OceanOPS Restructuring

OceanOPS management board
22 March 2024

Executive Summary

This document outlines a proposed staff restructuring of OceanOPS, to match income trends and to better position it for the future. It was prepared by the OceanOPS management board (IOC/UNESCO, WMO, OCG, OceanOPS) created in 2019, after the OceanOPS review, to jointly support OceanOPS development. This proposal has implications for the services that OceanOPS supports and for the organisation itself. The aim is that the restructuring, although necessary, will position OceanOPS for a digital ecosystem future and for future growth.

Financial trends in OceanOPS sustained stable income over the last five years show a downward trend in network contributions, mitigated by an increase in OceanOPS integrated contributions. The OceanOPS income is supplemented by limited-lifetime projects and pilots, and a number of one-off contributions that have filled budget gaps.

The core OceanOPS staff cost has grown in the past five years to stabilize IT support (previously outsourced) and to build integrated support capability, and to a much lesser extent with growing staff seniority and inflation. The cost of this staff exceeds the amount of stable income, and has been maintained through projects and one-off contributions, and by a squeeze of other activity (IT development, travel) to minimal levels. An IT staff manager vacancy since September 2023 has temporarily reduced budget pressure while creating other problems.

The OceanOPS management board in December 2023 decided to seek enhanced contributions from key supporters to mitigate this situation, but did not identify sufficient funding to prevent restructuring. It now recommends the reduction of network expert staff from three to two positions, in order to meet the financial challenges and best position OceanOPS for the future.

The feedback of the OCG networks and of staff is being sought, by 9 April 2024. The OceanOPS management board will then determine the new makeup of OceanOPS and initiate a staff restructuring process through WMO.

Background

Since its establishment in 2001, OceanOPS has gradually developed, firmly establishing itself as the monitoring and support center for both the Global Ocean Observing System (GOOS) and the WMO Integrated Global Observing System (WIGOS) operations and data flows.

The governance of OceanOPS (previously JCOMMOPS) was formerly linked to the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), and Recommendation 6 (JCOMM-5) gave the (now GOOS) Observations Coordination Group the role of managing the OceanOPS work plan. Financial and administrative (including human resource) governance of OceanOPS is with the organizations with staff in OceanOPS - WMO and IOC/UNESCO - working in coordination, and in consultation with the donors providing funds. The OceanOPS management board is made up of representatives of WMO, IOC/UNESCO, the OCG chair, and the OceanOPS manager, and meets regularly.

OceanOPS is providing critical services to the GOOS implementers, networks and management, regarding monitoring and reporting on networks and system status, leading metadata standardization, supporting efficient data flows and operations, and integrating new ‘emerging’ Networks.It is critical to GOOS across all of its areas of operation, metadata standards and tracking, visualization of an integrated system , supporting mature and emerging networks, and working towards an integrated digital ecosystem (national, network, private sector and cross discipline collaboration). Some of its services are critical blocks of the operational data flow to the WMO Information System (e.g., issuer of unique WMO/WIGOS identifiers) or to the gap analysis needs of the Global Basic Observing Network and Rolling Review of Requirements.

Since 2020, OceanOPS has consistently communicated clear recommendations and warnings regarding sustainability risks to GOOS Observation Coordination Group (OCG, reference documents detailing these are available in the annex).

Amidst persistent budgetary constraints, the operational capacity of the center experienced a significant reduction in staff and activities in late 2023. This included the inability to renew critical staff positions (e.g., IT manager), substantial cuts to the travel budget and web developments, and a challenging migration of the Information System from its previous host (CLS) to a new one (Ifremer).

This reduction means that it has become urgent to act on what has been foreseen for a long time, that is to resolve the short-term challenge by staff restructuring, and to position OceanOPS for the future through the development of Service Level Agreements with networks (as recommended by its Strategic Plan), and greater alignment of structure with funding.

