



Corporate Presentation

 **SPARKLE** | IP&DATA
PLATFORM

 **SPARKLE** | CLOUD & DATA CENTER
PLATFORM

 **SPARKLE** | CORPORATE
PLATFORM

 **SPARKLE** | MOBILE
PLATFORM

 **SPARKLE** | VOICE
PLATFORM

 **SPARKLE**

TIM Group Overview

A background image showing a group of business professionals in a modern office setting. In the foreground, two men in suits are shaking hands. Other people are visible in the background, some looking at documents. Large windows in the background offer a view of a city skyline.

Employees **57,901**

Customers (Mln) **106.6**

Revenues (Bn €) **18.9**

Data as of December 2018

TIM Group Overview



TIM is the **leading Italian** Telecommunications and ICT provider. In the areas of fixed, mobile and convergent telecommunications, internet, digital content, office and systems solutions, research and development

Leading Player in Brazil

Among TOP global operators through Sparkle

Core markets: Italy, Brazil

Sparkle Overview

Company data

Headcount

745

Countries of presence

33

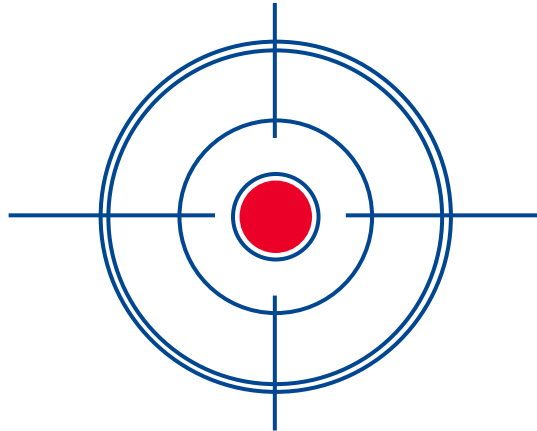
Network coverage

#PoPs 143

PoPs via partners

> 1,000

Data as of December 2018



Key figures

Voice Traffic

14.2 Bn minutes

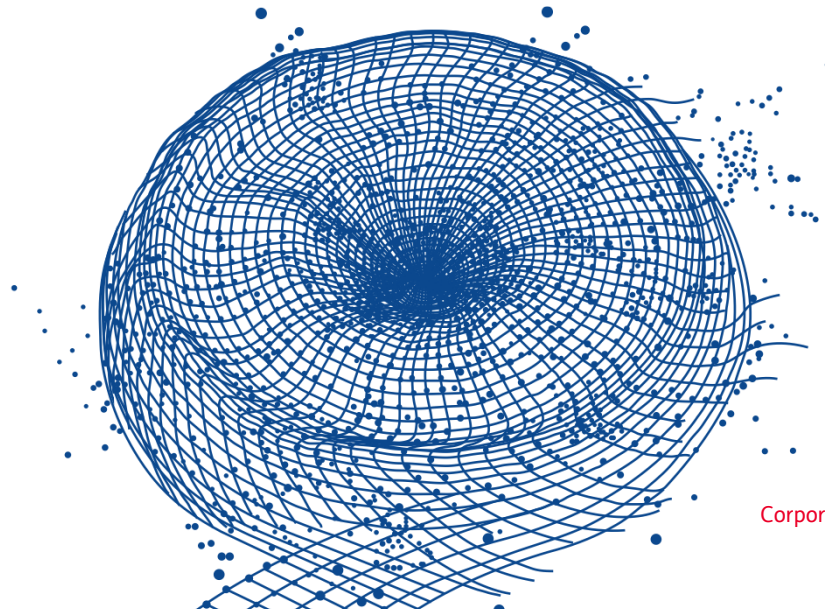
Revenues

1.3 Bn €

