Creating a new open-access node in Med region

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November 2022

GRID TELECOM

Grid Telecom's Origins

- **Grid Telecom** is a wholly owned subsidiary of the **Independent Power Transmission Operator** (IPTO) of Greece, acting as its vehicle to provide high quality telecommunications services on wholesale basis to national and international operators and OTTs.
- The optical fiber network installed by IPTO, is an integral part of its broader network that extends nationwide in Greek mainland and the islands and is interconnected with the corresponding Transmission System Operator (TSO) networks of neighboring countries and beyond.

Alternative Optical Network

- Grid Telecom's **alternative optical backbone network** utilises the overhead Optical Ground Wire (OPGW) cables on IPTO's transmission towers and available subsea optical cable systems, achieving the shortest possible routes and minimum faults, ensuring network diversity, high availability, and low latency.
- Grid Telecom's domestic network exceeds 4,000 km, offering diverse fiber connectivity throughout Greece and beyond. Through a state-of-the-art proprietary **DWDM** network, offers ultra high-speed interconnections, across Greece.

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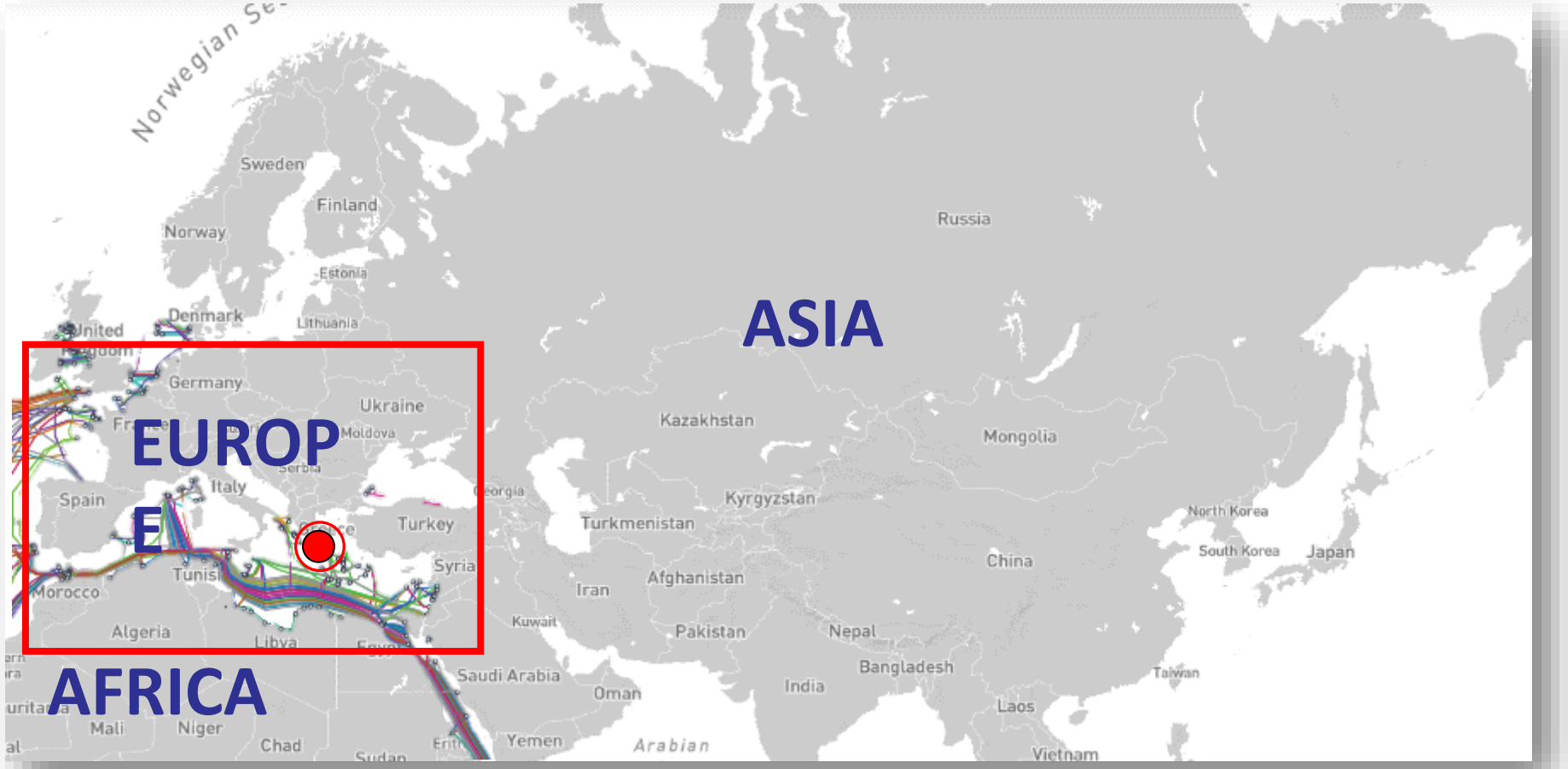
Geopolitics and Geostrategy



- Greece in the middle of three continents
- All submarine cables coming from Asia and crossing Mediterranean Sea are passing by Greece

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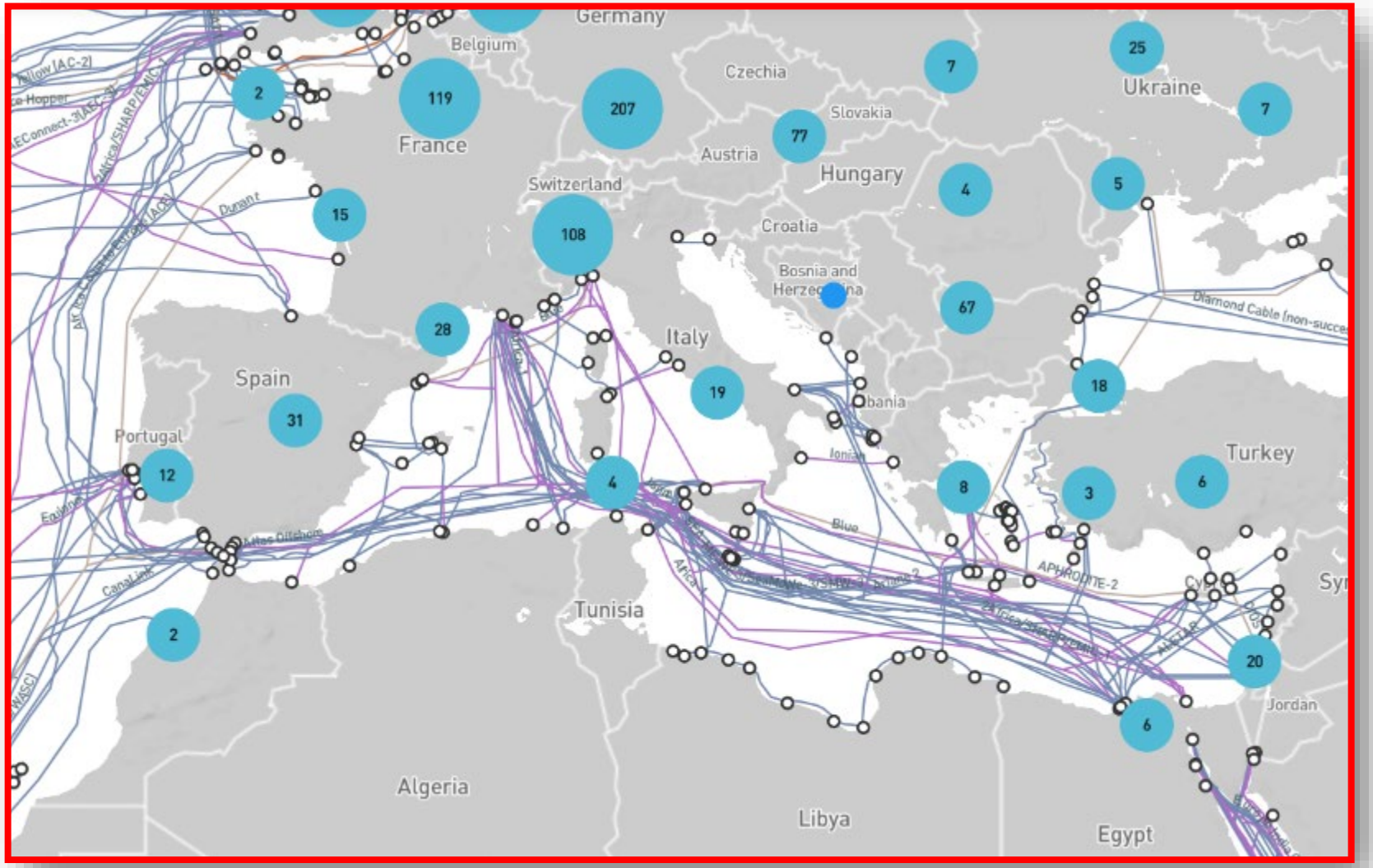
Mediterranean Submarine cables & Data Centers per region