1. Financial Trends

1.1 Income

Fig.1: Yearly income sources (USD)

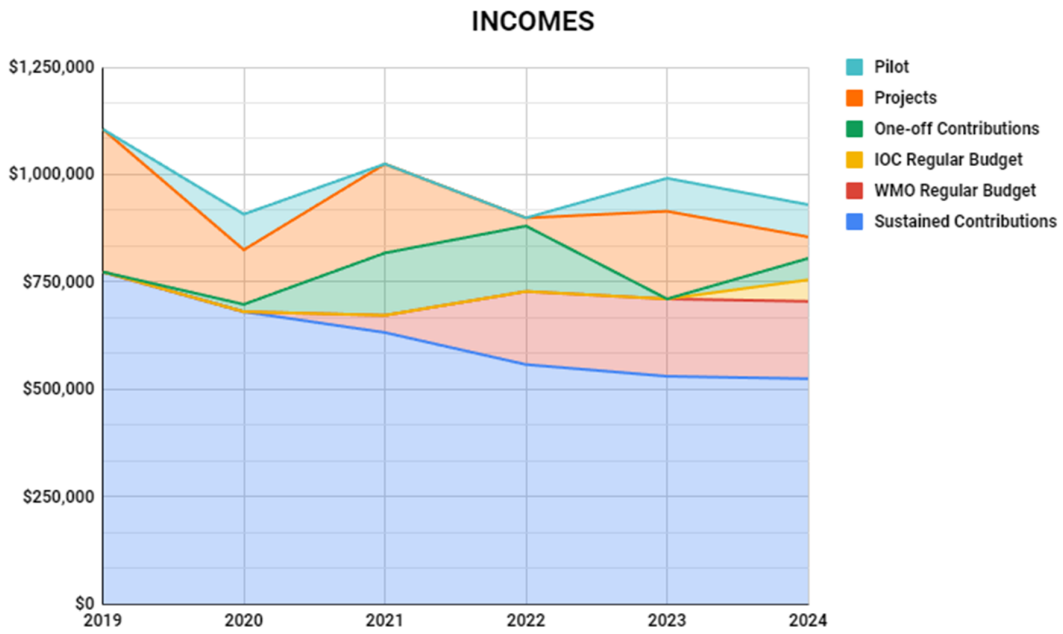

Figure 1 *represents the trend in incomes across 6 categories:*

- *Sustained contributions: national contributions made every year through voluntary contributions by countries (for specific networks or for OceanOPS as a whole)* ***[USA, FRA, EU, CAN, AUS, IND, CHN, GER, GBR, JPN, ITA, ZAF, NZL]***
- *Stable contributions: from the WMO Regular Budget (RB)* ***[WMO]***
- *Stable contributions: from the IOC/UNESCO GOOS Regular Budget* ***[IOC]*** *new in 2024.*
- *One-off contributions: for specific developments or support* ***[IOC, WMO, SOT]***
- *Funded projects (EU): finite duration* ***[Seadatanet, AtlantOS, EuroSea, EuroGO-SHIP, EuroArgoRISE, GROOM, TRUSTED, AMRIT, EMODnet]***
- *Pilot: funding provided by an entity for a specific support (regional pilot in the Med. Sea)* ***[Monaco]***

The projections for 2024 are based on the first half of the year, including clearly confirmed commitments for contributions. All figures have been converted from native currency to US Dollars ($).

Sustained contributions are those voluntarily made by Members or the parent organizations of WMO on an annual basis, with a long history of contributions. Over time, sustained national contributions have decreased, as illustrated in Figure 1. The WMO Regular Budget contribution has in large part mitigated this decline.

When considering the stable sustained contributions to OceanOPS, there is a clear decline in Networks' national contributions share (see Figure 1.1). This decline comes mainly from

the decrease of the US contribution and a few more fragile contributions from countries/ Networks that didn't re-emerge after COVID constraints or other national changes.

Projects, pilots, and one-off contributions make 20 to 30% of the total budget of OceanOPS.

