UNITED NATIONS OCEAN CONFERENCE

SUPPORTING AND MODERNIZING SMALL-SCALE FISHERIES

SIDE EVENT UNOC 2025, NICE

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Modernizing Small-Scale Fisheries
A Collective Call to Action

Small-scale fisheries are vital. They sustain millions of livelihoods across the globe, ensure food security in coastal communities, and preserve traditional knowledge and cultural heritage.

As marine ecosystems face increasing pressure from climate change, resource competition and evolving economic demands, supporting the modernization of these fisheries has become a priority for many governments and international partners. This process involves improving safety at sea, strengthening monitoring and reporting capacities, and fostering greater inclusion in decision-making frameworks. Modernization, however, is not a one-size-fits-all approach. It requires context-sensitive solutions, co-developed with the communities concerned and adapted to their operational realities.

Progress depends on reliable data, appropriate technologies, and shared commitments between institutions and those working at sea.

This side event reflects a growing momentum among stakeholders engaged in sustainable ocean governance. The discussions presented here — from policy perspectives to field case studies — highlight both challenges and opportunities on the path toward more resilient and better-managed small-scale fisheries.

90%
of the world's fishers
work in small-scale fisheries, making up the vast majority of employment in the capture sector globally.

44%
of the total economic value of global capture fisheries
is generated by small-scale fisheries, amounting to approximately USD 77.2 billion annually.

90 to 95%
of small-scale fisheries' catches
are used for local human consumption, playing a key role in food security at national and community levels.

500
million people
depend directly or indirectly on small-scale fisheries for their livelihoods, particularly in coastal communities of developing countries.

40%
of global fish catches
come from small-scale fisheries — and when considering fish destined for direct human consumption, this rises to 66%.

Agenda

FRENCH INSTITUTIONAL KEYNOTE
Cohesion Public Policy for Small-Scale Fisheries / France's National and European Commitments – French Directorate General for Maritime Affairs, Fisheries and Aquaculture (DGAMPA)

SSF GLOBAL OUTLOOK
Challenges and Priorities for Small-Scale Fisheries Worldwide – French Sea Foundation

FIELD EXPERIENCE IN PAPUA NEW GUINEA
Enhancing Safety and Monitoring with Adapted Tools – Papua New Guinea National Fisheries Authority

CO-MANAGEMENT IN ACTION
NGO-Led Initiatives for More Inclusive and Sustainable Fisheries – WILDAID and WWF Mediterranean Marine Initiative

SCALING UP WITH INNOVATION
Satellite Technologies for Connected and Transparent Fisheries – CLS & Kinéis

FROM DATA TO ACTION
A Mediterranean Producers' Organization Leading the Transition – SATHOAN

A SHARED PATH FORWARD
Mobilizing for the Future of Artisanal Fisheries – Food & Agriculture Organization (FAO)

Use Cases

From Isolation to Innovation: a New Era for Papua New Guinea's Coastal Fisheries

Papua New Guinea, a country of extraordinary marine biodiversity and rich ancestral seafaring traditions, is quietly pioneering a new chapter in sustainable ocean care. With thousands of small-scale fisheries operating across remote waters in modest banana boats, the nation is demonstrating that innovation does not require the abandonment of tradition, rather, it strengthens and future-proofs it.

Spanning 15 maritime provinces, Papua New Guinea's coastal fisheries rely on a vast network of traditional boats. These boats are not only the economic lifeline for remote coastal communities, but also their primary link to essential goods and services.

Yet the risks faced by these fishers are rising. Increasingly unpredictable weather, aging boats, and the absence of communication systems have led to numerous tragedies at sea. The need for a comprehensive and culturally sensitive response has never been more urgent.

Under the leadership of Managing Director Justin Ilakini, the National Fisheries Authority (NFA) has launched a modernization program under its Monitoring, Control and Surveillance (MCS) strategy, a cornerstone of the Papua New Guinea National Fisheries Strategic Plan 2021-2030.

At the heart of this transformation is NEMO, a real-time satellite-based tracking system, developed in partnership with Collect Localisation Satellites (CLS), a global leader in sustainable fisheries management. Thousands of artisanal vessels are being equipped with solar-powered beacons that provide live location data to authorities, enabling both emergency response and regulatory compliance monitoring.

While the initiative has faced challenges — including logistical complexity, cultural hesitation, and limited infrastructure — it has gained traction through persistent community engagement and targeted education campaigns. The program's success reflects a deliberate effort to build trust while empowering local fishers to take ownership of the tools designed to protect them.

