STRATIGN

STRATEGIC DEFENCE TECHNOLOGY

SATELLITE PHONE INTERCEPTION SOLUTIONS

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THURAYA INTERCEPTION SYSTEM

Introduction

With the advent of Satellite communications, it has become easy for people to communicate to or from remote parts of the world where normal communication resources are not available. Approximately 2,000 artificial satellites orbiting Earth relay analog and digital signals carrying voice, video, and data to and from one or many locations worldwide. In the modern world, Satellite communications play a vital role in the global telecommunications system. Among the many service providers, Thuraya is a world's leading mobile satellite service provider of Voice, SMS, and Fax services solutions in remote areas where GSM networks are not available.

Thuraya operates two geostationary satellites and provides telecommunications coverage in more than 161 countries globally. Thuraya offers a congestion-free network that now covers most of the planet - Europe, the Middle East, North, Central and East Africa, Asia and Australia, nearly 60 percent of the world's population. The emergence in the technological features and rapid growth in the subscriber base of Thuraya Satellite Communication System has made Interception Thuraya Communication very important for Government intelligence agencies Worldwide.
Whilst most Thuraya communications are perfectly legitimate, the extensive geographical coverage provided by this network makes it more favored by subversive and criminal groups located in remote regions or those wishing to avoid fixed wire network interception increased use of Thuraya phones by criminal elements are posing a serious problem for security agencies worldwide, working at intercepting their communication traffic.

Stratign provides intelligence organizations and national security government agencies with advanced solutions for Interception, collection processing and analysis of Thuraya communications. The system is capable of real time Deciphering Thuraya traffic to provide decoded Voice, SMS, FAX and DATA sessions along Geo-Location and call-related information of the intercepted terminals.

We have developed a unique solution which can locate the presence of Thuraya phone in the area of operation by sending silent calls to the target phone, forcing the target to respond without its knowledge.

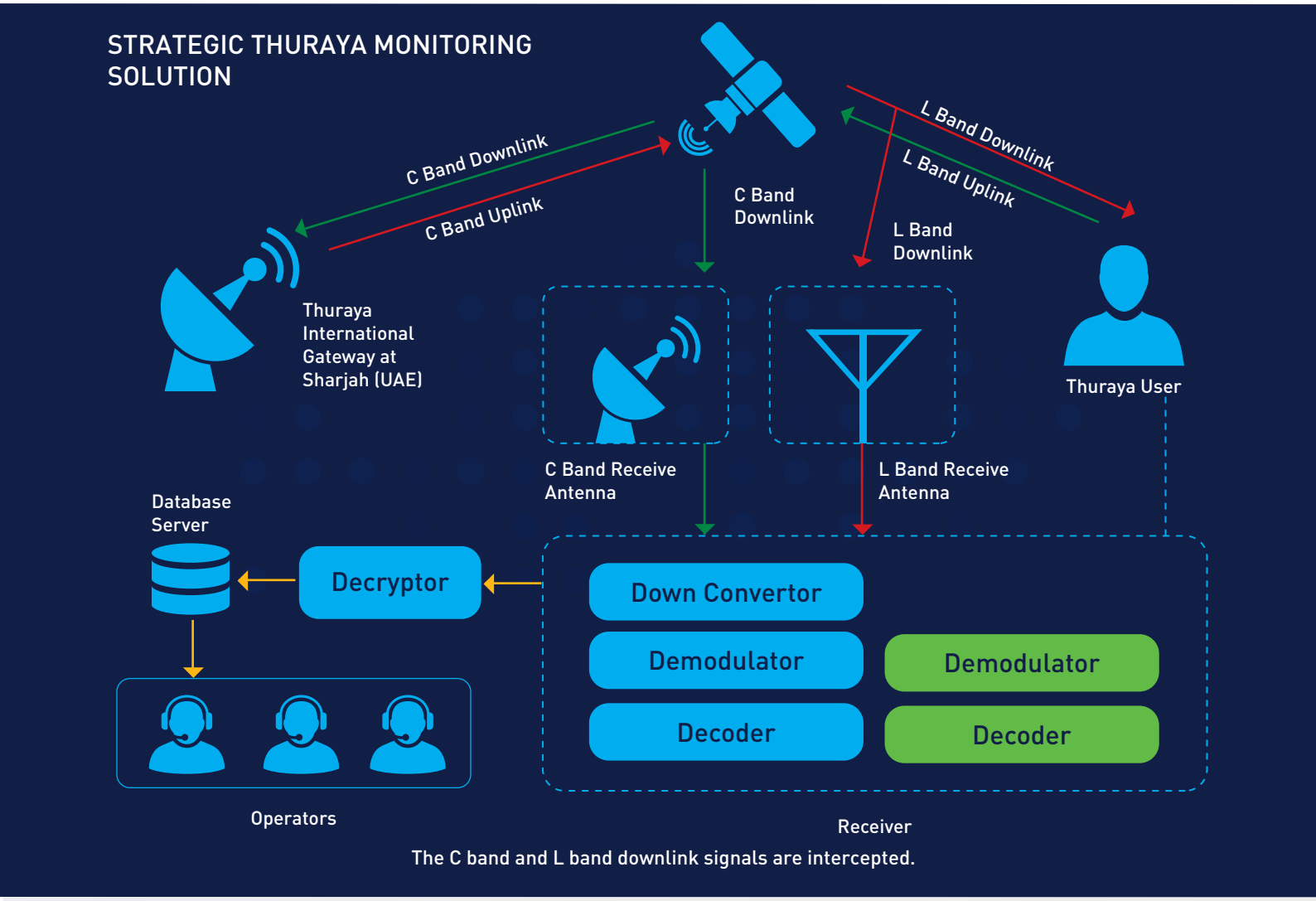
A. Strategic Thuraya Monitoring Solution

