

# TELESPAZIO IN THE UK

Company Overview



## OVERVIEW

With a pedigree in space technology stretching back over 40 years, Telespazio UK (TPZ UK) is an experienced consulting, technology, engineering, space operations and service development business. A subsidiary of Telespazio S.p.A in Rome, TPZ UK has built its first class reputation by exploiting technology developments in Earth Observation and satellite navigation & communications, pioneering innovative services in space operations and applications.

Using the broader capabilities of the Telespazio Group, TPZ UK provides novel solutions to the remotest regions of the globe.

TPZ UK is trusted to deliver the high value, high quality systems and services expected by its customers. It offers solutions and services in three main lines of business:

The **System Development & Missions Support** area has built an industry lead position in the use of satellite observations for the climate change marketplace. Furthermore, we have a long history in providing programme support for the European Space Agency across their sites, as well as quality controlling ESA mission data before it is delivered to the global user community.

The **Geo Information & Satellite Imaging Services** area has developed significant service capabilities using Synthetic Aperture Radar (SAR) platforms, including the COSMO-SkyMed constellation, providing novel solutions from rapid flood mapping and smart infrastructure monitoring, environmental protection monitoring and specialised products for defence and intelligence.

The **Satellite Communications** area, an award winning Teleport operator, Telespazio UK through the wider Telespazio group offers dedicated services for the oil & gas, utilities, maritime, defence and telco sectors, implementing fixed-line, mobile broadband satellite services with over 46,000 deployed very small aperture terminals (VSATs) and over 2,000 mobile SIMs.



## SYSTEM DEVELOPMENT & MISSION SUPPORT

System development & mission support covers all aspects of the satellite value chain that are needed to deliver usable information derived from satellites.

### GROUND SEGMENT

Built on multi-decade experience in supporting ESA (European Space Agency), EUMETSAT (European Organisation for the Exploitation of Meteorological Satellites), ECMWF (European Centre for Medium Range Weather Forecasting), and other European Space Institutions, we continue to deliver and maintain high quality, trusted, end-to-end ground segment solutions across Earth Observation, Navigation and Launch.

Our capabilities encompass all elements of ground systems including:

- Satellite and Ground Station Planning Systems
- Integration and Validation platforms
- Data Processing, Management, Quality Assessment & Provision
- Mobile Applications
- Simulation and Modelling

### SERVICE PROVISION

We are experienced in developing, managing and maintaining services to customers across the whole space industry value chain; examples include:

- Data quality service to ESA for its Earth Observation (EO missions). This service is operated according to strict service level agreements, providing all users with robust and reliable EO data from Earth Explorer missions, previous ERS and ENVISAT missions, and a range of 3rd party missions.
- Provision of Sea Surface Temperature climate data records for the Copernicus Climate Change Service.

### PROGRAMME SUPPORT & CONSULTING

We have provided subject matter expertise and programme support to almost every ESA mission since the late 1970's, as well as national and commercial programmes across Europe, the Middle East and beyond.

ESA's satellite programmes demand world class expertise and the need to be innovative, robust and secure, with systems that work first time, every time. Our staff have a significant presence onsite at ESAC (Madrid) and ECSAT (Harwell), providing specialist skills in domains of satellite communications / navigation, remote sensing, business applications, software and control systems, automation, optics, electromagnetics, power / radio-frequency systems, science operations.

# GEO INFORMATION & SATELLITE IMAGING

Our service portfolio is built on exploiting high revisit earth observation satellite constellations for developing near real time, low latency and land deformation applications. TPZ UK is active in all areas relating to the Earth Observation market, from acquiring and processing satellite data to developing and selling software and products.

## SATELLITE IMAGING SERVICES

With specialist analysis and processing expertise in Synthetic Aperture Radar (SAR), TPZ UK has developed a niche capability in providing geospatial services to satisfy emergency, time critical and monitoring based requirements anywhere in the world.

## TIME SENSITIVE ANALYSIS

Our preferential access to the COSMO-SkyMed constellation is key to developing high frequency change detection capabilities, with twice daily imaging for any location on Earth. Where time and speed of intelligence information is critical, TPZ UK is your first choice for a host of monitoring and emergency service applications.

## SURFACE MOTION

TPZ UK offers advanced deformation analysis using interferometric SAR. We use proprietary PS InSAR (Persistent Scatter Interferometry) algorithms developed over 10 years, as well as SBAS (Satellite Based Augmentation System) and DInSAR (Differential SAR Interferometry) techniques. Applications include critical and high value asset monitoring and failure prediction, such as for embankments, bridges, mines and dams.

## SATELLITE COMMUNICATIONS

Our parent company, Telespazio S.p.A, founded in 1961, is one of the world's earliest satellite telecommunication service providers. With a long record of accomplishment in the satellite data and broadcast sectors, the Telespazio group offers its clients secure, reliable and globally available solutions.

Telespazio is an award winning Teleport operator (WTA Teleport operator of the year 2018) with Teleports in Italy, Romania, Brazil and Argentina including the Fucino Teleport. The Telespazio group hosts ground segment equipment dedicated to telecommunications satellite systems managed by leading international operators such as Inmarsat, Eutelsat, OneWeb and Galileo.

In the broadcast market, the Telespazio group is the leader in Italy and a major European service provider with customers including Sky Italia, Sky Deutschland and Aljazeera. Telespazio also provides the global distribution for RAI, the Italian state Broadcaster.

## SATELLITE COMMUNICATIONS ENGINEERING

Through the acquisition of e2E, a leading UK space engineering company, TPZ UK delivers high quality and bespoke engineering services particularly in the field of

satellite communications.

Our capabilities include systems and software engineering, systems verification, validation and test, networking and service management, engineering assurance, and simulation and modelling. Our services are commonly provided in support of large and multifaceted programmes and across the end-to-end system lifecycle, from initial system definition into later operations.

## POSITION, NAVIGATION & TIMING (PNT)

Global Navigation Satellite Systems (GNSS), like GPS, are great at providing accurate position and timing signals which are free at the point of use; however, they are vulnerable to interference, either deliberate or accidental. At Telespazio UK, the Navigation Team is working on high-accuracy, high-integrity alternative PNT solutions to overcome the weaknesses of GNSS, either as bespoke solutions, or in a tapestry like System-of-Systems approach.

The Navigation Team focusses on 4 main areas of PNT and related subjects:

- High accuracy, high integrity maritime User Terminals (UT), services and applications
- High-accuracy, high-integrity augmentation, and authentication services for autonomy
- Lunar exploration & Space Station Services
- Timing

## BUSINESS APPLICATIONS

Space technologies underpin a whole range of services that enable the modern world. Examples of our delivery expertise include:

- Reliable, high accuracy, cost effective and early warning Dam monitoring system
- Monitoring of critical national infrastructure such as gas and water pipelines
- Interferometric measurements for landslides and ground subsidence analysis
- Specialised products for defence and intelligence
- Environmental protection monitoring
- Rush mapping in support to natural disaster management such as flood events
- Thematic mapping and change detection analysis for projects, including land cover change, agriculture and deforestation
- Oil spill identification and monitoring, and ship detection for maritime surveillance purposes.



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