A Trans-Atlantic Connectivity Game Changer

EllaLink has completed the marine installation of its trans-Atlantic subsea cable system between Europe and Latin America and is set to go live in May 2021. Capacity caught up with the company to get all the final details.

aicep Global Parques

How does EllaLink's route diversity across the south Atlantic contribute to the resilience of the system?
Data users rely on diversity in telecoms networks to minimise the impact of faults and to reduce outage periods during system failures, maintenance activities and upgrades. At EllaLink we have placed diversity at the forefront of many of our strategic design decisions, from the data centre connections, to backhaul solutions and the subsea route. Traditionally transatlantic submarine cable systems have taken a path across the North Atlantic from Europe to Canada, New Jersey, New York or Virginia Beach, where those wishing to reach Latin America would access onward connectivity via a separate cable system. The primary focus of the EllaLink design is to offer a direct high-speed connection across a unique transatlantic path for those wishing to reach Latin America from Europe, and vice versa. So yes, our southerly routing offers diversity to the cable systems of the North Atlantic, but our main driver is to create a direct optical platform between the two continents, minimising latency and increasing security along the way.

Why did you choose to land EllaLink in locations such as Sines in Portugal as opposed to existing hubs like Sesimbra, Carcavelos and Seixal?
As mentioned, diversity is key to the design of a reliable network and in Portugal we selected Sines as the landing site for this very reason. By avoiding the busy areas of Sesimbra, Carcavelos and Seixal we have created a new landing location for submarine cable owners looking for diversity. Being a new landing site, the route approaches into Sines do not require multiple crossing of existing cable systems, as is typical in congested landing locations. Cable crossings are not typically problematic for subsea cables, however, a crossing in shallow water incurs an interruption of burial, leaving a significant portion of the cable exposed and at risk from external aggression, especially in fishing areas. In EllaLink's case by ensuring that any crossings only occur in deep water we have further increased the robustness of the system. There were lots of other good reasons to land the cable in Sines including access to land, power and terrestrial networks, and excellent support from the local authorities.

What is the existing ecosystem like at the EllaLink landing points? Do you foresee any additional connectivity/infrastructure developments as a result of this system?
Yes, absolutely, and following discussions with our local partner aicep Global Parques and the Sines Municipality, the concept of 'SinesTech – Innovation and Data Center Hub' was born. Our idea was to create an open access location for new submarine cable systems and data centres in Portugal. SinesTech is located within the Industrial and Logistic Zone of Sines, managed by aicep Global Parques SA a state-owned company specialised in the management of business parks. The site offers cost-effective land, high power density networks and reliable backhaul connectivity. EllaLink is the inaugural customer of SinesTech and has built an entirely new Cable Landing Station (CLS) in Sines: The Vasco da Gama CLS.
We have also installed multiple HDD bore pipes at the beach to encourage future systems to land in Sines. From a terrestrial perspective Sines also offered a robust solution for our network with the diverse backhaul routes to Lisbon and Madrid running over both gas pipes and power lines respectively.

Given that EllaLink has <60ms latency for a round-trip between Portugal and Brazil, how will this benefit the burgeoning gaming sector?
From a gaming perspective latency is extremely important as it plays a critical part in winning or losing a game. If we imagine two players aiming at same target at the same time, the differentiator between winning and losing will be who hits it first, and this is purely determined by latency. Lag, caused by a slow response, is the gamer's worst enemy. When considering the need for new low latency routes globally it is important to look not only at where gaming is most popular, but also where servers are located and what languages are spoken. The connection between gamers in Brazil and Portugal is obviously strengthened by the common use of the Portuguese language at either end of the EllaLink cable system.
The Brazilian gaming market is vast, with Brazil currently ranked the 13th largest gaming market in the world and the third largest audience of the E-Sports market (behind China and the USA). Looking at the specific requirement for a low latency route between Europe and Latin America that EllaLink is addressing, companies such as 'No Ping' are

seeking to enable Brazilian gamers to play on European servers in a competitive way. This would make it possible for Brazilian E-Sports teams to train with European teams without any need for travel (particularly key during the current global Covid-19 pandemic). As in physical sports, professional E-Sports players are constantly seeking to develop their strategies and to be challenged by people from other regions and counties. Similarly, in the case of MMORPG (Massively Multiplayer Online Role-Playing Games) where players take the role of a character often in a fantasy or science fiction world, low latency cross continent routes like EllaLink open up the ability to play newly released games or befriend new groups of gamers.

