

DSiP

Multichannel Communication Software

Ajeco Oy
Arinatie 10
Fi-00370
Helsinki
Finland

Solutions for Secure Communication

DSiP is used for many kinds of applications:

- Power Grid Control
- SCADA applications
- Petrochemical industry
- Electrical Utility industry
- Mobile Communication
- Public Safety
- Many more

DSiP supports:

- IP and non-IP traffic
- TETRA modems
- 3G modems
- LTE (4G) modems
- WLAN
- LAN and WAN
- Satellite
- Serial Communication
- VHF-radio
- Transparent communication
- Tunneling of DNP3, IEC101/104, MODBUS, NMEA, IP etc.
- Multichannel tunneling of VPN networks
- TETRA handsets

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The advanced DSiP solution ensures safe, reliable and secure communication

“The best and most secure communication solution - the Diamond”

DSiP Distributed Systems intercommunication Protocol ®

The DSiP solution makes communication reliable and unbreakable. DSiP uses several physical communication methods in parallel. Applications, equipment and devices believe they communicate over a single unbreakable data channel. **Satellite, 3G, TETRA, 4G/LTE VHF-radios etc.** can be used simultaneously in parallel.

DSiP is suitable for a vast range of applications. Power Grid Control, SCADA and Public Safety communication are only a few examples.

DSiP handles communication channel selection and hides link establishment issues. DSiP solves incompatibility issues and is an invisible layer to all applications, equipment and software. It provides modularity, data integrity, security and versatility to data communications systems of any size. The DSiP software uses both IP and non-IP based links when needed.

DSiP reduces Cyber Warfare threats in a unique way not found in any other solution.

The DSiP solution brings several benefits:

- Better Data Security, Integrity & Priority
- Immunity towards virus infusion
- Immunity towards DoS network attacks
- Intrusion detection
- Authentication- and management tools
- Data-flow handshaking and flow-control
- Controllable data casting and compression
- Interfacing capabilities to equipment and software
- Transparent tunneling of any data
- Early detection of communication problems
- Automatic re-routing
- Cost-efficient network topology
- Insulation from Internet-system flaws
- Routing according to lowest cost and/or shortest hops
- LAN/WAN, TETRA, 2/3/4G, LTE(4G), WLAN, VHF, Satellite etc. can all be used simultaneously in parallel

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“Vehicles have dual brake systems. If one fails, the brakes can still be used for stopping the car. Commercial passenger aircraft have two or more engines. If one engine fails, the plane still flies.”

Can critical communication systems be based only on a single communication channel?

The answer to the question above is: **No.** Critical communication systems require DSiP.

SCADA applications benefit from using DSiP. Remote Terminal Units (RTU's) and SCADA interfaces directly and transparently with the DSiP communication system.

DSiP forms multiple parallel communication channels between the remote end and the control room. Should one communication channel be down, other channels will continue. There is no need to adjust or change anything in SCADA or RTU's - all communication is transparent.

DSiP is capable of converting classical polled systems into event driven function. This feature improves response time and speed. DSiP also contains compression of data which is useful with low capacity communication channels.

Mobile multichannel communication improves communication reliability and quality for example in **Public Safety applications.** Police cars, Ambulances and Fire engines benefit from uninterruptable secure communication.

DSiP provides a uniform, reliable and maintainable communications services platform capable of withstanding time. The system is not dependent of teleoperator services or any particular communications protocols.

Virtual Private Networks (VPN) may be tunneled through the DSiP communication system. This feature makes it possible to maintain constant communication without re-authentication even though one communication channel would be at fault.

DSiP:

- Increases reliability and security
- Is immune to network (DoS) attacks
- Decreases risk for viruses
- Results in less system downtime and lower maintenance need
- Contains authenticated communication
- Allows communication to TETRA- and mobile handsets
- Has capability of interfacing to many different kinds of equipment and software e.g. Radar, AIS, Radio Direction Finders, CCTV equipment etc.
- Transparent communication of DNP3, IEC101/104, MODBUS, NMEA and other protocols
- Network monitoring and management tools improving overall system performance