- Active cables are depicted in blue;
- Planned cables are depicted in purple
- Circles depict # of Data Centers

Source : www.infrapedia.com

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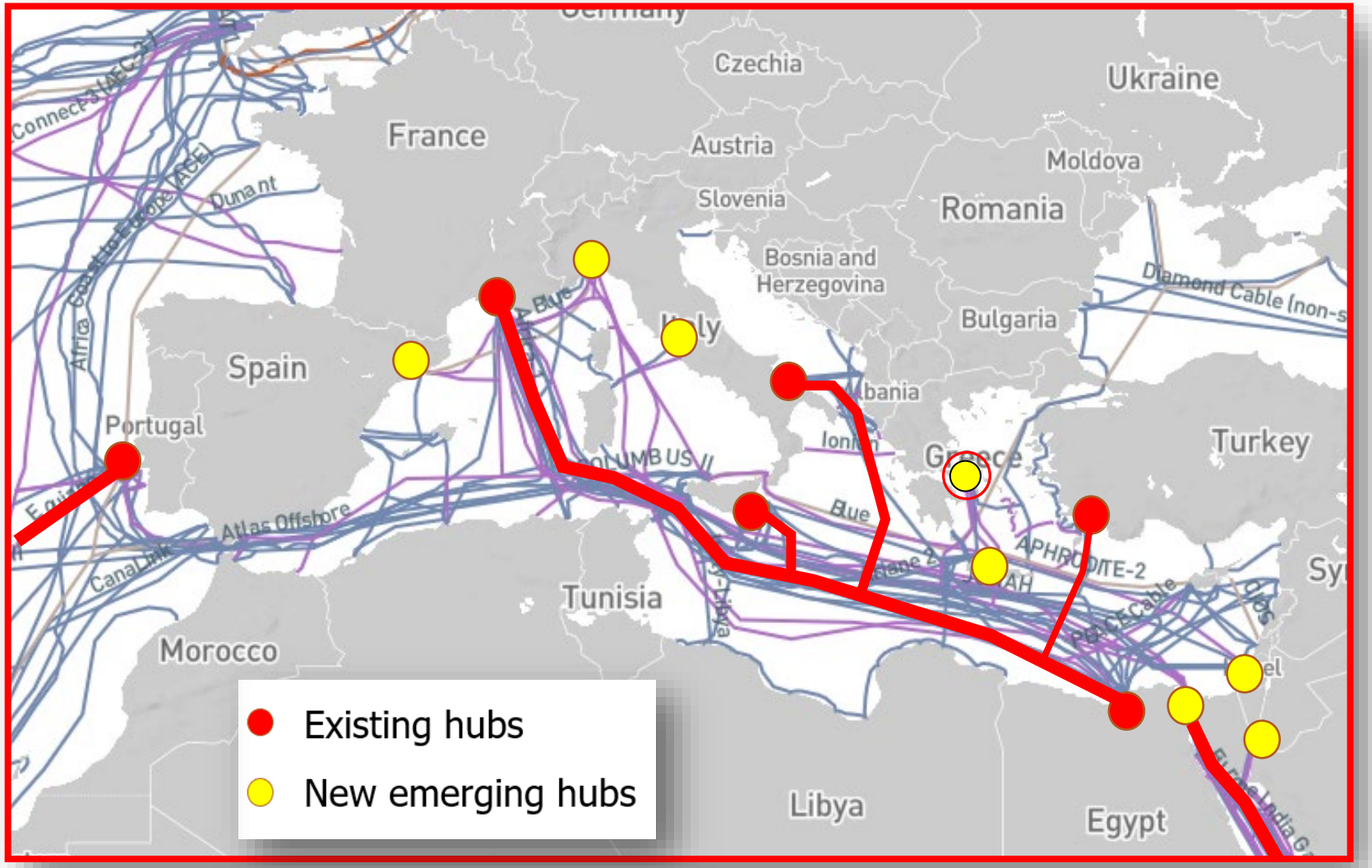
Mediterranean Submarine cables & Data Centers per region



Source : www.infrapedia.com

Greece is seizing the opportunity to fast becoming a critical telecom hub in the broader Balkan – Med region.

