C BORD

Effective **C**ontainer Inspection at **BORD**er Control Points

Fixed installations

Big sea ports: **Rotterdam**

Sea ports: **Gdansk**

Relocatable

Land borders: **Hungary**

Mobile

Proof of capability through live field trials in three use cases under real conditions at different border control points

Project Rationale:

- Efficient NII (non-intrusive inspection) of containerized freight is critical to trade and society
- Freight containers are potential means for smuggling, drug trafficking, and transport of dangerous / illicit substances
- NII technologies used today cannot cope with all targets under all circumstances with equivalent efficiency

Project Goal:

C-BORD will increase interdiction of illicit or dangerous material in containerized freight and deliver new capabilities against critical operational requirements and constraints:

- Increased throughput of containers per time unit
- Reduced need for costly, time-consuming and dangerous manual container inspections
- Lower false negative and false positive alarm ratios
- Operationally significant health & safety, logistics, cost and benefits issues

Project Approach:

- C-BORD develops five technology pillars to enable next generation container NII at EU sea and land borders
- Proof of capability through live field trials in three use cases under real conditions at different border control points
- A C-BORD Toolbox and Framework to help customs analyse needs for container NII, design integrated NII solutions, optimize the interdiction chain, and provide a systemic response to key functional, practical, logistical, safety and financial questions to support deployment.

C-BORD Toolbox: Complementary Innovative NII Technologies

Advanced Radiation Management

- Radiation detection, classification & ID
- Fixed, relocatable and mobile solutions
- Resilience to masked nuclear threats
- Reliable discrimination of natural radiation

Evaporation Based Detection

- Evaporation based detection of illicit drugs and chemical agents in cargo containers
- Complementary to X-ray imaging
- Biosensor arrays, highly sensitive transducers and machine learning to allow enhanced selectivity
- Appropriate sampling and pre-concentration technologies to increase sensitivity

Tagged Neutron Inspection System

- Position sensitive detection of explosives, illicit drugs and chemical agents
- Identification of elemental chemical composition
- Crucial progress of Tagged Neutron Inspection in terms of size, complexity and costs
- Development of relocatable system for test and validation in a real port environment

Next Generation Cargo X-Ray

- Improved material classification in the organic range
- Chemical separation of overlapping objects
- Chemical discrimination for low dose systems
- Global X-ray image improvements

Photofission

- Direct detection of Special Nuclear Material (SNM), uranium, plutonium
- Strong association between high-energy imaging and photofission techniques
- Test and validation in first EU photofission port installation

C BORD

42-month project

11.8m € budget ◆ started June 2015

Visit **cbord-h2020.eu** for more information

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