



Modular, versatile, universal.

## f.airnet DECT over IP

**IP-based, expandable, modular**  
**Telephony and personal security with messaging and localisation**

# f.airnet DECT over IP

## Benchmark for IP-based communication

### A solution for many applications



Old-age and nursing homes



Medical practices, hospitals and psychiatric wards



Industrial and factory security



Industrial areas with an explosion hazard



Judicial and public authorities, public institutions

### The f.airnet IP-based communication system –the professional communication infrastructure

- Can be used universally—as a new installation or upgrade
- Cordless DECT mobility
- Messaging functions
- Personal emergency signal functions
- Localisation

### Efficient

f.airnet offers the highest quality voice and data transmission in an IP network: Use state-of-the-art IP infrastructures for development and upgrading.

### Versatile

f.airnet can be upgraded with up to 750 DECT base stations and up to 1 500 handsets at minimal additional cost. If required, larger systems can be created simply by clustering. Your entire office or business premises can enjoy cordless mobility coverage provided by the DECT radio network; even outlying locations can be included in the infrastructure.

### Modular

Professional mobile communication, personal security and telephony are combined in a single solution—standards-compliant and certified. The system can be upgraded at any time by:

- Terminals
- DECT base stations
- Messaging
- Personal security
- Localisation

# f.airnet DECT over IP

## Optimal communication

### State-of-the-art voice communication

■ Irrespective of whether you wish to continue using existing telephone systems or to switch directly to an “all IP” solution, f.airnet can be customised accordingly. Outgoing communication takes place via your existing telephone infrastructure, a media gateway or simply via an “all IP” service provider.

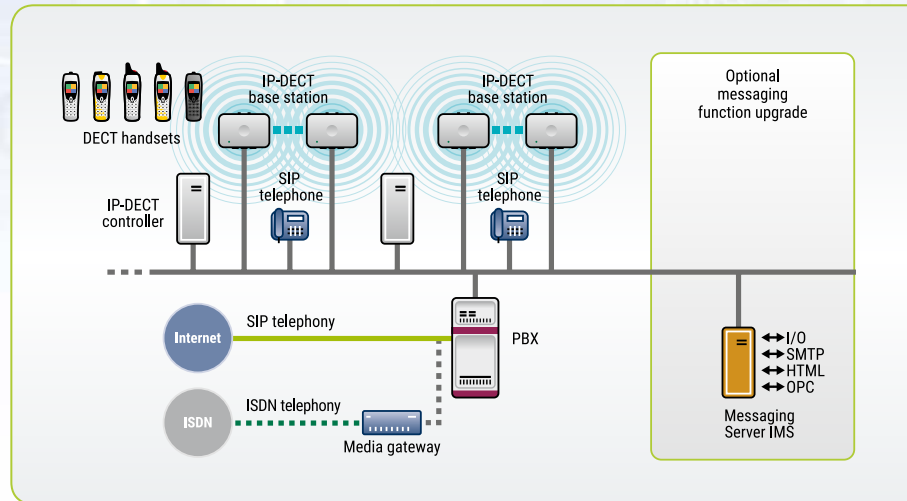
Advanced DECT base stations, which can be networked via standard IP connections, form the basis. This enables the system to be integrated in existing LAN networks or to be upgraded and expanded cost-effectively with standard components.

The availability of a wide variety of system components and antennas enables the creation of a versatile solution for the greatest diversity of requirements, thus assuring the uncomplicated delivery of reliable radio coverage—even in demanding environments, such as:

- Inner areas of buildings
- Complex industrial facilities
- Halls and tunnels
- Basements and machinery spaces
- Expansive outdoor sites
- Areas with a risk of explosion

