



DEFENCE

Research Day

12 September 2025



DEFENSIE
LA DÉFENSE

LIFE DEPARTMENT, ROYAL MILITARY ACADEMY
DR. ADRIANA SALATINO

12 September 2025



DEFENCE

Human-AI interaction in moral context



LIFE Department: Performance, safety and health of soldiers

Research unit: **PEPS**, Team: **ECON**



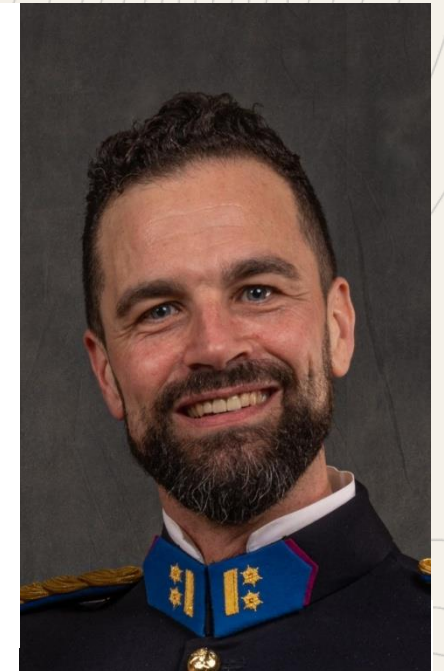
Dr. Adriana
Salatino, RMA



Arthur Prével
Université de Lille



Émilie Caspar
Ghent university



Lt. Col. Salvatore
Lo Bue, RMA

Human-AI interaction

Moral Decision- Making

Responsibility

Contents

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Introduction

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Our studies and results

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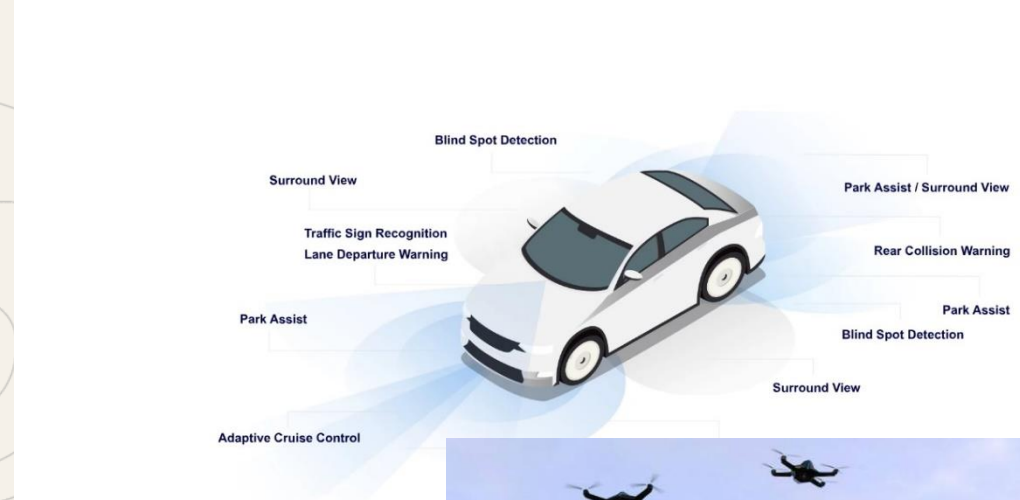
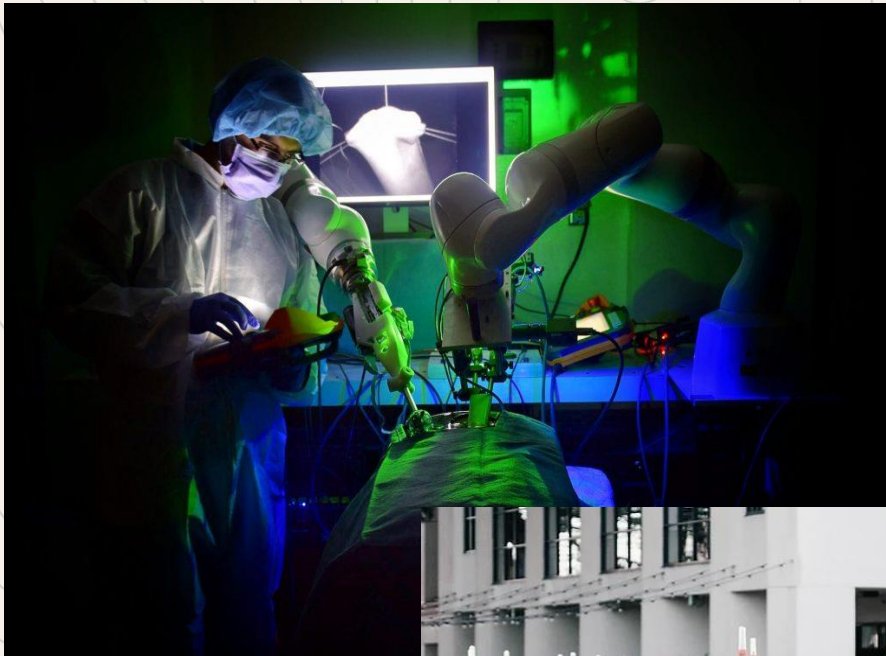
Discussion

4

Future directions

Introduction

The use of autonomous system is currently widespread in various fields of human activities:



Benefits for the users:

Reduce workplace accidents ^{1, 2, 3}

Help demanding works ^{4,5}

In laboratory settings: **shorter response times, fewer errors, and improved multitasking** ^{6,7}

Negative effects:

Overreliance on automation ^{8,9}

Loss of skills ¹⁰

Loss of Situation Awareness ¹¹

Artificial Intelligence and moral decision-making

Since intelligent systems are currently being used in sensitive areas such as **medicine** and the **military**



impact on moral decision-making (i.e. decisions implying conflicting moral values)

The main focus:

Rules, algorithms and values to be assigned to systems to guide their decisions in moral situations

Until recently, not on the impact on human moral decision-making

Mixed-picture of the effects of AI in moral decision-making

Positive effects:

increase fairness between human agents ¹²

promote human cooperation ¹³

Negative effects:

more likely **to cheat** when interacting with a computer ¹⁴

detrimental in terms of **ethical decision making**

In addition, it has been shown that sense of responsibility **decrease** during the interaction with AI ^{15,16,17,18,19}

Our studies

www.nature.com/scientificreports

1) AI autonomy level

Acta Psychologica 260 (2025) 105350



ELSEVIER

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Acta Psychologica

journal homepage: www.elsevier.com/locate/actpsy

“Fire! Do not fire!”: Investigating the effects of autonomous system agency and moral decision-making

Adriana Salatino^{a,*}, Arthur Prével^{b,*}, Emilie Caspar^c, Salvatore Lo Bue^a

3) Time Pressure

Human Factors and Systems Interaction, Vol. 192, 2025, 68–75

<https://doi.org/10.54941/ahfe1006629>



The Impact of Time Constraints on Moral Decision-Making During Human-AI Interaction

Adriana Salatino¹, Arthur Prével², Emilie Caspar³, and Salvatore Lo Bue¹

2) AI behaviour

scientific reports

Check for updates

OPEN Influence of AI behavior on human moral decisions, agency, and responsibility

Adriana Salatino^{1✉}, Arthur Prével², Emilie Caspar³ & Salvatore Lo Bue¹

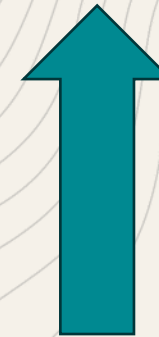
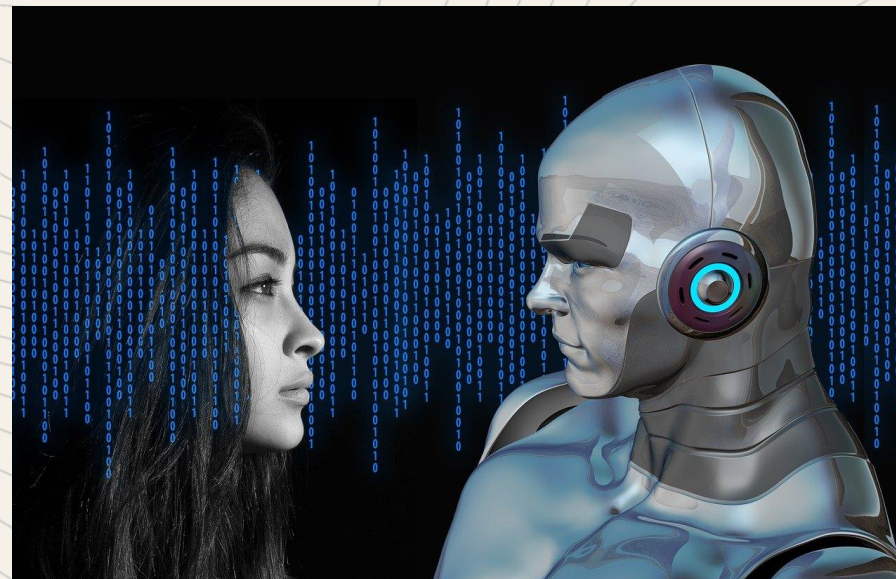
1) Investigate how the level of system autonomy affects human moral decisions and responsibility (*Salatino et al., 2025, Acta Psychologica*)

