

# GOVSATCOM SERVICES

A new approach to  
connectivity for governmental  
and institutional users

SES<sup>▲</sup>





# INTRODUCING GOVSATCOM SERVICES

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## Pooling and sharing of capacity and frequency bands

The new GovSatCom Service Offerings provide government entities and institutions with a new class of resource that implements a guaranteed, more efficient and direct way of addressing their connectivity requirements. These services introduce a new level of flexibility, which currently cannot be achieved by either commercial or dedicated MilSatCom products. Today, government entities and institutions often have to compromise or trade off some of their requirements. For example, by accommodating long-term capacity commitments to maintain cost-effective pricing, they risk coverage gaps in the event of their mission locations changing during the contracted timespan. Alternatively, to achieve increased efficiency by employing exact capacity allocation via Occasional Use (OU) arrangements, they face an increased risk of service unavailability. They may also incur significantly higher investment costs and need to utilise management programs with premium pricing to ensure access to resilient and highly secure proprietary communication systems.

GovSatCom Services are able to provide an alternative by combining several advantages. They offer guaranteed instant access to the required communications channels when and where needed at commercial rates, with the security, confidentiality assurance and resilience to failure or attack expected by governmental and institutional users.

This new service model introduces the innovative concept of pooling and sharing commercial and military frequency bands along with ground segment resources and service management mechanisms, while allocating dedicated pools of capacity to cover requested areas of operation. In addition, it implements a number of measures for ensuring the availability of different security levels for the communication channels, automated or semi-automated anti-jamming mechanisms, resilience and response-to-stress systems. These measures provide resilience against deliberate attacks or inadvertent interference.

## Key benefits and users of GovSatCom Services

GovSatCom services are aimed primarily at governmental and institutional users operating in the strategic areas of national and international security. However, other Commercial Secured Satcom Users such as banks can also obtain significant benefits from the system's features. The threats from attacks on their communications systems appear to be growing and the damage that could be caused by such attacks is enormous. In addition, commercial organisations with critical security requirements can benefit from the new system.

The key benefits of GovSatCom Services include:

Instant access to the communications channels as and when required through the pooling and sharing mechanism.

Pay-as-you-go service with no commitments.

Guaranteed data security through accredited, deployable infrastructure, to provide confidential communications between remote users and/or with their headquarters.

Different security levels, from Unclassified up to Secret, accommodated simultaneously through deployable infrastructure.

Failure resilience (for both ground and space segments) through diversity of assets and resources.

Anti-jamming and obfuscation features in the hub provide additional durability and resilience.

Highly automated operations that require minimal user intervention.

Rapid, responsive system management through the secure Government Mission Operations Centre.

Dynamic service content update to adapt to users' operational needs.