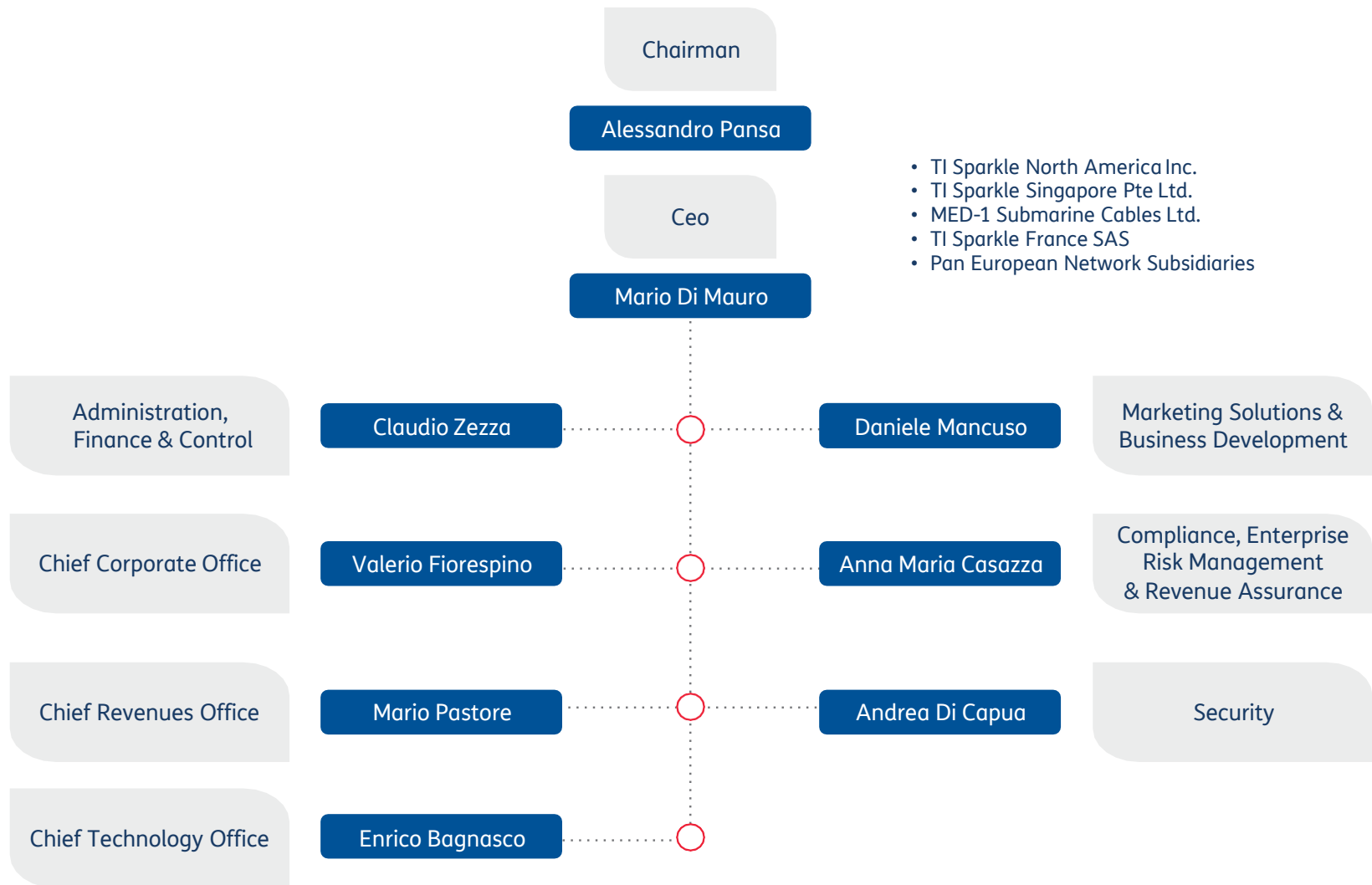
Data as of December 2018

Sparkle Overview

- **A LEADING GLOBAL OPERATOR** with an unparalleled experience and know-how in a multiplicity 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** created in 2003 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 Organization



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

Sparkle 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



#1 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
2 in South America
2 in Africa
4 in Europe**

IP WW Ranking

IP Global Ranking (Backbone)	December 2018
Telia Carrier	1^
Cogent	2^
NTT	3^
Level 3	4^
Tata Communications	5^
GTT	6^
Sparkle	7^
Hurricane Electric	8^
Century Link	9^
PCCW Global	10^

(source: Ranking Renesys)



**Voice Platform
10 Globally**

Int'l Voice traffic Ranking

Bn Min	2018
Vodafone CS	1^ 59,0
Tata	2^ 37,7
Orange	3^ 30,5
Barthi	4^ 28,0
DT	5^ 27,2
IDT	6^ 26,0
BICS	7^ 24,5
Telefonica	8^ 24,1
iBASIS	9^ 15,8
Sparkle	10^ 14,2

(source: GW Tracker)

Sparkle Key Assets



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



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



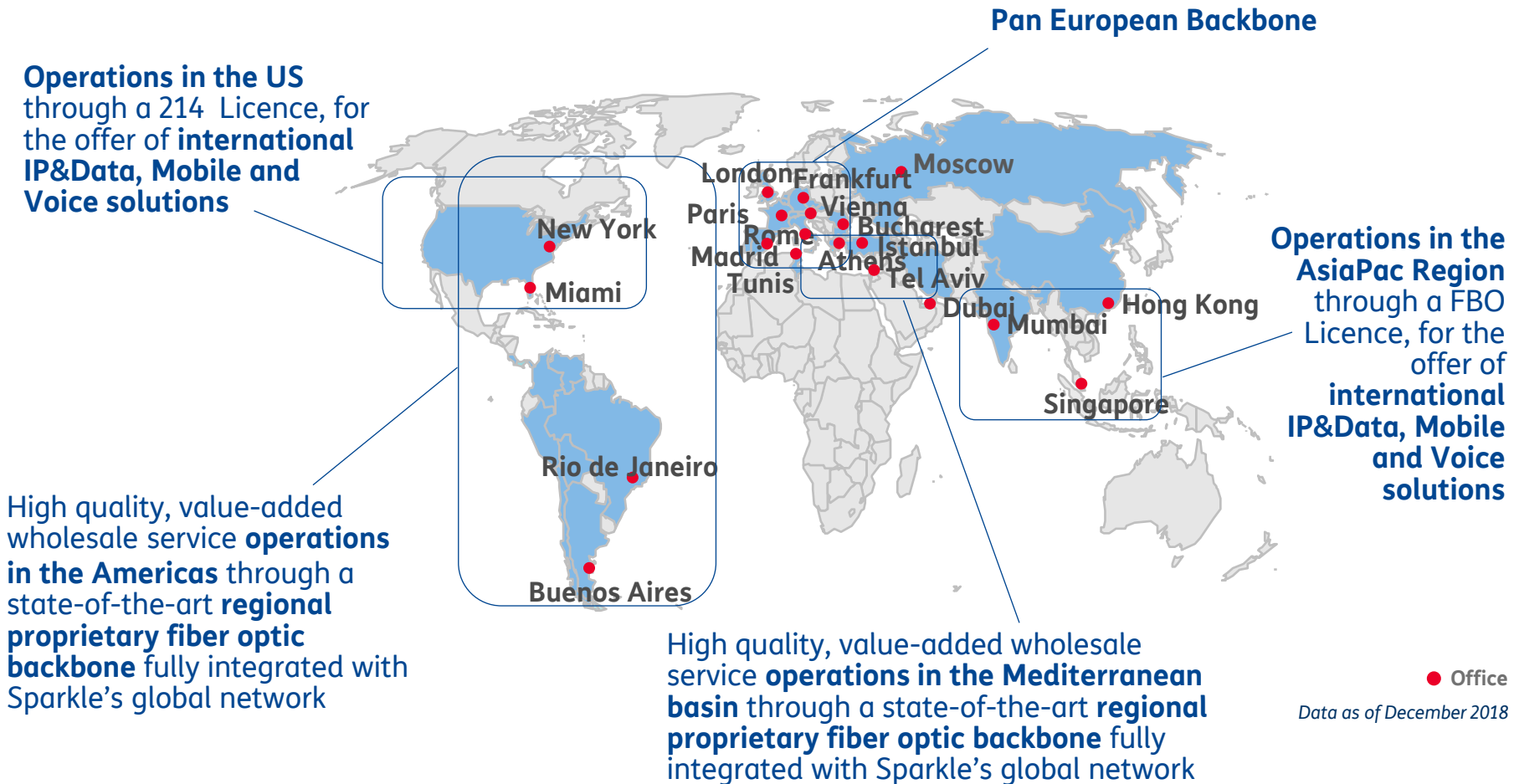
Worldwide presence in 33 countries based on fully owned companies and offices