The Strategic Thuraya Interception system is designed and developed as 100% Passive Interception system which is capable of Interception, deciphering and logging Thuraya communication including Voice, SMS and Data. The Strategic Thuraya Interception System is capable of providing both sides of the communication (full duplex call), call-related information along with the location of the Thuraya Phone by Interception of both L & C-band. System is designed and integrated to intercept Thuraya Communication from both Thuraya-2 and Thuraya-3 satellites.

The system can be configured to intercept up to 7 spot beams & 32 duplex calls per spot beam simultaneously.

The final system configuration will be based on the customer requirement. Coverage of Stratign's Strategic Thuraya Interception System can be extended to monitor full duplex communications beyond 7 spot beams with additional groups of up to seven spot beams, anywhere within the Thuraya coverage area by combining it with multiple Tactical Systems.

The Remote Tactical systems are connected to the strategic system via an always-on connection such as a leased line, WAN, or satellite link (e.g. VSAT). This allows Remote Tactical systems to work as an integrated part of the strategic system.



The C band and L band downlink signals are intercepted.

Features

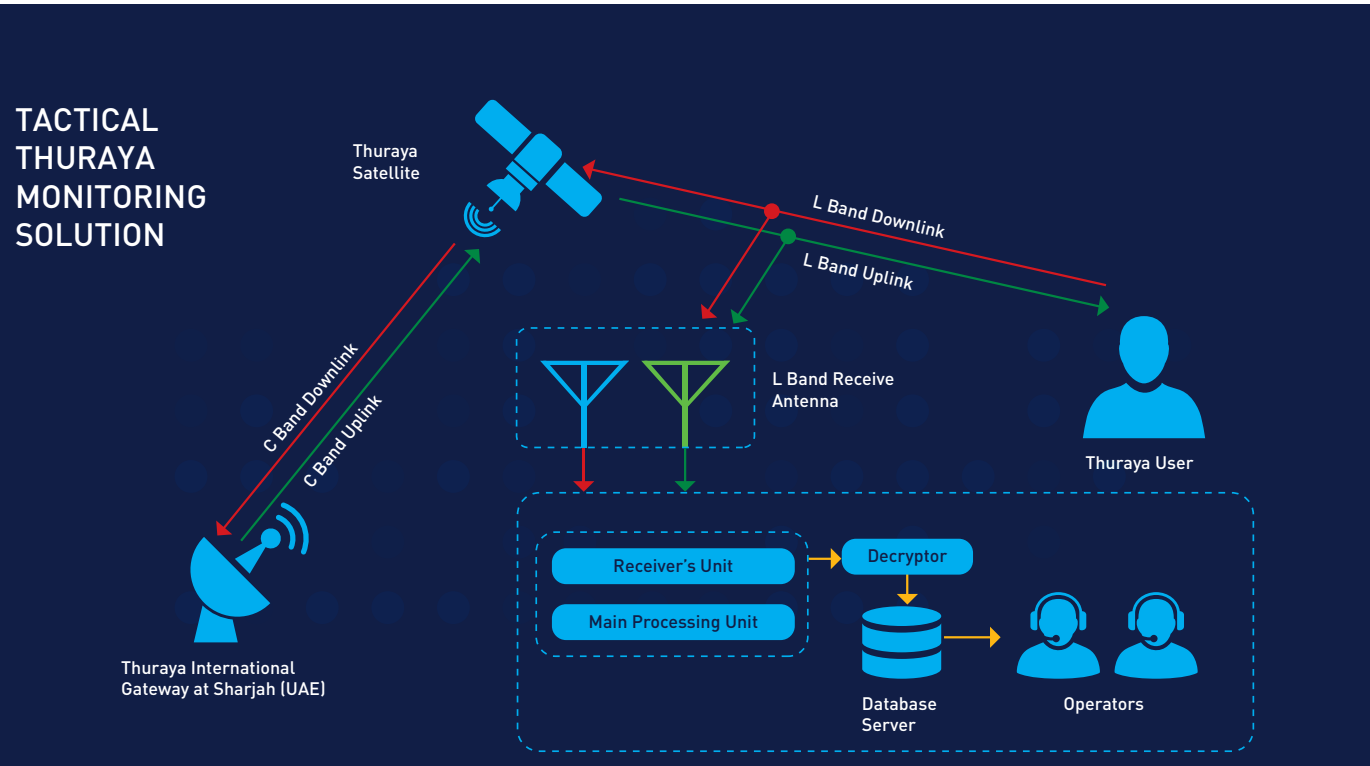
- Intercepts Thuraya Communication from Thuraya 2 and Thuraya 3 Satellites.
- Monitors both C & L band downlink from the Thuraya satellites.
- Modular structure enables configuration of one system to monitor up to 7 spot beams simultaneously.
- Intercepts 12 full duplex calls simultaneously per spot beam.
- Automatically scans the available spot beams (home and neighboring) and provides the spot beam ID, Latitude & Longitude for center of the spot beam, Channel Number, etc.

- Automatically tunes the demodulator to the desired spot beam.
- Automatically detects and identifies the Voice, SMS and Fax communication and decrypts the Voice, SMS and Fax communication almost in real time (once the call is completed).