Setup: Simulated battlefield

Task: Cadets had to decide to **initiate (or not)** an attack based on conflicting moral values (i.e. presence of enemies and allies at risk)

AI Level	What the AI Did
Level 0	Gave basic information about safe zones
Level 1	Showed risk to allies (probability + number)
Level 2	Recommended the safest choice

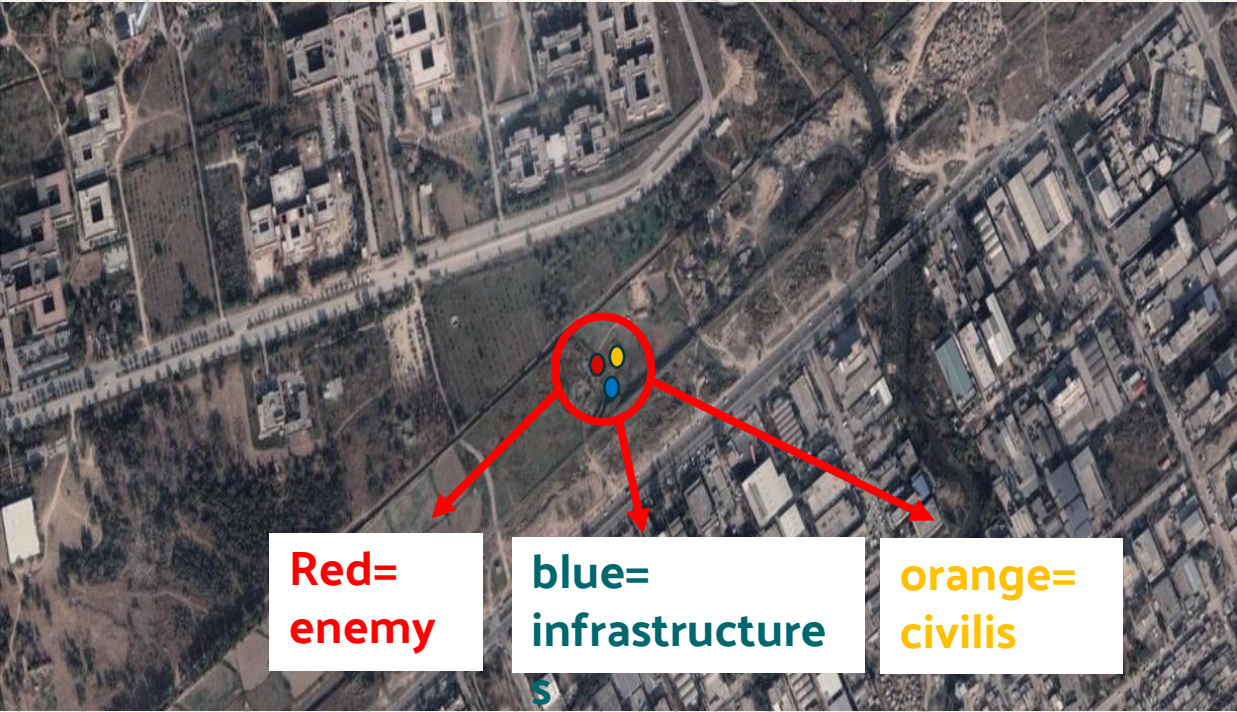
decreasing of
Responsibility during
the interaction with the
autonomous system



increasing of Utilitarian
Choice (i.e., the choices
that **lead to the least loss**)
as recommended by the
autonomous system

increasing RTs in the
morally challenging
scenario

2) Investigate how AI behaviour influences moral decisions and sense of responsibility (*Salatino et al., 2025, Scientific Reports*)

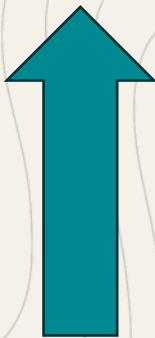
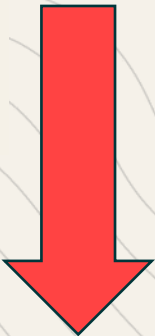


Task: To initiate an attack (or not)

Trials: Moral and Non moral

AI Level	What the AI Did
<i>Level 0</i>	not assisted
<i>Aggressive AI</i>	always attack
<i>Conservative AI</i>	never attack

decrease of Responsibility
during interaction with the **AI**



increasing of number of attack
during **Aggressive AI**
Assistance in morally challenging
situations

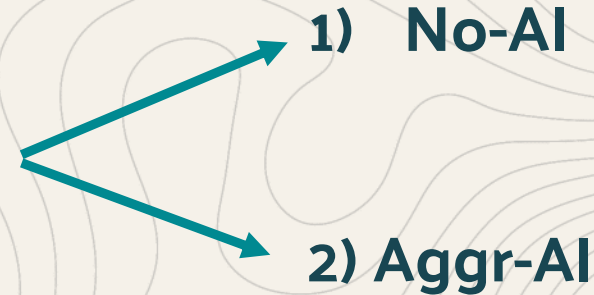
increasing RTs in the
morally challenging
scenario

3) Investigate the impact of Time Pressure on Moral Decision-Making and responsibility during Human-AI Interaction (*Salatino et al., 2025, Human Factors and Systems Interaction*)

Time Pressure Manipulation

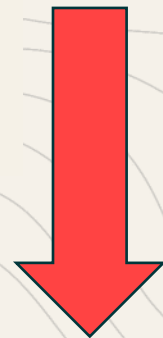
2 Blocks **High**-time-pressure: **4**

2 Blocks **Low**-time-pressure: **15**



decrease of Responsibility during the interaction with the AI

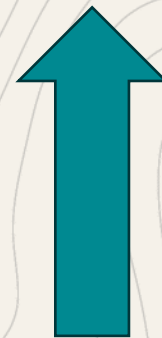
decrease of Responsibility during high time pressure in moral trials



increasing of number of attack during Aggressive AI

no effects of Time pressure

increasing RTs in the morally challenging scenario



Discussion

Overall, our results show that:

- ✓ Humans tend to **follow AI recommendations** in morally challenging situations

 even when the input is **clearly erroneous**

- ✓ Not depend to **high-time** pressure

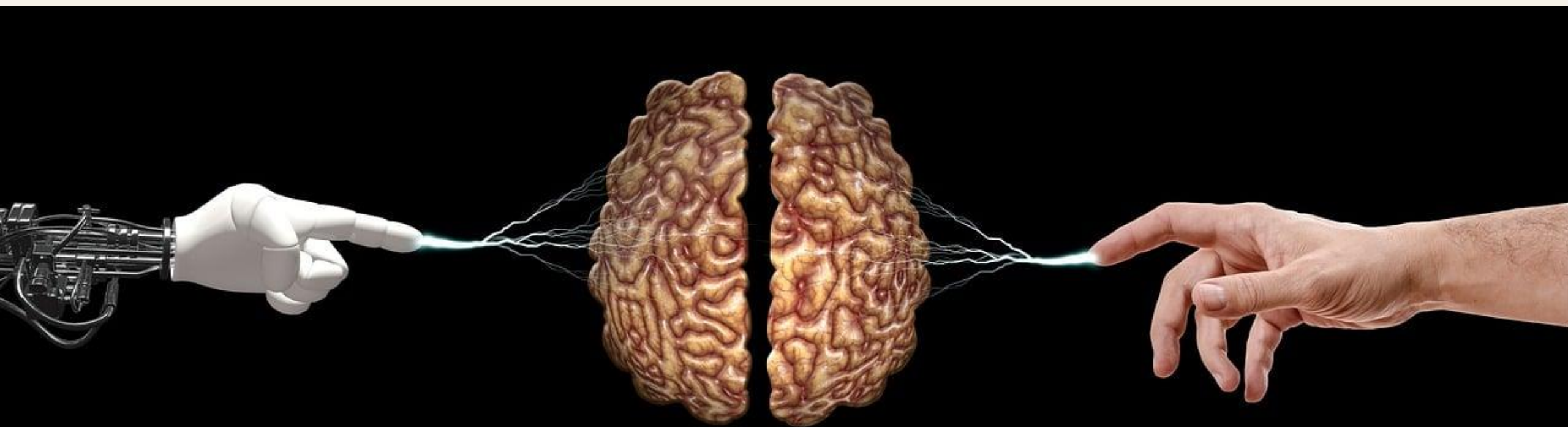
- ✓ Humans feel **less responsible** during the interaction with the AI, consistently with previous findings

Conclusions & Future directions

Next steps:

Investigate the **characteristics** of AI and the **conditions** that can promote moral decision-making without producing negative effects

Use neuroimaging techniques (**EEG** and **fNIRS**) to uncover the **neural signatures** of moral reasoning during AI interaction