### High-end messaging functions

- Dynamic Broadcast Messaging (simultaneous transmission of messages to all DECT devices that are logged in)
- Integrated messaging function with 140 alphanumeric characters per message
- Immediate transmission on the DECT network
- Message priority can be set within 10 levels
- Individual display and signalling settings per priority level
  - Display background colour with flashing function
  - Vibration function
  - Various tones and volumes
  - Interruption of muting
  - Cancellation call, which can be set for each priority level
  - Signal duration can be set individually (1 ... 240 seconds or until acknowledged manually)
- Complies with all the requirements of BGR (DIN V VDE 0825-1)



# f.airnet Security

## Protection of life and limb

### Quickest assistance with funktel Security

In addition to providing voice communication and messaging, the f.airnet system can be enhanced with specific specialised personal safety functions. To do so, f.airnet is upgraded with the funktel Security application as well as inductive localisation beacons in order to enable the precise localisation of persons.

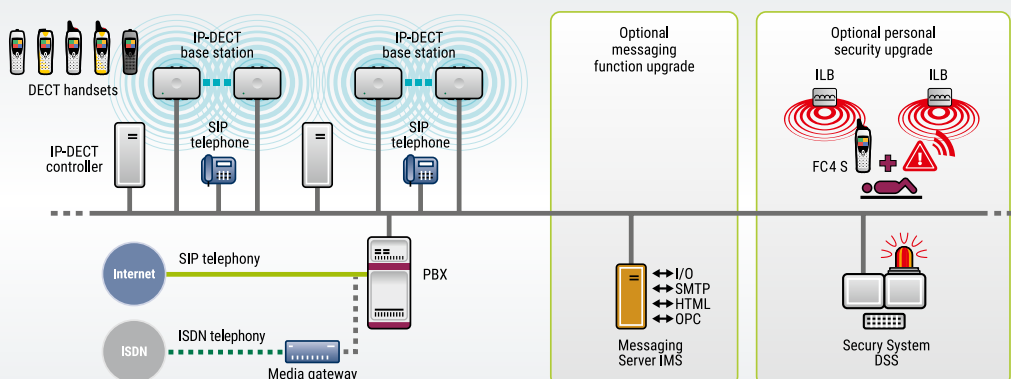
This, in conjunction with sensors for the manual and automatic triggering of alarms and localisation that are integrated in the handsets, assures the optimal safeguarding of persons and a rapid response in emergency situations.

The funktel Security application offers comprehensive, central alarm management on a client/server basis. In addition to the automatic logging of all events, signals and alarms, an optimal overview of login processes as well as localisation information regarding persons in an emergency is also assured—accurate to the floor and room.

For the efficient control of assistance and to provide information in the event of alarms and evacuation, the alarm monitoring system at the control centre can be displayed on floor plans be supported with video. In addition, eavesdropping or voice connections, which can even be remotely controlled, can be established with the employees concerned.

Individually upgradable Security functions:

- Relaying and signalling of alarms to switchboards and handsets
- Localisation with floor and room accuracy.
- Connection with 3rd-part systems (e.g. video, fire detectors, sirens, etc.)
- Coupling with machines and switching contacts for the automatic or manual initiation of alarm or status reports



### System overview of the f.airnet Security system

- Stand-alone system or part of a risk management system
- Connection with other alarm systems via standardised interfaces.
- Alarm control centre with one or more alarm work stations
- Remote alarm work stations, also covering all locations
- Processing of alarms with
  - site plan display and control of telephony and messaging functions
  - Continuously updated alarm displays offering room/area/floor accuracy on site plans
  - Insertion of video from surveillance cameras
- Remotely controlled response and eavesdropping functions for the fastest possible evaluation of a dangerous situation, even without intervention by the person who is raising the alarm
- Automatic, immediate relaying of alarms to other mobile devices to provide assistance as quickly as possible.
- Email transmission and relaying of alarms in the event of a dangerous situation escalating
- Automatic or manual triggering of contacts for the control of external signalling devices (e.g. sirens, rotating beacons, door locking mechanisms, etc.)
- Monitoring of assistance, logging and documentation
- Self-monitoring of system functionality
- Automatic login and logout procedure for the alarm devices, with technical testing of the alarm sensors in the device.
- Voice communication with extensions and the public telephone network (roaming)
- High subscriber capacity and expansion levels with handover throughout the network
- Certification: BGR139 / DIN V VDE V 0825-1

# f.airnet Control centre

## Always safe!

### funktel Security Server

■ The Security Server is the central point of the system and consists of a professional PC server (for 24-hour operation), the Security software as well the funkkel management system.

