



NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

Lessons from NATO MW Concept Experiment

SMS X. class Viktor ŠTRITOF



NATO MW COE MILESTONES

Established: 25 Mar 2015 (MOU signed)

ACT Accreditation Visit: 26 – 27 May 2015

Opening Ceremony: 10 Nov 2015

22nd activated NATO COE: 27 Nov 2015





VISION

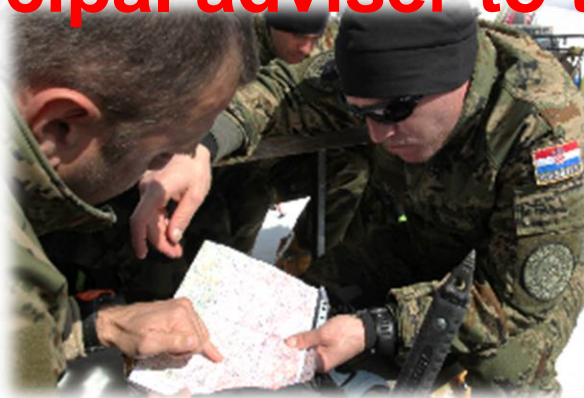
To be a **hub** and a focal point for MW **expertise** in the NATO community.

MISSION

To assist NATO member countries, partners, other countries and international organizations, in order to **enhance mountain warfare capabilities.**



Act as a principal adviser to the HQ SACT.





The purpose of MW Concept

To prove that NATO needs Mountain Warfare **Capabilities**

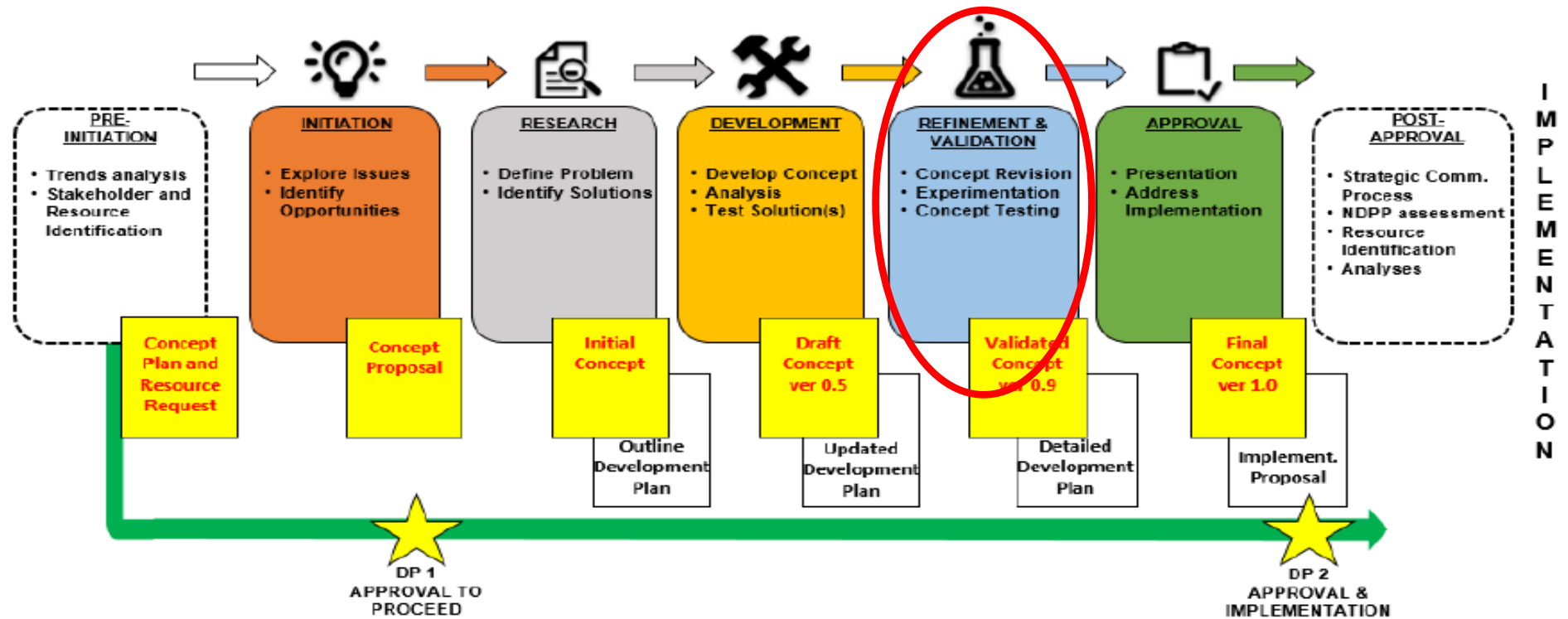
What is a Concept

... solution-oriented transformation idea that addresses a capability shortfall or a gap (AAP-6)

Thesis

In the mountain environment the employment of specific **capabilities** will give to NATO a great advantage

- NATO CDE process





MW CONCEPT VALIDATION EXPERIMENT

WHO:



General Data:

MW Concept Validation

Tactical / BDE level

Computer Assisted Simulation

JTC SAF Postojna, Slovenia

EXPERIMENT END STATE
VALIDATE MW 0.5
MOVE TO 0.9 MW CONCEPT



NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

April – June 2020
Work on the preparation of SCENARIO and DIV OPLAN




NATO UNCLASSIFIED/ Releasable to GSA
EXERCISE - EXERCISE - EXERCISE

MOUNTAIN WARFARE CENTRE OF EXCELLENCE

MOUNTAIN WARFARE
CONCEPT VALIDATION EXPERIMENT

OPLAN

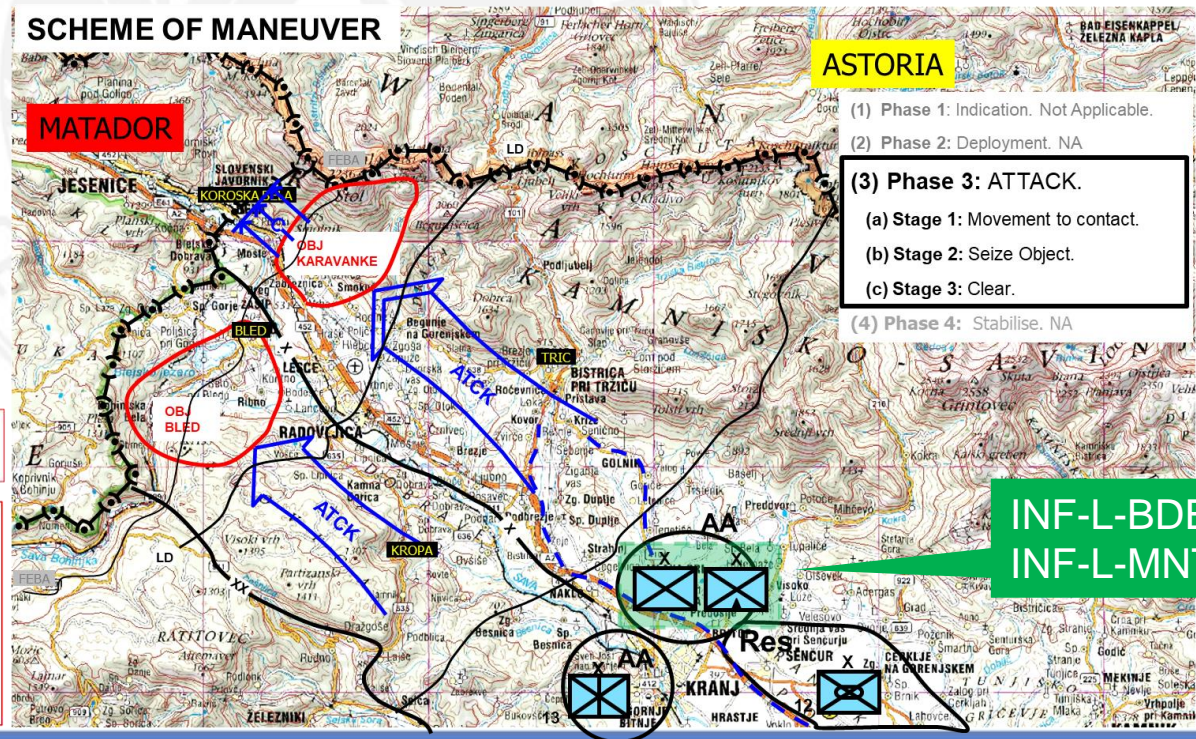


1st DIVISION

NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

EXERCISE - EXERCISE - EXERCISE
NATO UNCLASSIFIED/ Releasable to GSA

The scenario includes DIV OPLAN which has been prepared for two different brigades (with comparable strength); standard infantry brigade (INF-L-BDE) and infantry brigade with all capabilities (INF-L-MNT-BDE) have the same AOO, the same OPFOR and the same task.



BLUE COALITION is friendly.
OCCASUS is not friendly.
MATADOR is hostile.
ASTORIA is a neutral state.

OCCASUS Intent:
to become an indisputable peer to BLUE COALITION.

MATADOR Intent:

- Destabilize NW part of DRAGOLAND
- Draw attention away from the real economic challenges
- Maintain aggressive posture along the border of DRA and exploit the MAT minority support
- Gain territory from DRA
- Full scale war btw OCCASUS & BA Coalition (not very likely)



NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

September - November 2020
BDEs OPORDs




NATO UNCLASSIFIED/ Releasable to EXERCISE - EXERCISE - EXERCISE

NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

MOUNTAIN WARFARE
CONCEPT VALIDATION EXPERIMENT

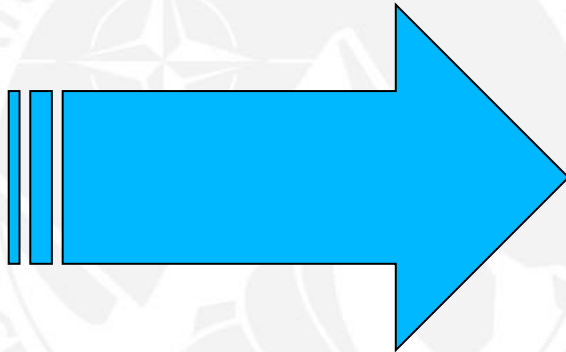
OPLAN



1st DIVISION

NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

EXERCISE - EXERCISE - EXERCISE
NATO UNCLASSIFIED/ Releasable to



In cooperation with the 1st Brigade of Slovenian Armed Forces and „Taurinnense” Alpine Brigade of Italian Armed Forces, two brigades’ staff created INF-L-BDE OPORD and INF-L-MNT-BDE OPORD.