DEFENSIELABORATORIA-LABORATOIRES DE LA DÉFENSE (DLD)
KATLEEN DE MEULENAERE, A4 ADVISEUR-GENERAAL



DEFENCE

12 sept 2025

Defensielaboratoria – Laboratoires de la Défense DLD Belgian Defence Laboratories



DLD : Missions



Support to Readiness & Operations

CBRN risk control and mitigation
experts ,reach-back ,Training

Health ,Safety & Environment
detection, sampling, analysis

Petrol, Oil & Lubricants
quality control



Defence against CBRN terrorism (national level)

Suspicious packages

Reference laboratory for chemical analysis (CWA)

CBRN terro & Nuclear contingency plans



« Joint » Life Cycle Support

CBRN Protection & Individual Equipment

Petrol, Oil & Lubricants



Centre of Excellence

Scientific & technical expertise

Applied research

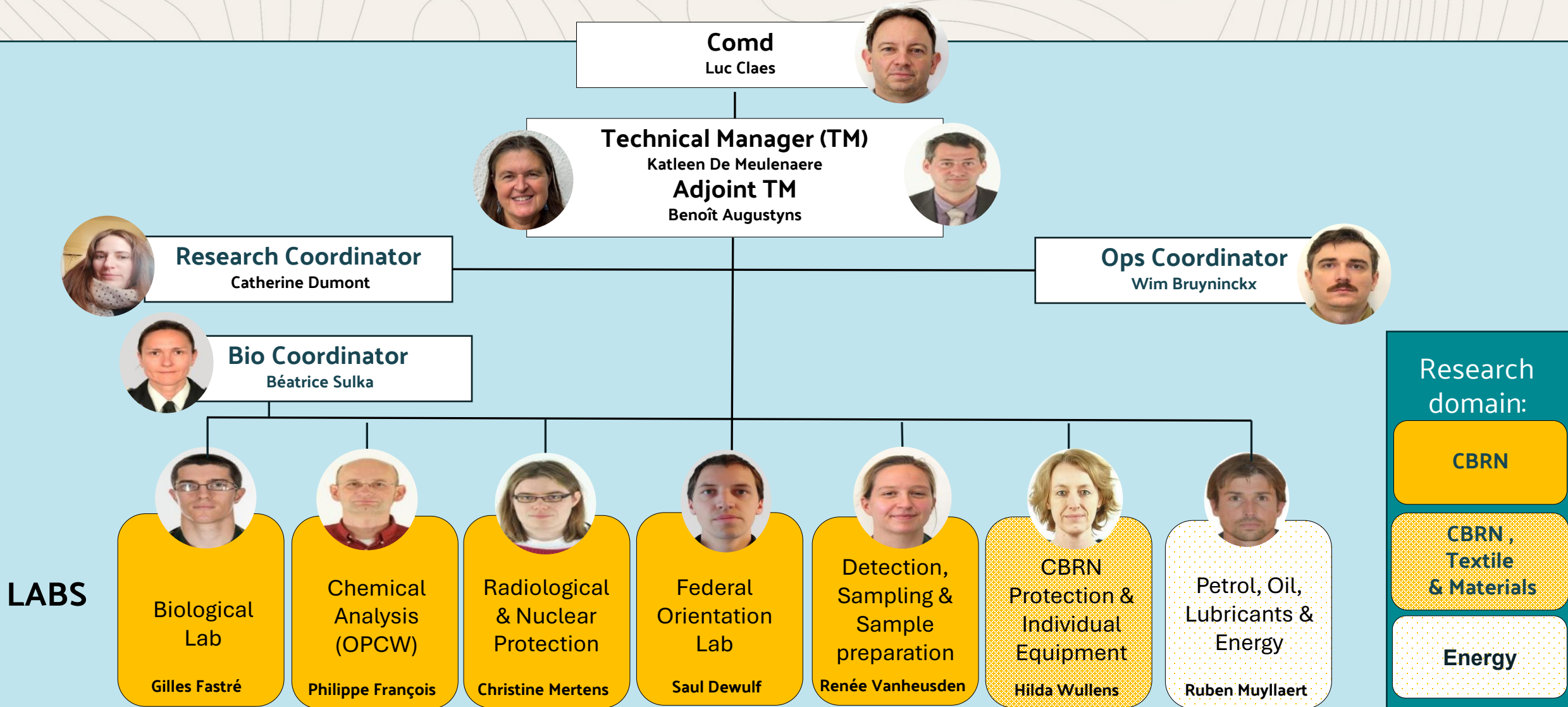
innovation and development of (new) capabilities (technology and processes)

CBRN

Textiles/Materials

Energy

DLD: Technical Department



DLD : Research domains



CBRN

Detection, Identification & Monitoring and sampling

Hazard Management

Forensics/ traces

Individual and collective protection



Material & Textiles

Protection & Comfort

Innovative technologies

Smart technologies

Energy

Green energy

Petrol, Oil & Lubricants

DLD : Research domains - Energy



Energy

Green energy

Petrol, Oil & Lubricants



Hydrogen panels: New Green Energy Systems



Compatibility of “green” non-conventional fuels



DEFENCE

DLD : Research domains – Materials & Textiles



Material & Textiles

Protection & Comfort

Innovative technologies

Smart technologies



Smart textiles for enhanced CBRN protection



Optimisation of clothing systems for thermophysiological comfort



Modelling breakthrough time of filters under operational conditions

DLD : Research domains - CBRN



CBRN

Detection, Identification & Monitoring and sampling

Hazard Management

Forensics/ traces

Individual and collective protection



Decontamination & Contaminated Evidence Management



Toxins identification & detection



Biological threats identification & bio-surveillance and -monitoring



Chemical threats identification & detection, technical exploitation

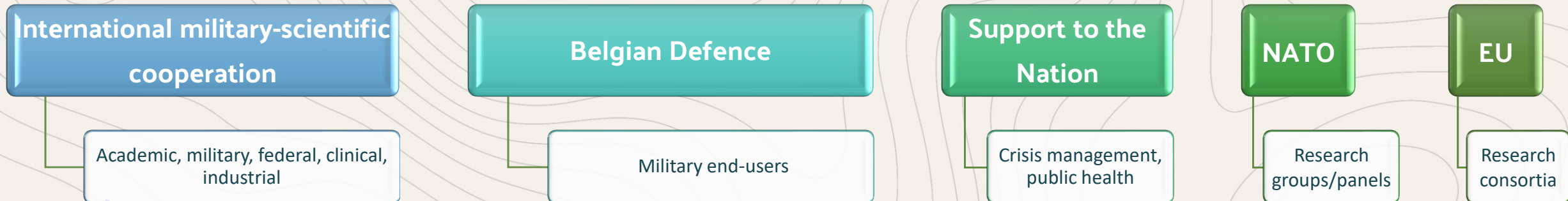


Radiological and Nuclear prevention & protection

DLD: Strenghts - Research network

Direct link with Readiness and Operations

Several other research projects are also underway at the DLD with various partners and collaborators:



Interested?

WELCOME
to visit
our booth at the
network event (1300 hrs)



RESEARCH MANAGER
KATIA PACELLA

12 September 2025



DEFENCE

R&D at the Queen Astrid Military Hospital



Agenda

1

Introduction

2

R&D Vision at the QAMH

3

Research pillars

4

Conclusions



Introduction: The Queen Astrid Military Hospital

Queen Astrid Military Hospital – Overview

- Provides medical support to military operations worldwide with specialised personnel and equipment.
- Ensures health and operational readiness of military personnel across multiple disciplines.
- Around 800 staff delivering advanced medical services.
- Centre of expertise for screening and training specialised units (pilots, divers, para-commandos).
- Offers tailored medical care for the unique demands of military service.

