



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Defence,
Civil Protection and Sport DDPS

armasuisse
Science and Technology

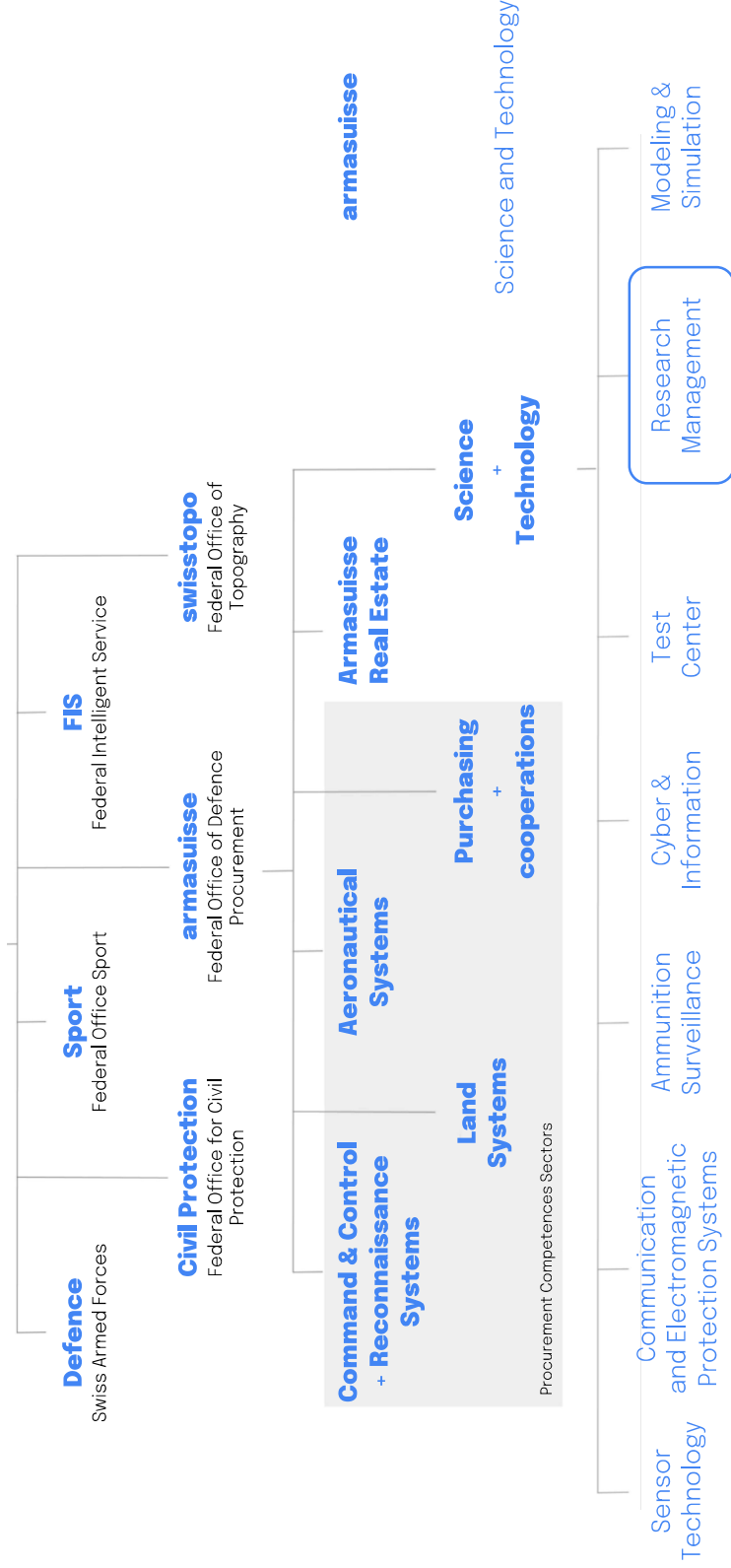
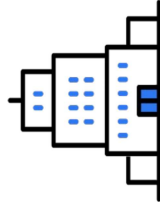


Technology Foresight in Deep Uncertainty

Paving the way for innovation

Dr. Quentin Ladetto
Head of Technology Foresight







Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Defence,
Civil Protection and Sport DDPS
armasuisse
Science and Technology

We are deftech



How could **technology** be part of
the **future opportunities** and **threats**
for the **Swiss armed forces**?



