

MANAGED CONNECTIVITY

STAY CONNECTED – AND MOVE FORWARD

Enhance your distributed organisation's collaborative efforts with an agile, adaptive and managed network infrastructure. Hughes Network Systems Europe delivers consistently high levels of availability and performance with managed wide area networks leveraging the best connectivity options.

HughesON[™]

DEMAND MORE PERFORMANCE

You are running a multisite organisation. That means, when your WAN underperforms, so does your business. But connecting a wide variety of devices, individuals and branches, nationally or internationally, is a major headache for most distributed organisations. Wide area networks are complex structures that can throw up considerable challenges even for experienced IT professionals. In practice, this can mean unnecessary expense and a lack of organisational agility for any company where IT is not their core business.

Leveraging the best available connectivity options, managed WAN solutions from Hughes Network Systems Europe ensure business continuity and provide the agility and scalability to deliver the reliable performance you need to keep all your sites up and running, so your business can move forward.

WE'VE GOT IT COVERED

We're technology agnostic – we choose the best solution for you. Hughes has relationships with major telecommunication companies across Europe. Combined with our capabilities in managed satellite services, we offer you the most effective connectivity solutions for your individual needs. Whether the requirement is for dual path for high performance, resilience for critical applications or effective back up for failover, Hughes has it covered.

TYPICAL USE CASES

Delivering the most reliable connectivity solutions across distributed estates is a complex business because availability of services is hugely dependent on location. Hughes offers the most effective combination of connectivity for every site in your estate. All our connectivity solutions are delivered across Europe under a single, universal service level agreement (SLA) to maximise efficiency and predictability for our customers. Every use case is, of course, unique, but the following four broadly cover the type of scenario we often encounter.

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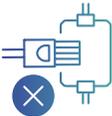
1 **Predominantly urban distribution of sites across multiple countries**

For an estate with this topology we normally deploy xDSL or fibre as the primary connectivity transport with either LTE (Long Term Evolution) or a secondary terrestrial connection as backup. This provides a resilient network delivering a consistent experience for your employees and customers across all sites.
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2 **A mix of urban and rural sites across multiple countries in Europe**

For estate topologies where there is a variety of locations, we recommend a hybrid approach. For urban sites we deploy the solution as in Use Case 1 but for the more remote sites, where access to terrestrial services may be restrictive, we deploy a dual path cellular solution using LTE. This could include a roaming e-SIM solution that would enable more resilience than a single mobile operator's service.
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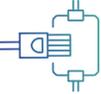
3 **Widespread distribution of sites across Europe including remote locations**

For estate topologies where there is widespread distribution, including extremely remote sites, we can deploy a mix of terrestrial, cellular and satellite connectivity. With capability in both VSAT and mobile satellite services we can deliver connectivity for both high throughput and lower bandwidth requirements throughout Europe – in even the remotest locations.
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4 **Broadband requirements where terrestrial is not available**

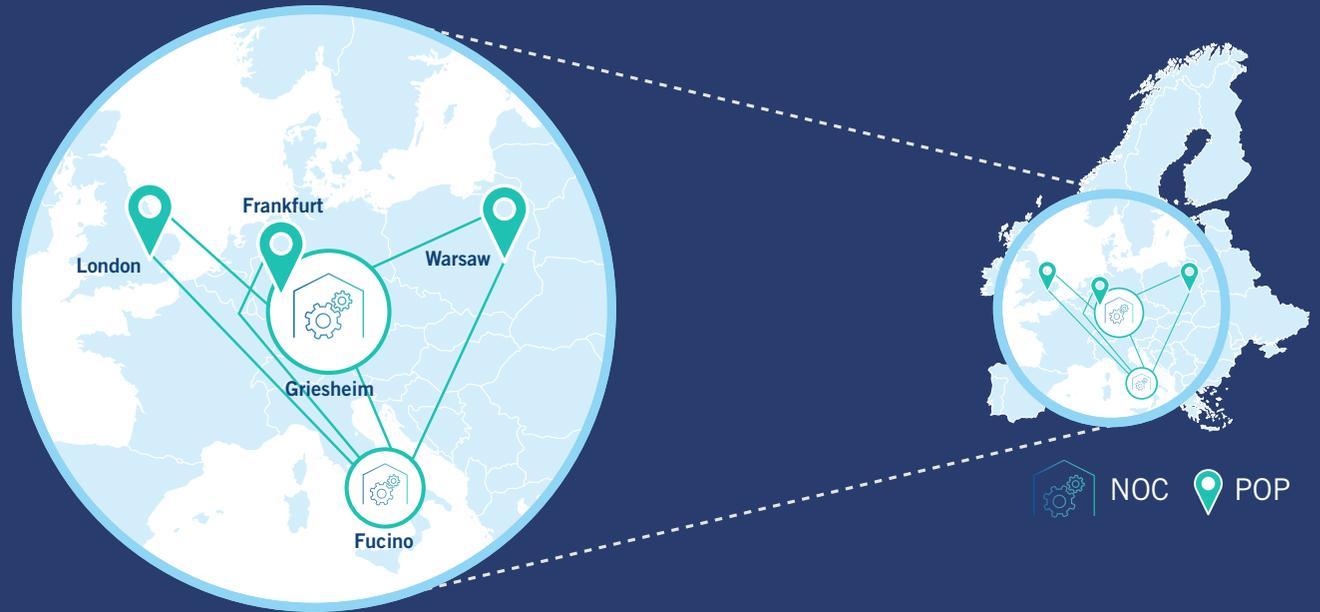
Where requirements are out of scope of existing connectivity options, for example because there is a lack of terrestrial infrastructure at all sites, we can design new solutions. In similar situations we can work with a local partner to deliver a new service based around microwave technology.