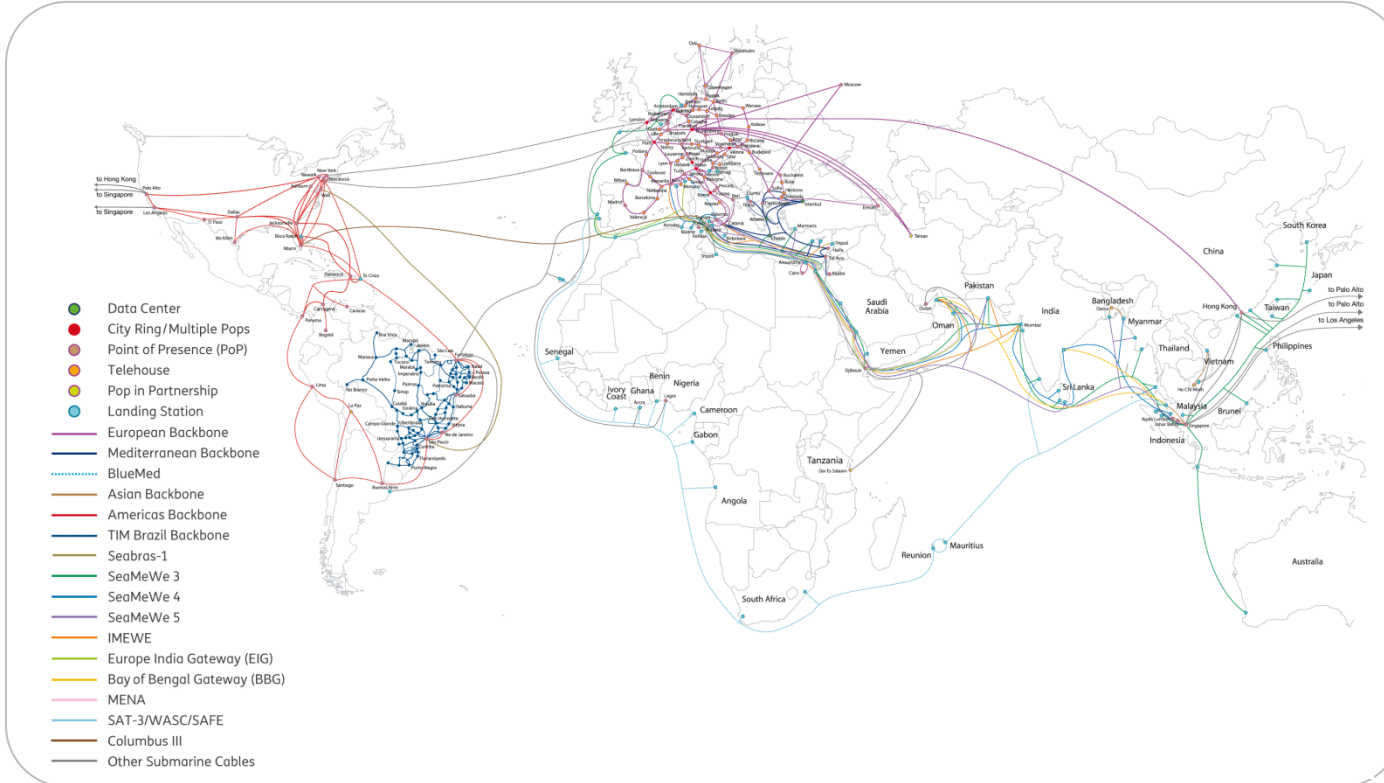
Advanced OSS, BSS and Customer Care capabilities with multi-lingual call center

Sparkle Operations

Sparkle has a **global presence** based on its fully owned subsidiaries and offices in **33 countries**, with a headcount of over 700 in Italy and abroad



Sparkle Global Network



GLOBAL CAPABILITIES

- ▶ 81 cities in 40 countries
- ▶ 143 PoPs
- ▶ >1,000 PoPs through partners
- ▶ 41,000 km/fibre PEB
- ▶ 47,000 km Americas Backbone
- ▶ 10,800 km Mediterranean Backbone
- ▶ 18,000 km/fibre Italian network
- ▶ around 413,000 km submarine cables

Data as of December 2018

- 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 and Jordan
- Increased network capillarity in Europe
- New proprietary redundant backbone links from North to South America and new cable Seabras-1 connecting New York and Sao Paulo
- Capacity across the Atlantic and the Pacific

Sparkle 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**



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



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



Complete portfolio of services ranging from entry-level solutions for small and medium enterprises, to business continuity solutions, with the highest level of service performance



Distinctive portfolio of services to support the operations of new entrants and established mobile operators. The services aim to quickly increase international mobile service coverage and usage, thus generating new revenue streams for mobile operators while minimizing costs for service set up and management



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 | Virtual NAP
- SPARKLE | City2City
- SPARKLE | IXP Connect
- SPARKLE | Ethernet Suite
- SPARKLE | Site2Site
- 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 | Site2Site
- SPARKLE | Global Connect
- SPARKLE | Data Center Connect
- SPARKLE | Cloud Connect
- SPARKLE | Bandwidth on Demand
- SPARKLE | Outsourcing Solutions
- SPARKLE | Communication Solutions
- SPARKLE | Security Solutions
- SPARKLE | Media Solutions
- SPARKLE | eHealth Solutions

SPARKLE | MOBILE PLATFORM

YOU MOVE AND TOGETHER WE EVOLVE

- SPARKLE | IPX
- SPARKLE | GRX
- 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

