

Cyta's Undersea Cable Hub in the Eastern Mediterranean

By Mr Constantinos Papas, Development of Cable Facilities and Products, Cytaglobal



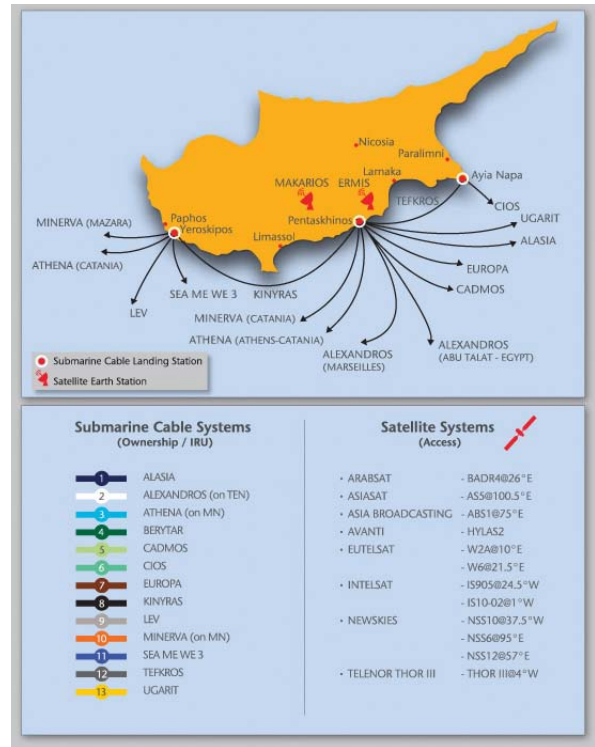
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Cyprus Telecommunications Authority (Cyta) is the primary telecommunications provider in Cyprus. Its product portfolio covers the whole spectrum of electronic communications ranging from fixed and mobile telephony to internet service provision and broadband applications. Cyta, through its strategic business unit Cytaglobal, is particularly active in the area of international undersea fibre optic cables, providing wholesale products and services on a global basis, and has established Cyprus as a regional telecommunications hub in the Eastern Mediterranean.

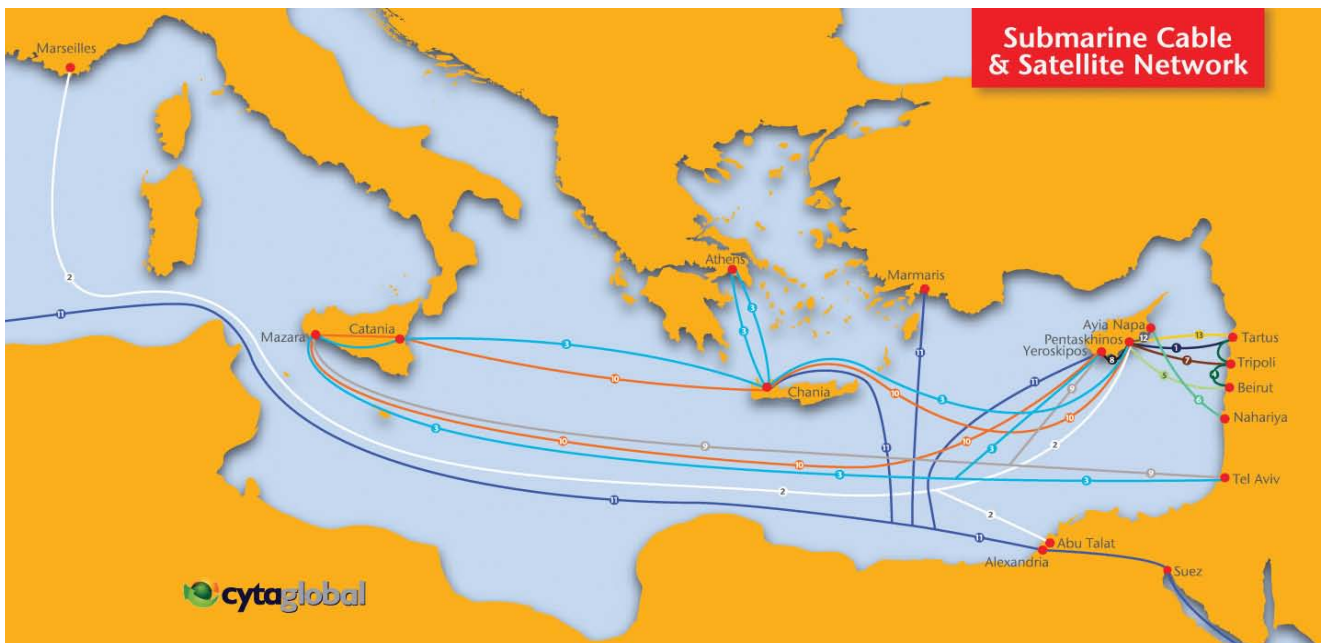
Taking advantage of the island's strategic geographical position, Cytaglobal has developed an extensive undersea fibre optic cable network, which connects Cyprus with the neighbouring countries of Greece, Italy, Israel, Syria, Lebanon and Egypt and thereafter with the rest of the world. This cable network uses state-of-the-art technology and full restoration and diversity and currently includes the following undersea fibre optic systems that land in Cyprus at three separate cable stations, namely Ayia Napa, Pentaskhinos and Yeroskipos:

- **CIOS:** a repeaterless SDH cable system connecting Cyprus directly with Israel.
- **CADMOS:** a repeaterless cable system of SDH technology connecting Cyprus directly with two separate landing stations in Lebanon.
- **UGARIT:** a repeaterless SDH cable system directly connecting Cyprus and Syria and via terrestrial extensions, with Jordan. UGARIT and CADMOS systems together with the **BERYTAR** cable system (Beirut – Tartous) are fully integrated into a secure self-healing ring, interconnecting Cyprus with Lebanon and Syria.
- **SEA ME WE 3:** southwards via Egypt, to the Middle East and the Indian Subcontinent, South East Asia, China and Australia, and westwards to Europe, traversing the Mediterranean and North Sea, all the way to Germany. This cable system has been upgraded several times and now consists of two fibre pairs each carrying 48 wavelengths operating at 10 Gb/s, linking the Pacific Rim, South East Asia, the Middle East and Western Europe, ▶

- ▶ through a multitude of landing stations in many countries. Its total length of about 40,000 km makes it the longest undersea optical fibre cable network in the world.
- **LEV:** a state-of-the-art cable system connecting Cyprus eastwards with Israel and westwards with Italy, and thereafter via the **MED NAUTILUS** cable system to Greece, Turkey and the rest of Europe.
- **MINERVA:** an independent private cable subsystem forming a direct self-healing ring between Cyprus and Italy, and through Telecom Italia Sparkle Pan-European networks, connecting to the rest of Europe, the US and beyond. The MINERVA subsystem interconnects two landing stations in Cyprus (Yeroskipos and Pentaskhinos) directly with two landing stations in Italy (Mazara and Catania), providing superior quality and protection. The MINERVA subsystem uses a dedicated express fibre pair with 10 Gb/s DWDM wavelengths on the **MED NAUTILUS** cable system, directly connecting Cyprus and Italy, completely bypassing Turkey, Greece and Israel. The MINERVA subsystem is operated and managed by MED NAUTILUS for the sole use of Cytaglobal and its customers.
- **ALEXANDROS:** a private cable subsystem wholly owned by Cyta, consisting of a fibre pair between Cyprus-Egypt and a fibre pair between Cyprus-France, implemented through Telecom Egypt's undersea cable system TE-NORTH (TEN), connecting Egypt with France, and through Pan-European networks, connecting to the rest of Europe and beyond. The ALEXANDROS subsystem interconnects Yeroskipos landing station in Cyprus with Abu Talat in Egypt and Marseilles in France, each direction with 80x40Gb/s total capacity, providing a bridge between East and West. Employing ALEXANDROS subsystem and leveraging its strategic co-operation with Telecom Egypt, Cyta achieves an optimum configuration for its business



- needs, enhancing connectivity in the Mediterranean and providing international network robustness and reliability.
- **ATHENA:** a private cable subsystem wholly owned by Cyta, connecting Cyprus with Greece. The subsystem consists of two integrated rings, one ring is interconnecting the islands of Cyprus, Crete and Sicily and the other ring is interconnecting Crete with the Greek mainland, terminating in Athens. The ATHENA subsystem represents



- ▶ a major deployment of additional capacity in the Eastern Mediterranean, providing further extensions to Western Europe via Catania in Sicily, but also to Eastern Europe via Athens, including a wet route to Turkey. The ATHENA subsystem can bridge via Cyprus, the Middle East region with Europe and beyond.

Two high capacity coastal links **TEFKROS** and **KINYRAS**, interconnect all Cyta's landing stations in Cyprus, thereby securing all-wet routes for regional and international traffic. The two coastal links are further protected with terrestrial SDH self-healing rings. As a major co-owner and Network Administrator of undersea cable systems, Cytaglobal facilitates the acquisition of capacity on systems landing in Cyprus. Through Cytaglobal, owners of capacity in such cable systems, have access to considerable reserve capacity in other undersea cables connecting Cyprus to rapidly developing neighbouring countries. Cytaglobal is continuously evaluating the connection of Cyprus to other planned fibre optic networks the world over. By co-owning, buying or leasing capacity, we participate in many other regional and global undersea cable systems such as AC1, CELTIC, COLUMBUS III, MED NAUTILUS, SAT3, TAT 14 and OTRANTO-CORFU.

Recently, Cytaglobal has reached an agreement with Radius Oceanic Communications Inc to implement a new and important project for Cyprus, the **POSEIDON** undersea cable system that aims to provide advanced telecommunications facilities to the offshore oil and gas industry in the Eastern Mediterranean region. The **POSEIDON** system will extend for some 800 km from two shore landings in Cyprus, creating a high capacity self-healing ring that borders the Cypriot EEZ, enveloping

the offshore oil and gas lease blocks established for development by the Republic of Cyprus. **POSEIDON** will enable Cytaglobal to play an important role in providing state-of-the-art telecommunications facilities to the developing energy sector in the Eastern Mediterranean region. Cytaglobal's partnership with Radius will allow offshore exploration, production and support facilities to reach the world, through Cytaglobal's telecommunications hub.

Moreover, Cytaglobal is in the process of establishing two new regional undersea cable systems that will connect Cyprus with Syria and Lebanon, respectively. Already a Construction & Maintenance Agreement has been signed between Cytaglobal and its counterpart in Syria (Syrian Telecom) for the **ALASIA** system, a multi terabit undersea cable, connecting Cyprus with Syria. Cytaglobal and the Lebanese Ministry of Telecommunications are also in the process of establishing **EUROPA**, a multi terabit undersea cable system connecting Cyprus with Lebanon.

Through its superior global network, Cytaglobal provides a wide range of international telecommunications products, services and total solutions, making Cyprus a major telecommunications hub in the Eastern Mediterranean and an excellent regional electronic communications centre.

For more information please visit:

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Landing of Alexandros subsystem at Pentaskhinos, Cyprus