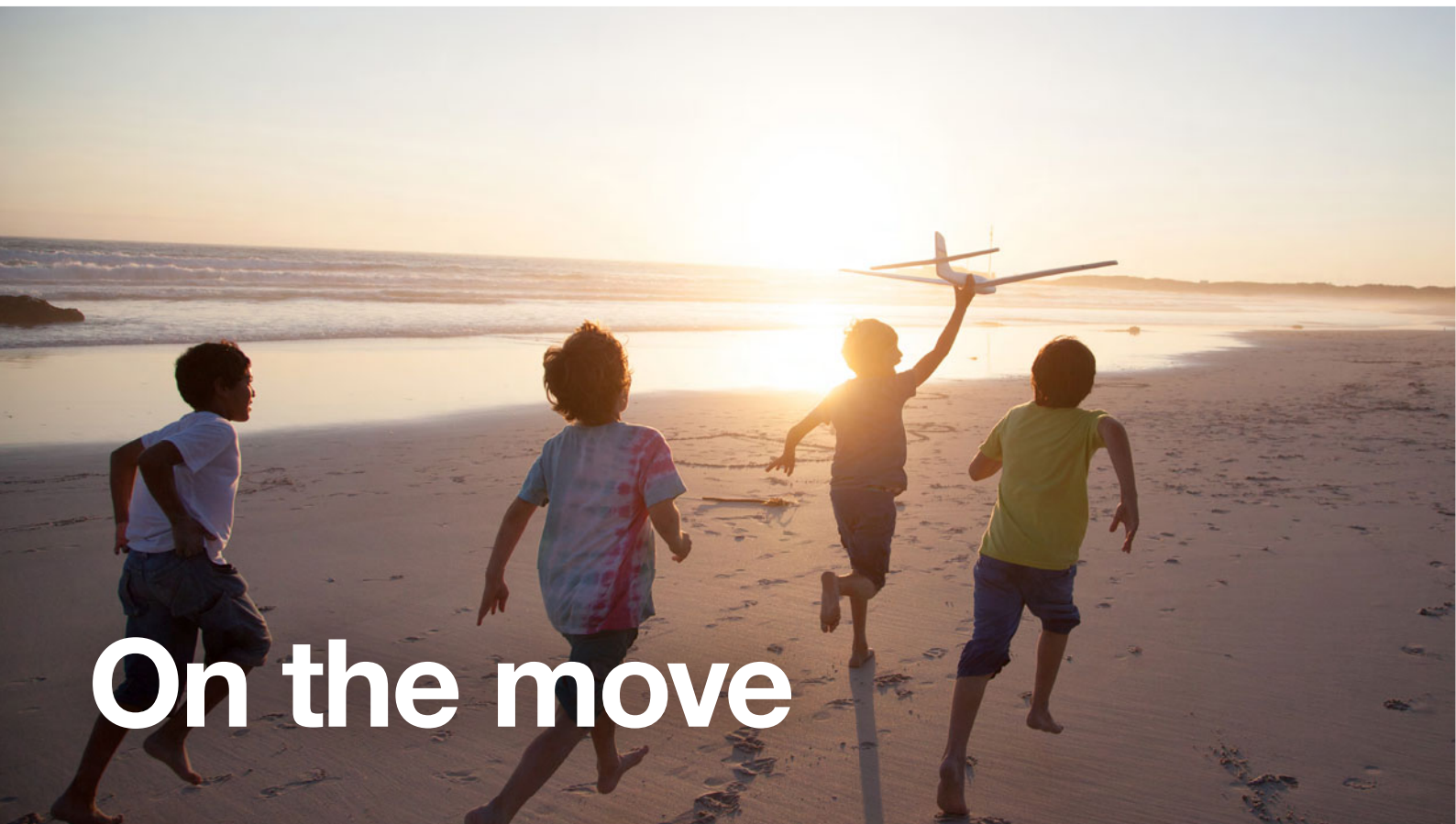


**International
Carriers**



On the move

June, 2023

Magazine #11

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Focus

Moving on Up



Emmanuel Rochas
CEO
Orange International Carriers

Watch the video 

Whether related to mobile services or data transportation, Orange International Carriers' latest innovations are a testimony of our commitment to keep moving on up with you.

A fascinating aspect of telecommunications is that the very concept of mobility is always moving. As a **global connectivity wholesaler**, Orange International Carriers is constantly challenged to innovate and imagine new mobility use cases and solutions to help operators and their customers move on up. Recently, we've been delivering these innovations on two fronts: mobile services and data transportation.

