

TITAN BY NORTAC™

Tracking solution



Learn more about how to protect your personnel in theater (AIR/LAND/SEA) by using the TITAN system. The latest update gives the operator in the field situational awareness even on the small encrypted handheld Iridium Wave device.





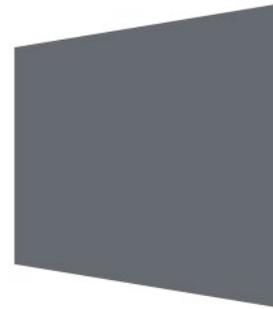
Executive Summary

The twentieth century's industrial warfare has evolved into the twenty-first century's war amongst the people. Battles take place within communities, in austere, remote regions all around the world, and joint operations are more commonplace than ever before. Interoperable, affordable, beyond the line-of-sight blue force tracking has therefore become an essential capability. When military, police, and government commanders implement the TITAN BY NORTAC™ tracking solution, they are accessing an integrated Situational Command and Control (C2) Platform which allows them to quickly and precisely manage unfolding events. The software provides a single, shared tactical Common Operational Picture (COP) - whether on land, air, or sea - allowing commanders to conduct synchronised planning, control movement, and respond rapidly, to changing events involving up to 10,000 separate tracked assets. Data exchange using TITAN's gateway services allows information to be seamlessly integrated into the strategic COP, ensuring interoperability between various incumbent technologies. The intuitive display plots near-time asset positions on commercial open-source or customised military, police, and government mapping, while also providing comprehensive reports for situational awareness, mission planning, and debriefing. Resetting or configuring associated TITAN mobile tracking devices can be achieved remotely, while pop-up alerts, alarms, and geo-fences, enhance management and collapse response times to critical events on the ground, in the air or at sea. The COP allows for a command hierarchy from a strategic HQ to a tactical forward operating base, as offered in a traditional C2 system. Additionally, without compromising the command structure, individual user groups or tactical clients, can utilise the system for routine chat and situational awareness at lower tactical levels.



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Differentiating Key Features

Control

The client takes control, with a server solution behind the client's firewalls for their encryption generation, therefore enabling each country, or client, to maintain their sovereignty without external viewing by MilDef, or other users. However, interoperability can be achieved for joint operations with the same encrypted key generation.

Cost Effectiveness

As the solution is based on commercial off-the-shelf technology, it benefits from being one of the most affordable on the market. Based upon hardware designed to fulfil the requirements of multi-million pound service level agreements (SLAs).

Security

With secure web protocols, password encryption and satellite communication links and messages that use AES 256 point-to-point encryption, it ensures complete data integrity for the client.

Reliability

MilDef has an established military, police, and government client list who are using TITAN BY NORTAC™ in demanding environments. Over the past decade of foreign and domestic conflict, we have proved how its market leading technology can isolate errors and can prevent system failures, to maintain seamless operations.

Communication

MilDef can support a wide range of devices and communication networks including satellite, radio, and GPRS/GSM, anywhere in the world.

What is TITAN?

