TELEINDUSTRIA
TELECOMUNICAZIONI PER L'INDUSTRIA
www.teleindustria.com

kiwa
certified
CERMET
BODY NOTIFIED BY ACCREDIA
SISTEMA DI GESTIONE
CERTIFICATO
REG. N° 8161-A   ISO 9001:2008

ROADCALLS®
EMERGENCY TELEPHONE SYSTEM
for ROADS

SOS Emergency Telephone System for Roads and Motorways

The **ROADCALLS©** System has been designed and built on the basis of over twenty-five years of experience in the production of emergency communication devices.

The system is based on the terminals of the **STEELVOX®** and **HARDYVOX®** family, which are installed in numerous sites all over the world in over 15,000 units.

1. DIRECTIVES, LAWS AND APPLICABLE RULES

The equipment is **designed and built entirely in Italy**, in our factory in Assago and meet the mandatory **guidelines** as well as a series of applicable technical **standards**.

- Directive 2014/35/UE – Electrical Safety
- Directive 2014/30/UE –EMC/EMI
- Directive 2014/53/UE

Even in the absence of a specific **European standard** that defines the minimum requirements of SOS devices for emergency telephony, our vast experience in the field of emergency communications has allowed us to develop a mixture of **performance and features** that makes our product the **most effective and updated is available** on the market today.

All the devices described in this document respond to the following non-binding rules, fully meeting the requirements of the **Rule of Art** referred to in the Laws:

Standard	Title
EN 50121-4:2006	EMC Railways
EN 55011:2007+A2:2007	EMC Industrial & Medical
EN 55022:2006+A1:2007	EMC - IT
EN 55024:1998+A1:2001+A2:2003	EMC - IT
EN 61000-6-2:2005	EMC Industrial Environment
EN 61000-6-4:2007	EMC Industrial Environment
EN 60529:1997+A1:2000+A2:2014	Protection Index IP
EN 60068-2-75:2015	Impact tests
EN 60950-1/A1:2012	Safety IT Systems
ETSI 203 021-1 v 2.1.1 (2005-08)	Telephone terminals

Our products also conform to numerous other technical standards and regulations produced by Organizations and Authorities of various European and US countries:

✓ TEM/CO/TEC/71
Trans European North South Motorways Standards and Recommended Practice

✓ NFPA 130 [2017]
Requirement for underground, surface, and elevated fixed guide way transit and passenger rails system

✓ Directive ANAS [2009] Guide Lines for design of Safety in Road Tunnels

✓ NF P 99-250; NF P 99-251; NF P 99-252; NF P 99-253; NF P 99-254
General Characteristics; Form and dimensions; Maintenance Principles; Technical C

TELEINDUSTRIA
TELECOMUNICAZIONI PER L'INDUSTRIA
www.teleindustria.com

kiwa
certified
CERMET
BODY NOTIFIED BY ACCREDIA
SISTEMA DI GESTIONE
CERTIFICATO
REG. N° 8161-A ISO 9001:2008

2. CRITERI DI PROGETTAZIONE

The design of the **SOS equipment** included in our product range is based on the **most stringent requirements** emerging from over **25 years of experience** in the construction of emergency telephony systems and service in **road tunnels**, **roads** and **highways**, **railways**, **underground railways**, **heavy industry**, **Oil & Gas**, **Mines** and **Ships**.

Naturally our company operates with a certified quality system that complies with **ISO 9001: 2015**. The quality system is also accredited for the production of **ATEX** equipment according to **EN 80079-34**.

All our products are designed for long life in environments with extreme climatic conditions **(-40°C +70°C** with **humidity** up to **98%**), continuous exposure to the elements, dirt and dust (**IP65** & **IP66**), exposure to **impact** and **vandalism** (**IK10**), exposure to highly **corrosive environments** (salt fog) exposure to electromagnetic **interferences** even in industrial and railway environments (**EN 50121-4**).

The design is carried out with the aim of obtaining a **high index of availability** and **continuity of service**, as well as fast and **simplified maintenance**.

$$\text{System Availability} = \frac{MTBF}{MTBF + MTTR}$$

MTBF = Mean Time Between Failures
MTTR = Mean Time To Repair

Thanks to the attention given to the design of the equipment, to the materials used and to the verification and testing system that precedes the delivery, we have **reduced the probability** and frequency of **faults**, while greatly **reducing the time for restoring** the faulty equipment.

With a **MTBF** that, on the various models available, is positioned around **150,000 hours** and **MTTR** less than **10 minutes**, the availability index of the single SOS device is **more than 99.9%.**

However, because a broken device can still lead to serious consequences for the people who count for it to get relief, we have put in place a **predictive** and **preventive maintenance** system.