Delivering on the promises of 5G

If we ask what the latest big innovation in mobility is, 5G will likely be mentioned. But there's 5G and 5G. We are fully committed to bringing the latest 5G enhancements to all operators worldwide, MNOs or MVNOs to address their digital

transformation. We actively take part in several proofs of concept, related to Open RAN, 5G NSA or 5G SA, bringing enhanced mobile broadband, ultra reliable low-latency communications or massive machine type communications. One asset we're especially proud of is **5G Core Network as a Service**, offering a cloud-ready core network to which users can directly connect their devices - the possibilities are limitless. On the mobile services front, we continue to invest in our one-stop-shop for roaming. Our **traveler roaming sponsor** and **Open Roaming Hub solutions** are now complemented by roaming-to-IoT connectivity. Taking advantage of permanent roaming capability and local breakout for 5G, any connected device use case can be imagined, virtually anywhere in the world - with many already embraced by some

Today



of our customers, in the field of automotive or customer electronics.

But true mobility is not only about having access to mind-blowing volumes of data from the palm of your hand. Mobility is also about being able to set up your office anywhere, connect databases with corporate facilities, and securely move content over ultra-fast, reliable and secure connections. For the “remote” side of mobility, secure and quick data transportation is the key.

Scalable data transportation through our expanding global networks

Our Content Delivery Boost **CDN solution** offers high capacity, fast loading times, optimal video streaming quality, scalability and airtight security thanks to end-to-end control over our networks. We’re bringing even more flexibility to move content right to the user’s homes through the development of **our global network of 200 CDN PoPs**.

Indeed, Content Delivery Boost is just one example of how mobility is made possible by transporting ever larger amounts of data, always faster and more securely. Which is why we keep enhancing our global networks, like **the Dunant and AMITIE transatlantic cables**. These two complementary routes are designed with scalability and upgrade potential in mind to support new usages, tailor-made voice offers and data service growth.

We keep unrolling such connectivity highways, but we also do more: we build interchanges. Our Marseille hub is the perfect example of our capacity to set up true digital gateways for global exchanges, as it connects over 20 subsea and terrestrial cables linking Asia, the Middle East and Africa to Europe, and on to America with the Dunant and AMITIE connection. In Marseille, all data centers and landing stations are themselves connected to each other by our ultra-low latency fiber city ring, just a stone’s throw away from

the home harbor of the Orange Marine fleet of cable ships.

Transformation is motion

Finally, it’s no stretch of the mind to relate mobility with customer journey. Among our constant efforts to make life and usages easier, we now offer **EVPL online** to enable real-time purchase and delivery. We also offer a ticketing API and API integration for completely transparent, end-to-end digitalized service.

At the end of the day, it must be because we have a clear understanding of these challenges and possibilities offered by mobility that such respected industry analysts as GlobalData’s now rank **Orange International Carriers as a “leader” in terms of vision and strategy**.

As mobility keeps reinventing our lives and redefining itself, our customers can be sure of one thing: today and tomorrow, we’ll keep moving on up – at your side.



Reinventing

5G Standalone to energize the mobile ecosystem

With 5G Standalone (5G SA), the mobile ecosystem is evolving fast with structural changes in terms of technology and service offer. It shows a lot of interrelated parts, such as 5G players like telcos, cloud providers, equipment manufacturers, software vendors, and systems integrators. According to the GSMA, existing actors are transitioning to 5G Standalone and new players are rushing directly into it. Relying on its own expertise, its retail operations and a complete **5G SA value offer**, Orange International Carriers is at the forefront of the market deployment to undertake these challenges.

A disruptive technology to improve performance

The mobile landscape is evolving very quickly, notably because 5G SA opens a wide spectrum of new applications to facilitate and enrich our offer delivery. For Frédéric Freschel, VP Voice & Mobility solutions at Orange International Carriers “most of operators have deployed **5G NSA** which is an efficient way to have a quick rollout of 5G solution but is still relying on 4G core network and infrastructure”. However, he adds that “5G NSA provides limited virtualization and poor performance improvement. So, the best way is to move toward 5G SA which relies on 5G core network”.

Opening new fields of possibilities

The new mobile ecosystem turns around a set of 3 use cases. The first one is the **enhanced mobile broadband (eMBB)**. This is the most popular use. It already delivers high speed connectivity in urban areas. The second one turns around **ultra-reliable low latency communications (uRLLC)**. Evoking this refers us immediately to autonomous cars or virtual reality. At the same time the industry will also host **massive machine type communications (mMTC)** allowing **IoT** devices for smart cities or factories. But over the horizon, 5G SA open up the field of possibilities in areas that are still undreamed of today.



