TetraFlex® for Airports
- when reliable communication is crucial

TetraFlex® Communications System ensures safe, reliable and efficient aircraft turnaround

Global development

In recent decades, air traffic has experienced astonishing development, resulting in an ever-increasing number of passengers.
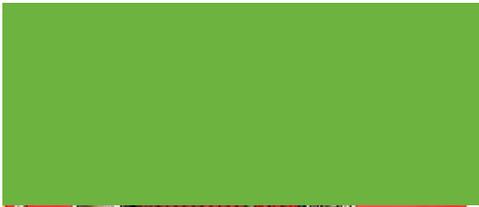
Air transport has grown more than tenfold in less than 40 years, becoming truly global and affordable to more people than ever.

Against this background, both airports and airlines are faced with tough challenges in their daily operations. The success of any airport is measured on the efficient turnaround of passengers, baggage and freight. At the same time, the importance of safety and security is an increasing issue.

Having the right communications platform has become a key factor in ensuring the necessary safety and operational efficiency of an airport operation.

The flexible and 100% reliable solution

DAMM's advanced TetraFlex® solution provides crucial communications integration on a single platform, linking airport operations, airline staff, security and emergency units and enhancing efficiency and safety. Total reliability and 100% uptime are guaranteed through full redundancy of components and critical system information.

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DAMM's TetraFlex®
Solution for Airports

DAMM's TetraFlex® solution provides a 100% reliable and fully trunked TETRA communications system. This enables private and secure voice and data communications across all operational airport functions for increased efficiency and optimized safety.
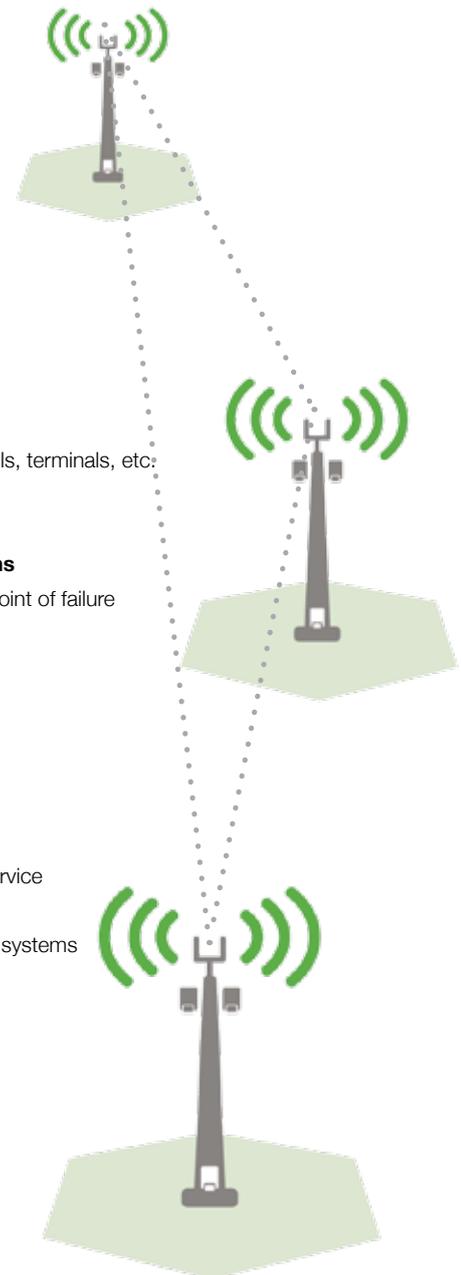
Typical voice and data requirements:

- Emergency management
- Aircraft turnaround at gates
- Check-In
- Security
- Baggage handling
- Catering services
- Vehicle fleets (i.e. terminal buses, de-icing vehicles)
- Fuelling
- Hangar area and aircraft maintenance

Examples of TetraFlex® applications integration

- Workflow management
- Geo fencing
- RFID tags at control points for patrol routes
- Passenger emergency calls from Sky Train monorails, terminals, etc.
- Airport flight information database

Key TetraFlex® features for airport communications

- 100% reliability: redundancy, back-ups, no single point of failure
- Spectrum efficiency
- High voice quality – low background noise
- Priority Calls and Full Duplex Calls
- Full encryption
- Data capabilities
- Flight-oriented dynamic group assignments
- Excellent indoor and outdoor radio coverage
- Easy and quick scalability without interruption to service
- GPS positioning system
- Easily accessible API for integration into third-party systems

Secure site coverage

A TETRA network provides secure and reliable mission-critical voice and data communications to ensure seamlessly integrated workflow management throughout airport, airline and air cargo operations.

