CargoObserver - Container Monitoring in Combined Transport

KeyWords:
Innovative vehicles, vessels and equipment, ICT (e.g. routing, guidance), transport optimisation, Business to business (B2B) solutions, cooperation, Transport management, fleet management, Safety and security: measures, regulations, insurance, Data collection and statistics

Description
The solution is a plug and play 5 Year maintenance free device called CargoObserver and mounted on Containers for a complete monitoring of the transport process on land and sea from origin to destination.

The practice allows to optimize the transportation time and to monitor the status of the goods with all kind of sensors in throughout the whole supply chain.

Benefits
- Permanent control of transport quality and current position of the cargo
- Advantage in competition due to better knowledge of position and status
- Saving insurance fees due to reduction of repeat theft risks

Success factors
Information is available nearly real time by data-loggers and not after shipment has been completed.

In this way one can react quickly upon alarms (i.e. Temperature, location information) and help solving the transportation problem or avoid future risk.

Supported strategic targets
- Optimization of transport chains
- Reduced emissions
- Available high quality information
- Quality of services

Solution
The CargoObserver System is a GPS+GSM supported wireless sensor system used to track and monitor containers or assets. It can be fully parameterized and updated remotely to reflect the unique application needs. The basic system consists of the master telematics unit – MTU, including sensors and transmission elements. The extended system adds the internal sensor unit – SU, enabling additional monitoring points of temperature, humidity and intrusion detection.

The common practice was to trust and rely on information from shippers or ports, or to mount monitoring devices that required a high level of maintenance (i.e. frequent charging of batteries).

The end customer and the logistics company wanted to see “What, When and Where” things were happening with their containers and goods during the transportation process.

Starting point/objectives/motivation:
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The outstanding features of CargoObserver are its modularity and a true energy self-sustaining operation without the need for recharging batteries for the full service interval of the container.

This world leading lifetime of the overall system has been achieved by extensive re-search with Universities in low power dedicated hardware and soft-ware, highly optimized for the given application.

Technical barriers were to achieve an autonomy of 5+ years and to solve various problems during deployment (i.e. different type of reefer containers). These barriers have been solved.

The solution is transferable to all industries that ship high quality goods around the globe.

To add more and different sensors to the system can extend the area of application.

www.cargomon.com

Cargomon Systems GmbH
Argentinierstraße 29/9
1040 Vienna | Austria

• Road/ truck
• Heavy rail
• Deep sea vessels

Main actors involved
• Logistics Partners
• Telecommunication Partners
• Service Provider
• Research Partner

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