More than a surveillance solution, NEMO represents a paradigm shift: integrating traditional practices with modern technology to ensure sustainable fisheries management, maritime safety, and national food security.

This innovation supports Papua New Guinea's commitment to Sustainable Development Goal 14 (Life Below Water) and reinforces regional efforts under the Pacific Islands Forum Fisheries Agency (FFA) and the Parties to the Nauru Agreement (PNA).

Ilakini's team operates by four guiding principles: Priorities. Planning. Patience. Persistence. Their work exemplifies how a Pacific Island nation can blend indigenous knowledge with cutting-edge solutions — not by importing models, but by adapting innovation to local realities.

As the world gathers in Nice to chart the future of our shared ocean, Papua New Guinea's story is a compelling example of how localized, inclusive, and resilient strategies can drive sustainable transformation in the blue economy.

In these remote waters, modernization is not a disruption — it is an evolution. And for many of Papua New Guinea's coastal communities, it is the difference between surviving and thriving at sea.

Lines in the Water, Data on the Map:
The SATHOAN Way

In the intricate and fragile landscape of Mediterranean fishing, some organizations stand at the crossroads of economic necessity, environmental urgency, and social resilience. The SATHOAN — short for Sardine, Tuna, Anchovy — is one such force. Representing a fleet of artisanal fishers, it combines market organization, regulatory oversight, and scientific cooperation to chart a new path toward sustainable fishing.

Based in southern France, the SATHOAN brings together over 110 mostly coastal vessels, operated by small-scale fishers. Long reliant on generational knowledge and intuition, artisanal fleets are now navigating a new reality shaped by compliance, environmental limits, and the digitalization of food systems. But faced with tighter regulations, biodiversity loss, and the demands of international markets, the model needed to evolve.

Led by Bertrand Wendling, General Director of the SATHOAN, the cooperative has taken on a hybrid role: part market organizer, part regulator, part innovation driver. It handles quota management, delivers fishing authorizations, represents fishers' voices, and ensures fair access to the Common Market Organization (OCM).

Their efforts have been recognized through a dual certification — MSC for bluefin tuna and a national ecolabel for responsible practices.

Science and partnership are central to this evolution. SATHOAN collaborates with leading institutions — CNRS, IFREMER, WWF — and maintains a close technical alliance with CLS, known for its satellite-based monitoring systems.

The flagship initiative? Equipping over 70 vessels with the NEMO tracking system, powered by solar-enabled beacons. This digital shift has brought the fleet online — literally. Now, the cooperative can geolocate fishing activity, verify logbooks, and track more than 10,000 bycatch events, a goldmine for environmental monitoring and better management of sensitive species like rays and sharks.

Co-Management

Shared Stewardship: Co-Management as a Driver for Resilient Oceans

Co-management is emerging as one of the most effective approaches to ensuring sustainable small-scale fisheries. It shifts the paradigm from top-down management to shared governance, where fishers, scientists, authorities, industries and civil society jointly develop and implement rules. This model promotes trust, mutual accountability, and better compliance through inclusive decision-making.

For Dr. Luca Eufemia, Small-Scale Fisheries Manager at WWF Mediterranean Marine Initiative, the strength of co-management lies in its ability to bring people together around a shared objective:

> "We see real change when local communities are part of the process, not just the outcome. Co-management works because it builds ownership — and with ownership comes responsibility."

WWF supports co-management initiatives across the Mediterranean through its SSF program, helping local actors formalize cooperation, improve data collection, and strengthen community governance. One of the most impactful examples is Catalonia, where co-management was institutionalized through legal decrees.

This reform empowered local committees — where all stakeholders hold equal voting rights — to co-design adaptive fisheries policies.

These co-management stuctures are enhanced by digital tools and connected platforms that facilitate realtime data collection, transparency, and collaboration among all stakeholders.

Today, more than 10% of Catalonia's landings come from co-managed fisheries. Compliance has improved, ecological recovery is underway, and consensus-built rules blend traditional knowledge with scientific input.

The result is not only better resource management, but a stronger connection between coastal communities and marine governance.

WILDAID: Seeing The Whole Picture - Why Monitoring All Fishing Activities Matters

Half a world away, another co-management model is taking root — this time in Ecudaor & in the Galápagos Islands, one of the most iconic marine biodiversity hotspots on Earth. WILDAID works with national authorities and coastal communities to design, equip, and implement robust ocean governance systems.

