

# Aviation security with a special focus on security scanners

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**PURPOSE:** to present a Commission communication on the use of security scanners at EU airports.

**CONTENT:** this Communication addresses an increasing and use of Security Scanners at the airports of the EU regulated at national level. The report is submitted in response to European Parliament [Resolution](#) No (2008)0521 on the impact of aviation security measures and body scanners on human rights, privacy, personal dignity and data protection. Different standards of scanners currently deployed in Europe bring a serious risk of fragmenting fundamental rights of EU citizens, impeding their rights of free movement and escalating their health concerns related to new security technologies. While security scanners are still exceptional at European airports, there is a growing need to address these concerns and find a common solution. The Communication examines arguments that only the common European standards for aviation security can provide the framework ensuring a harmonised approach to the use of Security Scanners at airports. It looks at how such a harmonised approach should incorporate EU fundamental rights standards and a common level of health protection to allow adding this technology to the existing list of equipment for screening persons at airports.

**The concerns raised over past years on the use of Security Scanners for screening at airports relate primarily to two issues, the creation of body images and the use of x-ray radiation.** Firstly, until recently all security scanners produced images of the screened person's body in order to allow a human reviewer of these images to assess the absence of items prohibited from being brought on board aircrafts. Secondly, part of the security scanner technologies emit low doses of radiation, ionising (x-ray) and non-ionising, for detection purposes. In particular, the use of ionising radiation raises health questions. Today technologies exist that neither produce images nor emit radiation. However these two concerns have created a fierce debate on the security scanner's compliance with fundamental rights and public health principles and legislation, applicable in the EU. The key issues are:

**Detection performance and operating considerations:** airport trials and tests suggest that Security Scanners permit a rigorous screening for a great number of passengers in a short amount of time while providing a reliable detection capability.

**Protection of fundamental rights:** the paper considers issues on human dignity and personal data. It notes the capability of some screening technologies to reveal a detailed display of the human body (even blurred), and medical conditions, such as prostheses and diapers, has been seen critically from the perspective of respect for human dignity and private life. In addition, the rights of the child require a careful analysis and operating standards must ensure that passengers requested to undergo a security scan are not chosen based on criteria such as gender, race, colour, ethnic or social origin, religion or belief.

With regard to data protection, the criteria against which the scanning has to be assessed are i) whether the measure proposed is appropriate to achieve the objective (detection of non-metallic items and therefore a higher security level), ii) whether it does not go beyond what is necessary to achieve this objective and iii) whether there is no less intrusive means.

**Health:** the report looks at different systems from passive millimetre-wave imaging systems which does not emit radiation to active millimetre-wave imaging system, X-ray backscatter, X-ray transmission imaging. It also examines possible ways to address health concerns of X-ray Security Scanners. While the doses emitted by X-ray security scanners to screen persons are rather low, it is evident any exposure to

ionising radiation, however small, may have health effects in the longer term. Therefore exposure even below the dose limits set by European legislation require that any decision on exposure to ionising radiation must be justified on grounds of their economic or public benefit to offset the potential damage from radiation. In addition, radiation protection measures must ensure that all exposures are as low as reasonably achievable (the ALARA principle) for workers, the general public, and the population as a whole. Therefore, if and when a ionising technology is being deployed, the improved efficiency in security terms, compared to the use of a non ionising technology, must be weighed against the possible health impact and thus has to be justified through a considerable gain in security level. Special considerations might also be called for when it comes to passengers that are especially sensitive to ionising radiation, primarily pregnant women and children.

**Costs:** the purchase cost of a basic Security Scanner per equipment ranges between EUR 100 000 and 200 000. The paper discusses the additional costs of upgrading and components as well as related costs on training and personnel.

**Conclusion:** the Communication states that common EU standards for security scanners can ensure an equal level of protection of fundamental rights and health. Only a EU approach would legally guarantee uniform application of security rules and standards throughout all EU airports. This is essential to ensure both the highest level of aviation security as well as the best possible protection of EU citizens' fundamental rights and health. The deployment of any security scanner technology requires a rigorous scientific assessment of the potential health risks that such technology may pose for the population. Scientific evidence documents the health risks associated with exposure to ionising radiation. It justifies particular precaution in considering the use of such radiation in Security Scanners.

It is evident that security scanners alone -like any other single security measure, cannot guarantee 100% aviation security. Nevertheless, tests have shown that security Scanners can improve the quality of security controls at EU airports. Their use could considerably increase the detection capacity especially of those prohibited items, such as liquid or plastic explosive, which cannot be detected by walk-through metal detectors. Alternatives to security scanners based on ionising radiation technology should be available when specific health related risks arise. Any possible future EU harmonisation in this area needs to provide for alternative security checks for vulnerable groups including pregnant women, babies, children and people with disabilities.

Security scanner technologies exist that neither produce neither full body images nor emit ionising radiation. Technical standards and operational conditions to be laid

down by law could significantly reduce concerns related to fundamental rights and health:

- under existing technology and safeguards attached to the use of security scanner equipment, fundamental rights issues can be dealt with by a combination of technical equipment specifications and operational rules. Minimum standards could be laid down by law;
- with the exception of full X-ray transmission imaging, current security scanner technologies can meet existing EU health standards but certain types of equipment will require technical and operational standards to be fixed. Maximum radiation doses must be respected and precautionary safeguards established. Individual protection must ensure that exposure is as low as reasonably achievable, in particular for travellers and workers. The long-term effects of exposure to security scanners should be regularly monitored and new scientific developments taken into account;
- the travelling public must receive clear and comprehensive information at airports and before travelling on all aspects linked to the use of Security Scanners;

The Commission nevertheless takes note of the ongoing discussion and further possibility for opt-outs, should security scanners be deployed. At the same time, it takes note of the fact that such opt-outs raise issues in relation to security, cost and feasibility that could put the usefulness of a possible deployment in question.