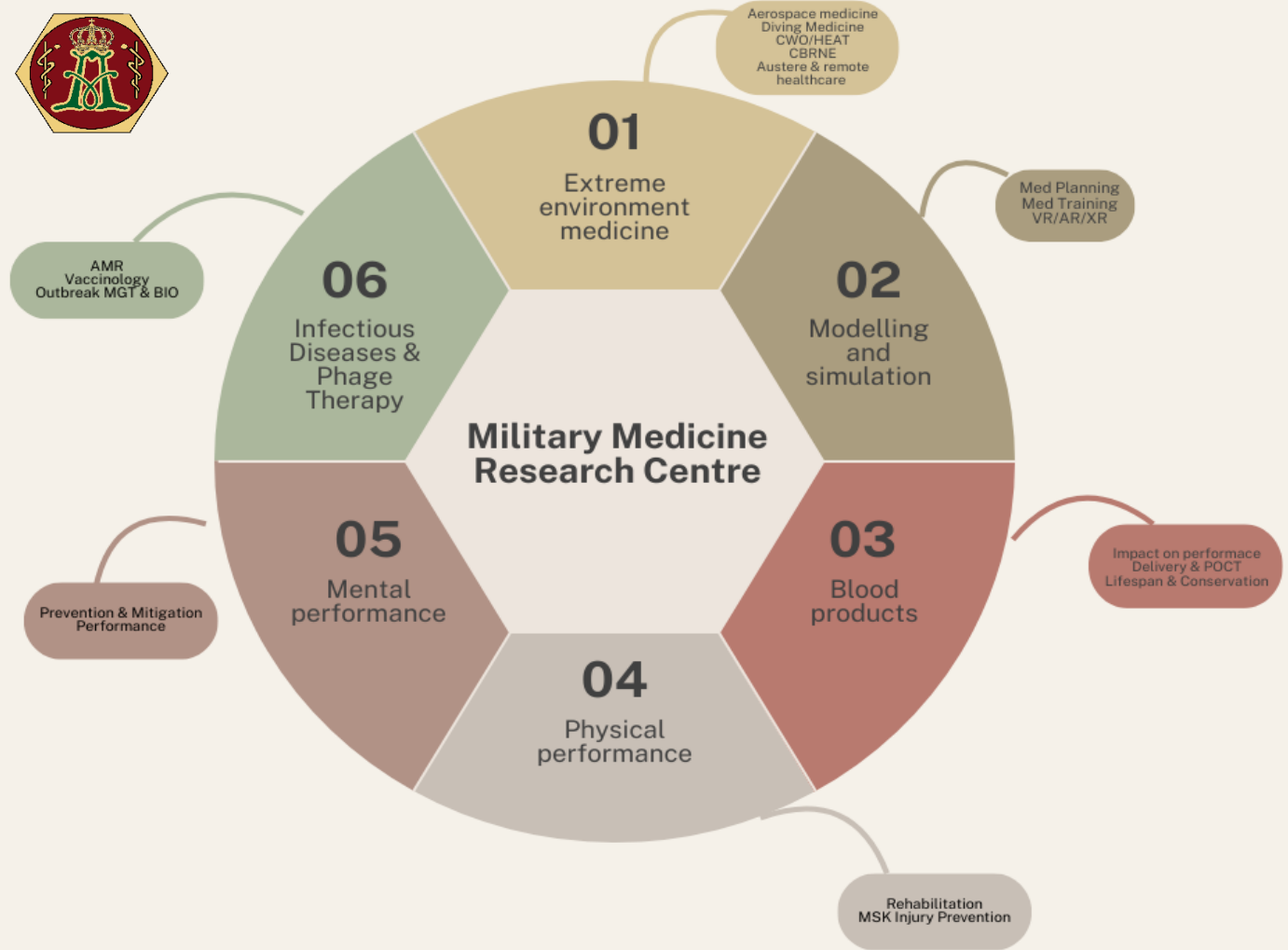
Key domains of excellence:

- Emergency, disaster, and trauma medicine
- Burn care and rehabilitation
- Surgery and musculoskeletal rehab
- Sports medicine, nutrition, and physical rehab
- Mental health (focus on crisis psychology) Infectious and travel medicine
- Hyperbaric medicine



R&D Vision: The Military Medicine Research Centre

Through research, QAMH aims to deepen and broaden its expertise, fostering development in specific medical fields



Extreme Environment Medicine

Clinical research

Hyperbaric Oxygen Therapy



Diving and Hyperbaric Medicine 55 No. 2 June 2025

104

Effect of normobaric and hyperbaric hyperoxia treatment on symptoms and cognitive capacities in Long COVID patients: a randomised placebo-controlled, prospective, double-blind trial

Leen D'hoore¹, Peter Germonpré^{1,2}, Bert Rinia¹, Leonard Caeyers¹, Nancy Stevens¹, Costantino Balestra^{2,3,4}

¹ Centre for Hyperbaric Oxygen Therapy, Queen Astrid Military Hospital, Brussels, Belgium

² DAN Europe Research Division, Roseto, Italy and Brussels, Belgium

³ Environmental, Occupational, Aging (Integrative) Physiology Laboratory, Haute Ecole Bruxelles-Brabant (HE2B), Brussels, Belgium

⁴ Motor Sciences Department, Physical Activity Teaching Unit, Université Libre de Bruxelles (ULB), Brussels, Belgium

Corresponding author: Dr Peter Germonpré, Queen Astrid Military Hospital, Bruynstraat 1, B-1120 Brussels, Belgium

ORCID: 0000-0003-2481-7376

peter.germonpre@mil.be

Keywords

COVID-19; Hyperbaric oxygen; Randomised controlled trial; SARS-CoV-2



Comparison of the effects of two types of scopolamine treatment on sea-sickness

Extreme Environment Medicine

Technical Research

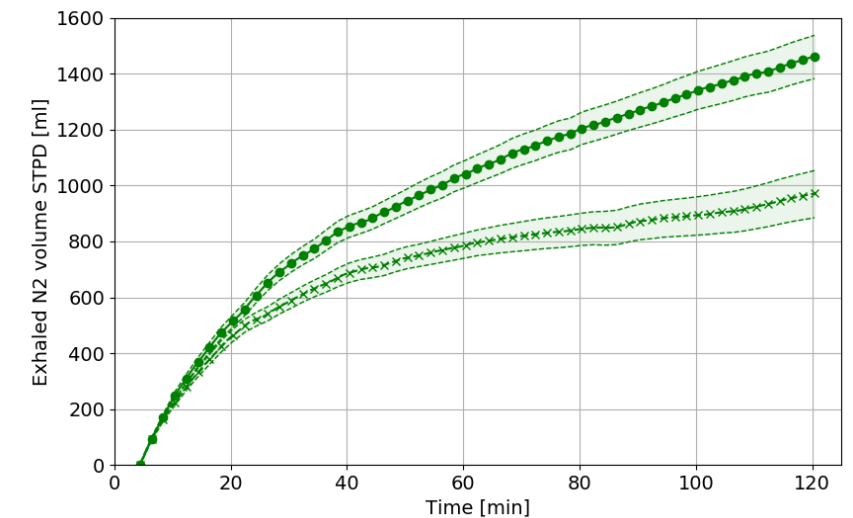
Prevention of Decompression Sickness

Development of a novel method and measurement system to quantify nitrogen gas exchange during decompression, the initiating step leading to decompression sickness.

- Validated system
- Initial N₂ elimination measurements after hyperbaric exposure
- Experiments revealed previously unrecognized variability
- Applicable to military divers and high-altitude operations



ORPHY



Blood products

Research Projects

« Blood far forward – a BEL walking blood bank concept »

STEP 4: Protocol of use

Development walking blood bank : BEL concept

STEP 3: Patient safety

Haemostatic properties: whole blood

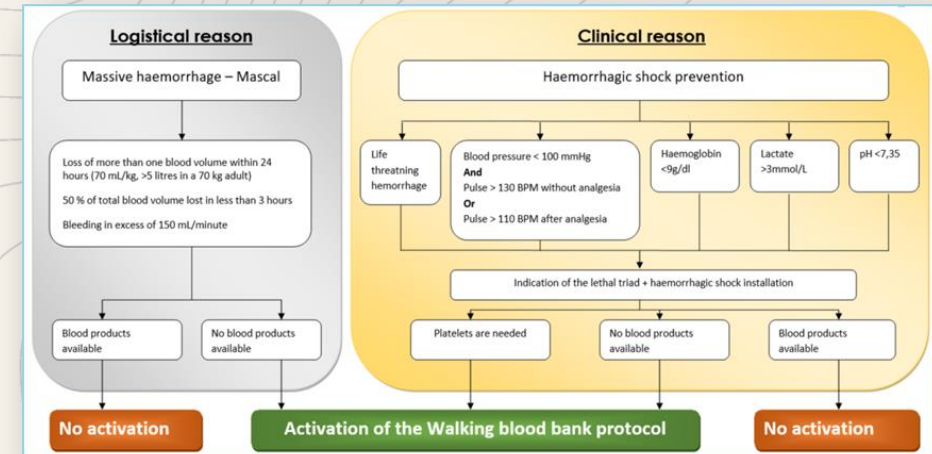
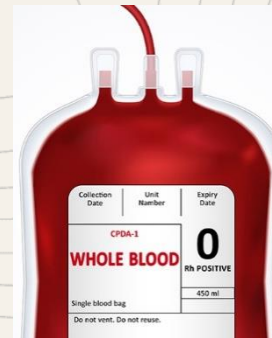
STEP 2: Donor safety

Donors Performances testing



STEP 1: Indications for use

Literature review



Researchers: Dr Eric Bernard

PhD Veerle Stevens

PhD candidate Maaïke Polspoel

PhD candidate CPN Med Thomas Van Haele

PhD Candidate Eddy Roosense



Physical performance

Mission Statement

Multidisciplinary research on, physical performance, musculoskeletal injury prevention, optimized rehabilitation for military personnel

Ensure a fit, healthy, and operationally deployable force, prepared to meet today's and tomorrow's geopolitical and operational challenges.