An ambitious 5G SA value proposition



Frédéric Freschel
VP Voice & Mobility Solutions
Orange International Carriers

Watch the video 

At Orange International Carriers, we offer a **set of four solutions** to help our customers with their transformation: 5G SA Roaming Signaling, **Open Roaming Hub** (to extend roaming coverage and manage security certificates and partnerships) and IPX Regional Breakout (designed to locally manage the termination of international data roaming and ensure low latency). Of particular note is the fourth solution which delivers significant value to our customers: Core Network as a Service (CNaaS). It provides a cloud-based and secure solution to accelerate the rapid transition to 5G SA and realize the full potential of 5G. For Hicham Maimoune, 5G Solutions Product Manager at Orange International Carriers, “we have roaming contracts with many partners. Some of them are already transforming their mobile ecosystem, and we need to simplify and digitalize their customer journey.”

A cloud-ready core network supported by a wide range of solutions

Thanks to 5G SA technology, Orange International Carriers can deliver tailored solutions and is

characterized by the concept of “slicing” with an outstanding adaptability to operators’ needs. In short, its implementation consists of sharing the same 5G Standalone physical network and splitting it into several virtual networks for specific uses. For Cédric Gonin, VP Global Business Support at Orange International Carriers, “the value proposition of our CNaaS is at the heart of operators’ 5G promise. We can offer our partners a cloud-ready and secure core network that allows them to unlock slicing capabilities and very low latency.”

Security as a powerful driver

At a time when communication and data protection are major concerns, 5G SA also addresses many of the threats faced by the soon-to-be sunset 4G/3G/2G networks. For example, controls include new mutual authentication capabilities, enhanced subscriber identity protection, and additional security mechanisms. 5G offers the mobile industry an unprecedented opportunity to improve network and service security. The 5G Standalone adventure is just beginning and will take us on unexpected paths.



The Caribbean is the new Eldorado

In order to bring its customers worldwide an ever more global portfolio of **connectivity solutions**, Orange International Carriers keeps investing to improve its networks under the seas, on the land and in space. In this context, regional multi-connectivity hubs offer an effective solution, representing interchanges where telecommunication superhighways meet to distribute traffic across all network types.

Alongside with **the Marseille hub**, Orange therefore keeps investing in other hubs in Dakar, Abidjan, Martinique and Singapore to bring operators and content providers worldwide a unique connectivity offering.

The Caribbean region stand for a particularly promising area of

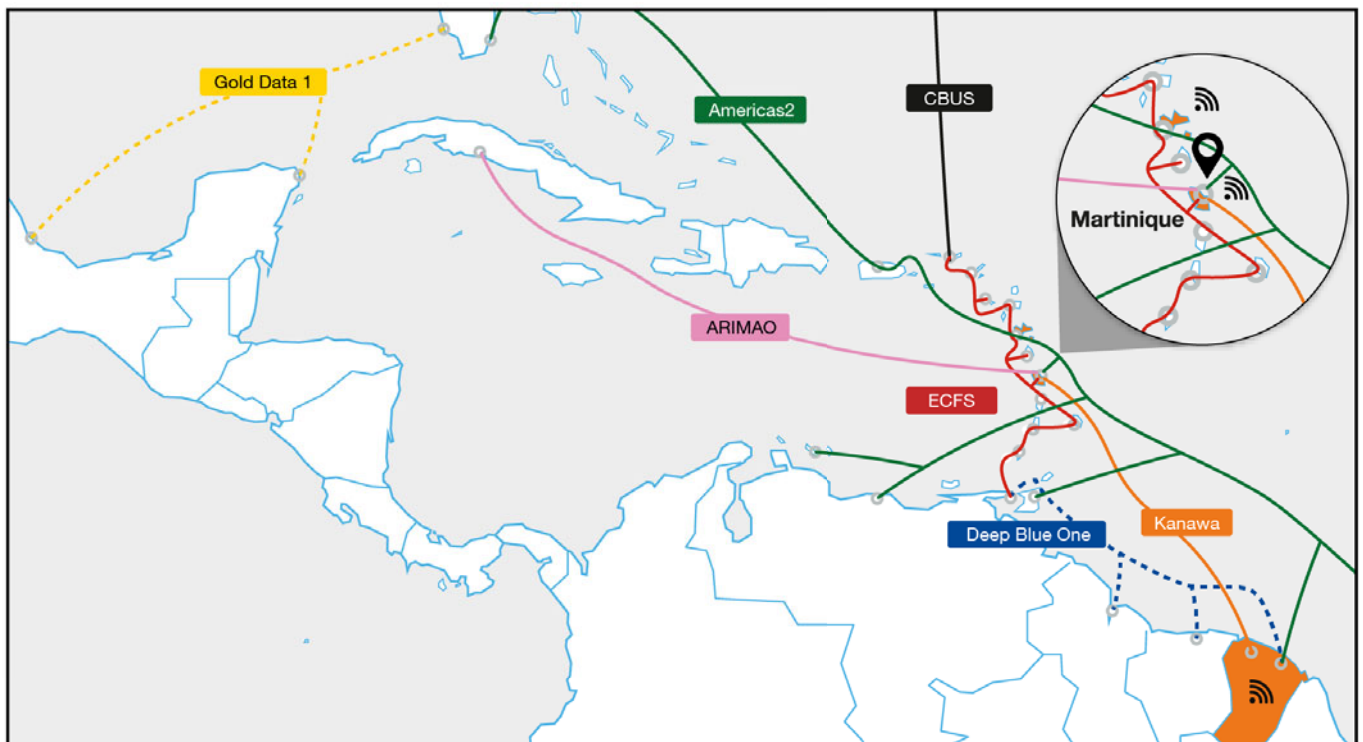
development as it is located at a strategic crossroad between the Transatlantic cable highways to Europe and Africa, Northeast American and Latin American subsea routes. But the Caribbean region also sits fully within the Equatorial plane, making it ideally located for communication with GEO and MEO satellites. Finally, the Caribbean is home to several French territories such as the islands of Martinique and Guadeloupe, making it possible to host European trusted or sovereign cloud services.

