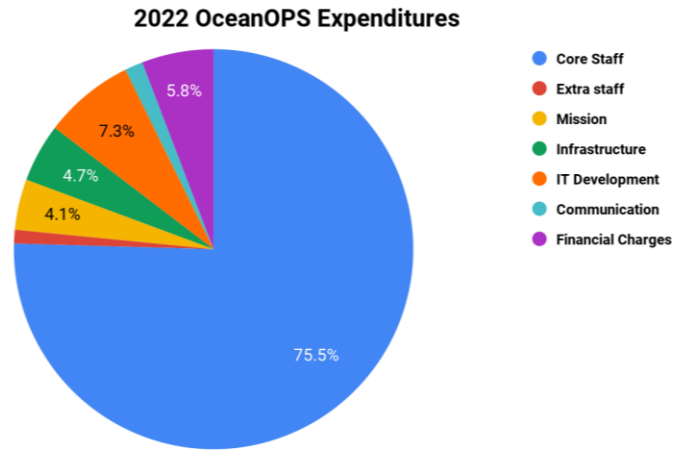
→ TO PROMOTE THE WORK OF GOOS AND SUPPORT ITS IMPLEMENTATION



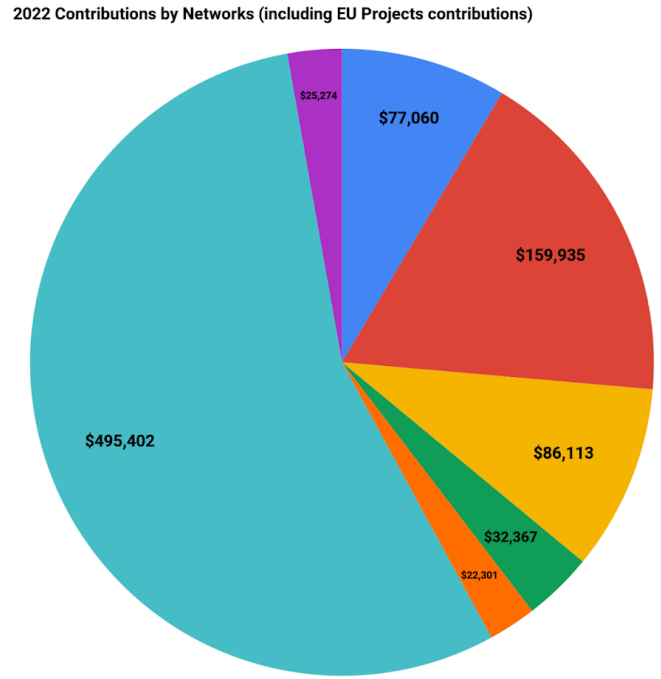
2022 Financial Report

- **899K$ received,** vs 805K$ in 2021, 900K$ in 2020, and 1M$ in 2019
- **Stable overall budget** (1.3M$ including carry forward)
- **Total expenditures slightly decreased** (872K$)
- **Positive balance at the end of the year** (471 K$)





- 2022 Highlights:
  - Strong WMO investment in OceanOPS (322K$)
  - Regular national contributions decreased from 699K$ in 2020 to 558k$
  - NOAA contribution decreased from 475K$ in 2020 to 372K$
  - EU Projects ending (received only 7K$ from TRUSTED Project/HRSST drifters, and 10K$ EuroSea)



- Remarks & recommendations:
  - **OceanSITES, OceanGliders, GO-SHIP, DBCP and SOT are encouraged to increase and diversify the sources of their contributions** (target ~120 k$/year, see 2021 OCG report) to help OceanOPS to sustain its support to Networks.