Cloud & Data Center Solutions

Data Center

6 DC Hubs Worldwide
Located

Colocation

Best Technology in
the Market

Power

Everything you need to be
connected

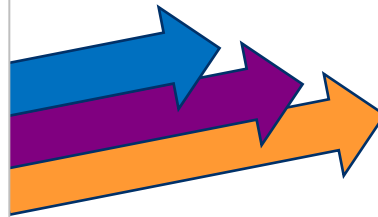
Cabling

360° Data Center
Support

**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

*"Best of Breed" Strong
Authentication Service*

**Online
Marketplace**

*Self-Management white
label marketplace and
Advanced SaaS*

DaaS

*High business agility and
continuity*

Cloud Storage

*Secure, Robust and
Scalable*

**ERP
Infrastructure**

*ERP processes acceleration
solutions*

Live Connect

*The fastest way to
communicate with
customers*

**An innovative and wide
service portfolio**

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

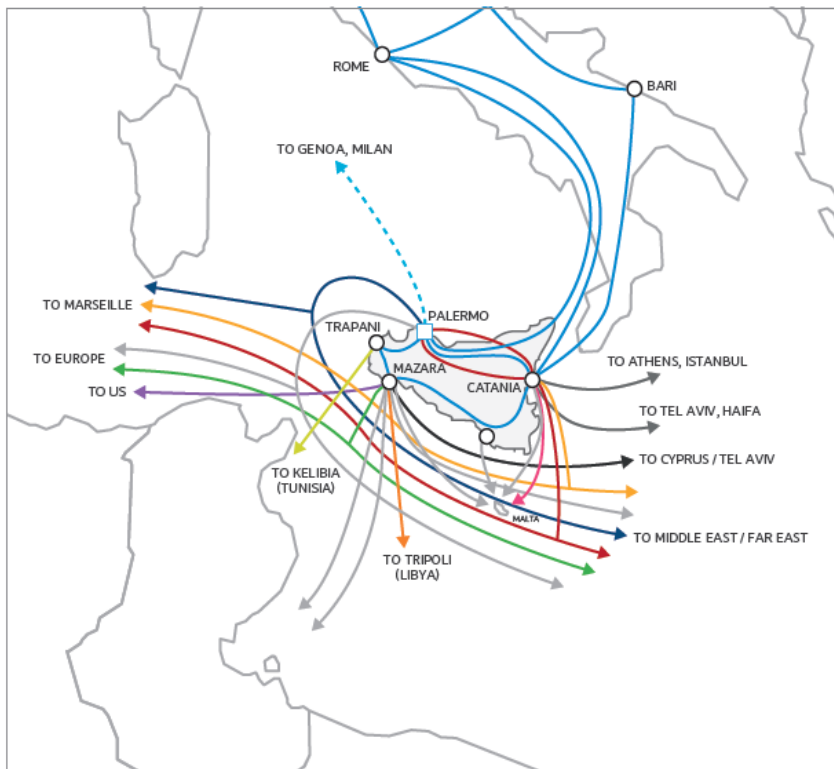
Colo and Hosting capabilities, completely
**integrated with Sparkle's network services
worldwide**

