Shoghi Communications Ltd. is head-quartered at Shoghi, Himachal Pradesh, India. We are a leading supplier and provider of customized applications designed for Intelligence Collection & Processing and for Information Denial & Suppression for Military Forces and Intelligence Agencies. The Military, Defence and Intelligence Agencies of more than 70 countries turn to Shoghi Communications Ltd. for integrated electronic defence technologies, products and systems.

Shoghi Communications Ltd. is recognized as one of the fastest growing defence technology companies around the world. The Company is a market leader with reliable and responsive systems in its catalogue.

Shoghi focuses on building defence technology and pre-emptive counter -intelligence strategies. We develop, manufacture and support a wide range of systems for mission critical and sustained military requirements. We also design futuristic homeland security tools, especially in the context of counter terrorism. We provide; Electronic Sensor Systems, Communication Intelligence, Information Processing Systems, Jamming Systems for Radio Operated IED, Signal Processing and Data Acquisition Systems, High Resolution Processed Satellite Imagery, Maintenance, Repair & Overhaul of Civil and Combat Aircrafts, Airport Surveillance Radars, Military Grade Encryption, Network Security Systems, Integrated Logistics & Support Services.
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success

strategy

excellence

marketing

innovation
Shoghi has grown rapidly and with sustainable consistency over the last decade. The company has gained a reputation as an industry authority and a prime defence contractor in; Intelligence, Surveillance and Reconnaissance (ISR), Secure Communications, Electronic Warfare Solutions, Information Warfare Training, Satellite Image Acquisition & Processing, Airport Surveillance Radars, Civil and Combat aircraft Maintenance and Repair Services.

Shoghi Communications aspires to strengthen its current position by penetrating the international defence market. Our goal is to be the principal global authority on defence solutions, while maintaining our special relationship with the Indian Defence Force. We aim to be a global pioneer in innovative products, alert responsive services and solutions that enable impregnable defence systems for our Nation-state customers.

Our strong R&D backing gives us the foresight to predict and conceive the needs of intelligence agencies and Combat forces around the world. The company perceptively provides highly evolved technologies, products and systems for enhancing Homeland Security and Defence.
RESEARCH & DEVELOPMENT

THE WAY FORWARD

At Shoghi, we understand that to be market attractive, we must emerge as technology pioneers and innovators. This is specially true in the field of Shoghi’s lifeline, strategic defence electronics. A strong R&D unit allows constant innovation and enables the production of cutting edge technology that is tried, tested and stable.

To meet the ever growing demands and challenges of the defence market, the Company diverts a good 12% of its annual net revenue into research and development. We frequently collaborate with academic communities and research units at various universities to source talent and find newer technologies. Shoghi maintains high production standards through our R&D division which helps us add value to our existing service line and product range.

Shoghi’s extensive research in the field of Intelligence collection and signal processing provides customers with customized and updated decoding, demodulation and decryption tools. These can be incorporated in our tactical and strategical systems to enable intelligence agencies to process the latest-generation telecom protocols. Our dedicated research and development unit is one of Shoghi’s true strengths and it has helped us emerge as path finders in our field.
As an experienced systems integrator for defence, intelligence and government customers, Shoghi is keenly aware of the unique importance and responsibilities of our customers’ missions. We understand that there can be no compromise with security, hence our products come with the promise of dedicated, around the clock support.

We stand by our customers and the products we design and build. We render consistent after-sales services and product support wherever our products are in use, around the world. We are committed to serving our customers. Our strong client focus enables us provide our nation state customers or their mission teams with 24 X 7 technical consultation and dedicated support in order to minimize system down time.
Shoghi understands that every customer, region or terrain has very specific requirements, thus we provide customized applications for intelligence collection and processing or for information denial and suppression. Shoghi’s highly skilled and experienced team easily manages such requirements and responds to customer / location / platform specific non-standard demands efficiently and precisely. Shoghi also provides tailor-made COMSEC and INFOSEC solutions based on individual communication networks and platforms. All such solutions are field-tested and accepted by our government customers worldwide.
Shoghi believes that creating a better world starts at home, at the local level. We believe that the entire company has a responsibility towards the world and the society we thrive in. Our sense of corporate responsibility is imbibed in an inbuilt self-regulatory mechanism whereby Shoghi monitors and ensures that it upholds the law, abides by ethical standards & fair trade practices with the international business norms.

Every individual Shoghi employees is encouraged to adopt the corporate citizenship model and be active participant in local communities. As corporate citizens, it is our responsibility to make more than charitable contributions that support our world vision. Shoghi Communications and its operating units, as well as individual employees, contribute to nationwide programs and local social organisations. Our employees are actively involved in social activities from food drives and shelters for the homeless, to organizing fund-raisers for medical research and saving the environment through projects that enhance parks and other green spaces.
Shoghi’s Intelligence, Surveillance and Reconnaissance (ISR) products and programs (sensors, platforms, systems and services) are designed and developed for our intelligence customers to provide them with auto processed intelligence feed. Shoghi has considerable years of experience providing pre-integrated or site installable intelligence collection and automated signal processing systems to our military and defence customers.

Shoghi’s solutions for Communication Surveillance and Intelligence include communication intercept and collection systems, signal analysis and processing tools and high end stand alone decoding and demodulation systems which can be integrated into customer’s existing intelligence systems.

Shoghi can provide a total turnkey solution that can be installed at customer site. This includes all related civil works, antenna installation, equipment integration, on site customer extensive training and life long maintenance programs.
Shoghi Communications has designed and developed various solutions to passively intercept traffic (Voice, Fax and Data) from Global Mobile Personal Communications by Satellite (GMPCS) and point to point satellite communication networks.