All alarms are evaluated by the Security Server and relayed to a client (workstation). At the same time, complete alarm messages are relayed to other DECT mobile devices in the system.

In addition, an alarm can be relayed to further pagers or via email and SMS and can even be used to actuate contacts to control external alarm devices (fire alarms, sirens, video systems, etc.)

A special software package offers the option of enhancing and upgrading f.airnet with an efficient command and control system for guard patrols.

The Security software can be configured and adapted so flexibly that even complex alarm situations in large networks can be displayed and processed in a clear and manageable manner.

### Highlights

- Multi-user client-server concept
- Automatic function check of logged in devices
- Emergency call display and processing
- Monitoring and logging of emergency call processing
- Professional messaging for the dispatch of individual and predefined messages with various priorities
- Contact reporting and relay control
- Cost-effective versions available for small systems

### Control centre and alarm management software

■ funkkel offers a highly efficient alarm management system with intuitive and ergonomic operator prompting for the recognition, processing and tracking of alarm messages and emergency situations. In doing so, the system guides the user step by step in order to ensure that alarms are processed in a fast and fault-free manner.

### Operation without an alarm server

In small systems that would not require BG\* approval (in Germany), it is possible to configure the system to allow it to be operated and alarms to be rest without a workstation being required.

### DECT telephony and TETRA digital radio

■ funkkel Security systems offer all the features required for personal security—localisation, messaging, as well as guard control functions—in conjunction with DECT and TETRA.

The connection of the alarm control centre and the Security server as well as the integration of localisation and alarm systems follows a parallel path in both technologies, by virtue of the use of one and the same Security control centre and alarm interfaces. This means that capital costs are minimised and all the advantages of DECT and TETRA communication are combined in one system.

An existing TETRA Security system can thus be expanded with the DECT Security system without any problems—and vice versa. Naturally, the planning and implementation of a combined DECT and TETRA system is also possible and sensible, which then allows the most diverse communication requirements of a company to be fulfilled.



# f.airnet Localisation

## Assuring rapid rescue

### Localisation and monitoring

■ f.airnet enables precise localisation by upgrading the system with inductive localisation beacons (ILBs). The exact whereabouts of a person in distress can thus be determined and then displayed and tracked on site plans at the client work stations. This enables rescue efforts to be launched promptly, as well as the initiation of other necessary measures.

#### Highlights

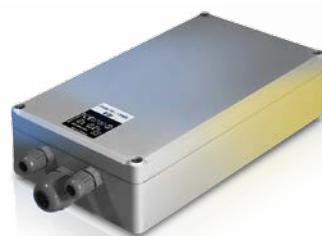
- The position is played accurately in terms of the area and floor on site plans and layouts.
- Automatic relaying of alarms to other mobile devices
- Silent alarms
- Hostage (switch-off) function
- Alarm location tracking
- Evacuation presentation
- Eavesdropping function (in the event of an emergency)
- Automatic telephone functions for secure communication in the event of an emergency

#### Supplementary functions

- Activation of process control systems
- Activation of video systems
- Processing of the FB4's switching signals

#### IOS452 localisation beacon

- Low frequency localisation process by means of induction
- Low reflectivity and not subject to attenuation caused by the body.
- Localisation range can be set precisely (0,7...6 m)
- Demarcation of large localisation fields by connecting external loop antennas (e.g. for in-floor installation)
- Configuration possible without opening the housing, also after installation
- Recognition of the direction of movement when connected to external antennas
- Suitable for outdoor and flush mounting (IP 65 protection)
- Sabotage-proof installation with sabotage alarm
- Optional: Function monitoring and alarm initiation



### WGS guard patrol command and control system

■ The WGS enhances the comprehensive control and configuration functions of the f.airnet system with the active and automatic guidance of guards, thus enabling a completely new way of organising guard service processes.

