DRAKON 5GSat Cameleon Kit

Securely extending tactical military networks with commercial connectivity (4G/5G and SatCom)

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THALES SOLUTION

DRAKON 5GSat Cameleon Kit provides tactical and command vehicles with the capability to extend the hardened core of battlefield connectivity (military SatCom, wideband MANET, tactical V/UHF radios, HF, troposcatter...) with commercial WAN networks (4G/5G mobile network operators and LEO, MEO or GEO constellations).
What this means for your missions:

- Faster data transmissions and an **acceleration of the OODA loop** thanks to high speed data up to 100 Mbps;
- Global coverage, **mobility and greater elongation** thanks to largely invested commercial infrastructures;
- Discrete radio use by **diluting into 5G and SatCom** public traffic;
- **Communication resiliency** by combining multiple bearers of different natures;
- **Increased radio bandwidth** to mitigate overload issues at levels 3, 4 and 5;
- Easier **interoperability** during operations in coalition thanks to sustained and standardized technology.

5G   **Satcom**

Tactical Radio

Aerial
5GSat module

Internal
Security & Service module
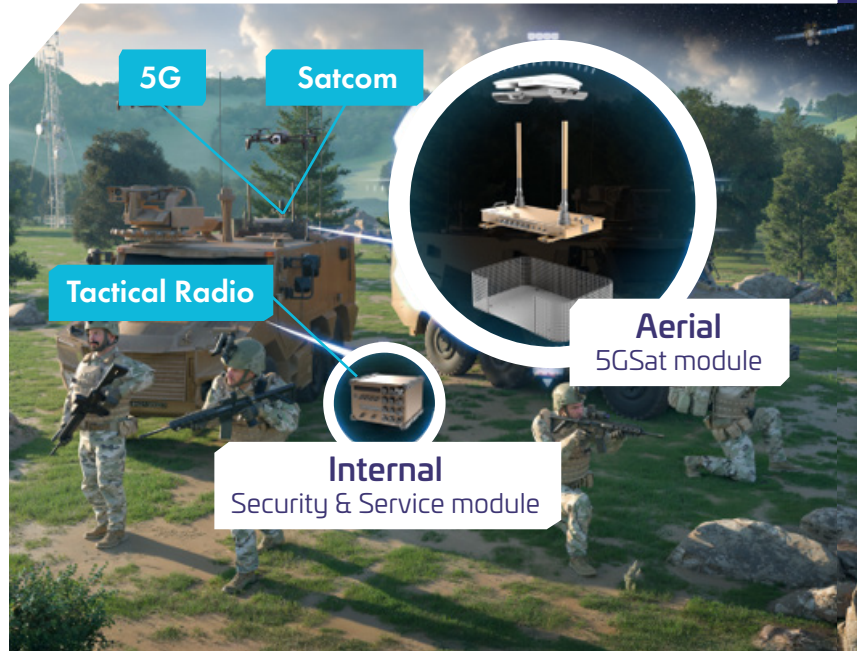
UNIQUE CAPABILITIES

DRAKON 5GSat Cameleon Kit provides tactical and command vehicles with the capability to extend the hardened core of battlefield connectivity (military SatCom, wideband MANET, tactical V/UHF radios, HF, troposcatter...) with commercial WAN networks (4G/5G mobile network operators and LEO, MEO or GEO constellations).
What this means for your missions:

Ultra-compact and modular hardware:
DRAKON 5GSat Cameleon Kit integrates 5G and SatCom terminals in a single AERIAL module, in particular providing multi-orbit (LEO, MEO, GEO) and multi-operator capacity. It supports Oneweb as well as Starlink constellation. The design allows for quick and easy swap of the SatCom terminal among various options. Vehicle integration is facilitated with a cable-pass-through kit for NATO standard opening and an adaptation plate requiring no modification of the structure.

5G and Satcom dilution:
Thales eSIM enables a scalable remote configuration of subscription profiles to disappear in local 4G/5G cellular networks traffic, thereby avoiding roaming hubs and identification and strengthening the discretion capability.

Scalable security:
DRAKON 5GSat Cameleon can support massive deployments interconnecting a large number of vehicles, nodes and radio networks. Thales's solution features the highest standard security capabilities to prevent threats like eaves dropping, identification, rogue terminal, DDOS attack, etc... The kit is simple to operate with a mission-oriented management interface.

COMPONENTS

The 5GSat kit is a highly modular solution, featuring:

1- AERIAL 5GSAT MODULE:

The aerial module can be easily integrated on the roof of any vehicle (using standard NATO opening). The upper and lower components can be dismantled and deployed beside the vehicle at a distance of a few hundreds meters with an optical cable to distance the radiating elements and mitigate the electromagnetic footprint. The aerial module is composed of 4 different elements:

The **upper component** is modular to accommodate an ESA SatCom antenna. Different options are possible, depending on the mission needs.