Fig.1.1: yearly sustained income from Networks, and integrated (USD)

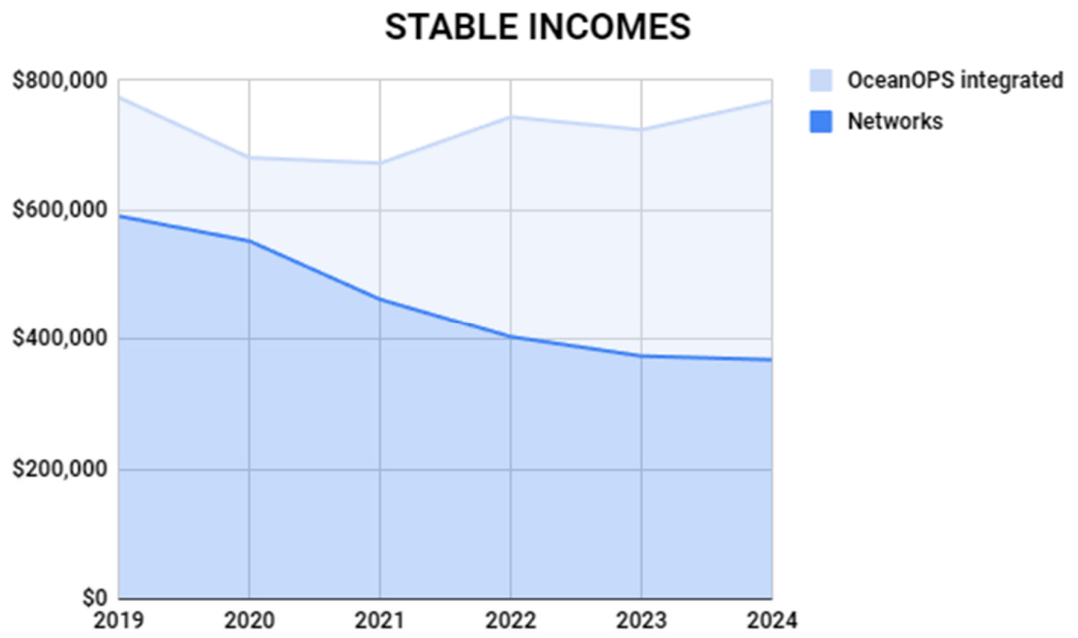

Figure 1.1 *zoom in on Figure 1 splitting stable incomes (sustain regular contributions and WMO/IOC RB) between:*

- *Contributions to OceanOPS as a whole*
- *Contributions to OceanOPS for specific Network support*

1.2 Expenses

Fig.2 yearly expenses (USD)