OUR CONNECTIVITY SOLUTIONS – AN OVERVIEW

TYPE	NAME	OVERVIEW	IDEAL FOR	LIMITATIONS
 TERRESTRIAL	Fibre	Fibre-based Ethernet services are the fastest growing connectivity medium on the market and telecommunication providers are investing heavily in this technology. It can achieve speeds of up to 1Gbit/s in some countries, although speeds vary considerably on a country-by-country basis.	Fibre-based Ethernet services are ideal for sites where there is a requirement for very high throughput speeds at an optimised price point.	This medium is not yet widely available outside of urban areas. It is provided by a wide range of regional service providers, so it is challenging to get consistency of speed and availability across all sites from a single supplier.
	Cable	Cable service offerings have traditionally focused on consumer markets and are not readily available everywhere, but it can be an effective option when other more commonly used options such as xDSL are not available.	Sites – often in residential areas – where there is a requirement for broadband connectivity and where xDSL is not available.	Cable is not widely available outside of urban or residential areas. Like xDSL, it is typically offered with a non-committed SLA.
	xDSL	xDSL is the most commonly used connectivity option for businesses in Europe but the type of service offered varies considerably by country. The most common service type in Europe is vDSL.	Urban sites with a requirement for low latency, high speed connectivity.	The quality of service is dependent on the contention ratios used by individual service providers as well as the quality of the copper wiring and the distance to the telco digital subscriber line access multiplexer (DSLAM).
 CELLULAR	LTE / 4G	Long-term evolution 4G is the most widely available cellular service globally.	Sites where the primary requirement is for low throughput services or where a backup is required for primary terrestrial connectivity.	The service offers no SLA whatsoever, with quality and speed being variable and heavily affected by signal strength and contention ratio, which is constantly fluctuating.
	LTE eSIM	Long-term evolution eSIM is a cellular service that is not aligned to any single mobile services provider. The eSIM will connect to the strongest signal available at the location at any given time irrespective of who is the mobile service provider.	Sites where availability is a key criterion and where terrestrial services are not available or where a backup is required for primary terrestrial connectivity.	As with any LTE service there are no committed SLAs and quality of service cannot be guaranteed.
 SATELLITE	VSAT	2-way VSAT technology is primarily sold as a consumer broadband service. It is available in hard-to-reach areas and has relatively high throughput speeds.	This is a great option for sites where bandwidth requirements are low, and the area is poorly served by terrestrial services.	VSAT services tend to be more expensive than terrestrial or cellular services and latency and jitter are generally higher than other connectivity options.
	S-Band (Mobile)	S-band satellite services provide connectivity for hard-to-reach locations and where there is a requirement for relatively low-throughput data or comms on the move.	This is good, cost-effective option for very remote sites where the requirement is for regular, small data packets.	S-band satellite services do not have the capability to deliver high levels of bandwidth.
 MICROWAVE	Microwave point to point	Microwave P2P technology is a well-developed connectivity solution in some parts of Europe and offers a competitively priced alternative to terrestrial and cellular connectivity where it is available.	Microwave P2P offers a stable, cost-effective solution for non-urban sites where terrestrial services are not widely available. Unlike cellular solutions, SLAs of up to 99.5% can be offered, making this a good option where high availability is a key criterion.	Microwave is not widely available in all regions and where it is, the signal strength is highly dependent on line of sight to the closest mast tower, and it can be adversely affected by weather conditions.

OUR MANAGED SERVICE FOR NETWORK CONNECTIVITY

Managed from our 24x7x365 Network Operations Centre in Frankfurt and supported by our customer support helpdesks in the UK and Germany, we continuously monitor and manage customer networks to identify potential issues that may arise and deal swiftly and effectively with any outages that might occur.



WANT TO KNOW MORE? GET IN TOUCH



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About Hughes Network Systems

Hughes Network Systems, LLC (HUGHES) is the global leader in broadband satellite technology and services for home and office. Its flagship high-speed satellite Internet service is HughesNet®, the world's largest satellite network with over 1.3 million residential and business customers across the Americas. For large enterprises and governments, the company's HughesON™ managed network services provide complete connectivity solutions employing an optimized mix of satellite and terrestrial technologies. The JUPITER™ System is the world's most widely deployed High-Throughput Satellite (HTS) platform, operating on more than 20 satellites by leading service providers, delivering a wide range of broadband enterprise, mobility, and cellular backhaul applications. To date, Hughes has shipped more than 7 million terminals of all types to customers in over 100 countries, representing approximately 50 percent market share, and its technology is powering broadband services to aircraft around the world. In Europe alone, where we have been helping our customers to achieve optimal value from their network infrastructure for more than 30 years, we manage 55000 sites, across 28 countries supporting more than 5 billion transactions every year. Headquartered outside Washington, D.C., in Germantown, Maryland, USA, Hughes operates sales and support offices worldwide, and is a wholly owned subsidiary of EchoStar Corporation (NASDAQ: SATS), a premier global provider of satellite operations. For additional information about Hughes, please visit www.hughes.com and follow @HughesConnects on Twitter.

About EchoStar

EchoStar Corporation (NASDAQ: SATS) is a premier global provider of satellite communication solutions. Headquartered in Englewood, Colo., and conducting business around the globe, EchoStar is a pioneer in secure communications technologies through its Hughes Network Systems and EchoStar Satellite Services business segments. For more information, visit echostar.com. Follow @EchoStar on Twitter.