All solutions are fully integrated monitoring and analysis platform which enables acquisition, processing, storing and analysis of Voice, fax, data and high speed IP traffic.

To challenge the various monitoring scenarios Shoghi has designed both tactical and strategic solutions equipped with automatic post processing, decoding demodulation & decryption of intercepted voice, fax, data and high speed IP traffic.

Our GMPCS satellite monitoring solutions are capable of intercepting voice, SMS, fax and data traffic along with call related information and Geo-location from Thuraya-2, Thuraya-3, ACES, ISAT Pro, Iridium Satellite Networks.

The point to point satellite communication monitoring systems are capable of intercepting traffic including voice, fax and data from C & Ku-band satellite compressed (DCME) & non compressed telecom carriers from Intelsat, Eutelsat, Arabsat, Turksat etc. The satellite monitoring system can also process and decode GSM traffic on satellite and decode high speed IP traffic online.

- Satellite Telecom Link Monitoring System
- Thuraya Monitoring
- Iridium Monitoring
- DCME Analysis
- Satellite Geo-location
- VSAT Monitoring
- ISAT Monitoring
- Inmarsat Monitoring
- Satellite Carrier Monitoring

Shoghi’s Cellular Monitoring solutions are fully integrated flexible, transportable systems which can be easily carried and deployed for mission critical scenarios.

Cellular Monitoring solutions are designed to intercept Voice, SMS along with Call Related Information off the air (between mobile handset and the BTS) and are transparent to both target as well as service provider.

Cellular monitoring systems offered by us can be customized to fit in your existing vehicle or vehicle of your choice in order to intercept the target while moving.

Shoghi Cellular Monitoring solutions consist of the following Products:
- Passive A5.1 GSM Monitoring System
- CDMA Monitoring
- Semi Active GSM Monitoring System
- A5/1 Decryptor
LAWFUL INTERCEPTION

Lawful interception is legally approved surveillance of private communications, such as telephone calls, SMS and email messages etc. It is a security process which allows service providers to support law enforcement, officials to identify, monitor and deliver all of the electronic communication of specified individuals and groups when requested. The LI System offered by us is designed for law enforcement and intelligence agencies.

The offered solutions are turnkey solution for the monitoring, processing, decoding, distribution and presentation of intercepted data of targets from circuit switched networks (e.g. GSM/CDMA/PSTN) as well as for packet switched networks (e.g. GPRS, EDGE, UMTS and High Speed IP backbones).

Lawful Interception products at a glance;

- Voice & Fax Logging and analysis
- Switch Based E1 Monitoring

RADIO MONITORING AND SIGNAL ANALYSIS

Shoghi’s Radio Monitoring and Signal Analysis product family offer comprehensive products for Wideband Signal Acquisition, Processing, Analysis, Automatic Detection & Classification, Demodulation & Decoding, as well as Direction Finding.

Based on our expertise radio monitoring and signal processing we have the competence to design, fabricate and deliver customized solutions meeting specific customer requirements.

Radio Monitoring and Signal Analysis product family consist of the following Products:

- Wide Band Digital Tuner
- HF-VHF-UHF Monitoring System
- Narrow Band Hand Held DF
- GSM Backhaul Monitoring Systems
- Signal Classification and Analysis
- Shoghi Wideband DF
- Microwave Monitoring Systems
- Wi-Fi Interception
The SCL-5020 is a multi-channel off the air passive GSM Monitoring system intended for intelligence and government organizations to ensure interception and deciphering of voice & SMS communications from GSM-850/900/1800/1900 cellular network standards. The system can be either operated as stationary or in movable scenarios.

System can decipher A5/0, A5/1 and A5/2 ciphering algorithms in real time, used in the GSM network to cipher the user’s communication. To prevent detection of the system's operation and avoid interference to the operation of cellular network the System works as a passive equipment intercepting GSM traffic directly from the air.

The number of channels being received and recorded by the system, can be from 1 to 32 for one control computer. The creation of targets are based on different parameters such as IMEI, IMSI, TMSI, Target distance from the base station, Type of target handset, Target’s dialed & received number (PLMN).

The systems have been designed for a plug and play operation and is compatible with global GSM standards and parameters. With highly customized options the system proposes to be a strong asset for the customer in gathering local and across the border communications.
The system is designed and developed as a Semi Active OFF-THE-AIR GSM Monitoring System. The SCL.5020SE has universal operating capability. This system can be used to intercept communications from any GSM service provider in the world irrespective of the type of encryption being used. System supports decryption of both A5/1 and A5/2 encryption algorithms in real time.

100% Target Call Monitor Rate: The system can monitor all communications of the target (SMS and Voice) till he/she is within its coverage range. Target list can be created using PLMN, IMSI or Suspects Mobile Number.

The system is capable of extracting the Suspect’s actual Mobile Number from the network without any help from the service provider. The system features a selective jamming capability, using which the operator can disable certain services of the suspect like Outgoing Call, Incoming Call, SMS, SS etc.
Integrated Satellite Telecom Link Monitoring System (SCL-3412) has been designed for intelligence and government organizations to Passively Intercept and Decode L, C, X, Ku and Ka-band satellite compressed (DCME) and non compressed Telecom carriers from Intelsat, Eutelsat, Arabsat, Turksat etc. satellites.

Equipped with software controlled universal satellite demodulator, the system is capable of demodulating and decoding any kind of satellite carrier. System provides Voice, Fax and Data sessions after decompression, which can be played or viewed on the client stations.