- Location of the target can be mapped on Digital map.
- Recorded conversations can be played back at a slower rate for clear understanding of the conversation.
- Detect new switching schema during which new frequencies are allocated to L Band and C Band mapping.
- Can be optionally configured to monitor the C band only when L band is not available.
- Integrable with Stratign's Voice Forensic Software (Optional) that can carry out Language Identification, Speaker Identification, Gender Identification, Key Word Spotting, etc.
- Stratign's powerful Link Analysis Software is also integrable (Optional) with the Tactical Thuraya Monitoring System, enabling the operator to do a Call Relation Analysis.
- Can be integrated with Stratign's unique Phone Locator System (optional) to find out the presence of target in the area of interest.
- Capable of intercepting and displaying the following information:
  - Spot beam ID
  - Date and time of call
  - TMSI/IMSI/IMEI
  - Latitude and longitude of target (GPS location)
  - Telephone number of called party
  - Telephone number of the calling party
  - Direction of the call flow (Incoming Call or Outgoing call
  - Call type (Voice or SMS)
  - Duration of call (With start time and end time)

B. Tactical Thuraya Monitoring Solution

Tactical Thuraya Interception, decrypting and logging solution, is capable of Interception, deciphering and logging Thuraya traffic including Voice & SMS. The system is designed to monitor Thuraya communications on the L-Band uplink and downlink channels, the system is completely passive and does not interfere with the normal communication and hence its presence cannot be detected.

The ruggedized built of system makes it highly portable and ideal for quick tactical deployment. The user-friendly GUI and simple system configuration significantly reduce the training time required for the operator. In standard configuration, the system is capable of Intercepting up to 7 spot beams and a maximum of 32 duplex calls in each spot beam.