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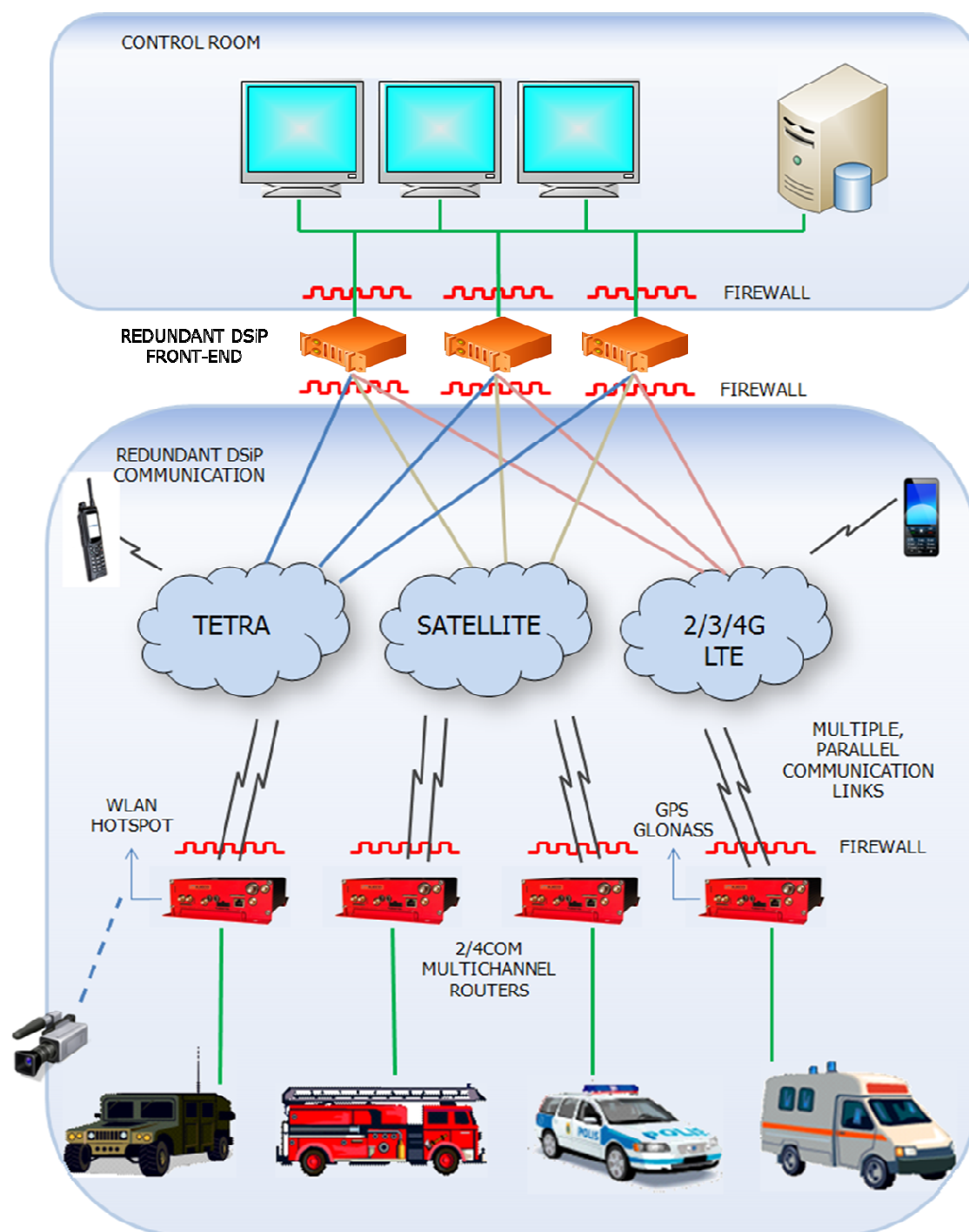
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DSiP Distributed Systems intercommunication Protocol ®