## GovSatCom clients

### BORDER SURVEILLANCE & MIGRATION MONITORING



### HUMANITARIAN DEVELOPMENT



### CRITICAL INFRASTRUCTURE PROTECTION



### CIVIL PROTECTION & CRISIS MANAGEMENT



### COMMERCIAL SECURED SATCOM USERS E.G. BANKS



### POLICE MISSIONS



### HUMANITARIAN AID & CRISIS MANAGEMENT



### MARITIME SURVEILLANCE & CRISIS MANAGEMENT



### EU EXTERNAL ACTION SERVICE COMMUNICATIONS

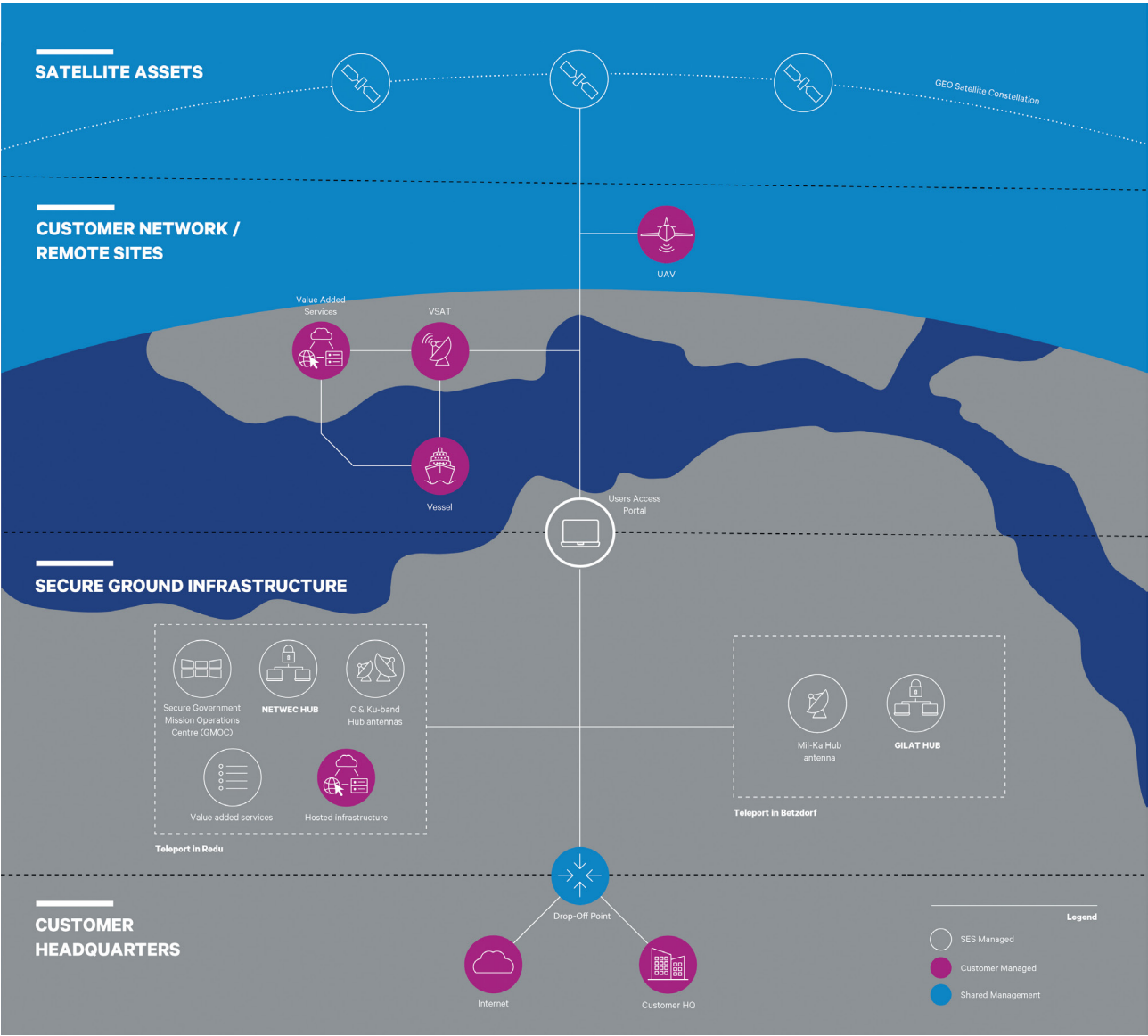
# OVERVIEW OF GOVSATCOM SERVICES

The core elements of GovSatCom Services are the provision of pooling and sharing of satellite connectivity and the provision of managed services, making it possible for any registered GovSatCom user to access satellite resources when and where required. The Government Mission Operations Centre (GMOC), located at ESA's Redu facility in Belgium, manages the complete end-to-end service chain for GovSatCom users.

Multiple satellites from a number of providers, offering various coverage areas and frequency bands (including C-, X-, Ku- and Military Ka-Band) and bandwidths, will provide space segment resources which are managed by the GMOC.

Security will be ensured through multiple mechanisms, including the use of secure and accredited facilities, cleared personnel, dedicated networks and 'accreditable' equipment. From a performance perspective, automated and/or semi-automated anti-jamming and response-to-stress systems will ensure that users are unaffected by deliberate or inadvertent interference to the GovSatCom space segment.