7 – 11 September 2020
Staff training INF-L-BDE (SVN)

NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

MOUNTAIN WARFARE
CONCEPT VALIDATION EXPERIMENT

OPORD 11th BDE




Slovenian
1st Brigade

INF - L - BDE


NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

November 2020
Staff training INF-L-MNT-BDE (ITA)

NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

MOUNTAIN WARFARE
CONCEPT VALIDATION EXPERIMENT

OPORD TF ICE

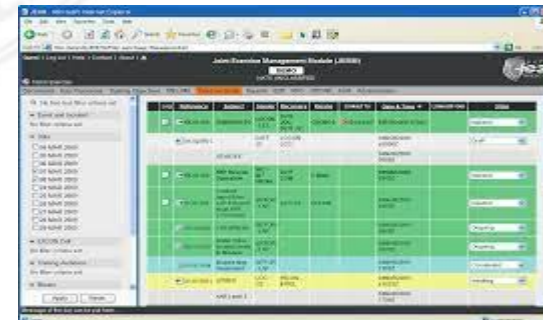
Italian
Alpine Brigade
"Taurinnense"

INF - L - MNT - BDE

NATO MOUNTAIN WARFARE CENTRE OF EXCELLENCE

Software used in NATO MW COE Experiment

- **JEMM (JOINT EXERCISE MANAGEMENT MODULE)**
- **JCATS (JOINT CONFLICT AND TACTICAL SIMULATION)**
- **3D Viewer**
- **VBS3 and VBS4 (VIRTUAL BATTLESPACE)**
- **pRTI (Pitch run time infrastructure)**





JEMM

OPOORD

MEL/MIL

SYNC

MATRIX

JCATS

Documents Map Key Processes Training Objectives MEL/MIL

No free-text filter criteria set

Mission and Storyline

- 01 C2 MNT
- 01.01 Communication BDE HQ
- 01.02 Maneuvering units
- 02 Mobility MNT
- 02.01 Maneuvering units
- 02.02 Mobility under extreme condition
- 03 Fires MNT
- 03.01 Coordinated direct fire support
- 03.02 Coordinated indirect fire support
- 04 Intel MNT
- 04.01 Gathering intelligence
- 04.02 Mountain terrain risks
- 05 Force protection MNT
- 05.01 Enemy trying to gain a supremacy
- 05.02 Paramilitary groups became active int AO
- 06 Info Ops MNT
- 06.01 PSYOP support
- 07 Sustainment MNT
- 07.01 Maneuver units are capable to self-sustain
- 07.02 Influence of bad weather condition
- 08 Risk and Hazard MNT
- 08.01 Mountain expert participation in the planning
- 08.02 Mountain expert participation in the operation
- 09 EW MNT
- 09.01 EW units in extreme weather situation.
- 09.02 Heavy compartmentalize terrain.
- 10 Interoperability MNT
- 101 C2 INF
- 101.01 Communication BDE HQ
- 101.02 Maneuvering units
- 102 Mobility INF
- 102.01 Maneuvering units
- 102.02 Mobility under extreme condition

Apply Reset

Go to Administration - Scenario - Exercise to change this text...

JEMM - Microsoft Internet Explorer

http://localhost/JEMM

Joint Exercise Management Module

Found 18 entries that meet the selected criteria.

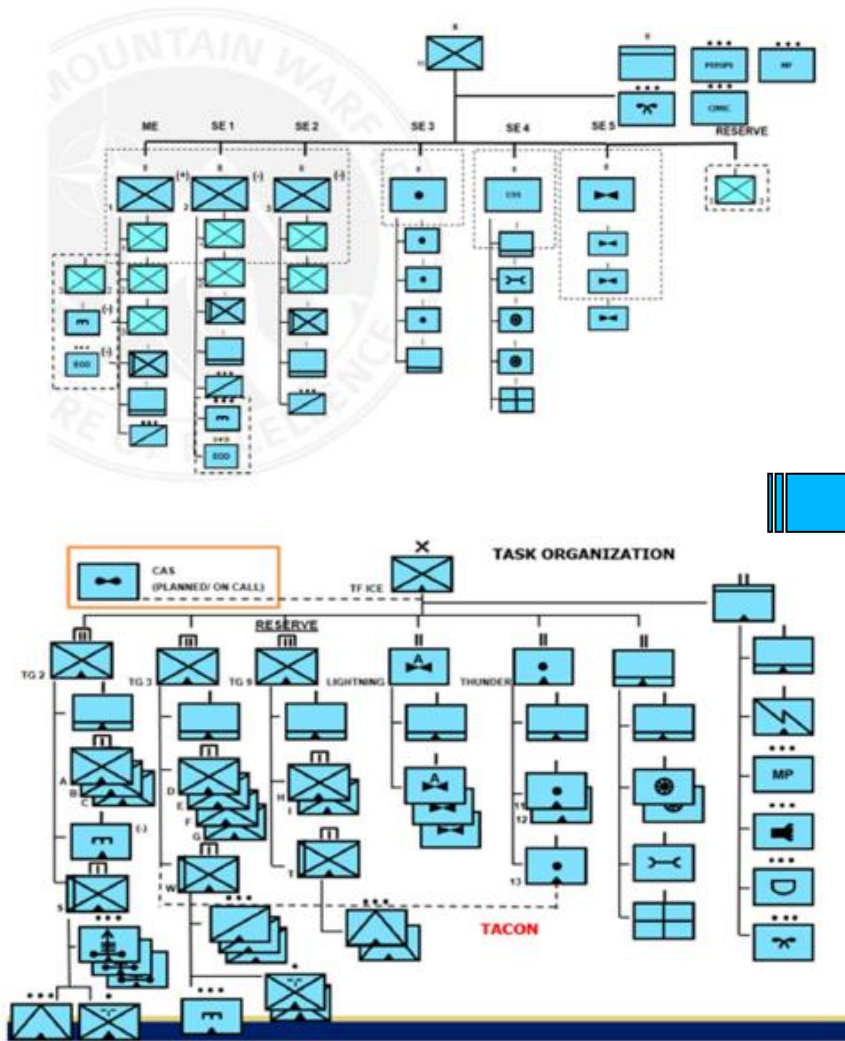
Log	Reference	Subject
		STARTEX
<input checked="" type="checkbox"/>	01.01.A02	VAS defector
<input checked="" type="checkbox"/>	01.01.A03	Water mine located close to Mindelo
<input checked="" type="checkbox"/>	01.01.I03	NRF Rescue Operation
<input checked="" type="checkbox"/>	01.01.I01	Contact report from LAP Police to local NRF LCC forces
<input checked="" type="checkbox"/>	01.01.A04	Maggie May movement
<input checked="" type="checkbox"/>	01.01.R01	SITREP
<input checked="" type="checkbox"/>	01.01.I08	PRAIA hospital response
<input checked="" type="checkbox"/>	01.01.I04	Reccon NR on the roads
<input checked="" type="checkbox"/>	01.01.I05	Refugee Vessel Starts Sinking
<input checked="" type="checkbox"/>	01.01.I06	INTREP - Possible Terrorist ISR at Mindelho, CPV
<input checked="" type="checkbox"/>	01.01.A01	ICRC Members trapped
<input checked="" type="checkbox"/>	01.01.I02	UN Informs DJTF trapped U.N. Field Workers
		ENDEX