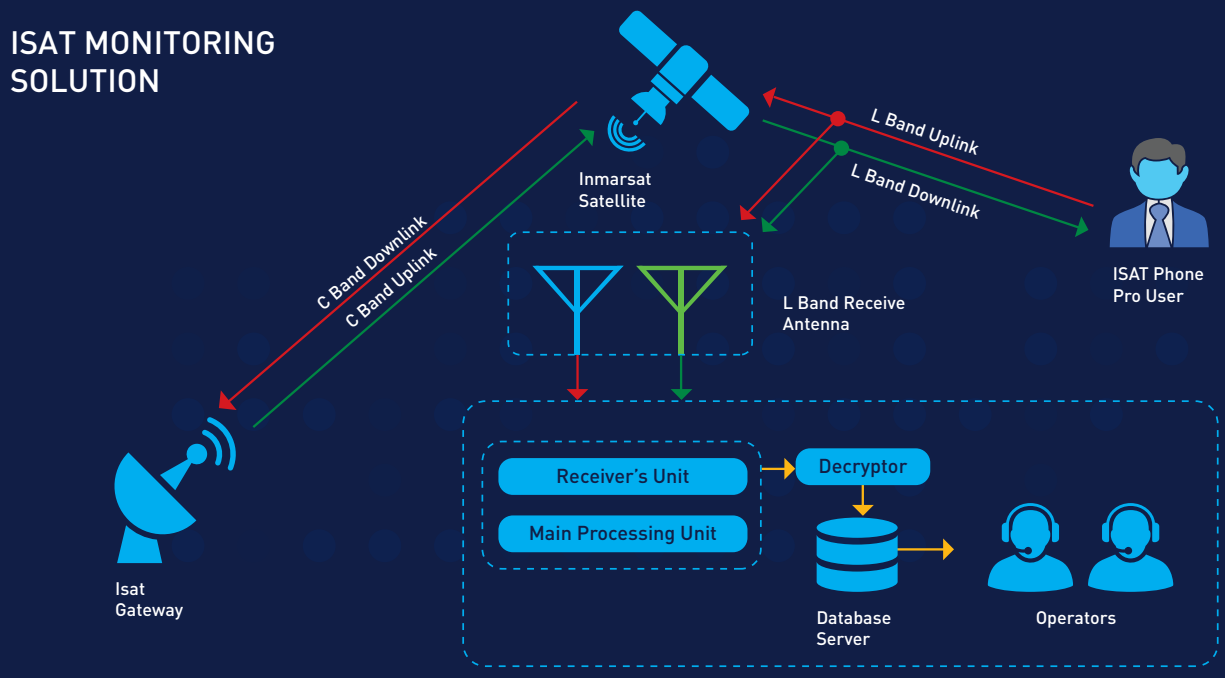


The L band uplink and downlink signals are intercepted.

Features

- Capable of intercepting Thuraya Communication from both Thuraya 2 and Thuraya 3 Satellites.
- Modular structure allows configuration of one system to monitor up to 7 spot beams and 32 full duplex calls per spot beam simultaneously (scalable based on customer requirement).
- Automatically scans the available spot beams (home and neighboring) and provides the spot beam ID, Latitude & Longitude of center of the spot beam, Channel Number, etc.
- System automatically detects and identifies the Voice, SMS and Fax communications and decrypts them almost in real time.
- System intercepts both uplink and downlink at L band and automatically tunes the demodulator to the desired spot beam.
- Location of the target can be mapped on a digital map.
- Can be integrated with Stratign's unique Phone Locator System (optional) to find out the presence of target in the area of interest.
- Recorded conversations can be played back at a slower rate for clear understanding of the conversation.
- Integrable with Stratign's Voice Forensic Software (Optional) which can carry out Language Identification, Speaker Identification, Gender Identification, Key Word Spotting, etc.
- Stratign's powerful Link Analysis Software is also integrable (Optional) with the Tactical Thuraya Monitoring System, enabling the operator to do a Call Relation Analysis.
- Multiple Tactical Thuraya Monitoring Systems can be integrated with a unified control to monitor a greater number of spot beams/larger area.
- The system is capable of intercepting and displaying the following information:
  - Spot beam ID.
  - Date and time of the call.
  - TMSI/IMSI/IMEI.
  - Latitude and longitude of target (GPS location).
  - Telephone number of the called party and calling party.
  - Direction of the call flow. (incoming call or outgoing call).
  - Call type (voice or SMS).
  - Duration of the call (start time & end time).

ISAT MONITORING SOLUTION



The L band uplink and downlink signals are intercepted.

