Corporate Presentation

March 2021

≡≡ SPARKLE

TIM Group Overview

Employees **55,198**

Customers (Mln) **102.5**

Revenues (Bn €) **18**

Data as of December 2019

SPARKLE

TIM Group Overview

It is the **leading Telecommunications and ICT group** and **Italy's digital partner**. In the areas of fixed, mobile and convergent telecommunications, internet, digital content, cloud platforms and services, ICT solutions, research and development
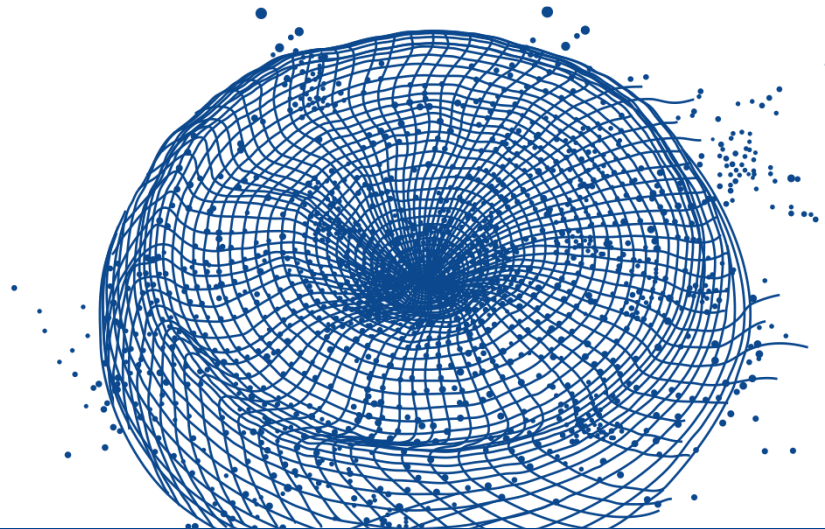
Leading Player in Brazil

Among TOP global operators through Sparkle

Core markets: **Italy**, **Brazil**

SPARKLE

Sparkle Overview

- **A LEADING GLOBAL OPERATOR** with an unparalleled experience and know-how in a wide range of diverse markets. Sparkle, with its IP&Data, Cloud & Data Center, Corporate, Mobile and Voice Platforms, actively takes part in the development of worldwide communications, providing the best global connectivity solution to Fixed and Mobile Carriers, ISPs, OTTs, Media & Content Players, Application Service Providers and Multinational Corporations, before they know they need it

- **Wholly owned subsidiary of TIM Group** with the objective of developing the international wholesale and the retail multinational corporate businesses, as well as of **supporting TIM Group business units for the provisioning of International Service**

Sparkle Overview

Company data

Headcount
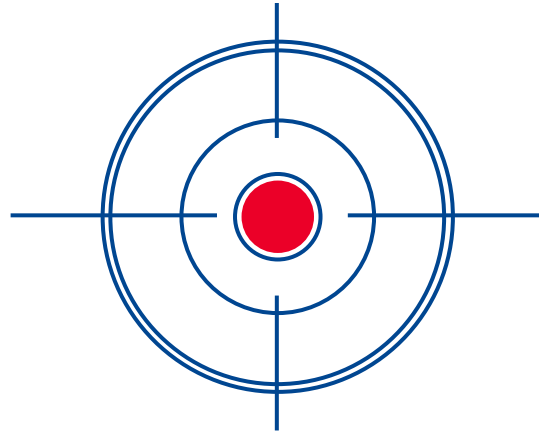754

Countries of presence
34

Network coverage*
#PoPs 159

PoPs via partners
> 1,000

Data as of December 2019
(*) Data as of April 2020

Key figures

Voice Traffic
9 Bn minutes

Data Traffic
57 Tbps

Revenues
947 Mln €

Data as of December 2019

Organization

Chairman

Alessandro Pansa

Ceo

Elisabetta Romano

- TI Sparkle North America Inc.
- TI Sparkle Singapore Pte Ltd.
- MED-1 Submarine Cables Ltd.
- TI Sparkle France SAS
- Pan European Network Subsidiaries

Administration, Finance & Control	Claudio Zezza	Alessandra Leonardi	Human Resources
Chief Corporate Office	Ambrogio Michetti	Daniele Mancuso	Product Management
Chief Revenues Office	Mario Pastore	Anna Maria Casazza	Compliance, Enterprise Risk Management & Revenue Assurance
Chief Technology Office	Enrico Bagnasco	Davide Colella	Security

Positioning

🛜 Sparkle Global IP Backbone "Seabone" ranks **#7** worldwide and is leader in the Mediterranean, Middle East, Africa and in South America

☁ Cloud & Data Center Solutions available in several DCs worldwide, with key assets presence in Italy, Greece and Turkey

🤝 **Leader** in Italy, challenger in Europe and emerging player on the global market

🌐 **#10** for worldwide traffic collected on an international basis

📱 Among the few global players currently active in the wholesale mobile market

IP&Data Platform # 7 Globally

 # 1 in Middle East
 # 1 in South America
 # 2 in Africa
 # 5 in Europe

IP WW Ranking

IP Global Ranking (Backbone)	2020
Telia Carrier	1^
Level 3	2^
Cogent3	3^
NTT	4^
GTT	5^
Tata Communications	6^
Sparkle	**7^**
Zayo	8^
PCCW Global	9^
Hurricane Electric	10^

(source: DYN)

Voice Platform # 10 Globally

Int'l Voice traffic Ranking

Bn Min		2019
Vodafone CS	1^	55.6
Tata	2^	32
Orange	3^	30.5
Tofane	4^	30
IDT	5^	26
DT	6^	26
BICS	7^	24.3
Barthi	8^	21
Telefonica	9^	21
Sparkle	**10^**	**9**

(source: IMF-GTF)

Key Assets

#1   **State-of-the-art Global Network** with proprietary backbones in Europe, Mediterranean Basin and the Americas and ownership in submarine cables connecting Europe with South-East Asia and the Americas

#2   **Global Services Portfolio** for Fixed and Mobile Operators, ISPs, OTTs, Media & Content Players, Application Service Providers and Multinational Corporations

