

## **SCANNING X-RAY MACHINES AS EFFECTIVE TOOLS FOR CUSTOMS CONTROL**

The personal visual and tactile inspection of passengers and their luggage takes a very long time, its result is subjective and depends on the employee, this method can be unpleasant and tedious for passengers. X-ray inspection is the most objective, reliable and fastest way to inspect passengers and their luggage.

*Passenger screening machines.* A separate and very interesting kind of screening technology is the use of passenger scanning machines. Microwave and X-ray machines are commonly used today.

X-ray scanners are used for non-intrusive inspection of cargo and baggage for possible weapons, drugs and explosives. The X-rays are localized inside the body of the scanners and are therefore safe for others. The main part of these scanners is an x-ray generator, a detection bar to detect the rays passing through the checked luggage, a data processing unit to convert the signals received from the detection bar into an image and a conveyor belt, which is used to carry the luggage through the scanner. The resulting images are displayed on a computer terminal, usually installed near the scanner.

Personal inspection scanners are based on penetrating X-ray technology. In these scanners, X-rays are passed through a person's body and then picked up by a detector or line of detectors. This type of personal search scanners can detect objects hidden not only under clothing, but also inside a person's body (such as drug couriers carrying drugs in their stomachs) or in their natural cavities. Usually the second projection scan takes place on a larger dose and is no longer a standard procedure, but an in-depth search of a suspicious subject, conducted selectively and usually on the suspicion of the officers.

*Scanners for cargo and vehicle inspection.* X-ray portal inspection systems for the scanning of cars and passenger vans are also used for scanning large cargo, sea containers, railroad trains, and cars and trucks.

In addition to stationary X-ray scanners, there are portable X-ray scanners, which are a compact generator that can be carried in the hand and a detector, most often a flat-panel detector. They are used to selectively scan small objects or parts of large objects that do not fit into standard settings. They are similar in ideology to portable nondestructive testing systems.

*Mobile X-ray scanners.* Mobile X-ray scanners can be divided into two kinds:

- stationary scanner mounted on a chassis (car, van, railroad car). Usually due to this design there are mobile (mobile) inspection points and checkpoints. Most often on a standard chassis with certain modifications are installed luggage or human scanning systems.

- mobile scanner - a deeply redesigned or developed from scratch vehicle for this purpose. Most often they are scanners for the inspection of large objects - cargo, vehicles, containers. They can be assembled in the transport position, and if necessary, quickly enough unfold into a working position.

Currently, technologies using deep machine learning (neural networks) are being developed around the world to automate the inspection process and reduce the influence of the human factor on the inspection procedure.

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[http://secuteck.ru/articles2/sys\\_ogr\\_dost/rentgenovskoe-dosmotrovoe-oborudovanie-v-sisteme-obespecheniya-transportnoy-bezopasnosti](http://secuteck.ru/articles2/sys_ogr_dost/rentgenovskoe-dosmotrovoe-oborudovanie-v-sisteme-obespecheniya-transportnoy-bezopasnosti). – : 27.03.2022

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[ ]. – , : <https://security.adani.by/products/adani-baggage-screening/>. – : 27.03.2022