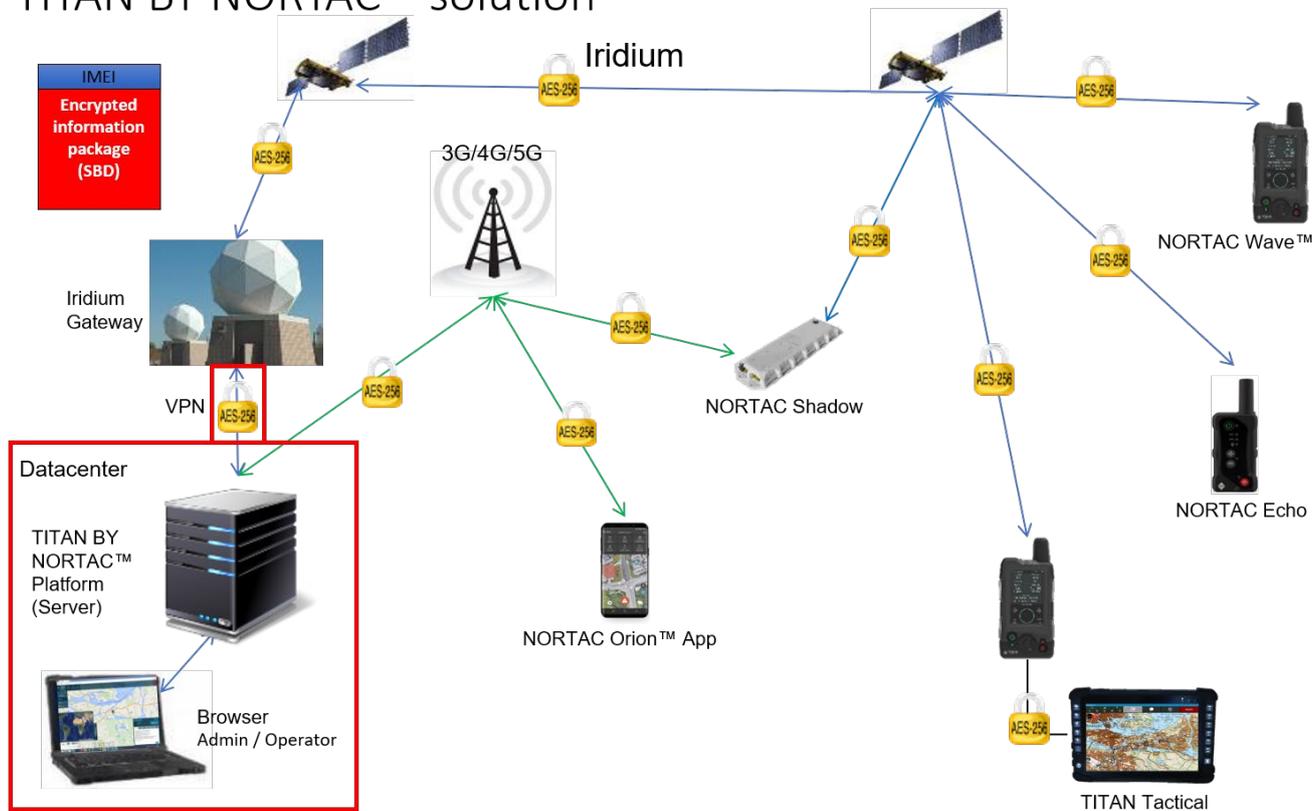
The TITAN BY NORTAC™ solution is comprised of; TITAN BY NORTAC™ Platform (the highly secure, web-based command centre HQ), Mobile tracking devices in the field and TITAN Tactical Software (optional remote command).

TITAN BY NORTAC™ provides full tracking and communication capabilities in real time anywhere in the world, including in areas with no cell coverage, and rugged or austere terrain that requires Beyond-Line-Of-Sight (BLOS) comms.

- SA (multi-asset tracking, Situational Awareness)
- Operational Command and Control (C2)
- Emergency response
- Chat messaging
- SITREP and reporting
- Geofencing
- Exclusion zones
- Blue force tracking
- Red force tracking
- Nearest-responder alerting
- Animated history/debriefing
- Sensor integration (IoT)
- CBRN integration (IoT)
- ECM control (IoT)
- Cargo tracking & monitoring

Architectural Overview

TITAN BY NORTAC™ solution



TITAN BY NORTAC™ is comprised of three main components:

The TITAN BY NORTAC™ Platform is the HQ component of the TITAN solution. It consists of the data handling server hardware and software, and can be located at a forward operating HQ, or at a strategic command, without compromise to security.

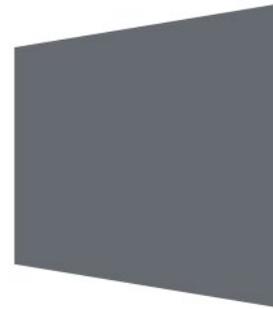
Titan Mobile Devices

Mobile devices are a component of the TITAN BY NORTAC™ solution for use in the field whether by soldiers on operations, or by non-military workers in challenging terrains. They can be handheld, or installed in vehicles, aircraft, or marine craft. The TITAN BY NORTAC™ Platform can support 10,000+ mobile devices. Operating as an 'Internet of Things', the TITAN mobile devices can speak laterally to each other, allowing for rapid spread of communication through the network with greater accuracy than voice.

TITAN Tactical is the mobile situational awareness software GUI component of the TITAN solution. It is designed to be accessed on a tablet or laptop computer running Windows 7, 8 and 10. When used in conjunction with the TITAN Platform as a client based standalone solution, TITAN Tactical utilises satellite communications infrastructure to ensure continuous secure operation, worldwide.

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The TITAN BY NORTAC™ platform

The HQ component of the TITAN BY NORTAC™ solution is the TITAN BY NORTAC™ Platform. It allows data to flow backwards and forwards between the command HQ and the tactical levels. It also allows data to flow laterally between field units providing tactical level communications using secure, cost effective, SBD satellite channels. It comprises the software program, gateway services and the back office Graphical User Interface (GUI) capability.

