

Demilitarization Developments in NATO



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Global Demilitarization Symposium

Reno, NV

Presented by:

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15 May 2007

NATO MAINTENANCE & SUPPLY AGENCY

Location



Organization

North Atlantic Council

NAMSO
Board of Directors

NAMSA

NATO's main logistics agency

Logistics support to Alliance operations

Logistics support to some 50 weapon systems (air, land, sea)

965 International staff

25 nations

Chartered 1958

DEMIL DEVELOPMENTS IN NATO

- **What's new?**

- New demil factory to open in **Turkey** 4 July 2007
- 7 year **MLRS** demil contract awarded
- Landmine stockpile disposal projects completed in **Belarus** and **Serbia**
- EWI operation continues 24/7 in **Albania**
- Rocket propellant conversion and UXO clearance continue in **Azerbaijan**
- **Lithuania** to lead rocket demil project in **Georgia**
- First *Mediterranean Dialogue* project under development in **Jordan**
- Stockpile security and rocket propellant project under development in **Afghanistan**

CURRENT DEMIL CONTRACTS

| Nomenclature | Customers | Approx Value (€) |
|--------------------------|-----------|---------------------|
| LSA 2006 | BEL-A | 1 200 000 |
| SMK WP Ammunition | DNK-A | 1 200 000 |
| LSA 2006 | FRA-A | -600 000 |
| Ammunition HD 1.3 - 2006 | USAREUR | 200 000 |
| 155 HE ADAM M692 | GRC-A | 100 000 |
| Navy Ammunition 2006 | FRA-N | 1 450 000 |
| CBU Mk 20 | USAREUR | 700 000 |
| BL755 | NLD-AF | 130 000 |
| BL755 | GBR-AF | 1 800 000 |
| TOW & CRV-7 | GBR-AF | 220 000 |
| SKY FLASH | GBR-AF | 100 000 |
| - options 2007-2008 | | 250 000 |

CURRENT DEMIL ACTIONS

| Nomenclature | Customers | ROM Estimate (€) |
|--------------------------------------|-----------|---------------------|
| LSA 2007 | FRA-A | 2 500 000 |
| Navy Ammunition 2007 | FRA-N | 1 500 000 |
| Air Force Ammunition | FRA-AF | 1 000 000 |
| Ammunition HD 1.1 & 1.2 - 2007 | USAREUR | 780 000 |
| AP Mines | GRC-A | 7 000 000 |
| 5" & 2"75 Warheads and Rocket Motors | GRC-AF | 2 500 000 |
| Missile AS-30SL | FRA-AF | 100 000 |
| ALARM Missiles | GBR-AF | 200 000 |
| AT Mines & Exocet missiles | BEL-A | 2 000 000 |
| NIKE-HERCULES | GRC-AF | 5 000 000 |
| Bombs GP M117 | USAREUR | 1 800 000 |
| 155 HE ICM M483A1 | BEL-A | 5 000 000 |
| M26 MLRS Rockets | NLD-A | 4 000 000 |
| M26 MLRS Rockets | GBR-A | 8 600 000 |
| - options 2010-2013 | | 17 000 000 |

NEW DEMIL FACTORY IN TURKEY

Location: Kirikkale, Ankara region

Prime contractor: Roketsan

Completion: 18 months after contract award

Opening Ceremony: 4 July 2007



DESIGN-BUILD TURNKEY PROJECT



Designed by Turkish engineers to comply with national and international standards of safety, security and environmental protection, to demil 6,000 tonnes ammunition/year

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MUNITIONS PLANNED FOR DEMIL



| | |
|------------------|---|
| Artillery | 8 inch, 155 mm, 105 mm, 3 inch |
| Cannon | 20mm, 25mm, 40mm, 57mm, 75mm, 76mm |
| Tank | 90 mm |
| Mortar | 60 mm, 81 mm, 4.2 inch |
| RCL | 106 mm |
| Mines | AP, AT |
| Rockets | 3.5 inch, 2.36 inch, 107 mm, 122 mm |
| GM | Redeye, Rapier, Exocet, Penguin, Sea Skua, G7A, Mk 14-23 |