GovSatCom network architecture





# KEY INNOVATIONS

The entire GovSatCom system is designed to automate as many tasks as possible and minimise the amount of user intervention. It is designed to be used without specialist knowledge or training on the part of its users. New developments in the system design include:

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## Maximum task automation

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Pooling and sharing of ground segment and space segment resources. Users will be allocated these resources in a way that best meets their operational requirements. In addition, it will be possible to change the allocation of ground and space segment resources if required due to interference, weather or other issues. This mechanism provides resilience against a range of possible problems.

Space segment capacity pools will be provided, each with a capacity size such that there is a 99.7% probability of having sufficient capacity to meet each user's request on the first attempt. Capacity pools will be created while giving consideration to actual satellite footprints and the expected areas of operation. Each pool will consist of one or more committed resources, for example several transponders or parts of transponders, and the pool's resources will be managed by the GMOC. If a user's request cannot be met immediately, it will be completed within a short time.

The system will support prioritisation in such a way that high-priority users will be assigned capacity and resources at the expense of other users if this becomes necessary.

The platform will have excess capacity, so that it can dynamically change the bit rate assigned to each user in line with their dynamically changing requests within the limits of the overall available capacity.

The platform includes a range of new features designed to provide security, flexibility and resilience, including frequency hopping, data encryption and obfuscation of critical information.

User groups will be guaranteed secure communications, both locally and over the space segment.

The GMOC will manage the deployed terminals by means of common signalling channels. The deployed terminals will be configured and be able to point themselves with minimal intervention from the users.



# SERVICE PACKAGES

There are six main categories of GovSatCom service packages, with differentiated features applicable for various types of mission.

IRON	COPPER	BRONZE	SILVER	GOLD	PLATINUM
Capacity only (MHz)	Managed Connectivity Services (Mbps)	Fully Managed Connectivity Services (Mbps) Provisioning and Management of remote terminals Secured GMOC incl. managed uplink/downlink Tailored Value Added Services			
		NGOs Humanitarian aid agencies	Blue light services	Air Force, Army, Navy	Critical infrastructure management, UAS operations
		Maximum signal protection			
		Scalable throughput			
		Guaranteed minimum throughput			
		Internet Access			
		Satellite connectivity in C- Ku- X- and Military Ka-band			
		Geolocation of interference			

# PACIS-1, THE PRECURSOR TO GOVSATCOM SERVICES

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European Space Agency  
(ESA) GovSatCom  
precursor programme to  
lay the foundations for  
future services

As part of the ESA GovSatCom precursor programme, PACIS-1 was the first step in demonstrating how European space industry can support the EU GovSatCom initiative. The platform leverages government and commercial satellite services to provide secure access to satellite communications. These will be made available to a wide range of governmental applications in civil protection, border control, humanitarian missions, maritime surveillance, and more.

Under the PACIS-1 public-private partnership agreement, an SES-led consortium is developing the architecture and service concept for the platform, utilising the space assets and ground infrastructure of the project partners: Redu Space Services, GovSat, Newtec, QinetiQ and Tekever.

The space segment will rely on both existing and future assets. It is sourced from European operators and managed by the GMOC. Technological and capacity assets have been selected to address the full spectrum of users – from security forces to humanitarian agencies and NGOs.

The ground segment, which is based on existing and new assets deployed at the ESA facility in Redu, Belgium, is supplemented by other European teleports. These include SES's headquarters in Betzdorf, Luxembourg. Redu is already a key site for the provision of satellite services to the European Union. For example, the technical operations centres for Galileo and the European Geostationary Navigation Overlay Service (EGNOS) are located in Redu. This facility also hosts telemetry, tracking and command (TT&C) backup facilities for SES, and key ground infrastructure for the European Data Relay System (EDRS).

## JOIN US IN **APRIL 2020,** **JULY 2020 OR OCTOBER** **2020 FOR THIS YEAR'S** **DEMONSTRATION** **SESSIONS**

Within the framework of our PACIS-1 project we are offering opportunities throughout 2020 to explore the newly developed GovSatCom Services and test how they support user-specific applications. A series of demonstration sessions will be conducted at the GMOC in Redu, Belgium, during [April 2020](#), [July 2020](#) and [October 2020](#).

To request additional information or to register for a demonstration session, please contact:

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Published in February 2020.  
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