ISAT MONITORING SOLUTION

Introduction

Among the many satellite communication providers, Inmarsat is the world's leading provider of global mobile satellite communication services. It delivers mobile voice and high speed data connectivity through the most versatile and reliable commercial satellite network in the world. It provides telephone and data services to users worldwide via portable or mobile terminals which communicate to ground stations via 11 geo-stationary telecommunication satellites. Whilst most ISAT communications are perfectly legitimate, the extensive geographical coverage provided by this network makes it more favored by subversive and criminal groups located in remote regions or those wishing to avoid fixed wire network interception. Increased use of ISAT phones by criminal elements are posing a serious problem for security agencies worldwide, working at intercepting their communication traffic.
Our state-of-the-art passive ISAT Monitoring Systems can address this situation and provide the intelligence agencies with a clear edge over criminal elements. Similar to Thuraya interception, Stratign's ISAT Interception solutions include two types of monitoring solutions – Strategic as well as Tactical Monitoring Solution.

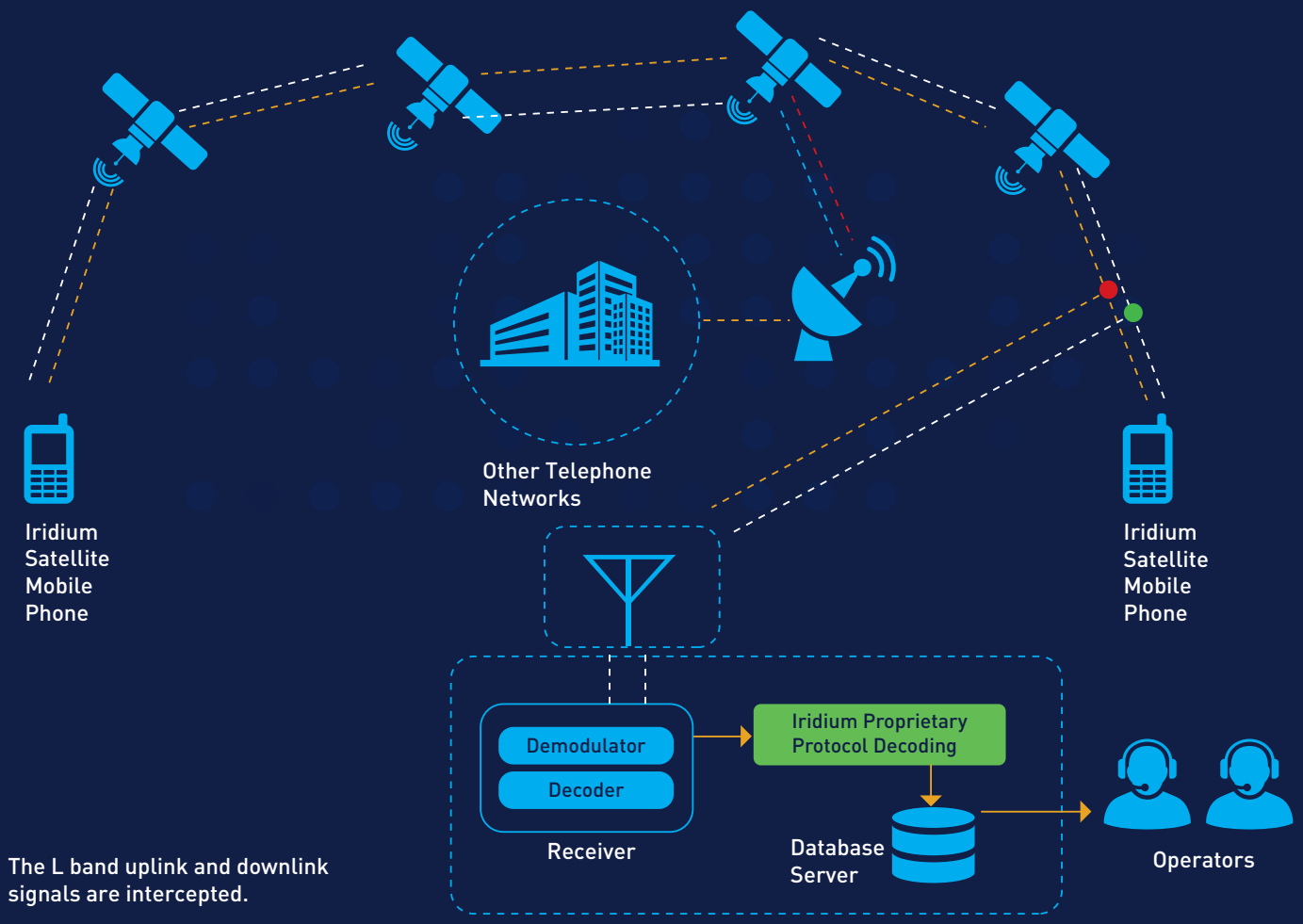
A. Strategic ISAT Monitoring Solution
The Strategic ISAT Interception Solution is designed and developed as 100% passive interception system which is capable of interception, deciphering and logging ISAT communication including voice, SMS, Fax and Data. The strategic solution is capable of providing both sides of the communication (full duplex call) & CRI along with the location of the satellite phone by interception of both L & C bands.