Thanks to the **TelDia® remote interrogation software** it is possible to obtain a **real-time view** of the status of the SOS telephones park, even if it were **hundreds or thousands of devices**. It is sufficient to organize a reactive and rapid intervention service (making available the necessary spare parts on site) to guarantee an availability index of the entire SOS telephony system.

3. LAY-OUT and ARCHITECTURE

ROADCALLS® is a system based on **technologies** and **protocols** consolidated, **open and internationally widespread**. This guarantees to buyers and operators a wide guarantee of continuity of service and the possible **interoperability** with equipment and systems of different manufacturers.

The system also accepts, at the same time, **SOS terminals** designed to operate on a **PSTN** (PBX) network, on a **LAN** network with **VoIP** protocol (SIP) and on a **GSM** network.

In order **not to bind the operator in any way** to a proprietary platform, all the terminals we produce can call and receive calls from **any telephone system**, totally free from proprietary software and / or protocols.

The emergency response management and response center can therefore be provided by our company **as well as by any third party**.
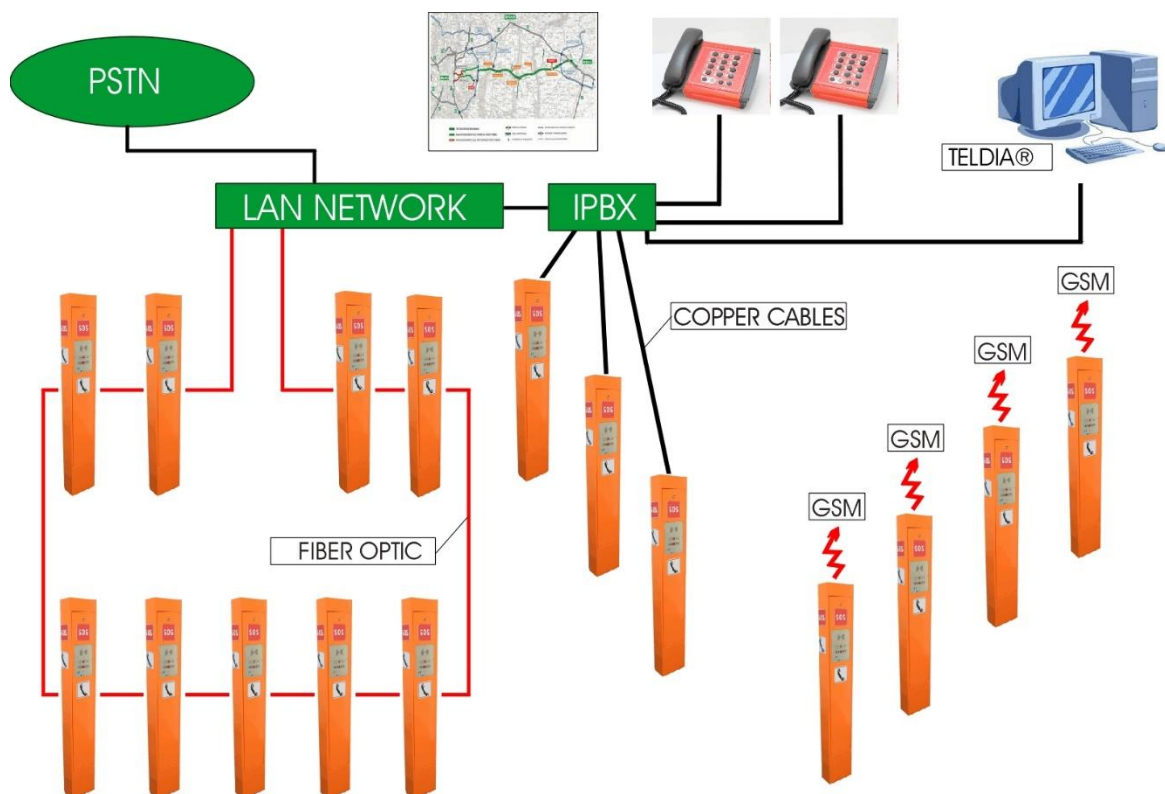
4. CENTRO DI GESTIONE – RICEZIONE E SMISTAMENTO CHIAMATE

The **emergency call answering and management center** is generally composed of at least one physical operator station, which allows you to **answer incoming calls** in the traditional way. We recommend the adoption of two identical operator posts in active service, in order to guarantee a first level of redundancy as well as allowing multiple shift workers to manage traffic simultaneously.