INTERIM BUDGET

2023

- **Expected overall budget (1.5M$)**
- **Expected expenses (1M$)**
- **Positive balance at the end of the year 2023**

- 2023 Highlights:
  - Budget increasing due to:
    - Last payment of EU Projects (EuroSea, Euro-Argo RISE, TRUSTED)
    - Delayed committed contributions from Monaco (to sustain BGC-Argo/Med Sea position) and EMODnet
    - 2 new EU Projects lasting for 2 years (GROOM II gliders, Euro-GO-SHIP)
  - Expenses increasing due to:
    - New BGC-Argo Coordinator recruitment, IT Engineer moving from CLS to WMO, as well as salaries increase due to inflation
    - Travel budget increasing even if the ambition is to keep it to the strict minimum
  - Web developments reduced to 3 months with ⅗ FTE to make necessary maintenance and small evolutions, but this doesn't enable any major development

- Remarks & recommendations:
  - All funds historically received at IOC and at CLS are transferred to WMO in order to continue stabilizing and upgrading key resources at WMO, and achieve the goal 5 of the OceanOPS strategic plan
  - **OCG and networks help OceanOPS raising funds to fully accomplish its mandate and strategy, and be fully operational to support Networks**

ANTICIPATED BUDGET

2024

- **Expected overall budget (1.4M$) and expenses (1M$) will be stable.**

- 2024 Highlights:
  - Several challenges will arise as current EU Projects funds will be exhausted, but new projects might be granted
  - Main challenge is to stabilize and upgrade remaining staff positions, to respect a minimum of balance and fairness in the team, and align their contract with experience and seniority:
    - Communication/admin. officer position should be “transferred” to WMO and upgraded to P2 level
    - Ship Coordinator position upgraded from P2 to P3 (currently on hold/postponed)
    - These changes are feasible with our current budget and carry forward, but not sustainable (from 2025) without any more resources. This scenario, without any fund increase, shows that we will start eating our carry forward.

- Remarks & recommendations:
  - Sustain core staff is a top priority
  - Travel budget, web developments and communication activities will be decreased to the very strict minimum
  - **We will absolutely need to find additional and regular 100 K$ in 2023/2024 to enable remaining staff changes and 200 k$ more to fully implement our plan (i.e.: 300 k$/year) and not rely on projects (see OceanOPS generic/ideal budget)**
  - In other words, we need to find sustained resources to complement extra projects incomes (fundamental for now to sustain our activities)

See full financial report on-line: file:///C:/Users/erusciano.GROUPCLS/Downloads/OCG14_OceanOPS_FinancialReport_2023-1.pdf

FUND RAISING

Strategy

- Host country (regional, national, institutional) - modest (5%) but stronger potential.
- Europe – demanding and potential – risk: reinvent the wheel with another "Euro-OceanOPS"
- WMO capabilities – already proven but more potential ahead
- IOC and GOOS central office progress – advance together (first request prepared to IOC Member States)
- Cooperation with third-parties (industry/Odyssey) - need investment and discussions (SOT central) and high-level meetings
- OCG criteria ? Fee on membership ?

CONCLUSION

- The strategic plan provided the required clarity for our role, and a frame to guide our work.
- At mid-course, we implement our strategic plan with tangible progresses on all objectives.

- Given our resources, some questions remain (EOV metrics, new Networks, third-parties) and developments are postponed.
- With a little funding push, we could fully complete our plan and start a next ambitious phase along the decade.
- Projects funding are absorbing the flat or decreasing network contributions and jeopardize our developments/innovation

- Day to day cooperation with GOOS central office and IOC/UNESCO is key for our work. Strong teamwork.
- WMO's investment in OceanOPS and the integration of the Team into its Infrastructure Department/Earth System Monitoring Division is to be commended and offers great opportunities (GBON, RRR, SOFF, Public-Private partnerships, regional connections, etc.).