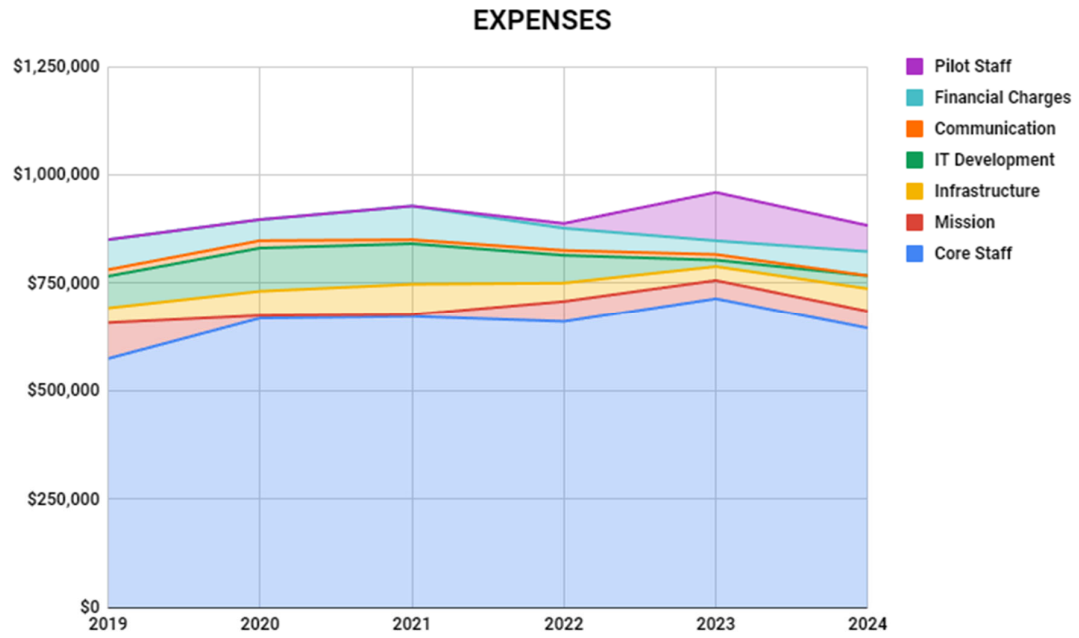

Figure 2 *represents the trends in expenses in different categories:*

- *Core staff: Manager, 3 Network Experts, Admin/Com., IT manager, IT metadata*
- *Mission: travel budget*
- *Infrastructure: cost of hosting and licenses (IT mainly) and misc. small activities*
- *IT development: outsourced web developments. Main variable of adjustment. Communication: GOOS Report Card design, printing*
- *Financial charges: overhead on expenses (3-8%) by parent organizations (WMO and UNESCO) and currency exchange rate loss/gains*
- *Pilot staff: One network expert decentralized (Med. Sea region)*

The projection for 2024 are based on the current situation (first semester 2024) including:

- *the cut of one P-staff equivalent for the year*
- *Strictly minimal travel budget (40 k$) and web developments (30k$)*
- *No communication*
- *Hosting costs (50k$) - being estimated with host*

1.2.1 Staffing expenses

Staffing costs have seen an increase primarily due to new hires, as depicted in Figure 2 and 3. But this increase is mitigated by a light staff reorganization (2021, 2022) and a hiring freeze in late 2023. These new hires, made with visibility of an additional upcoming contribution from the WMO Regular Budget, include the transfer and securing of the IT manager position from CLS to WMO, resulting in a reduction of in-kind contributions along the way (by CLS), and the recruitment of a metadata expert (general staff category). The first hire was made to resolve the “single point of failure”: OceanOPS IT expertise was relying on an outsourced CLS staff member, at a lower grade compared to the rest of the team, but with a large portfolio of duties.

The second hire (low cost and funded by projects) was done to improve overall metadata integration and quality and support the Network experts in their day-to-day work.
Also, a notable adjustment involved reducing the number of Network experts (technical coordinators, TC) from 4 to 3 Full-Time-Equivalent (FTE) in 2022. This decision was prompted by some Networks failing to adequately follow up on initial investments made by OceanOPS to establish a new TC position. It was deemed a prudent choice, with the expectation that an expansion of the IT team and integrated staff would offset any resulting gaps.

OceanOPS went ahead in providing support to new Networks, complementing initial commitments through its small available budget, and anticipating that the work would trigger further support. In retrospect, this model comes with high uncertainties on foreseen contributions and finally did not work out.

In that context, the budget for the pilot staff (regional expert), just sufficient for a 3/5 FTE, has not improved over 2023. This pilot is not sustaining a 1 FTE level and will be reverted to a sustainable FTE level (0.6 FTE maximum) in order to not generate any extra budget pressure.

Since 2022, network experts and integrated staff were essentially constant in time, but expenses have slightly increased through inflation (see Figure 3). The IT team was constant since 2020 and suddenly reduced late 2023 due to the budget situation.