UNIT	Phase 1	Phase 2a	Phase 2b	Phase 2c	Phase 3a	Phase 3b	Phase 3c	Phase 3d	Phase 3e
RECC		3.1.2	3.1.1	3.1.4	3.1.3	3.1.1	3.1.2	3.1.3	3.1.4
DET		3.2	3.1.1	3.1.2	3.1.3	3.1.1	3.1.2	3.1.3	3.1.4
UC		3.1.1	3.1.2	3.1.3	3.1.4	3.1.1	3.1.2	3.1.3	3.1.4
FRONT		3.1.1	3.1.2	3.1.3	3.1.4	3.1.1	3.1.2	3.1.3	3.1.4
SEC		3.1.1	3.1.2	3.1.3	3.1.4	3.1.1	3.1.2	3.1.3	3.1.4

UNIT	Element	Phase 2	Phase 3 - ADVANCE	Phase 3 - DEVELOP	Phase 3 - ATTACK	Phase 4 - CLEAR
RECC		3.1.2	3.1.1	3.1.4	3.1.3	3.1.1
DET		3.2	3.1.1	3.1.2	3.1.3	3.1.4
UC		3.1.1	3.1.2	3.1.3	3.1.4	3.1.1
FRONT		3.1.1	3.1.2	3.1.3	3.1.4	3.1.1
SEC		3.1.1	3.1.2	3.1.3	3.1.4	3.1.1

„JOINT EXERCISE MANAGEMENT MODULE“ software application that supports NATO’s process to develop and execute exercises.

JCATS - ORBAT



File Edit Import Export Extract Reports Editors Tools Compare

TO&E View

Attachment View

View

- BLUFOR
 - INF-L-BDE
 - INF-L-MNT-BDE
- OPFOR
 - MechINF BN

Attachment View

- BLUFOR
 - INF-L-BDE
 - 1st INF BN
 - 2nd INF BN
 - 3rd INF BN
 - ART BN
 - CSS_BN
 - ENG COY
 - INF-L-HQ-BDE
 - LIGHTNING BN
 - RESERVE INF COY
 - INF-L-MNT-BDE
 - 2 Inf Mnt Bn TG
 - 3 Inf Mnt Bn TG
 - 9 Inf Mnt Bn TG
 - CSS_BN
 - INF - L - MNT - HQ - BDE
 - LIGHTNING BN
 - Mnt Art BN
- OPFOR
 - MechINF BN
 - 1 MECH CO
 - ATGM_PLT
 - HQ MechINF BN
 - INFANTRY CO
 - MANPADS PLT
 - SP MORTAR BAT
 - TANK_PLT

