



Ministry of Foreign Affairs



The 22nd International Meeting of National Mine
Action Programme Directors and United Nations
Advisors

Panel 7

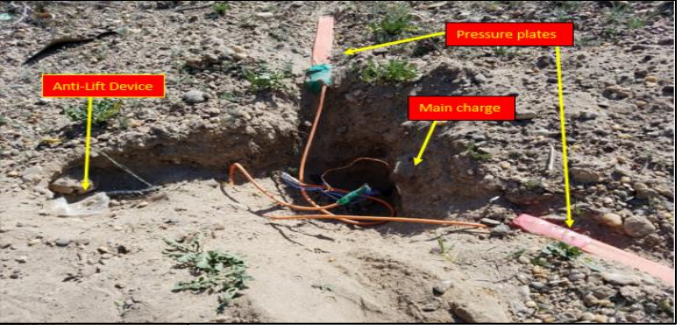
Mitigating the current and evolving explosive threats by bridging the (technology) GAPS

Sachi Claringbould

Deputy Permanent Representative of the Netherlands to
the Conference on Disarmament

Friday, 8 February 2019

Mine Action is evolving



Visual stereo change detection



Man-made object detection



Aim: detection at stand-off distance of surface laid explosive hazards
(e.g. an Explosive Formed Projectile in the side terrain of a route)

Equipment used:

Dedicated HD camera

Computer with detection algorithm

Display for operator.

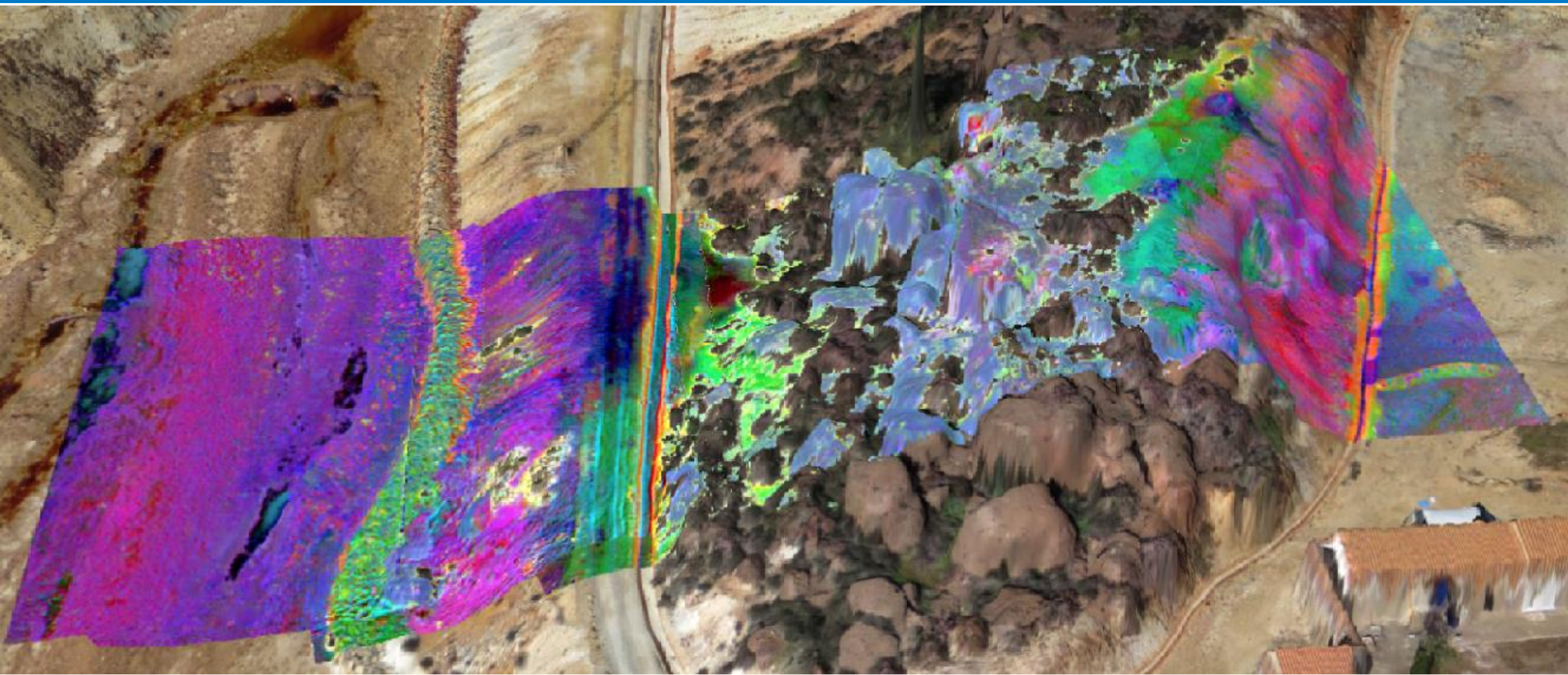
Video: EFP main charge on a wall,
partially concealed by blocks