B. Tactical ISAT Monitoring Solution
Tactical ISAT Interception, decrypting and logging is capable of interception, deciphering and logging ISAT communication including voice, SMS, Fax and Data. The system is designed to monitor ISAT communication on the L band uplink and downlink channels. The system is completely passive and does not interfere with the normal communication and hence the presence of the system cannot be detected.

The ruggedized built of the system makes it highly portable and ideal for quick tactical deployment. The user-friendly GUI and simple system configuration significantly reduces the training time required for the operator.

Features

- Monitors Voice, SMS, and Fax communication from ACeS ISAT Phone, and ISAT Phone Pro.
- Monitors both forward and reverse channels simultaneously.
- Automatically detects, identifies and decrypts (after the call is completed) the Voice, SMS and Fax communication.
- Modular architecture of the system allows further expansion of the system.
- Capable of intercepting and displaying the following information:
  - Spot beam ID.
  - Date and time of the call.
  - TMSI/IMSI/IMEI.
  - Telephone number of the called party.
  - Telephone number of the calling party.
  - Call type (Voice or SMS or Fax).
  - Direction of the call flow (Incoming Call or Outgoing call).
  - Duration of the call (With start time and end time).
- System maintains an internal call data record for each communication with all identity parameters that can be intercepted for each call.
- The recorded conversations can be searched based on call identity parameters.
- The system has a unique field for adding call synopsis.
- The location of the target can be mapped on a digital map.
- The recorded conversations can be played back at a slower rate for clear understanding of the conversation.
- The system is integrable with Stratign's Voice Forensic Software (Optional) which can carry out Language Identification, Speaker Identification, Gender Identification, Key Word Spotting, etc.
- Stratign's powerful Link Analysis Software is also integrable (optional) with the system, enabling the operator to do a call relation analysis.
- Stratign's powerful Link Analysis Software is also integrable (Optional) with the system, enabling the operator to do a Call Relation Analysis.
- Multiple ISAT Monitoring Systems can be integrated with a unified control to monitor a greater number of spot beams/larger area.



IRIDIUM MONITORING SOLUTION

Introduction

The Iridium satellite constellation is a group of satellites used to provide voice and data coverage to satellite phones, pagers and integrated transceivers over Earth's entire surface.

The constellation architecture of 66 Iridium satellites ensure that every location on the globe is always covered by at least one satellite. Each satellite is cross-linked to four other satellites, two in the same orbital plane and two others in adjacent planes. It is not necessary for the satellite to be in view of the ground station gateway, unless the call is to a PSTN, as the communication is relayed from satellite to satellite till it reaches the called Iridium Phone.

Removable Subscriber Identity Modules are used in Iridium phones, much like those used for cellular phones Calls from Iridium phones can be made to any landline or wireless device in the world. Communication between satellites and handsets is done using the L band spectrum Iridium routes, and the phone calls through space without the requirement of routing it to the ground control stations. In addition to communicating with the satellite phones in its footprint, each satellite in the constellation also maintains contact with two to four adjacent satellites, and routes data between them, to effectively create a large mesh network.

The system is designed to intercept voice, fax and data transmitted through Iridium channels from both uplink and downlink at L band. It registers the information of the Iridium phones operating within user's spot beam & call-related information like call content and directly classifies voice, fax, data & SMS sessions. It is equipped with state-of-the-art high-performance decryption module to provide processed intelligible output in the form of voice, fax, data & SMS along with session-related information.