> "We focus on practical solutions — from surveillance strategies to fleet monitoring and training," explains Manuel Bravo, Director of WILDAID Ecuador. "But these are only effective when paired with community trust."

The Galápagos face a range of mounting threats, including unreported fishing, particularly by hundreds of vessels operating in surrounding waters. The response from WILDAID and its partners includes not only monitoring industrial vessels via VMS but also addressing a key gap: the integration of artisanal fishers into marin protection frameworks.

> "Without a complete picture of fishing activity — industrial, semi-industrial and small-scale — policies are blind,"
> **Manuel Bravo says.**

> "The next logical step is equipping artisanal fleets with adapted tools: geolocation, data reporting, impact assessment. This allows authorities to adjust public policy based on real-world behavior."

WILDAID has supported the development of Marine Protection Plans that combine physical assets (such as patrol boats) with digital infrastructure (data platforms, connectivity, beacon reporting).

This approach also hinges on capacity-building, education and investment — both for artisanal fishers and operators of large mother ships — so that compliance is a shared responsibility, not an imposed burden.

Why Modernization Matters

Both WWF and WILDAID agree: modernizing traditional fisheries is a prerequisite for effective co-management.

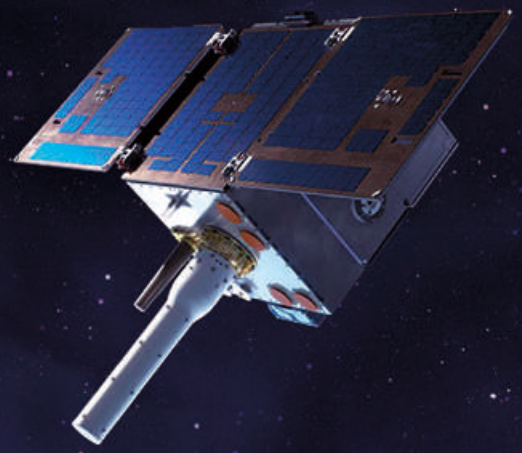
Without data, there is no shared baseline. Without tools, there is no autonomy. And without collaboration, there is no legitimacy.

Modernization is not about replacing traditional knowledge or pushing artisanal fleets into an industrial mold. It is about enabling these communities — often the first stewards of marine resources — to actively participate in sustainable management.

That includes:

- **Understanding and reducing bycatch** through gear modification and digital observation;
- **Mapping fishing effort to resolve spatial conflicts** (e.g. offshore wind, MPAs);
- **Improving safety at sea** with real-time vessel tracking;
- **Supporting fair compensation** where access is restricted due to conservation goals;
- **Strengthening local governance** through traceable, transparent practices.
- **Supporting fishers** in adding value to their product

Scaling up with Space-Based Innovation



For over 40 years, the space community has combined space innovation and local engagement to support the transition of fisheries towards a more sustainable, connected, protected and empowered sector.

Now this is time for small-scale fisheries to reap the benefits.

Kinéis: A European Satellite Constellation for Maritime IoT

Kinéis is a French company pioneering space-based IoT through the launch of the first European constellation of 25 nanosatellites. Built on the legacy of the Argos system and developed with support from CNES and CLS, Kinéis delivers low-cost, low-power data transmission to the most remote areas of the planet — including the high seas. By offering affordable, reliable connectivity, Kinéis enables the deployment of tracking and reporting systems, for instance on small-scale fishing vessels. This technological leap supports safer navigation, improved data collection, and more inclusive fisheries management.

A New Era of Connectivity

For decades, small-scale fisheries have operated outside of digital and regulatory networks, simply because the technologies available were not adapted to their scale or economic reality. Kinéis is changing that.

As a European operator of a 25-satellite constellation dedicated to the IoT, Kinéis offers global, affordable, low-power connectivity to even the most remote maritime zones.

This innovation marks a turning point: it is now possible to equip small vessels with compact devices that communicate regularly, securely, and at a manageable cost.

