**funkwerk** ))
security communications

# General Company Information
# Funkwerk Security Communications GmbH
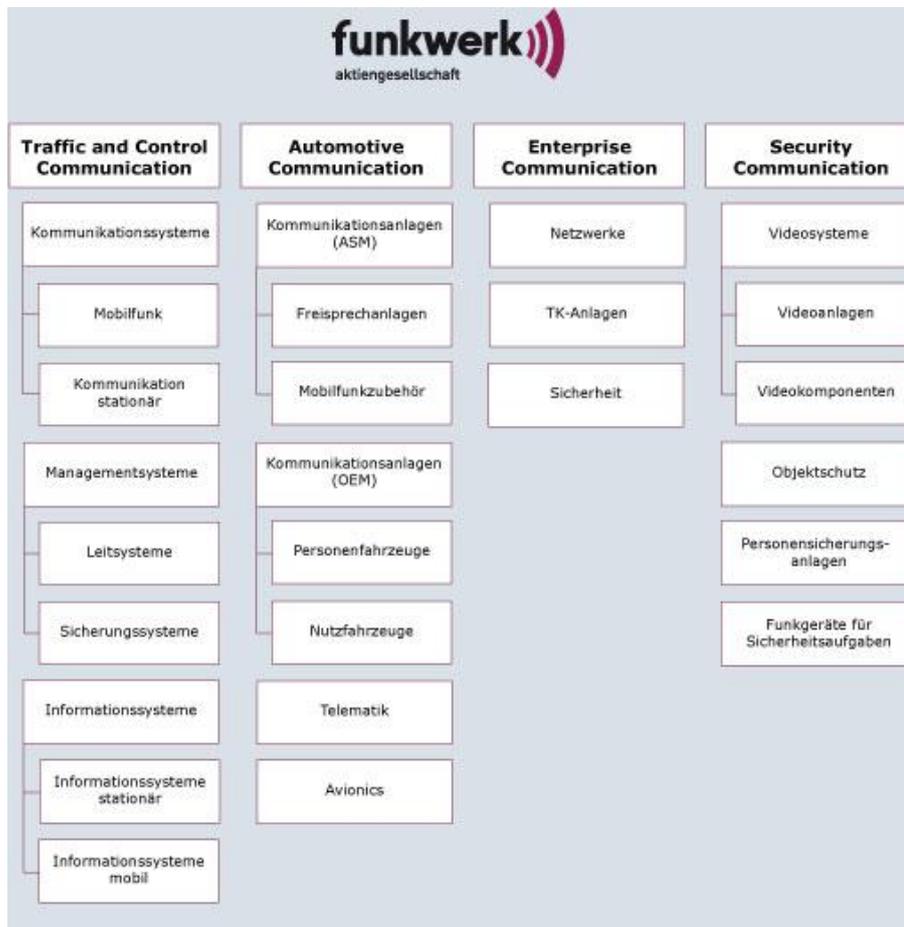
# CONTENT

# 1 Company Information

## 1.1 Funkwerk AG

Located in Kölleda near Erfurt, **Funkwerk AG** (ISIN DE0005753149) develops, manufactures and markets solution-orientated communication and information systems, with applications for vehicles, traffic control and companies, as well as by various instutions and public authorities.

Over the years, Funkwerk has focused on establishing and expanding the following business units:

- **Traffic & Control Communication**

  developing professional radio equipment for rail operators, public commuter transport, inland shipping and airports.

- **Automotive Communication**

  with a particular focus on vehicle equipment, telematics and avionics.

- **Enterprise Communication**

  delivers networks, telecommunication equipment and broadband access.

- **Security Communication**

  offers intelligent electronic security systems for the protection of buildings, sites, industrial properties, installations and persons, as well as DECT and TETRA communications solutions.

Although the business units operate independently within their market sectors, the links between them result in a concerted approach and value-generating synergies. Examples of this are integrated cash management, the equalisation of production capacities between the sites and technology transfer within the group between groups with the greatest competencies.

With these four business units, Funkwerk is well positioned to be a future market and technology leader in the field of professional communications systems.

Hallmarks of the Funkwerk business model include:  leading technological competency, a profound understanding of our clients' requirements, the flexibity that flows from being a medium-sized operation and rapid response times in transforming ideas into marketable products.

Based on this, Funkwerk has grown by leaps and bounds in past years - and in the space of only a few years, the turnover has multiplied significantly. The trusted business model is continuously developed, refined and adapted to suit the new structures.