Dr Quentin Ladetto

Head of Technology Foresight

+41 79 828 77 65

quentin.ladetto@armasuisse.ch

deftech.ch

deftech is the
Technology Foresight Research Program

in the
Research Management Team

from
armasuisse Science + Technology

Experiencing futures

How might we **identify** the **skills**
that will be crucial in the **future**
for **soldiers**?

How might we identify the
possible impacts of the
development of a **technology**
for the **armed forces**?

deftech.web

deftech.exploration

deftech.keynote

deftech.wargaming

deftech.creation

deftech.together

deftech.network

deftech.scan

Community - network

How might we have **access** to
different points of view and
expertise?

Technological watch

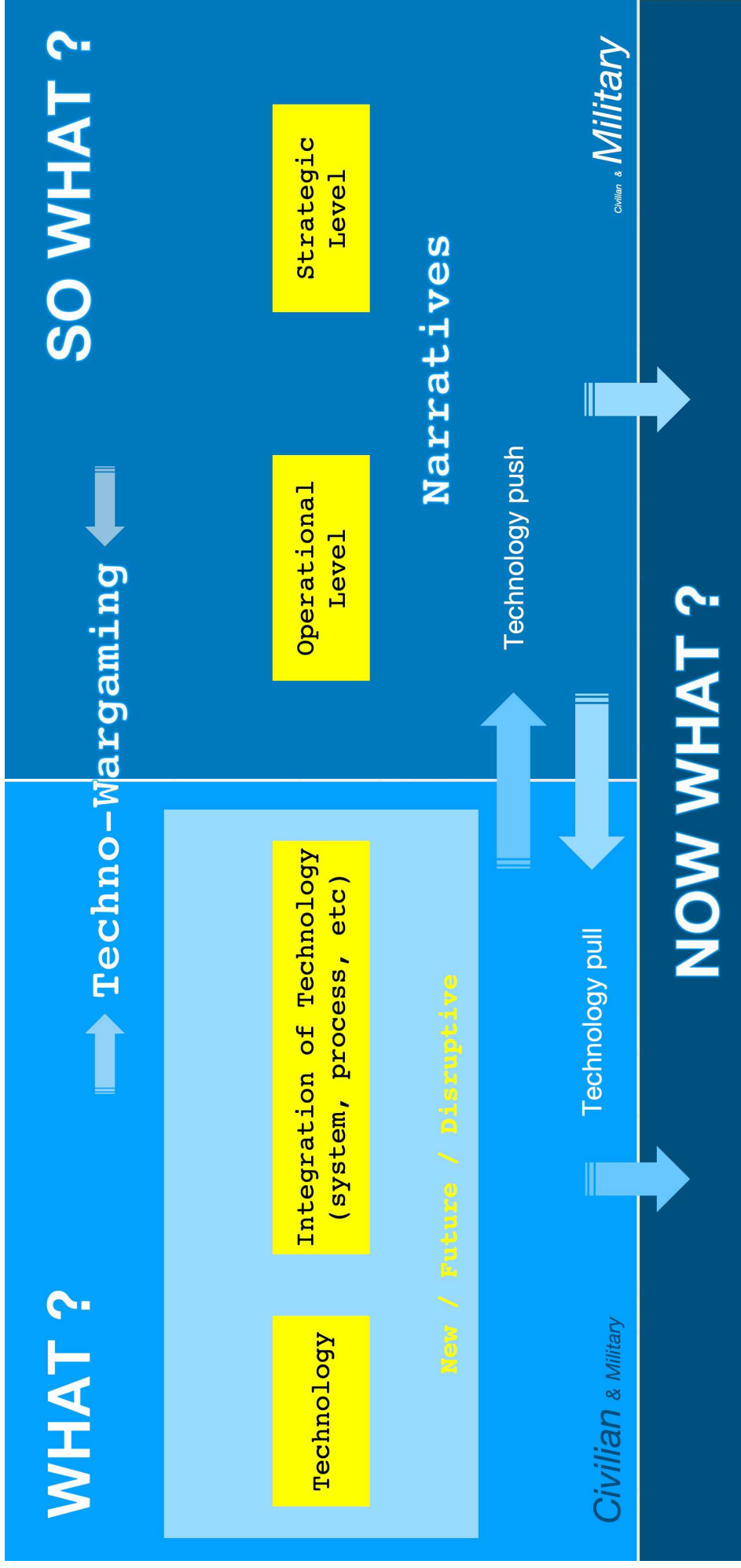
deftech.days

How might we **identify** the
technologies and their
combination that the Swiss Army
will have to **capitalize** on ?



