



Keeping an Award-Winning European Mega-Hub Moving

Rome Fiumicino Expands CT Screening with Smiths Detection

The Customer:

Aeroporti di Roma - Rome Fiumicino Airport

Rome Fiumicino “Leonardo da Vinci” Airport is one of Europe’s leading international hubs and a benchmark for service quality, innovation and operational performance. Operated by Aeroporti di Roma (ADR), its latest recognition as Best Airport in Europe in the Over 40 Million Passengers category reflects sustained investment in technology, process excellence and passenger experience.

For ADR, security screening is an operational priority. It must maintain high levels of protection and compliance while supporting a checkpoint experience that remains efficient as demand increases.

The Challenge:

Modernising Checkpoint Screening at Scale

As passenger volumes continued to grow, ADR needed to raise screening performance across a

live, high-volume airport environment without compromising service quality or operational continuity.

Conventional X-ray screening placed greater demands on passengers and security teams. More items had to be removed from cabin baggage, and operators remained heavily reliant on manual image interpretation. In a busy terminal environment, this can increase queue pressure, slow processing and make consistent checkpoint performance harder to sustain.

The programme required:

- Replacement of conventional X-ray equipment across 30 checkpoints in two terminals
- Integration with automatic tray return and the wider checkpoint architecture
- Deployment in a live airport environment with minimal operational disruption
- A future-ready platform capable of supporting higher levels of automation

For ADR, the requirement was not simply a technology refresh. It was a checkpoint modernisation programme designed to improve detection capability, reduce passenger friction and strengthen operational resilience.



The Solution:

Integrated CT Screening for High-Volume Operations

Smiths Detection delivered HI-SCAN 6040 CTiX scanners, selected for CT imaging capability, detection performance, proven reliability, service support and integration experience in complex airport environments.

CT checkpoint screening:

HI-SCAN 6040 CTiX uses Computed Tomography and automatic explosives detection algorithms to create high-quality, real-time 3D images of cabin baggage. Across the initial deployment, 30 CTiX units replaced conventional X-ray equipment and were integrated with automatic tray return equipment, operator workstations and IONSCAN 600 trace detectors.

Passenger experience:

With C3-approved CT screening, passengers can keep electronic devices and liquids of up to two litres in cabin baggage. This reduces divestment and supports a faster, less disruptive checkpoint process.

Live-airport delivery:

Installation began in June 2022 and was completed in April 2024. To protect operational continuity, hardware was moved in and out of the terminals overnight, with the new systems phased into service two at a time.

Expansion and AI-assisted decision support:

Following positive results from the initial 30 systems, ADR has purchased a further 24 HI-SCAN 6040 CTiX units as part of the next phase of its checkpoint modernisation programme. After comparative tests of AI-based Automatic Prohibited Items Detection Systems (APIDS),



The deployment of these CT screening systems contributes to keeping average passenger waiting times at security checkpoints at around 3 minutes at Rome Fiumicino Airport."

Antonella Zolla — Managing Director, ADR Security



ADR has always viewed innovation as a key enabler for improving both security performance and passenger experience. The certification of Smiths Detection's APIDS software, with OneTray and Cassioli trays, obtained thanks to the essential support of ENAC, is the result of a close collaboration involving testing, validation and operational assessment in a live airport environment. This milestone confirms the value of the partnership between ADR and Smiths Detection in bringing innovative screening technologies from concept to certified operational reality."

Giacomo Carleschi — Head of Security Management, Aeroporti di Roma (ADR)

Smiths Detection's algorithm also achieved strong results for accuracy and operational value. ADR has extended its use from two lanes to 15 lanes, where it is currently employed as operator assistance. In addition, ADR provided active and valuable support throughout the ENAC certification process for the Smiths Detection APIDS algorithm, which was successfully achieved in July 2026. This milestone enabled the deployment of the certified version of APIDS in "Alarm Only Viewing" mode, representing an important step towards wider operational adoption of AI-assisted screening capabilities at security checkpoints.





The Outcome:

Measurable Gains and a Platform for Future Automation

- The initial deployment has delivered measurable operational gains:
- Throughput has increased by 15%
- Random checks on carry-on baggage have reduced by 10%
- False alarms sent from Level 1 for secondary screening have reduced by 4%
- Passengers benefit from a smoother process, with electronic devices and liquids of up to two litres remaining in cabin baggage

The additional CTiX purchase and the extension of Smiths Detection's APIDS algorithm from two to 15 lanes confirm ADR's confidence in the technology. The programme now provides a scalable checkpoint platform that supports higher screening performance, improved passenger experience and future automation.

Why Smiths Detection?

ADR required a partner with proven CT screening technology, service capability and experience delivering complex checkpoint upgrades in live airport environments.

- Proven CT screening technology through HI-SCAN 6040 CTiX, supporting high-quality 3D imaging and automated explosives detection
- Reliable service and lifecycle support for high-volume airport operations
- Integration experience across automatic tray return, operator workstations and trace detection
- Phased deployment capability in live terminal environments
- A clear automation roadmap through APIDS and AI-assisted operator support
- Confidence to scale, with the initial 30-system deployment followed by the purchase of a further 24 CTiX units