### 1.1.1  Employees

Highly qualified and committed employees are the foundation upon which the success of the Funkwerk technology company has been built.  This is reflected in the unusually high standard of education of the employees:
- 45 percent of all Funkwerk employees have completed tertiary education,
- 50 percent have completed vocational training.

In addition, Funkwerk has implemented a programme for further professional development and to qualify employees for executive functions. Funkwerk also has an above-average involvement in vocational training.  In 2010, 60 apprentices (trainees) were prepared, at various locations, for a career in the fields of business, industry or information technology.

Flowing from its successful growth strategy, Funkwerk has created a number of jobs in the course of the past years. In this way the workforce has grown from 400 in 2001 to well over 1 350 in 2010. At this point over 550 employees are engaged in production while some 300 are involved in marketing and project management.

To maintain Funkwerk's technological edge, over 300 employees are busy with research and development at the various sites.

## 1.2 Funkwerk Security Communications GmbH

Funkwerk Security Communications GmbH (Funkwerk SC GmbH) is a wholly-owned subsiduary of Funkwerk AG, Kölleda, with around 200 employees.

Located in Salzgitter / Niedersachsen, Funkwerk Security Communications GmbH is one of Europe's leading manufacturers of mobile security and communications systems based on TETRA, DECT and GSM technology.

We have over 40 years' experience in the development and production of terminals and complete systems for personal security and messaging solutions.

The success of Funkwerk Systems is based on the fine-tuning of our systems to the individual requirements of the most varied branches of industry and application scenarios, as well as intensive and uninterrupted support by an extensive network of agency and service employees.

Funkwerk Security Communications GmbH can trace its roots back to AEG Telefunken AG, which from 1965 to 1983 did pioneering work in the fields of electrical engineering – and in particular paging. A spin-off of the AEG business units resulted in ANT Nachrichtentechnik GmbH being founded in 1983. In1990 the company was taken over by the Bosch Group, based in Stuttgart. The incorporation of Funkwerk AG in 2001 resulted in the intensive application of the development synergies and technologies of the individual divisions. This resulted in further development of personal security systems based on DECT, GSM und TETRA technology, making us the market leader in Germany with a more than 60% market share at the time.

Investment security, personal and competent service, robust and durable hardware and customisation to existing and future requirements – these aspects together with our extensive experience are reflected in the quality of our products; optimal ergonomics, high-end sensors and the latest technology all contribute to maximum future-proofing.

Anyone who chooses a Funkwerk product can also rely on the strengths of our Service Division, which has made us a market leader: here a decades-old spare parts supply and rapid repair turn-around times ensure high investment security and long-term serviceability.

### 1.2.1 Production

Funkwerk Electronic Services GmbH, a wholly-owned subsiduary of Funkwerk Security Communications GmbH, is a capable partner offering a full range of services for the logistic support and production of electronic subassemblies and equipment.

High capacity production facilities are available at the Salzgitter factory to deliver large quantities of products and devices – on schedule and of the highest quality that "Made in Germany" assures.

As one of the largest manufacturers of DECT equipment and Personal Emergency Alarm Equipment we produce about 250.000 mobile devices per annum for professional and industrial applications.

Extreme flexibility is a particular strength of our production capacity – thanks to our in-house, modular process architecture. In addition to extremely flexible, customisable production lines we also have the appropriate human resources.  Projects displaying the greatest difference in size and form can be brought to fruition. Precise manufacturing depends on planning, execution, a certified quality management system as well as intensive and personal consultation and support.

### 1.2.2 Quality Management

The high quality of our products is achieved by consistent support of an idea from conceptualisation to the completed product being used by our clients.

We involve all our employees in the process of continuous quality improvement.

Management conducts regular reviews to ensure the implementation of our quality assurance protocol and also sets quality assurance targets for the company.  These are then used to to derive targets for the various departments - and in some cases for individual employees.

The following certification speaks of the high quality of our products and services:

- IECEx Quality Assessment Summary Report 08/2009
- Quality Management System - certification by IQNet GmbH nach ISO 9001:2008 (EN)
- Quality Management System - certification by DQS GmbH nach ISO 9001:2008
- Quality Management System - certification for Nuclear Technology Facilities (KTA)
- Approval of the Quality Assurance System for Ex-Equipment by TÜV Nord (DE/EN)

### 1.2.3 Development expertise

For more than 40 years, Funkwerk Security Communications GmbH (FSC) has been involved in the development of pagers, DECT and GSM handsets. FSC has developed TETRA radios since 2006.