In the video the walls at 10, 5 and
3 meters from the route.





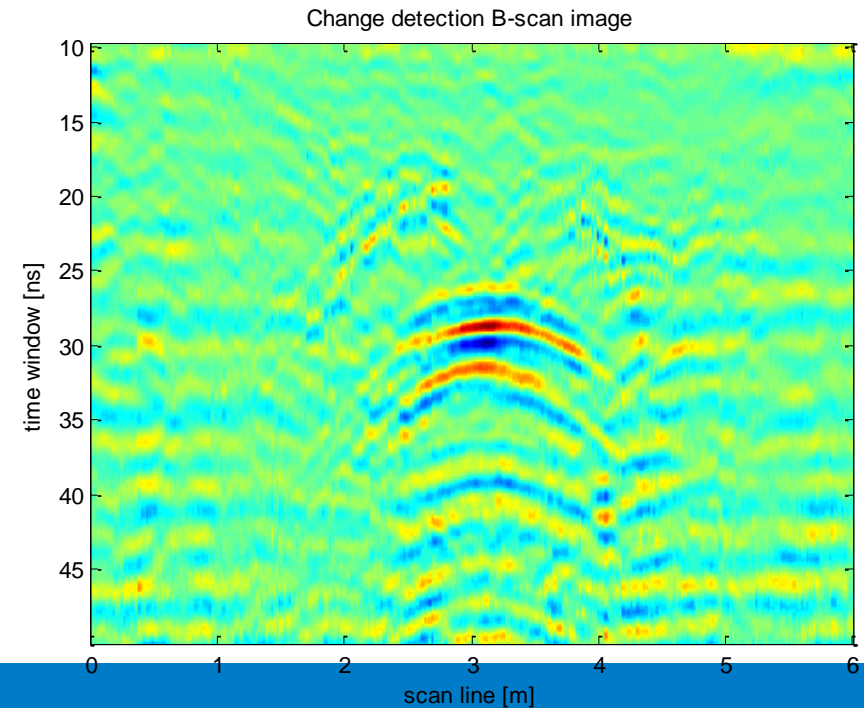
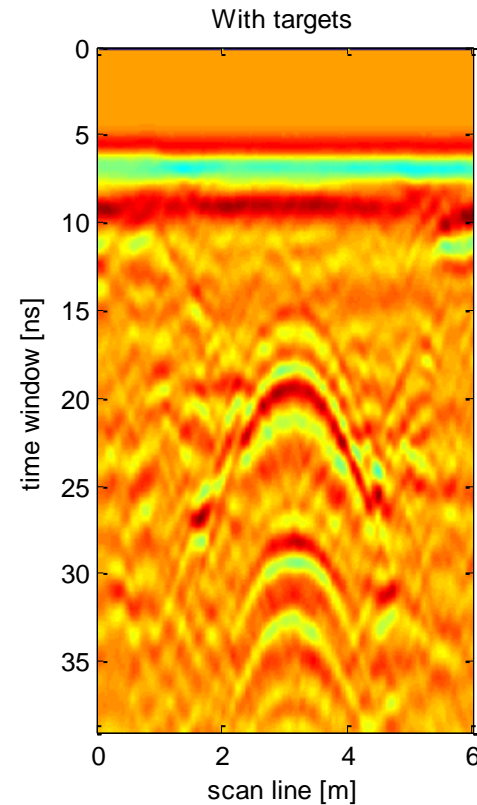
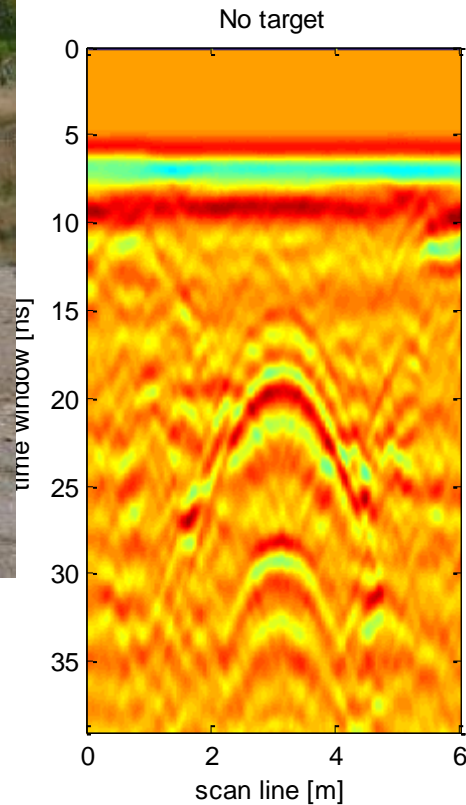
Hyper spectral imaging technology