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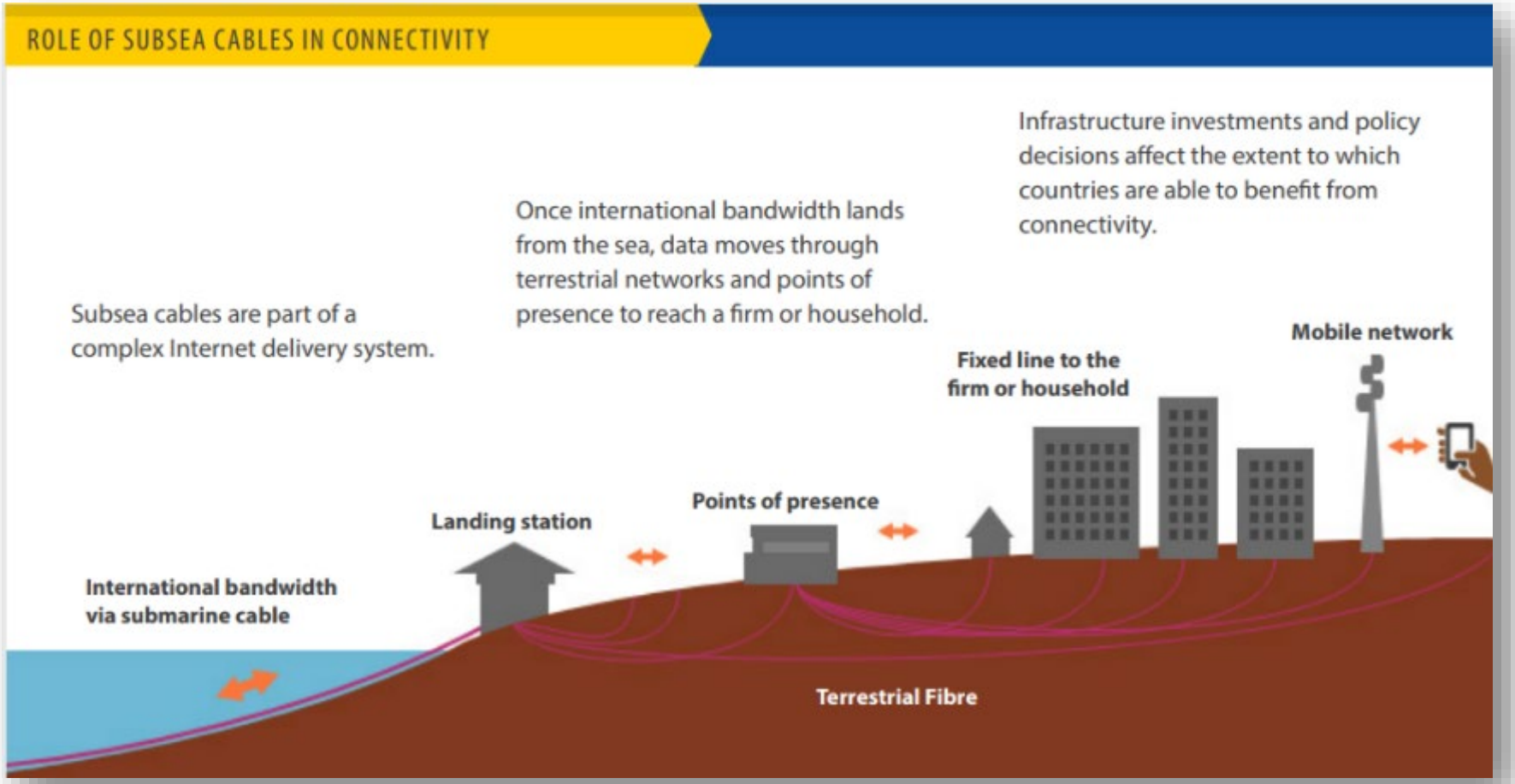
Undersea fiber-optic cables: a critical infrastructure



- Undersea fiber-optic cables support global network society. They carry 99% of all transoceanic digital communications
- It is cable systems, not satellites, that transport most of the Internet around the world.

Source: Study "Economic Impact of Meta's Subsea Cable Investments in Europe"

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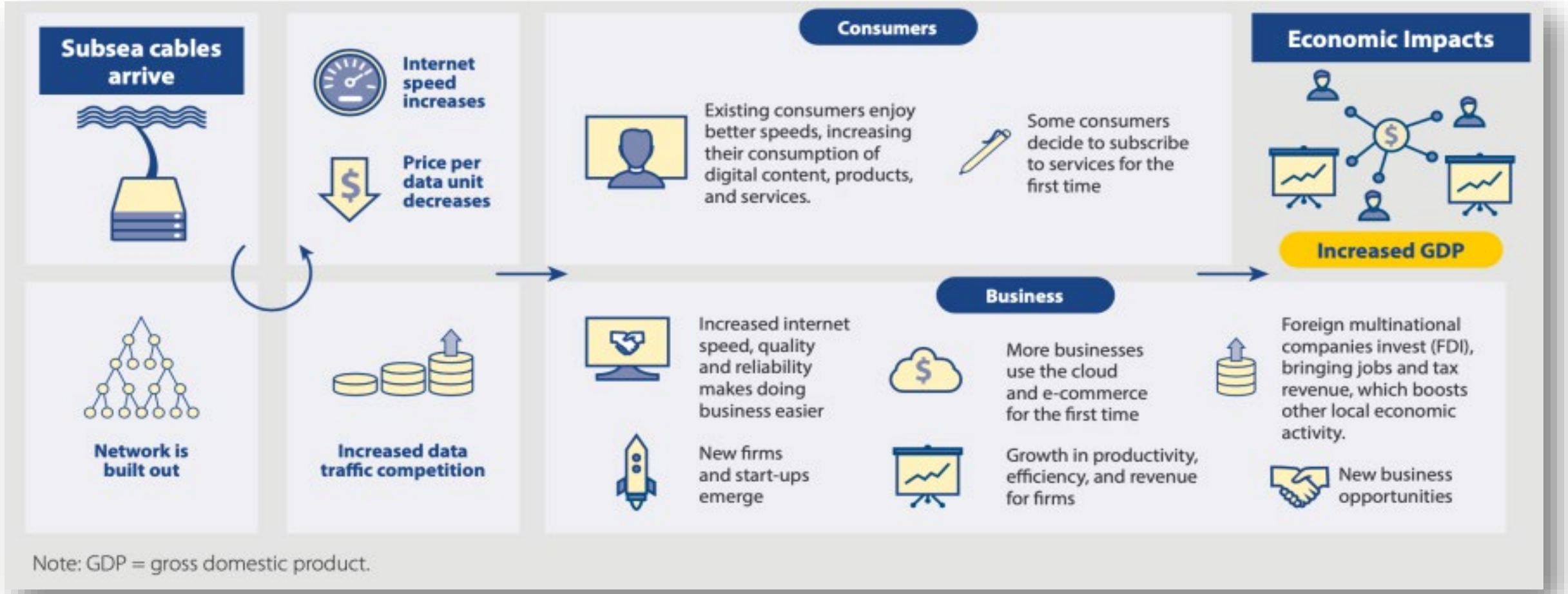
Undersea fiber-optic cables: a critical infrastructure



Source: about.fb.com

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Interconnecting Crete with the Greek Mainland

- Grid Telecom was created to be a game-changer in the wholesale telecommunications market in the BalkanMed region and to offer reliable integrated solutions and exceptional customer experiences, through an independent **carrier neutral** infrastructure network.
- Grid Telecom can offer reliable terrestrial and subsea fiber connections in Greece and neighbouring countries, leveraging its position as an emerging **open-access** regional node.
- Grid Telecom has established the island of Crete as a strategic interconnection node in the Med Sea by adding capacity of hundreds of Tbps through two new subsea cable systems, providing four geographically alternative subsea routes to the Greek mainland, each with 24 fiber pairs.

