



D-BOX

D-BOX Demining toolBOX

Call FP 7- security 2011
Integration Project

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Airbus Defence and Space

**DEMINEING TOOL-BOX FOR HUMANITARIAN CLEARING OF LARGE SCALE AREAS FROM
ANTI-PERSONNEL LANDMINES AND CLUSTER MUNITIONS**

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 284996.

www.d-boxproject.eu



Agenda



- ▶ D-BOX Project
- ▶ D-BOX System and Demo

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- ▶ D-BOX System and Demo

D-BOX



a toolbox and new tools for Demining activities to respond to priorities of the demining community

Demining Priorities:

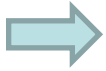
Information Management

Hazardous Area Reduction

Close In detection

Risk Assessment PPE

Manage Local Population



D-BOX response:

Development of a comprehensive and distributed tool box

Long range imagery (Satellite, UAV) and mapping tools

Explosive Biosensor, 3D GPR, polarization imagery, acoustic and GPR, data fusion, tools selection soft.

**Mine Risk Assessment software
Mine risk training database,
PPE test procedure**

**Cultural guidelines, aide-memoire
Mine risk education database**

D-BOX: a large panel of skills



Skill	D-BOX Consortium Partners
Mine clearance activities	BACTEC (<u>End User</u>) FOI, TNO, DUT, VTT, Fraunhofer, MORATEX
System integration	AIRBUS, SELEX
GIS	AIRBUS, Terra Spatium, e-Geos, Telespazio
Detection Tools, Mapping and Data Fusion	Selex, Fraunhofer, FOI, DUT, Radiolabs, Astri Polska, University of Surrey
Decision tools and planning	FOI
Explosive risk assessment	Fraunhofer
Protection and mine risk education & training	MORATEX
Education and training	BACTEC, MORATEX
Human sciences and legal framework	CBRNE, CEN and University of Surrey
Dissemination	Astri Polska
Large scale demonstrations	Astri Polska & SELEX

- ▶ **Support the Sponsors (EC, UN etc.) in the prioritization of Mine Actions** and in **monitoring activities** to ensure that value for money is delivered.
- ▶ **Provide accurate, reliable and comprehensive information to support decision making** and future improvements.
- ▶ Define more precisely where the mines lie, so that **uncontaminated land can be released quickly** and without the need to deploy slow and expensive clearance assets.
- ▶ **Propose new technologies** but also put effort on understanding how best to **make effective use of existing ones. Improve data analysis techniques.**
- ▶ Enable End User to **collect of the right data at various stages** before, during and after the mine action process, to manage the quality of data and to turn data it into useful information

Cross check: Mine Action Working Context, www.GICHD.org, produced by Ritherdon Consulting Ltd.

Agenda

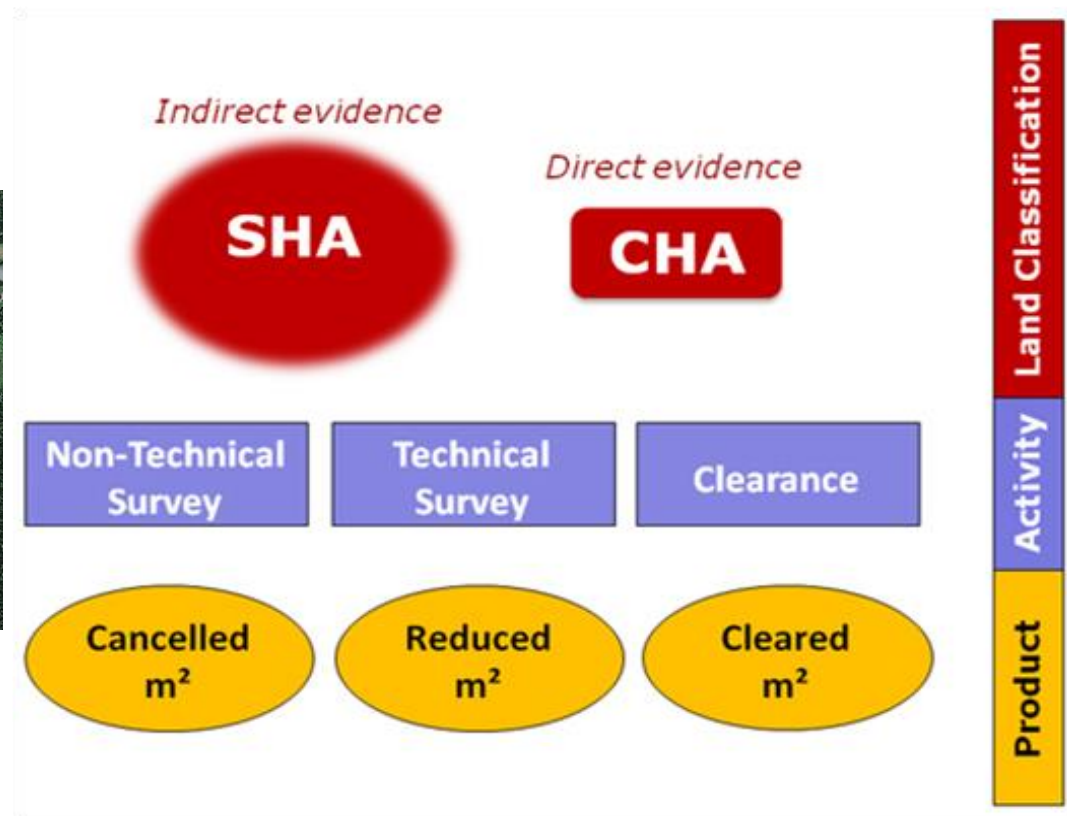
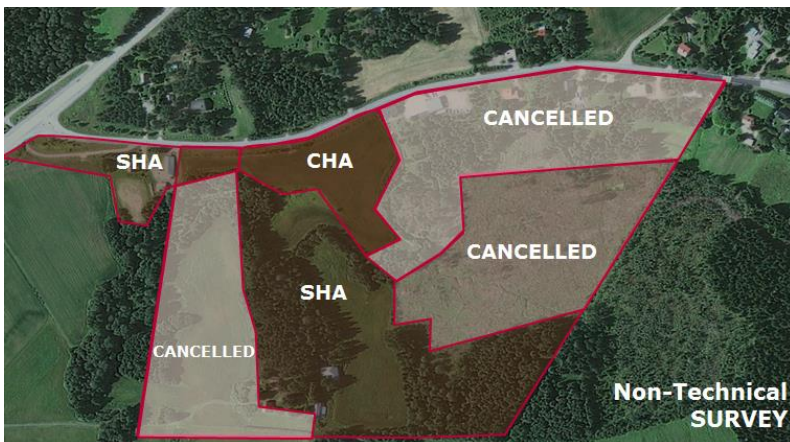


