ElettraSuite TIN (TETRA IP Node)

The flexible Switching and Control Node for the ElettraSuite ADAPTANET® TETRA IP solution

tetra solutions

network elements

ADAPTANET IP solution

ELETTRA SUITE

SELEX Communications
A Finmeccanica Company

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The flexible Switching and Control Node for the ElettraSuite ADAPTANET® TETRA IP solution

The new IP-based solution for regional networks

ElettraSuite ADAPTANET® IP is our new approach to TETRA architecture design and represents SELEX Communications' response to the evolving needs of our most demanding customers in public safety and mission critical markets. ElettraSuite ADAPTANET® IP offers full-featured TETRA network solutions for all business critical and mission critical professional users.

ElettraSuite ADAPTANET® IP offers suitable solutions for small and medium networks, supporting both centralized and distributed architectures, and it also provides support for larger network (i.e. regional networks), thanks to the introduction of a new centralized network topology, specifically designed for larger networks. This new approach is based on a new switching and control device: the **TIN (TETRA IP Node).**

PRODUCT DESCRIPTION

The ElettraSuite TIN (TETRA IP Node) is the ultimate series of the Switching and Control Node (SCN) network element of the ElettraSuite ADAPTANET® IP product family and it is the proper solution to apply to sizeable networks.
TIN performs Switching Services and Telephony Server (TS) functionality, called also TETRA Application Server (TAS), including Call Control.
The main TETRA application services and IP services capability provided by TIN are the following:

- TETRA Application Server Function
- Resource Management
- Packet Data
- Mobility Management
- Short Data Services (SDS)
- Air Interface encryption Key Management (AIKM) Function, including Authentication Centre Facility for secure storage of secret authentication key
- IP transfer function (IP routing, etc.).

TIN ensures TETRA performance with a state-of-the-art IP core, and it is ready for migration to TETRA Enhanced Data Service (TEDS) through SW upgrade.

MAIN FEATURES

Network sizing

The ElettraSuite TIN provides support for centralized network architectures. One single TIN platform can manage up to:

- 64 BS Nodes
- 32 Dispatchers
- 16 Gateways
- 4 Control Room Interface Servers.

To improve network capacity and to support a higher number of BS Nodes and additional network elements, up to 8 TIN can be connected together.

Main services

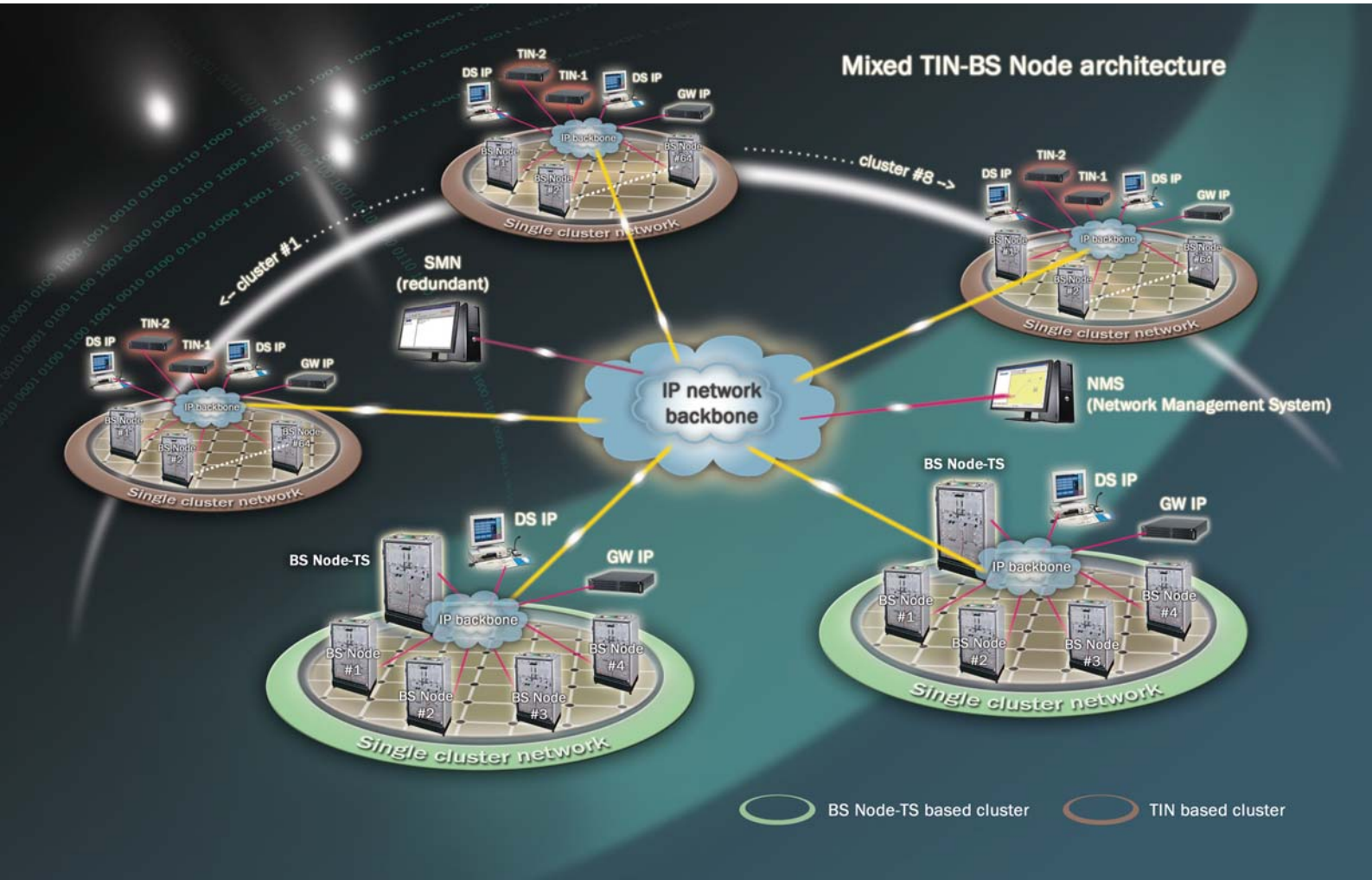
TIN provides switching and routing facilities between a numbers of cells and it is able to manage individual calls (half-duplex and full-duplex), group calls, emergency calls, Packet Data (PD) transmission, Short Data Service (SDS) and other telephonic and supplementary services foreseen by the TETRA standards.