The TITAN BY NORTAC™ Platform provides organizations with a secure web-based application, or in-premise rapidly deployed solutions behind client firewalls, for asset and personnel tracking capability, including situational awareness (SA), operational command and control (C2), emergency response and the ability to provide comprehensive post-operational debriefing.

Numerous functionalities are included such as encrypted two-way messaging, easily reconfigured geofences with inclusive and exclusive zoning, address book syncing, permission based user levels, configurable asset permissions, multiple map layers and overlays, multiple displays, history reports, asset configuration, asset group management, emergency alert management and more.

Tracking and Messaging

The TITAN BY NORTAC™ Platform has been designed by a team of ex-military specialists who were involved at the very highest levels of operational, and frontline conflict, with the Ministry of Defence (MoD) and NATO. The TITAN BY NORTAC™ Platform is built to service the beyond the line-of-sight (BLOS) blue force tracking defence requirements of military, police, and government organisations worldwide.

Advanced Functionality

Interoperability

All data can be duplicated and interconnected with a Battlefield Management System (BMS), combat search and rescue (SAR), or strategic Common Operational Picture (COP). The system incorporates gateway technology which easily allows data to be pushed and pulled from any strategic C2 systems, no matter what the format.

Information Layers

The TITAN BY NORTAC™ Platform allows the client to annotate geographical information of assets and locations to ensure all information is immediately identifiable and available to the commander at all times.

Communications

The integration of two-way advanced text messaging allows immediate confirmation of the nature of the incident, and subsequent command and control. This includes the ability to send and receive external emails to a mobile asset, which is using satellite communications.



Emergency Identifier

The identification system allows emergency information to be sent to the most appropriate commander, or organisation. emergency alert information is automatically sent to the active alert's nearest responders, or to an email/SMS account.

Geo-fencing

Geo-fencing can be used to control troop movement. Hot zones can be updated at speed, and easily annotated electronically on a digital map, resulting in an automatic alert being raised at HQ, if any assets enter, or leave, the specified 'geo-fence'. The system will alert the commander if the pre-planned convoy route has been compromised, or the assets have not reached pre-defined destinations, by the configured estimated time of arrival.

Asset Groups

One system can be used by several autonomous user groups within an organisation. Generally, these would be operationally specific and include a homeland user group for domestic operations and training. There is no limit to user asset groups from brigades, section level, and individual soldier, or for police force, down to police officer. All can be configured to offer the necessary hierarchical command and control structure, as required.

Typical Requirements

Server configuration depends on asset numbers and redundancy architecture. A server solution is a standard offering for the TITAN BY NORTAC™ Platform, TITAN software, Linux Ubuntu Server 12.04 64 Bit, Map Service – Google, ESRI ArcView or OSM, 2 x Exchange server licence for mailbox and SMS external reporting, Linux Scripted Backup Recovery Program.

Security

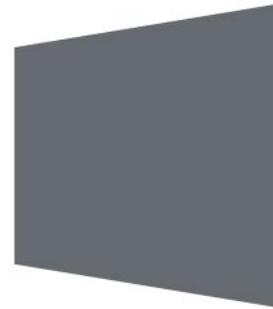
The encryption management module with password control for crypto custodian is ideal for military, police and government organisations. With current multi-national efforts, a set of crypto keys can be distributed for the same mission, enabling all clients to see each other for a true Blue Force Tracking (BFT) ability. During a mission, assets can easily be added, or disabled. At mission end, all assets can be cancelled and new keys generated.



TITAN BY NORTAC™ Platform

TITAN BY NORTAC™

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TITAN MOBILE

TITAN Mobile is designed to be used in the field for asset tracking and basic C2. The primary Mobile device is the NORTAC WAVE™ which can be used in conjunction with personnel and vehicles. When combined with the TITAN BY NORTAC™ Platform and TITAN Tactical, TITAN Mobile enables commanders to view their positions, in near real time, and pass this data into the COP.

The NORTAC WAVE™ tracking device displays Situational Awareness information at the handheld level. The compression technology used to achieve this is currently patent pending. Wave SA will enable deployed users to view near real time positional and emergency alerts at the Tactical level directly on their Wave device. This powerful tool will enable faster response times and increased situational awareness at the mobile level. The Wave provides two-way chat messaging between the device and the TITAN BY NORTAC™ Platform, device to asset group, and device to device. Free text, pre-defined canned messages, and email, are all supported.

In addition to the NORTAC WAVE™, the NORTAC's Echo tracking device is the ideal dismounted device for soldiers and police forces, with basic functionality: on-off, emergency, check-in, and predefined message capabilities.



