

CASE STUDY

SECTOR

Aerospace

SERVICE

Cloud Networking

Managed LAN

Virtual Data Center

Managed Hosting

Managed Security Services

Professional Services

ESA + GTT

ACCELERATING DIGITAL TRANSFORMATION





GTT Virtual Data Center solution stores and processes ESA's more than 8PB of Earth Observation multi-mission satellite data."

GTT ENABLES ESA TO SHARE EARTH OBSERVATION SATELLITE DATA WITH THE WORLD



GTT's cloud networking services give the European Space Agency (ESA), Europe's intergovernmental space organization, the ability to share vast amounts of satellite data with institutional partners, scientists, businesses, and the general public on its Earth Online web gateway.

These services help ESA's Earth Observation team make data available reliably and securely to users who depend on it for monitoring the conditions of our planet and finding ways of solving today's climate change and geohazard challenges.

SOLUTION HIGHLIGHTS

- GTT Virtual Data Center solution stores and processes ESA's more than 8PB of Earth Observation multi-mission satellite data

- Integration of multiple underlying ICT resources to allow users to view and retrieve data and perform tasks using various archives and tools
- End-to-end network integration between key ESA facilities and multi-cloud environment serving the entire Earth Observation user community in eight ESA locations
- Scalability to accommodate a hosted data set that has grown from around 300TB to more than 25 times that amount

KEY STATS

- Size of workforce: approx. 2,200 staff employees
- Number of countries: 22 member states
- Annual budget (2021): EUR 6.49 billion
- No. of centralized facilities throughout Europe: 8

THE CHALLENGE

GTT was competitively selected by ESA to host the more than 8PB of Earth Observation (EO) multi-mission satellite data on an information and communications technology (ICT) platform that leverages GTT's connectivity, hybrid cloud, security and professional services.

ESA shares EO data collected through its comprehensive fleet of satellites orbiting the Earth with the many communities that study and leverage the data for scientific, commercial and educational purposes. The fleet of satellites serve multiple missions including the SMOS mission to measure soil moisture and ocean salinity; the Aeolus mission to profile the earth's wind patterns; the Cryosat mission to measure polar sea ice thickness and changes in ice sheets; and the Swarm mission to study the earth's magnetic field.

THE SOLUTION

A Platform Optimized for Big Data Exploration.

Hybrid cloud infrastructure

The solution, based on the GTT Virtual Data Center (VDC) solution, stores and processes ESA's EO multimission satellite data. The GTT VDC private cloud also offers a "single-pane-of-glass" user interface fit for a multi-cloud environment by allowing portability to third-party public clouds such as Microsoft Azure and Amazon Web Services. The GTT solution enables ESA to operate smoothly with high levels of automation and uniformity, choosing the best execution venue for each workload. The solution brings together multiple underlying ICT resources that allow users to view and retrieve data and perform tasks using different archives and tools.

Network integration

GTT ensures end-to-end network integration between key ESA facilities and the agency's multi-cloud environment. The service supports the entire EO user community and connects eight ESA locations in Germany, Italy, Luxembourg, The Netherlands, Norway, Spain and Sweden.



The value of the data coming from ESA's Earth Observation missions will continue to increase. Working with GTT and other institutional partners, ESA is offering the many communities engaged with long – and short-term earth surface data exploitation, the ability to access and process data in a practical and secure way for a wide range of scientific, commercial and general interest purposes.”

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THE BENEFITS

A Long-Running Partnership

A growing data set

GTT has supported ESA under previous contracts since 2010 to find faster, more advanced and secure ways of sharing EO data with the world. GTT's support has enabled an evolution from the legacy approach of transferring data long distances for processing at a user's premises to one that allows secure access and tools to analyze the data where it's hosted, securely within the ESA ICT platform. This has proven ever more important as ESA's satellite program continues to expand in new and exciting ways, and the data set hosted by GTT has grown from around 300TB to more than 25 times that amount.

In the future, ESA plans to increase the amount of satellite data currently hosted with GTT. The expanded scope of data will come from additional missions, including the Biomass mission, set to deliver information about earth's forests, as well as the FLEX mission to monitor the chlorophyll fluorescence in terrestrial vegetation. Lastly, data will be garnered from the EarthCARE mission to observe the role that clouds and aerosols play in reflecting incident solar radiation back out to space and trapping infrared radiation emitted from earth's surface.

Enabling virtual research

GTT will enable virtual research environments for users around the world to access this rich and growing data cache, playing a vital role in realizing the benefits of this research for everyone. Thanks in part to GTT, ESA and its partnering communities can use the agency's pioneering data solutions to help solve critical challenges in areas such as food security, climate, natural disasters, ocean health and biodiversity. GTT also supports ESA's continuing development of solutions for improving everyday applications such as geo-positioning and weather forecasting.



With help from GTT, ESA's Earth Observation strategy aims to continue to help society observe, understand and make informed decisions about our home planet for decades to come."

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ESA**



ABOUT GTT

GTT is a managed network and security services provider to global organizations. We design and deliver solutions that leverage advanced cloud, networking and security technologies.

We complement our solutions with a suite of professional services and exceptional support teams in local markets around the world. We serve thousands of national and multinational companies with a portfolio that includes SD-WAN, security, Internet, voice and other connectivity options. Our services are uniquely enabled by our top-ranked, global, Tier 1 IP backbone, which spans more than 260 cities on six continents.

The company culture is built on a customer-first service experience reinforced by our commitment to operational excellence and continuous improvement in our business, environmental, social and governance practices.

Disclaimer: The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency.



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