Research in training physiology and MSKI prevention

- Analyze the interaction between the soldier, the task, and the environment
- Use advanced analytics, AI and wearables for personalized, evidence-based training
- Build normative data to improve performance and reduce injuries
- Lead Defence-specific projects and collaborate with universities and military partners

Research in Rehabilitation

- Develop advanced protocols for injuries, mild traumatic brain injuries, and chronic pain
- Apply AR, computer vision and biofeedback for optimized recovery
- Integrate mental health support into rehabilitation
- Collaborate globally for evidence-based recovery strategies



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Mental Performance

R&D Centre for Mental Health

Primary Prevention

Military personnel during pre-deployment training (PDT).



Secondary Prevention

Military personnel involved in Potentially Traumatic Events.

Example of tools: *TReMo* (Trauma Reactions Monitoring).



Tertiary Prevention

Military personnel suffering from trauma-related psychological disorders.

Phage Therapy & Infectious Disease

Therapeutic use of bacteriophages for the treatment of pathogenic bacterial infection



Evaluation of the indication
based on medical history

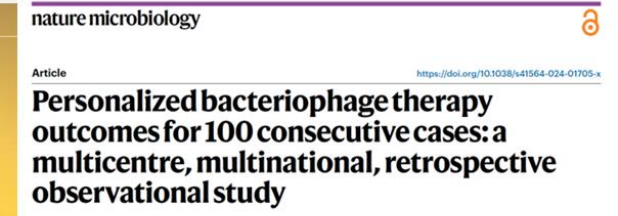
Performing phage
susceptibility tests on
patient's strain (LabMCT)

Establishing treatment
protocol with local treating
team

Follow-up during and after
phage therapy

We are a renowned coordination and production center :

- More than **600 requests** since 2023
- More than **220 phage therapy treatments** given in 14 different countries
- Around **25 APIs** (Active Pharmaceutical Ingredients) targeting different bacterial species and many phages in research
- Many articles published including one in the famous journal **Nature**
- Collaboration with other Hospitals and Institutions on **many projects** (ex: Ephicaci with UZLeuven)



Pirnay et al. *Nat. Microbiol.* 2024 Jun;9(6):1434-1453.



Pirnay J.-P., Djebara S. et al., *Nat. Microbiol.* 2024 Jun;9(6):1434-1453

Phage therapy at the QAMH

SYNERGY

Real-time optimization of the design of personalized phage cocktail ecology



antibiotics



Article

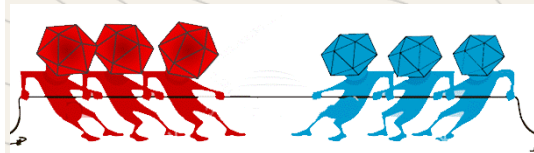
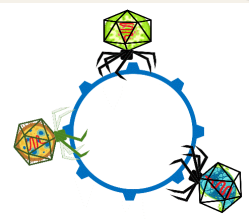
Use of the Naturally Occurring Bacteriophage Grouping Model for the Design of Potent Therapeutic Cocktails

Tea Glonti ^{1,*}, Michael Goossens ¹, Christel Cochez ¹, Sabrina Green ², Sayali Gorivale ², Jeroen Wagemans ², Rob Lavigne ² and Jean-Paul Pirnay ¹

synergy

Proto-cooperation

antagonism

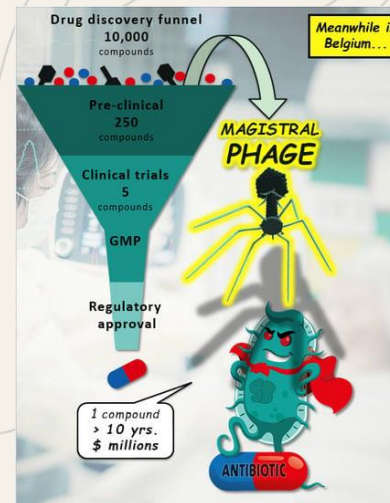


RESILIENCE PROJECT



The aim of RESILIENCE-R is to develop and test novel medical countermeasures against Chemical, Biological and Nuclear (CBRN) threats

RESEARCH IN SUPPORT OF PERSONALIZED BACTERIOPHAGE THERAPY OF DIFFICULT-TO TREAT INFECTIONS



DEFENCE

& Infectious Disease



INSTITUTE
OF TROPICAL
MEDICINE
ANTWERP

Finished trials (statistical analysis ongoing)

SINGLE-R : Clinical trial on a shortened administration schedule for administering the rabies vaccine.

The MALARIAPP (Digital Health Trial): To determine compliance to malaria prophylactic measures in travelers.

Future clinical trials

BAZOOKA Clinical trial on boostability of rabies vaccination

- which predictors for full compliance can be determined?
- the frequency and type of side effects of malaria chemoprophylaxis
- the effect of a daily digital reminder on full compliance
- the effect of a weekly digital reminder on full compliance



Simplifying and improving the accessibility of vaccination schedules for military and travelers

Conclusions - Collaborations & Project Funding



Collaborative research and development

Defence Funded
Research program

National

International



Royal Military Academy
Defence laboratories
Military Hospital Queen Astrid



Structural Collaborative Research
in Military Medicine (SCRiMM)



Visit our booth to get all the details!!

Other material (kits, articles, documents) on:

- Blood products (PhD Maj Maj Julie Degueudre)
- Phage Therapy (PhD Anandi Martin)

Posters on:

- *Decompression Research for Belgian Defence Aviation and Diving* by **Sven De Ridder**, Xavier Neyt, Nathalie Pattyn and Peter Germonpré.
- *Validating Physical Activity Thresholds in Active Populations* by **Maaïke Polspoel**, Col. Damien Van Tiggelen, Tara Reilly and Patrick Calders.
- *Centre for Physical Medicine and Rehabilitation* by **Eric Bernard**, **Maaïke Polspoel**, Eddy Roosens, Veerle Stevens and Thomas Van Hale.
- *In Vitro Evaluation Of The Dynamic Mode - Synergy, Proto-Cooperation, And Antagonism - To Develop Effective Phage Therapeutic Cocktails* by Tea Glonti, Jean-Paul Pirnay.
- *Evaluation of the effects of myofascial fibrolysis on burn scars* by **Léa Berthel**, Yves BUSEGNIES, **Denis Van Goethem**, Thomas ROSE, Arnaud Taets
- *App-based monitoring of malaria preventive measures in travelers to high-risk countries* by **Sami Alcedo**, Charlien Hupko, Ula Maniewski-Kelner, Mieke Croughs, Patrick Soentjens.

Thank you for your attention!

Contacts:

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Damien VAN TIGGELEN, PhD Col Advisor Research, Development and Innovation COMOPSMED

Damien.VanTiggelen@mil.be



Research Day – 12 September 2025



Department Behavioral Sciences (SCGW)

■ Content



Research Unit for Military Law



Research Unit for Military Ethics



Center for Military Social Research



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Research Unit for Military Law



Research Unit for Military Law

Research topics:

- International legal challenges of modern warfare, in particular as regards new tactics, means and methods, with a specific focus on accountability and responsibility
- Punishment & Internment of suspects of collaboration 1944-1950

Research Unit for Military Law

Some current research projects:

- Armed CONflict and DISinformation: Analysing and Strengthening the International Legal Framework against Fake News in Conflict Situations (**ACODIS – HFM/23-01**) (Promotor: Prof. S. Dewulf; researcher: L. Vandepuut)
 - PhD: “(Il)legal use of disinformation against combatants in armed conflicts”

Research Unit for Military Law

Some current research projects:

- A Belgian Integrated Approach to LawFare – towards a defensive and offensive legal strategy in a European and international context (**BIALF – HFM/24-01**) (Promotor: Prof. S. Dewulf – researcher: A.-C. Baron)
 - PhD: “L’utilisation du droit international pénal par la Belgique comme stratégie de lawfare en relation avec les conflits armés”



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Research Unit for Military Ethics



Research Unit for Military Ethics

Research Topics

- Ethics and modern military technology (drone warfare, (semi-) autonomous weapon systems, cyber warfare, etc.)
- The impact of the changing nature of warfare on the ethical Tradition of the Just War (terrorism, targeted killing, R2P, PMCs,)
- Theoretical developments within the domain of military ethics (role of virtue ethics, introduction of new extensions within JWT, such as *jus ante bellum*, *jus post bellum*, *jus ad vim*, debate on revisionist military ethics, etc).

Research Unit for Military Ethics

Some current research projects:

STRD-project HFM 22-03: “Ethics and AI. From Moral Virtues to Duties”. (2022-2026;; in collaboration with Institute of Philosophy KU Leuven)

DFR-RMA HFM 25-13: “Moral Implications of the Use of AI in the Mitigation of Civilian Casualties” (2025-2029: in collaboration with Institute of Philosophy KU Leuven)



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Center for Military Social Research



Center for Military Social Research

At the crossroads of Defence & Society

The chair of sociology explores the intersection of Defence and society. Our expertise covers operational analysis, recruitment, work satisfaction and organizational culture. We conduct surveys on security and Defence issues, personnel motivation and organizational diversity.