deftech

Our know-how



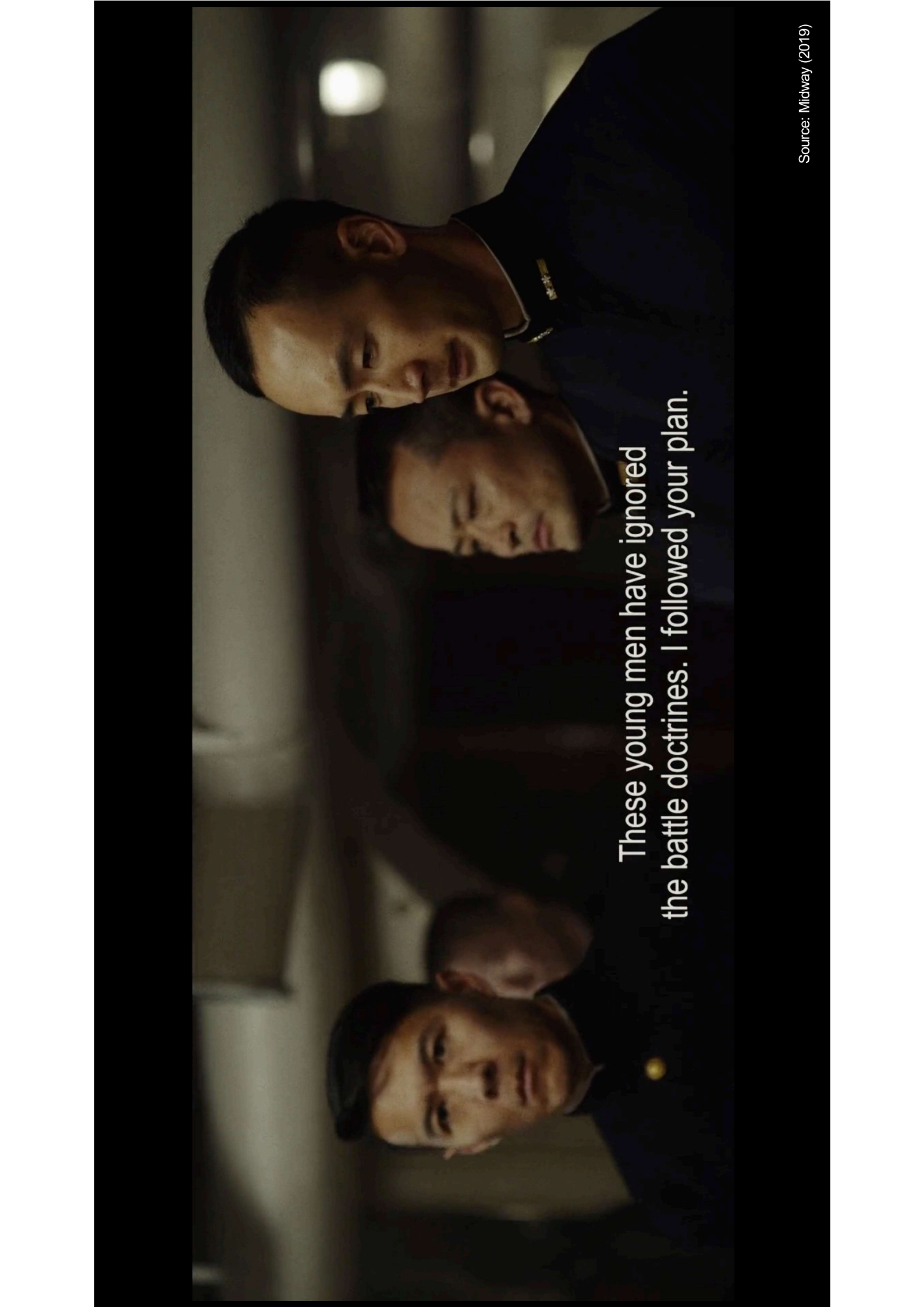


deftech wargaming

Dr. Quentin Ladetto

armasuisse + Science & Technology



A still from the movie 'Midway' showing three Japanese naval officers in a dark, industrial setting. The officer in the foreground is looking slightly to the right with a serious expression. Behind him, two other officers are visible, one looking down and the other looking forward. The lighting is dramatic, with strong highlights and deep shadows.

These young men have ignored
the battle doctrines. I followed your plan.

Source: Midway (2019)

[illegible]

日以後主陰
驚厥六車方二
二出三機動
離之短八



My American carriers didn't come from Pearl.

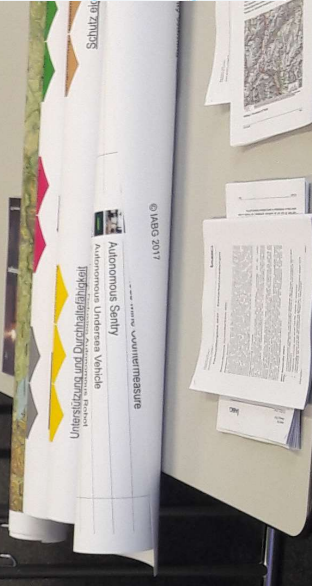
Design & Preparation



Matrix Game

Two-sided, open arguments, referees, analysts, after-action review/survey

- Scenario 1
 - Counter-Terrorism, central public infrastructure
 - Half day (including introduction)
- Scenario 2
 - Hybrid threats, major city
 - Half day
- Scenario 3
 - Major attack, border/country region
 - Full day