Orange is exceptionally well placed to bring to its telecommunication wholesale customers all the benefits of this strategic location.

Actually, the Group has been investing for many years now in the region, with several submarine cable systems connecting the Caribbean

with the world. Beyond the goal of providing carrier-grade connectivity, these cables make it possible to develop new usages which are rapidly growing in popularity, such as **Content Distribution, providing access to TV channels, video-on-demand, and other "bandwidth-hungry" digital services to end-users**. In this region, Orange recently announced the laying of the Gold Data 1 and Arimao submarine cables, connecting the US with Mexico, and Cuba with Martinique respectively. Orange is also involved in several ambitious satellite connectivity projects in the Caribbean which will undergo significant developments in the very near future.

Stay tuned!



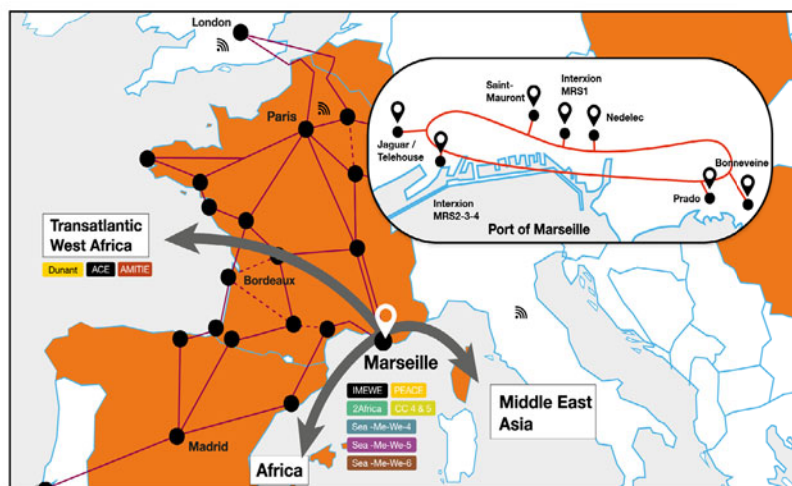
The Marseille hub: a strong digital gateway

Our global network just got even better. But this time it's not just about laying one more cable or adding a few PoPs. It's about bringing to life a strategic vision to cluster all the comprehensiveness of our wholesale telecom offering into a single digital gateway for global exchanges.