TIN is responsible for TCH allocation, queuing management when resources for traffic radio channels are not available and allocation of the subscribers on available resources based on a priority and pre-emptive tables, as configured within the system.

TIN-based TETRA System supports SDS service in terms of pre-defined messages (Status and Pre-coded Messages) and User Defined Messages, defined and writeable by the user, supporting also simultaneous speech call and SDS service.

Subscribers' database management

The storage of subscribers' database (HLR) is up to the mandatory add-on Service Management Node (SMN). A TIN-based network topology provides support for up to 10,000 users.



TIN hosts a high speed VLR database and interacts with the SMN to refer to the HLR database to manage the registration of the subscriber positions throughout the network, in order to give to the system the possibility to localise them when called.

Redundancy

Resilient architecture can be achieved by duplicating the TIN in active / stand-by configuration, with automatic changeover capability. Stand-by TIN installed in redundant network centre location provides automatic disaster recovery capability.

TECHNICAL CHARACTERISTICS

TIN is based on PERSEUS Professional Router (PPR) HW platform, Linux OS and the application layer composed of the set of software processes implementing the TIN functionality.

TECHNICAL DATA

- L3 Routing:
  - OSPF v2
  - BGP v4
  - RIP v1, RIP v2
- L2 capability:
  - VLAN
  - Proxy ARP
  - PPP
- IP Security:
  - IPSec
  - Firewalling
  - NAT
- Interfaces:
  - E1 G.703/G.704
  - Gbit Ethernet 10/100/1000 BT
  - Ethernet 100FX
  - PRI VoIP- ISDN
  - Analog FXS/FXO
- VoIP Services:
  - SIP
  - IAX
  - H.323
- QoS (DiffServ and traffic shaping):
  - CBWFQ
  - LLQ
  - CAR
  - WRED
- IP Mobility:
  - Mobile IP
- Network Services:
  - DHCP
  - NTP
  - RADIUS
- Redundancy:
  - VRRP
  - Link Bonding
- Management:
  - SNMP
  - Web Interface
  - Configuration files

Mechanical features

Physical dimensions (HxWxD):	90 (2U) x 430 (19") x 460 mm
Weight (fully equipped):	about 10 kg
Protection degree:	IP20
Cooling system:	Air forced cooling system front to rear
Power Supply:	110-220 VAC, 50-60 Hz
Power consumption (fully equipped):	150 W max.

Environmental conditions

Storage:	ETSI ETS 300 019-1-1 class 1.2
Transportation:	ETSI ETS 300 019-1-2 class 2.2
Operation:	ETSI ETS 300 019-1-3 class 3.1 (+5° to +40°C)
EMC:	ElettraSuite TIN is compliant with the EN 300 386 standard. This concerns both emissions and immunity requirements. Emissions limits shall be those of the standard EN 55022 class A.
Safety:	ElettraSuite TIN is be compliant to the standard CENELEC EN 60950-1

SELEX Communications

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