#3   **Worldwide presence in 34** countries based on fully owned companies and offices
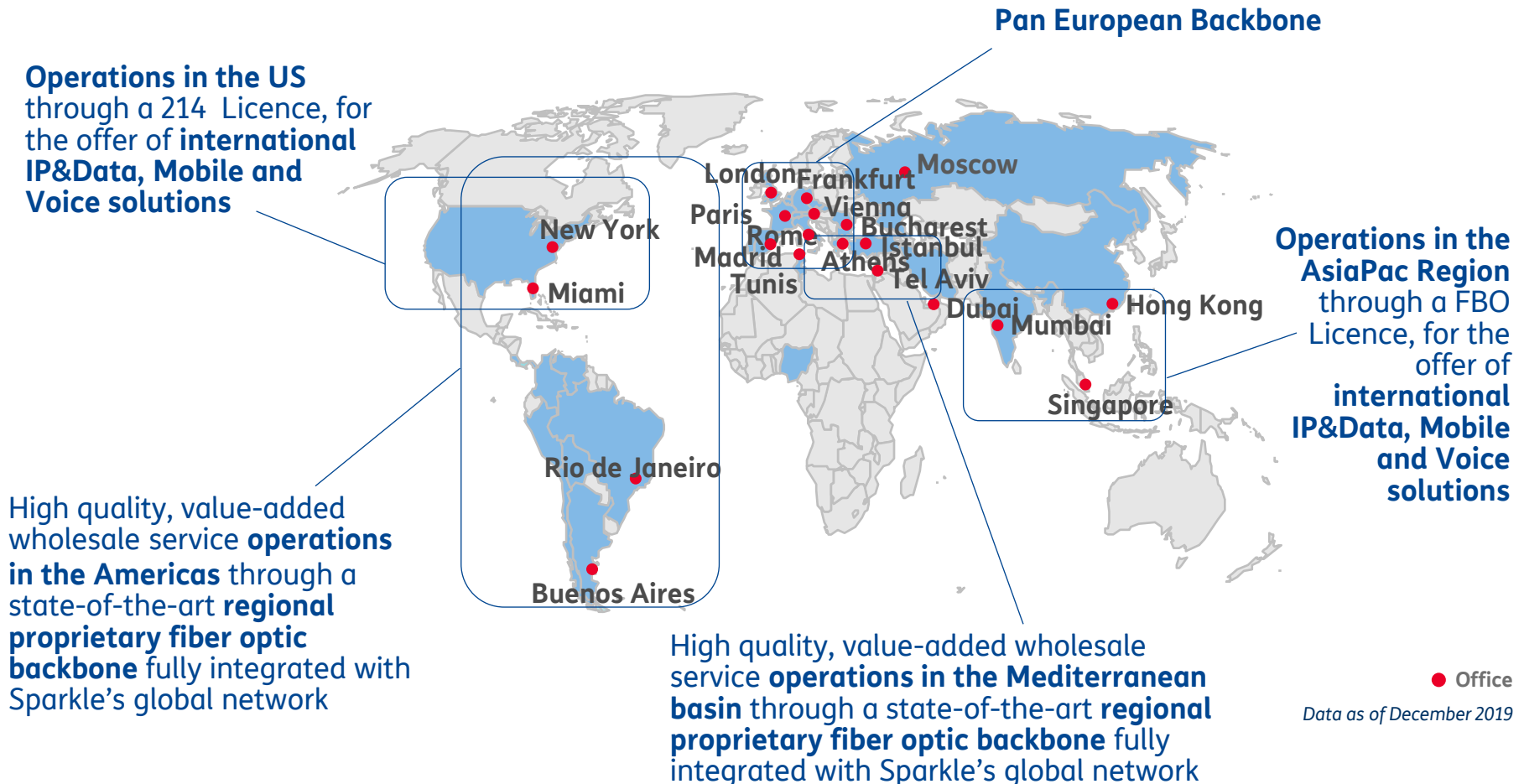
#4   **Advanced OSS, BSS** and **Customer Care capabilities** with multi-lingual call center
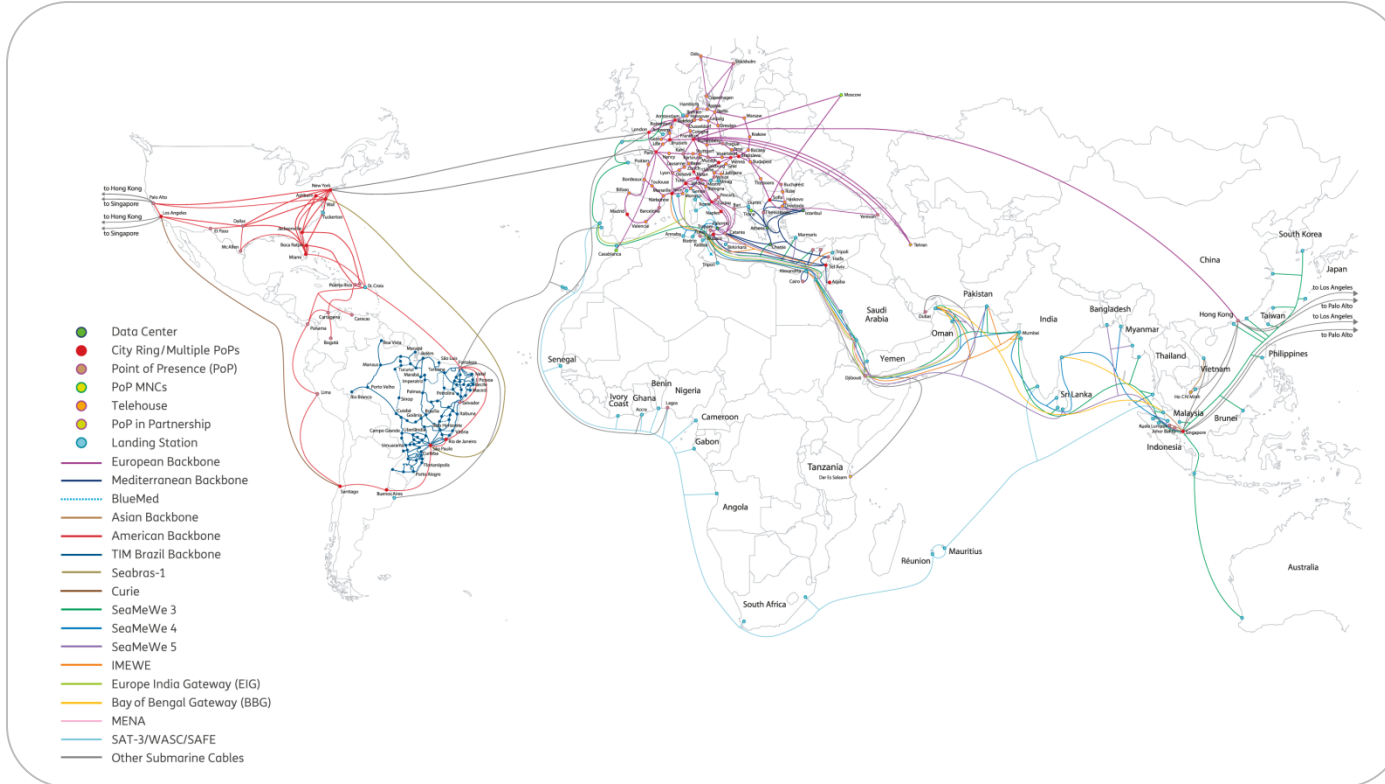
Operations

Sparkle has a **global presence** based on its fully owned subsidiaries and offices in **34 countries**, with a headcount of over 700 in Italy and abroad

Pan European Backbone

Operations in the US through a 214 Licence, for the offer of **international IP&Data, Mobile and Voice solutions**

Operations in the AsiaPac Region through a FBO Licence, for the offer of **international IP&Data, Mobile and Voice solutions**