With turn-key solutions for all global telecom players, our Marseille hub connects no less than 12 subsea cables and 8 major terrestrial links such as the Frankfurt London Amsterdam Paris "FLAP", and on to America with the **Dunant** and **AMITIE** connection. Africa, through PEACE, 2Africa and Medusa, or Asia with SEA-ME-WE 4, 5 and soon SEA-ME-WE 6 are therefore all connected with each other through our Marseille hub and its ultra high-speed fiber city ring, linking all datacenters and landing stations together. As a concentrate of our global

expertise, the Marseille hub provides dark fiber connectivity to neutral datacenters, neutral datacenter housing, landing station services as well as submarine cable deployment and maintenance with the nearby home harbor of the Orange Marine fleet of cable ships, representing 15% of the world's

total. All our latest services are made available in this hub, including **IP transit** and **EVPL solutions**. Alongside with the Marseille hub, we keep investing in our other hubs of Dakar, Abidjan, Singapore and Martinique to bring our customers the best of our unique connectivity offering.



Angola Cables extends its global connectivity with Djoliba



Reliable, efficient, and redundant digital connectivity is essential for any business in today's world. This is why Angola Cables is now partnering with Orange to offer its customers direct access to the French-speaking markets of West Africa through the **Djoliba** network. This agreement brings together two major players on the continent, helping them to extend their respective global connectivity by sharing domestic networks and thus offering additional

possible destinations. In addition, Angola Cables will extend its transatlantic connectivity through the Dunant and AMITIE submarine cables, completing its existing South American and US nodes.

A seamless connection to Orange's global networks

Djoliba is the first network in West Africa to offer complete security, with

more than 10,000 km of terrestrial fiber optic network coupled with 10,000 km of submarine cables, superfast broadband (up to 100 Gbps) and 99.99% availability. It covers 16 points of presence with a network of nearly 155 technical sites, and connects 300 points of presence in Europe, America, and Asia. It is based on Orange's Tier-1 network and therefore provides a seamless connection to Orange's international networks.

One-stop shop roaming solution



Jérémy Péan
Marketing Product Manager
Orange Wholesale France

Today, our customers expect us to connect them to any device, anywhere, with the best quality of service, over the fastest and most reliable networks. Elise Le Lonn and Jérémy Péan, product managers at Orange Wholesale explain that “we continue to invest in our one-stop shop for roaming.” Elise Le Lonn specifies that “it includes the latest innovations in 5G, analytics, and support for IoT connectivity needs.” Jérémy Péan adds that “Orange’s Roaming Sponsor solution provides outbound roaming coverage for travelers as well as any IoT device, virtually anywhere in the world, taking advantage of permanent roaming capabilities and Orange’s trusted global network of Tier 1 and Tier 2 partners.”

For example, a connected car can be fitted with a single SIM card right from the assembly line, ready to work in any specific international market, or combination of destinations. In addition, IoT could help to make a positive impact on the environment. To give you an idea of the scale of what we are talking about, according to a McKinsey study, IoT is set to change the world, potentially delivering \$12.6 trillion in economic value over the next decade.

Meeting roaming needs with flexibility and scalability

MVNOs and MNOs players that benefit from Orange’s Roaming Sponsor solution may want to gain more control over their connections, monetize their inbound roaming, and also sign bilateral agreements. That’s where Orange’s Roaming Hub solution comes in. It makes it easy to open roaming routes with support for all the latest GSMA standards and a full suite of enablers. The roaming hub solution helps customers to move from a bilateral to a multilateral roaming model with a simple connection.

At Orange, we know that a truly global connectivity solution includes international and universal services.



Elise Le Lonn
Marketing Product Manager
Orange International Carriers

A huge market and unimagined IoT applications

Our solution provides regional local breakout for 5G with 40 PoPs in key cities across Asia, Europe, the Middle East, and Africa with the goal of reaching 100 PoPs by the end of 2024. Any custom IoT use case can be imagined, some of which have already been adopted in automotive, asset-tracking, health services, and consumer electronics.

Watch the video 



Transporting enriched contents worldwide

Today, video represents over 80% of the world's internet traffic, and providers are moving to Over-The-Top (OTT) distribution of their programs to achieve a global scale. This is why CDN is a critical component in delivering such a best-in-class experience. At Orange International Carriers, we are proud to be the only global operator to offer an extensive footprint of CDNs through our **Content Delivery Boost (CDB) service***. For any web or mobile application, this solution delivers high capacity, fast loading times, optimal video streaming quality, security against web attacks, and lower international bandwidth costs.