The pre-integrated Carrier Monitoring System and optional Geo- Location capability for pin pointing the Satellite/VSAT terminals on a digital MAP, provides a reconnaissance edge to SCL-3412.

The built-in SS7 Analysis Module performs automatic analysis on the carrier and displays its various identity parameters including originating point country, destination point country and call related information such as Date, Time of call, Called number, Calling number etc.

The system comes with a High Speed IP Decoding Module, capable of acquiring real time decoding and reconstruction of High speed IP traffic.

Another interesting option is the GSM A and Abis Decoding Platform, which can identify any GSM traffic on the satellite links and can provide automatic classification, demodulation and decoding to provide IMEI, IMSI, CRI data, Call and SMS content.
The VSAT Interception, Monitoring and Logging system is designed for real time collection and traffic analysis of targeted VSAT Satellite Networks for intelligence and government organizations. The basic objective of this system is to provide the targeted intelligence on a specific VSAT network of a particular organization/agency. The current system is capable of processing signals in accordance with VSAT standards of Hughes PES, Hughes TES Quantum, iDirect Netmodem etc.

The system will provide decoded Voice, FAX and Data/IP sessions. The system is based on a modular hardware and software architecture, providing the customer flexibility of processing multiple inbound and outbound channels simultaneously. New and customized products are being researched and added to our VSAT monitoring library regularly.

Each VSAT network has unique characteristics, which may be due to customized modulation schemes, proprietary signaling for enhanced security etc., and is generally unknown to the intelligence operatives. In such a scenario, a customized software enabled demodulation schemes are created and integrated into the VSAT Monitoring System. Such multiple decoding platforms can be implemented on one VSAT monitoring system making it capable to handle multiple targeted networks. Shoghi works with the customer to provide them with constant support and development capability to handle complex scenarios.
**TACTICAL THURAYA MONITORING SYSTEM**

Tactical Thuraya Monitoring System is a highly portable Thuraya acquisition platform which has been designed for covert applications, providing Voice, SMS, Data & Fax sessions by monitoring both Uplink and Downlink at L-band. The system comes in a man portable configuration weighing not more than 10-12Kg.

Standard configuration of the system is for monitoring up to Four spot beam and 12 duplex calls. System also intercepts and displays the geographic location of the target along with call related information. The system can be upgraded to monitor up to 7 beams in the same chassis.

The tactical system is most suitable for transportable application and can provide an impressive interception range. The portable chassis consists of receiver, demodulation and decryption systems to provide real-time deciphered output for the intelligence operators to initiate a responsive action.

**STRATEGIC C-BAND THURAYA MONITORING SYSTEM (SCL-5031S)**

The Strategic C-band Thuraya Monitoring System is a fixed Thuraya acquisition platform for intercepting Thuraya traffic from C-band downlink, providing deciphered simplex calls and SMS, along with call related information and geo-location of the Thuraya terminals on digital MAP.

The Strategic C-band Thuraya monitoring system is very useful for the interception of Thuraya Traffic from the neighboring countries or the countries whose L-band spot beam is not visible from your location. System uses state of art technology for deciphering of cipher algorithms used on Thuraya network.

As the system is designed to intercept the C-band only, virtually it can intercept any spot beam of Thuraya Network if it is active and appears in the scanning. The number of spot beams and calls can be customized as per the customer requirement.
The Strategic Thuraya Monitoring System is a fixed Thuraya acquisition platform for intercepting Thuraya traffic from C and L-band, providing deciphered full duplex calls, SMS, Data & Fax along with call related information and geo-location of the Thuraya terminals on digital MAP.

The strategic system monitors Thuraya mobile to satellite communication on the C-band downlink and Thuraya Satellite to Thuraya mobile on the L-band downlink. The Surveillance of L-band and C-band, provides total traffic monitoring of the targeted spot beams.

The System uses state of art technology for deciphering of cipher algorithms used on Thuraya network. Standard configuration of the system will intercept 84 full duplex calls simultaneously from 7 spot beams. Being modular in architecture, the capability of the system in terms of number of calls can be increased by adding extra hardware.

The highly interactive graphical user interface provides the operators all the decoded inputs including Time/Date/Deciphered call contents/ GPS Coordinates etc., supporting the decision making immensely.

New application features include, Search Functions on the map, Voice Analysis etc add on to the automatic information processing capability.
The SCL-3415 is a Tactical Iridium Monitoring System designed to intercept in real-time Voice, SMS and Data sessions along with call related information from iridium network. The System is solely designed for use by intelligence and government organizations. The SCL-3415 is completely passive, does not interfere with normal communication and is therefore completely undetectable. Portability of the system allows it to be easily carried for mission critical applications.

The SCL-3415 system is integrated in a lunchbox type industrial computer and comes along with high gain L-band receive only antenna. All the RF sub modules including down-converter, digital signal processor is installed within the lunchbox computer which is loaded with necessary control software. System monitors both downlink and uplink at the L-band from the iridium terminals to provide duplex calls. Apart from call related information and call contents the system is also capable of providing Geo-location of the intercepted iridium phones in order to track them on Digital MAP. The ruggedized make and portability of the system makes it ideal for quick deployment. The user friendly GUI and simple system configuration, significantly reduces the training time required for the operator.

The SCL-3415 can be customized and engineered to meet the end customer’s specific intelligence gathering requirements.
ISAT Monitoring System is designed for intelligence and government organizations to monitor Voice, SMS, Fax and DATA along with Call Related Information from ACES, ISAT Phone and ISAT Phone pro based Global Mobile Personal Communication Systems. Along with the call related information and call contents the system is also capable of providing Geo-location of the intercepted ISAT phones in order to track them on digital MAP.