- ▶ D-BOX Project
- ▶ D-BOX System and Demo

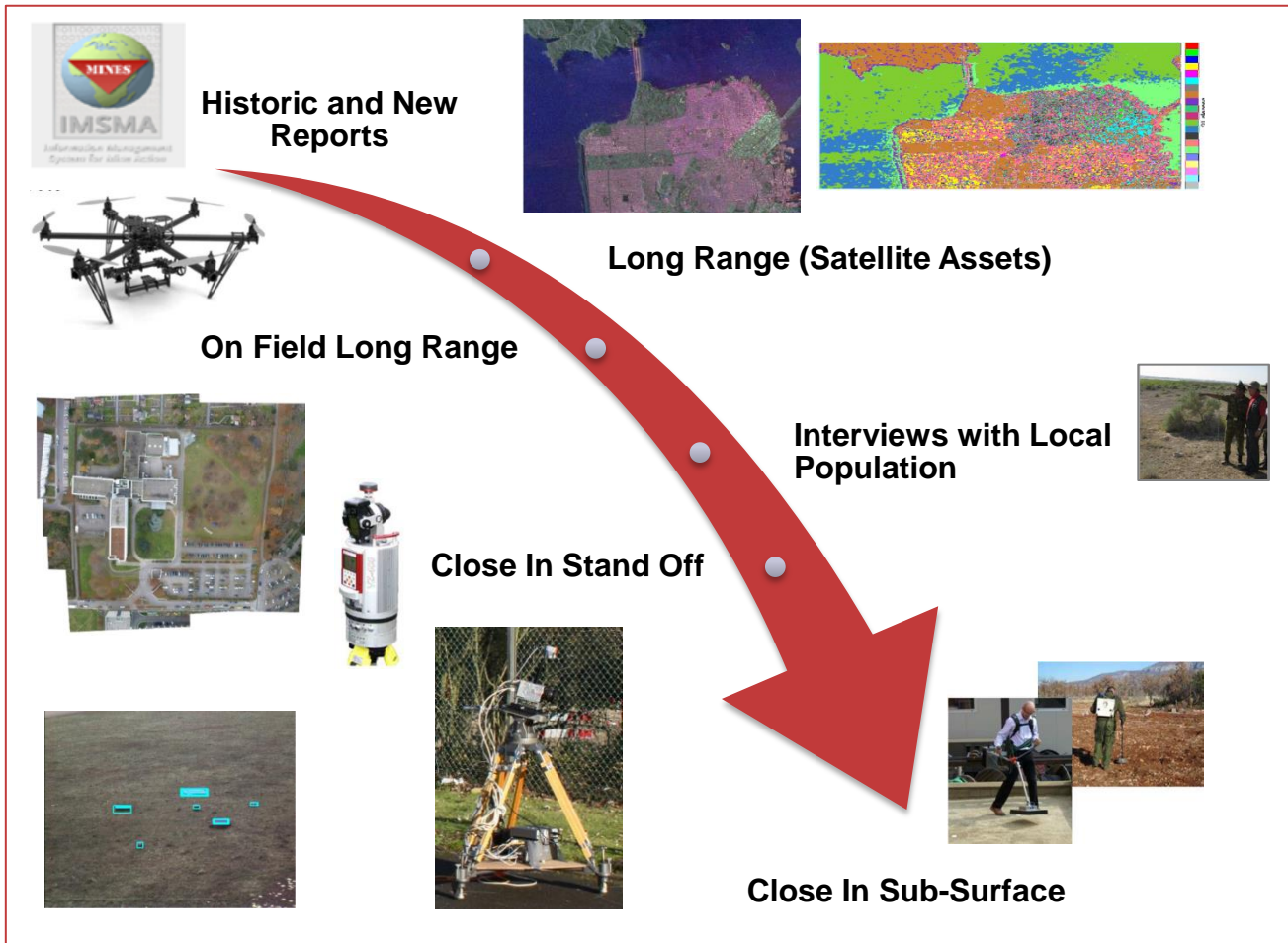
D-BOX Mission



D-BOX will enable End Users to gather information and classify evidences to define and plot Hazard Areas.



D-BOX Tool Chains



IMSMA: Historic Reports

New Reports.

Long Range Assets:

Satellite Assets :

- SAR, Multispectral, Optical Satellite Sensors
- Land Usage Map

Long Range Surface:

Environment Scanning:

- Surface Scanning
- HD Imagery.
- Soil Occupancy.

Interviews with Local Population.

Close In-Stand Off:

- 3D Model of the Area of Interests.
- Detection of Man Made Objects.
- Thermal Scan

Close In:

- Commercial tools: MD, GPR.
- Interface with MD.
- Sensor Data Fusion.

D-BOX Information Management