Strategy

Technology



Prototype



Stakeholder Involvement





Gameplay







Modular Extensions



<https://deftech.ch/ntw>

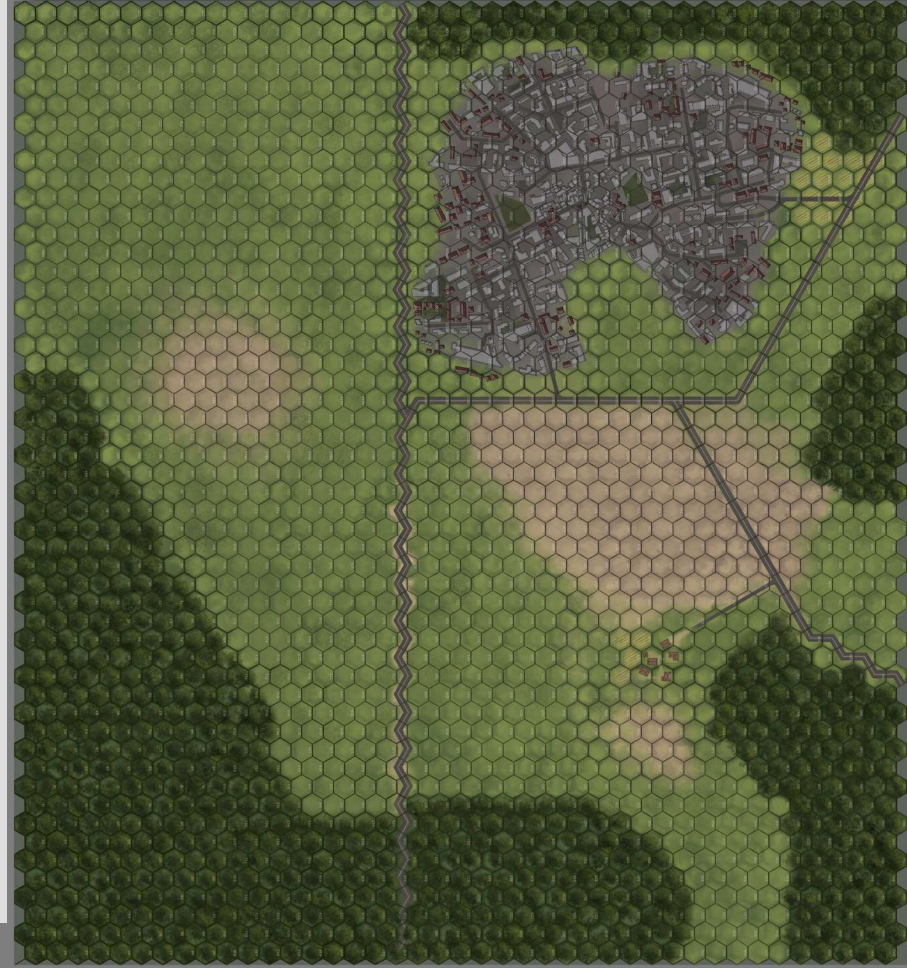
Création de scénario

► Carte:

☐ Terrain ouvert

☐ Ville

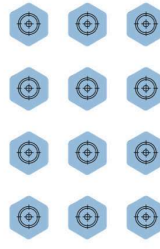
Internet Platform



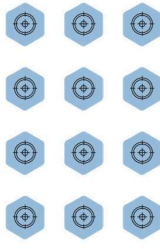
Troupes et Véhicules

☐ **Propre troupe**

Infanteries

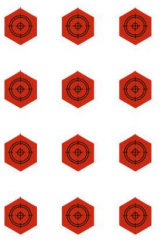


Véhicules



☒ **Adversaire**

Infanteries



Véhicules



drag and drop icons

Ordre

Situation générale

texte

Situation particulière

texte

Mission rouge



texte

Mission bleue



texte

Nombre de tours

▼

Début du jeu

▼

Remarque

texte

ENREGISTRER

PUBLIER EN PDF



Internet Platform - Roadbook

NEW TECHNO WAR

CHALLENGE TODAY TACTICS WITH SYSTEMS OF TOMORROW

CONTACT

SIGN OUT



TÉLÉCHARGEMENTS

JOURNAL DE COMBAT

Mes statistiques
Statistiques globales

CRÉER UN SCÉNARIO

NOUVELLE
TECHNOLOGIE

Journal de combat

Nouvelle entrée

Journal de combat

Date	27.04.2021
Nom du scénario	
Technologies	☐ Exosquelette ☐ Drone ☐ Véhicule autonome
Nombre de tour joué	1
Victoire	Propre troupe
Remarques	

Enregistrer

Mes statistiques

Filtrer par

Nom du scénario

Technologie

Carte

Date

jj.mm.aaaa

Filtrer

Global

Nombre de partie jouée:

0

Nombre de tour moyen:

0

Technologie la plus utilisée:

inconnu

Scénario le plus joué:

inconnu

Victoire / Défaite



Victoire: 0%



Défaite: 0%



Internet Platform - New Scenario

CHALLENGE TODAY TACTICS WITH SYSTEMS OF TOMORROW

SIGN OUT



TÉLÉCHARGEMENTS

JOURNAL DE COMBAT

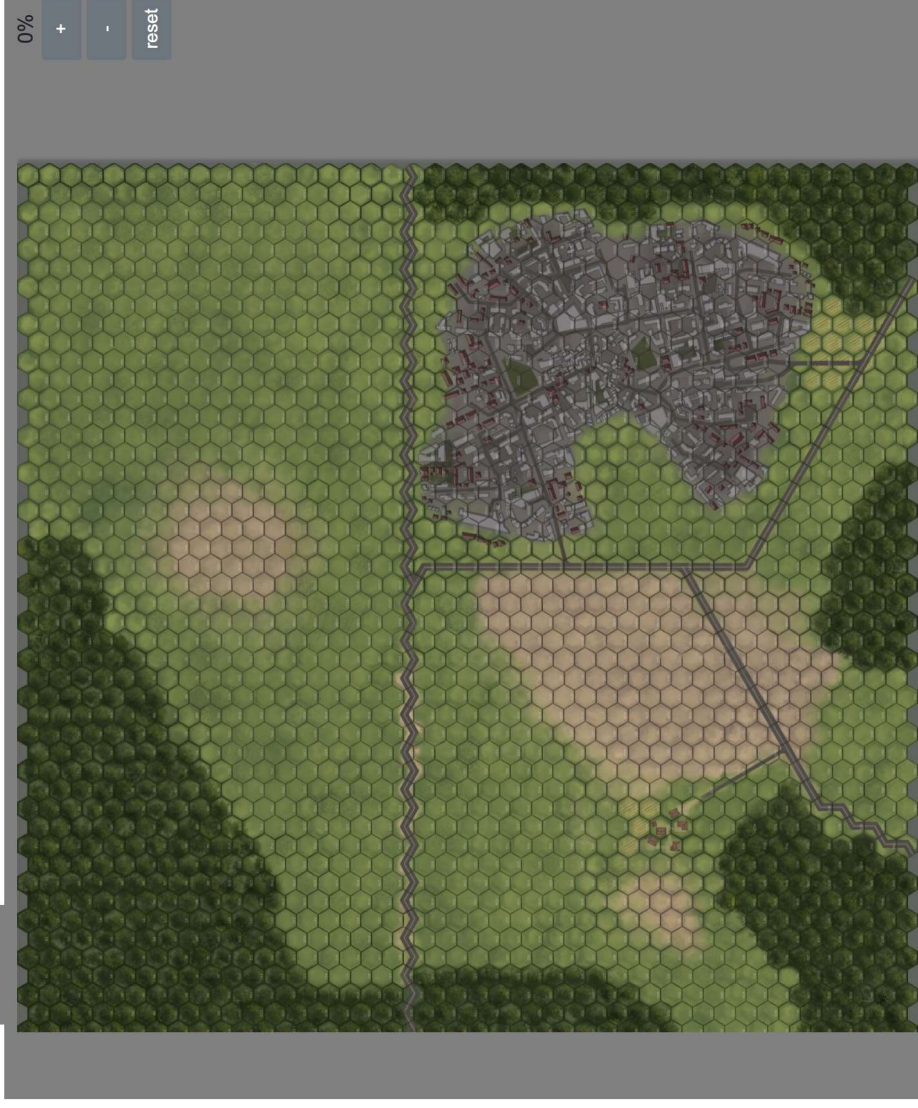
CRÉER UN SCÉNARIO

Nouveau scénario
Mes scénarios

NOUVELLE
TECHNOLOGIE

Création de scénario

> Carte:Open ground



> Mission

TROUPES ET VÉHICULES

Propre troupe	Adversaire	Neutre	Terrain
Infanteries			
drag and drop icons			

ORDRE

Mission

Situation générale

Situation particulière

Mission rouge

Mission bleue



New Strategy

New Technology