The system provides duplex call by monitoring both Uplink and Downlink at L-band. The SCL-5032P consists of two independent directional antennas covering both uplink and downlink signals. The System uses state of art technology for reception, demodulation and decoding of ISAT signals. System uses proprietary technology to scan the active spot beams in the coverage range of the antenna and after scanning provides the list of available active spot beams. Once the scanning is completed the operator can tune the system to spot beam of interest.

The system is completely passive and does not interfere with the normal communications and hence its presence cannot be detected. The ruggedized make and portability of the system makes it ideal for quick deployment. The user friendly GUI and simple system configuration, significantly reduces the training time required for the operator.
The Lawful Interception System offered by Shoghi is a turnkey solution for the Monitoring, Processing, Decoding, Distribution, and Presentation of intercepted data of targets from circuit switched networks (e.g., mobile and fixed telephony) as well as for packet switched networks (e.g., internet, email) and is used by law enforcement and intelligence agencies worldwide. The system is not only compliant with the latest ETSI or CALEA specifications for lawful interception but can also support country specific Lawful Interception handover protocols.

The Lawful Interception System is equipped with X-1/ HI-1 interfaces for automated marking of the targets in the interception access points (e.g., MSC’s, routers, mediation equipment etc), this feature gives agency the flexibility of assigning targets without involving the service provider and hence increases the confidentiality of the process.

The user administration of the Lawful Interception System is case-based, which means investigators are assigned to one or more cases, while targets are assigned to a specific case. This ensures that investigators only have access to targets they are allowed to monitor. The user friendly GUI and simple system configuration, significantly reduces the training time required for the operator.

Shoghi can provide various specific Lawful Interception Systems, namely:
- GSM/ CDMA Lawful Interception Solution (3G/GPRS/EDGE)
- Public Switched Telephone Networks (PSTN/ISDN)
- Internet Service Providers (IP backbones)
RCIED Jammer
  - Portable Briefcase RCIED Jammer
  - Manpack RCIED Jammer
  - Vehicular RCIED Jammer
  - Cellular Jammer

RF Jammer
  - VHF-UHF Frequency Hopping Jamming System
  - Radio Reconnaissance & Jamming Station
  - Small Size Jamming Transmitter Set

Area Protection Jammer
  - FM Jammer
  - Cellular Satellite Phone Jammer
  - C/Ku Band VSAT Integrated Jammer
  - GPS Jammer

ESM/ELINT System
  - RADAR Denial System
  - Radar Signal Detection, Identification and Direction Finding System
  - SAEALOS ELINT System
  - Passive Search System: SORAP
  - Radioelectronic Signal Monitoring Station: RESMS
  - Portable Radar Warning System: RADWARN
Shoghi provides Electronic Warfare ELINT / ESM / ECM systems for airborne and ground platforms to interpret a wide range of electronic signals from deep within enemy territory as well as to monitor and jam Radio Communications. Shoghi takes pride in our high precision system design and implementation. Our ESM/ELINT systems are developed and customized to handle most severe operating conditions and customer requirements.

Our latest development in this division remains our Spread Spectrum/Frequency Hopping Follow on jamming system capable of handling very high speed hopping radios at long distances. Transportable/Stationary Communication jammers are designed for protection against Remote Operated and Controlled Explosive Devices. Shoghi also specializes in providing our customers with GPS jamming system for asset protection against GPS navigated threats.
A RCIED or Remote Controlled Improvised Explosive Device has become a more common threat and needs a reliable deterrent. Using RCIED bombs or explosive devices can be detonated by radio frequency based remote control. These are an increasing threat as terrorists become more technically sophisticated.

RCIED Jammers are the best possible deterrent against remote controlled improvised explosive device. Shoghi Communications offers various configurations of RCIED jammers to meet the operational requirements of various Law enforcement agencies at all levels. Our systems are engineered and built to provide continuous electronic protection against RCIEDs in the most rugged, tactical and extreme environments.

RCIED Jammer product family consist of the following Products:

- Portable Briefcase RCIED Jammer
- Vehicular RCIED Jammer
- Manpack RCIED Jammer
- Cellular Jammer

Radio jamming systems are intended to deliberately disrupt radio signals transmission of unwanted or undesirable communications by decreasing the signal to noise ratio. These RF jammers are specially designed for jamming communication links of adversary networks during conflict scenarios.

Shoghi Communications offers various configurations of RF jammers to meet the operational requirements of various Law enforcement agencies at all levels. Our systems are engineered and built to provide continuous disruption of undesirable communications in the most rugged, tactical and extreme environments.

RF Jammer product family consist of the following Products:

- VHF-UHF Frequency Hopping Jamming System
- Small Size Jamming Transmitter Set
- Radio Reconnaissance & Jamming Station
Area Protection System is designed to protect a defined area from threats like unwarranted communications, RCIED’s or Satellite navigated threats. The systems have been specially designed and built to suit the needs of Military and Home Land security agencies.

Shoghi Communications offers various configurations of RF jammers to meet the operational requirements of various Law enforcement agencies at all levels. Our systems are engineered and built to provide services even in the most rugged, tactical and extreme environments.

Area Protection Jammer product family consist of the following Products:

- FM Jammer
- C/Ku Band VSAT Integrated Jammer
- Cellular Satellite Phone Jammer
- GPS Jammer

Shoghi’s Electronic Support Measures (ESM) are designed for electronic warfare techniques involving actions to detect, intercept, identify, locate, record, and/or analyze sources of radiated electromagnetic energy for the purposes of immediate threat recognition.