High quality, value-added wholesale service **operations in the Americas** through a state-of-the-art **regional proprietary fiber optic backbone** fully integrated with Sparkle's global network

High quality, value-added wholesale service **operations in the Mediterranean basin** through a state-of-the-art **regional proprietary fiber optic backbone** fully integrated with Sparkle's global network

London
Frankfurt
Moscow
Paris
Vienna
Rome
Bucharest
Madrid
Istanbul
Athens
Tunis
Tel Aviv
Dubai
Hong Kong
Mumbai
Singapore
New York
Miami
Rio de Janeiro
Buenos Aires

● **Office**

Data as of December 2019

Global Backbone

GLOBAL CAPABILITIES

- 86 cities in 44 countries
- 159 PoPs
- >1,000 PoPs through partners
- 41,000 km/fibre PEB
- 58,500 km Americas Backbone
- 11,000 km Mediterranean Backbone
- 18,000 km/fibre Italian network
- more than 433,000 km submarine cables*
- ca. 53,000 km other fibre network*

Data as of April 2020
(*) Includes Lease

Legend:
- Data Center
- City Ring / Multiple PoPs
- Point of Presence (PoP)
- PoP MNCs
- Telehouse
- PoP in Partnership
- Landing Station
- European Backbone
- Mediterranean Backbone
- BlueMed
- Asian Backbone
- American Backbone
- TIM Brazil Backbone
- Seabras-1
- Curie
- SeaMeWe 3
- SeaMeWe 4
- SeaMeWe 5
- IMEWE
- Europe India Gateway (EIG)
- Bay of Bengal Gateway (BBG)
- MENA
- SAT-3/WASC/SAFE
- Other Submarine Cables

- Full IP Global Network

- Unique protected fiber path in Europe and global meshed architecture providing full resilience

- Unique footprint in Middle East and South East Asia through a state-of-the-art regional proprietary fiber optic backbone in the Mediterranean Basin, SeaMeWe-3, SeaMeWe-4, SeaMeWe-5, IMEWE and bilateral cable Systems

- New POPs in Italy, UK, US, Colombia, Brazil, Nigeria, Armenia, Jordan and Morocco

- Increased network capillarity in Europe

- New proprietary redundant backbone links from North to South America, new cable Seabras-1 connecting New York and Sao Paulo and new Fiber Pair on Google's Curie Submarine Cable to directly connect Chile to US

- Capacity across the Atlantic and the Pacific

Service Proposition

Complete set of **IP, Data, Cloud & Data Center, Corporate, Mobile and Voice solutions** for **Fixed and Mobile Operators, ISPs, OTTs, Media & Content Players, Application Service Providers and Enterprises**

SPARKLE | IP&DATA *PLATFORM*

A complete range of solutions designed to access any content on the Internet with secure global international IP connectivity, high-performance international bandwidth and IP MPLS services

SPARKLE | CLOUD & DATA CENTER *PLATFORM*

Suite of highly flexible and scalable top class integrated IaaS, PaaS and SaaS that meets the ever growing need of cost efficient and top security IT solutions, available in several Data Centers worldwide, with proprietary key assets in Italy, Greece and Turkey

SPARKLE | CORPORATE *PLATFORM*

Complete portfolio of services, including global connectivity and ICT, aimed at serving the needs of corporate customers with the highest performance level

SPARKLE | MOBILE *PLATFORM*

A distinctive portfolio designed to support the operations of mobile operators to rapidly increase international mobile coverage and usage, generate new revenue streams and minimize service set up and management costs

SPARKLE | VOICE *PLATFORM*

Voice Solutions offer worldwide voice capabilities to Carriers, Service Providers and Mobile Operators combining network reliability, competitive pricing and excellent routing solutions

SPARKLE

Global Portfolio

SPARKLE | IP&DATA PLATFORM
YOU CONNECT AND TOGETHER WE EVOLVE

- SPARKLE | Seabone
- SPARKLE | DDoS Protection Service
- SPARKLE | Virtual NAP

- SPARKLE | IXP Connect
- SPARKLE | City2City
- SPARKLE | Site2Site

- SPARKLE | Ethernet Suite
- SPARKLE | Country2Country
- SPARKLE | Restoration

SPARKLE | CLOUD & DATA CENTER PLATFORM
YOU GROW AND TOGETHER WE EVOLVE

- SPARKLE | IaaS Suite
- SPARKLE | Backup and Storage as a Service
- SPARKLE | Disaster Recovery as a Service
- SPARKLE | Professional Services

- SPARKLE | MultiCloud Suite
- SPARKLE | YourCloudStore
- SPARKLE | Cloud Tailored Suite
- SPARKLE | Vertical Services

- SPARKLE | Sicily Hub
- SPARKLE | Greece Data Centers
- SPARKLE | Turkey Data Centers
- SPARKLE | Miami Data Center

- SPARKLE | Global Data Center
- SPARKLE | Data Center Connect
- SPARKLE | Cloud Connect

SPARKLE | CORPORATE PLATFORM
WE COLLABORATE AND TOGETHER WE EVOLVE

- SPARKLE | Ethernet Suite
- SPARKLE | Carrier MPLS
- SPARKLE | IP VPN Suite
- SPARKLE | SD-WAN

- SPARKLE | Global Connect
- SPARKLE | Data Center Connect
- SPARKLE | Cloud Connect
- SPARKLE | Bandwidth on Demand

- SPARKLE | Outsourcing Solutions
- SPARKLE | Communication Solutions
- SPARKLE | IoT Solutions

- SPARKLE | Media Solutions
- SPARKLE | eHealth Solutions

SPARKLE | MOBILE PLATFORM
YOU MOVE AND TOGETHER WE EVOLVE

- SPARKLE | IPX
- SPARKLE | GRX
- SPARKLE | Big Data

- SPARKLE | Global Signalling
- SPARKLE | LTE Diameter Signalling
- SPARKLE | Signalling Protection Suite

- SPARKLE | SMS Transit
- SPARKLE | SMS Booster
- SPARKLE | Voice & SMS Express

- SPARKLE | Outbound Roaming Solution
- SPARKLE | VoLTE Transit and Roaming

SPARKLE | VOICE PLATFORM
YOU TALK AND TOGETHER WE EVOLVE

- SPARKLE | Best Voice Transit
- SPARKLE | W.A.V.E. Voice Outsourcing

- SPARKLE | IPX
- SPARKLE | High Definition Voice

- SPARKLE | Access Services
- SPARKLE | Barrier Antifraud Services

- SPARKLE | Voice & SMS Express

SPARKLE

Cloud & Data Center Solutions

Data Center

6 DC Hubs Worldwide Located

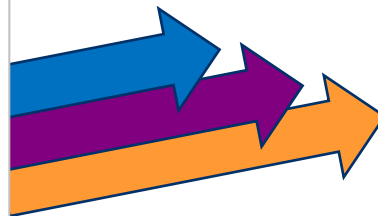Best Technology in the Market

Everything you need to be connected

360° Data Center Support

| Colocation |
| Power |
| Cabling |
| Colo Professional Services |

Advanced Data Centers to meet the requirements of Telcos and Enterprises

With

Int'l Global Network Inside

Cloud

IaaS	Scalable and Flexible
Security	A full set of security solutions
Online Marketplace	Self-Management white label marketplace and Advanced SaaS
DraaS	High business agility and continuity
Cloud Storage	Secure, Robust and Scalable
MultiCloud	Reselling of Public Clouds + tools & professional services
Cloud Connect	High Speed and secure connectivity to all Pubic Cloud Players