INTELLIAN
Oneweb

The **lower component** integrates two 4G/5G omni-antennas as well as the 4G/5G modem and SatCom modem (the latter is often directly integrated in the SatCom antenna).

STARLINK
Starlink

An **optional fixed component** with branch protection ensures the integrity of the above elements while the vehicle is on-the-move, along with an adapter plate for mounting onto the vehicle.

An **optional cable-pass-through kit for NATO standard opening**: Electrical and data connections are established through the standard NATO opening. The mounting kit allows the opening to be used for other purposes if needed.

COMPONENTS

The 5GSat kit is a highly modular solution, featuring:

2- INTERNAL SECURITY & SERVICE MODULE:

It enables dynamic routing of voice and data over any available bearers and across multiple networked kits. Its tactical radio form factor allows for easy integration into any vehicle. The module includes a firewall and IPSec VPN node compliant to NATO Restricted level. It can interface with military bearers such as ESSOR radios, high-capacity line-of-sight (HC-LOS) or Mil SatCom. It also supports an ROIP gateway function, enabling the integration of analog radios and their backhauling to commercial WANs.
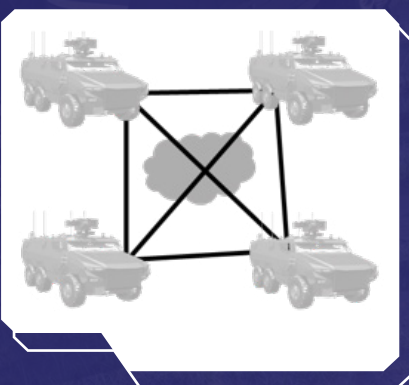

3- CENTRAL MANAGEMENT:

TA central management software solution is provided to facilitate effective network planning. It supports remote configuration and supervision of the kits in both mesh or star configurations
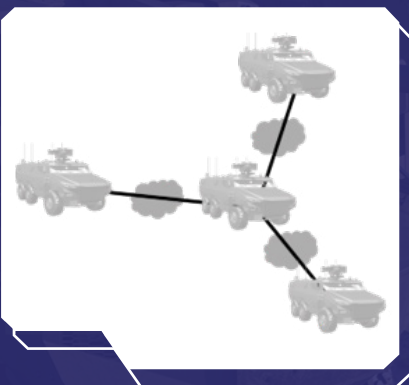
Hub and spoke configuration

MESH configuration

4- LOCAL MANAGEMENT:

the Thales DRAKON 5GSat Cameleon Kit includes a local management solution that allows CIS operators to configure IPSec VPN tunnels.
During missions, operators can use this solution to select the appropriate bearers and monitor 4G/5G and Satcom reception levels.

CHARACTERISTICS

A INTERNAL SECURITY & SERVICE MODULE

Dimensions	• 26,94 (L) x 36,25 (P) x 22,9 (H) cm
Weight	• <10 kg
Power	• Consumption: 100 W • Input: 24 VDC
System capacity	• MESH: up to 25 kits in a network • Single-star : 100 kits in a network with topology engineering • Multi-star: 1000 kits in a network with topology engineering and planning tool
Security	• Security levels: Restricted (UE and NATO) certified by ANSSI • IPSec VPN, AES-GCM • IDS-IPS, firewalling • EAL4+C
Protocol interface	• IPv4 • IS-IS, OSPF, BGP
Physical interface (military connectors)	• 1x 1Gb optical • 3x 1Gb for LAN • 2x 1Gb RJ45 field Ethernet for management • 4x analog interfaces for tactical radio • 2x RS232 for maintenance of phony gateway and security module • 3x USB for maintenance of the routing module
Environment	• Certification: CE

AERIAL MODULE

Upper, lower and fixed component (as illustrated in the COMPONENTS section)

Dimensions	• 108 (L) x 70 (P) x 28,7 (H) cm (omni antennas excluded). Omni antenna height: 85cm.
Weight	• 34 kg (with INTELLIAN) for upper+lower components • 21 kg for the fixed component
Power	• Consumption: <350W (with INTELLIAN) • Input: 24V DC
Environment	• Certification: CE • STANAG 4370 (AECTP 300, AECTP 400)

4G/5G components

4G/5G Technology	• 3GPP Rel 15
MIMO	• 2x2
Bands	• 4G FDD : B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B66, B71 • Single-star : 100 kits in a network with topology engineering • Multi-star: 1000 kits in a network with topology engineering and planning tool

ESA SatCom Antennas

	INTELLIAN	**STARLINK**
Supported orbits	• LEO	• LEO
Available band	• Ku	• Ku
Power consumption	• 150W	• 100W
Weight	• 12kg + 1.5kg	• 5.2kg + 2.1kg
Max G/T ratio	• 9dB/K	• Unavailable
Certifications	• Oneweb	• Starlink

*In progress
** Following regional authorization

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