

# RADIO TECHNOLOGIES AT YOUR AIRPORT

## CONSIDERATIONS WHEN CHOOSING AIRPORT PROFESSIONAL MOBILE RADIO (PMR) TECHNOLOGY

Several radio technologies are available to airports as a suitable ground communications solution. The decisions around deployment will largely revolve around the number of subscribers, functionality and cost. While initial cost will have a major influence, the system must also satisfy many basic requirements. These include:

### 1. System subscribers

Typically, the larger the airport the higher the required efficiency and the more mission-critical the ground radio system will be. So, larger airports will require exceptionally high system availability – a failure in the system can cause serious delays or even airport closure; while for smaller airports less criticality may suffice. Different radio technologies provide different levels of availability. So, what do you need?

### 2. Ancillary revenue

Will radio technology be used only for airport/airline employees? Or, will you offer these services to your other tenants and generate additional revenue? Ancillary revenue could turn your radio system into a profit centre, as opposed to a cost.

### 3. Coverage and capacity

Most airports have high traffic density within just a few square miles and difficult areas for radio coverage, and as such both the radio system technology and in building coverage need to be considered carefully.

### 4. Health and safety

Unlike analogue systems, digital handsets in airports typically transmit below 1W – increasing battery performance and improving the health and safety of the workforce.

### 5. Spectrum availability

Does the airport/airline have access to the right frequency bands and enough resource to provide the service? A TETRA network will need specific frequency bands 450-470 MHz or 809-824/854-869 MHz and enough radio channels for the traffic expected.

### 6. Speech services

All radio systems support voice, but what if you need functionality like group calls, individual calls, emergency and broadcast calls? Prioritization is equally important to ensure certain individuals and groups get the resources when they need them. Not all radio technologies provide these; will your system support them?

### 7. Data services

Will the system only offer voice services or do you also want to include data services? No current PMR system provides broadband data, but some support data applications.

For example, SITA has developed some applications over TETRA. What applications do you want or do you envisage? Do you already have applications that need supporting?

### 8. PMR Evolution

Do you want a system that can evolve and grow with your needs? An IP based system will facilitate such an evolution; however other considerations may also be required such as communication gateways and migration paths to next generation 4G (LTE) technology.

### 9. Interoperability requirements

All systems state they are open and interoperable, but what guarantees do you have? Can you procure end-user devices from several vendors and operate them?

### 10. Resilience and availability

What services are you planning to use over the system and how critical are the radio systems in your airport? Do you require 99.999% availability (five 9s) or less?

### 11. Migration

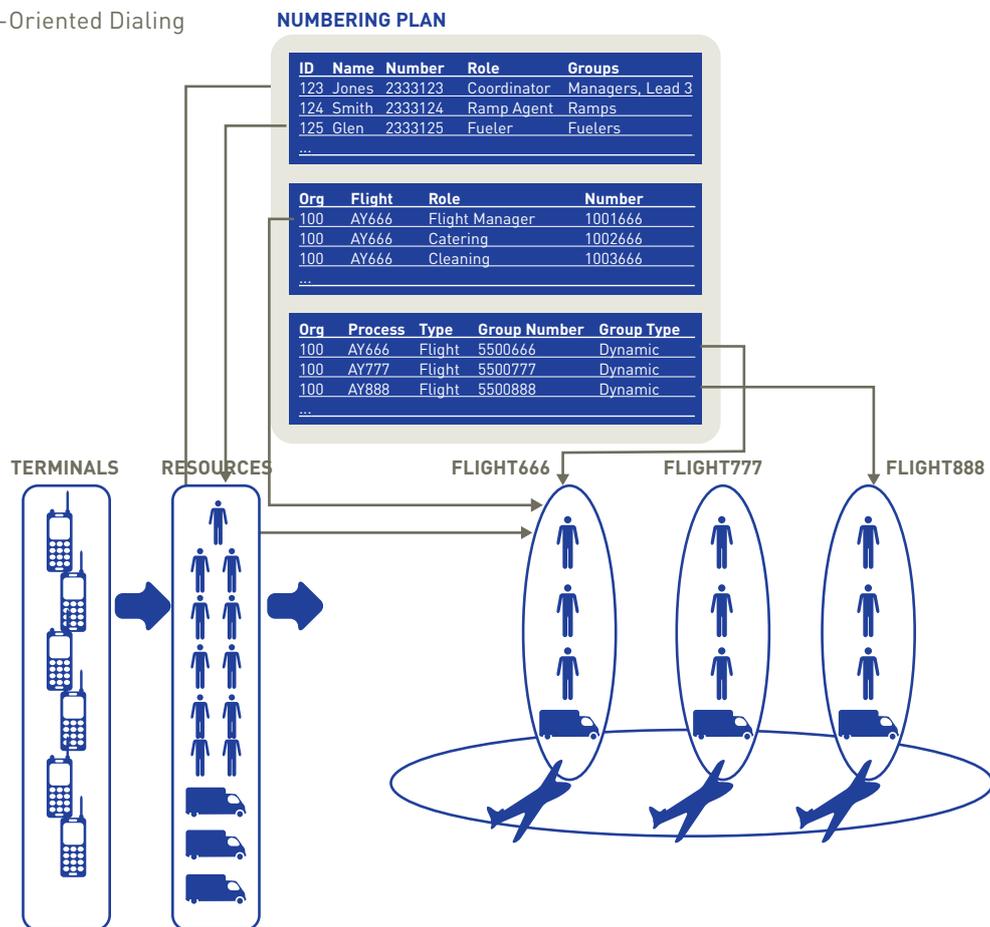
Does the technology allow you to migrate? Some solutions have multi-mode terminals to support both analogue and digital, while others require parallel systems connected via a radio gateway. How will you deploy your new system?