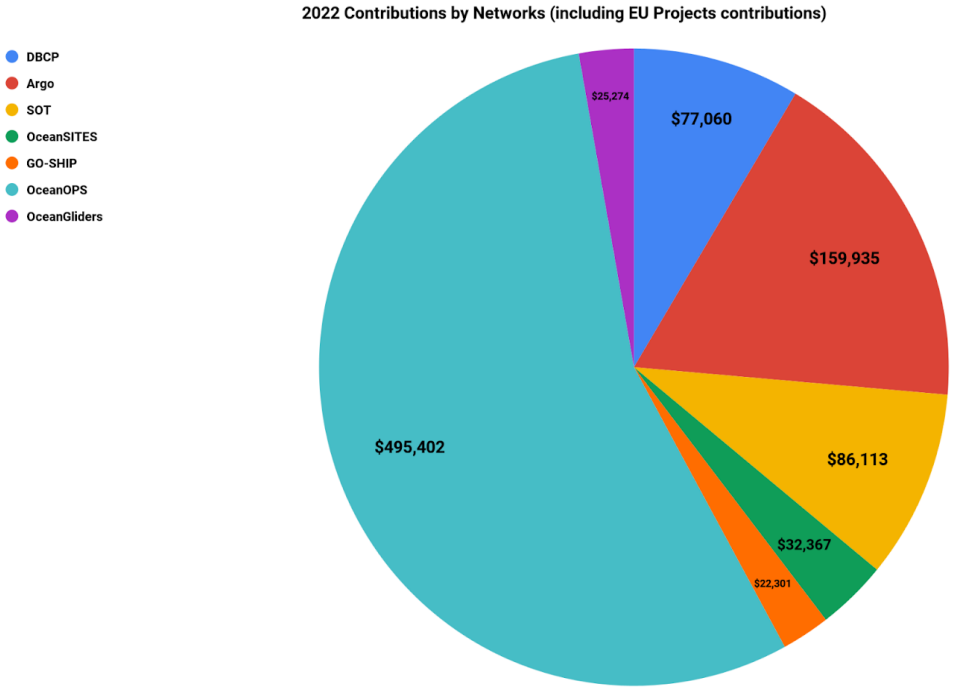
- We must formalize our hosting conditions in France and request further support (EU, national, regional, institutional). We need to write down our common roadmap with Ifremer to move forward together for the GOOS.

DISCUSSION

- Networks to contribute to OceanOPS through:
  - **Funds** – Networks balance unsatisfactory – **How to resolve this ?**
  - **Metadata** – **Why some networks/operators are not responsive ?**
  - **Use and feedback on our web tools/KPIs** (dedicated task teams in Networks)

- **OceanOPS is slowly expanding beyond OCG networks** (coastal, R/V, GRAs) and has strong demand from GOOS-SC to continue in this direction (BioEco, IMDOS, etc.).
  - **How do we prioritize ?**

- Any other priority for the workplan ? Any objection ? Any recommendation ?



Even when we combine networks support (DBCP/OceanSITES e.g.) the level of funding is unsufficient to cover 1 FTE (and even less travels, inflation, share costs of the common infrastructure ...).
What do we do ?

	α	SCORE
Argo	100%	95
Tropical Moored Array	100%	95
VOS	90%	72
ASAP	100%	70
Global Drifter Array	90%	68
SOOP - XBT	80%	64
OceanGliders	80%	60
Tsunameters	80%	60
GO-SHIP	100%	50
Coastal/Ntl Moored Buoys	50%	30
OceanSITES	30%	19
AniBOS	30%	8
GLOSS	100%	5
HF	100%	5

