SYSTEME 3000

Tactical HF Multimode Multi-Service Communication System

THALES

SYSTEME 3000

TACTICAL HF MULTI—SERVICE COMMUNICATION SYSTEM

The distances which can be covered in the most diversified environments and the technological progress achieved, have made HF a vital transmission means for tactical or strategic communications of armed forces. It plays an essential role in the preparation, implementation and control of military operations.

Expertise in radiocommunications

Relying on its world-wide acknowledged expertise in the field of radiocommunications, Thales proposes a tactical HF communication system which fulfils the new requirements of modern armies: SYSTEME 3000. Thales is offering an evolving, complete and unequalled system for operations of the armed forces, while retaining the fundamental characteristics which have made the renown of its products (reliability, simplicity, performance) and counting on a well thought out P3I (Pre Planned Product Improvement) policy.

An advanced multi-service communication system

SYSTEME 3000 meets the present and future requirements of the battlefield through a complete offer of services such as digital or analog voice, fast and reliable data transmissions. The transmissions rely upon robust high or low speed modems, powerful error correcting codes and optimized communication protocols. Its multi-service capability enables users to carry out their mission: communicate in complete security under the most difficult conditions.

Simple, reliable and efficient communications

The fast automatic link management mode, SKYMASTER, makes possible simple and reliable use of the HF channel, by ensuring fast automatic link establishment. The implemented process also enables to automatically maintain point-to-point data communications through adaptativity in frequency and power as well as in data rate.

Highly protected communications

The intelligent frequency hopping mode, SKYHOPPER® 2, provides high resistance to all electronic warfare threats, while freeing itself from constraints of propagation and spectrum occupancy which usually limit the efficiency of HF frequency hopping systems.

In addition, a high security ciphering device provides protection against listening-in, spoofing and intrusion for all data transmissions and voice communications.

An open system on the digitized battlefield

As the notion of interconnection becomes primordial in the concept of digitized battlefield, SYSTEME 3000 provides a wide variety of connections to other media such as the switched telephone network, local area networks, VHF combat networks or tactical area networks.

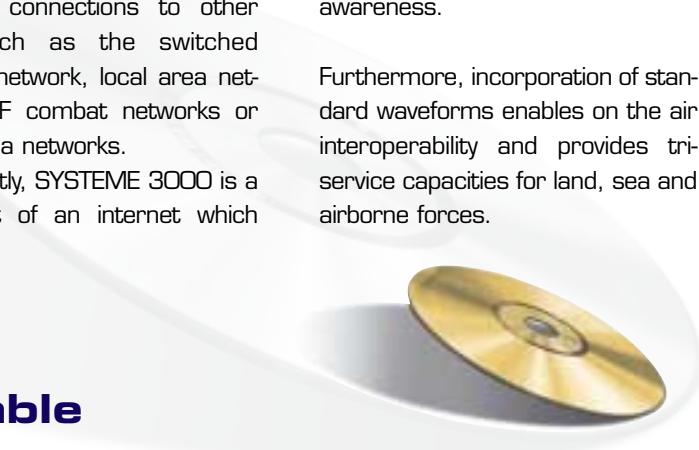Consequently, SYSTEME 3000 is a component of an internet which incorporates routing capacities, ensures seamless communications and provides access to network-type functions: e-mail or situation awareness.

Furthermore, incorporation of standard waveforms enables on the air interoperability and provides tri-service capacities for land, sea and airborne forces.

Software programmable

SYSTEME 3000 is based on a software radio, multi-waveform and programmable. The modem and ALE waveforms (STANAG or proprietary) already available will be completed step by step and downloaded depending on the development of HF standards or on specific requirements. Compatibility with the existing inventory will provide users of SYSTEME 3000 progressive evolution.

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A COMPLETE FAMILY OF TACTICAL HF EQUIPMENT

The latest generation of Thales HF systems, SYSTEME 3000, includes an entire line of tactical equipment able to fulfil the most diverse uses: 20 W manpack stations, vehicular, transportable or fixed 125 W or 400 W stations.

Compact multimode multi-service stations

Particularly compact and lightweight, the core transceiver incorporates a broad series of modes and services providing it with maximum efficiency in all its uses. The 125 W and 400 W stations are easily integrable into any type of carriers due to their compactness and simplified connections. Their modular design allows immediate removability for manpack use.

The cosite filters incorporated into the amplifiers make possible simultaneous use of the HF and VHF PR4G stations on the same vehicle. The agile antenna tuning units allow the use of the transceivers in all modes of transmission including wide band frequency hopping.

Communications from 0 to 1 000 km

Thales also provides an incomparable tactical antenna system which enables a significant increase in the reliability of HF radio links from a moving vehicle. This NVIS (Near Vertical Incidence Skyware) type of antenna system based on a whip antenna converted to a half loop, overcomes the problems met in mountainous terrain and eliminates the silence zone of whip antennas also known as the skip zone.

A complete range of peripherals and accessories

Combined with manpack, mobile or fixed stations, a complete range of peripherals fulfils the most diverse uses. These peripherals are common to the VHF PR4G system and are already in use in numerous countries.

For remote operation, various available solutions are proposed. Particularly adapted to manpack stations, the smart handset provides local remote control of the main controls of the transceiver. The full remote control unit provides entire remote operation of the transceiver up to 3 km through a standard telephone pair. The wireless remote opera-

ting kit increases considerably the operational capacities of a station by enabling wireless complete operation up to 800 m. At last, very long distance remote control solutions based on fiber optics or local area networks allow complete operation of a station.

Several data transmission terminals are also available. The Tactical Data Terminal, lightweight and rugged, allows free or pre-formatted tactical messages to be sent.