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

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

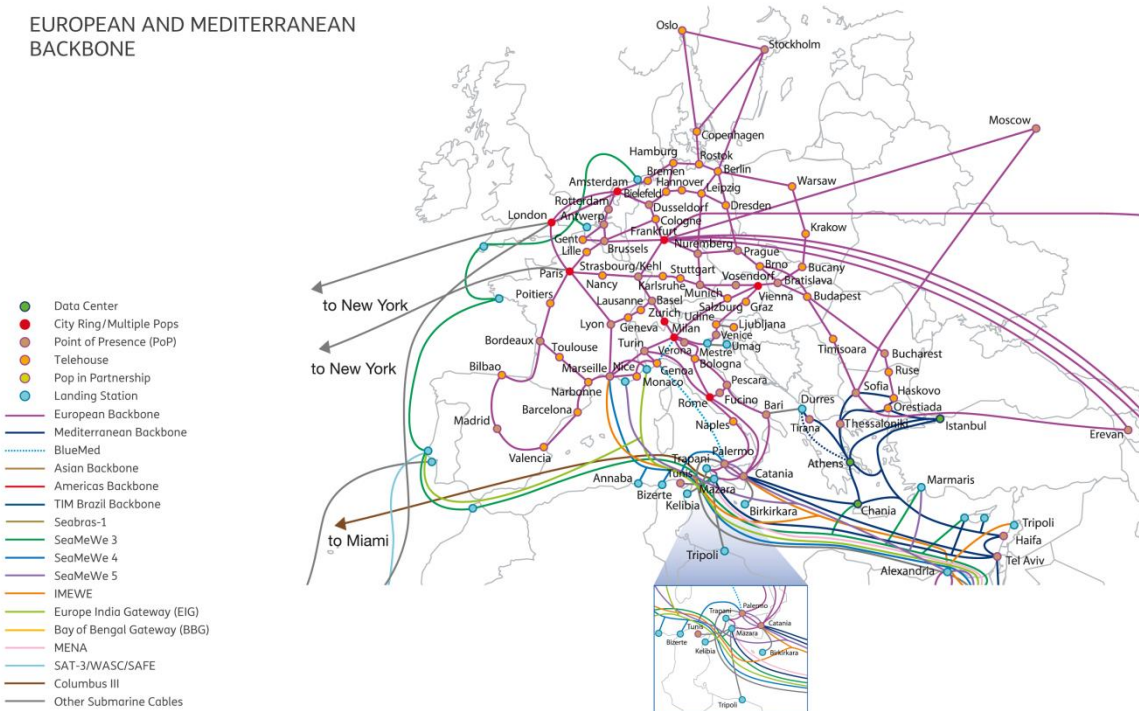
SPARKLE | Sicily Hub



- **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

Focus on Key Regional Backbones: Europe & Mediterranean

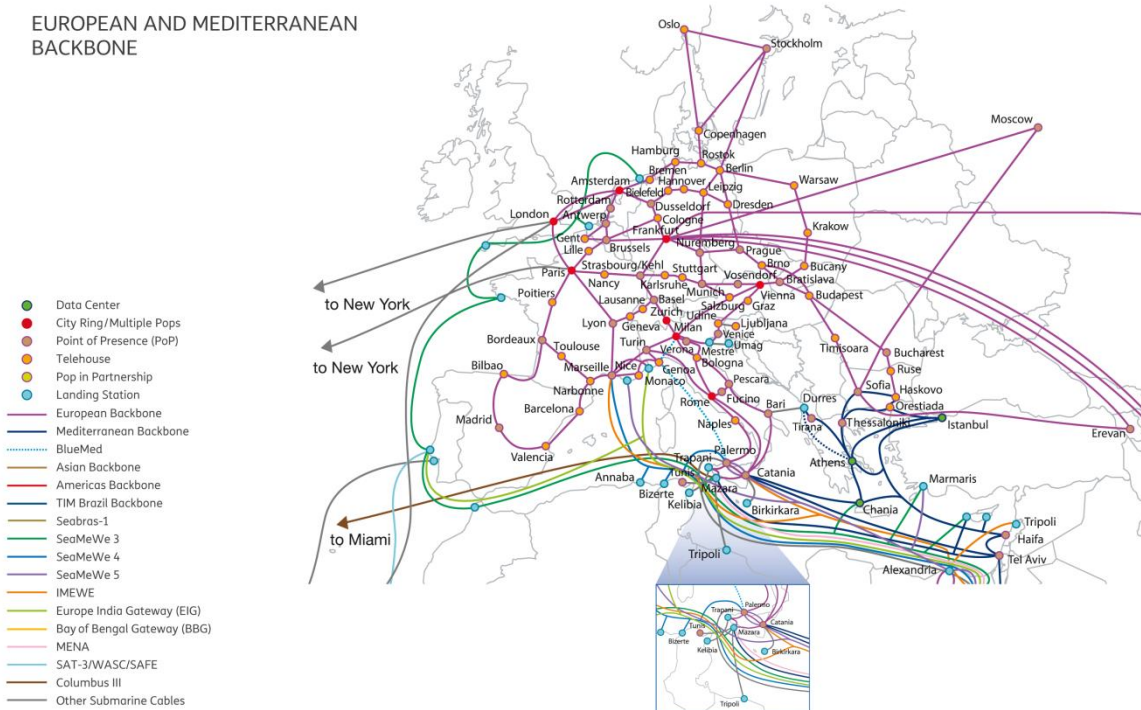
EUROPEAN AND MEDITERRANEAN BACKBONE



- 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 POP in Moscow for Corporate Solutions

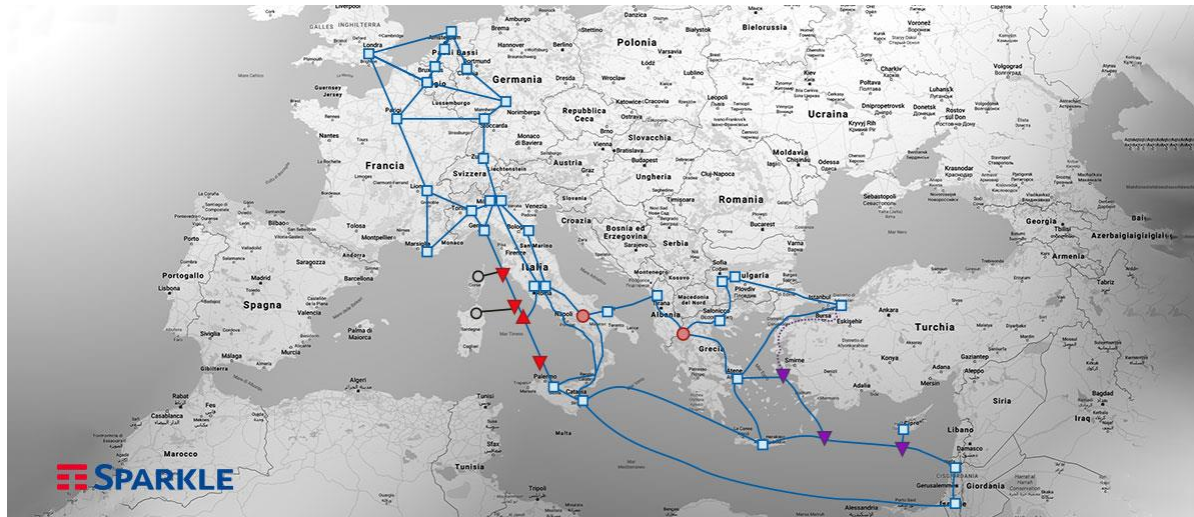
Reinforcing Leadership in the Mediterranean through BlueMed....

EUROPEAN AND MEDITERRANEAN BACKBONE



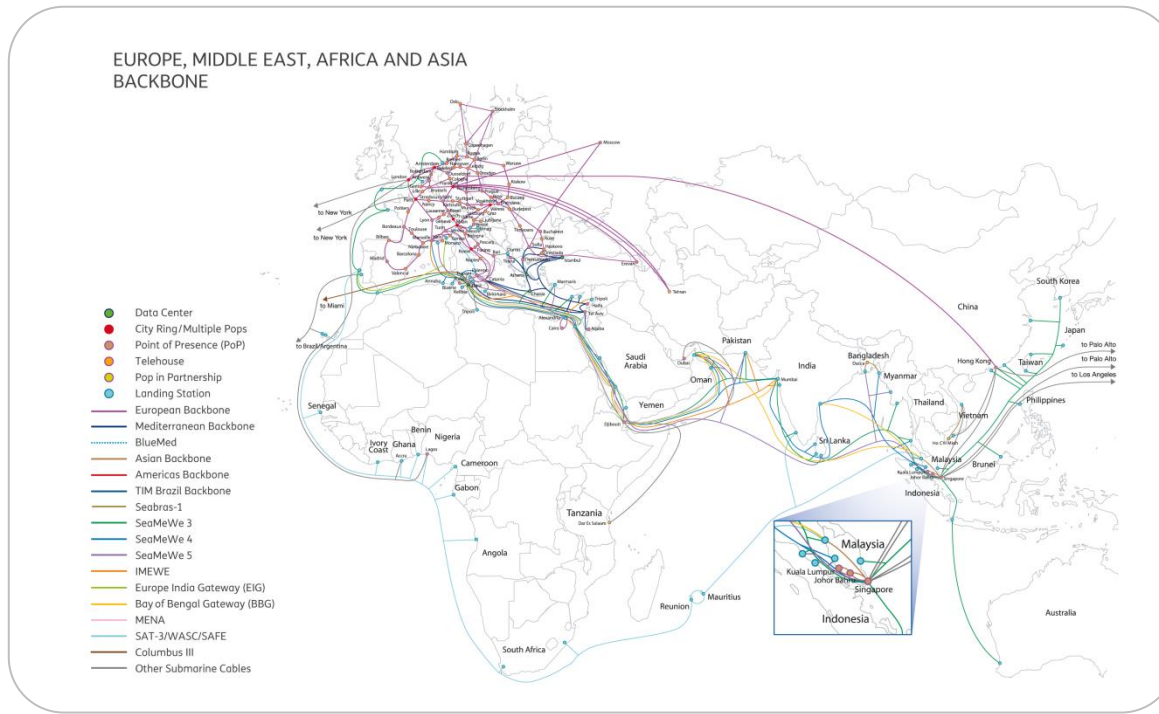
- New cable to connect Palermo with Genoa's new open landing station, directly connected to Milan's rich digital ecosystem
- Multiple branches within the Tyrrhenian Sea to support further extensions southbound of Sicily
- Capacity up to 240 Tbps, Total length of 1,000 km
- Expected RFS 2020
- BlueMed 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**