Fig.3 yearly staff expenses

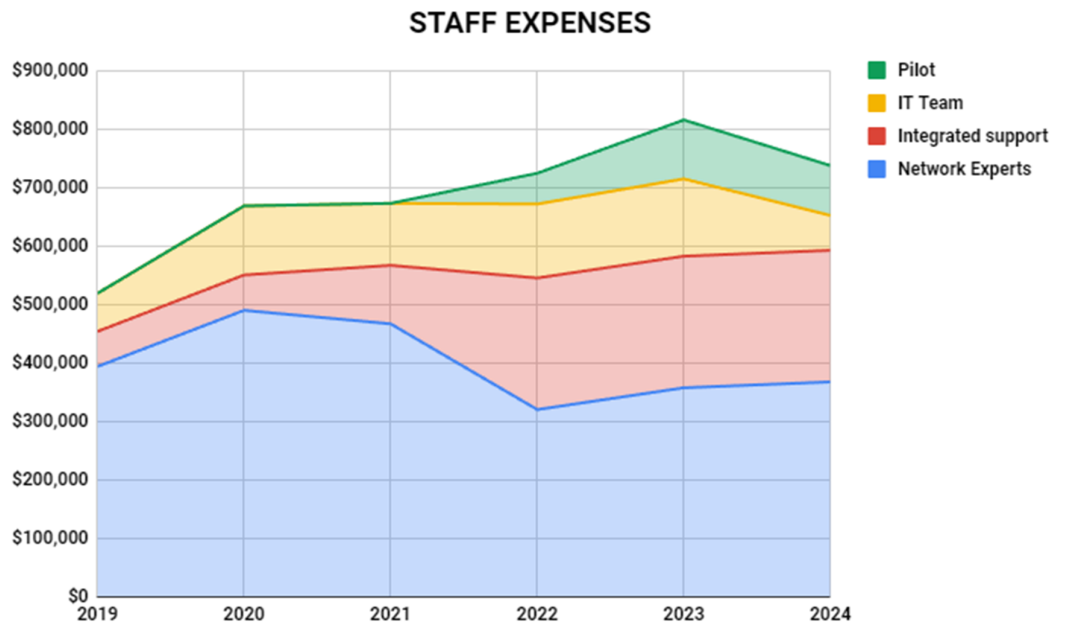

Figure 3 *represents the staff expenses in different categories:*

- *Network Experts: Technical Coordinators*
- *IT Team: IT manager, metadata expert*
- *Integrated support: Manager, Admin/Com staff*
- *Pilot: regional extra staff*

Projection for 2024 are based on the current situation (as Fig. 2)

1.2.2 Other expenses

Travel budget was reduced by a factor of two in the post pandemic period and reduced to a strict minimum.

The infrastructure costs (IT hosting, and small activities such as meeting organization) have been relatively stable over the years. 2024 IT hosting costs are being estimated by the host. We have estimated them optimistically at the level of 50k$ in the projection but they could be higher, or potentially provided in-kind.

Web developments have been dramatically reduced, participating in the overall decrease of our IT workforce (see Figure 2). Communications expenses are stable and represent mainly the production of the GOOS Report Card.

Natural increases of salaries with seniority (while retaining the same grade), fluctuations on exchange rates, and financial charges (overhead and currency gains/loss, ranging from 3-8%), represent slight fluctuations.

1.3 Overview

The core OceanOPS staff cost has grown in the past five years to stabilize IT support (previously outsourced) and to build integrated support capability, and to a much lesser extent with growing staff seniority and inflation. The cost of this staff exceeds the amount of stable income, and has been maintained through the contribution of projects and one-off contributions, and by a squeeze of other activity (IT development, travel) to minimal levels. An IT staff manager vacancy since September 2023 has temporarily reduced budget pressure while creating other problems.

Careful consideration also needs to be given to establishing and maintaining contingency/ working capital fund. This is particularly important given the potential implications outside of the control of management, such as salary levels and post-adjustment factors (which are decided by the International Civil Service Commission and may be adjusted for inflation) and exchange rate fluctuations (noting that OceanOPS is impacted by CHF, USD and EUR currencies). A target level for such a contingency/working capital balance could be set at approximately two months of operating expenses to allow for changes.

“Project funding must be generally viewed as important to further innovation projects, but not as a base on which to support core services” (recommendation of the Strategic Plan, see annex OCG-11).

2. Impact of budgetary constraints

The conjunction of the need to complete the IT migration between two hosts end 2023, with the lack of IT workforce to do so (IT manager position not filled due to financial constraints, web development down to 0.17 FTE in 2023), slowed down the migration process and led to the downtime of all OceanOPS web services for approximately five weeks. It is anticipated that an additional five weeks will be required to restore full functionality and synchronize operations with the real-time GOOS.

During this period of downtime, it has become evident how critical some services provided by OceanOPS are:

1. **Disruption of OceanOPS Metadata Flow**: This interruption prevents the delivery of unique identifiers and metadata to operators, crucial for data distribution via the GTS and global web-based data nodes. The final delivery of metadata to WIGOS/OSCAR system is broken, leading to a lack of gap analysis means for GBON. This breakdown in metadata management threatens the coherence of the GOOS data chain, resulting in a gradual decline in data delivery to users.
2. **Absence of supporting tools for planning and optimizing operations at sea:** critical functionalities such as access to cruise plans, density maps, and other essential information are unavailable, impeding the ability to effectively respond to events such as beaching incidents, entrance in EEZs (ensuring compliance with IOC resolutions XX-6 and EC XLI-4). Without access to these tools, operators lack the necessary guidance to coordinate instrument deployments, potentially resulting in redundant efforts and inefficient use of resources.
3. **Decreased Monitoring and Reporting Capacity**:
   Essential functionalities such as up-to-date maps, performance indicators, and statistics related to various implementation, instrumentation, operations, and data flows are unavailable. This dearth of information leaves the GOOS community without vital insights, impairing their ability to make informed decisions and effectively manage ocean observing operations.