An innovative and wide service portfolio

...and a unique Set of Cloud/Data Centers and Network Infrastructure

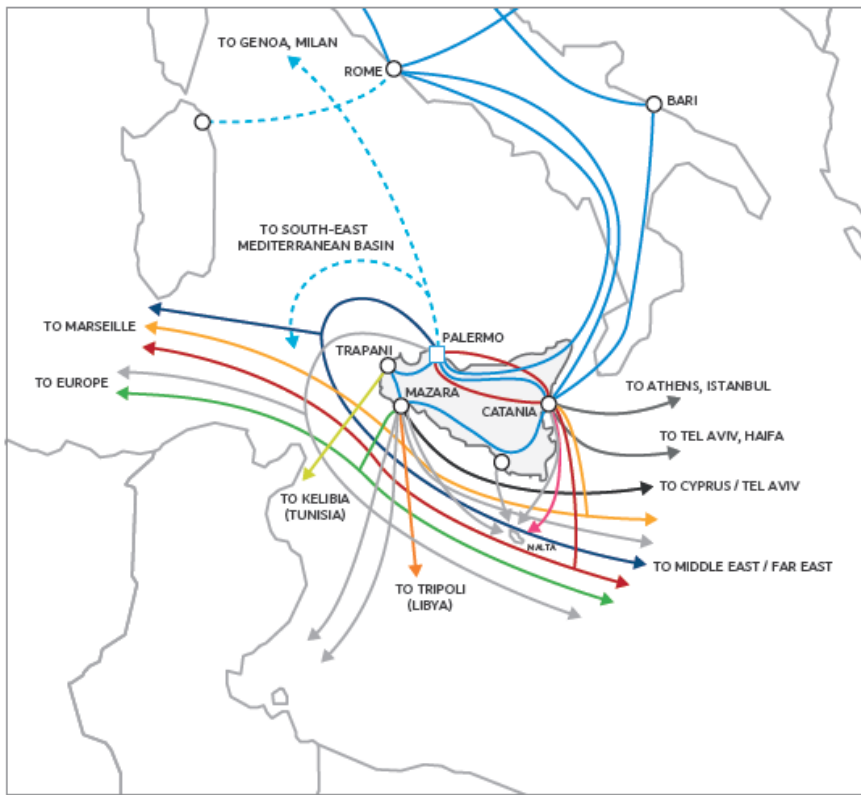Colo and Hosting capabilities, completely *integrated with Sparkle's network services worldwide*

Regional Data Centers in **Italy, Greece and Turkey** that leverage on Sparkle's unique protected terrestrial and submarine network to Europe

SPARKLE

Sicily Hub as Top Mediterranean Gateway to the Global Internet

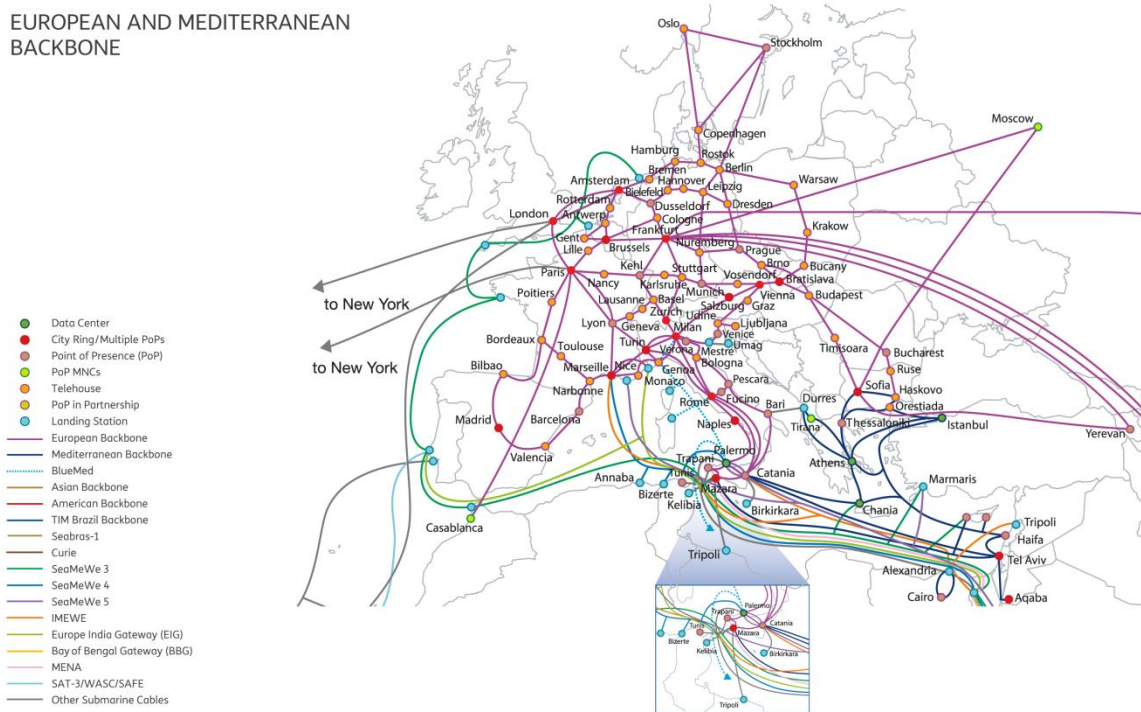**The leading IP gravity center in the Mediterranean where Content meets ISPs is in Palermo**

- **Neutral colocation facility**

- **Connected to all landing stations in Sicily, including SeaMeWe-5**

- **Private or Public Peering through DE-CIX**, the world largest neutral IX

- **Content**, the most important players have chosen Sicily Hub to interconnect with ISPs

- **Quality & Competitiveness**, improved latency and lower costs than any other European location

- **Flexibility**, to efficiently manage submarine and terrestrial capacity with enhanced resilience