The **TelMap®** software allows you to view the **status of the entire network**. A large, high resolution screen (generally at least 75 ") allows you to view the map of the entire site, on which **the icons of the individual SOS columns are arranged**.
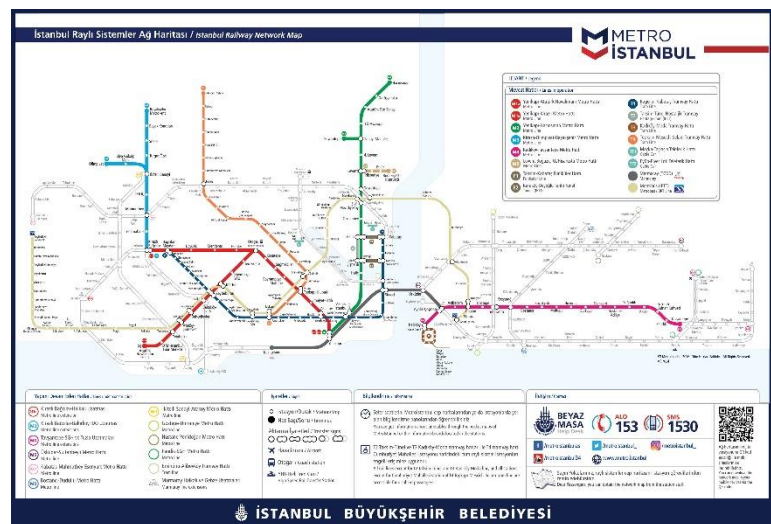
The icons are gray in the rest position and change color according to the change of state:

Gray: **Stand-by**
Green: **Enable**
Red: **Fault**

Of course, the map is made to measure for each new project, adhering to the particular requests of each user.

5. DESCRIPTION OF THE SOS TERMINALS

STEELVOX© is a family of **hands-free SOS telephones**, made with a highly robust **stainless-steel body** (2mm thick), with an **IK10** impact resistance index and degree of protection against dust and liquids **IP66**. The mechanics is prepared for mounting on existing SOS cabinets, or on the emergency columns included in our extensive production.

STEELVOX© is produced in many different versions with a number of call buttons between 1 and 8, but is also available in a version with a full 15-key telephone keypad.
All versions are designed to work in the presence of **high ambient noise**, ensuring full **intelligibility** of the conversation.

Depending on the electronic card mounted inside the device, it can be supplied in **SMART Analog** telephone, **SMART VoIP (SIP) telephone** and **SMART GSM** telephone versions. All the versions are mechanically **interchangeable** with each other and have additional boards for special performances, such as for example the activation of command and **alarm relays** or the **detection of local criteria** useful for completing the functions.

AFD Automatic Fault Detection

This is an **essential function** in an emergency communication apparatus, that is the ability to carry out **self-diagnosis** and make a **status indication** available. The self-diagnosis goes up to the generation of an audio tone emitted by the loudspeaker and retrieved from the microphone, which allows you to be **sure of the status of good functioning** of each individual device. A flashing **blue LED** confirms the status of service and a **red LED** confirms the activation of the emergency button and / or the reception of a call from the center.

TELEINDUSTRIA
TELECOMUNICAZIONI PER L'INDUSTRIA
www.teleindustria.com

kiwa
certified
CERMET
SISTEMA DI GESTIONE
CERTIFICATO
REG. N° 8161-A ISO 9001:2008
BODY NOTIFIED BY ACCREDIA

6.   REMOTE INTERROGATION SOFTWARE TelDia©

The **TelDia8.0** software allows you to **monitor an entire fleet** of SOS phones. It can be installed on a common PC in a Windows© environment to which one or more **TelDia®** modems are connected. Each modem can be connected to the telephone network via an analog FXS port, or registered on a SIP (VoIP) server.

All SOS phones we produce are equipped with the **AFD (Automatic Fault Detection)** function. They are therefore able to independently launch **periodic self-test** sessions, during which all the vital parameters of the phone are tested and the **microphone and loudspeaker audio test** is performed. At the end of the self-test session (which is an independent and autonomous function from the Response Center and the Interrogation Software) each phone stores the result. The **blue LED** on the front of the phone flashes indicating the **correct functioning status**.

The **TelDia®** software performs **periodic queries** of the entire telephone park, accessing the memory of each phone to **detect the results of the last self-test session**. The results of the queries are stored and stored on Excel© files, which can be **viewed on the screen** using an intuitive **graphic interface** and automatically forwarded by e-mail to the predefined recipients. All the main vital parameters of SOS phones are thus kept under control and recorded. Among these parameters, but not only, are shown for example:

- ✓ Microphone or speaker failure
- ✓ Push-button panel fault (if provided)
- ✓ System fault (PSTN, VoIP, GSM network anomaly)
- ✓ Auxiliary power supply fault (if present)
- ✓ Changing the schedule

Some models can be programmed to make **automatic calls in case of anomalies** (for example **low battery voltage** or failed charging, in the case of devices powered by batteries and / or solar panels).