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



- 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 planned to go live in summer 2019 connecting Sparkle's Sicily Hub in Palermo with Milan Caldera open datacenter
- RFS: EoY 2020

Strategic Focus on Med, ME, Africa & APAC Corridors



- **IMEWE reinforces Italy's role as main infrastructural Hub in the Mediterranean** connecting Middle East and South-East Asia to Europe
- 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**

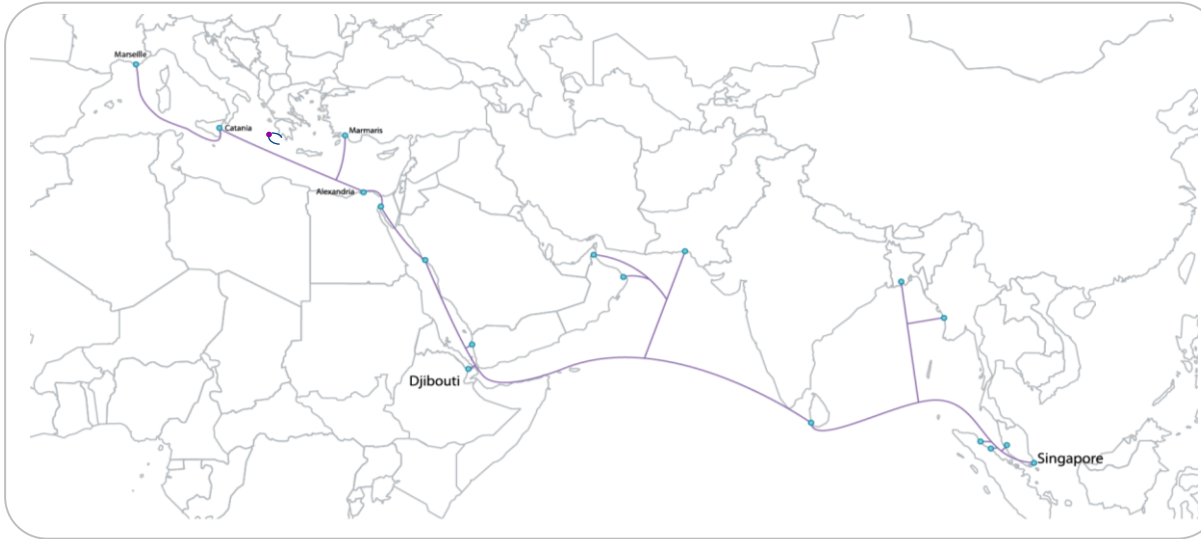
EUROPE TO AFRICA, ME & ASIA

- **SeaMeWe-4** cable: France, Algeria, Tunisia, Italy, Egypt, Saudi Arabia, India, South-East Asia
- **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)
- **SeaMeWe-5** cable: Europe to Asia with a main landing in Catania, Sicily

EUROPE TO WEST AFRICA & SOUTH AMERICA

- **SAT-3** (Europe, West Africa), **ATLANTIS-2** (Europe, West Africa, South America)

Reinforcing Leadership in the EU-Asia Corridor: SeaMeWe-5

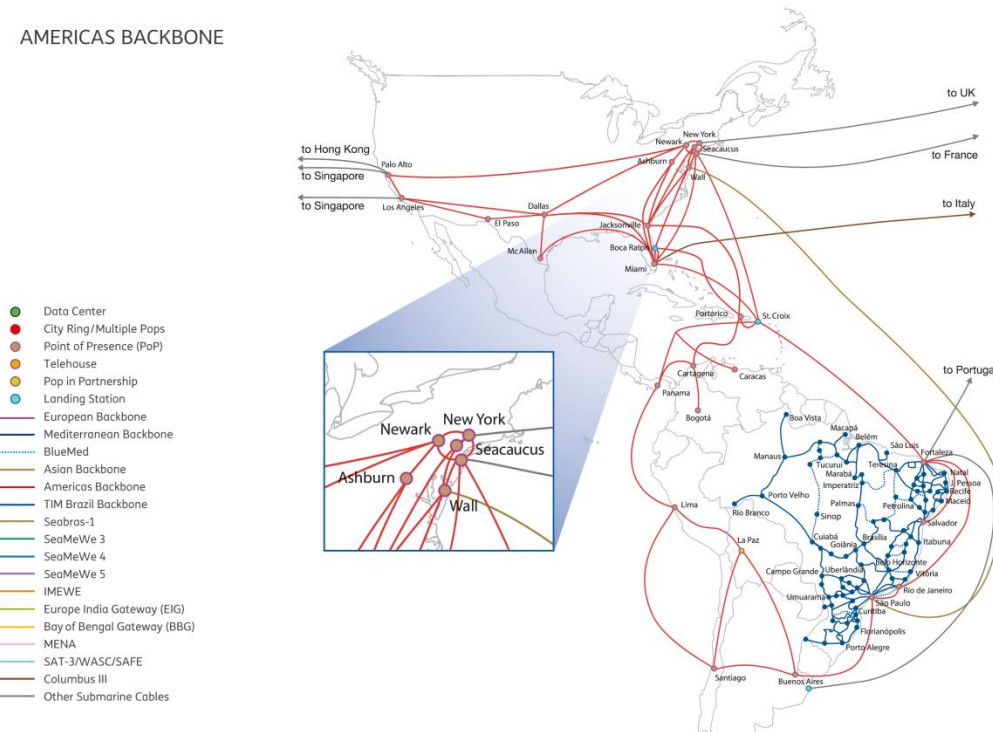


- Total length of **20,000 km**
- 20,000 km of **Core System with 3 fiber pairs**, 4 fiber pairs in the Mediterranean
- Design capacity of 80 waves **at 100 Gb/s per fiber pair**