- **Marketplace** of multi-breed interconnected players to trade any telecommunication and cloud solutions
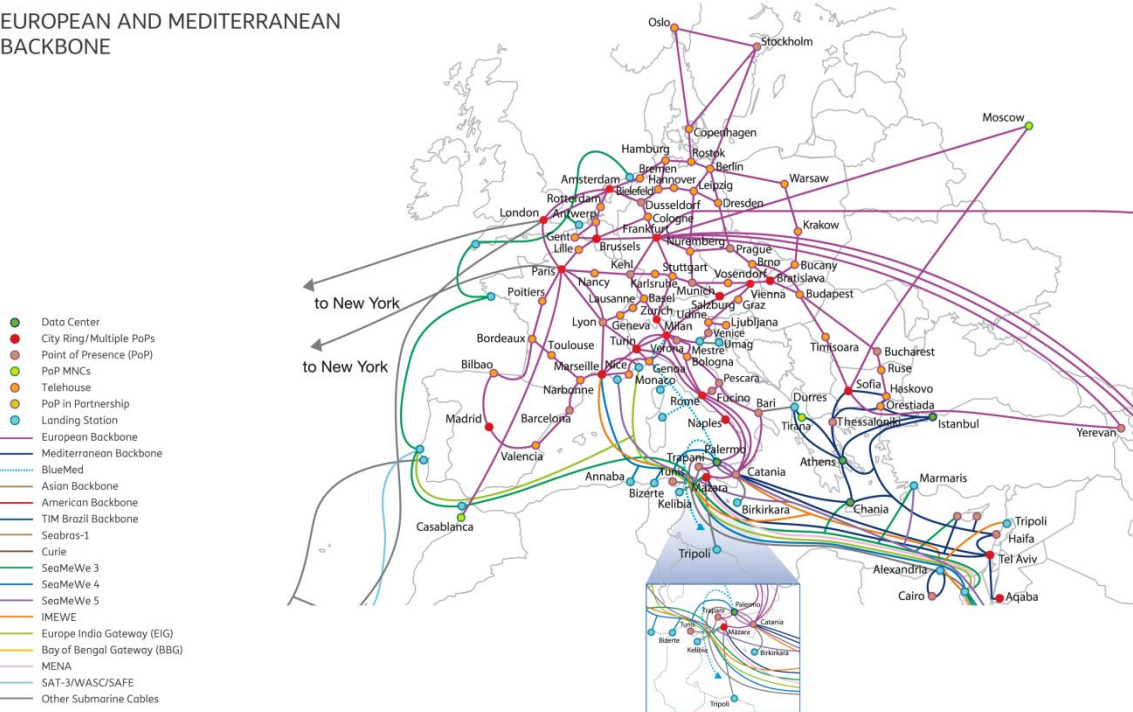
Key Regional Backbones: Europe & Mediterranean

- Increased network capillarity in Europe

- Unique protection from Istanbul to Europe through terrestrial and submarine networks

- New diversified and protected backbone links in the Balkans as alternative route to connect Europe to Africa, Middle and Far East

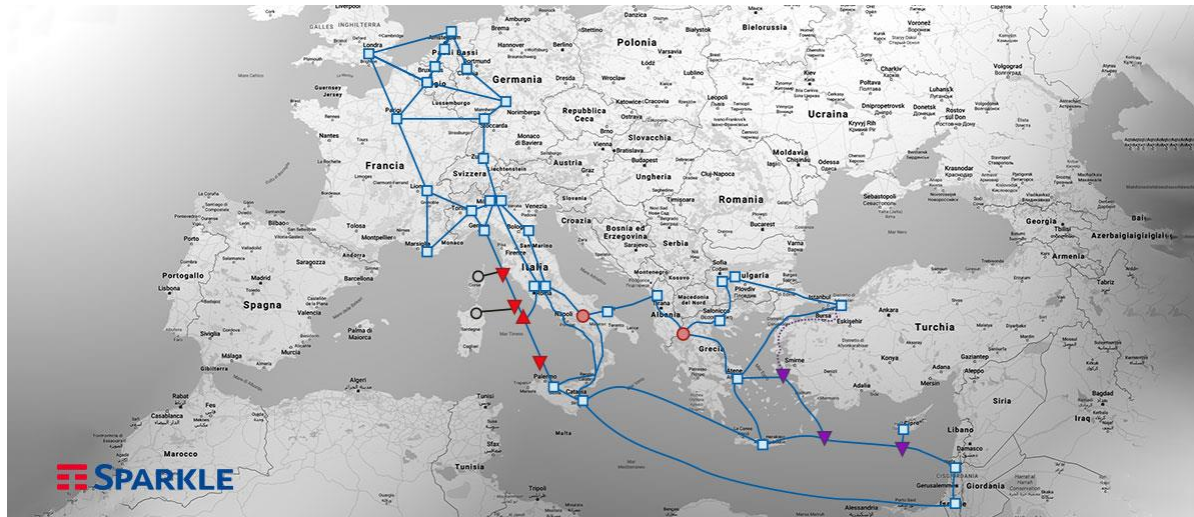- New POPs in Moscow and Casablanca for Corporate Solutions

Reinforcing Leadership in the Mediterranean through BlueMed....

EUROPEAN AND MEDITERRANEAN BACKBONE

Legend:
- Data Center
- City Ring / Multiple PoPs
- Point of Presence (PoP)
- PoP MNCs
- Telehouse
- PoP in Partnership
- Landing Station
- European Backbone
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- TIM Brazil Backbone
- Seabras-1
- Curie
- SeaMeWe 3
- SeaMeWe 4
- SeaMeWe 5
- IMEWE
- Europe India Gateway (EIG)
- Bay of Bengal Gateway (BBG)
- MENA
- SAT-3/WASC/SAFE
- Other Submarine Cables

- **New cable to connect Palermo with Genoa's new open landing station, directly connected to Milan's rich digital ecosystem**

- **Multiple branches within the Tyrrhenian Sea to support further extensions southbound of Sicily**

- **Capacity up to 240 Tbps, Total length of 1,000 km**

- **Expected RFS 2022**

- BlueMed will provide **advanced connectivity between Middle East, Africa, Asia and the Europe** with up to **50% latency reduction** than existing terrestrial cables connecting Sicily with Milan

- Sparkle's new open landing station in **Genoa is set to become the alternative priority access for other upcoming submarine cables** looking for a diversified entry way to Europe, thus **strengthening Italy's role as digital gateway between Africa, Middle East, Asia and Europe**

SPARKLE
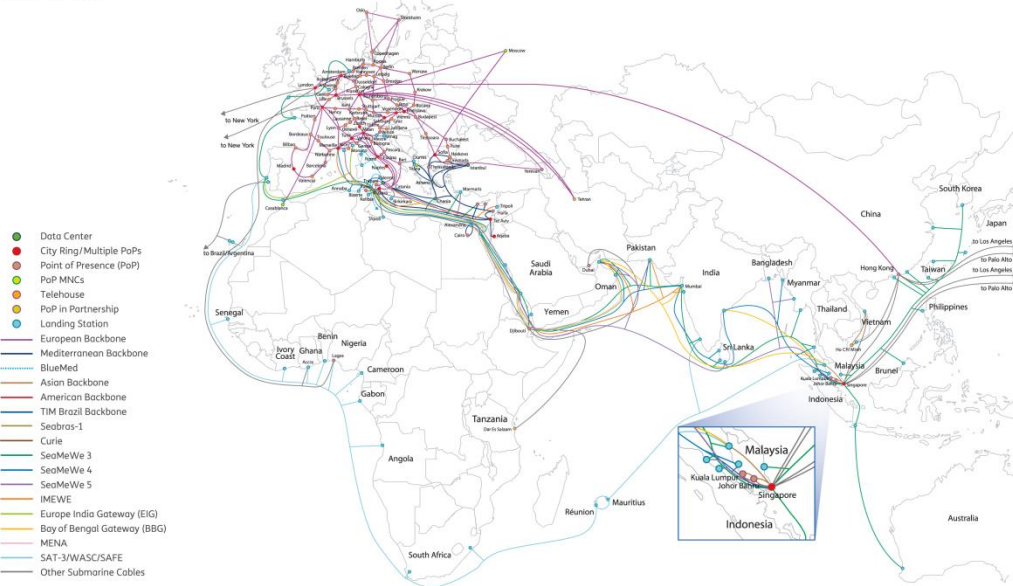
....and Nibble, the new Pan-Mediterranean Network

