ANALYSIS OF THE CROATIAN ARMED FORCES 8X8 CAPABILITIES

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Republic of Croatia

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Background

- Croatian Armed Forces (CAF) grew up during Homeland war (1991 – 1995) under embargo and hard armed aggression
- CAF used different types of wheeled armoured fighting vehicles, mostly captured in battle or manufactured in war surrounding conditions
- Obsolete vehicles such as ex-Soviet BRDM & BTR and ex-Yugoslav BOV-3 fulfilled its primary role during the war, but those were not perspective solution



Preceding Research

- CAF Study from 2002 showed the need for new type of highly capable armoured vehicles, in line with:
  - new role of Armed Forces,
  - proposed force structure, and
  - future NATO membership

Main goal:

- Establishment of technical and logistical pre-conditions for mobility and efficiency increasing of Croatian Armed Forces, through:
  - equipping with modern wheeled armoured vehicles
  - assuring permanent technical/logistic support from Croatian industry, by developing of capacities for future modernization and continuously maintenance and staff training
  - minimisation of CAF dependence in equipping and long-term logistic support from foreign sources

Preceding Research

- Based on CAF Study, MoD launched a preliminary gathering process, aiming to collect input data, including:
  - possible vehicle types and configurations
  - feasibility possibilities
  - trials
  - local industry capabilities

Piranha IIIC 8x8, MOWAG

Pandur II 8x8, Steyr

AMV 8x8, Patria

Request for Best and Final Offer

- Based on:
  - Feasibility Study (2003)
  - "AIFV Tactical Study" (2006) – issued by CAF
  - Informative offers of potential partners

Through **Request for Best and Final Offers** MoD defined **main criteria** for decision:

- design - modern and perspective vehicle, 8x8 and/or 6x6 configuration, high protection, fully NATO compatible
- commercial - price, contractual model
- localisation - >100% offset & local production
- ILS/LCS - training, maintainability, modernisation capability

- **Request for Best and Final Offer** was issued in 2007

Request for Best and Final Offer

- Technical Requirements for Basic vehicle
  - high mobility (specific power >25 HP/ton; max. speed >100 km/h)
  - ballistic protection: Level 3 & Level 4 (front glacis)
  - mine protection: Level 3a/3b
  - payload: >4,000 kg
  - Customizable Multi-Mission Capability
  - wide range of different armament systems (cal. 12.7 to 120 mm)
  - all weather and all climate conditions (-35 to +55º C)
  - crew: 3 permanent (driver, commander, gunner) & (7+) troops
  - hydraulically operated rear ramp with emergency door
  - Life Support Systems (crew protection, air conditioning, NBC overpressure system)
  - full NATO compatibility & interoperability with other CAF vehicles
  - ability to meet current and future requirements
  - swimming capability (some of the versions)

Request for Best and Final Offer

- Quantities and variants

1	AIFV-30	Armoured Infantry Fighting Vehicle RCWS 30	18	8x8
2	AIFV-30 L	Armoured Infantry Fighting Vehicle RCWS 30 L	6	8x8
3	AIFV-12.7 L	Armoured Infantry Fighting Vehicle RCWS 12.7 L	12	8x8
4	AIFV-12.7	Armoured Infantry Fighting Vehicle RCWS 12.7	24	8x8
5	AIFV-40 AGL	Armoured Infantry Fighting Vehicle RCWS 40 AGL	24	8x8
6	AICV	Armoured Infantry Command Vehicle	2	6x6
7	ACMV	Armoured Command Mortar Vehicle	2	6x6
8	AAV	Armoured Ambulance Vehicle	2	6x6
9	ANBCRV	Armoured NBC Reconnaissance vehicle	4	6x6
10	ARRV	Armoured Repair and Recovery Vehicle	2	6x6
11	ATGMV	Anti-Tank Guided Missile Vehicle	8	6x6
12	ADMV	Air Defence Missile Vehicle	6	6x6
13	AMV-120	Armoured Mortar Vehicle 120 mm	16	6x6
		TOTAL:	**126**	