We focus exclusively on target markets in the professional environment, including industry, public institutions and authorities, prisons, clinics and the service sector. For decades we have positioned ourselves as the market leader in the field of personal emergency alarm devices for industry, prisons, psychiatric facilities and administrative authorities.

With an in-house department for TETRA development, Funkwerk SC aligned its field of business to digital radio communication on the TETRA standard.

Excellence in the fields of hardware and software development as well as construction enabled our expertise to be combined efficiently and in a target-orientated manner.  Our TETRA expertise is based on years of experience in developing diverse technologies.  The development staff comprises only engineers, with know-how applied to the complex specification, implementation and integration process.

This particular development expertise is well known in the market place and is also used by our associated companies.   For example, FSC developed products for digital radio communication on behalf of Funkwerk AG or Hörmann GmbH.

## 1.2.4 TETRA Radio Handset Expertise

Successes in the field of TETRA digital radio can be demonstrated by the proprietary development and delivery of our TETRA Series FT4 handsets, which have already established themselves on the market.

For industrial applications and in prisons, Funkwerk introduced the TETRA FT4 S handset at the beginning of 2010. This is equipped with high-grade sensors and innovative security functions.

The **FT4 S handsets** are equipped with operator-dependent or independent alarm modes as well as a cyclic function test and complies with the requirements of the German Institution for Statutory Accident Insurance and Prevention (BGR139).

Funkwerk offers the **FT4** as a high-tech TETRA handset for use in environments where the risk of an explosion exists.

These security solutions are particularlry suited for use in dangerous solo working environments – and in the case of the Ex-models, for use in environments with an explosion risk. The FT4 Ex-handsets comply with the ATEX 94/9/EG directive.

Currently, the combination of our security-enhancing performance characteristics and explosion-proofing is being certified in the form of our **FT4 S Ex with GPS**. In addition to GPS-based localisation in the field, this handset also offers room-specific localisation in buildings.

| An overview of TETRA Handsets | |
| --- | --- |
| **FT4 Voice**<br>Standard TETRA Handset<br>Available frequencies<br>- 380 – 430 MHz<br>- 450 – 470 MHz *)<br>  *) 410 – 470 MHz Project-specific development<br><br>Valid for all models |  |
| **FT4 S**<br>Security handset with sensors, operator-dependent or independent alarm modes as well as room-specific localisation in buildings |  |
| **FT4 Ex / FT4 EX & GPS // IA T3 and IIC T4**<br>High-tech TETRA radio in the IIA T3 protection class for use in environments with an explosion risk<br>High-tech TETRA radio in the IIC T4 Protection Class for use in environments with an explosion risk– with optional GPS |  |

| An overview of TETRA Handsets | |
|---|---|
| **FT4 S Ex & GPS**<br><br>Security handset with sensors, operator-dependent or independent alarm modes as well as room-specific localisation in buildings with additional IIC T4 Protection Class explosion-proofing and with optional GPS-based localisation in the field |  |

By means of TETRA trunking radio, the new Funkwerk FT4 series handsets integrate personal alarm-signal functions with automatic localisation functions as well as radio group and telephone functions in a single unit – a unique selling proposition in the industry.

For decades, FSC has successfully developed and marketed global solutions, based on fixed and mobile unit technology in the fields of paging / messaging, personal security, personal localisation as well as ATEX explosion-proofing.  In the process it has applied diverse technologies, such as analogue radio, DECT, GSM and TETRA. In all such developments, especially in the complex TETRA handset environment, optimised technology-specific battery management has been acquired to satisfy the professional requirements for mobile security applications with regard to standby and talk-time. These highly integrated solutions clearly show the expertise and performance capability of Funkwerk Security Communications GmbH with regard to the development and implementation of terminals in the field of new technology with security applications - especially in the field of TETRA trunking radio.

### 1.2.5  DECT Handset Expertise

Funkwerk offers the **FC4** series of as a high-tech DECT handset for general enterprise use, for use in hospitals and harsh industrial environments as well as in environments, where the risk of an explosion exists.

These security solutions are particualry suited for use in dangerous solo working environments – and in the case of the Ex-models, for use in environments with an explosion risk. The FC4 Ex-handsets comply with the ATEX 94/9/EG directive.

