

CGI CarnotSat

Accelerating the roll-out of 5G



CGI CarnotSat enables accelerated delivery of 5G, reduces the costs of rolling out large scale and rural networks and enables the introduction of new hybrid applications such as connected cars or IoT.

Planning and deployment of heterogeneous terrestrial/satellite networks

CGI CarnotSat allows network operators to carry out scenario-based modelling and to explore use cases across vertical markets. The tool will show where bringing satellite communications into an existing or 5G network will provide wider geographical coverage, at a lower cost and improve network performance.

CGI CarnotSat has been developed with the European Space Agency as part of the [ARTES Core Competitiveness](#) program to better enable the integration of satellite communications and terrestrial networks.

CGI CarnotSat is designed to integrate with most commercially available third-party Radio Access Network (RAN) planning tools for ease of deployment into client legacy tool chains. For the initial release, we selected market leader [TEOCO ASSET](#) to demonstrate its seamless integration with a RAN planning tool and for greenfield deployment scenarios. CGI is also able to offer business consulting for hybrid network deployments, taking advantage of CarnotSat.

Client challenges

Mobile Network Operators (MNOs)

- Provide wider geographical coverage at the lowest cost.
- Predict network performance.
- Need to be able to buy flexibly to meet pressures of connectivity being a commodity.
- Need to manage the end-to-end quality of service.

Neutral Host Network Operators (NHNOs)

- Meet customer expectations of WiFi, connectivity and reliability.



5G roll-out challenge

CGI CarnotSat was developed after talking to mobile network operators and other key stakeholders for 5G. It was clear that one of the initial challenges for 5G is efficiently rolling out networks. There are many locations both in the UK and globally that don't have sufficient access to terrestrial connectivity in order to support 100% 5G coverage, Using the global connectivity capabilities available from satellite communications in an efficient and integrated manner can be the solution. CGI CarnotSat provides 5G planners with the tool-set they need to achieve it.

Satellite Operators

- Need to capitalise on new 5G revenue streams with a premium offering focussed on long term large customer relationships.
- Increase awareness of satcom capabilities.

CGI CarnotSat

The CGI CarnotSat toolset will allow satellite and network operators to evaluate and design hybrid networks, optimizing for cost and performance against emerging use cases.

CGI CarnotSat enables the planning and deployment of heterogeneous terrestrial/satellite networks including:

- Location based optimization
- Interoperability
- Input to network orchestration
- Scenario modelling for network implications of applications in different vertical markets

Benefits of using CGI CarnotSat

CGI CarnotSat is a computer aided radio network optimization tool. It can help you:

- Deliver a single source of backhaul options.
- Identify where satellite backhaul could lower costs and improve coverage.
- Contribute to new differentiated services.
- Support network optimization using satellites.
- Support the development of new use case solutions.
- Create a more responsive service delivery model.
- Demonstrate at scale how satellite connectivity could increase revenues for network operators.

“Space for 5G is a matter of strategic importance for the European Space Agency”

Georgios Ziaragkas,
Technical Officer for CarnotSat at
ESA

Within the ARTES Core
Competitiveness program, ESA is
supporting CGI to develop effective
tools enabling the satellite
integration into 5G networks.

About CGI

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

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