Center for Military Social Research

Focus Areas

- ✓ Work satisfaction & motivation
- ✓ Recruitment, attrition & retention
- ✓ Organizational culture & image
 - ✓ Diversity & inclusion
- ✓ Building societal and institutional resilience
 - ✓ Public and private partnerships

Center for Military Social Research

Bridging the Gap: Exploring the Intersection of Belgian Military Reservists and Civilian Life

Focus:

- Motivation, integration and experiences of Belgian reservists in a changing context
- Key concepts: Total Defence Force, multiple identities, organizational culture
- Mixed-method approach: literature + quantitative survey + qualitative interviews with reservists and civilian employers

Objectives:

- Gain insights on the experiences, integration and motivation of reservists in Belgium
- Provide Defence with accurate data and recommendations for recruitment and retention strategies

Center for Military Social Research

Recruitment & Integration of Youth in the Belgian Defence

Focus:

- Evaluate partnerships with public and private actors
- Analyse Reboot4You and SUC project
- Examine voluntary military service initiative for youth

Objectives:

- Assess effectiveness of partnerships in recruitment and retention
- Examine career trajectories of young recruits
- Analyse role of Reboot4You and SUC in professional development

CONFLICT STUDIES
PROF DR SARA VAN HOEYMISSSEN

12 September 2025



DEFENCE

■ Conflict Studies (COST)



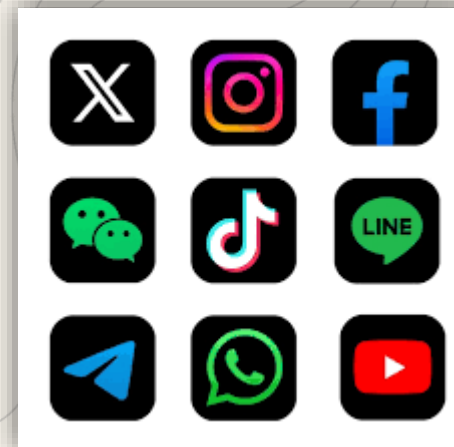


Does Ukraine show the future of conflict and war, or its past?

Is the rise of multipolarity a genuine alternative to Western hegemony, or simply a rebranding of old imperialist ambitions?



Can we learn something about resilience from our own past?

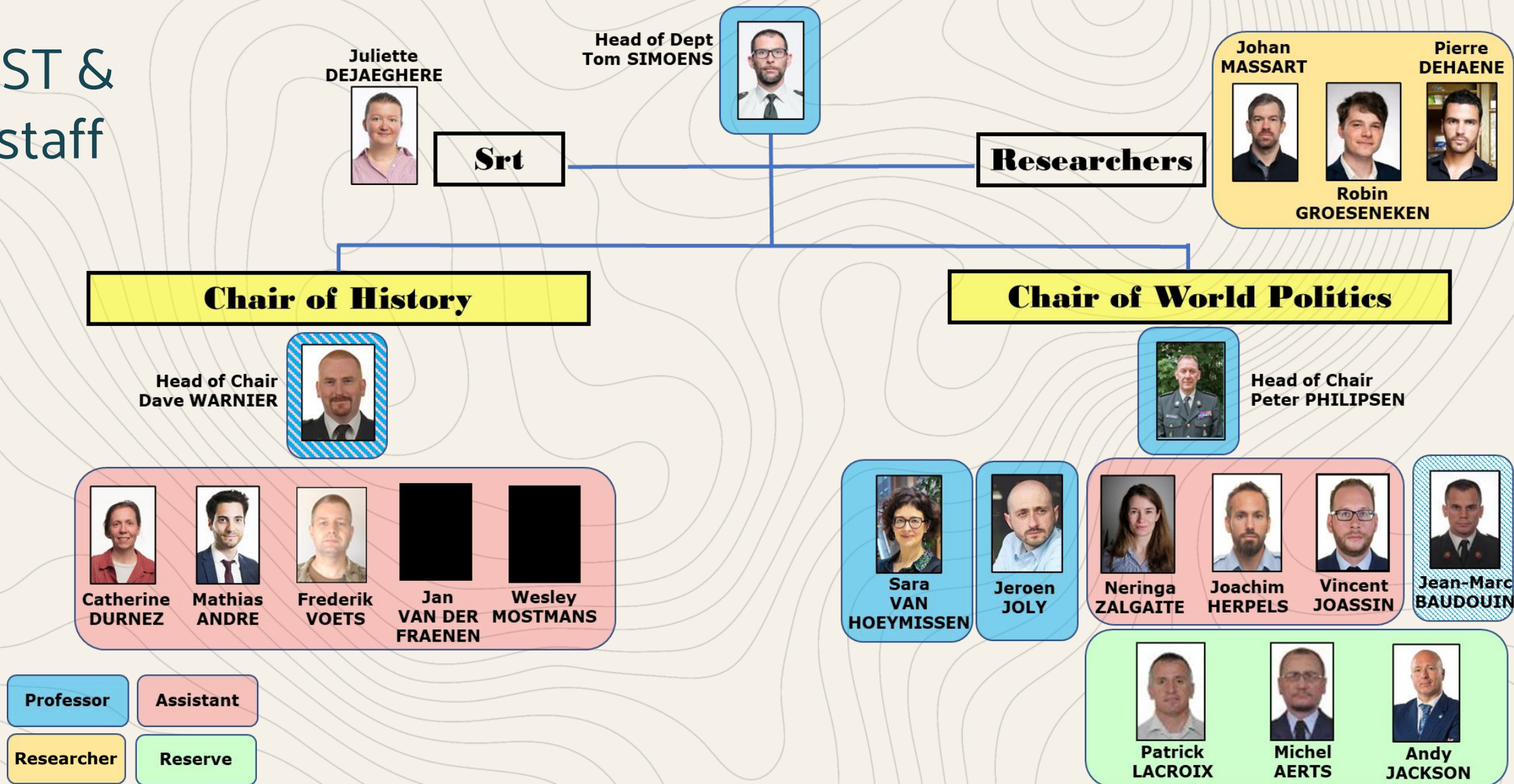


How can democratic societies balance openness and security?

**For all these questions, and more,
one place to look for answers at the RMA:**



COST & its staff

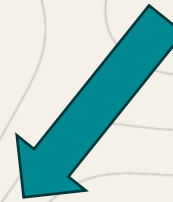


Research focus - History

Belgian military history in the 20th century



WW1 – Interwar Period –
WW2 – *Cold War*



Research projects - History

PROJECT	DESCRIPTION
SHERPA (Ongoing: 2024-2028)	examines the daily life experience of the Belgian military during the Phoney War (Sep 1939 - May 1940) in order to confirm or reject the long held view of a Belgian army troubled by social tensions and political twists rendering it incapable of effectively fighting the German invasion of May 1940.
BRAVE (Planned: 2025-2029)	explores the impact of Belgian officers on the World War II resistance. It seeks to understand the extent of their participation and impact: did these officers enhance the resistance's effectiveness and efficiency?
BELMILCAS (Ongoing: 2023-2027)	aims to determine how many Belgian military have died in operations since 1945 , to clarify the operational circumstances of their deaths and to see how public opinion and politicians responded to this loss of life.
CIVBEL (Planned: 2026-2029)	analyses how Belgium established a complex system of civil-military coordination committees and commissions between 1950 and 1992 to facilitate civil protection and ensure the survival of critical infrastructure and services in times of crisis or war.

Research focus - World Politics



Impact of geopolitical changes on Belgian and EU Foreign Policy

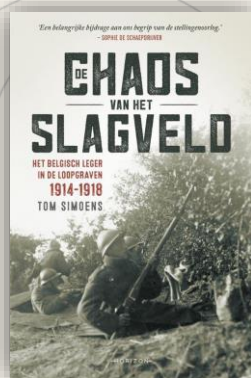


with special attention to the big actors like China, the USA and Russia, and to the Global South

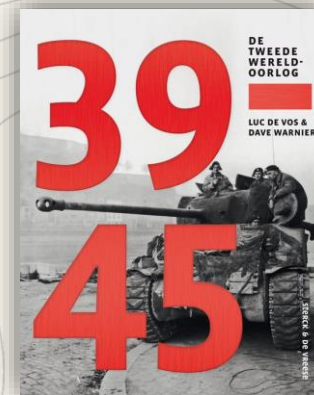
Research projects – World Politics

GEOPOLITICAL CHANGES		BELGIAN AND EU FOREIGN POLICY	
<i>PROJECT</i>	<i>KEYWORDS</i>	<i>PROJECT</i>	<i>KEYWORDS</i>
EMPORIA (Ongoing: 2024-2028)	Emerging Powers Maritime Security Geo-Economics	MISTIC (Ongoing: 2024-2029)	Military spending Political Narratives
NADYR (Planned: 2026-2030)	Disinformation Social Media War in Ukraine	BEL-POP (Planned: 2027-2031)	Formation of and shifts in public opinion Global politics and international security
PEGASUS (Planned: 2026-2030)	EU-Global South relations Critical raw materials Great Power competition		

Outputs



Publications and initiatives for a broader audience



Lezing Tom Simoens: Oekraïne en de Eerste Wereldoorlog – Terug naar de loopgraven

04 February 2024 - Zonnebeke - Bron: MMP1917

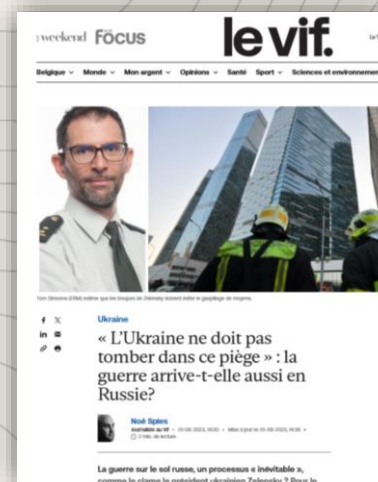
Luitenant-kolonel Tom Simoens, docent aan de Koninklijke Militaire School, vergeleek het Oekraïense tegenoffensief met de Slag bij Passendale. De strijd lijkt vast te zitten. Beide partijen hebben zich verschanst in kilometers brede opeenvolgende verdedigingslijnen. Drones snorren door de lucht met het gedonder van zware artillerie in hun kielzog. De gewone soldaat op de grond wordt schijnbaar aan zijn lot overgelaten.



