

# MILITARY DECISIONS BASED ON REAL-TIME MONITORED READINESS-TO-PERFORM

C. Leenders, A. Peña Fernández, D. Berckmans





# Problem statement

- Soldiers who are mentally/physically exhausted are not performing optimally
- Soldiers who are not in focus zone make critical mistakes
- Decision makers under stress make suboptimal decisions
- Mistakes cost lives!
- The mission's objectives are at risk

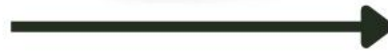
# Solution: real-time monitoring



High-stakes mission



Real-time feedback



Monitoring

	Readiness	Resilience	Focus zone	Risk for drop-out
Person 1	😐	😐	😞	😐
Person 2	😊	😐	😊	😊
Person 3	😞	😞	😞	😞
Person 4	😞	😐	😞	😐



Real-time **objective & accurate** data



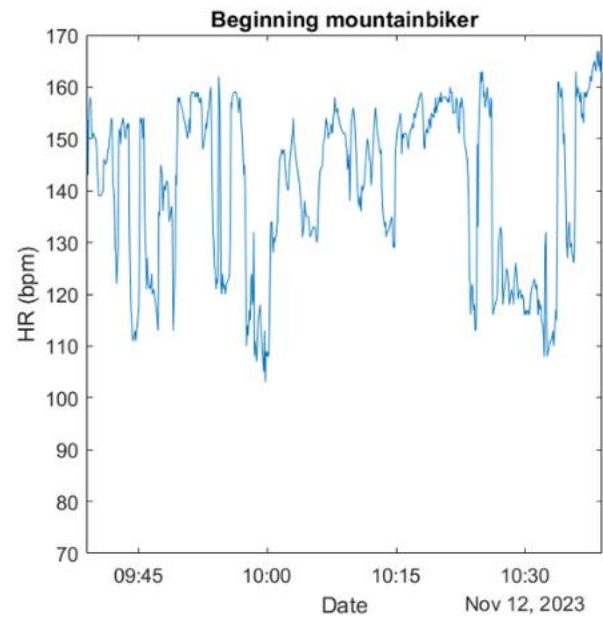
Intervention



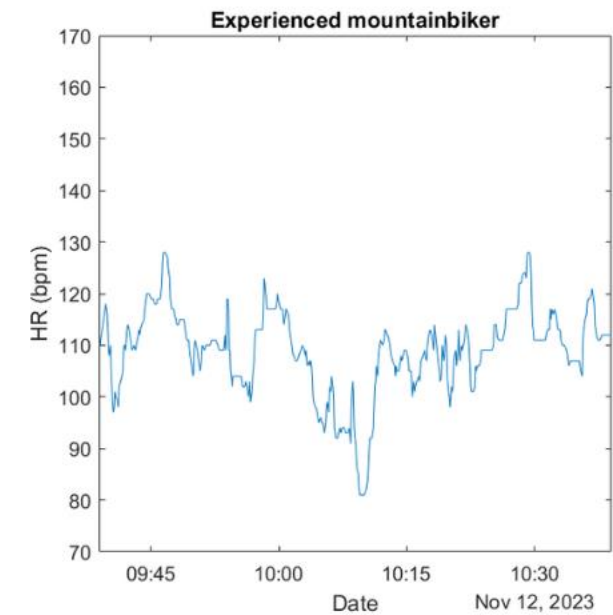
Military data-based decisions