OceanOPS metadata completion estimation

OceanOPS

WORLD METEOROLOGICAL ORGANIZATION

unesco Intergovernmental Oceanographic Commission

Спасибо

Thank you

Gracias

Merci

谢谢

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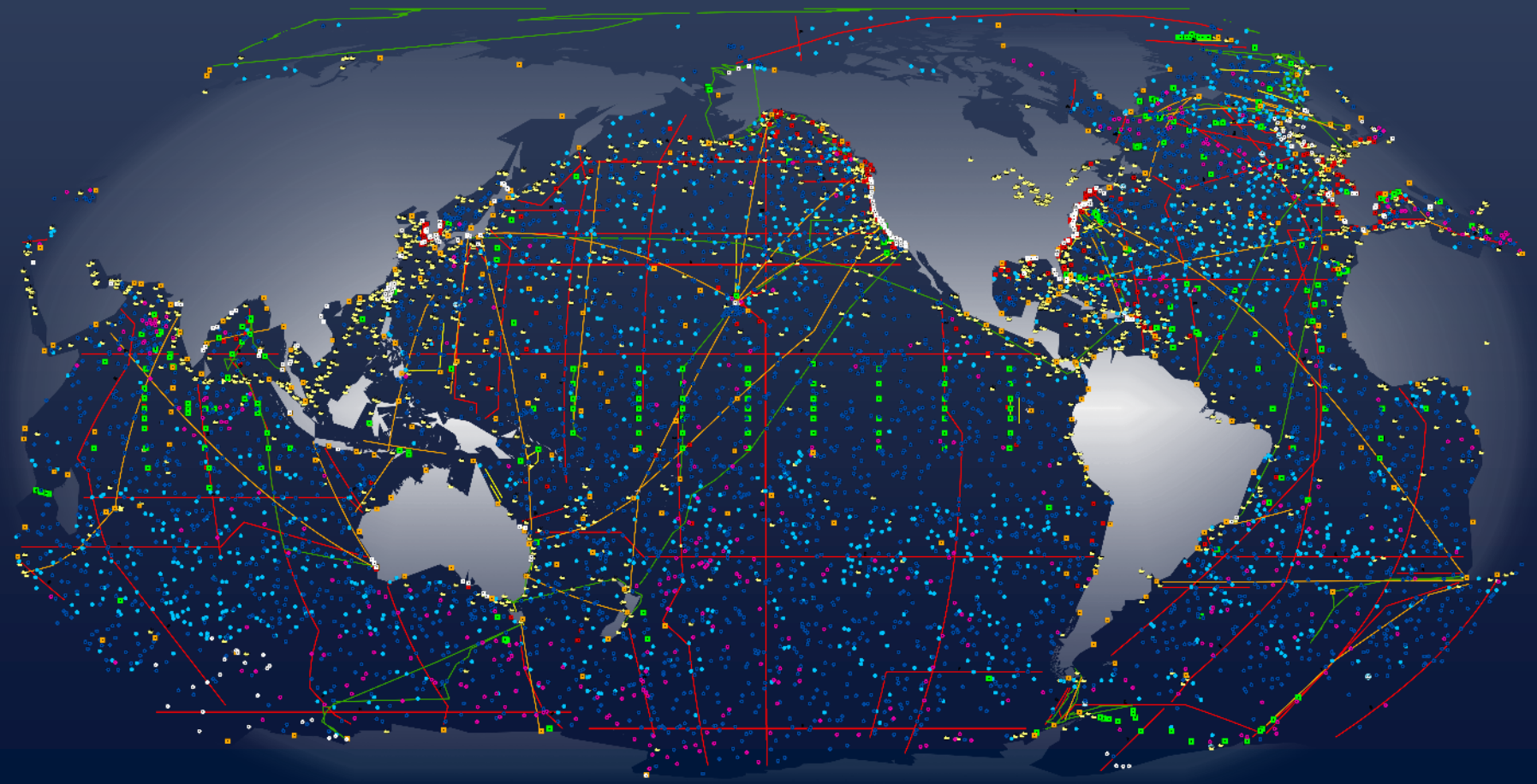