Academic publications

Le char de combat est-il mort dans la guerre en Ukraine? Quelques réponses fournies par l'Histoire

Mathias Andre



Media contributions

What can we do for/with you?

Joint development of a multiple-year research project on a topic of mutual interest

Student dissertation research on a topic of your interest

Joint organisation of conferences, study days, workshops...

Research-based input on contemporary (policy) issues

Training

Vesalius College (VUB), Global Governance Institute (GGI) Summer School

...





DEFENCE



■ Questions?



12 September 2025

Research at the Department of Economy, Management and Leadership

The Economic Statecraft of China

Threat analysis, e.g.:

- Shadowboxing: The People's Republic of China's Use of Informal Trade Restrictions as a Rising Power
- Sino-Belgian Research Collaborations and Chinese Military Power

Analysis of protective instruments, e.g.:

- Matrix of Geoeconomic Instruments

Monitoring, e.g.:

- Geopolitical Risk on the Firm-Level

EMPORIA - *Emerging powers' maritime nationalism and its consequences for Belgium and the EU*



To understand
the link between maritime
security and economic
nationalism.

By investigating
State strategies to build and
wield maritime power,
combining economic and
military perspectives.



EMPORIA - *Emerging powers' maritime nationalism and its consequences for Belgium and the EU*

Protecting Belgian and European maritime interests amid a changing geopolitical landscape and growing contestation in the maritime domain.



Source: Belga [Port of Antwerp-Bruges sets world's first maritime GDP port certificate for pharma goods](#)



Source: DEME to Use Special Drilling Tech Again as it Wins Second Major Offshore Wind Deal in France



Source: [F-931 BNS Louise Marie Karel Doorman class Frigate Belgian Navy](#)

BEPIDS

Belgian Economic Potential in the Industry of Defence and Security

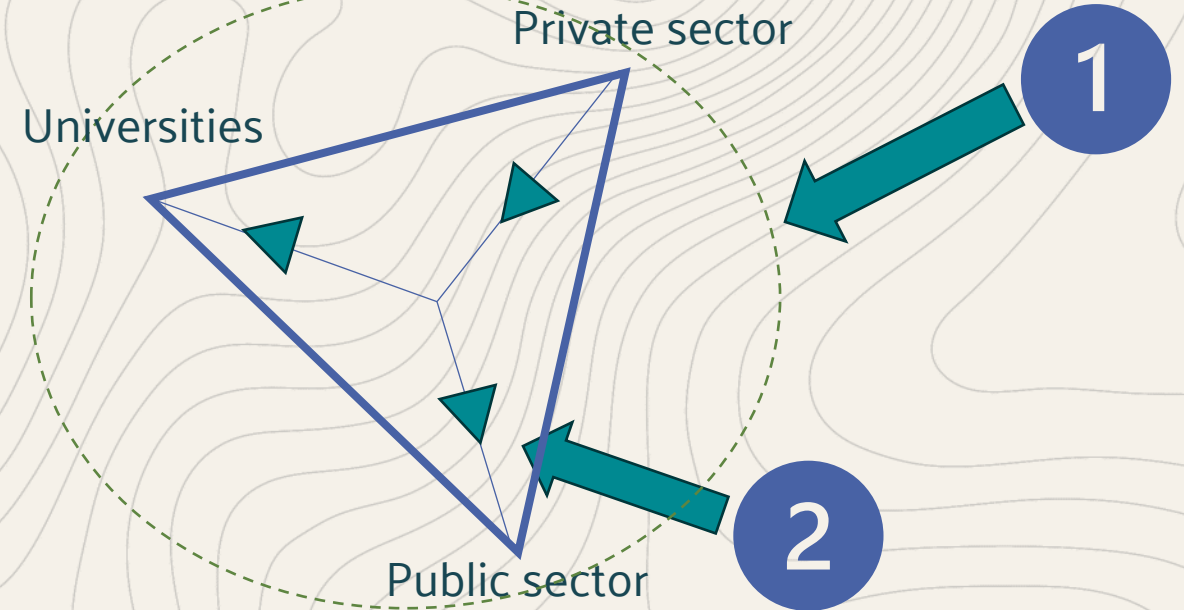
→ Addresses some of the open points of the DIRS

1. Map the Belgian Defence Technological and Industrial Base (BE-DTIB) and develop a database*.
2. Development of policy toolkit and manual for support to research for the BE-DTIB in compliance with EU law

Research by: **RMA & VUB**

Funded by: **BELSPO (+optional allocation RHID)**

“What is the BE-DTIB and how can BE support it within the EDTIB?”



PATRIODS

Performance **A**ssessment **T**ool for **R**esearch & **I**nnovation support **O**f the Belgian **D**efence and **S**ecurity technological & industrial Base.
→ Sets up a system to evaluate measures and investments in the BE-D(S)TIB.

1. Evaluation of Support Mechanisms to understand effectiveness, efficiency and appropriateness.
2. Development of a practical toolkit for the 3 phases of the support lifecycle (design, governance, ex-post evaluation) and a monitoring dashboard.

i.e.

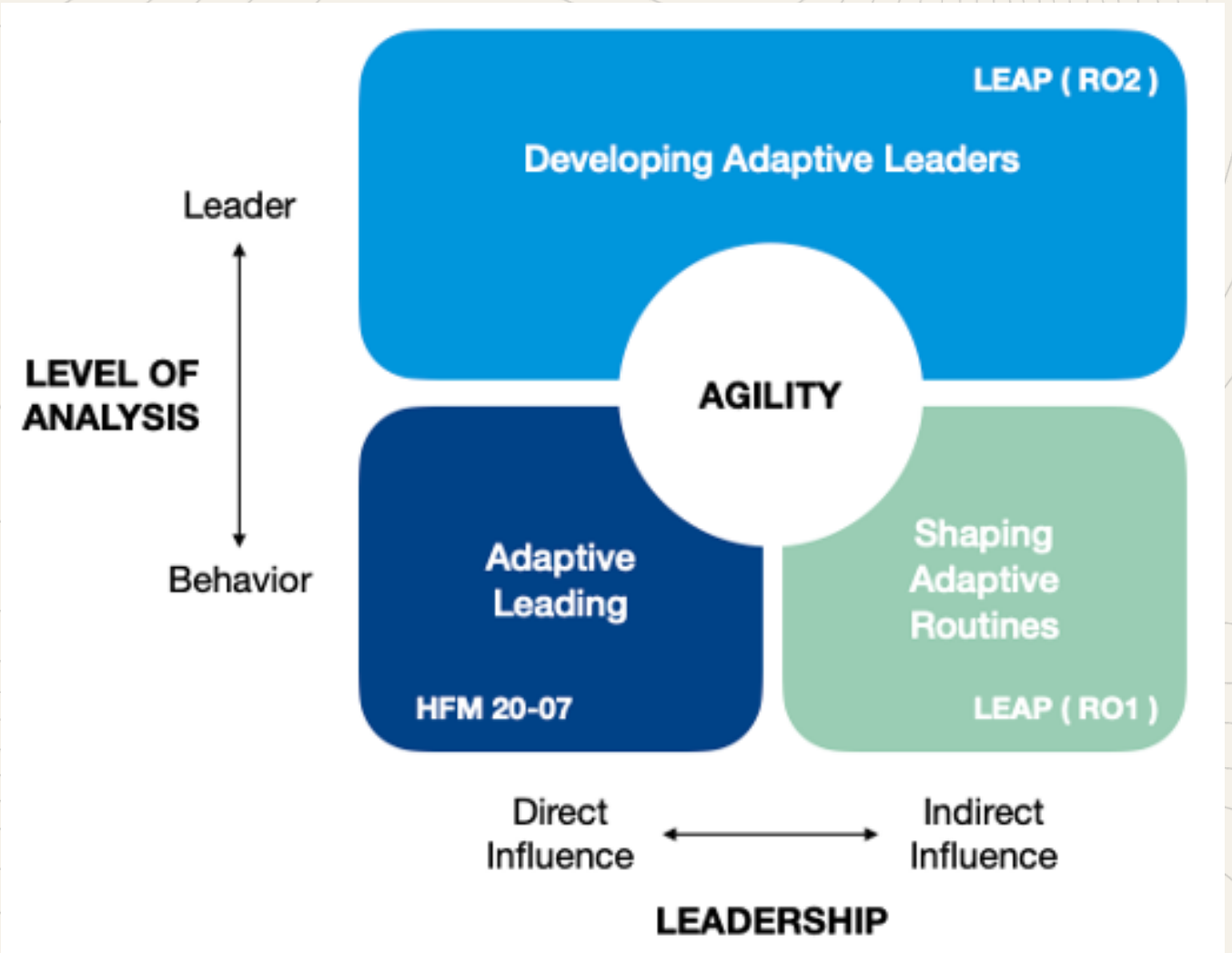
“What is the impact of support mechanisms?” + sets up a system for better assessments.