Fully redundant multichannel **Public-Safety** communication network

Note that the suggested layout may be realized in any desired topology



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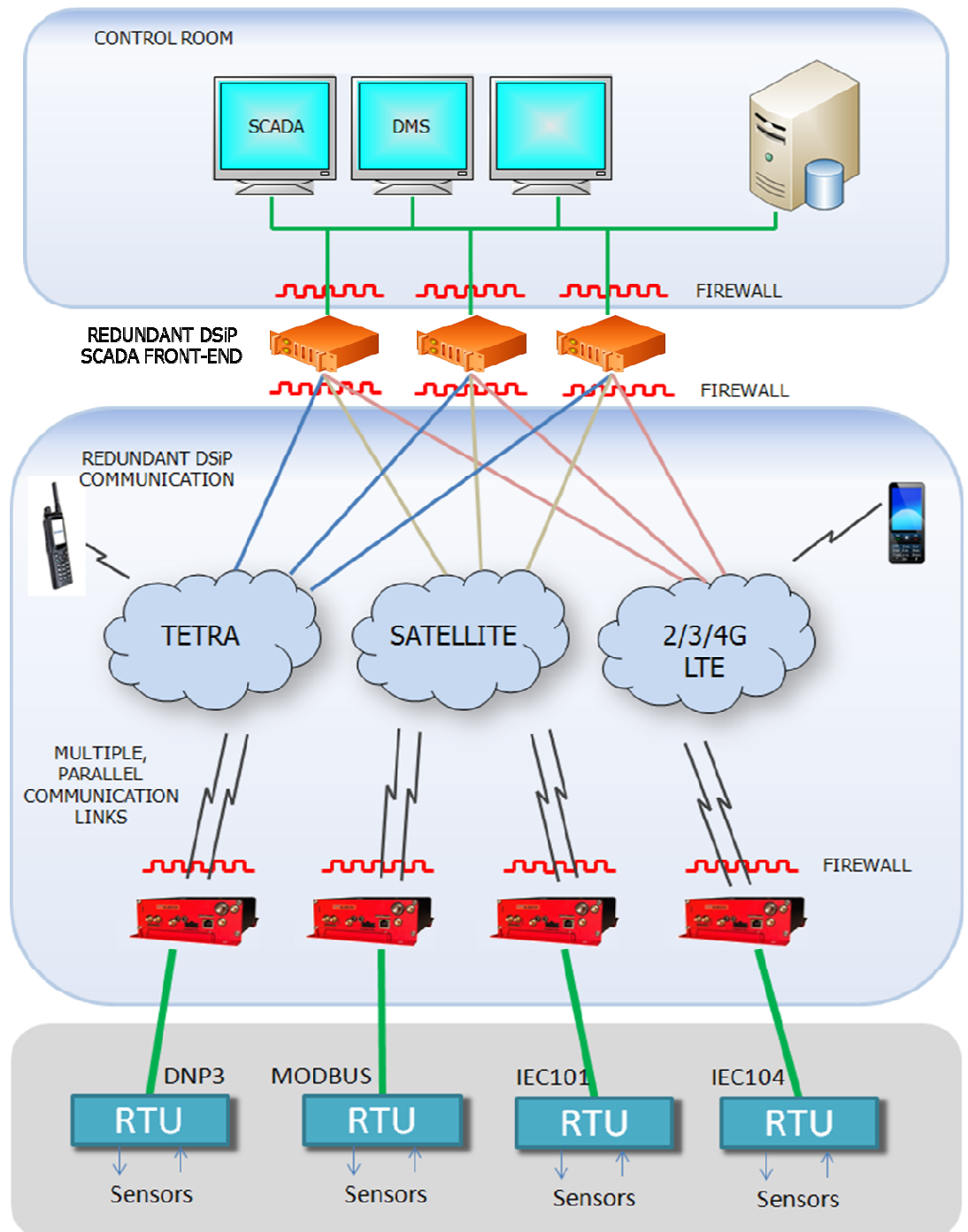
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DSiP Distributed Systems intercommunication Protocol ®