The systems have been specially designed and built to suit the needs of Military services. The systems are engineered and built to provide services even in the most rugged, tactical and extreme environments.

ESM/ELINT Systems product family consist of the following Products:

- RADAR Denial System
- Radar Signal Detection, Identification and Direction Finding System
- SAEALOS ELINT System
- Passive Search System : SORAP
- Radioelectronic Signal Monitoring Station : RESMS
- Portable Radar Warning System : RADWARN
Spread Spectrum Communications Tactical Countermeasures Systems (SCL-SSCTS) is a Direct Sequence and Frequency Hopping Communication Jamming system for tactical countermeasure operations. System covers the entire frequency range (VHF to microwave) simultaneously at a single “look through” time frame of only 50us. “Look Through” time can be reduced down to even 1us if very fast frequency hopping networks operate in the field.

SCL-SSCTS operate distance up to 12 km from foe networks in Land Scenario and 6 Km in Naval Scenario. SCL-SSCTS hopping rate jamming capability is up to 20,000 Hops/sec with power output of 100W to 2KW.

GPS Jammer (SCL-APSNT)

Area Protection System against Satellite Navigated Threats (SCL-APSNT) is a multipurpose jammer designed to jam Satellite Navigated Threats like GPS guided missiles.

The SCL-APSNT is capable of protecting a well defined geographical area from sky and ground threats without effecting normal navigation services outside the area. The SCL-APSNT covers the GPS bands L1 (Codes P(Y), C/A, L1C, M-Code) and L2 (Codes P(Y), C/A, L1C, M-code).

It is designed to operate on all satellite navigation system available today or in the near future including GPS, GPS II, GALILEO and GLONASS at different power levels. It is upgradable to operate on COMPASS.
Vehicular RCIED Jammer (SCL-VJ)

Vehicular RCIED Jammer is designed for the protection of vehicles in convoy or individual from RCIED triggered explosives. System is capable of jamming the frequency range from 25-6000MHz with an integral power of upto 2000W to provide a protective radius of 100-400 meters.

Vehicular RF Jammer uses digital interference based on frequency synthesizer to defeat the remote controlled improvised explosives devices. The design of the Jammer offers great flexibility for rapid field deployment on both mobile and fixed platforms.

The system can either be provided as a complete turnkey integrated solution in customer’s choice of vehicle or can be provided as a separate module for integration into the customer existing vehicle.

Cellular Satellite Phone Jammer

Cellular Satellite Phone Jammer (SCL-CSPJ) is designed to block the area where undesirable cellular and satellite communications are taking place. Jammer can be deployed in variety of applications depending upon the scenarios.

The SCL-CSPJ transmits adequate power radio signals to cut-off communications between cell phones/Satellite Phones and cellular base-stations/Satellite, by jamming the cell phone/satellite phone signals in the operating frequencies of CDMA, GSM, E-GSM, DCS, PCS, UMTS2100, Thuraya, Iridium, Inmarsat and Globalstar. It does not interfere with any communications other than cellular and Satellite within the defined regulated zone.

Upon activating Cellular Satellite Phone Jammer, all idle phones will indicate “NO SERVICE”.

When Cellular Satellite Phone Jammer, is turned off, all phones will automatically re-establish communications and provide full service.
Shoghi’s ELINT system SAEOLOS offers electronic intelligence in the 0.5-18 GHz frequency bands (L, S, C, X and J bands) with optional extension to 30-36 GHz.

The SAEOLOS ELINT system provides both manual and operator assistance (automated) modes of operation designed for radar signal detection, identification and direction finding of military, paramilitary naval air force and commercial radar signals. Manual modes of operation provide precision collection, statistical display, visualization, and identification of collected intercept. Operator assisted modes of operation support continuous scanning of frequency ranges of interest for activity and subsequent collection/analysis.

SYSTEM CAPABILITIES

The SAEOLOS ELINT System has the following capabilities:
- Detection of non-comms signals over the 0.5-18 GHz frequency range
- Optional extensions available above and below the 0.5-18 GHz frequency range, especially at 30-36GHz range
- Manual and Automated modes of operation supporting identification and direction finding
- Designed for precision detailed technical ELINT collection and analysis
- Wide 2000 MHz bandwidth for capturing modern, frequency agile emitters, high probability of intercept
- Standard 25 and 75 MHz narrow bandwidths for high precision signal measurement
- Real-time amplitude vs. frequency display with up to four accept/reject qualification boxes
- Real-time amplitude or frequency vs. latched pointing angle displays
- Full control of hardware and software settings via the software interface
- Current emitter displays with activity shown as detected across one or more bands of interest
- Real-time and post processing displays aid operator in signal separation, identification, analysis, and capture
- 360 degree instantaneous field-of-view using the omni-directional antenna
- High gain, directional DF antenna supports spin, point, or sector modes.
Passive Search System from a family of tactical-strategic ELINT/ESM systems designed for Aircraft Control and Reconnaissance, Special Forces Reconnaissance and Coast Reconnaissance.

The system serves for detection, identification, localization and monitoring of airborne, seaborne and ground targets. It is based on the principle of advanced wideband interferometer with perfect analysis of all signal types (pulse Doppler) CW, including identification of navigation and communication signals.