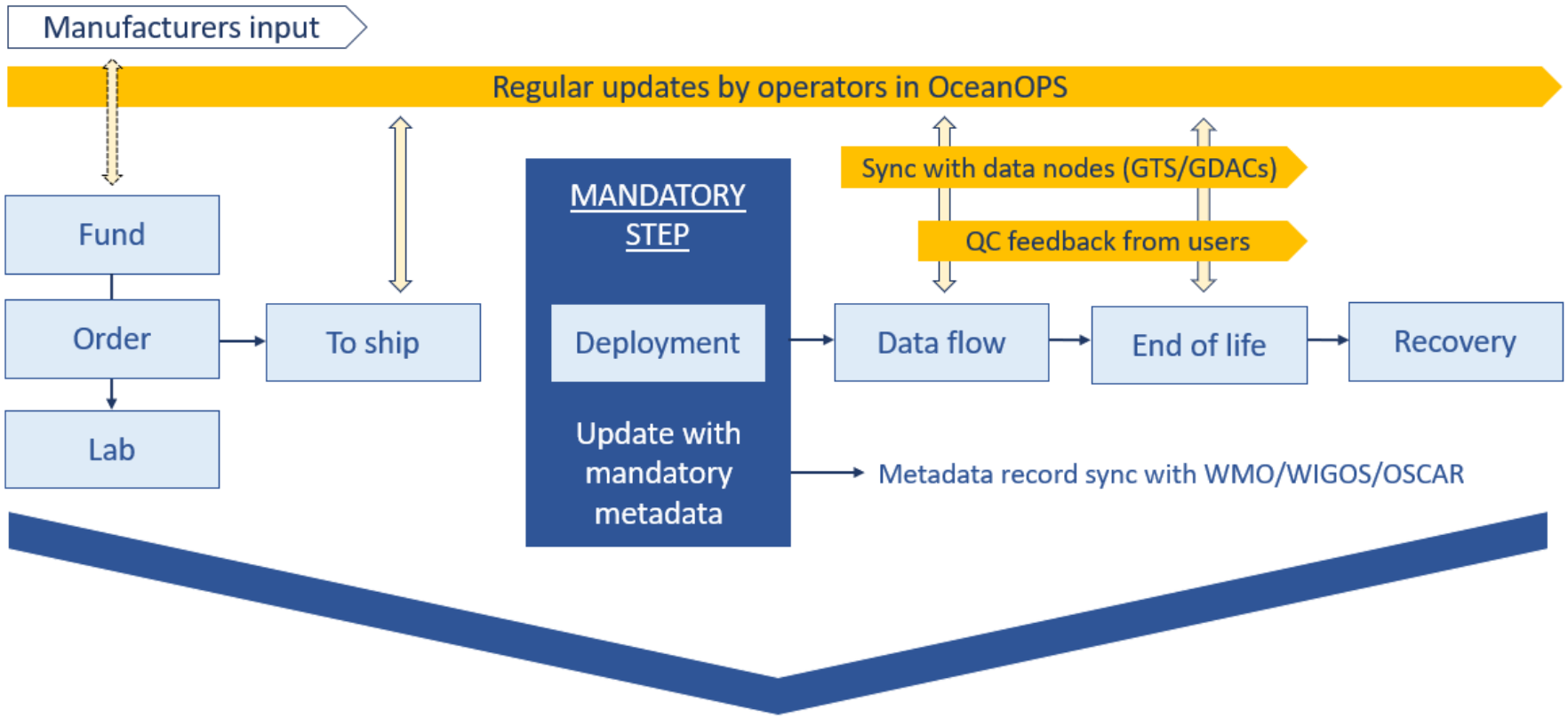
GO-SHIP · Argo · DBCP WMO-IOC · Ship Observations Team · OceanSITES Taking the pulse of the global ocean · GLOSS Global Sea Level Observing System · OceanGliders · Global HF Radar Network · ANIBOS