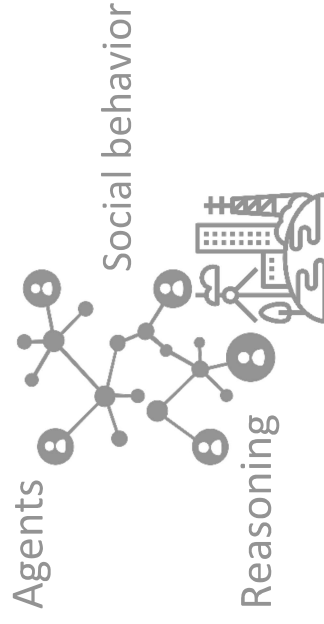


Multi-agent simulations

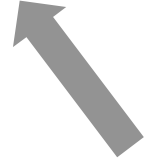
Real World



Model



Simulation



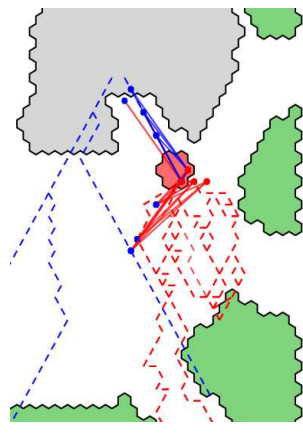
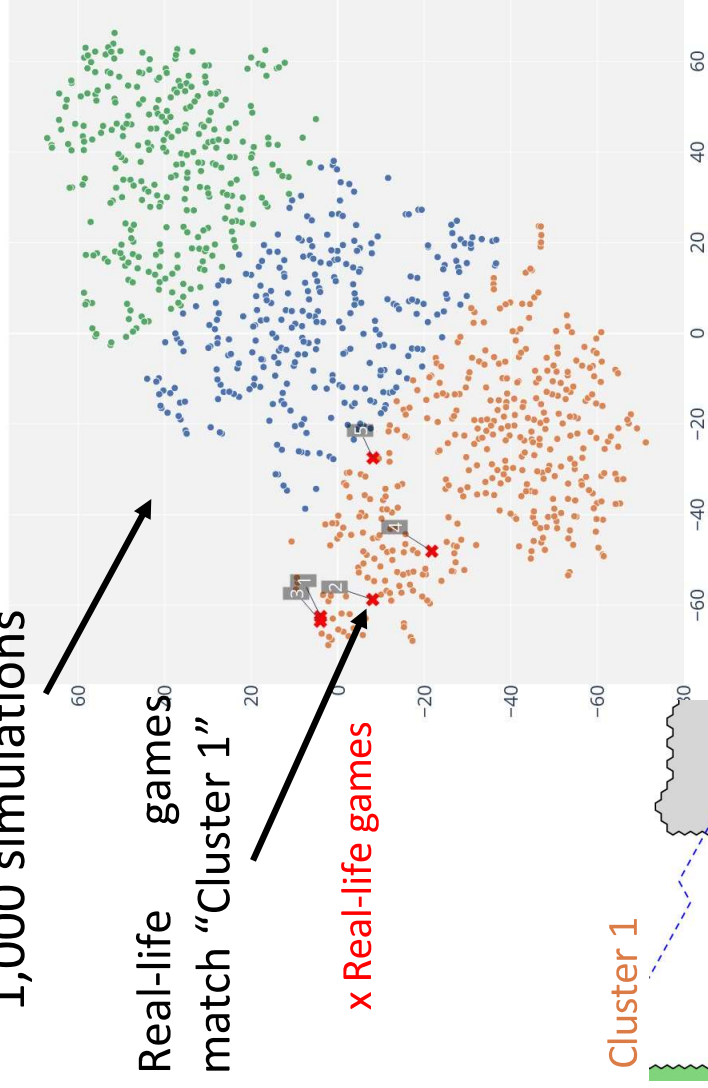
Digital Twin



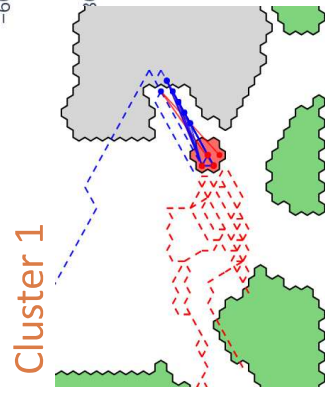


General Results

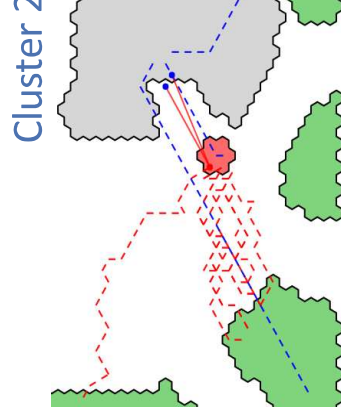
1,000 simulations



Cluster 3



Cluster 1



Cluster 2

- Games played by humans may lead to 40% chance BLUE winning
- In the simulation BLUE wins about 1 out of 30 games
- Improving BLUE's win ratio by fine-tuning its AI made BLUE win 1 out of 10 times