OPERATIONAL UNITS

Medium/Large Caliber Projectile w/o fuze and
Mortar Disassembly Unit

Medium/Large Caliber Projectile with fuze and
Mine Disassembly Unit

Rocket and Missile Disassembly Unit

Water Jet Cutting Unit

TNT Disposal Unit

Final Process Unit

Explosive Waste Incinerator (EWI)

Ammunition Storage Units (x2)

TNT Storage



SUPPORTING UNITS

Main Circuit Breaker & Transformer

Water Pump Station & Water Storage Tanks

Pressurized Air Building

Central Heating Building & Wooden Box Incinerator

Management Control, Fire Station & Change Room

Administrative Building, Cafeteria & Medical Centre

Main Entrance and Security Building

Secure Area Control Station

Mobile Restrooms (x3)



PROGRESS MAY 2006 TO MAY 2007



Entrance



Top view 14:17

EXPLOSIVE WASTE INCINERATOR



EWI (Model APE 1236M2) in Utah

**EWI Contractor:
Southern Technologies**

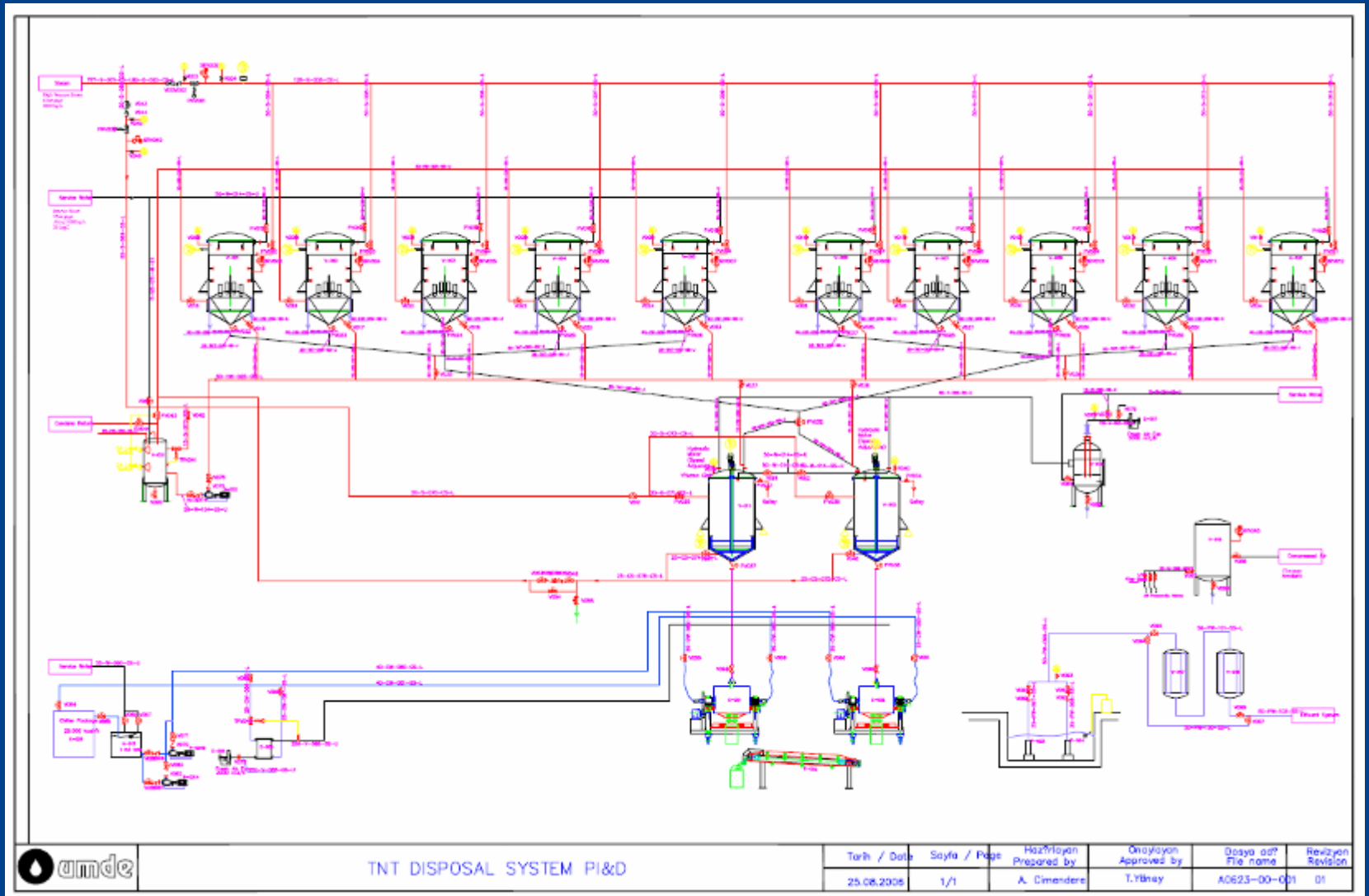
**Under assembly at
Kirikkale**

**To be commissioned and go
live June 2007**



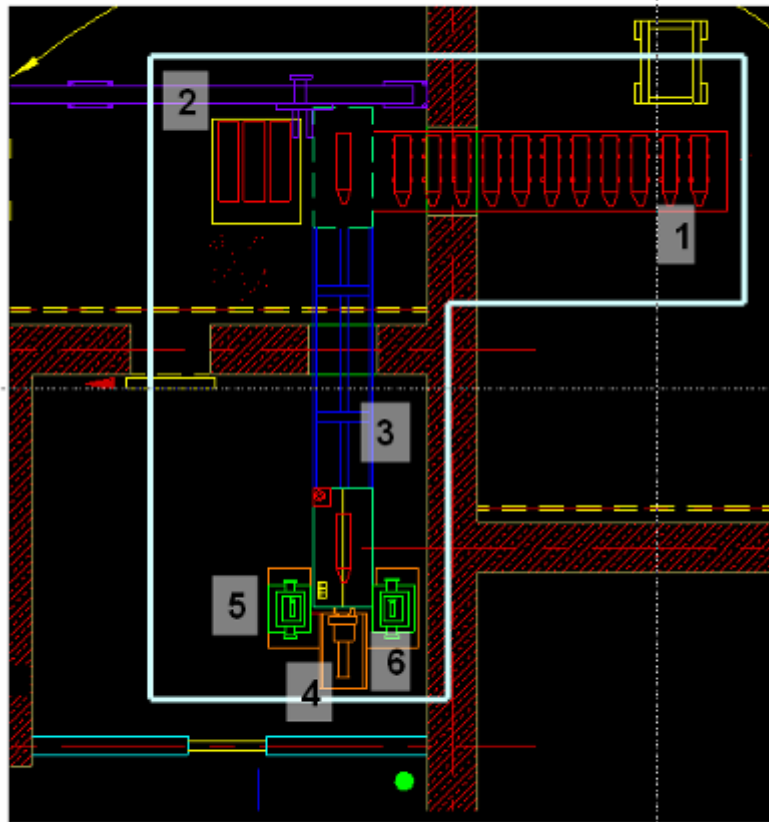
EWI Construction Site at Kirikkale

10-AUTOCLAVE TNT REMOVAL SYSTEM



ROBOTIC HANDLING UNITS

F20.1 - Demolition Line-1 Ammunition with Fuze/Dummy Fuze



Descriptive List of Components F20.1:

1. Munition transfer conveyor
2. Munition loading gantry robot
3. Munition transfer and fixing shuttle
4. Fuze / Dummy fuze removal mechanism
5. In-liner removal mechanism
6. Supplementary charge removal mechanism
7. Others (bucket, disassembled shell buffer, etc)

KaleAltınay Robotik ve Otomasyon A.Ş.,
İstanbul Deniz ve End.Sarb.Böl. Orjin Cad. 10 Sokak No.3, Tuzla 34957 İstanbul
Tel:+90 (216) 581 32 00 • Fax:+90(216) 581 32 90 • www.kalealtinay.com.tr