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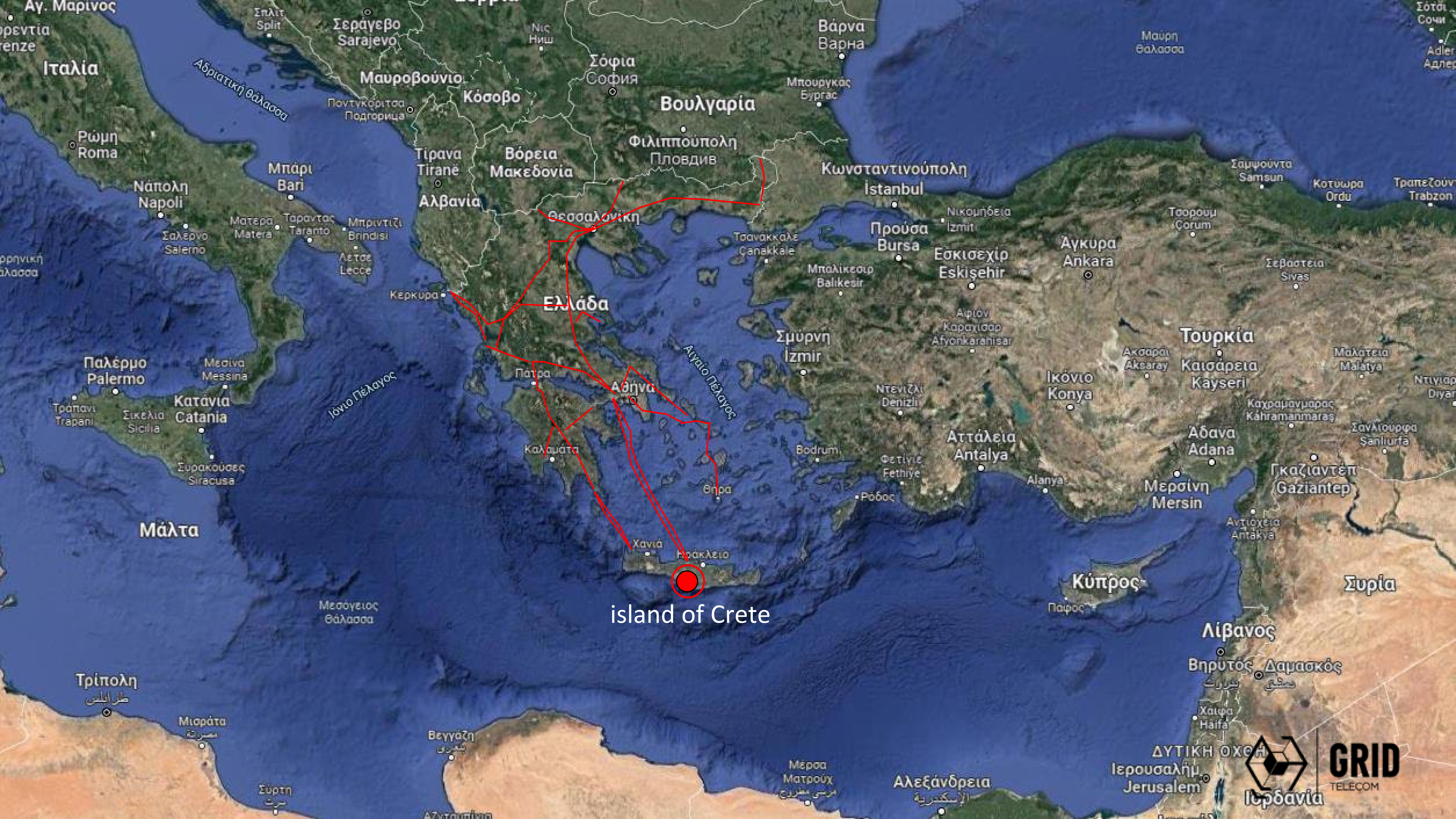
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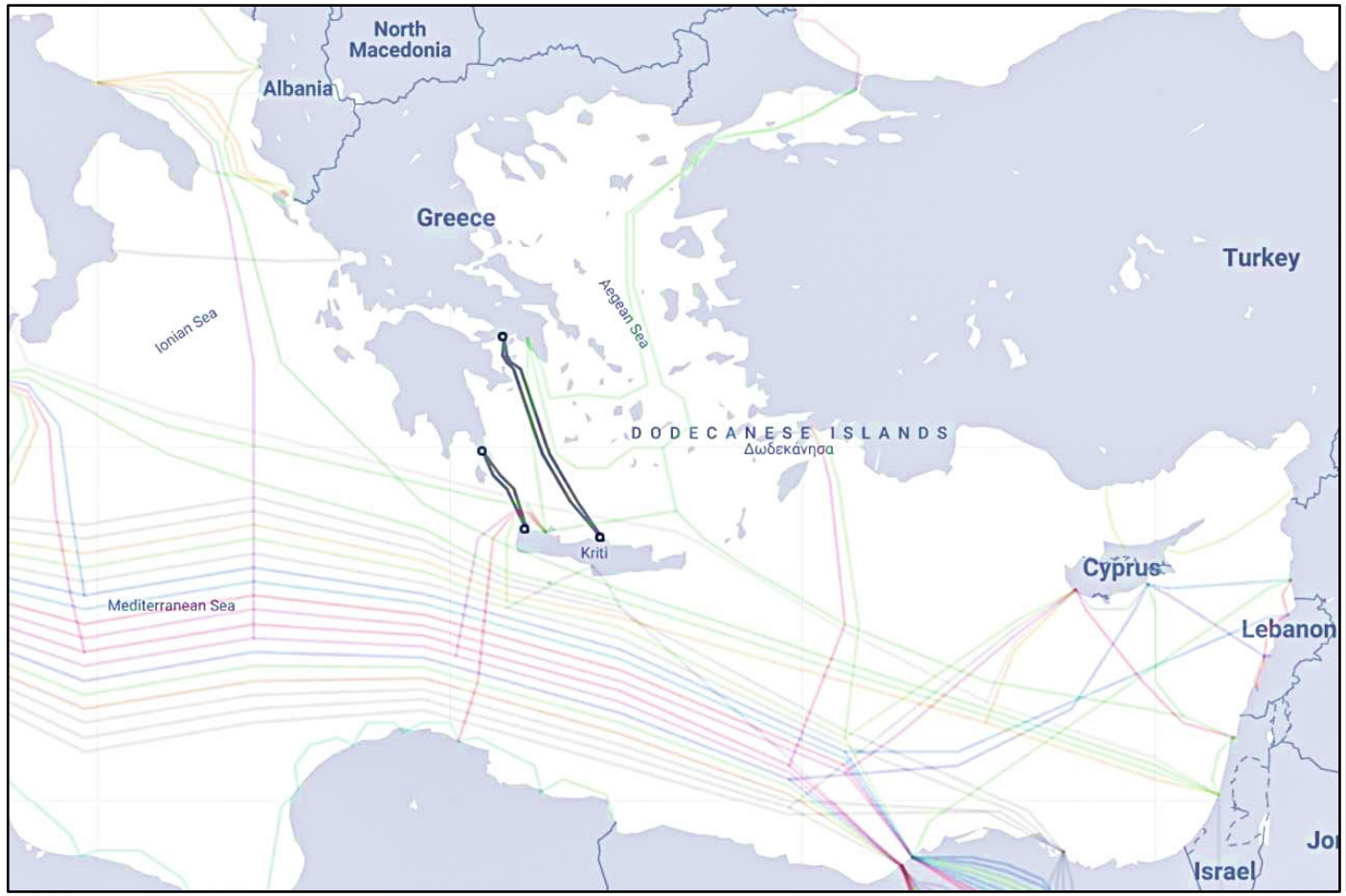
MINOAS East-West and APOLLO East-West



Minoas East and West

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RFS
2021

Cable Length
270 km

Owners
Grid Telecom

URL
https://www.grid-telecom.com/

Notes
Minoas East and West are fiber optic cables attached to power cables. Minoas East was RFS in December, 2021. Minoas West was RFS in May, 2021. Each leg is 135 km in length, for a total of 270 km of fiber optic cable.