To accommodate increasing numbers of users, TETRA provides extensive network capacity through more cost-efficient frequency spectrum efficiency than conventional radio technologies for larger systems.

The 100% IP-based technology used by TetraFlex® enables easy scalability of both capacity and coverage, protecting the value of your investment in the future. This means you can quickly and cost-effectively expand the network as your needs develop, creating fully integrated communications across multiple airport operations, such as security, emergency and aircraft turnarounds at gates.

TetraFlex® also features high-power base stations, delivering high output power to distributed antenna systems and leaky feeder solutions for extended coverage in indoor areas.

100% reliability

To guarantee 100% up-time, the system is delivered with full component redundancy. Further security is provided by the TetraFlex® intelligent distributed network architecture.

This means that all system information is constantly replicated to all sites in the network, allowing call and data traffic to continue uninterrupted if one or more sites lose connection with the rest of the network. In addition, this enables simple self-configuring site expansion and automatic re-establishment following a network interruption, without interrupting your operations.

Optimized installation for airport requirements

The TetraFlex® IP65 encapsulated outdoor base station is well suited to outdoor installations in harsh environments. Together with the system's compact design, it is optimized for direct installation on buildings or masts, securing coverage across the entire airport site. The system can be installed using any combination of outdoor base stations and high-capacity indoor base stations, as required.

TetraFlex® Outdoor Base Station

About TETRA

TETRA (terrestrial trunked radio) is a digital-trunked professional mobile radio standard developed by ETSI, the European Telecommunications Standards Institute.

TETRA was originally developed to provide more spectrum-efficient digital voice and data technology for users of private mobile radio systems. This group extends from countrywide government radio networks with hundreds of thousands of users, right down to small single-site systems with as few as 15 users.

TETRA technology is currently being used in more than 160 countries. In recent years, TETRA has proved to be the ideal technology choice for transport communications. With installations across the globe, transport is today the second largest sector using TETRA communication technology after public safety.

The core technologies used in the TETRA standard – such as digital, trunking and time division multiple access (TDMA) – provide a number of inherent advantages and benefits, including voice quality, RF coverage, data services and security.

Dispatch solution

Effective dispatching is a key tool for achieving increased efficiency. Using the TetraFlex® Dispatcher solution, single subscribers as well as dedicated subscriber groups (for example, everyone working on a specific flight or all emergency units), can easily be dispatched by the operational centre. Thanks to the built-in GPS positioning system, users and vehicles can easily be tracked and movements optimized in real-time. In addition, the system's geo-fencing functionalities can be used to generate alarms whenever a vehicle is too close to a specific geographical area, such as a runway.

TetraFlex® Dispatcher

Unlimited third-party application integration

TetraFlex® is supplied with an easily accessible application programming interface (API). This allows straightforward development and integration of existing or customer-designed airport applications, such as workflow management or the airport flight information database.

Remote network management and surveillance

By supporting remote connection, the TetraFlex® Network Management system provides easy access to configuration and surveillance of the entire network and all subscribers. It comes with a Google map already installed, which monitors the alarm status of all site positions.

Voice and data collection for increased operational productivity

For many modern enterprises, TetraFlex® plays a vital role in providing accurate operational data. This can then be used in decision-making for improved operational processes, recommendations and forecasts, planning, costing and report preparation.