NORTAC WAVE™



NORTAC WAVE™



NORTAC Echo

SA-Function ON



Tracking and Battery Life

The Wave and Echo devices operate on the Iridium satellite network, which offers complete global coverage, and the option of AES 256 bit encryption. Robust and versatile, the devices can be handheld, or deployed as a vehicle tracker through the use of an optional vehicle kit. The reporting rate can be changed as required, from one minute intervals upwards. Waypoint marking and 'check-in' messages are also supported. This is controlled via the Wave device's resistive touch screen.

Impressive battery life of best-in-class level allows for prolonged operation away from power sources, even at high reporting rate.

Emergency Alarm

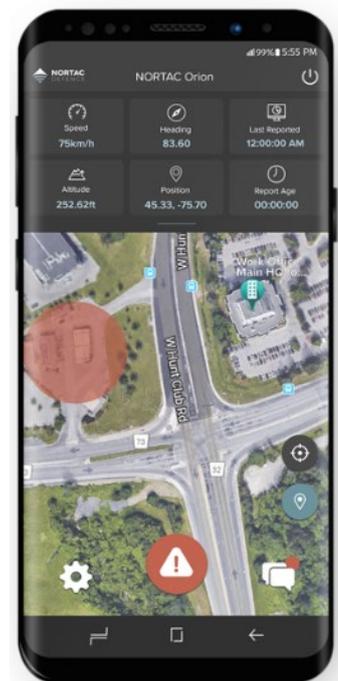
When the Emergency button is pushed, audible and visual alerts appear on the TITAN BY NORTAC™ Platform. Notification of the alarm is also automatically forwarded by SMS and e-mail to nominated recipients and TITAN Tactical clients. Furthermore, closest responder alert functionality ensures that information such as Military Grid Reference System (MGRS), direction and heading is automatically transmitted with the emergency alert to the five nearest responders.

M2M

We have advanced the capability of data through our devices by adding a Machine to Machine (M2M) way of sending additional data over the satellite network for use in the battlefield, or for user groups such as the military, police, NATO or for UN observers when in cities, or on operations.

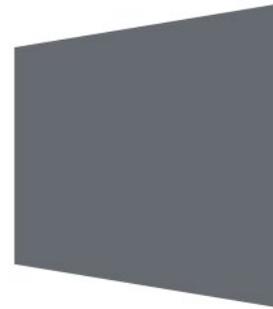
NORTAC Orion™

The encrypted smartphone application, NORTAC Orion™ complements the capabilities of the Wave and Echo device. The application sends accurate, AES 256 encrypted position updates, and text messages back to the monitoring software. For personal privacy, tracking can be easily switched off, when it is not required. When the emergency alarm is activated, the near real time notification will be an audible and visual alert, on the TITAN BY NORTAC™ Platform. An individual's location will update every 15 seconds, and their status can be rapidly assessed, and an effective response initiated. Notification of an alarm is also automatically forwarded by SMS and e-mailed to nominated recipients in the client's organisation.



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TITAN TACTICAL

Titan Tactical is a mobile situational awareness component of the TITAN BY NORTAC™ solution. It is designed to be accessed on a tablet or laptop computer and is paired with the NORTAC WAVE™ to enable connectivity regardless of terrain. Ideal for those in charge who are part of the developing operational scenario. It enables geo-fences to be viewed, messaging, and events can be plotted. Titan Tactical updates the TITAN BY NORTAC™ with key details. When there is no infrastructure in place, Titan Tactical provides clarity from the operating environment to HQ. By having three-way message functionality for land, air, and sea assets, it enables the mission command to continue, where terrestrial communication may fail.

TITAN Tactical software is quickly and easily loaded onto a laptop or a tablet device for vehicles, helicopters or a tactical HQ. It enables those in charge to view their immediate Area of Responsibility (AOR), or provide them with a greater field of view, by giving them more asset group access from the Platform. It is designed to be lightweight and agile, to be carried in a day sack, ops vest, or jacket pocket.

The messaging Graphical User Interface (GUI) is designed to be simple and intuitive. Offering extensive mapping functionality allowing for manual and automatic map data inputs, the client can see up to a hundred positional reports simultaneously. Custom maps and all major file formats are supported.

Tracking and Messaging

TITAN Tactical has pre-defined messages which the client can setup which become the Standing Operating Procedure (SOP) tool. With one click of a button, the client will know that correct messages are being sent, and in turn received. The client wants to know that they are being tracked, and support is on the way. By having TITAN Tactical three way message functionality for land, air, and sea assets, it enables the mission command to continue, where terrestrial communication may fail.





