THE CONCEPT OF PERSONAL SECURITY
for staff being exposed to danger


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Supporting Safety, Health and Environment Policies

Dangerous work place
Night shift

Incident

Lone worker protection

Plant security force

Security Application
With these products you achieve

- A high safety level for technical repair staff
  - working at inopportune moments
  - in technical and equipment rooms not frequently used
- A high safety level for fire fighting & assistance staff:
  - being forced to enter hazardous areas under emergency situation
  - may not be backed up by a second person
- Lone working staff
  - working in dangerous environment
  - working at filling stations
  - working in areas subject to likely gas leakage
  - being exposed to attacks
- Assistance in realisation of evacuation scenarios
  - manual and tool-based alarming of staff by SDS messages
  - ordering staff to dedicated assembly points by SDS messages
  - ordering help if a unit is not responding in time

Supporting Safety, Health & Environment Policies
Supporting Safety, Health & Environment Policies

Security Features at a Glance

- Position Finding with GPS and Beacons
- Evacuation
- Route Tracking
- Alarming
Supporting Safety, Health & Environment Policies
Security Features at a Glance

Position Finding with GPS and Beacons

- Locating persons in distress - even in-house - based on our inductive loops and beacons (transmitters at Very Low Frequency = VLF) with down to 1m accuracy (adjustable) and outdoor, based on GPS
- Registration on entering and leaving of a defined area
- Both, indoor and outdoor localisation work in parallel
- Who-is-present check
Evacuation

- Messaging functions (silent alarming, one to many Short Data Message SDS, etc.)
  - causing the radio units into a special acoustic alarm signal
  - shifts alarm messages directly into the foreground of the display
  - alarming signals remain, until staff acknowledges the receipt

- Ordering staff to dedicated assembly points by SDS messages

- Provides programming of pre-defined scripts for automatic alarm routines

- Supports automatic alarm sequences

- Different messages can be sent to different groups - all triggered by the same emergency

- Provides interfaces to external umbrella management systems (OPC server)
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Security Features at a Glance

Route Tracking

- Localisation history of this person: lists last 3 positions before the alarm trigger
- Visible monitoring of alarm situations in floor maps
- Contact-less guard control function for real time records of the guard rounds
  - supports also computer-assisted supervision of critical missions on time and target boundaries
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Security Features at a Glance

Alarming

- Alarm management with detailed information about incoming emergencies, showing -> who, -> what, -> where)
- Alarm logging, logging of response times and actions of the officer on duty
- Automatic Alarm Scenarios:
  - alarm forwarding to other Tetra Security terminals
  - evacuation procedures
  - precaution actions i.e. closing doors, switch fire-siren etc.
- Sensor technology for automatic, will-independent alarm identification
  - Position, no-motion, time and loss alarm
- Commissioning test of sensors of the TETRA (FT4 S) and DECT (FC4 S) on power-on
  - making sure, that the unit is fully operational
- Cyclic life check of all sensor functions of the unit (FT4 S / FC4 S) and the radio
  - supervises the unit function on highest technical level

Security

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Security
Current ATEX Products

- funkwerk MR380 Ex
  - Dust II 2G Ex ib IIC T4 or T6
  - Gas II 2G Ex ib IIC T4

- funkwerk FC4 Ex
  - Dust II 2D Ex ibD 21 T125°C IP6x
  - Gas II 2G Ex ib IIC T4

- funkwerk FC4 S Ex
  - Dust II 2D Ex ibD 21 T100°C IP6X
  - Gas II 2G Ex ib IIC T4

- funkwerk gsm S Ex
  - Dust II 2D Ex ibD 21 T80°C

- funkwerk FT4 Ex
  - Gas 2G Ex ib IIA T3

- funkwerk FT4 S Ex
  - Gas 2G Ex ib IIC T4 (under certification)
funkwerk TETRA radio handset - FT4 series

Characteristics

- Single TETRA radio device according to IP65 on the market (jet proof and dust tight)
- Single TETRA radio device and TETRA ATEX radio device on the market with complete integrated personal-safeguarding functions (FT4 S and FT4 S Ex)
- Single TETRA device with certification for hazardous workplaces
- Best Display of its class
  - 2,2”TFT, 240 x 320 Pixels, 262,000 Colours
- Outstanding development in the fields of ergonomics and user guidance for most simple handling
  - illuminated keys
  - individual assignable function keys
  - clearly differentiated keys for safe handling with gloves
  - big, easily reachable emergency call button
- Single TETRA device with 3 different Memory card slots (FT4 und FT4 S)
  - SIM-card for E2E encryption
  - Mini-SIM card for network carrier data
  - Micro-SD-card for storing user-specific settings and parameters
funkwerk FT4 S
TETRA personal safeguarding handset for TETRA Secury System - TSS