support@ocean-ops.org



METADATA

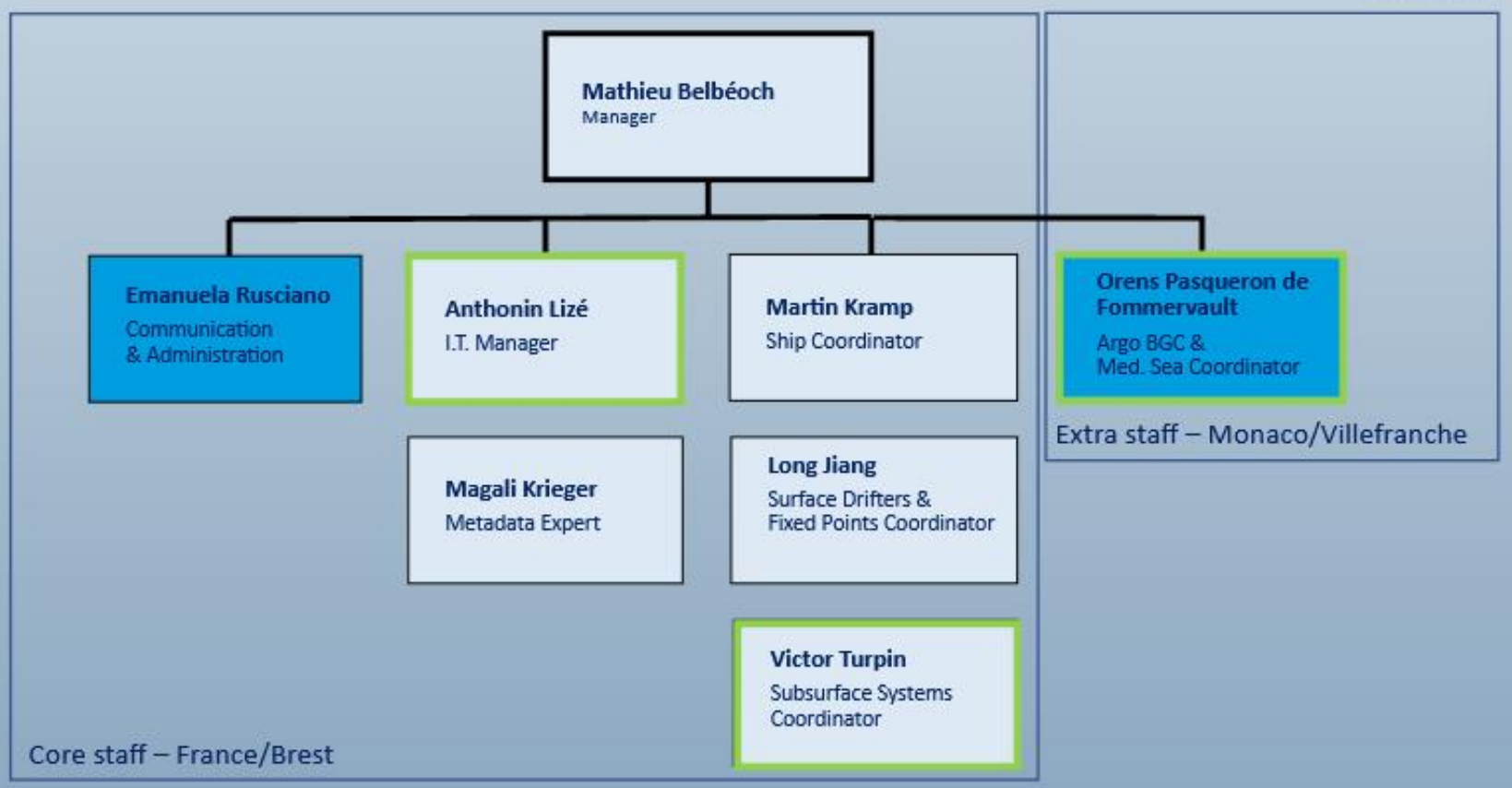
Lifecycle



OceanOPS added value:
Unique Identifiers, derived and inherited metadata, controlled vocabulary, notifications: planning, data processing, status (beached, Iced, EEZ), data/metadata QC feedback relay, retrieval procedure)
API/web: request IDs, upload/download metadata (CSV, XLM WIGOS compliant, NetCDF, JSON)

