



ELETTA
SUITE

ElettraSuite CRS Control Rooms Server series

OVERVIEW

SELEX Communications, providers of ElettraSuite turn key system solutions in the TETRA environment, also have a range of dispatching solutions, suited to a variety of Control Centres, which exploit the ElettraSuite system features available for co-ordination and decision-making allowing for improved operational performance of an organization.

The CRS/LDS client/server relationship makes it possible to provide control centres of any size, from a small office to the large control-room of a major town.

Architecture & Operation

The **Control Room Server (CRS)** is connected via local area network to a set of LAN Dispatching Stations (LDS) each of them dedicated to an individual dispatching operator.

From a functional point of view, the LDS element must provide to an operator the ability to participate in TETRA network calls (data/voice). Each LDS runs a graphical Human Machine Interface (HMI) through which the operator can remotely access dispatching services.

Each LDS includes equipment through which a dispatcher operator can manage and control audio services.

Signalling and PTT activities generated from the LDS operator are collected and sent via LAN to the correct dispatching

application instance running on the CRS.

The CRS connects to the TETRA infrastructure via a dedicated E1 link (2 Mbit/s G.703 physical link) conveying control, audio, operation and maintenance information exchanged between the LDS operators and the TETRA infrastructure (control information like O&M and Subscriber Management are IP packets embedded in the E1 flow). The CRS runs one instance of the dispatching application for each connected LDS.

Communication between the graphical HMI and the remote dispatching application instance is based on a client server relationship where the client is the LDS's HMI and the server is the instance of the dispatcher application running on the CRS.

In case of failure of a CRS (in the redundant version), the working server is automatically reconfigured by the SCN to manage all LDS. Whenever a LDS operator successfully logs into the CRS, a dispatcher application instance in conjunction with physical resources (e.g. audio port) are allocated and associated to that LDS by the CRS.

Professional tools for a professional dispatching.

The LDS workstation is provided with a Dispatcher Audio Console (DAC) and a professional set of audio-accessories allowing clear communications with personnel in the field and management of audio calls. This device is connected via a physical audio

path to a dedicated audio port available at the CRS site and provides facilities to connect audio equipment such as a headset, loudspeakers, PTT facilities, etc.

Ease of use

The Dispatching application running on the LDS station is the same one used for the stand-alone station (WDS - WAN Dispatcher Station). So no training time is needed if an operator is to be transferred from one control room to another one or has to alternate between a WDS and an LDS station.

Secure identification and authentication

For a more effective and secure access (with respect to the standard Windows user-name/password mechanism), it is possible to add a smart card reader in order to identify/authenticate a Dispatcher Operator before accessing the TETRA system's resources. This solution also allows the creation of different access profiles depending on the customer needs.

Resilience

The CRS/LDS architecture is also available in a redundant version in order to achieve resilient configurations for the Control Room, providing double connections for each LDS operator to the Control Room Server and double E1 links between the CRS and the SCN (Switch Control Node) network elements.

VoIP for an "all-IP" environment

The latest CRS version is also able to use the LAN connection for both signalling and voice traffic, achieved using VoIP technology.

- Cost reduction (no audio-cables);
- Integration in a full IP environment (all information is treated as packet data);
- Easier integration between voice dispatching and multimedia/data applications.

FEATURES

Services

The CRS is a TETRA network element that provides a set of single-operator LDS Stations with access to TETRA services. The CRS offers up to 8 connections for LDSs. The LDSs are connected to CRS by means of a LAN connection (for signalling and data traffic) and an analogue connection for voice traffic. Through the CRS, the LDS accesses three types of services:

1. **Telephone services**
voice calls; data calls (SDS, Circuit Data, Packet Data); Supplementary Services (also see the DS Application brochure).
2. **Subscriber management services.**
e.g. subscriber profile modifications; group management.
3. **Alarm notification service**

The functions/services accessible for service-groups 1. and 2. depend on the privileges associated with the operator (more details on the Dispatcher application are described in the

dedicated brochure), privileges are configurable by means of the NMS (Network Management System).

CRS sizing

The maximum number of LDS that can be supported by one single CRS is 8. The maximum load uses all of the E1 link capacity, i.e. 64 kbit/s per 30 channels. Each LDS manages 16 communications; the bit-rate of each communication is 8 kbit/s. The table below summarizes the sizing:

Control Room Server models

The ElettraSuite CRS/LDS Control Room offers different types of servers covering both old and new ELETTRA networks based on the different generations of TETRA Switches.

Item	Description
CRS-145	4 Dispatching position
CRS-145 R	4 Dispatching position - Redundant
CRS-185	8 Dispatching position
CRS 185 R	8 Dispatching position - Redundant
CRS-200	8 Dispatching position, PRI / VoIP
CRS-200R	8 Dispatching position, PRI / VoIP - Redundant

Note: "4(8) position" means up to 4/8 LDS positions

CONTROL ROOM SERVER CRS-145/185 MODELS

These versions of the Control Room Server are to be employed with an ElettraSuite infrastructure based on the SCN-TX switching node.

The main elements constituting, from the functional viewpoint, the basic way of connecting the Dispatcher Stations to the CRS server that is, in turn, linked to the Switching and Control Node (SCN).

CONTROL ROOM SERVER CRS-200 MODEL

A product open to customers' networking needs

Modern Control Centre operations are supported by a number of different networks and co-operation between them has become an important need for an efficient network both in normal daily and critical/emergency conditions.

The new Control Room Server has been designed to satisfy this need (e.g. inter-working, gateway capability, etc.), so this product also offers, in addition to connection capabilities for LDSs, other services such as:

- network management for TETRA network Infrastructure based on SCN-TX / SCN-plus.
- gateway services to ISDN, VoIP and Packet Data networks, that embed networking capability so enabling IP connectivity to the TETRA IP core network for:
 - service provisioning operators,
 - network management
 - Packet Data applications

The new CRS-200 comes in two versions:

- **CRS-200/PRI**
- **CRS-200/VoIP**