Request for Best and Final Offer

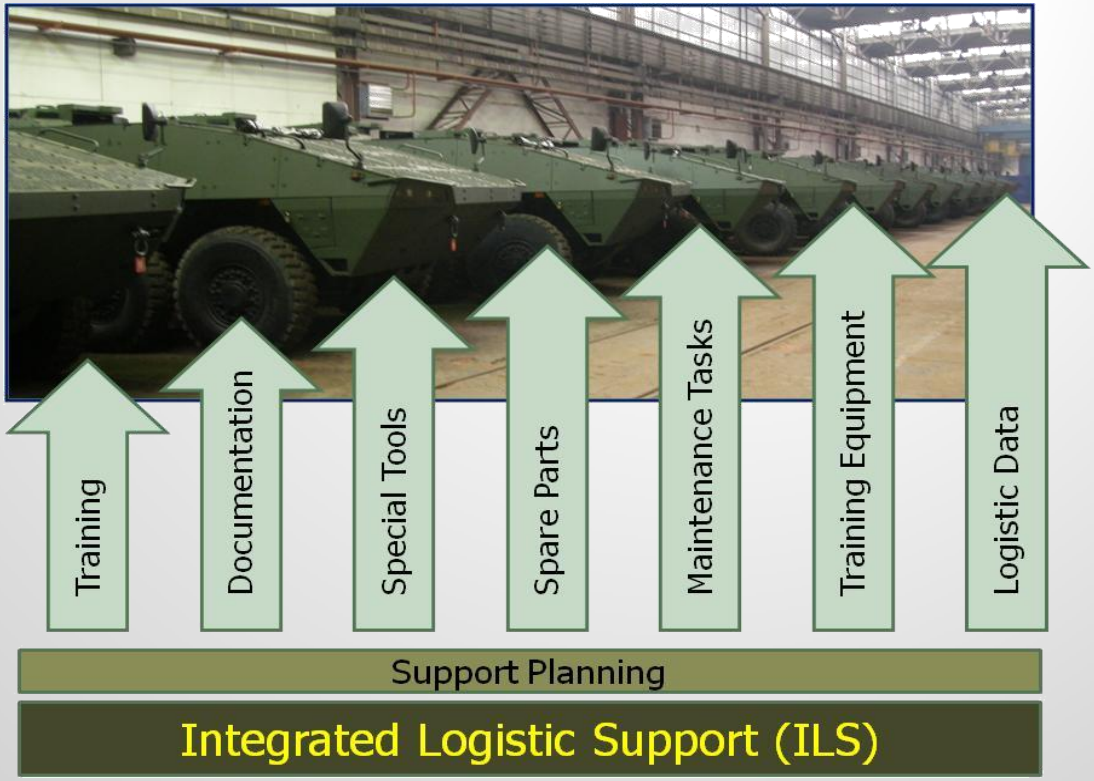
- Localisation requirements
  - readiness for Transfer of Technology
  - unlimited localisation readiness
  - offset: >100%

Role of Croatian Company DURO DAKOVIC SPECIAL VEHICLES as strategic partner of Croatian MoD and AIFV Project Consortium leader:

- Manufacturer of AMV 8x8, in its own facilities and capacities of Republic of Croatia
- Integrator of sub-systems and complete AMV 8x8
- Supplier of the final product (AIFV) to the Customer
- Responsible for full in-country/in-field after-sales support (LCS)

Request for Best and Final Offer

- ILS/LCS requirements
  - 20 years support
  - 2nd and 3rd level industry maintenance capabilities
  - future upgrading possibility



Contracting process

1. Best and Final Offers of two potential partners:
   - Steyr-Daimler-Puch (Austria) for Pandur II 8x8
   - Patria (Finland) for AMV 8x8
2. Parallel trials:

Pandur II 8x8
Piranha IIIC 8x8
Patria AMV 8x8
Patria AMV 6x6

3. Evaluation of Offers

Decision

1. Basic vehicle **Patria AMV 8x8** has been chosen as the most acceptable solution
2. All vehicles are in **8x8 configuration** (argued through parallel analysis of 8x8 and 6x6 configurations)
3. In the first phase contract has been signed for 84 basic vehicle platforms in 4 variants: AIFV-12.7 (78), AICV (2), ARRV (2) and AAV (2)
4. Basic vehicles have to be **customized**, in accordance with specific CAF requirements
5. Basic vehicles AMV 8x8 has been contracted with Consortium (DURO DAKOVIC SPECIAL VEHICLES as Leader and PATRIA LAND SYSTEMS)
6. Weapon and special systems will be contracted directly with DURO DAKOVIC SPECIAL VEHICLES, as separate processes

Technical Comparison - AMV 8x8 potentials

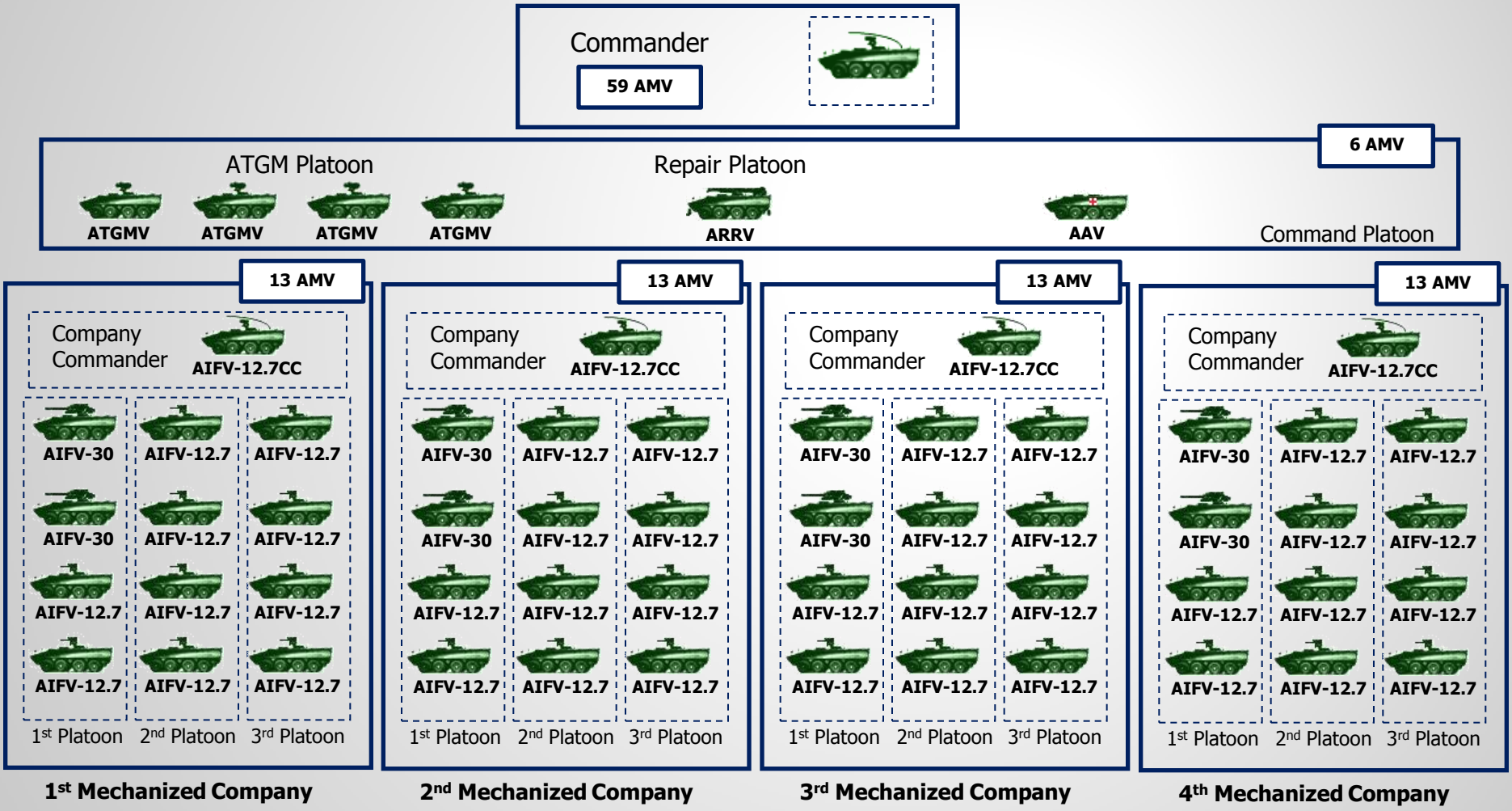
- Basic vehicle AMV 8x8 fulfils all technical requirements, specified in RBAFO

