SemTETRA

SemTETRA is based on the ETSI TETRA (TErrestrial Trunked Radio) standard and is an open digital trunked radio standard defined by the European Telecommunications Standardization Institute (ETSI). This standard meets the requirements of the most critical private mobile radio users such as the police, emergency services, the oil and gas sector, harbours, airports and the military.

SemTETRA offers an advanced solution that integrates many other telecommunication systems with the SemTETRA system. SemTETRA enables direct calls between a TETRA terminal and telephone networks, other radio systems like ships radio systems, helicopter radios, and traditional VHF/UHF onboard radios, making it a unique and effective way of communicating.

A brief technical introduction SemTETRA is a new TETRA radio system for single- and multi-node solutions. It is a full IP based system designed for IP based backbone networks and IP based interfaces like SIP voice gateways, PABX or IP based call manager.

The system is based on the Single Carrier Base Station Transceiver Unit and Base Station Controller (BSC),

and is optimised for 1- and 2-carrier solutions with two antennas (TX/RX). Two systems can be interconnected to provide a 3- or 4-carrier solution with redundant BSC and power supply, carriers and antennas.

A subscriber register is present on each node allowing full verification of the subscribers and full access to feature lists. One BSC acts as master. All other BSCs are on standby as slaves.

The base stations are designed to operate autonomously as a complete stand-alone system without any support from other external units.

All nodes have equal priority, and no centralised nodes show any single point of failure. Any changes to the master subscriber register will be broadcasted immediately to the other slave subscriber registers and updated instantly.

Authentication and air interface encryption

The SemTETRA system fully supports Tetra security class 1 and 3 features, and is basically supporting the air interface encryption TEA1, TEA2 and TEA3 algorithms. Authentication is supplied as standard on all SemTETRA systems, whereas air

interface encryption can be chosen as an option.

SemTETRA numbering plan

The SemTETRA system makes it possible to operate with a unique numbering plan. Each individual and group can be set up to have a unique number (dial number) with up to 7 digits.

Voice gateway

Voice gateways can be activated on any node by using the SIP protocol with voice-over IP. The gateway can handle up to 15 simultaneous speech connections.

The voice gateway supports incoming and outgoing Duplex calls in a normal way.

SemTETRA

The voice gateway supports connection to specific terminals or group call. All group communication can be monitored via the phone. PTT activation can be made by a combination of key pressure and VOX (Voice Operated Transmit).

SemTETRA data services

The SemTETRA network provides a short data service allowing short messages to be sent in between the mobile data.

Packet data gateway

The SemTETRA system fully supports multi-slot PD giving approximate throughputs from 3.5 to 14 Kbit/sec. depending on the number of slots used.

Network management application

The Network Management programme provided with SemTETRA is a standard Windows application, which can be started on any Windows computer with connec-tion to the SemTETRA backbone network.

Voice logging

For individual calls, if the calling or the called party or both are on the positive list, the call is voice logged otherwise not. The group call is only voice-logged if the called group, TSI, appears on the positive list.

Priority

If all voice time slots are occupied, calls are prioritised. Lower priority calls are stopped in order to allow communication of higher priority. Pre-emptive priority of normal and/or emergency calls is also possible.

Application gateway

The application gateway enables integration of almost all other voice systems, that is, traditional UHF radio, VHF/FM/AM, PA/GA, and a number of other systems and applications.

SemTETRA dispatcher functions

The SemTETRA also uses the appli-cation gateway. From the dispatcher it is possible to see the:

- Phone book
- Active calls view
- SDS view
- Event log

If enabled it is possible to edit the subscriber register directly from the dispatcher.

For further information, addresses, email addresses and phone numbers - please see our website:

www.semcomaritime.com