- The system can handle up to 200 automatically monitored targets
- SORAP can clear target identification from the parameters of radiated signals
- SORAP includes inter-pulse analysis

Technical Data

Operation Range : upto 400Km
Reconnaissance Sector : 120°
Measuring Accuracy : 0,2° - 0,4°
Reconnaissance Frequency Range : 0.8 to 18 GHz (bandwidth optionally expandable to higher frequencies (34 ÷ 37 GHz))
The RESMS station is a part of automated system of radio-electronic reconnaissance and monitoring of radio-electronic signals for tactical up to strategic command level. The station consists of an antenna unit mounted on a four-wheel chassis and the processing section, located in a shelter on a vehicle carrier which ensures full mobility of the system.

The system enables reception, direction finding and identification of radio-electronic signals, automatic control of known signal sources and full analysis of technical parameters of signals.

ADVANTAGES

• Automatic detection of incoming signal direction and its technical parameters
• FM receiver provides immediate surveillance over the situation in the bandwidth of 100 MHz or 4 GHz
• Processed signals: continuous or pulse; amplitude, frequency and phase modulation including their combinations
• Displaying of radio-electronic situation using interactive graphic processing (maps, tables, measured data)
• Automatic testing of basic functions during the operation
• Modular design, easily expandable
• Long mean-time-to-failure period of operation
• Powered from the mains 3 x 400V/50Hz, or power backup station which is part of the system.
RADWARN-4M is a small radar searcher that finds and locates ground radars operating in 1GHz to 18GHz frequency band, and determines basic parameters thereof.

This portable device, which can also be used as a warning searcher, includes two antenna systems for 1 - 8 GHz and 8 - 18 GHz frequency bands, microwave detectors, video signal amplifiers and digital circuits for analysis of received signals. It is equipped with sound and optical indication of received signals parameters.

The searcher can be linked with a recording device or with a higher version of signal analyzer. Powered by 3 batteries providing 3 - 15V output voltage.
Satellite High Resolution Imaging
Image Reception Ground Station

SAR/Optical Image Acquisition

Optical Surveillance

Fixed Wing UAV
Rotary Wing UAV
High Resolution Imaging Solutions

High-resolution satellite imagery helps defence and intelligence organizations with mission planning, situational awareness, and monitoring key areas of interest. Shoghi provides High Resolution Satellite Imagery on demand, both Optical and SAR. We also provide our customers with an Integrated Ground Earth Station where by the High Resolution Images can be acquired and processed directly by the customers. Shoghi also provides customized UAV platforms for our customers enabling day/night Aerial Photography for various applications including Disaster Management and Situational Awareness.
SATELLITE HIGH RESOLUTION IMAGING

Satellite images have many applications in meteorology, agriculture, geology, forestry, biodiversity conservation, regional planning, education, intelligence and warfare. Shoghi provides on demand high resolution Synthetic Aperture Radar (SAR)/Optical satellite image and consultancy services in the field of image processing.

We are equipped with state of art setup to acquire and process high resolution satellite images obtained from low earth orbiting satellites having onboard SAR and optic camera payload. The obtained images are of meter and sub-meter resolutions. Shoghi offers a broad range of geospatial information processing technology, delivering the most comprehensive solutions in image exploitation, processing, visualization and management.

Shoghi with its expertise in establishing the satellite ground station can also accept a turnkey projects to establish Image Reception Ground Station for acquisition and processing of remote sensing satellites data.

Satellite High Resolution Imaging product family consist of the following Products:

- **SAR/Optical Image Acquisition**
- **Image Reception Ground Station**
Shoghi offer UAV based surveillance systems which are equipped with state of art optical and SAR sensors to provide high resolution images and video of ground objects from air. The UAV Payloads include optical sensor (which is a daytime and infra red camera) and a synthetic aperture radar sensor capable of providing photographic-like images through clouds, rain or fog, and in daytime or nighttime conditions; all in real-time.

Optical surveillance systems are capable to transmit the video or image to ground control station during flight or can store the acquired images and video in the UAV onboard computer.

Optical surveillance systems have been specially designed for homeland security and military applications where reliability and extended persistence are required.

- Fixed Wing UAV
- Rotary Wing UAV
Shoghi provides high resolution satellite SAR/Optical images and consultancy services in the field of image processing. We are equipped with state of the art setup to acquire the high resolution satellite images. These high resolution images can be used for identifying natural resources, protecting homeland and borders, oil & gas exploration, agriculture & forestry, infrastructure development, environmental, transportation, mining, media, responding to emergencies and natural disasters.

The High resolution satellite images can also be used for defence and security applications to plan and conduct operations, respond immediately to a crisis, obtain operational geospatial information’s.
Shoghi with its expertise in establishing the satellite ground station can accept a turnkey projects to establish Image Reception Ground Station for direct tasking, acquisition and processing of remote sensing satellites data (Optical and SAR). Image Reception Ground Station regularly receives data from the remote sensing satellite so as to provide data over customer defined areas.

The Image Reception Ground Station will be equipped with state of art setup to acquire and process high resolution satellite images obtained from low earth orbiting satellites having onboard SAR and optic camera payload. The obtained images are of meter and sub-meter resolutions.

The satellite ground station will be equipped with high end image processing capabilities. The system will be able to Create Cartographic Quality Map Compositions, Image Rectification and Reprojection, Ortho Corrections, Raster to Vector Conversions, Resolution Merge, Processing LiDAR into surfaces, Advanced image Classification and Hyper-Spectral Processing, Advanced GIS spatial modelling etc.
Remote surveillance system "SCL-RSS" is fixed wing UAV designed for monitoring ground objects from air. SCL-RSS can do detection and tracking of buildings and other objects like transportation means, military equipments, roads, bridges, individuals or groups of people.

Soghi RSS is capable of monitoring combat operations, natural disasters, man-made accident effects.