KaleAltınay 

ROBOTIC HANDLING UNITS



155 mm projectile
fuze and plug removal unit

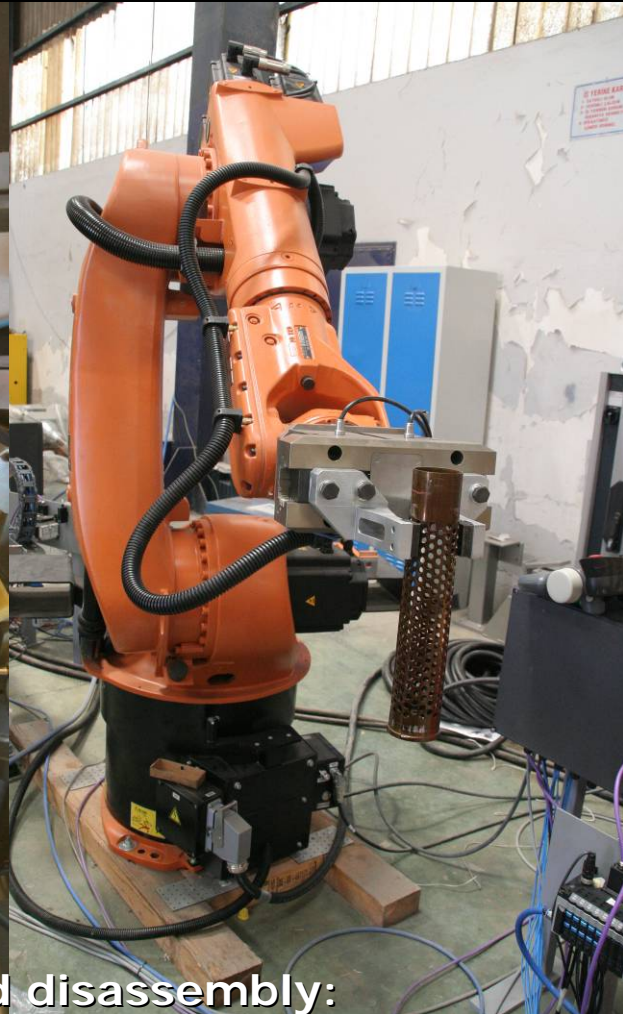
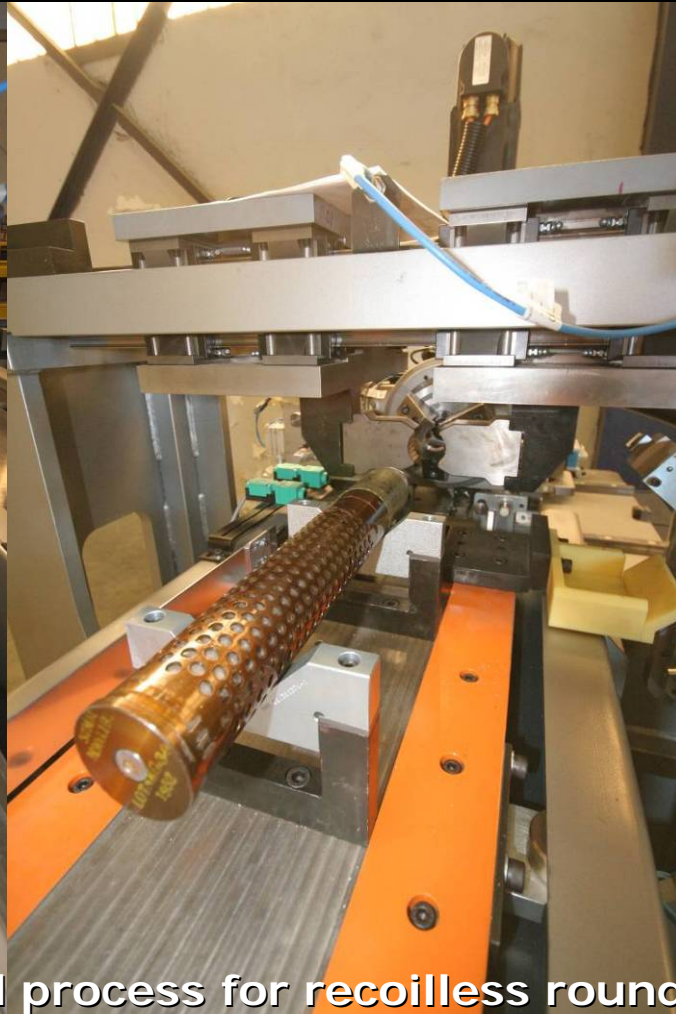
Units designed and built by
Kale Altinay Robotics, Istanbul

ROBOTIC HANDLING UNITS



Parallel lines for fuze/plug removal for different calibres

ROBOTIC HANDLING UNITS



Automated process for recoilless round disassembly:

separate projectile/cartridge, remove fuze and primer, empty propellant

ROBOTIC HANDLING UNITS



Disassembly of jumping
anti-personnel mine

ROBOTIC HANDLING UNITS



Part of waterjet charge removal assembly

BUILDING BRIDGES IN TURKEY

International cooperation built between parties in Turkey, Luxembourg, Italy and USA to establish national demil capacity in Turkey