- Basic vehicle AMV 8x8 has a potential for future upgrading and customizing:
  - by gross weight increasing up to 28 tons, payload can be bigger - allowing integration of additional weapon and special mission equipment
  - ballistic protection is modular, allowing increasing protection up to Level 4 around and Level 5 (front glacis)
  - mine protection can be increased to the level 4a/4b
  - interior crew compartment with adjustable layout can be rearranged for different missions and different crew members, up to 12

AMV 8x8 deployment in CAF

- CAF has planned to equip two mechanized battalions with fully armed and equipped AMV 8x8 vehicles
- Two mechanized battalions have similar internal structure
- Missions:
  - integral part of the CAF defence and security system
  - battalions have to be ready for peace keeping missions, depending of Croatian Parliament decisions
  - one company, as a part of European Battle Group (EUBG), has to be in full readiness

Battalion


Commander
59 AMV
6 AMV
ATGM Platoon
ATGMV
ATGMV
ATGMV
ATGMV
Repair Platoon
ARRV
AAV
Command Platoon
13 AMV
Company Commander
AIFV-12.7CC
AIFV-30
AIFV-12.7
1st Platoon
2nd Platoon
3rd Platoon
1st Mechanized Company
2nd Mechanized Company
3rd Mechanized Company
4th Mechanized Company

Contracting process

Basic vehicle

Ministry of Defence
of the Republic of Croatia

Consortium:

- ĐURO ĐAKOVIĆ SPECIJALNA VOZILA d.d. SLAVONSKI BROD HRVATSKA
- Patria

Weapon systems and mission equipment

- Weapon Systems
- Communications
- Intercom
- Driver's thermal vision sight
- etc.

ĐURO ĐAKOVIĆ SPECIJALNA VOZILA d.d. SLAVONSKI BROD HRVATSKA

Contracting process

- 1st phase: 84 vehicles AMV 8x8 (signed in 2007)
- 2nd phase: 42 vehicles AMV 8x8 (signed in 2008)
- 6 different configurations on the same platform
- all vehicles in 8x8 configuration

1	AIFV-30	Armoured Infantry Fighting Vehicle RCWS 30	16	8x8
2	AIFV-12.7	Armoured Infantry Fighting Vehicle RCWS 12.7	96	8x8
3	AICV	Armoured Infantry Command Vehicle	2	8x8
4	AAV	Armoured Ambulance Vehicle	2	8x8
5	ARRV	Armoured Repair and Recovery Vehicle	2	8x8
6	ATGMV	Anti-Tank Guided Missile Vehicle	8	8x8
		TOTAL:	**126**	

Basic Variants

AIFV-30

ARRV

AAV

Project Approach

1. MORH's Project Team leads and coordinates the whole process of establishing and managing of the AIFV Project
2. The whole AIFV Project is defined and managed through mutually agreed Project and Quality Assurance Plan
3. Permanent reporting and coordinating
4. Every vehicle variant is verified through Factory Acceptance Tests before serial production starts
5. Government Quality Assurance Representative (GQAR), named by MORH, controls manufacturers' processes and products on daily basis