Validated by the MW COE's military experts

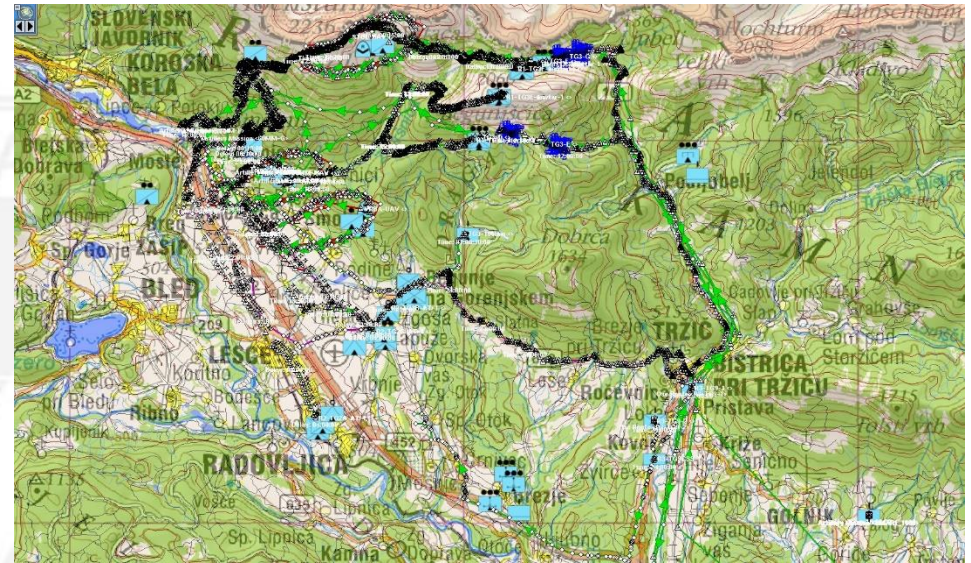


JCATS – MODELING SYSTEMS



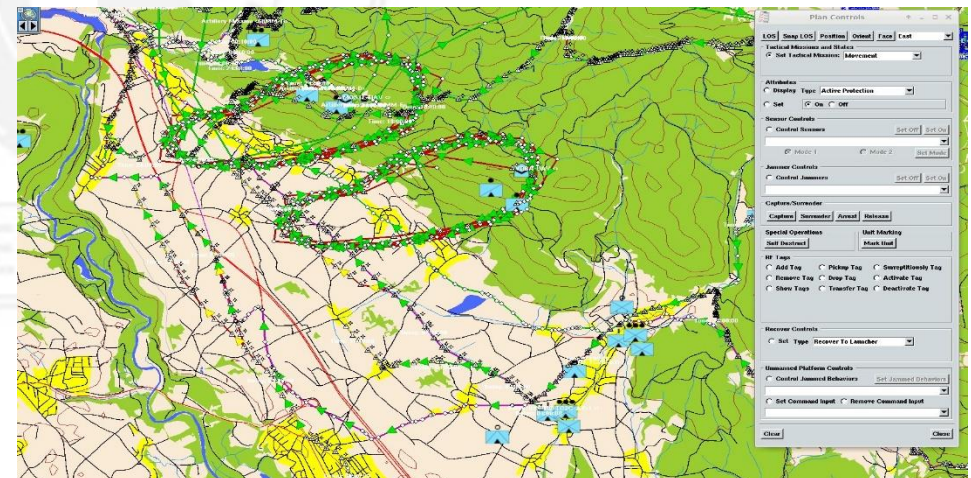
Validated by the MW COE's military experts

JCATS – PLANNING



We used (on SQD/PLT level):

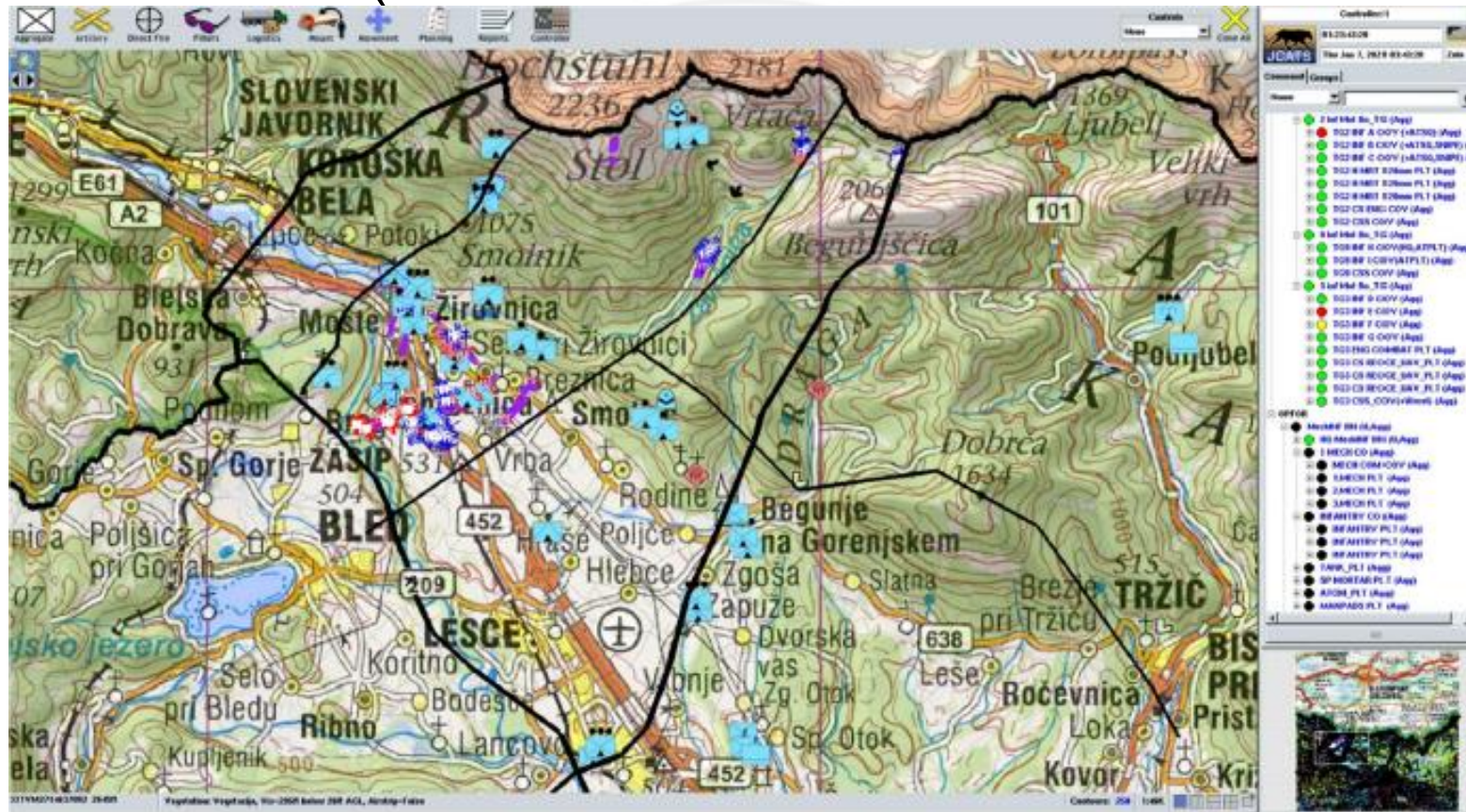
- routes,
- tactical missions,
- tactical states
- attributes
- + global parameters