While the sustainability of IT services is in question, the continuous need for developments cannot be addressed and many improvements are piled on waiting lists, waiting for the IT workforce to be rebuilt.

The travel budget does not allow network experts to meet with their community regularly and capture their requirements (e.g., mission to meet national programmes, manufacturers).

The GOOS Report Card is a flagship deliverable. It should be rather improved (in its web version) rather than postponed or cancelled in 2024, as is required given the situation.

3. Strategic considerations: positioning OceanOPS for the future

Today OceanOPS tracks about 10 000 observing platforms in real-time, with their 120 000 daily observations. This is going to grow with new networks, and the development of the additional GOOS components.

This crisis can also be an opportunity to position OceanOPS for a digital and brighter future. Moving forward, OceanOPS should prioritize the adoption of interoperable machine-to-machine processes (over labor-intensive manual tasks), as noted at OCG-14. This shift necessitates a corresponding shift in attention (at least in the short term) towards metadata development, cloud service capabilities, and interoperability with GOOS observing networks and other metadata systems (e.g., WIGOS, WIS). The OceanOPS backend architecture, APIs, and front-end evolution/tools still need some level of consistent support to sustain the overall system, develop new capabilities, and ensure users have necessary support to generate reports and exploit OceanOPS information to better manage the global ocean observing system.

An attractive model for consideration is a hybrid development/support system whereby a small capable team could enlist contributions of in-kind support from national Institutions.

Finally, we should not forget the essence of OceanOPS: the integrated team and services model. This entails fostering growth in integrated staff and the IT workforce while optimizing Network-dedicated staff. An integrated team optimizes the delivery to networks and enable the delivery to the global, while doing scale economies. It can deliver more effectively than isolated network experts.

4. Potential solutions analysis

There is a clear need for restructuring for viability of OceanOPS and to position it for the future.

As all activities were already cut to a maximum, the only solution is to restructure the staff.