▲ New branching units ▲ Existing branching units ● Fiber/Photonic interconnection points

○ Fiber/Photonic interconnection points on BlueMed branches ☐ Capacity delivery points

- **New ultra-long-haul photonic backbone digitally linking Sicily with the major Points of Presence and datacenters in Europe**

- **Built upon new express fibers, Nibble will provide industry-leading speeds, low-latency, high-performance, scalable and guaranteed connectivity services between the most important European locations, meeting carriers and enterprises' rapidly increasing network capacity requirements**

- Based on: **DWDM & Instant Network technologies, Software-Defined Bandwidth solution and Instant Network**

- Nibble will progressively be **integrated with Sparkle's existing Mediterranean and Balkans Network and with BlueMed**

- First link connecting Sparkle's Sicily Hub in Palermo with Milan Caldera open datacenter

Strategic Focus on Med, ME, Africa & APAC Corridors

EUROPE, MIDDLE EAST, AFRICA AND ASIA BACKBONE

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- Other Submarine Cables

Through Sparkle's global network, operators in fast growing markets of Middle East and Asia have access to worldwide contents with unrivalled performance through a **2-way path connecting Sparkle's Asian network to Europe and US, both East and Westbound**

EUROPE & MEDITERRANEAN

- **Fully resilient Pan European backbone** covering 13 countries

- **State-of-the-art regional proprietary fiber optic backbone** covering: Italy, Turkey, Israel, Greece, Cyprus

- **Proprietary submarine cable Athens-Istanbul**

- **Bilateral cables with Monaco, Albania, Croatia, Slovenia, Cyprus, Malta, Israel and Libya**
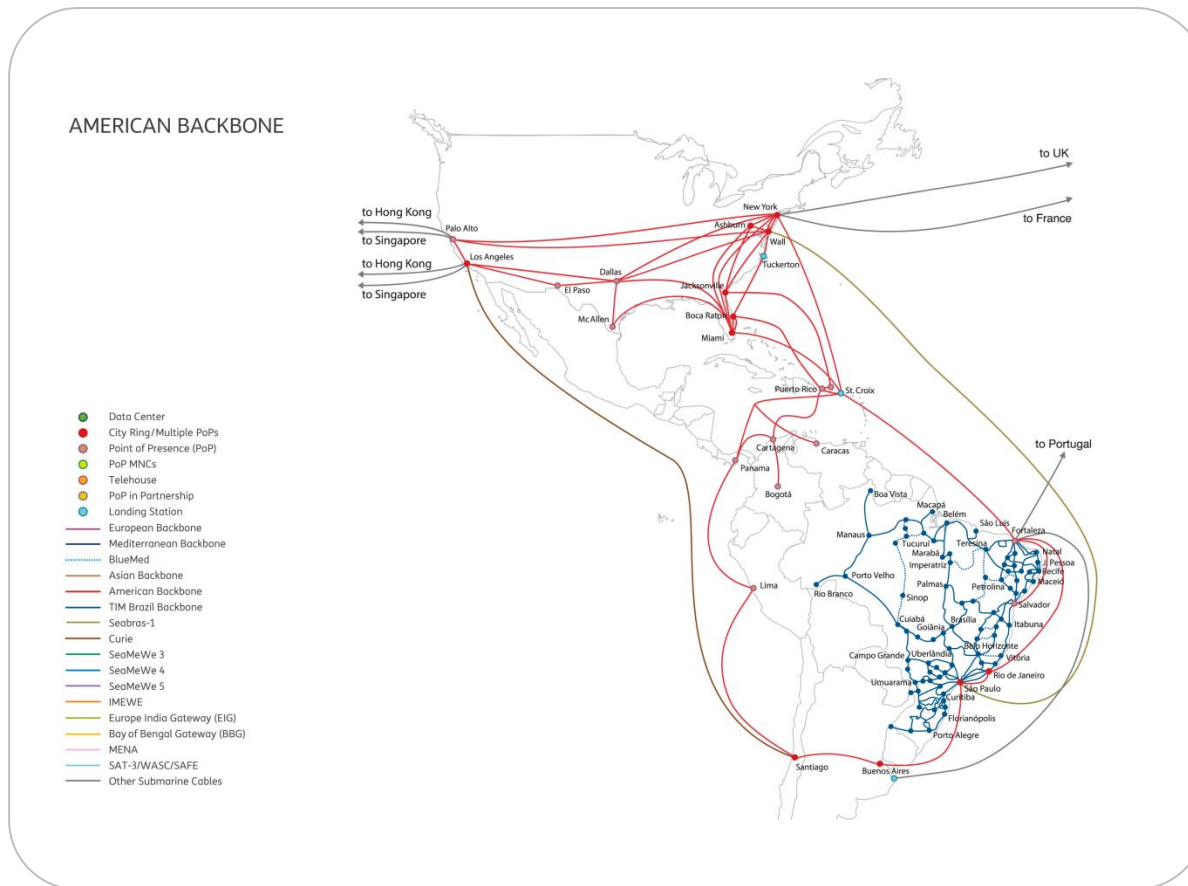
EUROPE TO AFRICA, ME & ASIA

- **SeaMeWe-4** cable: France, Algeria, Tunisia, Italy, Egypt, Saudi Arabia, India, South-East Asia

- **SeaMeWe-5** cable: Europe to Asia, reaching 17 countries, with a main landing in Catania, Sicily

- **IMEWE** cable: France, Italy, Lebanon, Egypt, Saudi Arabia, United Arab Emirates, Pakistan, India

- Other Submarine Cables: **SeaMeWe-3, EIG, BBG** and **MENA** (Europe, Africa, Middle East, Far East)