- **Sparkle is among initial investors for the implementation of the new submarine cable system connecting Europe to Singapore.** Participated by 19 global players, **SeaMeWe-5 connects Europe to Asia with main landing in Palermo and Catania, Sicily.**
- **The new cable system reaches 17 countries:** Singapore, Malaysia, Indonesia, Myanmar, Bangladesh, Sri Lanka, Pakistan, Qatar, Oman, UAE, Yemen, Djibouti, Saudi Arabia, Egypt, Turkey, France and Italy
- Devised with the latest **100Gbps technology**, SeaMeWe-5 is a multiregional superhighway that provides lowest latency and **represents an additional network layer of diversity and resilience for the heavily loaded Asia to Europe route**
- Sparkle has been awarded both **Network Administrator (NA)** and **Network Operation Center (NOC)** responsibilities for SeaMeWe-5. Both activities are performed in **Sparkle's Core Landing Station in Catania**, which is also a **main landing point in Europe for SeaMeWe-5** as well as for other major international cable systems
- With the participation to SeaMeWe-5 **Sparkle enhances its customer proposition with a diversified and low latency route to and from Asia**, thus **further strengthening Sparkle's role as major cable landing hub in Europe and the Mediterranean**

Focus on Key Regional Backbones: Americas

AMERICAS BACKBONE



- Full IP network in the Americas

- New Seabras-1 cable connecting New York and Sao Paulo

- State-of-the-art proprietary fiber optic backbone in 9 countries: US, Argentina, Brazil, Bolivia, Chile, Colombia, Panama, Peru, Venezuela

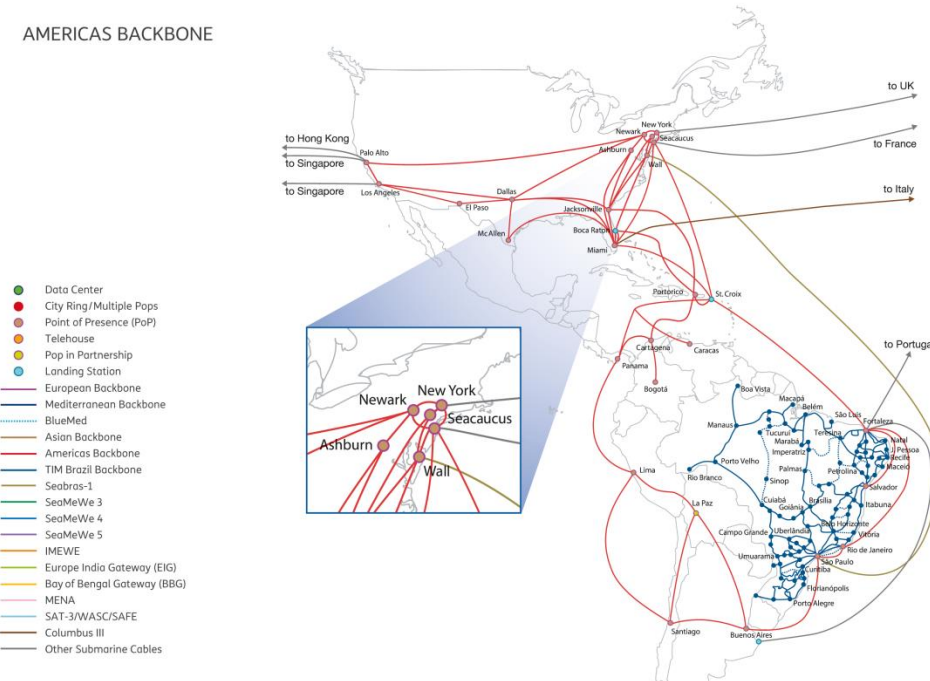
- New proprietary redundant backbone links from North to South America

- TIM Brazil Backbone fully integrated with Sparkle's global network

- Capacity across the Atlantic and the Pacific

Reinforcing Leadership in the Americas: Seabras-1

AMERICAS 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

A Look to the Near Future

A progressive and future proof strategy: reshaping the growth

GOING TO ENTERPRISE: A SCALABLE & REPLICABLE MODEL

- **Services & Portfolio Evolution:** Integrated **portfolio evolution** with **quick-win** solutions (e.g. Messaging, Mobile device management, etc.) and **strategic** solutions (e.g. Hybrid Cloud, Security, SD-WAN, etc.) for **geo-scaling**
- **Innovative virtual portfolio supported by partnership** with **ICT players** and **startups** to satisfy specific **customer demand**

CABLES RELAUNCH: REAFFIRMING THE STRATEGIC ROLE IN CORE BUSINESS

- **Consolidating Mediterranean basin leadership through the extension and enhancement of regional backbone:** new multi-fiber submarine **BlueMed** cable linking Palermo with Genoa
- **Developing a new Mediterranean system from Palermo to South Europe Basin**
- **Expanding the reach toward new frontier**

Sparkle Training Programs

With a history of experience and know-how in a multitude of markets, Sparkle launched two training programs that provide the key competencies required to recognize, strategize and respond quickly and successfully to the ever-changing environment of the international telecommunications market

- **Global Satiro Training Program** consists of technical and commercial in-class programs that offer an in-depth comprehension of the international telecom market and of its dynamics as well as all the skills to maximize the value of technology and optimize its overall contribution to the business
- **Satiro Mobile Training Program** provides an overview of Mobile Networks and Services evolution, from GSM to LTE, with an in-depth analysis of International Roaming Services

50+ Operators have participated to the last 12 editions



3 editions in the last 2 years



Global Partner

GP is a new line of business that offers structured capabilities to share TIM Group's key assets and competences with partners worldwide. Unlike traditional consulting firms, GP offers its extensive «hands on» know-how directly through highly skilled line managers and experts

PEOPLE	Extensive market, business and technical expertise , with multi-cultural approach
PROCESSES	Solid business processes throughout the value chain , constantly updated with best practices
PLATFORMS	In-house development & customization capabilities , leading to cost effectiveness
PORTFOLIO	Wide portfolio covering all customer segments

Our ICT line managers and experts:

- adopt a highly pragmatic approach, based on field experience
- are focused on delivering quick results allowing partners to resume work promptly
- deeply understand our partners' needs and speak their same "language"



Benefits

- Revenue increase
- Lower time-to-market
- Improved efficiency
- Better quality of service
- Innovation