Ground control system contains of a protected computer and offers a possibility to control UAV and receive real-time video data transmitted from the UAV. During the flight, video information is transmitted from stabilized Optical or IR camera with reference to unmanned aerial vehicle current coordinates on the map. Video signal reception and flight control are operated by ground control station. Size and noise level make UAV very hard to detect and destroy.

Landing is performed with parachute system. Operator can do pre-programmed maneuvers which are as follows -- Point Observation, Point Pass-Through, Return, Landing, Dive. Flight route can be programmed by on-ground control system before flight.
Shoghi SCL-RWU is rotary wing UAV designed for monitoring ground objects from air. SCL-RWU can be deployed in military operations for various scenarios such as detection and tracking of objects like transportation means, military equipment, roads, bridges, individuals or groups of people, surveillance and reconnaissance mission etc.

SCL-RWU is capable of monitoring combat operations, natural disasters, man-made accident effects. Monitoring is performed with Unmanned Air Vehicles (UAV), specially designed and developed for remote surveillance.
Primary Surveillance Radar (PSR)

Secondary Surveillance Radar (MSSR)
AIRPORT SURVEILLANCE RADAR SOLUTIONS

Shoghi’s Airport Surveillance Radars are high profile radar systems, which are designed to provide Air traffic controllers with reliable and clear picture of air traffic within its coverage area.

Using Shoghi’s Airport Radar Solutions, the Air Traffic Controller gets a real-time overview of the aircraft flying in the airspace they control.

Today, Shoghi provides two types of Airport Surveillance Radar equipments namely Primary Surveillance Radars (PSR) and Secondary Surveillance Radars (MSSR).
Shoghi’s Primary Surveillance Radar (PSR) provides detection and measurement of aircraft coordinates within the terminal area with further radar data transmission to ATC centers for monitoring and providing Air Traffic Control. The PSR is high performance primary surveillance terminal area radar based on conventional coherent scheme.

The PSR functions:
• Coherent receiver and transmitter, digital system of processing radar signals supporting a high probability of target detection by primary radar
• Fully solid-state air-cooled transmitter
• Linear and circular polarization for increased target detection under deteriorated weather conditions
• Digital signal transformation and compression to provide high stability
• Processing of weather info
• Adaptive tuning of parameters of digital receivers to minimize false alarms
• Built-in system for initial processing of data received both from the primary and secondary radar
• Built-in system for processing data on target trajectory obtained both from the primary and secondary radar
• Diagnostic CMS to provide continuous remote monitoring of operation
• BITE to automatically monitor condition of individual PSR units
• Automatic backup
• Recording, restoring and statistical analyses of radar information
• Unattended operation
• Price/performance ratio ranks among the most favorable in ATC market.
Shoghi’s Monopulse Secondary Surveillance Radar (MSSR) Mode S System M10SR, is a very flexible and high performance turnkey Radar solution.

SSR M10SR is used for air traffic control for the civil authorities as an information source about aircraft location and movement parameters. The system complies with all the ICAO requirements and is built using the latest, best known technological improvements over this type of systems. It can be used either separately or with a primary surveillance radar (PSR).

The MSSR System has been designed according to the most advanced international standards and latest state of the art technologies in this field and includes the following main features:

- High level of integration and modularization using the latest well proven technologies without losing full redundancy in operational equipment to meet system availability. Hot stand-by redundant configuration
- Simple, reliable, contrasted and robust design of the Radar Station concept based on experienced dual local area network technologies
- Complete Remote Control and Monitoring System including a powerful BITE system to help technical maintenance staff
- Modern connectivity between Radar Stations and Area Control Centre’s using different network protocols free of errors, such as X.25, IP, etc., to help diffusion of radar data and other data types depending on project scope

The system has been designed allowing its easy evolution to incorporate future advanced features and the adaptation to the specific client requirements.
Maintenance, Repair & Overhaul Services

Combat and Civil Aircrafts

Spare-parts

Combat and Civil Aircrafts

Simulators

Helicopter Crew Training System
Combat Aircraft Flying Simulator

Trainings

Ground Engineer’s Training
Pilot Flight Training
Avionics Solutions

Shoghi is one of the growing companies dealing in Civil and Military Aircraft life cycle support and extension services. Our mission is to let our customers focus on their core operations as we concentrate maintaining the utmost high operational readiness and mission capability of their aircraft fleet.

We currently provide MRO services for Various Civil / Military Fixed and Rotary Wing Aircrafts.

Apart from these services Shoghi also provides spare-part support, engineering services, training exercises and simulators.
Shoghi MRO Division is primarily focused on maintenance, repair and overhaul of both Rotary and Fixed Wing Aircraft (Civil and Combat), and associated components.

Shoghi MRO Division with its global reach and mutual Joint working agreements with various Aircraft supplier and MRO organizations can provide a total solution to your region in order to create a world class facility to conduct required repairs and maintenance of your existing fleet of aircrafts. We also can provide the required support in order to source spares for these aircrafts.

In the field of Combat, Shoghi provides innovative platform solutions for all fixed and rotary wing aircraft, to ensure guaranteed aircraft readiness, deployability, improved safety and self reliance, supports for total lifecycle support management of complex assets and weapons platforms, including ground support equipment and components. It is specifically designed for the needs of the aftermarket- the care and feeding of weapons systems after they have been delivered to the customer and the end user.

While in the field of Civil aircrafts MRO, we offer expertise in line and heavy maintenance, repair, overhaul and modification of complete aircraft engines and accessories, aircraft structures, aircraft systems and components, avionics and instruments. We provide complete nose to tail service backed by reliable testing and uncompromising engineering and technical support through the full product life cycle.
Services provided by Shoghi MRO Division.