The EllaLink team, with the help of our expert group of interns, are working on an exciting gaming event to celebrate the release of our low latency route and show case its benefits to the gaming community – stay tuned for the live launch!

Obviously, latency is crucial to other sectors as well such as algorithmic trading which is used in capital markets where long term debt or equity back securities are bought and sold. The ability to react to market events faster than your competitor is crucial and subsequently results in increased profitability of trades. Algorithmic trading, which was first developed to make use of the data processing advantages computers have over humans, is a method of executing orders using automated pre-programmed trading instructions which take into account variables such as price and volume. Low latency or ultra-low latency in capital markets refers to the use of algorithmic trading, and its effect is determined by the amount of monies lost per additional millisecond (or nanosecond) taken to complete the trade. High Frequency Trading (HFT), considered the primary form of algorithmic trading, is driven by high speed, high turnover rates and high order-to-trade ratios and it is reported that a 1 millisecond advantage can be worth around $100 million to a major brokerage firm. EllaLink's low latency solution offers a clear advantage to businesses operating over the system, including technology providers and network operators who support the financial sector.

EllaLink are in discussions with BSO, the global pioneering infrastructure and connectivity provider, to work together towards our common goal of providing capital markets with the lowest latency between Europe and Latin America.

Many new systems are designed with future data and connectivity requirements in mind. How will the EllaLink system evolve with the constantly changing data demands?

As an open system EllaLink is able to take advantage of the latest technology available in the market at any given time. We have selected Infinera to light the network when we go live next month. Their state-of-the-art ICE6 800G coherent technology will enable us to offer advanced products and services to our customers and supports over 100Tbps between Portugal and Brazil in one single hop between data centres. We will also use ICE6 technology to enhance capacity on our long-haul terrestrial network between Sines, Lisbon, Madrid, and Marseille. From a connectivity perspective we have plans for future subsea extensions and terrestrial routes to support the changing shape of data demands between Latin America and Europe.

Interestingly, with a trunk length of less than 6,000km, Fortaleza is actually closer to Portugal than Miami, and closer to Madrid than the densely-populated 'Data Centre Alley' in Ashburn, Virginia. This means that the Latin America market can now enjoy the same level of services to Europe as their North American counterparts. In order to facilitate this development, we are exceptionally pleased to announce our new partnership with DE-CIX, operator of the world's largest carrier and data centre neutral interconnection ecosystem, to provide a new low latency route between LATAM and Europe for access to the DE-CIX Internet Exchanges in Lisbon and Madrid.

With the EllaLink system due to go live in May 2021, what's next on the roadmap?

A subsea system ultimately forms part of an end-to-end network, linking the cable on the beach with data centres in cities, and beyond. The EllaLink network will extend into DCs in São Paulo, Rio de Janeiro, Lisbon, Madrid and Marseille thanks to our partners at Equinix and Interxion. Our ultimate goal is to create a low latency data corridor between Latin America and Europe and to promote onwards connectivity to Africa and the Middle East.

As mentioned, future extensions into the Canary Islands, Morocco, Mauritania, French Guiana and southern Brazil will all help to stimulate traffic growth and improve connectivity, and the team are actively working on their development as we speak, with deployment plans in 2022. Furthermore, by developing terrestrial routes to key strategic connection points, such as Marseille in France, EllaLink will truly begin to connect up the Globe.

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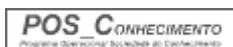
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