Expanding our CDN footprint

As the owner of our networks, we control the end-to-end value chain. This also applies to our **CDN PoPs**. This means that our solution is secured "by design" because it is part of our IP network. What is new is the launch of an enhanced solution thanks to a new software layer. According to Laurent Talibert, CDN Business Development Director at Orange International Carriers "this will allow us to increase the number of our **CDN PoPs from 50 to 200** by 2024, extending our CDN footprint from France, Western Europe and Africa to Eastern Europe, the United States and Asia. This unparalleled global coverage is a unique opportunity for Orange to offer a solution to broadcasters, telcos, OTT, as well as the banking/finance, e-commerce, and gaming industries, allowing them to expand their customer base.

Anticipating market needs

To date, more than 15 players have adopted our CDB solution. But our customers want much more and are asking for greater digitalization. François Collobert, CDN Content Delivery Boost Product Manager at Orange International Carriers explains that "the huge growth in content traffic is forcing us to innovate and this new software layer will also allow us to digitalize the customer acquisition process through our Orange eCare portal." He points out that "the extension of our coverage is imperative to anticipate market trends, consumption growth, and ultimately, be an asset for our customers." He concludes by reminding us that "more than ever, at a time when digital sovereignty is becoming a hot topic, this enhanced solution is a step in the right direction."



François Collobert
Content Delivery Boost
Product Manager
Orange International Carriers

[Watch the video](#) 



*Previously branded Media Delivery Boost

APIs to digitalize and extend our EVPL solution

With our **EVPL online** solution, we offer our customers e-line point-to-point connectivity over Orange's international MPLS network. This scalable and flexible service is available from 2 to 10 GB with a global reach of 350+ PoPs. It also incorporates **SDN technology** to enable real-time purchase and delivery, providing improved responsiveness and flexibility.



Jean-Marc Barraqué
Digital Transformation Director
Orange International Carriers

Watch the video 

APIs for a successful digital journey

To improve the customer journey, we have integrated the solution into our **eCare portal** and exposed the API on the Orange Developer platform. We have implemented specific MEF-standard APIs, so that our customers can automate many tasks by integrating the Orange EVPL connectivity offer into their own service: real-time feasibility checks, quotes, purchasing, etc. APIs provide a set of functions and procedures that enable the creation of applications. Customers can then access the data and features of other applications, services, or operating systems.

Expanding our footprint

For Jean-Marc Barraqué, **Digital Transformation Director** at Orange International Carriers, “our ultimate goal is to expand our footprint to make EVPL available online in areas where we don’t have a direct presence by using our partners’ APIs.” He adds that “either we continue to exchange endless emails with suppliers or we digitalize the process with them from top to bottom. This is where APIs come in again.” The solution? To work hand in hand with capacity providers who expose APIs and from whom we buy Network as a Service. Thanks to this win-win process, our customers can enjoy a tailor-made end-to-end solution. “We are at the beginning of this broader partnership process,” concludes Jean-Marc Barraqué. At Orange International Carriers, our mission is to provide the best Ethernet services to meet our customers' needs. As the world goes digital, we owe you best-in-class service and peace of mind.



A wholesale leader in terms of “vision and strategy”

At Orange International Carriers, we are very proud to have climbed another step in GlobalData’s latest company assessment. This report, primarily relevant to decision makers from large enterprises, recognizes the improvement in our market **“Vision and Strategy”**. We are also ranked above industry average on each assessment criteria of the report: solid positioning in Momentum / Stability, Innovation, and Product Portfolio.

To underpin this outstanding leap forward, the report confirms the acceleration of our digital transformation with a focus on the cloud and the network, as we are investing heavily in new PoPs, submarine routes, and terrestrial fiber with several “new-generation submarine cables planned or announced.” At the same time, the analyst notes our mobilization to transition our network to 5G, in particular “by offering non-standalone 5G on top of **IPX** and **LTE** services” and our commitment to “standalone 5G for operators,” among other things.

The report also notes that we have launched a comprehensive program to increase our speed to market and emphasizes that “Orange International Carriers is backed

by considerable R&D facilities, comprising 5,000 researchers and 12 labs on four continents” to reach its goals. As proof of customer confidence, the analyst reminds that we “report approximately 1,000 operators and OTT customers” in 220 countries and territories.

GlobalData provides data, expert insight, and innovative solutions to the world's largest industries. The Company Assessment report is an in-depth analysis of individual companies in the wholesale sector. It provides an analysis of the company, breaking down and scoring its offering across six key areas. As part of this report, GlobalData provides an analysis of any challenges or threats the company may face, as well as recommendations.