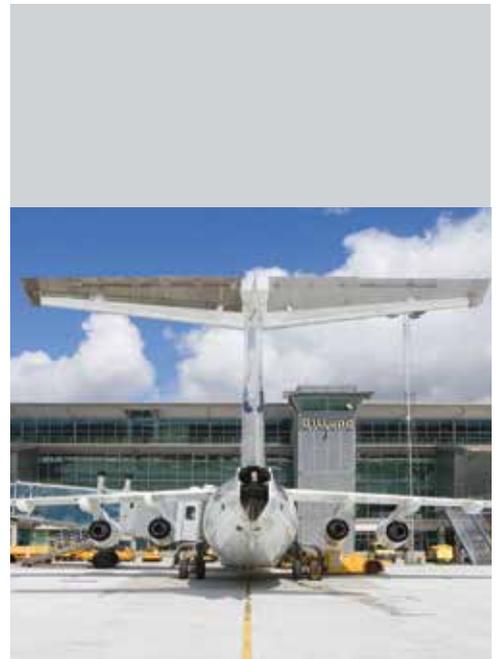*TetraFlex® Voice and Data Logging and Replay*

The TetraFlex® Voice and Data Management solution provides full voice and data logging facilities, as well as replay, across the entire network. This enables effortless incident reconstruction while also gathering valuable statistics on operational performance for future efficiency improvements.

TetraFlex® High Capacity Indoor Base Station

Complete Coverage

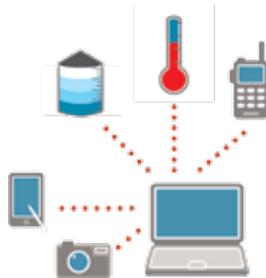**Secure voice communications**

With the TetraFlex® Communications System used in airports, user-defined groups and staff teams can easily be defined and coordinated. TETRA's end-to-end encryption ensures highly secure communications that are well protected against eavesdroppers.

The system's highly flexible voice communication services support individual private calls, group calls, telephony communications (PSTN) and more; always with crystal-clear voice quality, even in the noisiest areas.

For emergency incidents, TetraFlex® provides emergency calls, man-down facilities and override functions. The useful dynamic group calling feature allows the group assignment of individual handsets, simply through radio commands. This is widely used in airports for the flexible assigning of staff involved in airplane turnarounds at gates, using individual flight numbers.

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TetraFlex® Packet Data Gateway

Efficient data communications

TetraFlex® data services are the key to achieving operational efficiency. Resource management can be improved through the simple exchange of status messaging, without the need for additional bandwith.

TetraFlex® data services also enable SCADA and telemetry data to be used for reporting alarms and failures or collecting data for improving operational performance in support of third-party applications, such as vehicle management systems.

Data and alarms can be sent to operational centers or direct to vehicles or handheld TETRA terminal displays. Existing data and telemetry systems or workflow management systems can be seamlessly integrated via the easily accessible TetraFlex® API.

TetraFlex® Voice Gateway

Our customers

We have cooperated successfully with a number of major global airport operations. Their choice of DAMM's TetraFlex® communications system means that both they and their passengers are today enjoying the benefits of increased efficiency and safety.

- Frankfurt Airport, Germany
- Rome Fiumicino Airport, Italy
- Eindhoven Airport, Holland
- Billund Airport, Denmark
- Liege Airport, Belgium
- Burgas Airport, Bulgaria
- Varna Airport, Bulgaria
- Szczecin-Goleniów Airport, Poland
- Wroclaw Airport, Poland
- Friedrichshafen Airport, Germany
- Airport Lodz, Poland
- Gdynia Airport, Poland
- Chopin Airport, Poland
- Groningen Airport Eelde, Holland

> " TetraFlex® provides complete site coverage and easy scalability as needs change. "

Stay in touch

At DAMM, you will find straightforward business processes and lean sales and support organisations that make it easy for you to do business with us anywhere in the world.

DAMM Cellular Systems A/S is a world leader in the provision of scalable, flexible, user-friendly and cost-effective TETRA infrastructure products to industrial, commercial and public safety customers. As a key player within professional radio communications for more than 30 years, DAMM holds a leadership position in developing TETRA technology through superior engineering and a constant focus on customer needs and reduced complexity.

The DAMM TetraFlex® system is a highly cost-effective solution offering rapid deployment of TETRA infrastructure, easy access to responsive expert support and the full benefits of cutting-edge technology. DAMM solutions are available worldwide through an exclusive network of partners.

For more information, please visit www.damm.dk