Fully redundant multichannel SCADA communication network

Note that the suggested layout may be realized in any desired topology



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DSiP

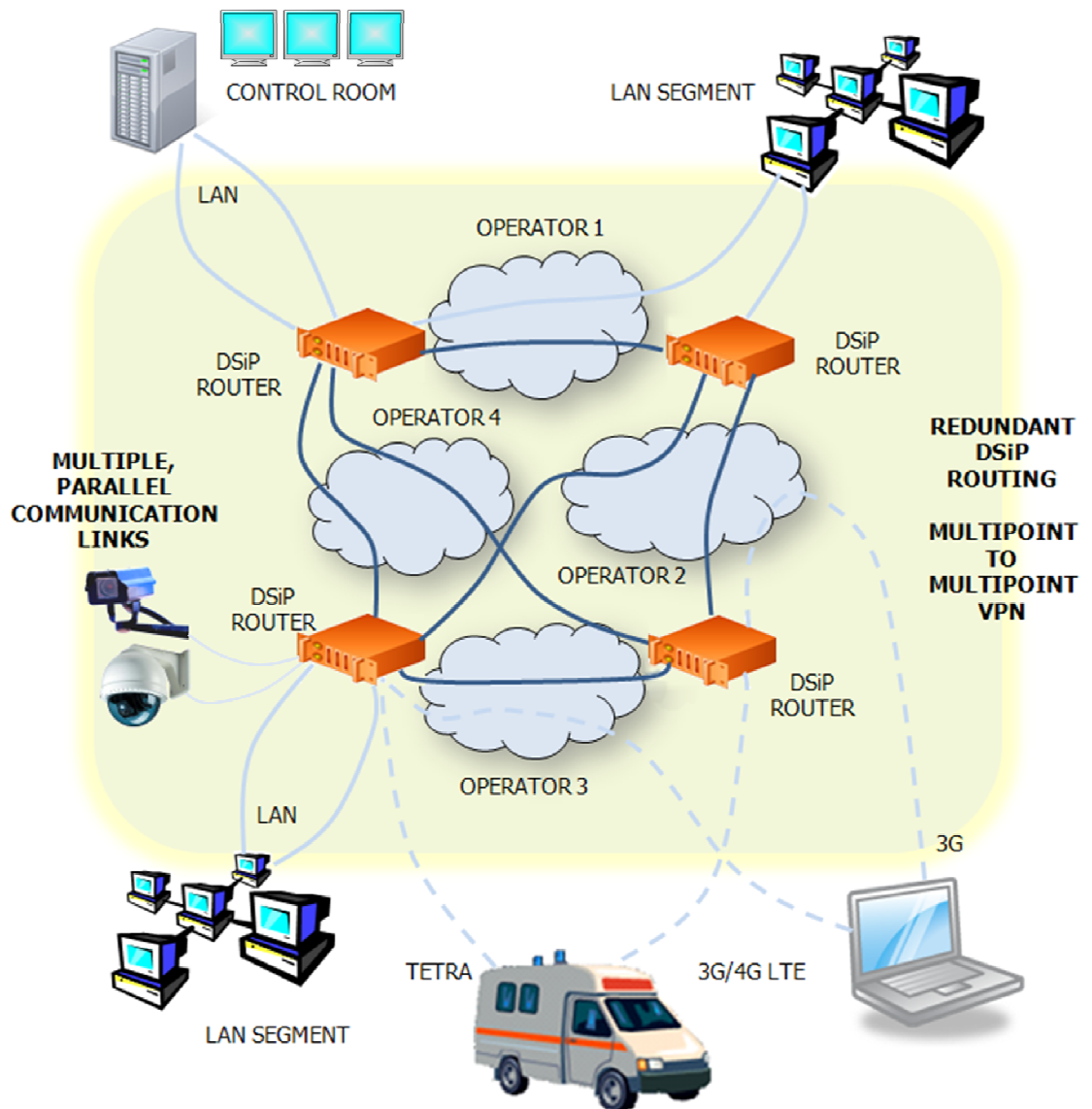
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DSiP Distributed Systems intercommunication Protocol ®

Fully redundant **multipurpose** multichannel communication network

Note that the suggested layout may be realized in any desired topology



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DSiP Distributed Systems intercommunication Protocol ®

Monitor and Control your network with Management Tools & Utilities

Critical networks and communication solutions require efficient management and monitoring tools. The DSiP solution contains several modules for support, maintenance and configuration.

Authentication Server Software

The DSiP features an centralized and mirrorable Authentication Server software. This software allows for editing passwords for DSiP-nodes. The nodes may have passwords that expire after a specific time. Nodes may be allowed in the DSiP routing system and they may be excluded from it.

Configuration Server Software.

The Configuration Server software is an entity for providing routing instructions and firmware updates to nodes. Nodes may be instructed to contact the Configuration Server at any time.

Network Management Server Software

The Network Management Server software constantly monitors the connections in the DSiP system. A graphical tool called **DSiP-View** enables the user to get a visual feedback over the current network function. Nodes marked green are OK, yellow indicates anomalies in the functionality and red errors. Users may select a node and query its status. **DSiP-Graph** is a browser tool presenting graphs over node latencies, transferred data-amounts etc.