EUROPE TO WEST AFRICA & SOUTH AMERICA

- **SAT-3** (Europe, West Africa), **ATLANTIS-2** (Europe, West Africa, South America)
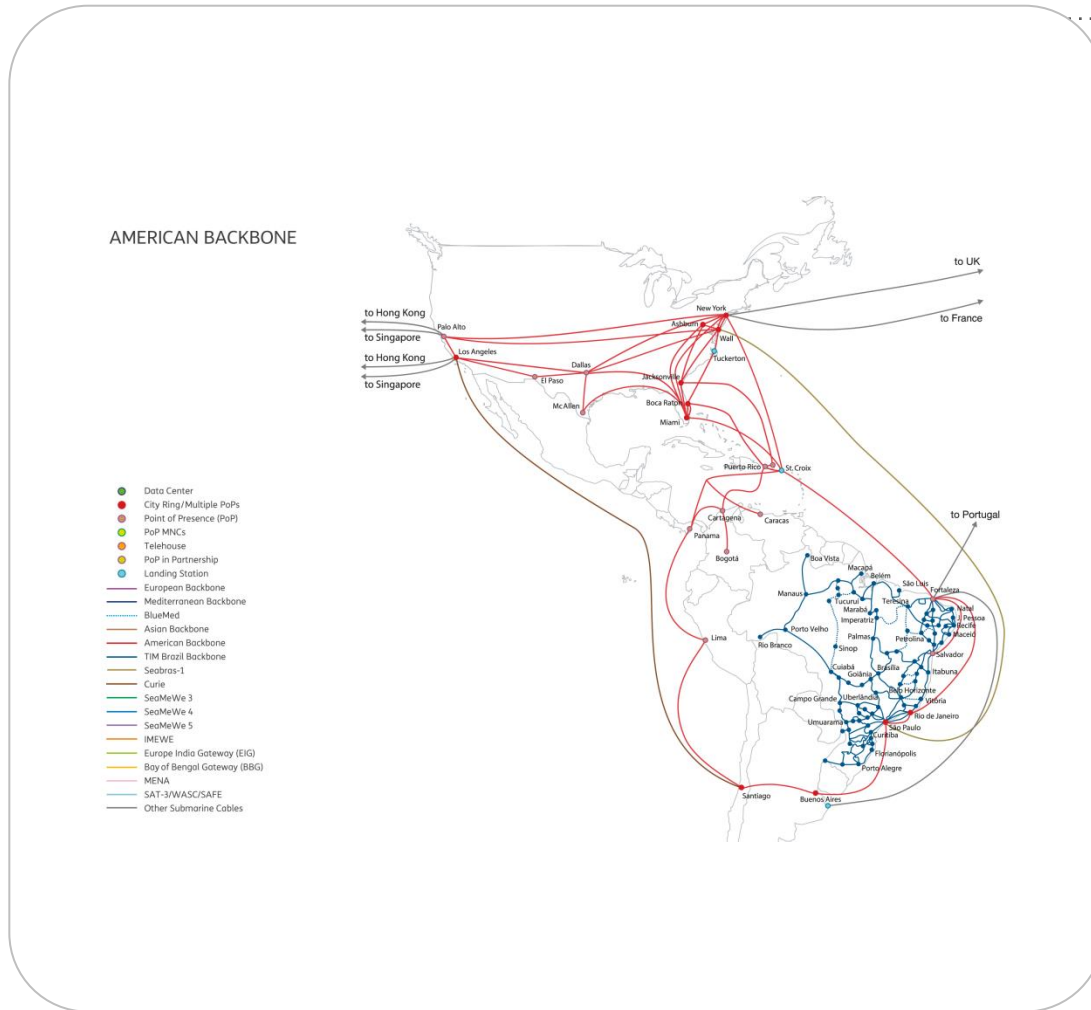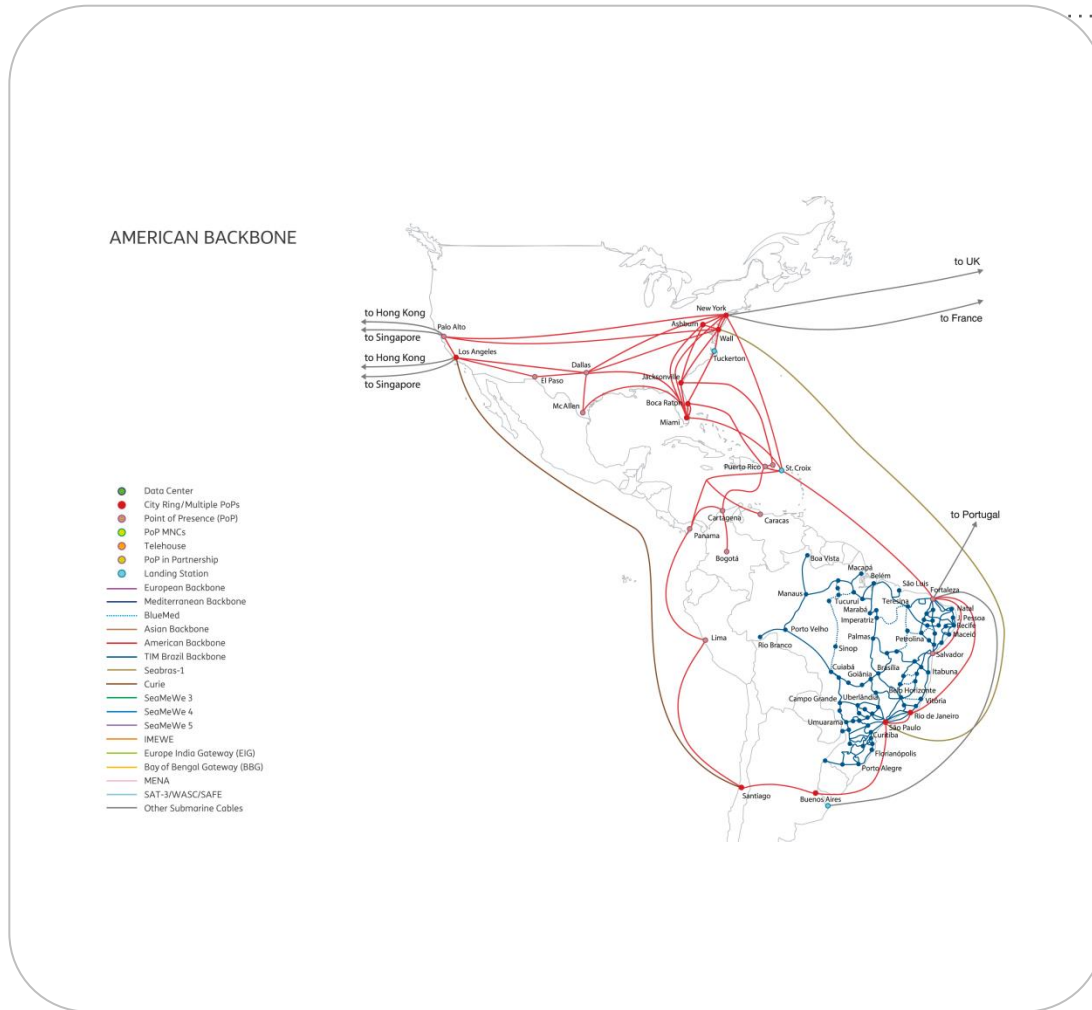
Key Regional Backbones: Americas

AMERICAN BACKBONE

Legend:
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- Other Submarine Cables

- Full IP network in the Americas

- **New Seabras-1 cable connecting New York and Sao Paulo and new Fiber Pair on Google's Curie Submarine Cable to directly connect Chile to US**

- **State-of-the-art proprietary fiber optic backbone in 8 countries**: US, Argentina, Brazil, Chile, Colombia, Panama, Peru, Venezuela

- New proprietary redundant backbone links from North to South America

- **TIM Brasil Backbone fully integrated with Sparkle's global network**

- Capacity across the Atlantic and the Pacific

Reinforcing Leadership in the Americas through Seabras-1....