## HOW CAN TETRA HELP?

It is SITA's view that TETRA provides many of the answers to the points above, which an airport or airline must consider prior to choosing a vendor or suitable technology. A robust, mission-critical radio platform will help your airport or airline operate efficiently.

The TETRA system proposed by SITA is a fully IP-based system with state-of-the-art features and functionality. Designed for dense urban environments, which reflect the city airports of today, TETRA's encoding schemes ensure the required capacity at a minimum cost. Furthermore, SITA's solutions come with air transport-specific applications, such as Flight-Orientated Dialing (where groups are created according to the turnaround crew of an aircraft), and seamless dialing to ensure the call is automatically forwarded to the end user "on call".

Example of Flight-Oriented Dialing



Device interoperability is guaranteed for a TETRA system, due to the TETRA Interoperability testing (IOP) carried out under the guidance of the TETRA organization and between vendors.

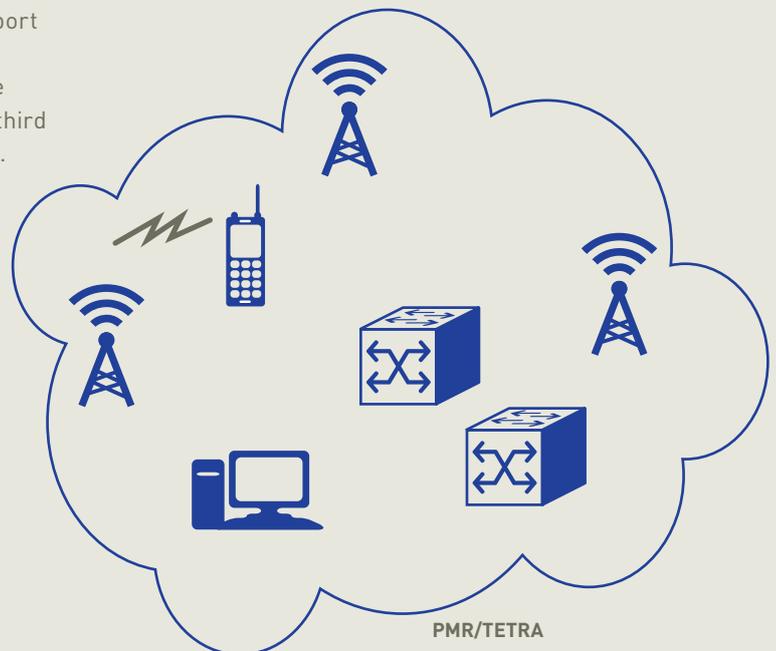
You can use almost any TETRA device on any TETRA infrastructure; enabling you to select devices different from the network.

While SITA can procure all devices, we have preferred suppliers that can provide a range of devices – from FM and hand portable to vehicle-mounted radio and desktop devices. By combining these with an effective distributed antenna system (DAS) for indoor coverage, this will ensure an airport has an unrivaled radio system with 'always connected' availability. It also provides an opportunity to resell these services and radio coverage for additional revenue, with third party tenants and mobile operators based at your airport.

SITA has experience in deploying TETRA networks at airports globally. We provide standard TETRA radio solution and bespoke solutions that focus on:

- superior coverage performance
- air transport applications
- commercializing radio systems

For more information on how SITA can help you and your airport, please contact us at [www.sita.aero](http://www.sita.aero)





## SITA AT A GLANCE

**The air transport industry is the most dynamic and exciting community on earth – and SITA is its heart.**

- Our vision is to be the chosen technology partner of the industry, a position we will attain through flawless customer service and a unique portfolio of IT and communications solutions that covers the industry's every need 24/7.
- We are the innovators of the industry. Our experts and developers keep it fuelled with a constant stream of ground-breaking products and solutions. We are the ones who see the potential in the latest technology and put it to work.
- Our customers include airlines, airports, GDSs and governments. We work with around 450 air transport industry members and 2,800 customers in over 200 countries and territories.
- We are open, energetic and committed. We work in collaboration with our partners and customers to ensure we are always delivering the most effective, most efficient solutions.
- We own and operate the world's most extensive communications network. It's the vital asset that keeps the global air transport industry connected.
- We are 100% owned by the air transport industry – a unique status that enables us to understand and respond to its needs better than anyone.
- Our annual IT surveys for airlines, airports and passenger self-service are industry-renowned and the only ones of their kind.
- We sponsor .aero, the top-level internet domain reserved exclusively for aviation.
- In 2013, we had consolidated revenues of US\$1.63 billion.

For further information, please visit [www.sita.aero](http://www.sita.aero)



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