Landing Points
Neapoli, Greece
Nopigeia, Greece

Apollo East and West

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RFS
2024 Q2

Cable Length
670 km

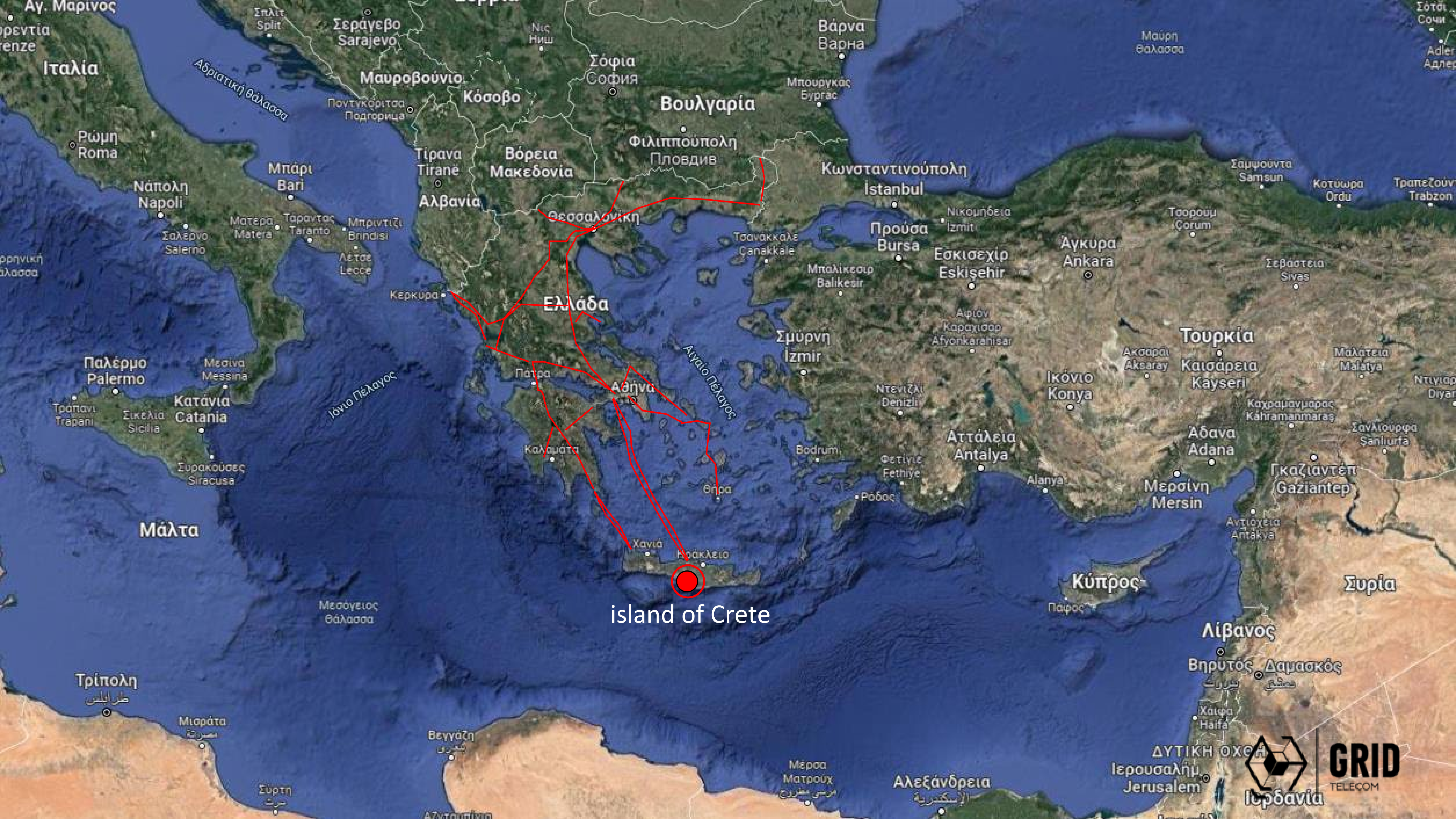
Owners
Grid Telecom

URL
https://www.grid-telecom.com/

Notes
Apollo East and West are fiber optic cables in parallel (but not attached) to power cables. Each leg is 335 km in length, for a total of 670 km of fiber optic cable.

