|| TRAXENS – seal detection sensor

the challenge

Given their limited security, shipping containers are subject to unexpected opening which can impact the operations of Shippers and Carriers. Container cargo theft is down but the overall value of goods stolen is up. Illicit cargo smuggling seems to be increasing as customs seizures are larger and more frequent.

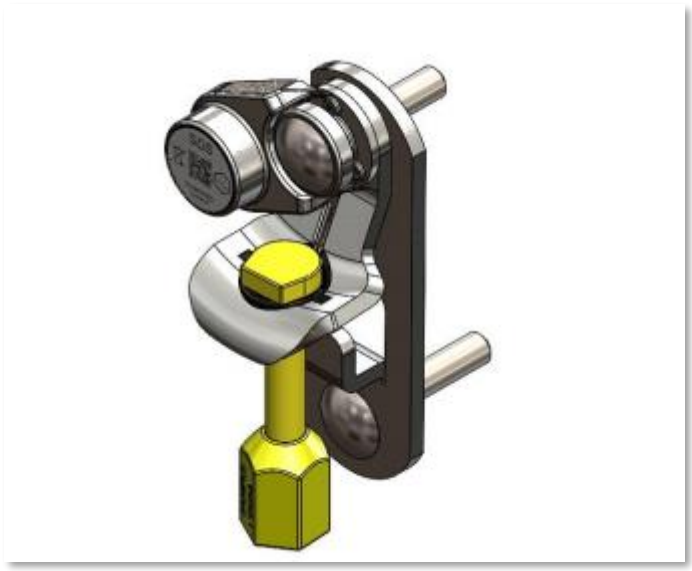
Violence due to container cargo theft or illicit goods smuggling impacts the safety of port and vessel personnel and warrants automated and anonymous measures to avoid also endangering logistics teams.

the innovation

Traxens makes the containers smart by adding an advanced IoT device to track its position and detect door openings. Thanks to global and timely communication, the container events are available on Traxens platform. Along with advanced contextualization algorithms, knowledge of customs practices and locations (geozones) characteristics, it allows to raise exception events showing suspicious or unexpected door openings that could point to theft or smuggling. Then, Traxens application allows automated notification and collaboration to reach resolution of the incident through authorities' quick intervention and provide extra proof to help investigating.

A normal (dumb) container latch

To bring an extra level of security, Traxens has developed an innovation called the Seal Detection Sensor. It allows to detect insertion and removal of standard ISO 17712 H security seals to provide even better door opening detection and knowledge of context. By knowing the exact time when the container is sealed, Traxens algorithms are even further empowered to notify



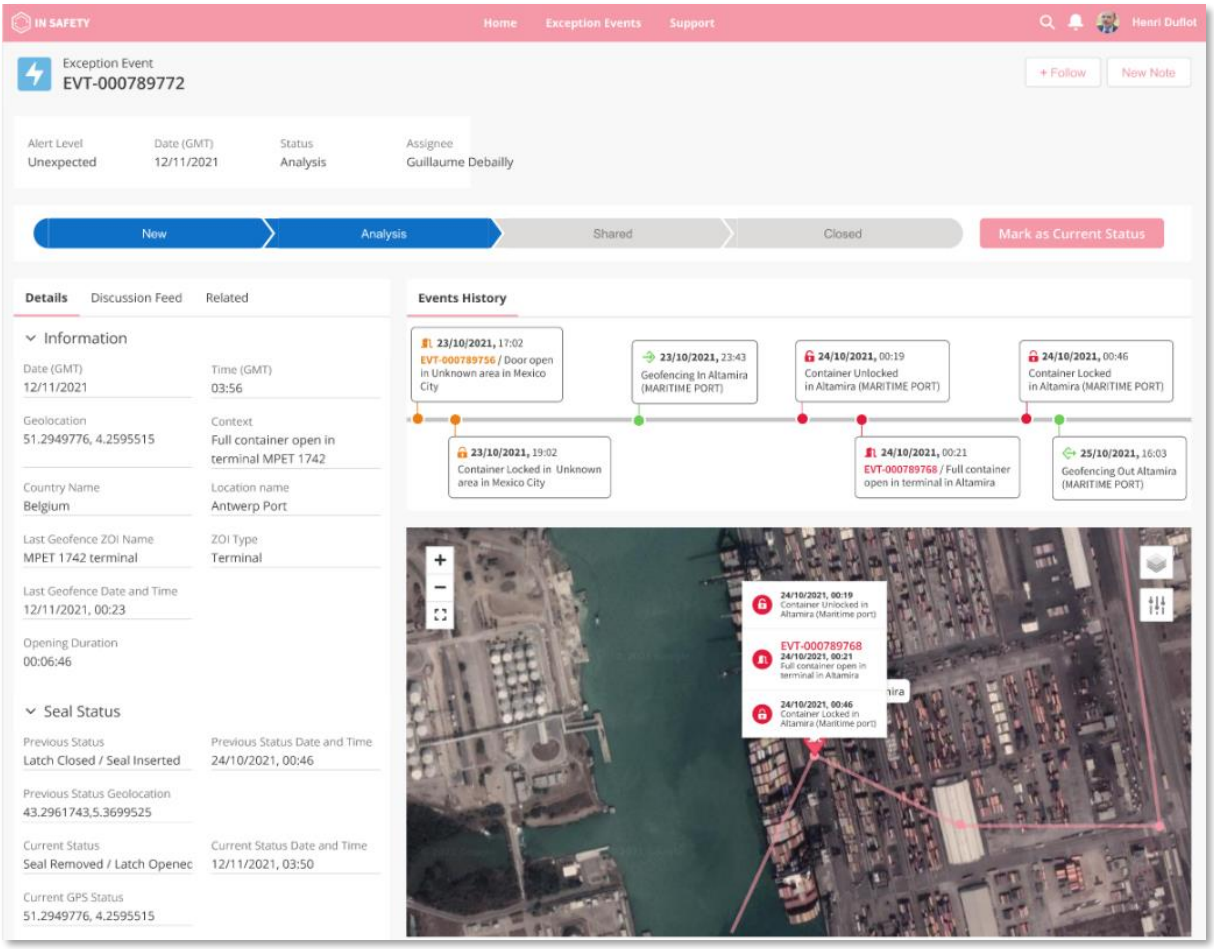
The Seal Detection Sensor concept shown with a standard ISO 17712 H security seal

unexpected door openings. And all this can be done without any impact on shippers' process thanks to the use of standard seals.

how it was implemented

The Seal Detection Sensor is a device which replaces the container latch the seals lock through.It is a permanent device installed in collaboration with the container owner that communicates through standard Bluetooth protocol to the main Traxens IoT device on the container.

Actual fully working device prototype on a container



Integration of seal status and unlocking events in trade security application InSafety

It can also communicate seamlessly to a mobile application developed by Traxens to check the locking history of the container. It does not require the use of specific security seals and thus doesn't impact shippers, consignees and customs.

A patent has been filed by Traxens for this innovation and several counter-measures have been implemented to avoid tampering of the device and its detection function. For this reason, it is a device made of metal to fit with the rough and challenging environment related to this use case.

result

The innovation is currently at an advanced prototype state and industrialization is ongoing to be able to benefit from it on a sizeable field deployment.

conclusion

Traxens already has success with theft and smuggling with its current solution and we are confident this extra innovation can help reduce illegal practices with containers.

Further information can be found at https://www.traxens.com/