Best option for explored topics

Sparkle Winner at the Global Wholesale Excellence Voice Award 2017



Sparkle wins the Global Wholesale Excellence Voice Award at PTC 2017

- Sparkle has been awarded the **Global Wholesale Service Provider Excellence award for Voice Value in the Midsized category**. Sparkle received the important recognition from industry research and analysis firm Atlantic-ACM as a result of their Global Wholesale Report Card market research
- Sparkle has obtained the highest voice value score calculated by combining respondents' **Quality and Price Competitiveness** perceptions and considering international Wholesale Voice Services such as guaranteed **quality Voice Termination, best efforts Voice Termination, Global Mobile Interconnection and IPX Services**
- The ATLANTIC-ACM Global Wholesale Report Card is an independent, market-wide customer survey study of leading global wholesale providers. Nearly 400 respondents supplied around 1,400 individual carrier ratings, grading global wholesale service providers in categories that include numerous quality and price competitiveness categories for voice and data services in addition to provisioning, network performance, billing, customer service among others

Sparkle Winner at the Proof of Concept Showcases at MEF 2018

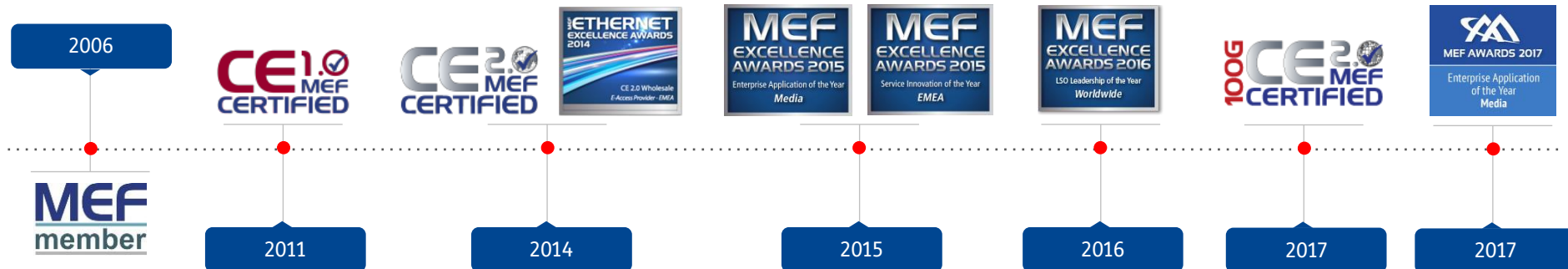
- Sparkle wins “Best MEF 3.0 Implementation Project 2018” and “Silver Proof of Concept” at MEF18
- The awards recognize Sparkle’s ability to implement platforms for the automation and network programming, for the services orchestration and the commercial iterations management, using blockchain technology
- **Best MEF 3.0 Implementation project 2018** awarded the longstanding project on “**Fulfilment and Activation of an Intercontinental MEF 3.0 Service Spanning Four Operators**” developed by Sparkle together with Amartus, ECI Telecom, Equinix, Liquid Telecom, Spirent, and Tata Communications with the objective to implement LSO (Lifecycle Service Orchestration) architecture and LSO APIs across multiple domains, testing processes and automation and virtualization platforms, for automated MEF 3.0 services in an intercontinental network context
- **The Silver PoC Award** has been assigned to Sparkle, as well as to service providers CBCcom, PCCW Global, Tata Communications and technology vendors Clear Blockchain Technologies and Cataworx, for the Proof of Concept on “**MEF 3.0 LSO Federated Inter-carrier Data-on-demand Services through Automated Discovery and Blockchain Settlement**” that showcased how telcos can introduce next-generation services in record speed, thanks to innovations in blockchain technology, artificial intelligence and intent-based customer interfaces
- These wins follow the recognitions achieved in the past years and confirm Sparkle’s commitment and excellence in deploying forward-looking technologies and contributing to the definition of industry standards



Sparkle Winner at the MEF Excellence Award 2017

Sparkle awarded with Best Enterprise Application of the year for Media

- The award recognizes the innovation of a new proposition developed in partnership with Aldea Solutions that provides **high performance end-to-end permanent and occasional video services to Broadcasters, Content Providers and Final Diffusion Networks** ensuring top performance and global coverage
- In 2016 **Sparkle** won the **LSO leadership Worldwide awards**. The award recognized the leading role of Sparkle in adopting MEF's concept of Lifecycle Service Orchestration (LSO) and implementing a **new architecture** that enables customers with an end-to-end management of the connectivity solutions purchased
- The first two innovative digital solutions introduced, **Data Center Interconnect** and **Secure Cloud Interconnect**, provide customers looking for more scalable bandwidth, capacity and intelligence, with the ability to distribute more efficiently the volume of traffic and transactional data among their own data centers and/or Cloud Provider premises
- These award follow the recognition as **Best Service Innovation-EMEA** and **Best Enterprise Application-Media** in 2015 and the recognition as **Best CE 2.0 Wholesale E-Access Provider EMEA of the year** and the **Carrier Ethernet CE 2.0** Certification obtained in 2014 by Sparkle and Telecom Italia Group, the first Service Providers in Europe to achieve this Certification
- As further recognition of Sparkle's commitment in providing customers with best performing advanced connectivity solutions, in January 2017, Sparkle has obtained the **MEF 100G Carrier Ethernet 2.0 Certification For E-Line (EPL & EVPL) Services**. It is the first Service Providers in Europe to achieve this certification and the first worldwide Service Providers to become MEF 100G CE 2.0 certified for E-Line Services on a submarine cable system



Sparkle Winner at the Global Carrier Awards 2019

Sparkle wins the **Best European Project** and **Best Social Media Campaign** prizes at the Global Carrier Awards. The awards follow the recognitions achieved by Sparkle in 2016 for **Best Marketing Campaign** and in 2014 for **Best OTT Partnership** and **Best Latin American project**



The **Best European Project** award recognizes Sparkle's top-notch offer providing disaster recovery as-a-service (DRaaS) out of its data center in Catania, Sicily, in collaboration with Nutanix, world leader in enterprise cloud computing



The **Best Social Media Campaign** award acknowledges the effectiveness of the company's digital corporate identity deployment and its renewed digital communication strategy resulting in a remarkable increase of the follower base and engagement rate

Thank You