- Unique security functions in TETRA environment
- Localisation with room and floor accuracy, based on VLF inductive localisation transmitters (IOS beacons)
- Integrated GPS receiver (option)
- Contactless warden control function
- Big red emergency button with two-stage emergency call alarm
  - 4 will-dependent alarms - emergency call (1+2), warning (1+2)
  - 4 will-independent alarms - position, no-motion, time and loss
- Migration into existing funkwerk DECT™-Secury-Systems
- Certification for hazardous workplaces
  - meets BGR 139 requirements according to DIN V VDE 0825-1 (with R&S infrastructure only)
Funkwerk FT4 S Ex

The only TETRA EX handset with all life-saving features included!

- Intrinsically Safe acc. ATEX II 2G Ex ib IIC T4 (under certification)
- Outdoor protection class: IP 65
- Full keypad, single-hand use
- Localisation
  - GPS functionality build-in
  - Indoor- localisation by build-in VLF receiver based on VLF beacons
- Volition- independent alarms:
  - tilt
  - no-motion
  - time
  - tear-off / theft / loss alert
- Emergency alarms: 2 different types
- Technical alarm in case of unit failure
- Continuos supervision by the alarm center
- DIN VDE 0825-1 approved (Standard for hazardous workplaces)
VLF Beacon with remote antenna

- Inductive localisation transmitter, Range: 1-6m, adjustable in 16 steps
  - VLF = Very Low Frequency, inductive based transmitter up to room accuracy
  - Available as Atex version in IIC T6 (IOS-541 Ex)
Security Application - System Overview
funkwerk TETRA Secury System – TSS
TETRA System with integrated personal safeguarding function

• Single TETRA system with certification for hazardous workplaces
  (timings & security in accordance with BGR 139, valid for R&S and Damm)

• Single TETRA system providing localisation with room and floor accuracy
  based on VLF inductive localisation transmitters

• Optical signalling and presentation of localisation
  – detailed informationen about announced emergency alarms (who, what, where)

• Alarm management
  – receipt, operating, alarm tapping function
  – hostage mute mode
  – radio-based alarm transmission, as well to other mobile units

• Statistics and Logging

• Integrated in facility management system webnet

• Combination with funkwerk DECT™-Secury-System

• OPC Interface to most common building management systems
funkwerk - webnet®
Hazard management system for TETRA Secury System - TSS

- Unique hazard management system in TETRA environment
- Soft- and Hardware for presentation, processing and logging of alarms
  - Graphical overview and alarm plans of all security and building facilities
  - Control of different systems under the same "Look and Feel"
  - Modular design in web technology
  - Entire integration of the funkwerk personal security solutions with fallback option

☑ minimise risks and losses,
☑ reduce operating costs effectively
☑ reduce liability considerably.
Area accurate in-house localisation based on inductive localisation transmitters (VLF beacon)

Sensor technology for automatically and will independent alarm identification

4 different will-independent alarm types
- Position alarm
- No-motion alarm
- Time alarm
- Loss alarm

2 different manual alarm types
- Push alarm 1 + 2
Automatic Alarm Forwarding (fastest help)

- Automatic alarm forwarding to other handheld terminals to ensure rapid help

Alarm - Activation

Alarm at Refinery MAA

Push Alarm HH 7

Automatic Alarm Forwarding (fastest help)
Guard Control Function
& life check of lone workers in dangerous environment

- Defined guard rounds with contactless guard control function
- Supervision of the correct way and in time
- Random guard rounds programmable
- Submission of orders

Guard Control

1. Defined guard rounds with contactless guard control function
2. Supervision of the correct way and in time
3. Random guard rounds programmable
4. Submission of orders

Next Area: Entrance Hall in 3 min.
Order: Light Off!

Next Area: Gate 1 in 3 min.
Order: shut the door!

Next Area: Headquarter in 8 min.
Order: Light Off!
UTSS System Design Overview

TETRA Radio Infrastructure e.g. EADS, Thales, R&S, Damm etc.
funkwerk security communications
The TETRA Solution Provider

- Supplier of turnkey TETRA systems
- Project planning from one hand
- Customised system solution and integration
- Extensive service and maintenance concept
  - Certified repair service
  - 24-hours-on-call-duty and service-hotline
  - Service-network throughout Germany