- Depot Level Maintenance (DLM)
- Organizational Level Maintenance
- Intermediate Level Maintenance
- Major Structural Repair
- Major Inspection
- Structural Repair
- Crash Damage Recovery
- Drop in Maintenance
- Engine Overhaul
- Modernization of onboard equipment
- Overhaul Life extension
- Incorporation of Airworthiness Directives, Service Bulletins, Special Instructions and Special Technical Instruction
- Aircraft Strip and Paint
- Interior Refurbishment
- Avionics Upgrade and Modifications
- Modifications Kits Designs and Fabrications
- Non Destructive Testing and Inspections
- Sheet Metal & Fiberglass Repair
- Compass Swing
- Aircraft Weighing
- Supply Chain Management
- Technical Records Management
- Technical Training / Type Training
- Field Services Team
- Calibration Services (PMEL)
Terrestrial Solution
- Link Encryptors

Cellular Applications
- Inbuilt Secure GSM
- Secure SMS Application
- Secure Messenger Application

Radio Encryption
- HF Encryption Module
- VHF/UHF Encryption Module

Satellite Encryption
- Thuraya
- Iridium

Services
- Algorithms Customization
- Key Generation
- Key Management
COMMUNICATION SECURITY

With more than 15 years experience in development and design of Customer specific Mil Grade Crypto system, Shoghi is a sincere partner for your requirements of end to end Communication Security and secure information transfer.

We have strong experience in creating customer specific algorithms and key management schemes. All the hardware, inspite of all the complexities can be loaded by the customer themselves with their own algorithm, to enhance the whole security environment. We are known for our open source designs and crypto validated equipments supplied to our military customers.

Shoghi also takes pride in our customized product development expertise. Shoghi provides various innovative Secure solutions to our government, defence and diplomatic customers in order to secure their strategic communications.
Secure Voice & SMS

Inbuilt Secure GSM (SCL-1SG)

Inbuilt Secure GSM is designed to protect your communication from eavesdropping and interception by providing Military Grade security for your confidential mobile phone conversations. SCL-1SG can be used in any GSM network which supports the data call (CSD).

ISG utilizes a dual layered combination of unbreakable encryption algorithms at a military level and provides complete end to end protection, from phone to phone for both audio and text messages.

Absolutely no back doors - encryption keys are randomly generated by the software and cannot be viewed by any one.

Secure SMS Application (SCL-SSA)

Secure SMS Application is a secure text messaging solution for enterprises and governments for transmitting sensitive and confidential information from GSM mobile handset. The Application is built on a JAVA™ platform and is compatible on any smart mobile that has an operating system.

The SCL-SSA uses 256 bit AES for encryption of messages. To further augment the security there is also flexibility for the operator to customize the encryption with proprietary algorithm. The interface of the application is quite similar to the normal SMS application used by mobile phones.
The Secure Instant Messenger is a powerful Instant Text Messaging Solution with a built-in Encryption module. The Application is built on a JAVA platform and is compatible on any smart mobile that has an operating system. The application is cross device and cross-platform compatible, and can run virtually any device that has an operating system.

The System uses 256 bit AES for encryption. To further augment the security there is also flexibility for the operator to customize the encryption with proprietary algorithm. The interface of the application is quite similar to the normal G-Talk application used by mobile phones.
The constant challenges and changes in today’s world require professionals in every industry to update their knowledge and skills. We at Shoghi Communications Ltd. strive to provide the opportunity for professionals in the field of Intelligence, Security, Law Enforcement, and Defence to maximize their skills through effective continuing education. We are a leading provider of Network Security, Information Warfare, Intelligence Gathering and Analysis training courses. Our tailor made technology training courses of various products/systems have helped intelligence gathering and communication security agencies globally, optimize their resources and increase efficiency. Our training programs are designed considering the latest challenges faced by governments, intelligence agencies, law enforcement agencies etc. Our unique insights into the critical topics within the security, intelligence and risk management space are codified into our knowledge products. Our delivery methodology ensures skills transfer.
The Information Warfare (IW) involves the use and management of information technology in pursuit of a competitive advantage over an opponent. The Advance Training Courses offered by us will provide comprehensive knowledge on both technical and human related aspects of information warfare. The technical phase consists of comprehensive training on Electronic Warfare, Cyber Warfare, Information Assurance and Computer Network Operations / Attack / Defence. The human related part of the training focuses on social network analysis, decision analysis and the human aspects of Command and Control.
Network security involves all activities that organizations, enterprises and institutions undertake to protect the value and ongoing usability of assets and the integrity and continuity of operations. The Advance Training Course offered by us will provide comprehensive knowledge on the network security and cyber warfare. The course includes both the offensive and defensive aspects of network security. The offensive aspects include understanding of Viruses, Trojan horse programs, Vandals, Attacks, Data interception, Social engineering etc. The defensive aspects include understanding of Antivirus software packages, Encryption and data security, Firewalls, Intrusion detection system, Virtual private networks, Identity services, Security management etc.
PARTNERS AND ALLIANCES

Shoghi has built strong business alliances and partnerships with industry leaders to deliver the best in technology to our customers. We leverage our partnerships to enhance our processes, knowledge, and offerings, which further help us to create, integrate, deploy, and manage flexible and reliable solutions.

REPRESENTATIVES

Shoghi has a well-established Representative base world wide, to resell and support our solutions. We are always keen to have new representations in unchartered territories. Please feel free to contact us if you are keen to resell and market our solution in your area and we shall be glad to guide you through our reseller program.
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