AMERICAN BACKBONE

- **First cable to connect Sao Paulo to New York**

- **Based on six fiber pairs and with initial design capacity of 72 Terabytes**

- **Sparkle owns 3 out of the 6 pairs**

- **Investment in a Branch Unit in Fortaleza, Brazil, and a protected backhaul between New York and Miami**

- **Full network resiliency with top service quality**

- With Seabras-1 Sparkle supports the fast growing demand of capacity originating in South America, especially Brazil, along the South to North America route, one of the most relevant IP traffic streams globally which records yearly growth rates of over 35% and contributes over 30% of the global market value

- With the backhaul extensions from cable landing points to main PoPs in New York and Sao Paulo, Sparkle provides easy onward connectivity to rest of world

....and Curie Submarine Cable

- Sparkle Adds a **new fiber pair on Curie submarine cable system connecting Chile to US**

- The Google-owned subsea cable Curie is the **first direct new generation US-Chile cable connecting Los Angeles to Valparaiso**

- Sparkle's new fiber pair on Curie will be **fully integrated with Sparkle's global backbone**, **increasing redundancy and offering a fourth diversified route** to directly connect South and North America

- Thanks to these newest highways, Curie in the Pacific and Seabras-1 in the Atlantic, Sparkle offers **the best performance in terms of latency and robustness** through its pillar connectivity service City2City and its global Tier-1 IP transit service Seabone

- With this latest investment Sparkle is even more able to cater to the huge data demand driven by new technologies, media platforms and cloud-based services, requiring omnipresent internet connectivity

Sparkle Winner at the World Communication Awards 2020

Sparkle received the **Operator Efficiency** prize at the World Communication Awards 2020 as a recognition for the use of **Artificial Intelligence to improve operational efficiency and customer experience**

- The award recognizes Sparkle's effectiveness **in automating its Operations, Provisioning, Pre-Sales, Marketing and Customer Care processes** through the introduction of **Robotic Process Automation (RPA), Machine Learning** and **Artificial Intelligence**

- Started in 2019, Sparkle's **Network Intelligent Operations (NIO)** program has already shown excellent results: entrusting robots with the most repetitive tasks, the company was able **to completely eliminate human errors**, **speed up service delivery** and **restoration times** and **save more than 10,000 working hours** that employees can spend on higher value professional activities

- Besides operational efficiency, the NIO program, combining technology and innovation with soft and hard skills, is **improving the quality of service offered to our customers**

Sparkle Winner at the Global Carrier Awards 2020

Sparkle received the **Best Middle East Africa Project**, **Best Americas Project**, **Best Data Centre** and **Best 5G Deployment** prizes at the Global Carrier Awards

16TH ANNIVERSARY
global carrier
Awards 2020
WINNER
Best Middle East Africa Project
SPARKLE

16TH ANNIVERSARY
global carrier
Awards 2020
WINNER
Best Americas Project
SPARKLE

16TH ANNIVERSARY
global carrier
Awards 2020
WINNER
Best Data Centre
SPARKLE

16TH ANNIVERSARY
global carrier
Awards 2020
WINNER
Best 5G Deployment
SPARKLE

The **Best Middle East Africa Project** awarded Sparkle for its **Point of Presence in Aqaba**, a new gravitational hub in the Middle East region and a **strategic corridor between Jordan, its neighboring countries and Europe**

The **Best Americas Project** prize recognized Sparkle's recent **addition of Curie to its routes in the Pacific** as a milestone and crucial project **to powering the digital age in Latin America**

The **Best Data Centre** acknowledged Sparkle's ongoing global expansion, with the **deployment of a new data c**enter in Athens that will provide the country with **one of the largest and most advanced "green" data centers in Europe**

The **Best 5G Deployment** awarded for the establishment of **a 5G data roaming interconnection between Etisalat in the UAE and TIM in Italy** - the first between Europe and the Middle East - showed **Sparkle's pioneering role in 5G data roaming**
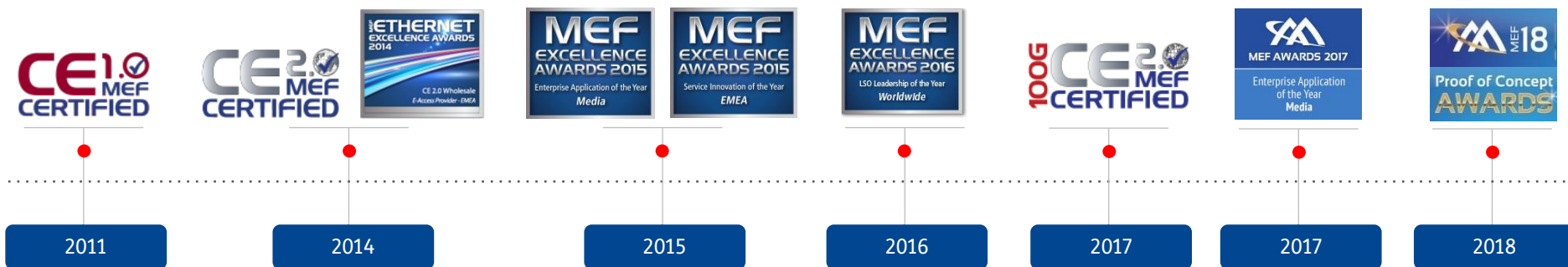
Sparkle Wins the "Business Impact Award" at MEF

- In March 2021 Sparkle has been awarded with the **Business Impact Award** for a **Proof of Concept on Secure Access Service Edge (SASE)**. The "**Remote Employee Access to Cloud**" PoC demonstrated how Sparkle enables multinational enterprises to deploy a post-pandemic hybrid workplace model, establishing secure and effective remote employee access to company resources located in multiple clouds or on premise

- As recognition of Sparkle's commitment in providing customers with best performing advanced connectivity solutions – complaint with industry's standard – in December 2020 **Sparkle has obtained the MEF 3.0 Carrier Ethernet Certification**

- **In 2019 Sparkle has been awarded with MEF PoC Award for the Service Assurance Implementation project "Dynamic Connectivity and Commerce Enabled by MEF 3.0 and Blockchain"** at MEF19 and **in 2018 won the "Best MEF 3.0 Implementation Project 2018" and the "Silver Proof of Concept" awards at MEF18**

- These wins follow other recognitions achieved in previous years and confirm Sparkle's commitment and excellence in deploying forward-looking technologies and contributing to the definition of industry standards starting from 2006 when it joined MEF

| 2011 | 2014 | 2015 | 2016 | 2017 | 2017 | 2018 |

Thank You

≣ SPARKLE