JCATS – EXECUTION

Batch execution, 100 repetition

(for INF-L-MNT-BDE and INF-L-BDE each)



Data collection



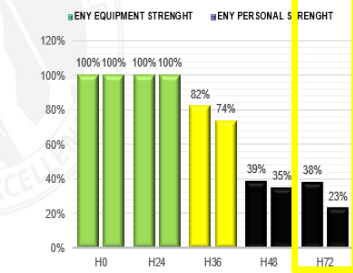
JCATS – ANALYSIS

JCATS analitic tools:

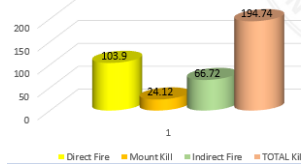
- Replay
- AWS (Analyst WorkStation)
- KVS (Killer/Victim Scoreboard)
- Event Batch Analyzer

INF-L-BDE					
OPFOR	H0 - H24	H36	H48	H72	
EQUIPMENT STRENGHT Bn	100%	61%	54%	54%	
PERSONAL STRENGHT Bn	100%	62%	52%	52%	

INF-L-MNT-BDE					
OPFOR	H0 - H24	H36	H48	H72	
EQUIPMENT STRENGHT Bn	100%	82%	39%	38%	
PERSONAL STRENGHT Bn	100%	74%	35%	23%	

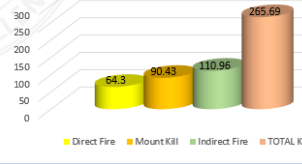


Indirect Fire Any Kill	37,83	7,2278
Mount Kill KKill	66,72	6,58343
Mount Kill Any Kill	66,72	6,58343
TOTAL Kkill	194,74	

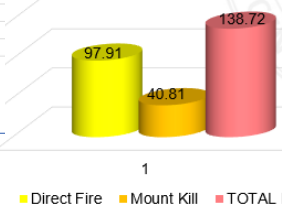


ENY CASUALTIES INF-L-MNT-BDE

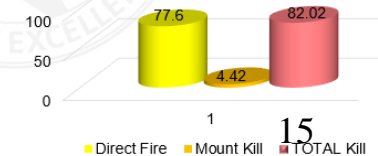
Source	Damage	Ave # dan	Std Dev
Direct Fire KKill	64,3	5,76628	
Direct Fire FKill	0,05	0,217945	
Direct Fire MFKill	0,04	0,195959	
Direct Fire Non KKill	0,09	0,286182	
Direct Fire Any Kill	64,39	5,70595	
Indirect Fire KKill	110,96	3,28	
Indirect Fire FKill	1,43	1,15113	
Indirect Fire MKill	0,85	0,887412	
Indirect Fire MFKill	41,68	3,77327	
Indirect Fire Non KKill	43,96	4,0937	
Indirect Fire Any Kill	154,92	4,89833	
Mount Kill KKill	90,43	8,02902	
Mount Kill Any Kill	90,43	8,02902	
TOTAL KKill	265,69		



INF-L-BDE				
Source	Damage	Ave # dan	Std Dev	
Direct Fire KKill	97,91	20,9151		
Direct Fire FKill	10,18	3,61215		
Direct Fire MKill	13,52	4,38516		
Direct Fire MFKill	62,13	14,1292		
Direct Fire Non KKill	85,83	18,3151		
Direct Fire Any Kill	183,74	35,1979		
Mount Kill KKill	40,81	13,5681		
Mount Kill Any Kill	40,81	13,5681		
TOTAL KKill	138,72			