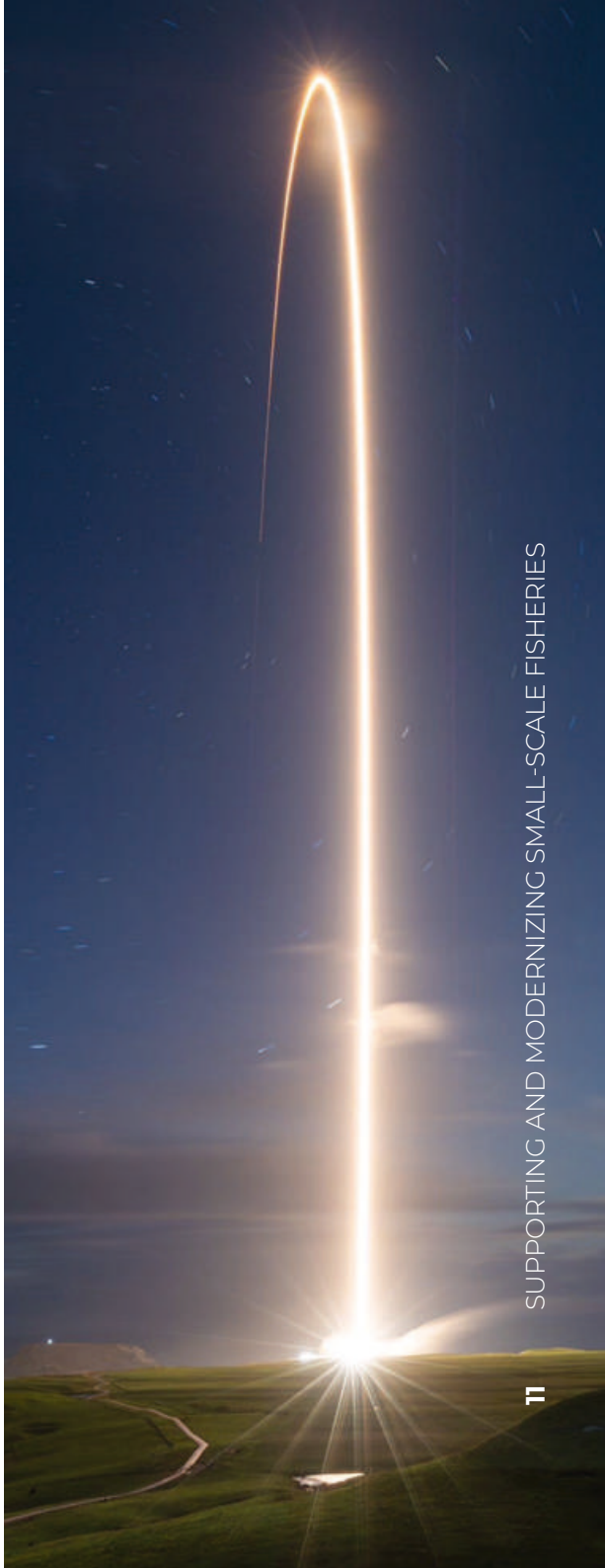
Enabling Visibility and Inclusion

Through its collaboration with CLS and the NEMO solution, Kinéis enables small-scale fishers to report positions, access safety services, and contribute data to national monitoring systems. This is particularly valuable in countries seeking to document fishing efforts, ensure compliance, and improve marine spatial planning — all while integrating coastal communities more closely into resource management.The constellation's frequent revisit times and global coverage ensure reliability without technical complexity on the user's end.

Built for Scale, Powered by Legacy

Kinéis was born from a collaboration between CNES and CLS, building on the proven heritage of the Argos system. What makes Kinéis unique is its ability to serve a wide range of stakeholders — from governments to local producer organizations — with a unified, scalable solution.For small-scale fisheries, it means a realistic path to modernization: simple devices, accessible pricing, and seamless integration into broader sustainability strategies.

> "With this constellation, we are bringing a simple and affordable connectivity solution to vessels that were previously out of reach. For small-scale fisheries, it's a game changer — enabling safety, transparency and integration into national monitoring systems, without compromising on cost or practicality."
> **Eric Nicolas, the Innovation Director at Kinéis.**



CLS: A Pioneer in Space Technology for Fisheries

How can cutting-edge space technology serve small-scale fisheries? At CLS, the answer lies in making innovation accessible, actionable, and aligned with local needs. With decades of experience in sustainable management of fisheries and deep-rooted partnerships across the globe, CLS stands at the forefront of the shift toward modern, connected, empowered and more sustainable fisheries.