Project Realisation Phases

- end 2007 - Contract signing
- 2009 – Transfer of Technology (documentation, on-job training, localisation)
- 2010 - Pre-serial production and deliveries of the first vehicles made in Croatia (DURO DAKOVIC SPECIAL VEHICLES)
- 2011 - Full serial production started, still running
- 2012 - Equipping of vehicles with weapon systems, communication and other special equipment




DURO DAKOVIC SPECIAL VEHICLES

Hull Production

DURO DAKOVIC SPECIAL VEHICLES

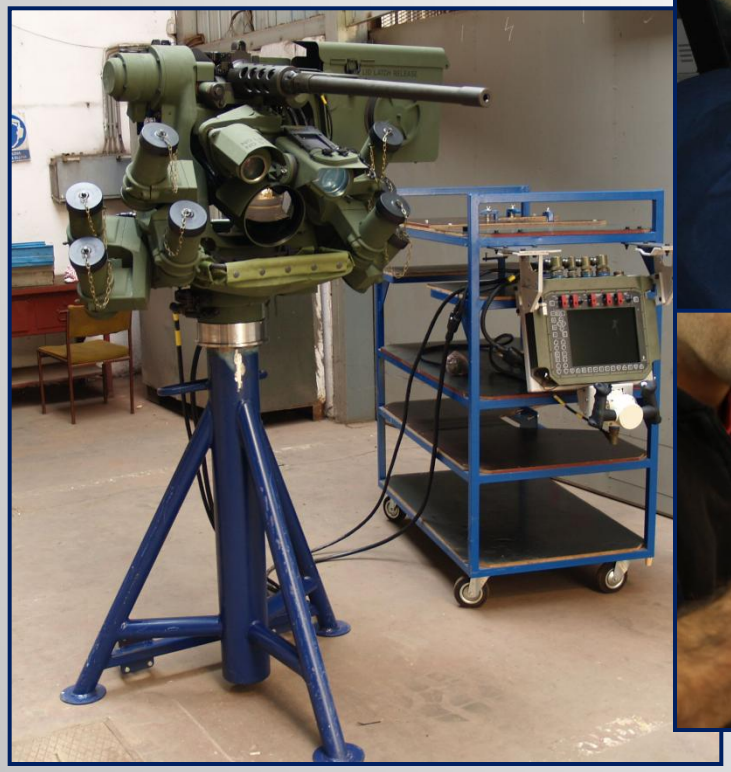
Mechanical & Electrical Components

DURO DAKOVIC SPECIAL VEHICLES