Same as with the **FT4 S** handsets, the **FC4** handsets are equipped with operator-dependent or independent alarm modes as well as a cyclic function test and complies with the requirements of the German Institution for Statutory Accident Insurance and Prevention (BGR139).

| An overview of DECT Handsets | |
| --- | --- |
| **D4 Office**<br><br>DECT  handset with new icon-based user interface and colour shortcut keys;<br> - TFT colour display, 65536 colours,<br> - GAP / CAP compatible<br> - Replaces Tenovis / AVAYA D3 and Funktel FC1 by using the MemCard of the D3 / FC 1 series in the D4<br> - 20 Midi ring tones, up to 90 dB SPL<br> - Strong vibration alarm,<br> - Handsfree talking through loudspeaker | |
| **FC4  - THE DECT industrial system handset**<br><br>DECT system handset with new icon-based user interface and colour shortcut keys;<br> - TFT colour display, 65536 colours,<br> - Bright keyboard lighting,<br> - 20 Midi ring tones, up to 90 dB SPL,<br> - Strong vibration alarm,<br> - Handsfree talking through loudspeaker | |
| **FC4 Medical**<br><br>Handset for medical enviroenments with antimicrobial casing surface to prevent germ growth<br>Resistant to a wide range of common disinfectants<br><br>for use in DECT GAP systems and Avaya Mobility Server Integral | |
| **FC4 S**<br><br>DECT personal emergency signal handsets with programmable manual and automatic alarm types certified according to BGR139 and therefore usable according to DIN V VDE V 0825-1<br><br>DECT personal emergency alarm handset;<br> - with emergency call(1/2)-, warning(1/2)-, loss alarm | |

| An overview of DECT Handsets | |
|---|---|
| - position, no-motion, time alarm<br>- IOS (fine) and RBS (rough) localization<br>- technical supervision | |
| **FC4 Ex**<br><br>DECT handset with ATEX protection for use in Gas Zone 1 according to Ex ib IIC T4 and Dust Zone 21 Ex ibD21 T125°C IP65<br><br>Comes with screwed-in battery as a standard; | |
| **FC4 S Ex**<br><br>DECT personal emergency alarm handset;<br>- with emergency call(1/2)-, warning(1/2)-, loss alarm<br>- position, no-motion, time alarm<br>- IOS (fine) and RBS (rough) localization<br>- technical supervision<br><br>DECT handset with ATEX protection for use in Gas Zone 1 according to Ex ib IIC T4 and Dust Zone 21 Ex ibD21 T125°C IP65 | |

By means of a DECT mobile telephone  coverage in the enterprise, the Funkwerk FC4 series of DECT handsets integrate personal alarm-signal functions with automatic localisation functions as well as excellent telephone voice functions in a single unit – a unique selling proposition in the industry.

### 1.2.6 Pager Expertise

Pagers and on-site radio telephone systems were already developed and marketed by Funkwerk at the end of the 1950s.

Beginning inductively on SW (27 und 40 MHz) up to UHF (420 - 470 MHz), selective call-receivers came into use. Already in 1959, the "Telefunken D502" became the first German-made voice-pager to come onto the market – manufactured by us (at that time, Telefunken).

In the years that followed, first analogue (with tone-only signalling), and then from 1979 digital (with numeric and alphanumeric display information) on-site systems (D600D, Alpha 1, Alpha 2 und Alpha T) were successfully developed and manufactured.

In addition, we also developed, produced and successfully marketed the Cityruf-Pager (tone-only, numeric und alphanumeric displays). Approximately 250 000 pagers were produced in total.

In a further stage of development, FSC implemented alarm functionality by means of pagers in a multi-cellular on-site system based on DECT and GSM technology.

These products continue to be developed and successfully marketed by us up to the present day. With the TETRA Pager currently being developed, Funkwerk SC will bring the 8th generation of pagers onto the market.

| Overview of Pagers | |
|---|---|
| **From 1990:**<br>POCSAG Tone-only Cityruf Receiver, German Telekom | |
| **from 1991:**<br>POCSAG numeric Cityruf Receiver, German Telekom<br><br>- Cityfon 200 | |
| **From 1991:**<br>POCSAG alphanumeric Cityruf Receiver, German Telekom<br><br>- Cityfon 300 | |
| **From 2000:**<br>POCSAG Message Pager OCP<br>- MR 226, MR 380 | |

# 2 Service Plan

Funkwerk Security Communications GmbH offers a multi-level service plan for maintenance and repair, thus ensuring the long-term and economical operation of hardware, software and installations for our customers.