Features

- System is designed & integrated to intercept Voice, Data and Text Communication from/to Iridium satellite phones.
- System can intercept 32 full duplex calls simultaneously (scalable based on customer requirement).
- System intercepts both uplink and it automatically tunes the demodulator to the desired spot beam.
- The system is capable of intercepting and displaying the following information:
    - Date and time of the call.
    - TMSI/IMSI/IMEI.
    - Latitude and Longitude of the target (GPS location).
    - Telephone number of the called party and calling party.
    - Direction of the call flow (incoming call or outgoing call).
    - Call type (voice or SMS).
    - Duration of the call (start time & end time).
    - Data information.
    - Fax information.
- The location of the target can be mapped on a digital map.
- The recorded conversations can be played back at a slower rate for clear understanding of the conversation.
- The system is integrable with Stratign's Voice Forensic Software (Optional) which can carry out Language Identification, Speaker Identification, Gender Identification, Key Word Spotting, etc.
- Stratign's powerful Link Analysis Software is also integrable (Optional) with the Tactical Thuraya Monitoring System, enabling the operator to do a Call Relation Analysis.
- Multiple Iridium Monitoring Systems can be integrated with a unified control to monitor a greater area.

UNIFIED SATELLITE PHONE MONITORING SOLUTION

Introduction

In the modern world, satellite communications play a vital role in the global telecommunications system. Among the many service providers, Thuraya, Iridium and ISAT Phone Pro are the most widely used Global Mobile Personal Communication Systems (GMPCS). While Thuraya makes use of 2 Nos. of Geo stationary satellites for Thuraya 2 and Thuraya 3 networks, ISAT PhonePro makes use of 12 Geo stationary satellites for providing communication in most parts of the world. In contrast, Iridium uses 66 Low Earth Orbit (LEO) satellites which works like a honeycomb mesh to cover the entire globe.

The accessibility to communication from remote areas has made satellite communication popular among terrorist organizations and anti-national organizations. This has thrown challenges to the law enforcement agencies and Stratign has developed a solution to help the government agencies to monitor communication from all these three satellites simultaneously. The system can be configured as a highly portable tactical system or can be used in static roles.

Features

- Unified 100% Passive System which can intercept Thuraya, Iridium and ISAT Phone Pro Satellite Phones.
- Compact rugged system which can be man carried and hence can be used for clandestine operations.
- Automatic Interception, Decoding and Decryption of Voice, SMS and Text Traffic from Thuraya 2 or Thuraya 3, Iridium and ISAT Phone Pro Satellite Phones independently or simultaneously (customizable).
- Capable of intercepting traffic from up to 7 spot beams of Thuraya, up to 4 narrow spot beams of ISAT Phone Pro and up to 3 Iridium satellites over the area of operation simultaneously (customizable).
- Pre-integrated for automatic decryption of intercepted traffic from Thuraya and ISAT Phone Pro network.
- Integrated map display allows for geo-location of target position and tracking on digital map.
- System monitors both forward and reverse channels simultaneously on L-band.
- Ruggedized casing and pre-integrated hardware make them a perfect choice for fast and easy field deployment.
- Plug and Play capability provides faster response on mission critical situations to operators.
- Provides flexibility to listen to target's call from the map.
- Automatically scans, detects and monitors Iridium signals and automatic compensation for continuously changing Iridium signal Doppler shift.
- Automatically determines and processes Inter-Beam and Inter Satellite handoffs.
- Can provide the full duplex up to 15Kms (LoS) (extendable using Range Extenders). Whereas Simplex call can receive up to 600Km (radius) in Thuraya, up to 400Km in ISAT Phone Pro and 1000Km (radius) in Iridium.
- Can intercept calls initiated from PSTN to Satellite Phone, Satellite Phone to PSTN and Satellite Phone to Satellite Phone.
- In case of Thuraya and ISAT Phone Pro network, system automatically scans the available spot beams and provides the spot beam ID, Latitude & Longitude of center of the spot beam, Channel Number for tuning of the demodulators.
- In case of Iridium, system automatically tunes its receives, after defining the interception range and its location.
- Maintains the internal call data record for each communication with all identity parameters that can be intercepted for each call.
- Can perform geo-fencing to monitor calls from a specific area.
- Can sort and search the content database by date, time, duration of the call, types of files, etc.
- Link Analysis tool to discern call pattern.
- Integrable with Voice Forensic Software (Speaker Identification, Language Identification, Key Word Spotting, etc.)

OPTIONAL CONFIGURATIONS

Along with Satellite Phone Interception System, you can additionally configure the below technology for added advantage.

OSINT (Open Source Intelligence)

Open Source Intelligence (OSINT) is the collection and analysis of information gathered from public, or open-sources. The Internet and the rise of social media have made OSINT more complex in terms of both sources and methods. It can take a phone number or email id as the input to the system.