Final Assembling

DURO DAKOVIC SPECIAL VEHICLES

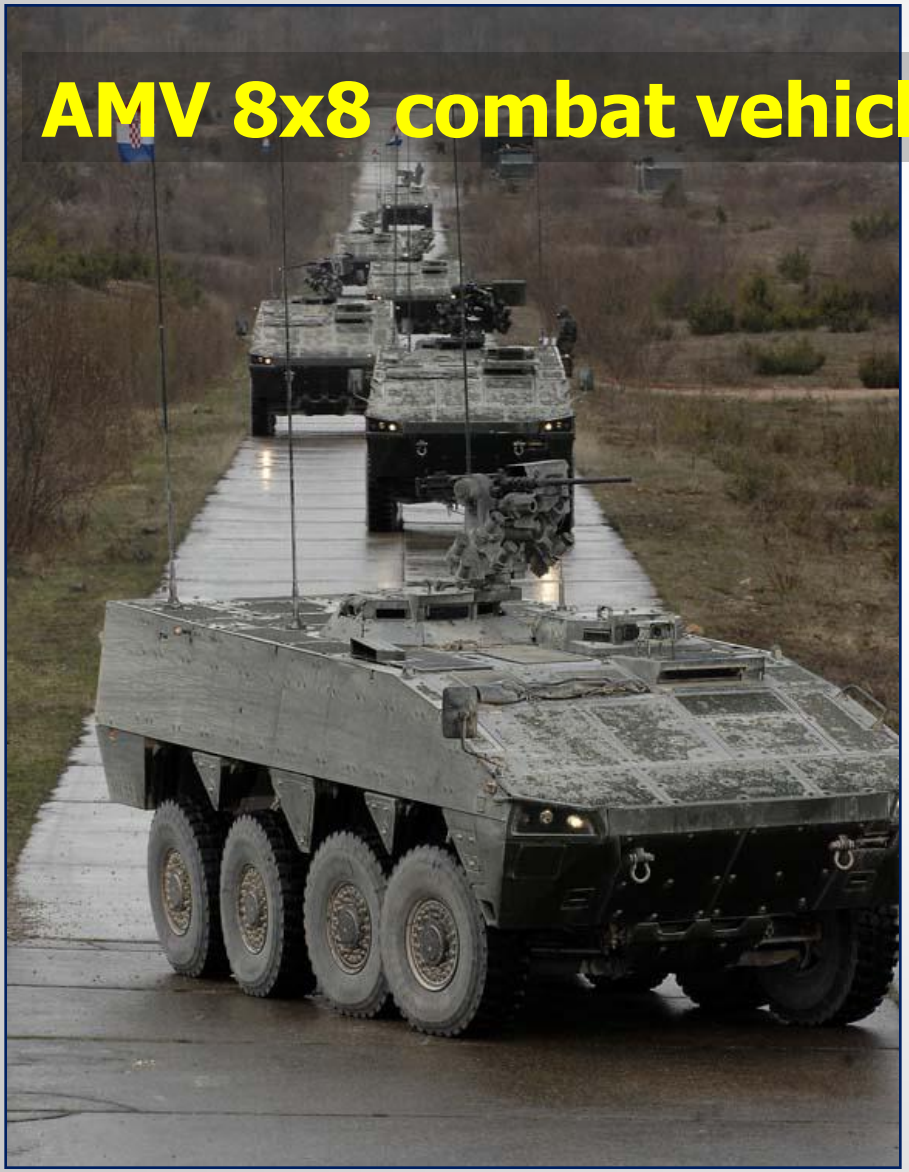
Systems Integration



DURO DAKOVIC SPECIAL VEHICLES

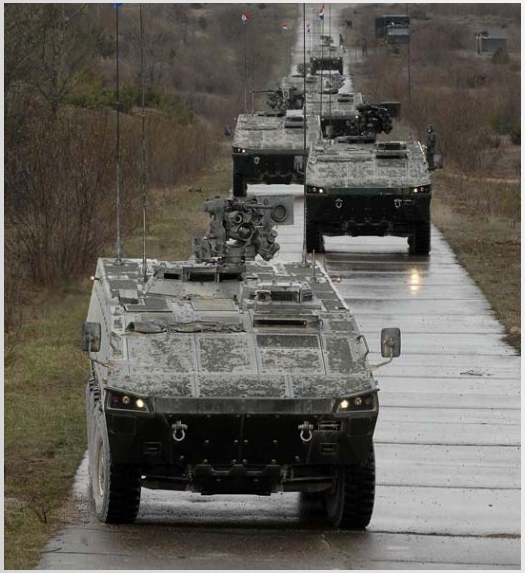
Testing

AMV 8x8 combat vehicles deployed in CAF



AIFV – PROJECT STATUS

- BASIC VEHICLES PRODUCED - 103
- FULLY EQUIPPED AND DELIVERED TO THE ARMED FORCES:
  - **AIFV 12,7 – 42**
  - **AAV – 2**
  - **ARRV – 2**



- GROUP OF CAF VEHICLES SUCCESSFULLY PARTICIPATED IN **EU BATTLE GROUP** EXERCISE IN GERMANY IN APRIL/MAY THIS YEAR
- VEHICLES PERFORMED UP TO EXPECTATIONS AND USER SATISFACTION

Thank you!