

THE ST7000 SMALL TETRA RADIO – DESIGNED BY YOU



As a product manager, my role is really to bring together the customer needs, engineering capability and industrial design to deliver a product that addresses unresolved customer pain points. The best way to do this is co-development, working hand-in-hand with your customers. The new ST7000 Small TETRA radio is a perfect example of this philosophy in action, co-developed with customers in the airport industry to meet their need for a small, discreet and sophisticated TETRA radio.

We have a lot of airport customers who are interested in TETRA technology because of the system capacity and interoperability it provides with public safety. We know from working with them that airports generally have a mixed fleet of radios. The MTP3000 Series radios, for example, are perfect for ground staff such as baggage handlers, maintenance teams, cleaners and security - those who need a device that is rugged and hardwearing like a traditional radio. Similarly, teams that refuel the airplanes on the runway need an intrinsically safe ATEX radio like the MTP8000Ex Series. However, there was a group of airport customers who had a need that was going unmet; they approached us about the need for a different type of radio - one that was smaller, sleeker, and more stylish. These customers needed a device that their passenger-facing staff could wear with their smart uniforms. And that was the impetus for the co-development of the ST7000 Small TETRA Radio.

We worked with a number of these key customers - including NAR, a network operator in Japan - to develop the new radio. We spent a lot of time with them and their airline customers at Narita Airport in Tokyo. We looked in detail at their daily routines, the jobs they performed, and their key pain points.

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12.3 **MILLION EMPLOYEES
ACROSS EUROPE'S
AIRPORTS¹**

1.8 **BILLION
PASSENGERS TRAVEL
THROUGH EUROPEAN
AIRPORTS EACH
YEAR¹**
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¹Economic Impact of European Airports,
InterVISTAS, 2015

DELIVERING UNCOMPROMISING AUDIO QUALITY AND COVERAGE IN A SMALL, ELEGANT AND DISCREET FORM FACTOR



DISCREET STYLE

It was immediately obvious that most current radios were just too big and bulky for these passenger-facing representatives to use properly. Many of them were wearing the radios around their necks. This weighed the representatives down and became an obstacle that obscured their face when they picked up the radio to talk. This was a pain point, as it was important to the passenger-facing representatives that nothing comes between them and their passengers.

One of the interesting discussions during customer research was around the antenna. We heard many complaints about the size of the antenna, and that it can dig in or catch on clothing. When exploring different product concepts, we showed models with different size antennas, and even fully internal antennas. We were surprised when the antenna-free model was repeatedly rejected by focus groups. The users wanted a small, but noticeable antenna, as this showed that they had a radio, not a smartphone, and therefore that they were a professional user. In a way, having a radio is a badge of authority, and our users did not want to lose this.

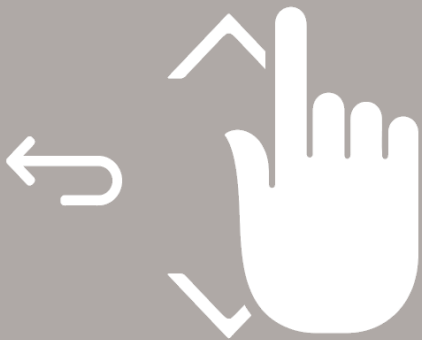
These passenger-facing customers also dressed differently than a typical radio user - wearing smart uniforms, and therefore needed something that matched their dress. They also told us that they didn't just want a smaller version of the current TETRA radios; what was required was a device that would look modern and stylish, and would be fitting with their smart airline uniform.



SMALL AND ELEGANT

EASY TO USE

Another observed customer need was the need for simplicity. Passenger-facing representatives need to be able to pick the radio up and use it without extensive training. Training costs were a big issue for our airport customers; traditional radios are complex, and as such, training was time consuming. Given high employee turnover rates at the airport, it was really important to our customers that they should not have to spend a lot of time and money training their employees on how to use the radio equipment. The ST7000 was therefore designed to be as simple and easy-to-use as possible in order to lower the training and operational costs of our customers. We added an innovative 4-button touch user interface display which is both intuitive to use, and addresses the fact that these customers did not need a traditional, full radio keypad.