The Multi-Service Terminal provides message handling services. Software-based, it can be installed on any type of PC: from tactical pen to desktop computers.

An operational HF and VF management system

To manage the deployment of HF stations, frequencies and keys can be produced by a Management Center and distributed through a lightweight, rugged fill gun.

The HF management system can also be paired up with the one of the PR4G. Thus, it becomes possible to regroup the initial parameters necessary to VHF networks and HF networks in the same fill gun.

A software programmable offer

Benefiting from the latest digital technology: flash memories, extended memory capacity and fast digital signal processing, the radios as well as the peripherals are software programmable.

A new software version can be simply and securely downloaded from a PC simultaneously to several radios or peripherals.

Advanced data transmission services

SYSTEME 3000 incorporates a complete offer of data transmission services including not only the terminals but also the operational applications. By making use of the transceiver capabilities, the user has access to a wide range of services such as voice, e-mail, file and picture transfer, fax and tactical messages.

The system covers various types of deployment: from simple point-to-point links to the creation of a complete HF communications network. The offered services can be extended to VHF combat networks and use external networks like Public Switched Telephone Network (PSTN) or Local Area Networks (LAN).

SYSTEME
3000

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Benefiting from its transceiver's operational performances, SYSTEME 3000 forms a complete, automatic, secure communications system and allows the constitution of an Intranet.

SKYMASTER

An Automatic Link Management mode optimized for tactical use

The SKYMASTER mode integrates all the automatisms which simplify the management of HF links while ensuring highly reliable transmissions.
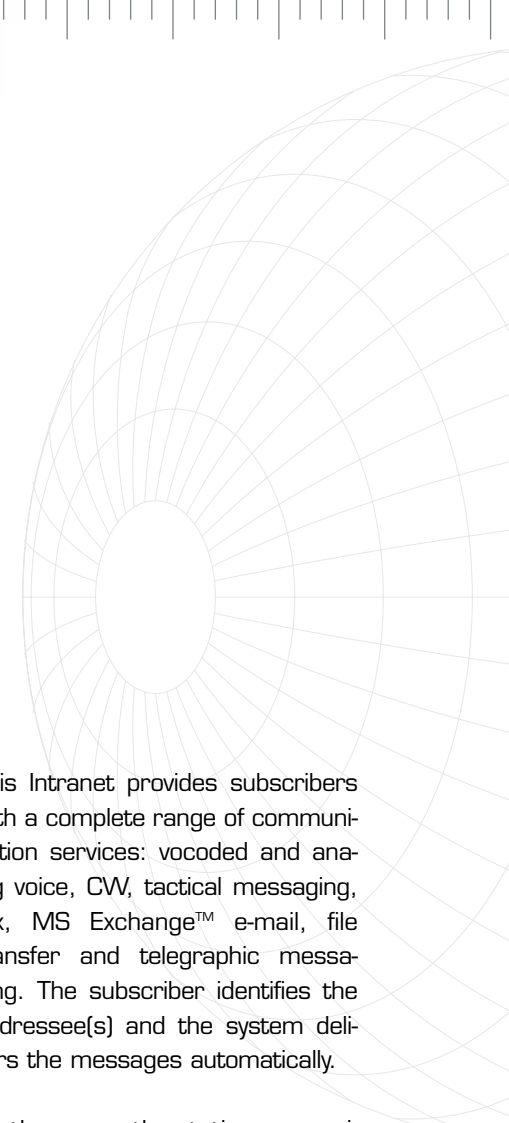
The Automatic Link Establishment automatically selects the transmission parameters (frequency, power-level) and establishes the communications, whether point-to-point or in network.

During data transmissions, the adaptivity process automatically maintains the communication and ensures the maximum usable data rate, according to the evolution of the link quality.

Optimized for tactical use, this mode offers the best performance in communication availability, reliability and set-up rapidity.
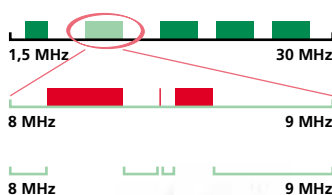
THE BEST OPERATIONAL

INTRANET CAPABILITIES

Automatic end to end communications between all subscribers

Used along with PCs and application softwares, SYSTEME 3000 offers the possibility of interconnection of HF networks to constitute an Intranet with voice and data services. The routing and transmission protocols enable to manage traffic and take maximum advantage of the network topology and link quality.

This Intranet provides subscribers with a complete range of communication services: vocoded and analog voice, CW, tactical messaging, fax, MS Exchange™ e-mail, file transfer and telegraphic messaging. The subscriber identifies the addressee(s) and the system delivers the messages automatically.

Furthermore, the stations comprising the system can be used as communication nodes and also as gateways with outside networks to make up an Internet.

1,5 MHz   30 MHz

8 MHz   9 MHz

8 MHz   9 MHz

SKYHOPPER® 2

A Frequency Hopping mode integrating Automatic Link Management

Relying on its proven and unique experience in Adaptive Frequency Hopping, Thales proposes with SKYHOPPER® 2, an intelligent HF Frequency hopping mode which gives the only solution that works on the field.
The FH mode SKYHOPPER® 2 implements sophisticated techniques of spectrum analysis and signal processing, and applies the principle of automatic link management already used in fixed frequency.

The hop set is determined in two phases: automatic selection of the optimum hop band between two correspondents, then selection of the usable frequencies within this band (SKYHOPPER® concept), considering the propagation constraints, spectrum occupancy, and enemy jamming. This mode offers a high resistance to Electronic Warfare, while ensuring quality communications as well as easy operation.

PERFORMANCES

SYSTEME 3000

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Land & Joint Systems

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