challenge and learn from the AI



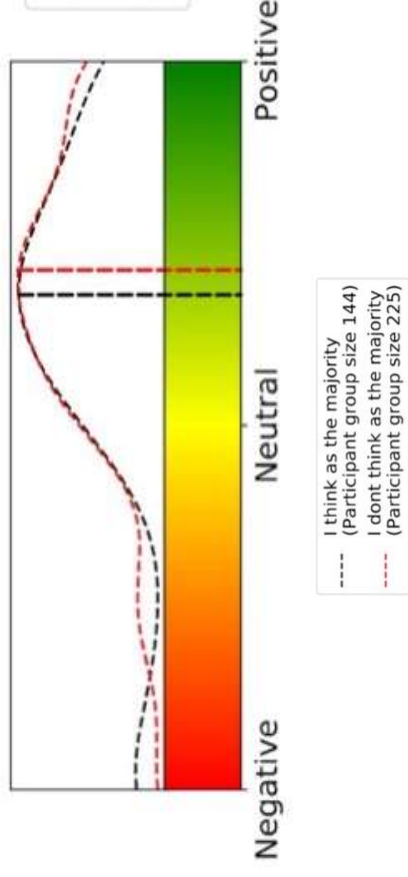
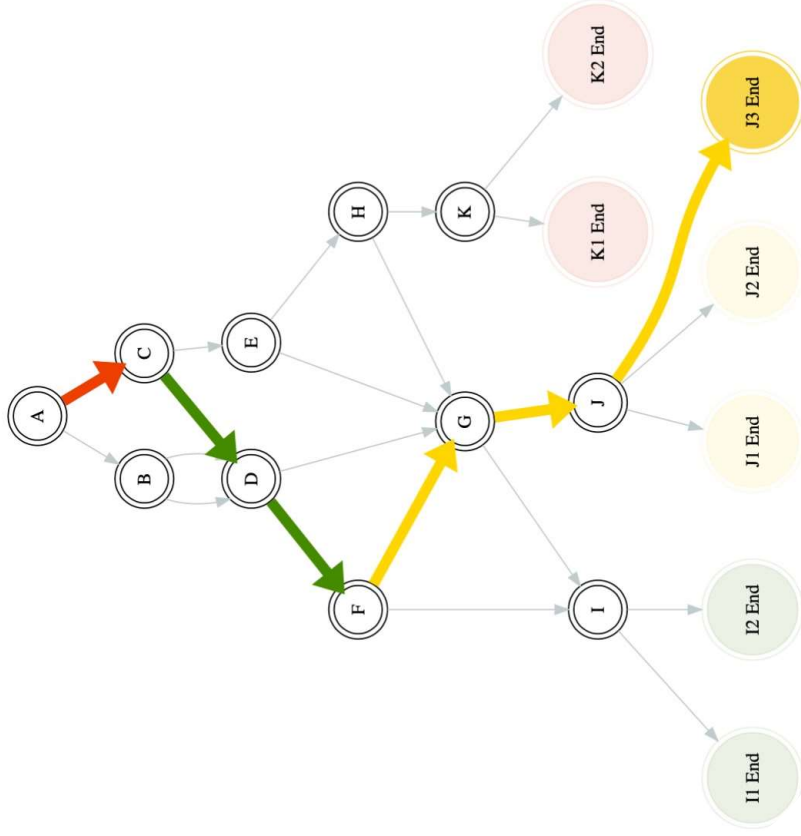
Interactive narratives



<https://technocast.org>



Write your story (before history)





Should you trust your digital companion ?



<https://deftech.ch/the-soldiers-companion/>



**L'avenir n'est pas ce qui vient après le présent,
mais ce qui est différent de lui.**

Gaston Berger





Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Defence,
Civil Protection and Sport DDPS

armasuisse
Science and Technology



deftech
defencefuturetechnologies

deftech.ch

FuturS

futurs.world

Atelier
des
FuturS

atelierdesfuturs.org

Dr Quentin Ladetto

Head of Technology Foresight

+41 79 828 77 65

quentin.ladetto@armasuisse.ch