STAFF

OceanOPS 1.0 - 2023

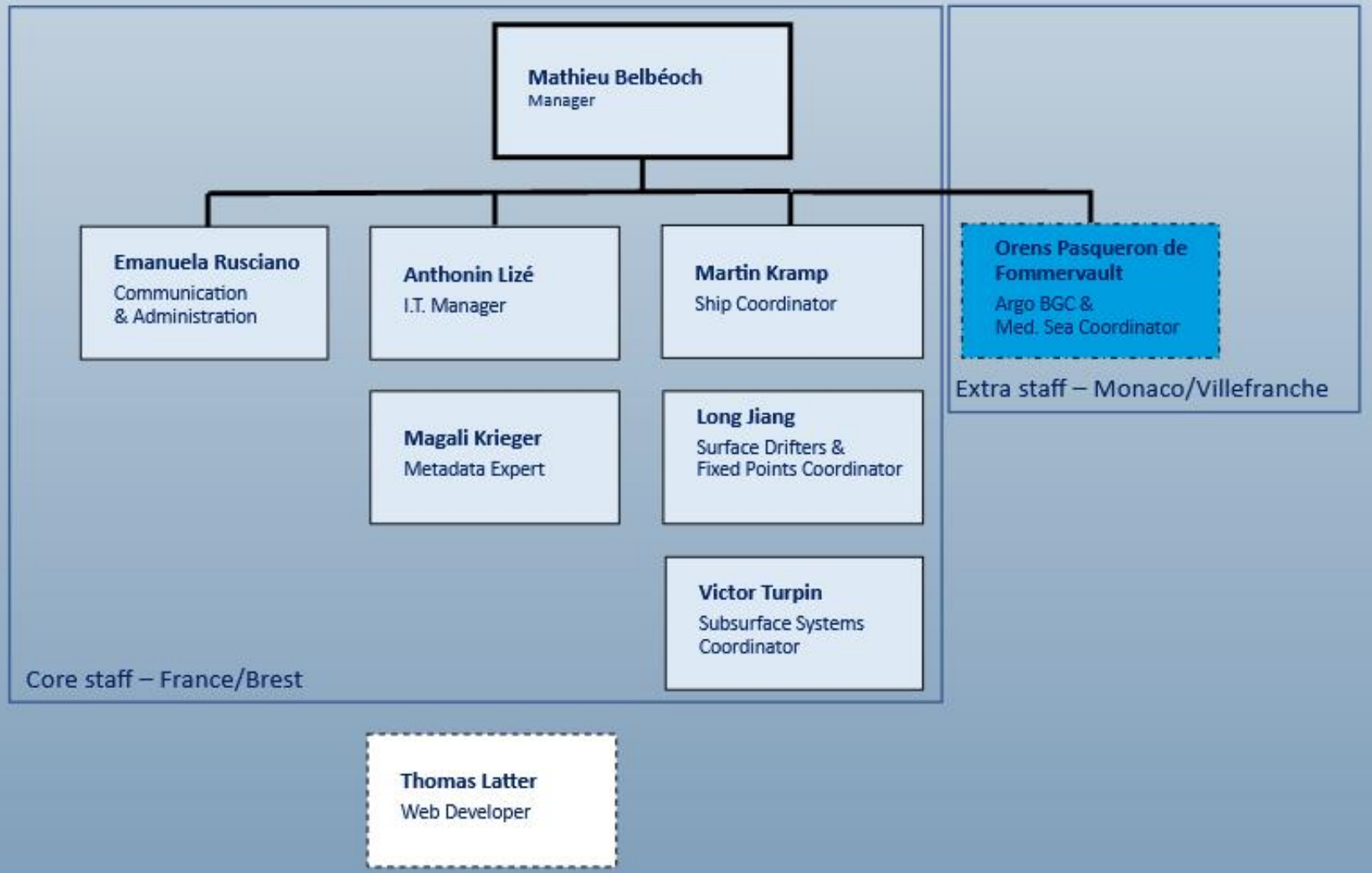


WMO RB
WMO EXB
IOC/UNESCO
OUTSOURCED

NEW OR STABILIZED STAFF
STAFF BREAK

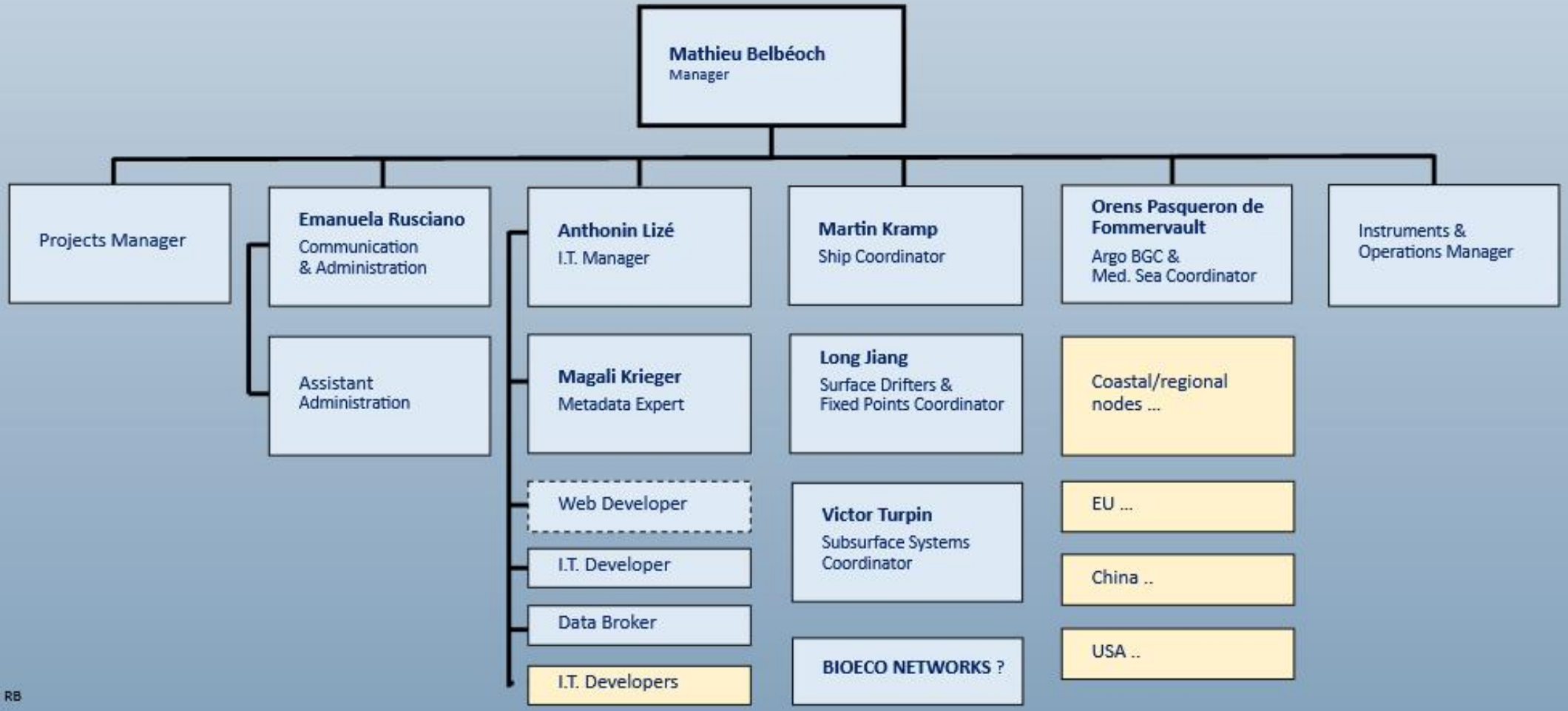
STAFF

OceanOPS 1.0 - 2024



STAFF

OceanOPS 2.0 – 2025-30



BULLETIN

A semestrial technical bulletin on networks status …
Releases June/December