“People are creatures of habit”—this bit of wisdom has already made so many systems vulnerable: Procedures and rounds that always remain the same are predictable and can be spied upon. The f.airnet guard patrol module assists in disrupting precisely these habits by means issuing random patrol instructions. Guard patrols can thus be randomised automatically or changed to suit current requirements (e.g. omission of certain locations, changes in sequence, the interruption / cancellation of patrols).

Existing or additionally installed ILB localisation beacons can be used and individually defined as checkpoints. Decentralised attendance clocks, card readers or checkpoints can thus be eliminated completely.

#### Control functions

- Random or manual selection of defined guard patrols
- Simultaneous control and monitoring of multiple guard patrols.
- Automatic display of of the next contact point on the handset when passing a checkpoint (with time specified).
- Instructions regarding the required measures issued automatically by the display on the handset. “in the right place at the right time”
- Automatic transmission of time and place details when passing a check point
- Simultaneous display of alarm to client
- Monitoring and logging of localisation and alarms



# funktel SWAT workstation

## Outstanding crisis management



### Special SWAT functions

■ In the event of attacks or hostage taking, the SWAT workstation function enables SWAT (police Special Weapons and Tactics) teams to eavesdrop or to intervene in communication, as well as to trace devices precisely—to resolve critical solutions quickly and safely.

In order to avoid disruption and the monitoring of normal operations—as well as to protect the personal rights of employees and members of staff—the SWAT function is only available after a password-protected user login. Only then do the central SWAT functions become available.

### Highlights

- Remote-controlled muting of a Personal Alarm Device
- Stealthy SWAT mode at the alarm device
  - Standby display
  - Voice function no longer possible
  - Triggering of alarm possible
- Eavesdropping option in the event of hostage taking
- Initiation of the SWAT function directly on the alarm device by means of a side-mounted warning alarm key (programmable)
- Suppression of the automatic relaying of an alarm to other devices / assistance groups
- Localisation of the alarm device with interrogation of the previous locations (ILB localisation backtracking)
- Tracking of the location of the alarm device involved in the emergency (e.g. when being dragged or guards in the event of an alarm)

### SWAT alarm control point functions

- SWAT functions and monitoring only enabled after password-protected user login (not in normal mode)
- SWAT alarm in wait loop (alarm information including actual message state)
- Manual relaying of the SWAT alarm to other devices / assistance groups via separate button (no report to device in possession of hostage takers)
- Remote-controlled resetting of the alarm device (to normal state) at the end of the hostage incident
- Silent alarm at alarm device possible (alarm indication by vibration only, with manual acknowledgement)
- Logging of all actions for evaluation and verification

# f.airnet

## Hardware components

### Components for flexible expansion –“grow as required”

■ The f.airnet system components place optimised modules at your disposal, which when fully implemented with a control centre and mobile personal emergency signal devices offer a personal security system that even complies with BG\* requirements. In doing so, the required components are selected with due regard of the available infrastructure—the system grows flexibly according to your requirements. The 19" rack system and stand-alone hardware allow a flexible, individualised configuration.



### Digital telephone systems

Basic: for up to 70 subscribers  
Medium: for up to 240 subscribers  
Pro: for up to 1,000 subscribers



### IP-DECT controllers

DC100: up to 250 handsets  
DC200: up to 1,500 handsets



### IP-DECT base stations

FB4 IP TP: LAN connection  
FB4 IP FX: Fibre optic connection  
Indoor, outdoor and ATEX versions  
Power over Ethernet (PoE) or plug-in power supply  
Input for switching contact

### DECT handsets



funktel FC4 Series: for industry and ATEX  
funktel FC4 Medical: for healthcare  
funktel D11 Series: for office users  
funktel FC11 Series: for industry

### Various communication

All funktel DECT handsets enable convenient voice communication with other mobile terminals, phones on a PBX or the public telephone network, while offering all the handy features that you would expect. The high availability of communication paths combined with unlimited freedom of movement assures user acceptance and flexibility while also increasing the efficiency of ongoing operations.