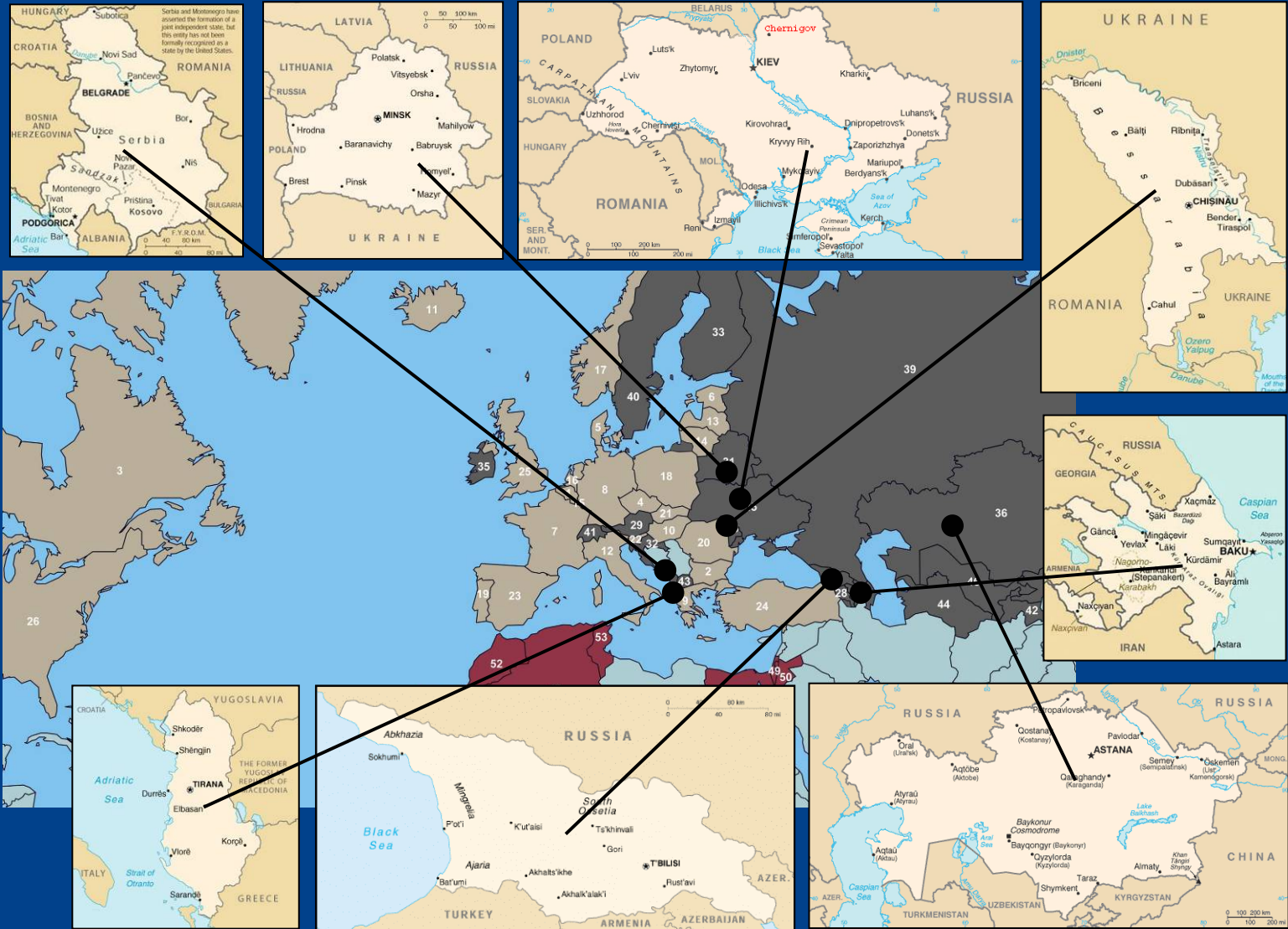
MLRS DEMIL

- 1st contract awarded Feb 2005
 - 8,000 rockets (Netherlands)
 - Italian contractor, German sub-contractor
 - ROM price €700/rocket
- 2nd contract awarded May 2007
 - 50,000 rockets (UK & Netherlands)
 - German contractor, Norwegian sub-contractor
 - ROM price €600/rocket