## 2.1 Service Sites in Germany

Our country-wide sales and service network offers points of contact close to clients – and guarantees the fastest possible reaction times on the spot.
In addition to our Head Office in Salzgitter and branches in Berlin, Dresden, Freiburg, Kamen, Neuss, Nürnberg, Offenbach and Rostock, we have further branches in Germany for technology and project planning – guaranteeing that we are always close to our clients.
The map below offers an overview of our service and sales sites:
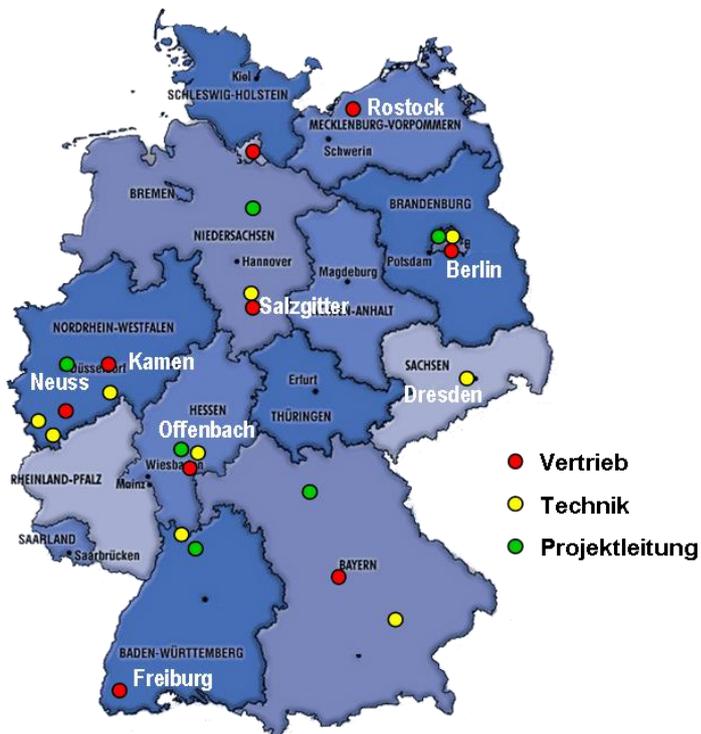
**Illustration 1 :** Overview of FSC GmbH branches

## 2.2 Hotline-Service

Service partners and contract customers can make use of the central Service Hotline at our factory in Salzgitter, which can adjust or fix problems at the point of development.  This can often save a costly call-out.   On this service hotline we offer "first aid"(trouble-shooting?) in the event of malfunctions. Enquiries can also be made by e-mail.

## 2.3 24-Hour Service Availability:

For our contract clients, we offer a 24-hour Service option.  In the event of a malfunction or if technical assistance is required, round-the-clock telephonic availability is offered – including Sundays and holidays.

## 2.4 Repair Service

Thanks to the special training and education of our employees, we can ensure that only qualified personnel are entrusted with the maintenance of your equipment. Additional specialised test equipment – (e.g.for the certification of explosion-proof sets) ensures the highest standards of safety and operational reliability of sets that have been repaired.
For the maintenance of our mobile terminals we normally set an economical flat rate: this has been created especially with larger systems in mind, thereby allowing the operating costs to be calculated and effectively managed.
The maintenance of permanently installed components and control centres is charged on a time and material basis.

We offer a 12-month guarantee on exchanged parts and the repairs to all equipment.

## 2.5 On-the-spot Repair Service

When the Hotline Service cannot offer further assistance, the help of our Service Centre can be requested.  The economical and precisely targeted rectification of faults is based on competent situation analysis and trouble-shooting.

## 2.6 Express Repair Service

At the request of the client and in exceptional circumstances, the repair of terminals can be completed within one working day.  The standard repair times are guaranteed.  Thanks to our repair management software, repairs are process integrated – ensuring high levels of serviceability for the user.

## 2.7 Instruction and Training

Training in the latest technology and developments forms an integral part of our customer support. In addition to the continuous training of our service staff, we also offer clients a detailed introduction to the system in use.  This forms part of setting up the system but individual instruction is also possible, on request.

## 2.8 Spare Parts Plan

As a manufacturer, we are in a position to ensure the long-term availability of original spare parts and components, including those for older generation equipment and custom-made items. Thanks to our service centre's direct contact with the development and manufacturing divisions, it is always up to date with the latest technology.
Repairs of sets and systems are always carried out using original spares and parametrization always follows our quality requirements.