### Messaging

All funktel DECT handsets offer comprehensive messaging functions and allow alarm and text messages sent by other users to be received. Automatically-generated error messages, notifications from computer systems or manually-generated messages can also be received during a call. High-contrast alphanumeric displays present the alarm and text messages in a clearly legible form, even under conditions of poor visibility.

### Other terminals

Corded IP telephony





# f.airnet V

## f.airnet in the virtual environment

### Unitary hardware—no compromises

■ The virtual variants of the f.airnet components create the possibility for you to set up a communication and security solution that is matched to your individual requirements. Irrespective of whether you wish to upgrade an existing telephone system with a modern, multi-cell DECT system with messaging functionality, or if you are refitting an existing telephone connection with a modern, all-IP connection, you will always find the matching solution with f.airnet components.

Naturally, subsequent upgrading of the system is possible without any difficulty. Once a system has been acquired, it can be upgraded with BG\*-certified f.airnet Security security components. Of course, this also applies to features such as central answering machines, conference rooms, etc.

For the purposes of operating as a security or personal security solution, it is also possible to acknowledge alarms from the terminals. This enables the system to be operated without its own workstation, thus reducing operating costs.

### Flexible sizing—from small to large

The modular system architecture enables an individual configuration that is tailored to your requirements. The implementation of the system as a complete solution is just as feasible as a solution comprising only a DECT server for corporate communication within branches and subsidiaries.

### Environments with an explosion hazard

The system is even well suited for use in the most hazardous working environments. The active components such as DECT transmitters and DECT handsets are available in a dust- and explosion-proof version that complies with European ATEX directives.

### Application examples

- All-in-one telephone system
- In-house emergency call system
- BG 139-certified PES system

### f.airnet V components

#### f.airnet V Controller Bundle

The f.airnet V Controller Bundle is the basis of the system and supports up to 30 DECT base stations and 100 DECT handsets. It consists of an efficient ultra-compact server and the virtual DECT controller with messaging upgrade.



#### f.airnet V telephone systems

f.airnet telephone system upgrade for up to 50 or 100 subscribers respectively and all-IP support. These upgrades are equipped with all the convenient features (licence-dependent) that have become familiar in telephone systems.



#### f.airnet V Security

The optional security upgrade opens all the possibilities for personal security. These range from an easy-to-operate application in old-age homes and nursing homes without a workstation up to a BG-certified system for the highest security requirements.

Messaging
DECT controller
Private branch exchange
Security



# funktel FC4 DECT handset series

## Ergonomic, safe, robust



### Industrial mobile device and telephone in one: Your perfect mobile companion for the greatest level of safety

■ With the FC4 series of mobile DECT terminals, funktel sets the benchmark in respect of functionality, as well as operating and handling convenience. Optimal ergonomics, comprehensive protection against external influences as well as extensive features distinguish the FC4 series of devices.

The sturdy, dust-proof housing that offers IP65-compliant jet-proof protection makes the funktel FC4 a robust, high-quality companion, even in industrial environments. All settings are stored on an interchangeable MemCard (SIM card), enabling the handset to be swapped seamlessly in the event of servicing being required.

All handsets in the funktel FC4 series offer the convenience of features such as hands-free calling, MIDI ringtones, vibration signalling as well as an icon-based user interface.

### DECT handset for areas with an explosion hazard funktel FC4 Ex

Intrinsically safe mobile devices that comply with the strictest European ATEX directives are available for use in environments with an explosion hazard.

