A Platform Approach for IM in Mine Action by using Open Source and Co-creation with end Users

13th International Symposium
Mine Action 2016

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Agenda

- D-BOX Project & Concept
- D-BOX Demonstration
- Use of Co-Creation and Open Source in D-BOX.
- Next Steps
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D-BOX Project

D-BOX is a project co-financed by the European Commission FP7 (Call FP 7-security 2011).

D-BOX develops a toolbox and new tools for Demining activities to respond to priorities of the humanitarian demining community.

Budget: 10M€,
Duration: 3 years,
Start: 1st January 2013,
Conclusion: Spring 2016,
Consortium: 20 European Partners
D-BOX Mission: the land release process

D-BOX tool box provides to End Users a common platform to gather information and classify evidences to define and plot Hazard Areas.
D-BOX Architecture

D-BOX for Planning (office)

Task

Report

D-BOX for Operations
(version for RECCE)
(Version for NTS)
(Version for TS)
D-BOX for Planning: Semantic Wiki

A wiki technology which support collaborative decision making by linking together Processes, Information and Tools.
Procedure to Plan a Non-Technical Survey

1. Overview
   1.1 What are the related hazard areas?
   1.2 What is the related evidence?
   1.3 Local information: Demographics, weather, laws, culture etc.

2. Task preparation
   2.1 Summary of Task Deliverables
   2.2 Task folder preparation
      - Terrain, Geology
      - Weather
      - Satellite imagery
      - Geographic
      - Military, Police etc.

3. SOP
   3.1 Arrange for and assess:
      - Accommodation
      - Messing
      - Medical facilities
      - Equipment and vehicles

4. Visit to general area

5. Team preparation
   5.1 Tool selection. Consider hazards, soil, weather, etc.
   5.2 Personnel assessment. Consider education, training, experience, etc.
   5.3 Team preparation workflow:
      - Qualified team members (IMAS08.21)
      - National guidelines (IMAS 02:20)
      - SOP for NTS area
      - Training of NTS team
      - Accredit NTS team
      - Brief NTS team
   5.4 Team preparation workflow:
      - Qualification of team members
      - Identification of areas requiring further investigation
      - Priority setting of tasks requiring further mine clearance support
   5.5 NTS team ready

6. On-site
   6.1 List tasks to be done on-site e.g.: Fence SHA if missing, Mark safe routes, Mark start lines, Delete start lines which are not appropriate
   6.2 Visit the NTS area

7. Cancellation
   7.1 Assess evidence gathered from the on-site visit.
   7.2 Removal of suspicion/evidence that is not substantiated (National land release criteria).
   7.3 Record suspicion/evidence that is substantiated. Follow the National land release criteria.
   7.4 Areas recommended for cancellation, clearance and/or further information gathering tasks.
   7.5 Land release

8. Post NTS
   8.1 Assess the implications and limitation of land release through this NTS.
   8.2 Record findings of NTS.
   8.3 List reports done within the NTS.
   8.4 NTS final report
D-BOX Concept

D-BOX for Planning
(Operator Office)

D-BOX for Planning
(Mine Action Center)

Sponsors

GICHD

UNMAS

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

18 May 2016
Tool Chains in the toolbox

IMSMA: Historic Reports

New Reports.

Long Range Assets:
• SAR, Multispectral, Optical
• Change Detection
• Land Usage Map

Long Range Surface:
• UAV HD Imagery
• UAV + GPR
• Soil Occupancy
• 3D Model.

Interviews with Local Population.

Close In-Stand Off:
• 3D Model
• Detection of Man Made Objects.
• Thermal Scan

Close In:
• 3D GPR
• MD Robot
• Interface MD vs PC
• Acoustic Sensor
• Bio Sensors

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D-BOX Demonstration in Naples
Functional Chain of Tools
Functional Chain of Tools
Reporting, Decision Making, Planning of Next Steps
Other Decision Support

Decision support for tools

Decision support for Hazard area priority

Evidence recording
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D-BOX Key Successes: Co-Creation and Open Source

Explore Use Cases for D-BOX
Generate Architecture Options
Implementation trade-offs.

Probe Refine Generate Select

Probe Plan Do
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Mine Action 2015: Toward a Multifaceted Platform for Humanitarian Demining

Data Bases & Business Intelligence
Close In and Remote detection Tool
D-BOX Planning
D-BOX Operations
IMSMA
D-BOX Sharing Procedures, Data Models
Mine Action Center should reflect on the possibility to create an open source community and use local resources financed by sponsors to create local capabilities.
THANKS FOR ATTENTION!

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