Since the late 1990s, security for the goods shipped by air has become a bigger concern. Following the events of September 11th 2001, most countries have passed new legislations regarding Civil Aviation Security that include security screening requirements for air cargo.

Air cargo screening purpose is to prevent the presence of Improvised Explosive Devices (IEDs) that would compromise the security of cargo or passenger aircrafts carrying commercial goods. However the inspection of goods may end up with difficult and costly operations depending on the type of cargo going through screening.

As an example, dense cargo remains an issue for common screening devices such as X-Ray scanners because of the physics limitations of the technology that make difficult to screen dense material but also lighter and less dense material when configured in large pallets.

CEIA, world leader in threat electromagnetic detection technologies, has been deploying over the last decade a solution that improves drastically the screening of many types of cargo characterized by low x-ray penetration. The commodity groups of interest are defined as non-metallic commercial cargo such as produce, seafood, meat, printed materials, flowers and apparel.

The EMIS (Electro-Magnetic Inspection Scanner) screens quickly and accurately packages or pallets using a harmless, low intensity electromagnetic field to ensure there are no explosive devices hidden within. This method of inspection does not require visual interpretation of an image, unlike typical x-ray scanners, or any direct manipulation of the goods, unlike explosive trace detection equipment. Threats can be detected throughout the entire stack of cargo minimizing operator interaction with the goods.

When methods such as X-Ray and ETD focus on trying to detect the possible presence of explosive inside the goods, the EMIS technology based on electromagnetic analysis provides an automatic detection of IEDs metallic components such as detonators and batteries. The result is consequently very reliable and guarantees the security of the shipments.
Global supply chain actors such as third party logistics providers, freight forwarders, air carriers, cargo handlers, independent cargo screening facilities, etc., shall derive great benefit from the use of the EMIS. Indeed, operators avoid disassembling the pallets to inspect each individual package, decreasing then the work dedicated to screening operations, reducing greatly the time and cost of inspection and finally providing extremely reliable security.

The EMIS were first evaluated in the early 2000s by the French DGAC/STAC (Direction Générale de l’Aviation Civile/Service Technique de l’Aviation Civile). Then they were definitely introduced in the late 2000s as part of the standard screening methods for non-metallic cargo by the European Commission (former Regulation No. 185/2010 and newest Regulation No. 2015/1998) and the U.S. TSA [Transportation Security Administration - Certified Cargo Screening Program – Air Cargo Screening Technology List]. More recently, the EMIS were also approved as the most suitable technology for screening non-metallic goods by the United Kingdom Department for Transport and the Australian Aviation & Maritime Security Division.

As a consequence, many units have already been deployed successfully in several ECAC member states such as Denmark, France, the United Kingdom, Norway and Iceland but also in the USA and Australia that after having acquired experience using some units for complying with the US-bound air cargo screening requirements is now having several units installed in every large airports to fulfil the near coming screening requirements of the latest Australian Air Screening Program starting on March 1st, 2019.

The series currently includes 2 models depending on the screening needs: EMIS 8075 for small to medium packages; EMIS 130200 for palletized cargo.

**Possible installation layouts for EMIS 8075**

**Method of use for the EMIS 130200**

**EACH MODEL OFFERS THE FOLLOWING BENEFITS**

- Fast, real-time analysis
- Automatic detection with no nuisance alarms
- Reduction of the analysis time
- No dedicated operator needed for use
- Reduction of operating costs
- Completely solid-state construction (no periodic maintenance or calibration required)
- Complete data logging and traceability
- Safe for operators and cargo screened (no use of ionizing radiation)

**THE FOLLOWING COMMODITIES MAY BE SCREENED USING THE EMIS SERIES**

- Perishable goods such as
  - fish, meat
  - fruits and vegetables
  - fresh flowers
  - organic materials in general
- Paper products, plastic, rubber
- Apparel without metal components
- Frozen goods in non-metallic containers
- Live animals
- Non-metallic hazardous materials