### DECT handset for healthcare funktel FC4 Medical

The FC4 Medical is equipped with an anti-microbial housing surface specifically for use in the hospital and nursing home sector. Bacterial reproduction on the housing is thus reduced. Thanks to its IP65 protection level, the FC4 Medical is also best suited for safe use in areas such as wet cells.

### DECT handset alarm devices funktel FC4 S / FC4 S Ex

The FC4 S and FC4 S Ex mobile devices offer high quality sensors for localisation as well as manual and automatic alarms. This enables the active safeguarding of persons working alone in hazardous working environments—even in accordance with the strict directives of BGR139. By virtue of the integrated special functions, the funktel FC4 S series of mobile terminals are capable of dealing with any emergency situation.

Various manual alarms (emergency call and warning alarm) as well as automatic alarm modes (position, loss, man-down and time alarms) are available—in strict compliance with the German BG\* standards.

#### Manual alarms

Push alarm 1 (Emergency)



Push alarm 2 (Warning)



#### Automatic alarms

Loss alarm



Position alarm



Time alarm



No-motion alarm



# funktel D11 / FC11 DECT handset series

## New generation – modern, efficient, ergonomic



### **funktel D11** **Optimal mobility in the office**

■ The funktel D11 reinvents cordless business and convenience telephony. You will find that the professional voice and messaging functions, tried-and-tested ergonomics and innovative user prompting make a convincing proposition.

The handy housing withstands demanding situations without any problem. Operating the funktel D11 is an everyday pleasure by virtue of the innovative menu prompting with its clear structure and intuitive symbology.

The funktel D11 is the ideal terminal for integral and f.airnet communication systems. Use at various sites is supported by automatic login. Thanks to universal GAP functionality you can also communicate via the funktel D11 with almost all DECT systems and exchanges.



*Innovative menu prompting:  
The menu has been developed  
from scratch and the logical  
menu structure enables  
intuitive operation of numerous  
convenience features.*

### **funktel FC11** **Handy, ergonomic, robust**

■ The funktel FC11 offers users the perfect industrial handset for harsh everyday conditions: handy, convenient, robust and durable—even in an industrial environment. No matter whether professional voice and messaging functions, sophisticated ergonomics or innovative user prompting are required: The funktel FC 11 delivers a convincing solution across the board.

The sturdy industrial housing sits in the hand perfectly and withstands high loadings or falls from a great height (tested up to 1,8 m) without any problem. Thanks to the guaranteed IP 65 protection class, the funktel FC 11 is dust-and waterproof and suitable for use outdoors and in harsh industrial environments. The sturdy belt clip ensures secure support and great carrying comfort. The bright 2-inch screen impresses with its crystal clear display, even under unfavourable lighting conditions. This is achieved by new user prompting with clear icons and an innovative menu structure for intuitive operation. The strong vibrator for hazard alarms and a discrete emergency call button guarantee the highest level of protection in everyday use.

The funktel FC11 supports all features of the funktel Integral and f.airnet communication systems. Device settings can be imported simply via MEM card directly from the FC1, D3 and FC4 series funktel handsets without manual configuration being required. A comprehensive range of accessories with rechargeable batteries, headsets as well as various pouches is available. The handsets are thus individually upgradable and ready for the future.

# Security & Communication

**MORE THAN 50 YEARS OF EXPERIENCE**



**Personal security**



**Guard round control**



**Localisation**



**Explosion protection**



**People tracking**



**Messaging**

Based in Salzgitter, funktel GmbH is a leading manufacturer of professional security and communication solutions based on DECT, GSM and TETRA technology for industry, utilities and public authorities.

We are specialists in the field of personal emergency signal devices and have built up over 50 years worth of know-how in the development and production of terminals that comply with the directives of the (Federal German) Employers' Liability Insurance Association and with requirements for intrinsic safety.

At our headquarters in Salzgitter we develop and manufacture mobile terminals and certified personal emergency signal devices based on DECT and TETRA technology—as one of the largest producers of handsets for professional and industrial applications.

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