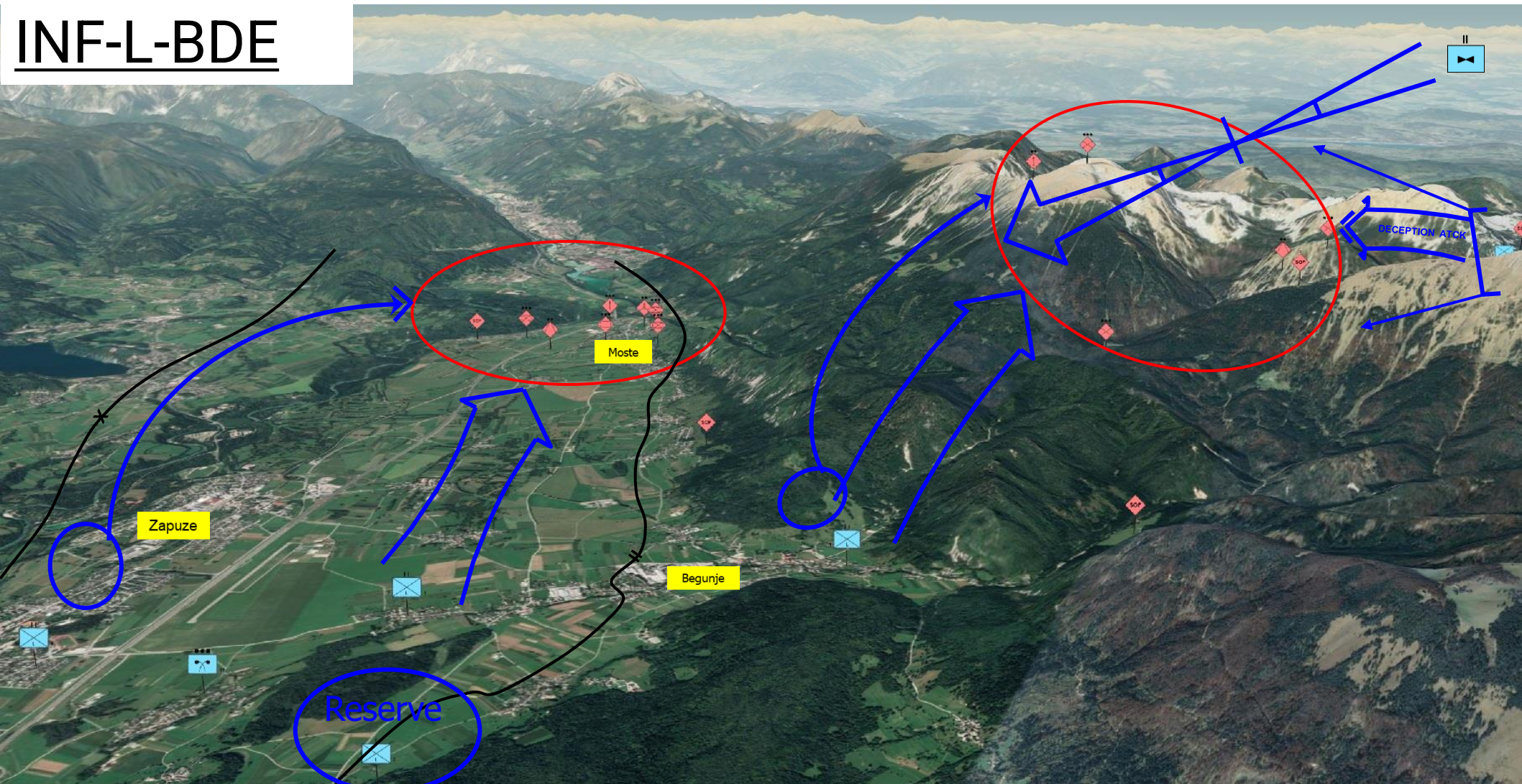
INF-L-MNT-BDE				
Source	Damage	Ave # dan	Std Dev	
Direct Fire KKill	77,6	38,7907		
Direct Fire FKill	8,34	4,46815		
Direct Fire MKill	6,83	4,13777		
Direct Fire MFKill	48,92	20,108		
Direct Fire Non KKill	64,09	26,1485		
Direct Fire Any Kill	141,69	58,6636		
Mount Kill KKill	4,42	9,04011		
Mount Kill Any Kill	4,42	9,04011		
TOTAL KKill	82,02			