Advanced Functionality

Versatile

TITAN Tactical software is quickly and easily loaded onto a laptop or a tablet device for vehicles, helicopters or a tactical HQ. It enables a commander to view their immediate Area of Responsibility (AOR), or provide them with a greater field of view, by the TITAN BY NORTAC™ Platform asset group functions. TITAN Tactical is designed to be lightweight and agile, to be carried in a day sack, ops vest, or jacket pocket. MilDef also supports the TITAN Tactical military and police vehicle fits, which can be overt or covert. TITAN Tactical offers the client positional reports to other assets within the AOR. With map overlays and weather updates to a geo-fence capability, the client can be certain of the accuracy of the software.

Supported GUI and mapping

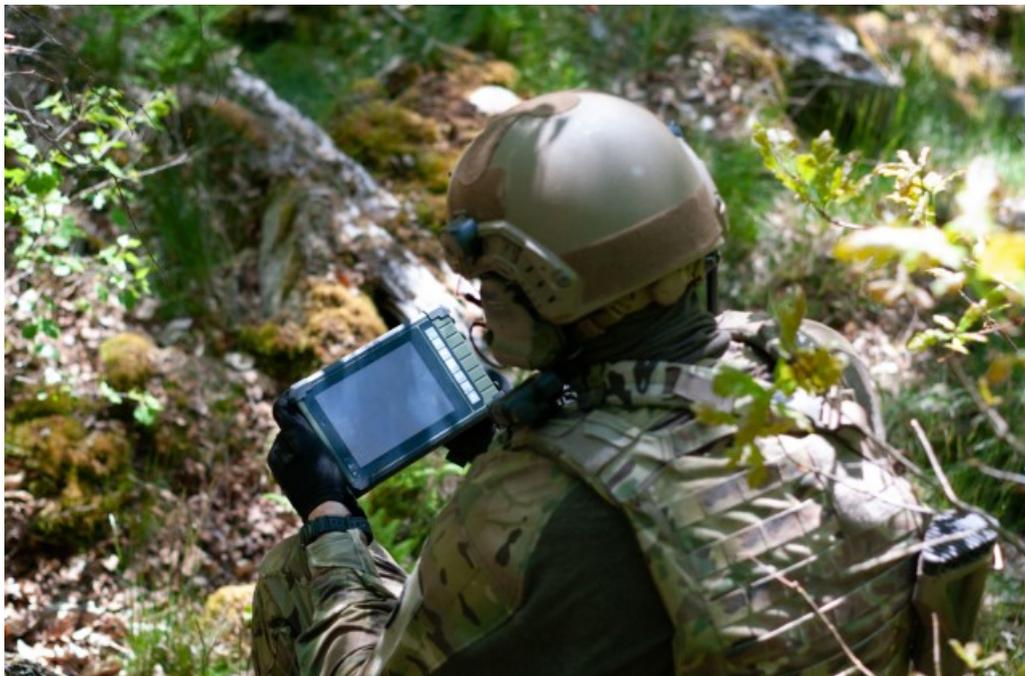
The messaging Graphical User Interface (GUI) is designed to be as simple and intuitive as Skype messaging. TITAN Tactical has a multi-messaging GUI, which offers a three way communications model. Offering extensive mapping functionality allowing for manual and automatic map data inputs, the client can see up to a hundred positional reports simultaneously. Custom maps and all major file formats are recognized.

Typical Hardware Requirements

Any laptop/tablet with the following minimum specification: Intel 2.7 GHz processor, 64 GB available disc space, 2 GB DDR2 Memory (RAM), 2 x USB 2.0 Bluetooth (recommended)

Typical Software Requirements

TITAN Tactical application, Windows 7, 8 and 10, required electronic formatted maps



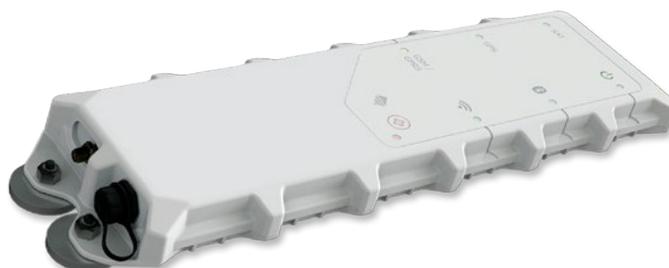
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NORTAC Shadow

NORTAC's Shadow is a dual mode tracking device suitable for vehicles and cargo management.



Other Titan-Integrated Products

Nortac's team of dedicated software engineers have integrated numerous products to the TITAN BY NORTAC™ Platform including devices by Iridium, Lars Thrane, NAL and Garmin. The ever-evolving list of integrated devices gives new users the flexibility to continue using their existing stock of devices where possible.

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