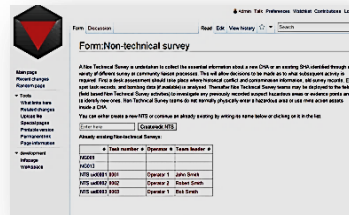


Smart Interface to commercial tools and new tools



Sensor Management

D-BOX for Planning



Collaborative Decision Making between Mine Action Stakeholder even remotely located.

- ▶ Support the Operator on the mine field.
- ▶ Information gathering on the field.

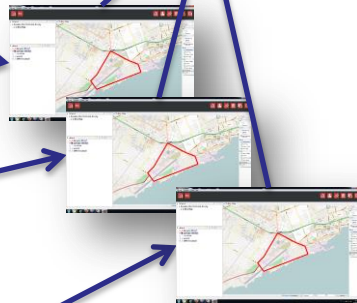
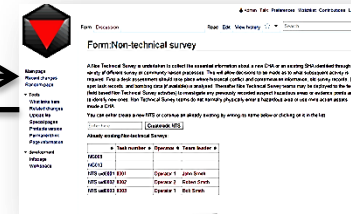
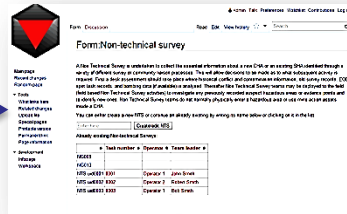
D-BOX for Operations

D-BOX Concept

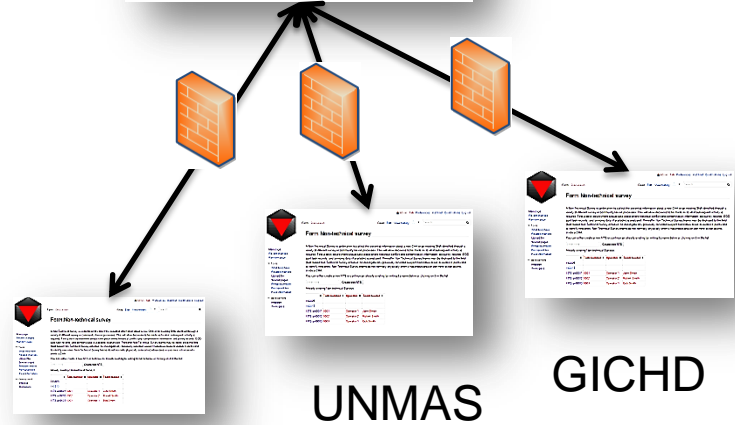


D-BOX for Planning (Operator HQ)

D-BOX for Planning (Mine Action Center)



D-BOX for Operations (Operation Room & Operation Field)



Sponsors

UNMAS

GICHD





D-BOX

Thank you!

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