Recognition

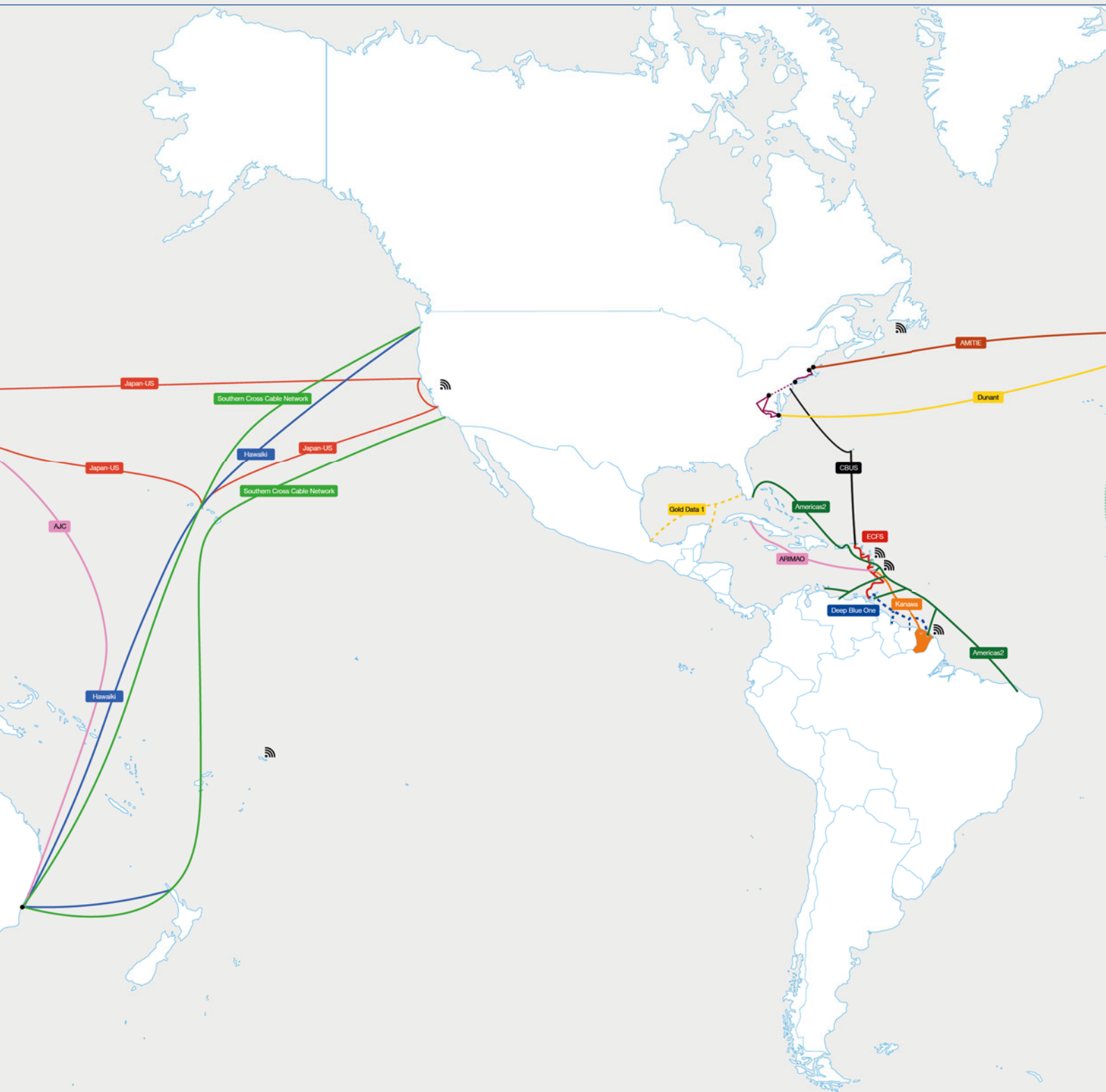
Learn more about
Global Data assessment










Industry



Orange

global networks



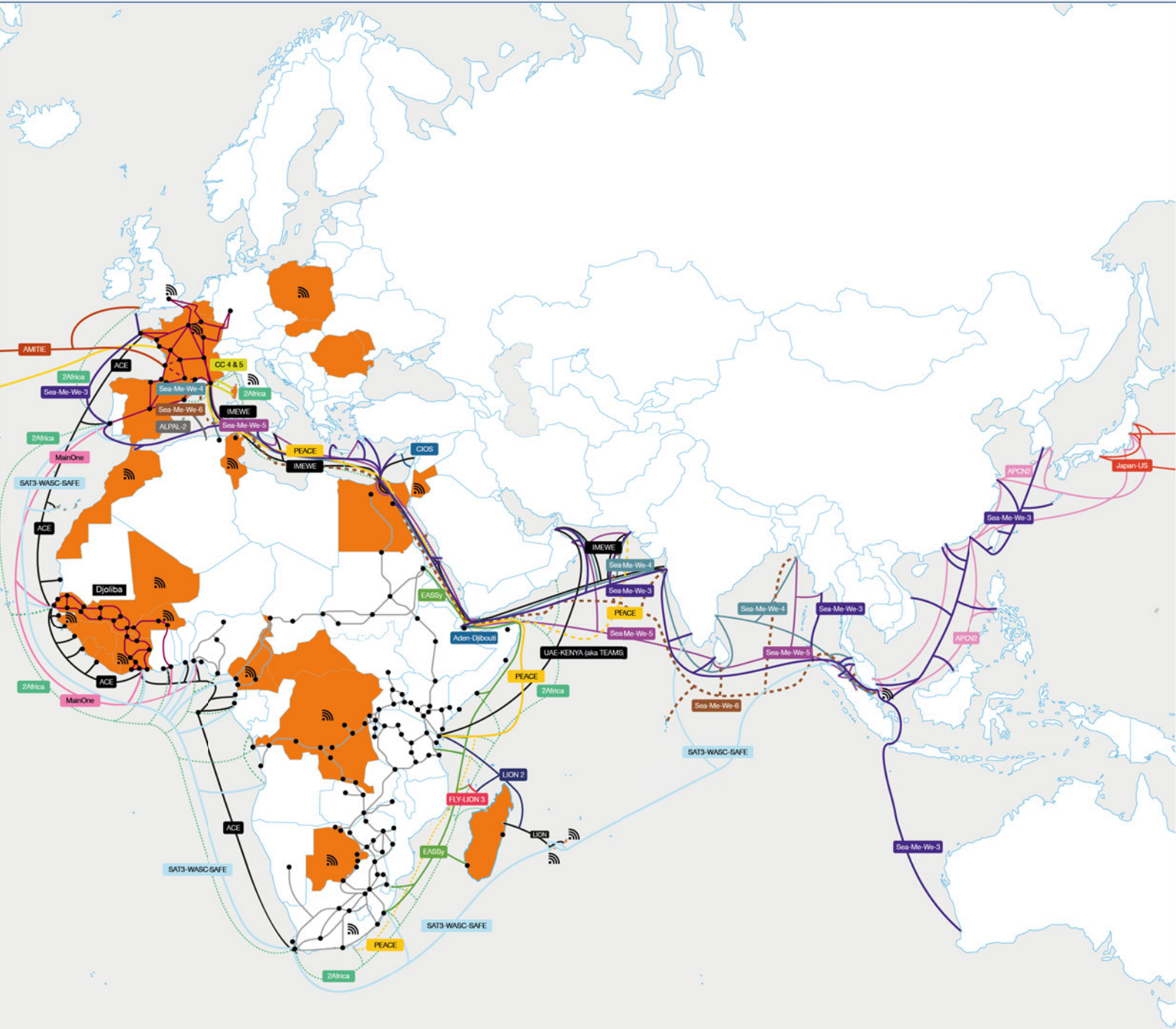
	Orange footprint		Point of Presence
	Submarine cable		Terrestrial network
	IPL route		Planned IPL route
	Country or territory with Orange teleport and satellite technical sites		

Orange co-owned systems or IRU holder on other networks:

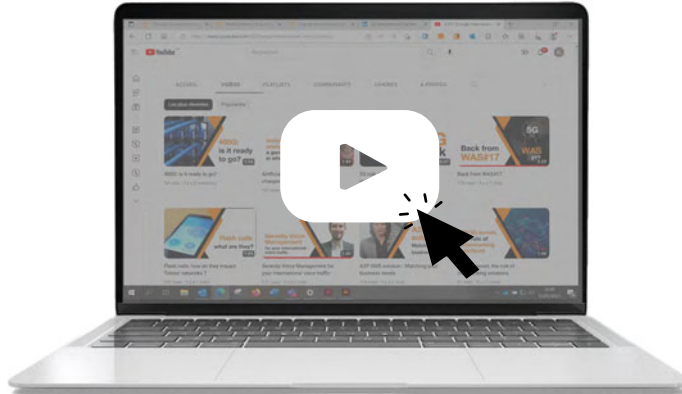
-  In service
-  Under completion, under construction or planned

Cable routes shown do not indicate physical cable location.
Political boundaries on this map are not authoritative.

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