Research by: **RMA & VUB**

Funded by: **BELSPO (Science4Policy)**

LEADERSHIP

Collaborative partners



Funding acknowledgement: The project MACECS - HFM/20-07 & LEAP - HFM/25-12 are financed under the DFR call.





ROYAL HIGHER INSTITUTE FOR DEFENCE
LTCOL GENOUW JOHN (GS), DIR STRD



DEFENCE

12 Sep 2025

STRD | WTOD | RSTD

SCIENTIFIC & TECHNOLOGICAL RESEARCH FOR DEFENCE

Belgian Policy

2016

2020 - 2022

2025

Strategic vision for Defence

- Gradual increase of the R&T contribution for security and defence up to 2% of defence spending in 2030
- Strengthening the Scientific, Technological and Industrial Potential
- Essential security interest to have a national DTIB

Policy Statement MOD (STAR plan)

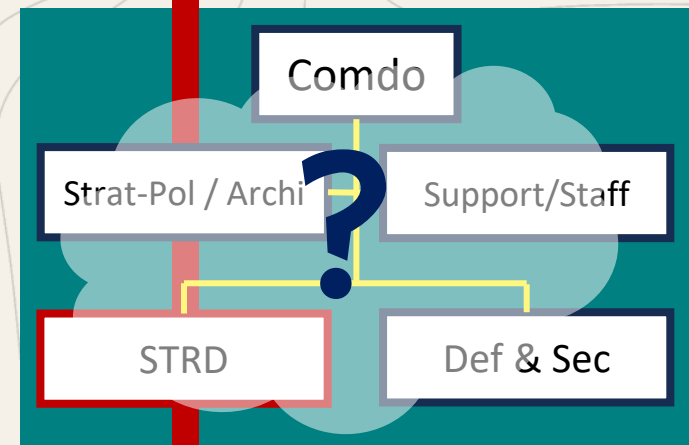
- Development of a defense, industry, and research strategy (DIRS)
- ICCW the communities & regions
- R&T budget grows, specific DIRS Bg, Major development programs

Government agreement

- RHID = Innovation Hub
- “DIRS is here to stay”
- Continued policy: Increased awareness, effort, resources

Belgian Defence ‘Research, Technology & Innovation Vision 2030’

- The RHID wishes to be one of the driving forces for the development and the strengthening of the Belgian defence technological and industrial base (DTIB), in a European and NATO-framework, in order to develop a larger and better knowledge base, more effective military and industrial capabilities and a larger strategic autonomy in the security and defence domain.
- 5 vectors for Defence Research, Technology and Innovation
- RSTD Structure base (end 2024)



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The department for

Scientific and Technological Research of Defence

Supports the **policy and strategy** through 5 RTI vectors

From an internal scientific and technological research programme
to a research, technology and innovation policy
within a national and European context.



**Structurally reinforce the
Belgian Defence**

R&T-capabilities

(Royal Military Academy, Defence
laboratories,
Military Hospital Queen Astrid)



**Develop a broader
national knowledge
and technological
base**

DEFRA
DEFENCE-RELATED RESEARCH ACTION



**Stimulate and support
collaborative research
and development**
(EDA, EDF, ESA, NATO)



**Facilitate short-cyclic
innovation projects
for Defence**

 **INNOVATION FOR DEFENCE**

**DIANA
HEDI**



**Create ecosystems for
research, development and
innovation**

12 Research Areas

DAP Data Acquisition and Processing

MSP Mobility, Systems, and Protection

HFM Human Factors and Medicine

From an internal scientific and technological research programme to a research, technology and innovation policy within a national and European context.

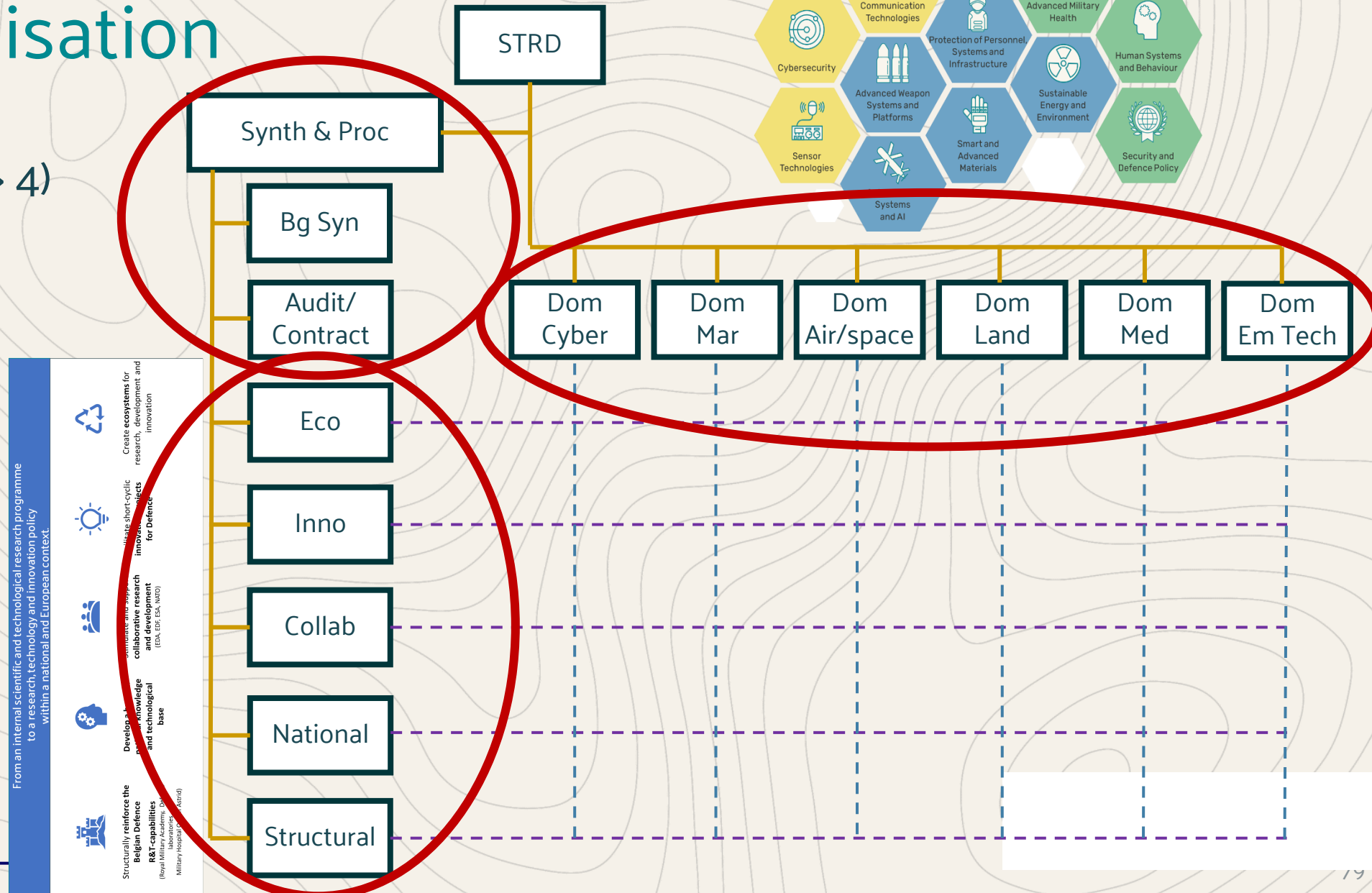
 Structurally reinforce the Belgian Defence R&T-capabilities (Royal Military Academy, Defence laboratories, Military Hospital Queen Astrid)	 Develop a broader national knowledge and technological base	 Stimulate and support collaborative research and development (EDA, EDF, ESA, NATO)	 Facilitate short-cyclic innovation projects for Defence	 Create ecosystems for research, development and innovation
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RSTD organisation

Current head count

- Bg follow up : 1 (\Rightarrow 4)
- Coord : 6 (\Rightarrow 8)
- Res Mgt : 8 (\Rightarrow 11)





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■ Thank you



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Coffee Break



DEFENSIE
LA DÉFENSE