Founded over four decades ago, CLS is a mission-driven company and a subsidiary of the French Space Agency (CNES). It is a global pioneer in harnessing satellite data to study, protect the Planet and sustainably manage its resources. Operating in over 90 countries, CLS supports nearly 60 coastal states through its fisheries monitoring centers, and manages a fleet of 20,000 fishing vessels, including 6,000 small-scale boats, all equipped with tracking and reporting devices (NEMO).

At the crossroads of innovation, regulatory expertise, and local adaptation, CLS is a key player in the digital transformation of traditional fisheries. Working closely with producers' organizations, NGOs and public authorities, CLS delivers scalable, affordable, and locally adaptable tools—such as the Nemo beacon, designed specifically for artisanal fishing vessels.

> "Our mission: to foster more responsible, secure, transparent, and efficient fisheries."
> **Hervé Galabert,**
> **Director of Sustainable Fisheries Division, CLS**

Thanks to its Fishing Monitoring Centers (FMCs) and big data processing capabilities, CLS offers a powerful end-to-end ecosystem for tracking, monitoring, and analyzing fishing activity in near real-time. These systems are already in place and built to scale, ensuring that as more traditional fleets adopt digital tools, the infrastructure is ready to support them.

Beyond technology, CLS champions a model of co-development and field-based cooperation, building trust with local communities and tailoring its services to the realities of each region. With operations in 31 facilities worldwide, CLS benefits from a vast territorial presence that brings it closer to the people behind the data.

Monitoring small-scale fisheries means scaling up. How has CLS prepared for this shift?

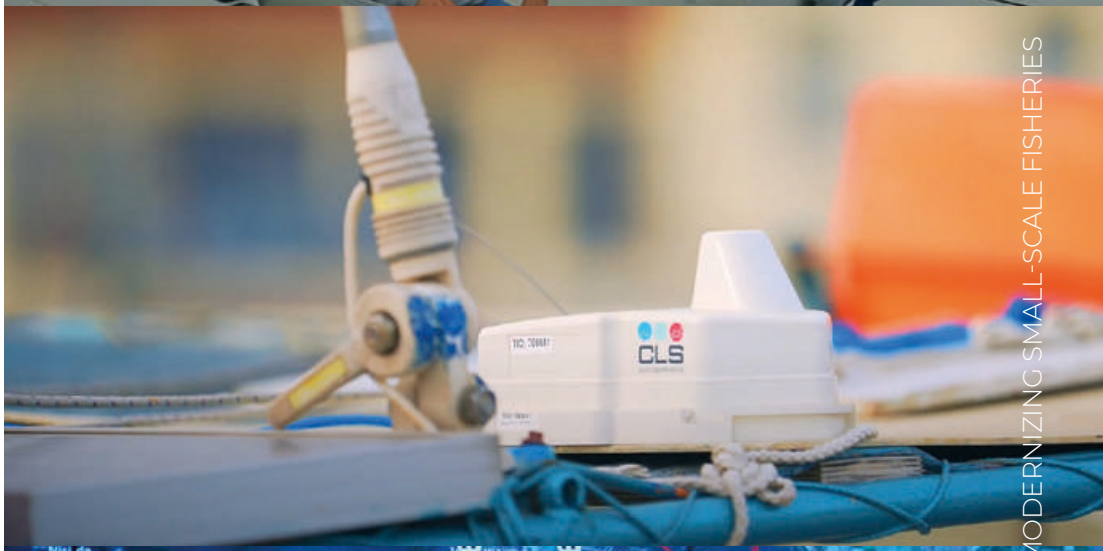
This shift in scale is something we anticipated. For years, we have been preparing both in terms of technology, with equipment adapted to small-scale fisheries—like the NEMO beacon—and in terms of data infrastructure.

For small-scale fishers, we knew the solution had to be simple, robust, and adapted to their daily reality. That's why we designed the NEMO beacon to be light, portable, and easy to use—even on the smallest boats. It's solar-powered, so they don't have to worry about charging it, and there's a built-in safety button in case of emergency. They can even connect it to their phone via Bluetooth to report catches or check status. With near real-time satellite coverage, it allows them to stay visible and safe, wherever they are at sea. It's not just a piece of tech—it's a tool that fits into their life and supports their work.

Scaling up also means building strong cooperation with local producer organizations and maintaining flexibility to address local constraints.

We are ready. CLS operates in more than 90 countries and is recognized as a global leader in sustainable fisheries management.