Figure 5: OceanOPS current organigramme

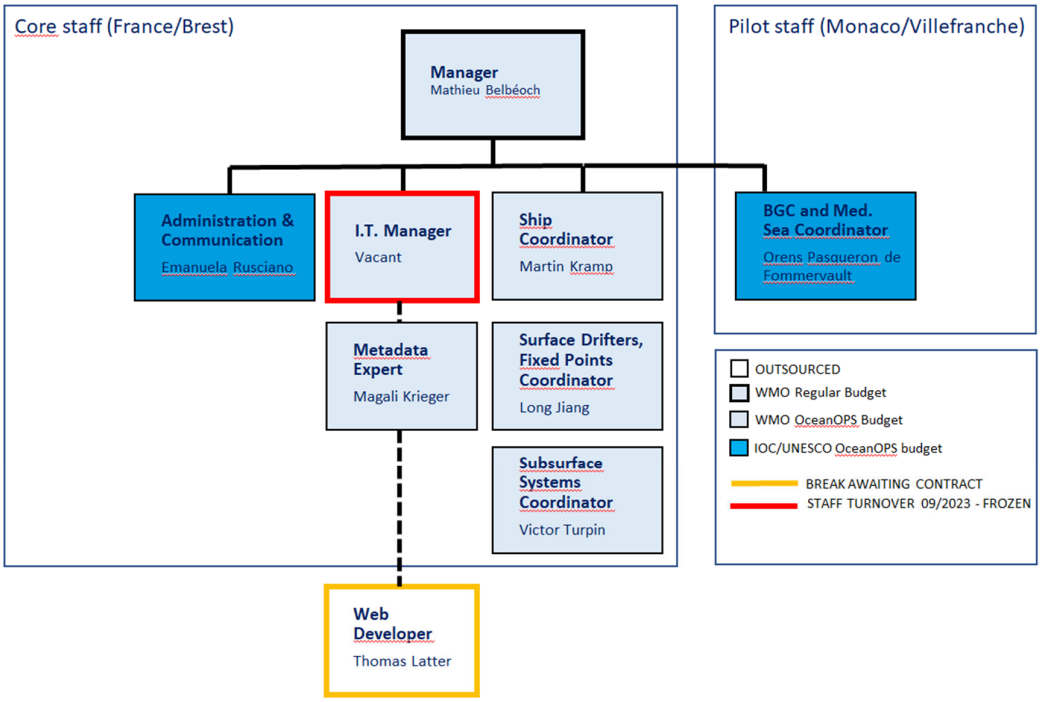

Figure 5 *represents the 7 core staff members, plus the pilot staff, plus the web developer. Note the web developer position is outsourced, and remote (Toulouse), but has been part of the team for a number of years*

The cost of the core staff, including financial charges, is 820 k$ (thousands of US Dollars), while the OceanOPS stable income is averaging around 700 k$. The staffing base is too large compared to income, requiring a staff restructuring that eliminates one professional (P) staff position or two general service staff positions (G), yielding roughly equivalent savings.

The OceanOPS management board has evaluated 2 scenarios (summary of risk analysis in

Table 1 below), keeping in mind the future positioning of OceanOPS, and their consequences on the delivery of support services to Networks, GOOS and WIGOS:

- Scenario 1: Hiring freeze: eliminate 1 P staff (IT manager) - already here
- Scenario 2: “Network expert reduction: 3 to 2” eliminate 1 P staff (Network expert)

Scenario 1 “Hiring Freeze”

In this scenario, the IT workforce is reduced to the metadata expert and a minimalist outsourced web developer. OceanOPS has been operating under this scenario since the resignation of the OceanOPS IT Manager in September 2023. The consequences took some time to develop but have become a crisis with the current and ongoing outage of OceanOPS web services, in/out data/metadata flows, and the long-planned transition to Ifremer IT architecture leading to a catastrophic loss in ability to monitor, manage, and advise on ocean observing asset operations globally. GOOS and WIGOS have lost an important monitoring capability.

This scenario is not considered as a realistic option and is going in the opposite direction of the future positioning envisioned for OceanOPS.

Scenario 2 “Network expert reduction: 3 to 2”

This scenario is motivated by the downward trend in network voluntary contributions.

The 3 network experts provide essential support to 6 established networks (Argo, DBCP, SOT, GO-SHIP, OceanGliders, OceanSITES) and their sub-components, and also to some emerging networks. With an “integrated resource” (management, IT) they can ensure a good level of support to networks. Ideally, it would not be reasonable to task them with support to further networks.

This scenario suggests filling the vacant IT manager position and releasing pressure on budget by reducing the 3 network experts to 2. The workload, and specific duties for networks, would have to be redistributed within the remaining team. In practice, this would mean that the two remaining network experts and the manager would handle the reporting and representation needs for networks. This situation has been experienced in the past through periods of staff turnover, over rather long periods.

A first consequence will be a decrease in services to Networks, in line with financial contributions. This would have the merit of encouraging OceanOPS progress towards integration, focus on core delivery but also of triggering in-depth discussions with all Networks about Service Level Agreements with OceanOPS.

This is not an ideal scenario if we consider the growing number of observing components joining GOOS, but this scenario would enable us to re-establish and sustain OceanOPS critical web-based services.

If the network contribution trend changes and turns positive as more networks contribute, then network dedicated staff can increase again accordingly.

Other considerations

The management board considered other potential staff restructuring configurations that would yield the same level of cost savings, but found that no other configuration produced a viable OceanOPS. The administrative/communications and metadata expert posts are in the general staff category, with costs approximately half those in the professional staff category,

so an equivalent staff cost savings would require the elimination of both. This would have a high impact on both IT support, as well as shifting tasks related to higher-cost staff, reducing efficiency and delivery of OceanOPS to GOOS, WIGOS, and the observing networks.

	IMPACT
Scenario 1	Degredation of web services, end of critical blocks to operational data flows (unique identifiers, OSCAR metadata e.g.), stop in development of in-depth gap analysis tools, charts, maps strongly degraded technical reporting capacity disintegration of metadata and OceanOPS, GOOS/WIGOS monitoring capacity
Scenario 2	Support for networks decreased. Non-essential activities dropped. Responsibilities redistributed within the team and manager taking over more network support in the transition period with a stronger IT team producing necessary material in the background.