Landing Points
Korakia, Greece
Pachi, Greece

TeleGeography Submarine Cable Map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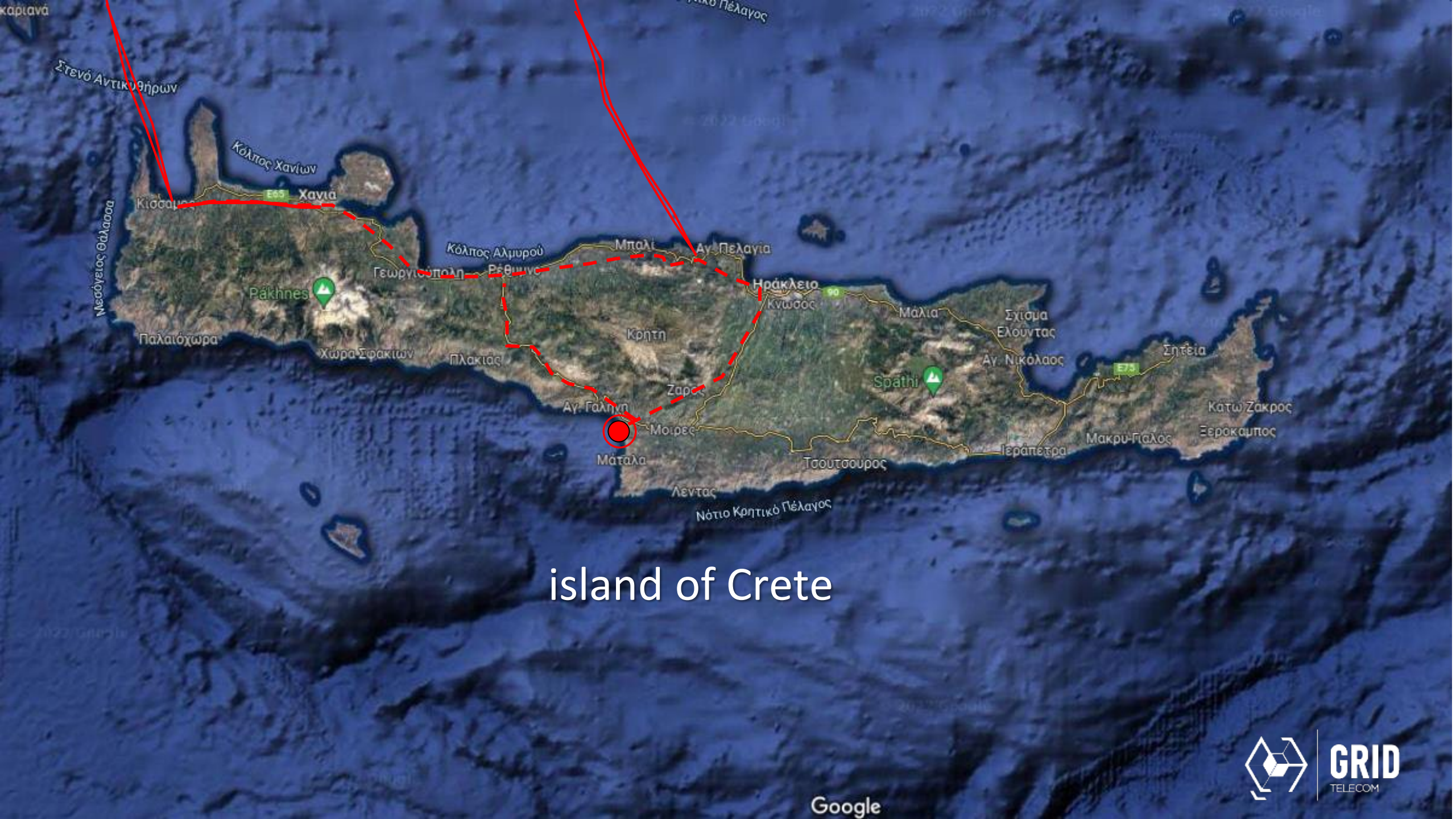

island of Crete

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Cable Landing Stations and Data Centers

- The island of Crete is fast developing into an important telecommunications hub and a data access point for the **BalkanMed** region. Telecom Italia Sparkle and OTEGlobe already operate cable landing stations.
- New additional Tier-III data centers have been announced by GRNET (Knossos-II), Interxion's and Lancom (Balkan Gate Crete) to take advantage of the emerging BalkanMed telecommunications corridor.
- Major subsea cable systems crossing the Med, such as TEAS, BLUE, MEDUSA και IEX have already chosen to land on the island of Crete and others such as 2AFRICA, AFRICA-1, SMW6, etc. are seriously examining the possibility.

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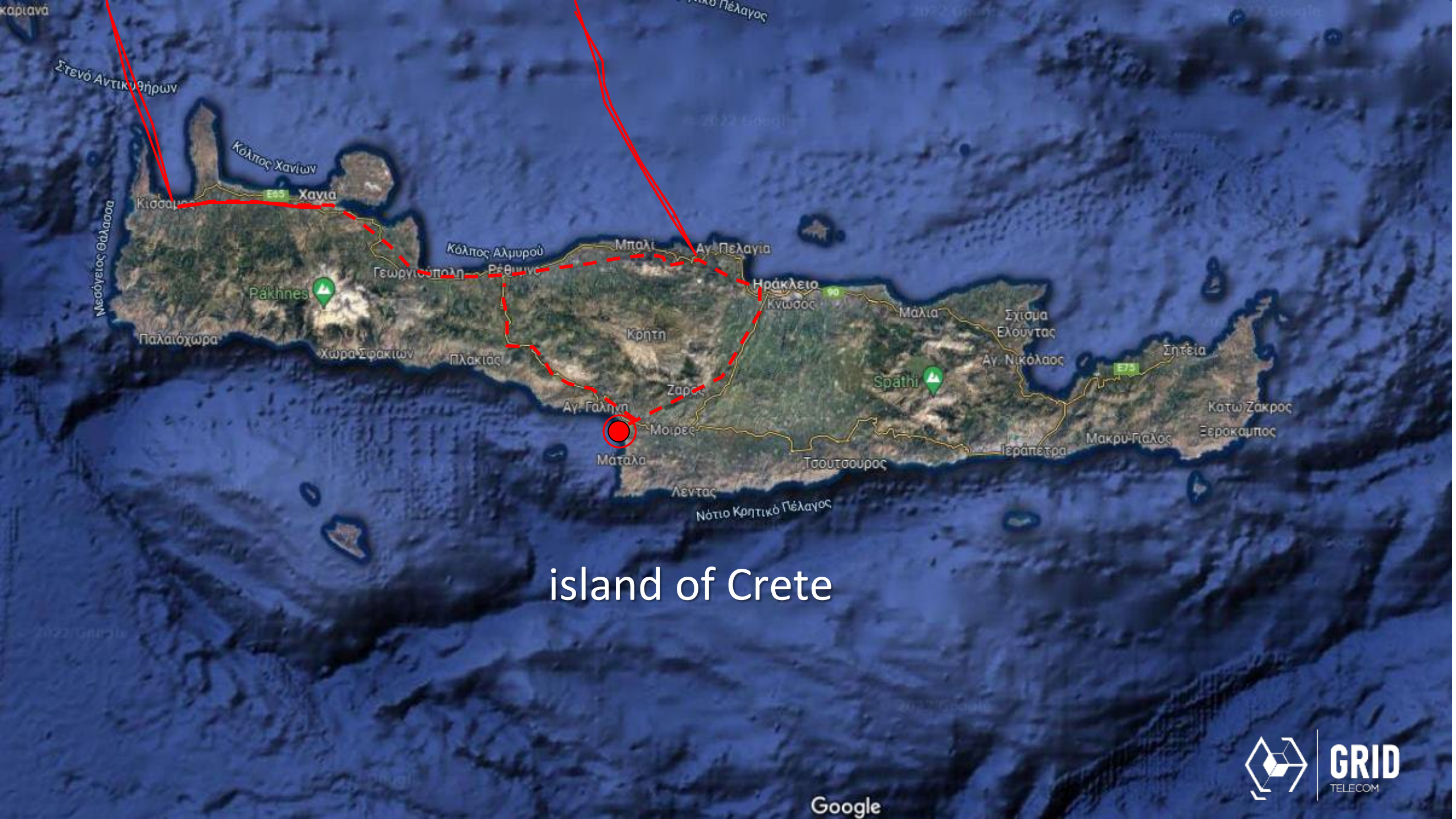

