“Standards” for T&E of Demining Machines for Mine Action

- NGO, GO, Others
- Manufacturer
- Test Institutes

BACKGROUND

CEN Workshop Agreement (CWA)

- Funded partly by European Commission (EC)
- Procedure CWA
- Business plan adopted at the Kick-off in Brussels in June 2003
- Three meetings in autumn 2003 in Sweden and Croatia
**AIM**

- Comparable test result for equipment concerning
  - Performance and survivability
  - Suitability in different environment

- CWA to be proposed to IMAS Revision Board for inclusion into IMAS

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**Solutions**

- Pre-test conditions
- Pre-trial assessment
- Performance test
- Survivability test
  - Machines
  - Operator
- Acceptance test
- Agreed test targets
**Pre-test conditions**  
*(provided by the manufacturer)*

- Weight, size, slopes capabilities etc.
- Consumption of fuel, spare parts, etc.
- Clearance speed
- Records of machine in operation, for 6 consecutive days 8 hour/day

**Performance Test**  
*(will not replicate real conditions)*

- Comparable results of clearance capability
- Controlled conditions, three types of soil  
  (gravel, sand, topsoil)
- 150 targets in each soil type
- Three different depth, flush to surface, 10, 20 cm
- Demonstrate the capability to cut vegetation
Survivability test

Machine

• Testing of the blast effect on the mine clearance tool

• Testing with live/simulated AP mines (240 g explosives) and AT mines (8 kg explosives)

Survivability test

Operator

• Verification of the survivability of the operator after an AT-mine detonation.

• Measurement of overpressure in internal organs and accelerations of feet and spine

• Displacement of the operator and estimated injuries due to this, i.e. potential head injury
Acceptance test

• Testing under local and controlled conditions in a live mine field.

• Machines are driven against 20 AP and 5 AT mines

• Based on CROMAC methodology

• Vegetation classified in four categories

• Adapted to national safety regulations

Test Targets

• Shape
• Size
• Weight
• Function
• Explosives

Explosives
• AP Mine 0.24 kg
• AT Mine 8 kg

• Live Mine Targets (LMT) production mines fully functional
• Surrogate Mine (SUM) specific mine type
• Simulated Mine (SIM) generic categories of mines