5. OceanOPS management board Recommendation

5.1 Management board discussion

The OceanOPS management board discussed the situation in December 2023 and the manager communicated to most of the Network executive teams on the funding challenge and the high probability of a forced staff restructuring if the financial situation did not improve. The management board proposed to do a roundtable of potential donors (in particular WMO, IOC, and NOAA) to see if the funding situation could be resolved in the short run and if about 200 k$ could be identified rapidly.

At a January 2024 OceanOPS management board meeting IOC announced that GOOS will contribute 50 k$ per year for the next two years, and WMO announced that WIGOS could help to resolve short-term budget shortfalls up to 50 kCHF, as it did in previous years to make up for cash flow shortfalls. NOAA announced that the funding level will remain the same but that they will be working internally to see what possibilities could be available to increase.

The Management Board decided to: i) develop a restructuring plan, as funding commitments were too low to overcome the challenges and ii) recommend that the least damaging scenario to move forward is Scenario 2.

OCG networks are being informed of this recommendation through this report, and your feedback and input is requested, to the OCG chair (david.legler@noaa.gov) and the OCG Executive Committee (ocg-exec@goosocean.org), by 9 April 2024.

5.2 Staff Restructuring Process

Since the OceanOPS staff restructuring option proposed by the management board only involves the WMO staff in OceanOPS, the process will be managed in accordance with

WMO Staff Regulations and Rules. Concerned staff will be consulted and their input on the restructuring plan will be sought. In addition, financial and strategic considerations will be taken into account when determining the new makeup of OceanOPS when the final determination is made in April by the OceanOPS management board, and given the approval of the WMO Secretary-General (SG).

After approval by the WMO SG, job descriptions for the posts in the new structure will be established, and, if existing staff members are affected, they will be asked to apply. Should terminations become necessary, affected staff will receive entitlements (repatriation costs, termination indemnities, and other entitlements according to the WMO Regulations and Rules) sourced from WMO common costs. This process is foreseen to run in April and May 2024.

This staff restructuring does not preclude the re-opening or creation of new posts at OceanOPS should the financial situation improve, and the management board agrees.

6. Outlook

In 2024, OceanOPS anticipates a transitional period marked by a reduction in delivery output. This strategic adjustment aligns with the recommendations outlined in the 2019 review and 2020 Strategic Plan. It serves as a crucial step towards addressing structural weaknesses and establishing a stable foundation for the center's future operations, while concurrently developing a framework to enhance delivery efficiency for an expanding GOOS.

OceanOPS intends to keep building this integrated team, including entraining in-kind remotely located technical/observing, and IT expertise, beyond the Brest office. This strategy will be further reinforced through the establishment of Service Level Agreements (SLAs) with each network, a matter to be discussed at the next OCG session in May 2024. It will also resolve a long-standing issue aligning gradually service levels with resources allocated by networks on a fair, transparent and flexible way.

The development of pilots to set up new functions in support of new networks should be carefully planned in SLAs.

A fund-raising strategy is in development, on different fronts: IOC, WMO, GOOS/WIGOS, host country (France), European Union and OCG networks. This funding strategy will consider exploring other models of contributions (e.g., remote secondment).

New networks are being endorsed by OCG and have plans to invest into OceanOPS for specific support (e.g., Fishing Vessels, SOCONET). The growth of GOOS in support of biogeochemistry, biology, and ecosystems is as well a growth opportunity for OceanOPS.

The OCG session in May 2024 will examine the Service Level Agreements options based on contribution levels. It is anticipated that these SLAs will be signed between Networks and OceanOPS by the end of year 2024 for delivery starting in 2025.

The management board encourages collaboration with OceanOPS to jointly define Service Level Agreements tailored to network specific requirements and resources. Participation and input from the community are invaluable as OceanOPS strives to optimize its services and support the global ocean observing community.

ANNEX

References - Financial Reports to OCG sessions

These reports include the main decisions, key points and recommendations for OceanOPS in the last 5 years, regarding its financial situation.

OceanOPS review (2018)
OCG 11 (2020)
OCG 12 (2021)
OCG 13 (2022)
OCG 14 (2023)