island of Crete

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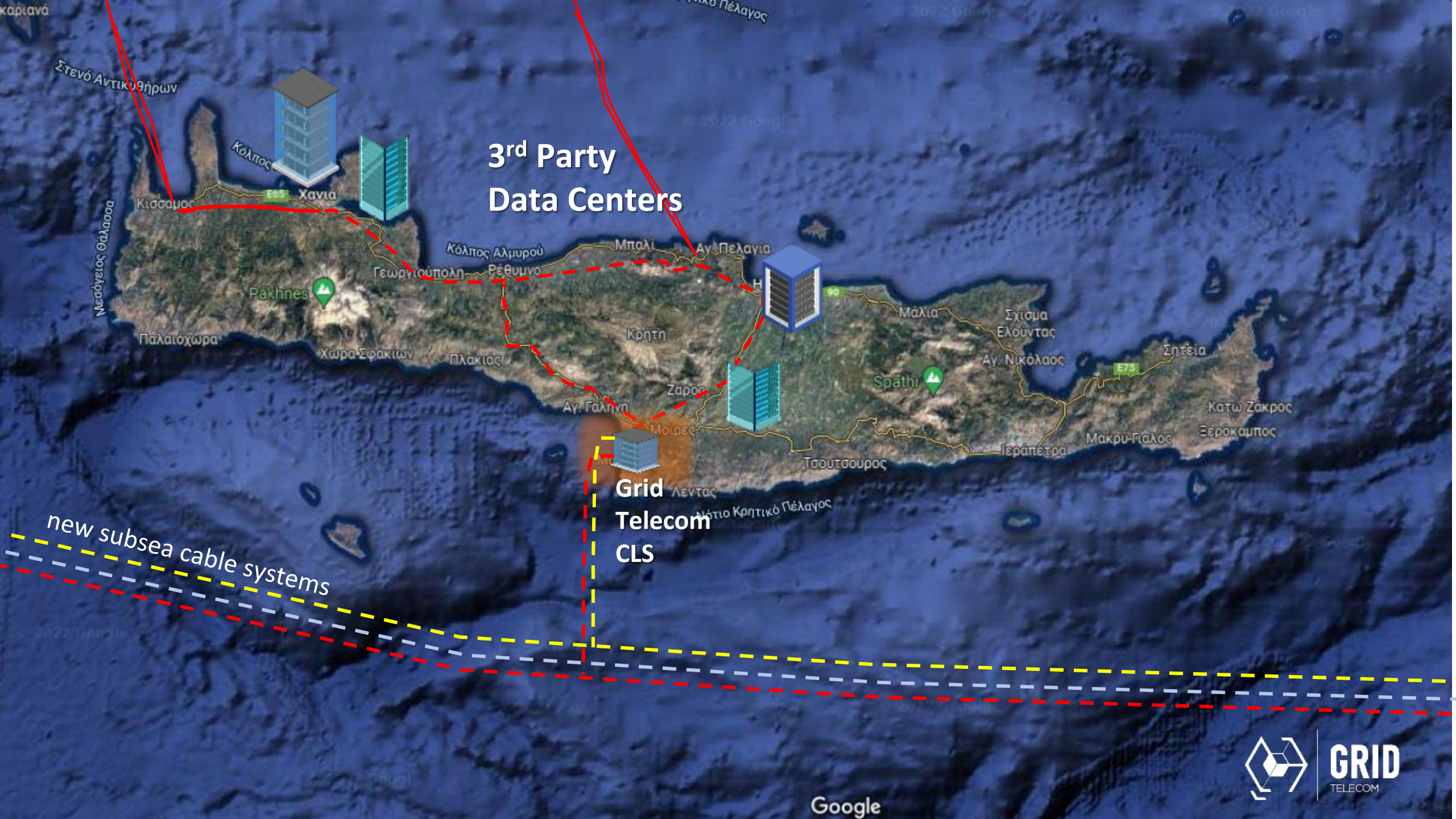
3rd Party
Data Centers
Grid
Telecom
CLS
new subsea cable systems
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Κόλπος
Χανιά
Κίσσαμος
Κόλπος Αλμυρού
Μπαλί
Αγ. Πελαγία
Γεωργιούπολη
Ρέθυμνο
Pákhnes
Παλαιόχωρα
Χώρα Σφακίων
Πλακιάς
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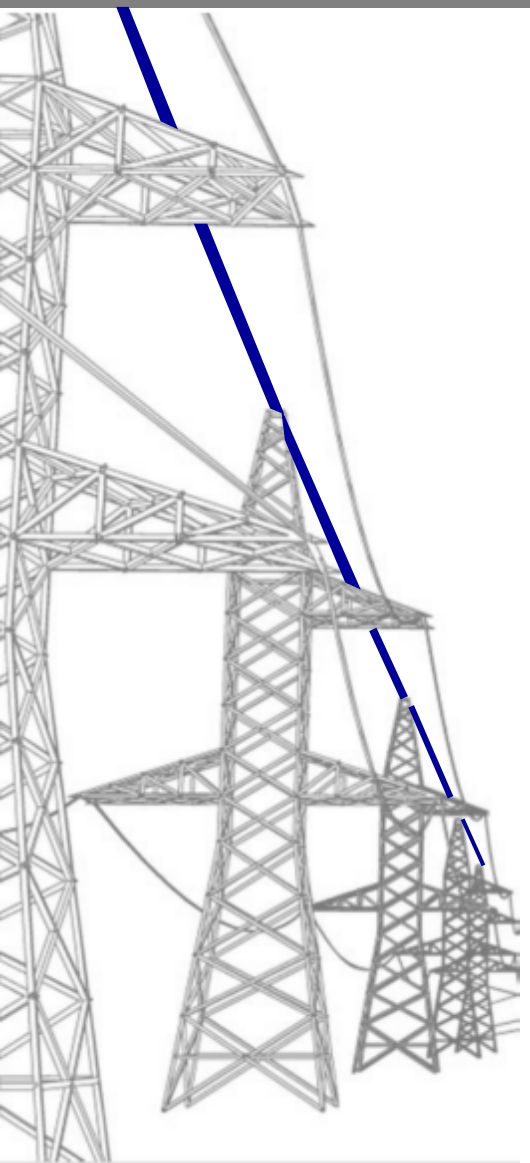
Grid Telecom's Cable Landing Station in Crete

- Grid Telecom's Cable Landing Station (CLS) on the southern coast of Crete will anchor new international subsea cable systems, connecting Greece and the BalkanMed region with other East and West destinations.
- The CLS will provide carrier-hosting services and facilities for the interconnection with backhaul terrestrial and subsea networks.

Grid Telecom Points-of-Presence



- Grid Telecom will provide diverse and highly reliable backhaul network to existing and new data centers on the island of Crete, the Greek mainland, as well as Italy, the Balkans, and Central Europe, providing a paradigm for creating a new carrier neutral hub in the broader **BalkanMed** region.
- The partnership of Grid Telecom with prospective subsea cable operators will provide wholesale customers with **open-access** interconnection with leading edge data connectivity and international reach to Southeast Europe and beyond, supporting the implementation of new international alternative routes.

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The IONIAN System

- Grid Telecom and Islalink have signed a 25-year agreement on the expansion of the terrestrial backbone network of the **IONIAN** subsea cable that connects Italy and Greece. On the Greek side, the 320 km cable of Islalink will be supplemented by a 1,000 km network of Grid Telecom, which connects Preveza with Athens and then with Thessaloniki.