SIMPLE CONTROLS

MAXIMUM ACCESSORY COMPATIBILITY



FLEXIBLE CONNECTIVITY

Flexibility was also key to these customers; they wanted to have a wide range of accessories options available for use. As such, we equipped the ST7000 with Bluetooth® wireless technology for use with wireless accessories, and added a 3.5mm audio jack that enables use of the radio with consumer off-the-shelf accessories (COTS). The additional inclusion of a reversible micro USB-C connector also enabled them to charge the device from any USB outlet, providing maximum flexibility when charging as well.

UNCOMPROMISING QUALITY

Through this detailed analysis, we saw that a small size product, with modern design, good wearability options, and ease of use would be key factors to address in the final product.

The ST7000 delivers a modern look and feel with a sleek, matte front that's completely black when the radio is not being used, but lights up with a touch interface when activated. Other fine details of the ST7000 include: a perforated leather-like texture on the back, an anodised embossed emsignia, and stainless steel ring around the PTT button. The ST7000 delivers on the sophistication of appearance that our customers strove to maintain.



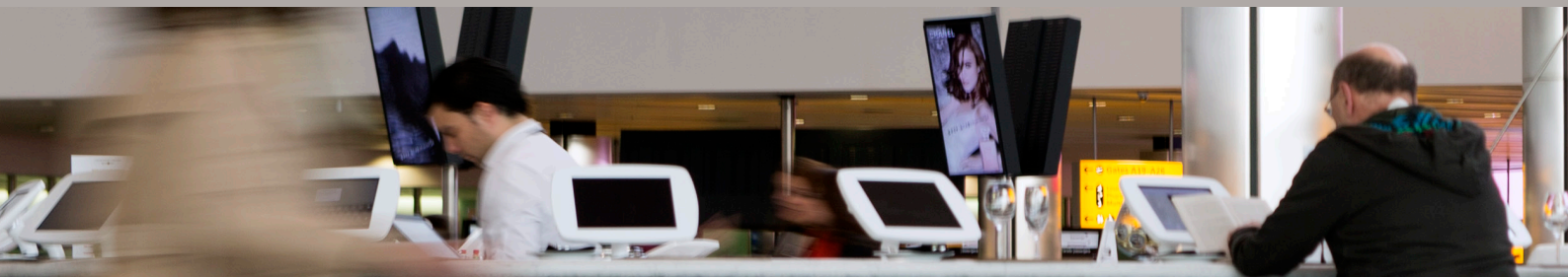
LOUD AND CLEAR

To meet the goal of small size, we focused on "pocketability". This meant creating a device that could easily fit in a trouser or suit pocket. To meet this need the, Motorola Solutions engineers developed an extremely small radio with a very small external antenna. To achieve this end, but without compromising coverage, it uses an internal coil inside the radio, which combines with a small external antenna to provide coverage. Using this solution, the radio becomes "pocketable", without compromising coverage.

These pain points were addressed without sacrificing the core tenet of good radio design: loud and clear audio. The ST7000 delivers loud and clear audio so our customers can hear and be heard even against the loud background noise of an airport.

The close collaboration with our customers has resulted in the development of a unique radio they wanted and needed - the ST7000 - a TETRA radio that is small, discreet and sophisticated.

Ross Harvey
Product Manager



MOTOROLA SOLUTIONS

Motorola Solutions is the leader in mission-critical digital voice and data communications. Solutions include dedicated and customised communications infrastructures for airports. Motorola Solutions works with airport operators around the world in the development and provision of advance networks designs to support the industry priorities of safety, efficiency, improving the passenger experience and reliable, effective communication.

For more information on our communication solutions
for airport operators, including the ST7000 you can:

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