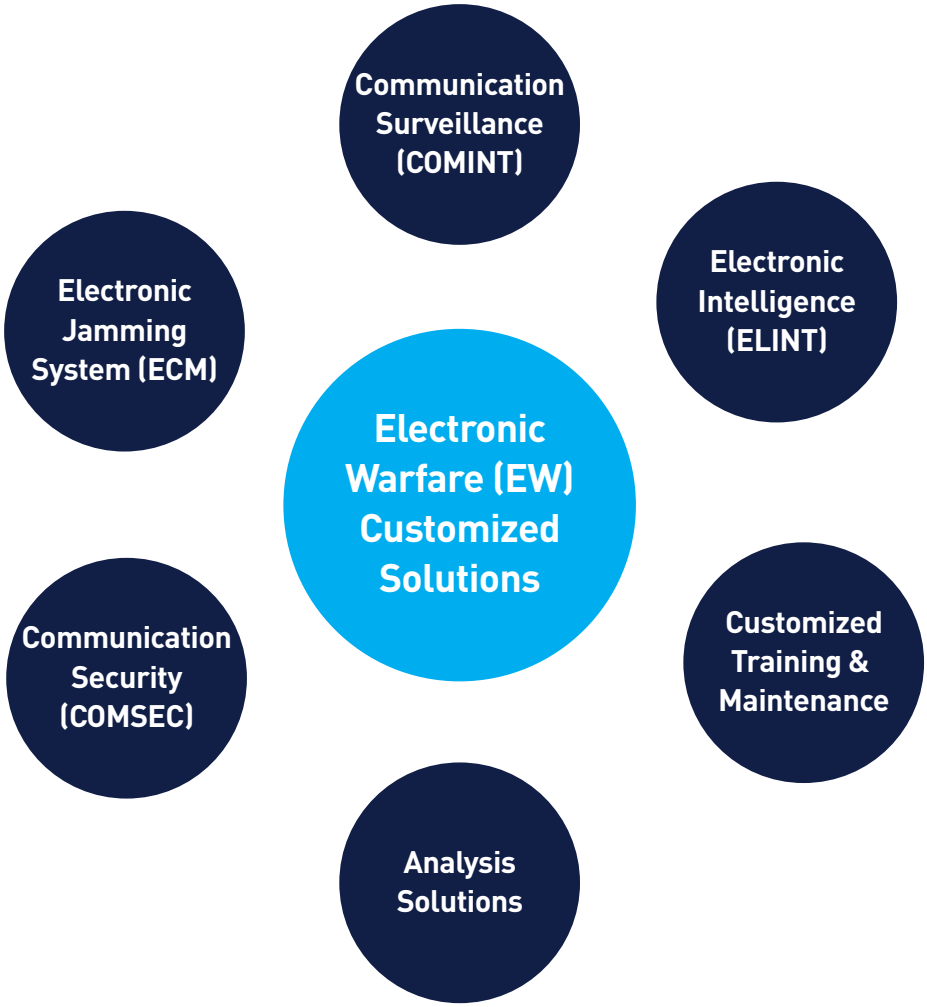
VPA (Voice Print Analysis)

VPA is a speech analysis system that can analyze audio files for Speech/Non-speech detection, Language identification and Speaker identification. The Stratign VPA concept is based on Client/server architecture.

Link Analysis

Link analysis is a data analysis technique used to evaluate the relationships or connections between network nodes. This assists the operator to analyze the call records and associated metadata to create a clear picture of call hierarchy.

OUR EXPERTISE



Stratign's Expertise Domains

Stratign is a UAE based company, established in 2002 mainly working in the field of COMINT, ELINT, COMSEC, ECM and Customized Training for govt. defense and law enforcement agencies worldwide.

We have offices in UAE, Singapore, India & Egypt and have successfully completed projects in more than 54 countries in Africa, Middle East, South America, and Southeast Asia.

Our key skills include design and integration of complex software and hardware solutions. Stratign has a committed and highly skilled team of researchers, engineers and technicians who can provide precise, tailored solutions for the challenges faced by our customers globally. We believe in providing solutions rather than products. Further, Stratign has tie-ups with renowned global R&D institutions to further supplement our existing research capabilities.

Stratign has always believed in understanding customer requirements and providing tailormade solutions to meet operational needs. We have an experienced in-house software development team capable of integrating third party systems and software into our solutions or vice-versa. All our systems are modular in nature and can be configured according to demands of the customer.

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