- The cooperation provides critical broadband infrastructure between Greece – Italy with an additional capacity of 360 Tbps. The **IONIAN** system will contribute to the emergence of Athens and Thessaloniki as major regional hubs, giving rise to new investments in digital infrastructure.

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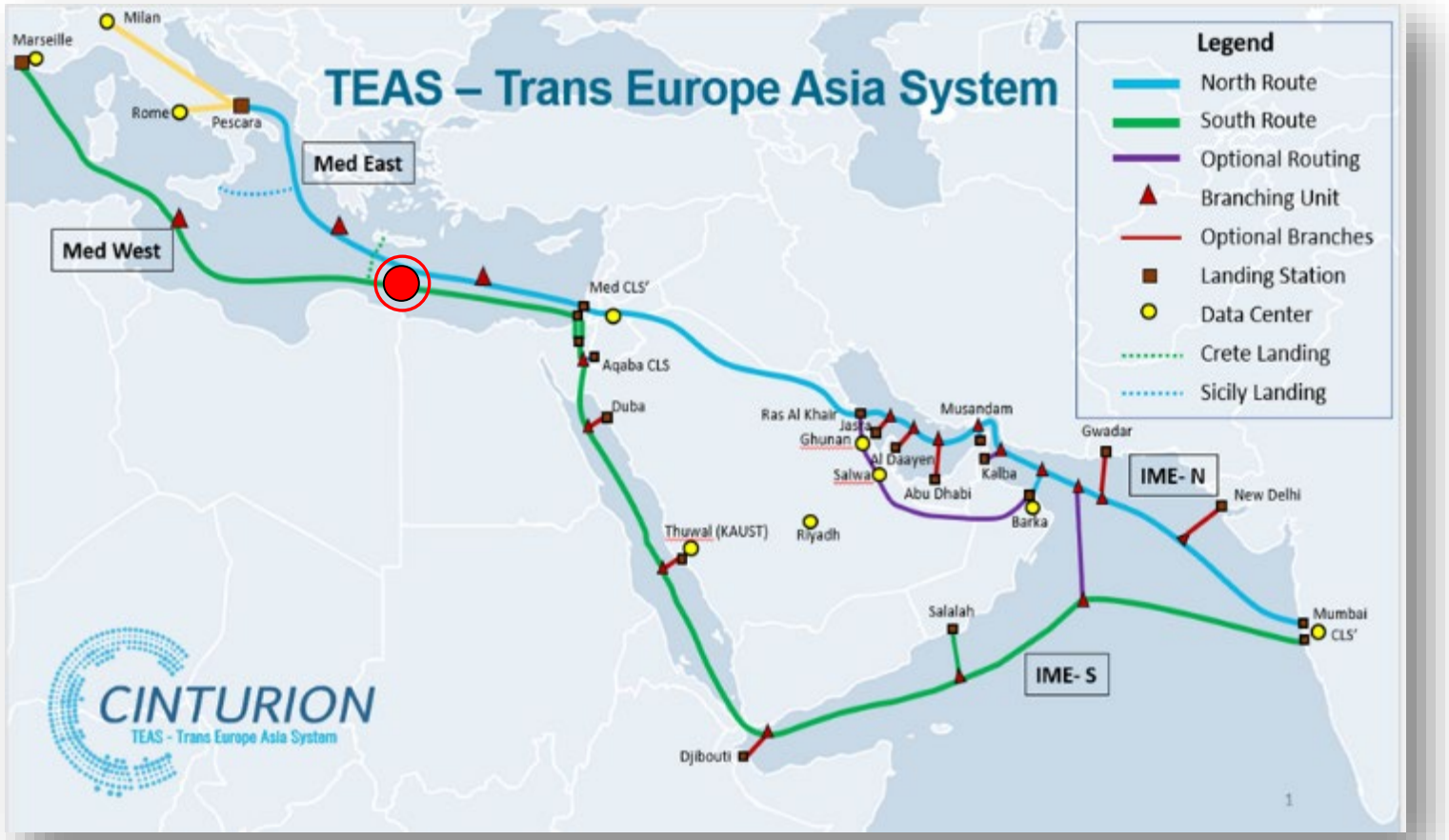
TEAS – Trans Europe Asia System



- Cinturion has signed a "Heads-of-Agreement" with Grid Telecom to be its **Landing Party** partner in Greece, providing **open-access** interconnection and international reach
- **TEAS** is enabling high-speed and secure connections, through two separate routes across the Med Sea, continuing with two paths inter-linking the Middle East, with multiple routes across the Arabian Peninsula, and a route through the Gulf of Aqaba and the Red Sea.

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Greece – Egypt Connectivity

- Grid Telecom and Telecom Egypt have signed "Heads-of-Agreement" to connect Greece and Egypt by extending a branch to the island of Crete from major subsea cable systems, laid across the Med Sea.

- The connectivity between Egypt and Greece will serve the data traffic between Africa, Asia and Europe creating a new reliable corridor interconnecting the three continents. It will be the shortest possible path crossing the Med to reach the Balkans region & other destinations like Genoa and Marseilles

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Interconnectors

- Interconnectors are cables that connect the electricity systems of neighboring countries, either terrestrially or under-the-sea, enabling excess power to be shared and traded between countries. These electricity interconnectors are also supplemented with optical fibers.
- IPTO, the parent company of Grid Telecom, is implementing with corresponding Transmission System Operators (TSOs) new interconnections with Italy and the Balkans (Albania, North Macedonia, Bulgaria, Turkey), as well as in the Med region.

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EuroAsia Interconnector

- The **EuroAsia Interconnector** is a leading EU Project of Common Interest (PCI), interconnecting the national grids of Israel, Cyprus and Greece, and creating a reliable energy bridge between Europe and Asia.

- The 2000 MW project aims to interconnect the transmission networks of Israel, Cyprus and Greece. The interconnector is to be 1,208 km long. In parallel, the **Quantum** subsea optical fiber cable system will be added to interconnect the three countries and beyond.

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GREGY Interconnector

- The **GREGY** interconnection (Green Energy Interconnector) between Greece and Egypt, is a major cross-border Project of Common Interest (PCI) of EU, achieving its climate targets and energy policy by providing safe, affordable and sustainable energy.

- The GREGY subsea interconnection is 137 km long and will transfer 3,000 MW of electricity, produced by **renewable energy** sources in Egypt, providing 100% clean, green energy, which will offer significant benefits not only to Greece but to the whole of Europe.

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Grid – Telecom International Network Expansion

Conclusions

- Greece is taking the initiative to fast becoming a critical energy and telecommunications hub in the broader BalkanMed region.
- IPTO in partnership with neighbouring TSOs are interconnecting the future in the BalkanMed region by building critical infrastructure for tomorrow's electricity and telecommunications backbone networks
- Grid Telecom, is in a unique position to offer diverse and highly reliable fibre connections throughout Greece and beyond, leveraging its position as an emerging open-access carrier neutral connectivity node in the region.

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Thank you!