Hervé Galabert,
Director of Sustainable Fisheries Division, CLS



The People Behind the Conversation

Dr. Vera Agostini is Deputy Director of the Fisheries and Aquaculture Division at FAO, where she brings decades of experience in ecosystem science, climate adaptation, and inclusive fisheries governance. With a career spanning NGOs, government, and academia, she has led global efforts to integrate small-scale fisheries into sustainable ocean policies. Deeply committed to equity and resilience, her work empowers coastal communities and contributes to food security and biodiversity conservation.

ERIC BANEL
DGAMPA

Éric Banel has served as Director General for Maritime Affairs, Fisheries and Aquaculture in France since March 2022. A specialist in fisheries policy, he leads the French Directorate General for Maritime Affairs, Fisheries and Aquaculture and has represented the French maritime and fisheries sector internationally as former Director of Armateurs de France. His career, spanning both public administration and the private sector, reflects a longstanding commitment to sustainable and modernized fisheries.

MANUEL BRAVO
WILDAID

Director of WILDAID Ecuador, Biologist with more than 30 years of experience in conservation and management of protected areas and mangroves. He has a Master's Degree in Management of Bioaquatic Resources and the Environment and studies in conflict facilitation and mediation. He was Undersecretary of Natural Heritage and Vice Minister of the Ministry of the Environment. Since 2000 he has been working on strengthening the control and surveillance systems of Ecuador's Marine Protected Areas and coastal zones.

Dr. LUCA EUFEMIA
WWF Mediterranean Marine Initiative

Dr. Luca Eufemia leads, as SSF Manager, WWF Mediterranean's regional projects for small-scale fisheries. In this role, he coordinates the adaptation and implementation of the Regional Plan of Action for Small-Scale Fisheries (RPOA-SSF) across over 30 sites in ten countries, working with fishing communities to strengthen co-management, data collection, and gender-inclusivity. Prior to WWF, he was a post-doctoral researcher and lecturer at Humboldt-Universität zu Berlin, bringing a strong scientific background to his work on sustainable agriculture.

ALEXANDRE IASCHINE
Fondation de la Mer

Alexandre Iaschine, Executive Director of the Fondation de la Mer, has led the foundation since 2015. Committed to ocean protection, he brings together scientists, NGOs, and private stakeholders to accelerate the protection and sustainable management of the ocean, and represents the foundation at major international forums dedicated to the ocean.

JUSTIN ILAKINI
National Fishing Authority

Managing Director National Fisheries Authority, Papua New Guinea.
Mr. Justin Ilakini has over 25 years of experience in the regional fisheries sector, promoting private sector growth through effective policy and management.
His expertise covers economic integration, investment, policy, and advisory services across Papua New Guinea and the Pacific. He has led major initiatives, including founding the PNA office in Majuro and reforming PNG's fisheries sector. Notable achievements include re-drafting the US treaty, launching the Pacific IEPA, and spearheading the East New Britain Initiative. As Managing Director of the National Fisheries Authority, he focuses on efficiency, capacity building, and sustainable management for long-term impact.

BERTRAND WENDLING
SATHOAN

Managing Director of SATHOAN (the leading producers' organization in the French Mediterranean), Bertrand Wendling is a fisheries engineer by training. Since 2005, he has led the organization while consistently operating at the interface between fisheries and conservation, promoting a sustainable resource management approach. With a background spanning research (IFREMER), maritime administrations, and support for fishing fleets, he is a strong advocate for artisanal fisheries in the Mediterranean. Under his leadership, SATHOAN obtained dual environmental certifications for bluefin tuna, the MSC label and the French "PêcheDurable" ecolabel, & launched pioneering digital traceability programs.

ERIC NICOLAS
KINEIS

Eric Nicolas is the Innovation Director at Kinéis, a French satellite operator providing global IoT connectivity through its constellation of nanosatellites, enabling real-time tracking and data collection anywhere on Earth. With 25+ years of experience in IoT, he graduated from Télécom SudParis in ICT engineering and previously shaped offerings at Sigfox and Orange, bringing deep technical and market expertise to Kinéis's mission of connecting the planet.

HERVE GALABERT
CLS

An agricultural engineer by training, Hervé Galabert has over 15 years of international experience in trade and commercial leadership. For the past 4 years, he has led CLS's sustainable fisheries division, travelling around the world to engage coastal communities with technologies that protect marine resources. At CLS, a global company providing satellite-based solutions to understand, protect, and sustainably manage the planet, as Director of sustainable management of fisheries, he promotes responsible fishing practices and provides hands-on support to small-scale fishers around the world.

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