Culvert IED detection using Ground Penetrating Radar



Aim: detection of IEDs in a culvert from the road surface
4 metal AT mines stacked



Desensitizing HMEs



Applied Augmented and Virtual Reality in Threat Mitigation



Friday, 11 January, 2019

STOP

Naam

HOME

Basic entries

Reports

Software

Admin

Technology

Threat

Environment

Company

Product

Platform

Company

Country

<input type="checkbox"/>	Aariona	GERMANY
<input type="checkbox"/>	Achleitner	AUSTRIA
<input type="checkbox"/>	Acustek	IRELAND
<input type="checkbox"/>	Aeraccess	FRANCE
<input type="checkbox"/>	Aerobotica	NETHERLANDS
<input type="checkbox"/>	Airsense Analytics	GERMANY
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<input type="checkbox"/>	American Science and Engineering (AS	UNITED STATES
<input type="checkbox"/>	Apex Global B.V.	NETHERLANDS
<input type="checkbox"/>	ApolloShield	NETHERLANDS
<input type="checkbox"/>	Argo-A Security	UNITED STATES
<input type="checkbox"/>	Audiotel International	UNITED KINGDOM
<input type="checkbox"/>	BAE Systems	UNITED KINGDOM
<input type="checkbox"/>	BATS	BELGIUM
<input type="checkbox"/>	Battelle	UNITED STATES
<input type="checkbox"/>	Bavak	NETHERLANDS
<input type="checkbox"/>	Blighter Surveillance Systems (BSS)	UNITED KINGDOM
<input type="checkbox"/>	Blueprint Subsea	UNITED KINGDOM
<input type="checkbox"/>	Bodkin Design and Engineering	UNITED STATES
<input type="checkbox"/>	Borovo Gummitrade	CROATIA
<input type="checkbox"/>	Bruhn	DENMARK

Record: 1 of 133

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Company Website Country

	Product	Status	Available
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<input type="checkbox"/>	<input type="text" value="CPEDS"/>	current	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="PRIED"/>	current	<input type="text"/>
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Record: 1 of 3

No Filter

Search

Product

Technology

 *

Record: 1 of 1

Threat

 *

Record: 1 of 4



- New threats → new types of devices → accurate recording.
- Why?
 - Helps with threat mitigation, MRE and clearance activities.
 - For monitoring implementation of different international commitments, such as the Anti-Personnel Mine Ban Convention.

- Example:

'Anti-personnel mine' means a mine designed to be exploded by the presence, proximity or contact of a person and that will incapacitate, injure or kill one or more persons (Article 2.1 APMBC)'

- Reflections and understandings on the implementation and completion of Article 5 mine clearance obligations:

'The definition in Art. 2.1 makes no distinction between an AP-mine that has been 'manufactured' and one that has been 'improvised', since negotiators aimed for an effect-based definition. Hence, States Parties affected by the latter type of AP-mines must address them as part of their overall implementation challenge under the Convention, in fulfilment of Article 5 and 7 commitments.'



Thank you.