BREAKING NATO FRONTIERS

- Albania
- Azerbaijan
- Belarus
- Georgia
- Kazakhstan
- Moldova
- Ukraine
- Serbia



LANDMINE DISPOSAL IN BELARUS

712,235 anti-personnel landmines processed:
321,910 disassembled or destroyed
(PMN, PMN-2, POMZ-2M, POM-2)
390,325 inspected and trip mechanisms removed
(MON series & OZM-72)



Project completed
December 2006



LANDMINE DISPOSAL IN SERBIA



Lead nations:

Canada and Austria

Contributors:

Austria, Bulgaria, Canada, Czech Republic, Hungary, Ireland, Netherlands, Norway, Spain, Sweden, Switzerland

1.4 million anti-personnel landmines demilitarized

7 Types: PMA-1, PMA-2, PMA-2A, PMA-3, PMR-3, PROM-1, VS-50

Processed at government workshops in **Kragujevac**

139 tonnes TNT and **10 tonnes Tetryl** recycled in commercial explosives

Closing ceremony in Belgrade **16 May 2007**

EWI ACQUISITION

- **Third NAMSA contract awarded for armoured rotary kiln EWI**
- **Albania EWI running 24/7 for 18 months**
- **Turkey – installation in progress**
- **Ukraine – EWI in production in US**

EWI OPERATION IN ALBANIA

- 3 shifts employing 60 workers

- Monthly productivity:

- 7.62 mm 10 million (310 tonnes)
- 12.7 mm API 2.2 million (365 tonnes)
- 14.5 mm API 1.5 million (375 tonnes)

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UXO THREAT IN AZERBAIJAN

Before...



...after



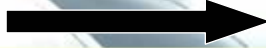
UXO CLEARANCE IN AZERBAIJAN



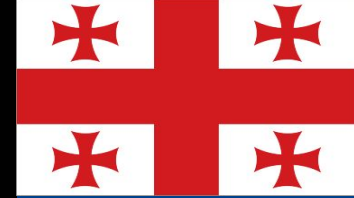
ROCKET PROPELLANT CONVERSION IN AZERBAIJAN



RECYCLING IN AZERBAIJAN



DEMIL OF ROCKETS IN GEORGIA



Proposed demil of 9,000 Alazan, Kristall & S-8 rockets

Rockets adapted and used in regional conflicts in South Caucasus

Lithuania likely to act as Lead Nation

Al-Qaeda advocated use of Alazan
Air to Surface missiles - April 2006





First MOU between a Mediterranean Dialogue country and NAMSA



BG Khaled Obeidat,
Jordanian Armed Forces



MG Karl-Heinz Münzner,
NAMSA General Manager

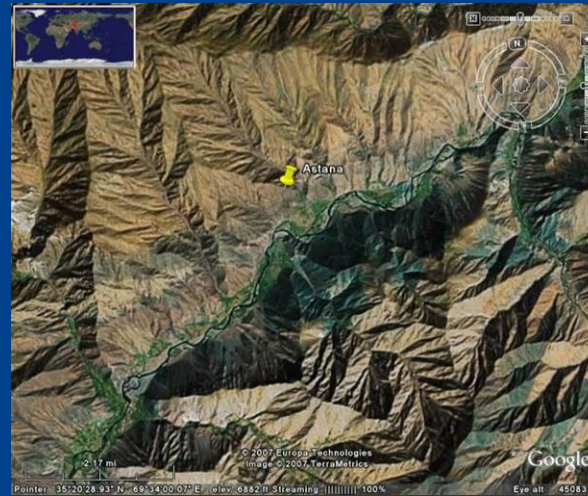


- Munitions demilitarization
- Safety and Suitability for Service
- Nationwide UXO survey
- Spain to act as Lead Nation

AFGHANISTAN



- Afghanistan is NATO's top priority
- Trust Fund project proposed to help resolve problems of:
 - Surplus munitions
 - Ammunition stock management
 - UXO contamination
 - Rocket propellant neutralization
- Initial proposal under development by NAMSA





NATO
+
OTAN

N A M S A