3D VIEWER

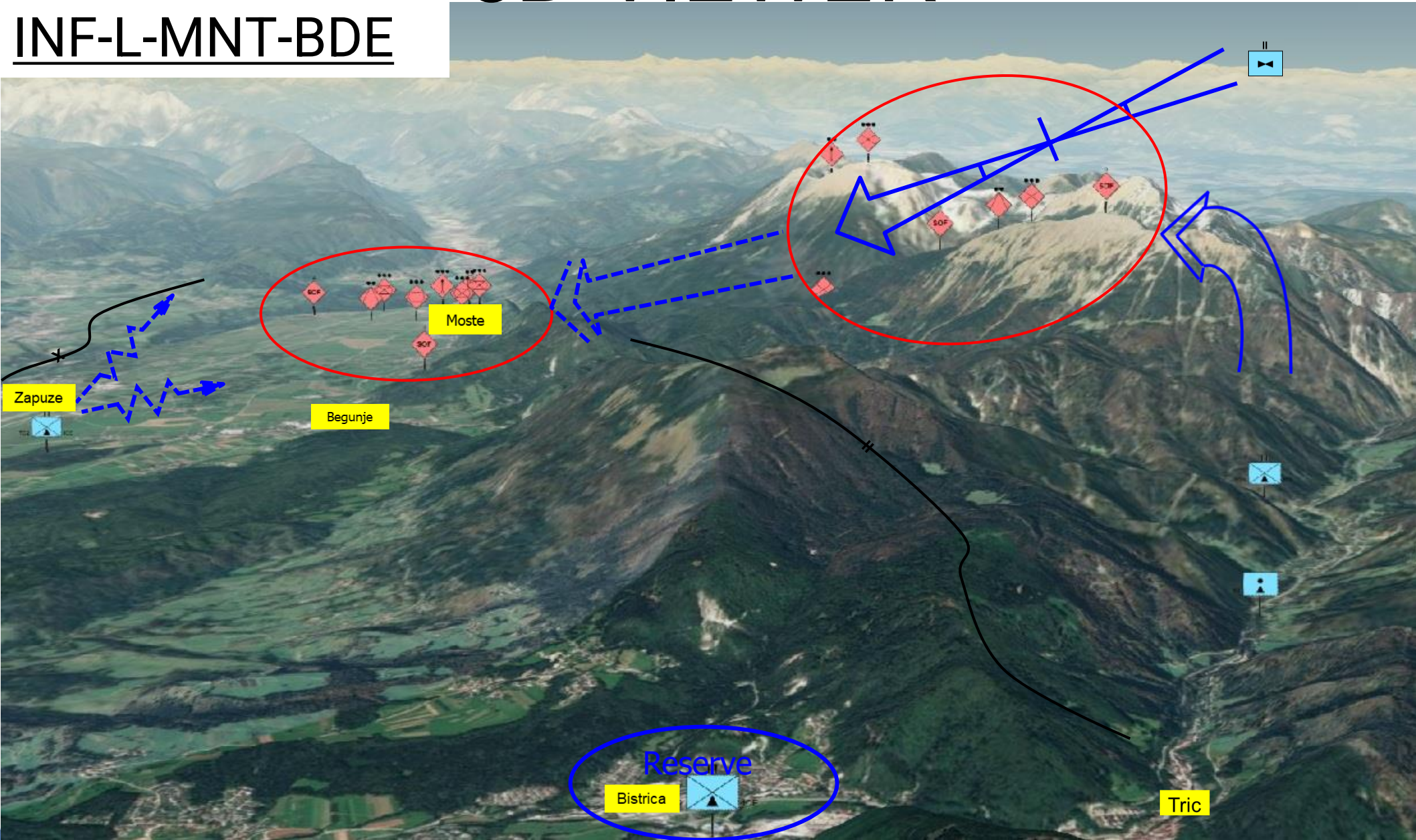
INF-L-BDE





3D VIEWER

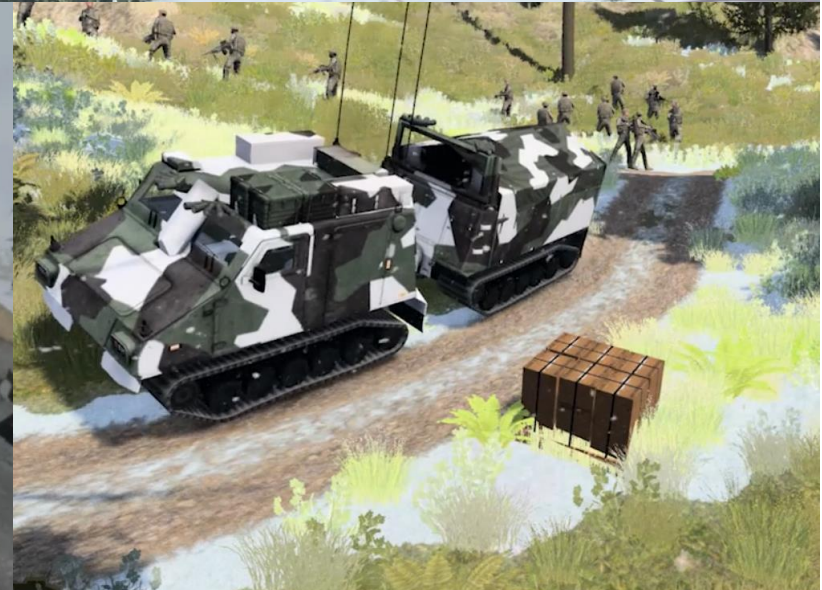
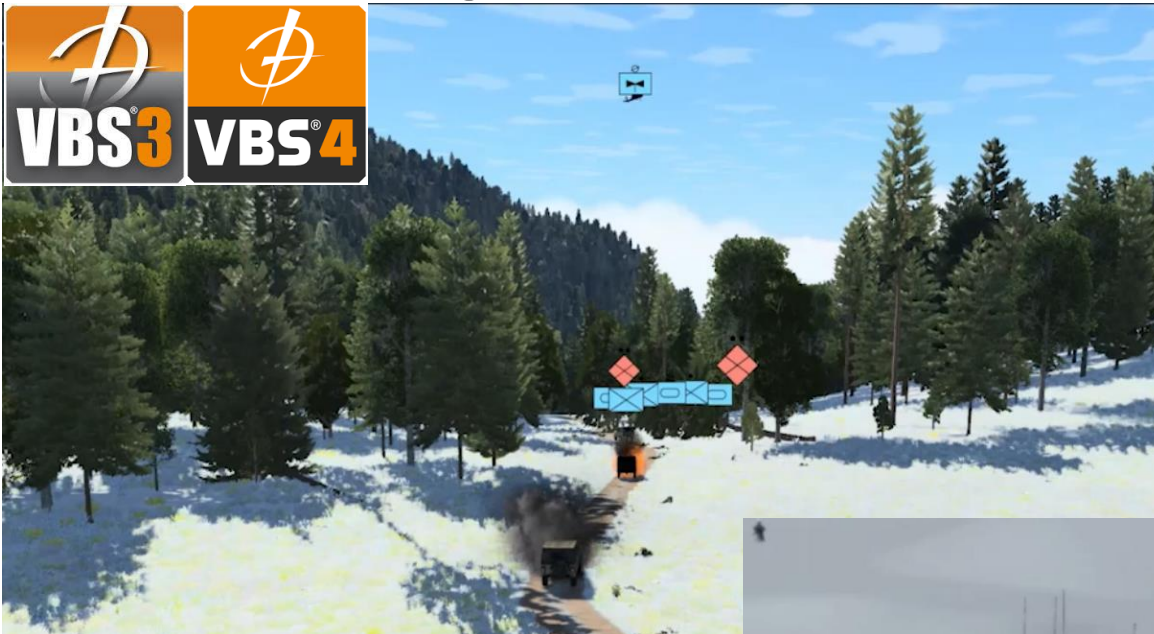
INF-L-MNT-BDE





VBS3 and VBS4

Used for vignettes visualisation





EXPERIMENT OUTPUT



**NATO needs
well equipped and trained combat-ready forces
with mountain warfare capabilities
to fulfil future challenges!**



Lessons from NATO MW COE Experiment

- ✓ **Huge work to prepare JCATS database (create capabilities),**
- ✓ **Close work JCATS SME's with MW SME's**
- ✓ **We are now JCATS experts**
- ✓ **Methodology for experimentation is validate**



WEB PAGE: <https://www.mwcoe.org>

QUESTIONS