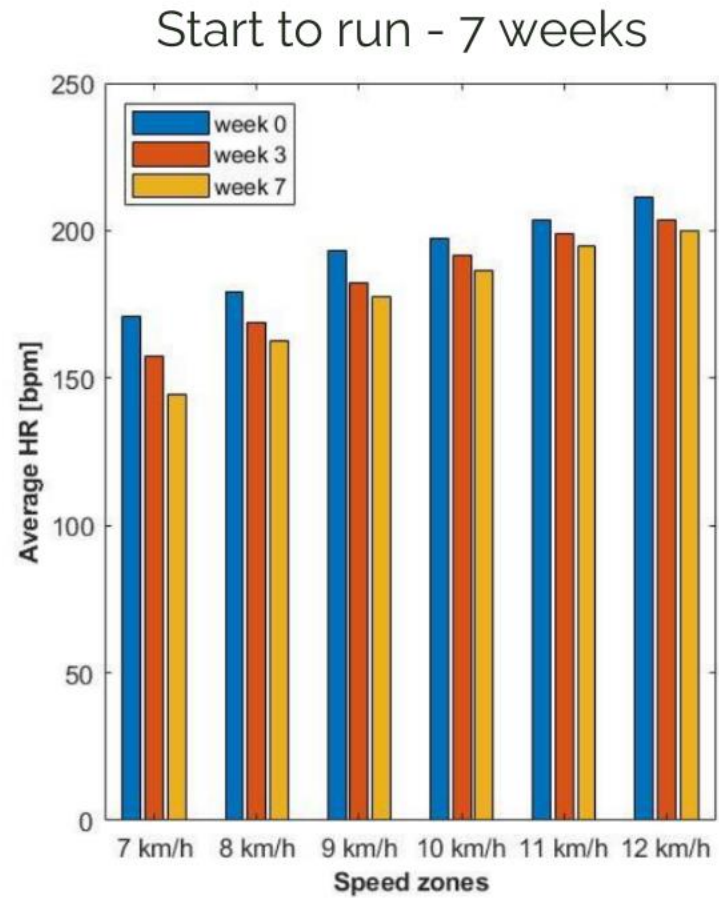
# Individualized algorithms



VS

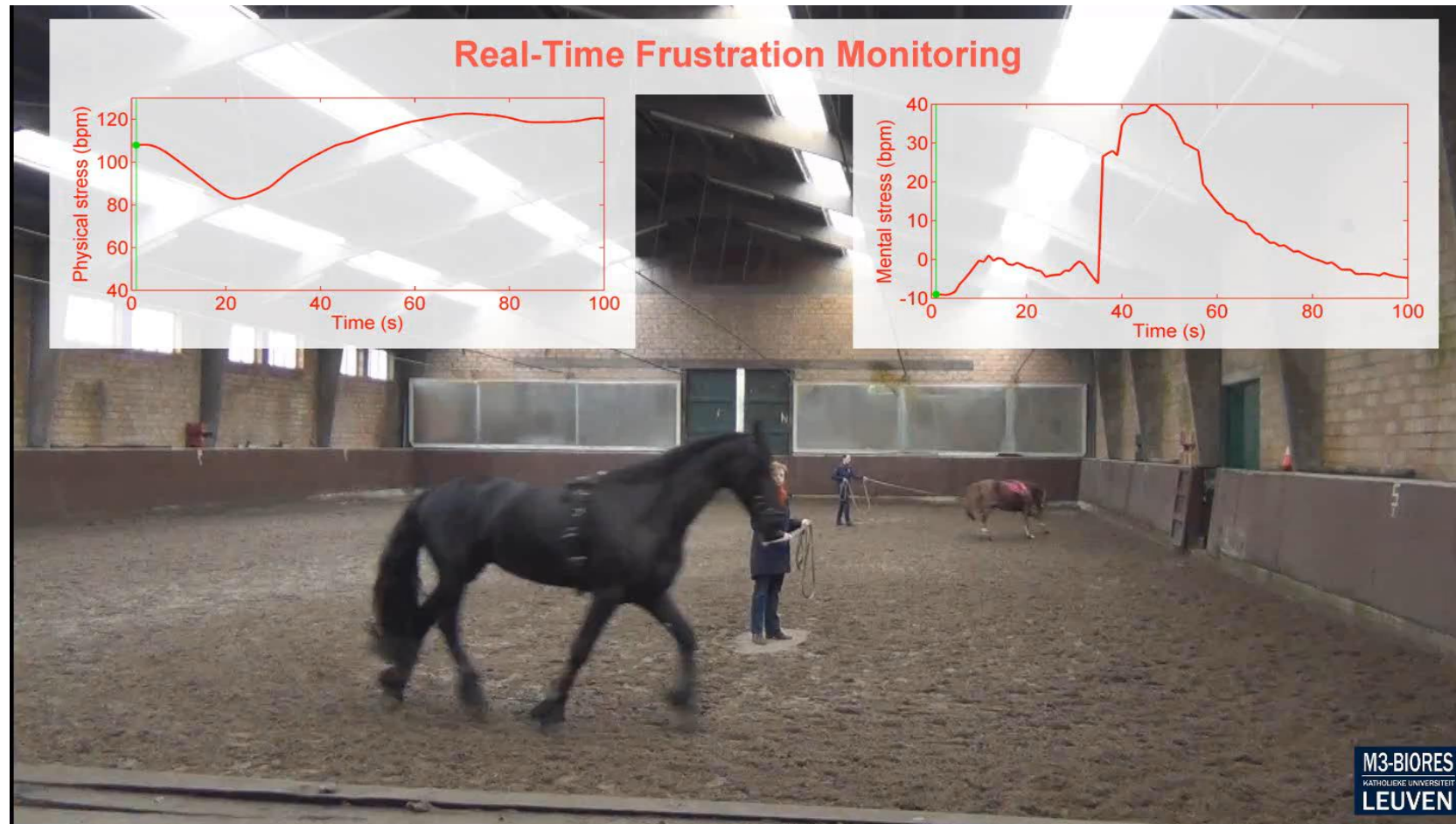


# Time-variant algorithms



# Real-time algorithms

Mental state can change in terms of seconds



# Differentiation with other technologies



## NOT INDIVIDUAL

Use of group averages



## NOT REAL-TIME

Individual characteristics are not adapted over time



## HARDWARE

Low sampling frequency due to low battery lifetime



## NO INTERPRETATION

AI and ML work black-box and is not able to interpret results





# Benefits of individualized real-time monitoring

- Alert individuals who are not in mental focus zone
- Alert colleagues to take care of individuals who are not ready to perform
- Switch positions to put best people on critical positions
- Data-based decisions by military commanders under stress
- Continuous feedback

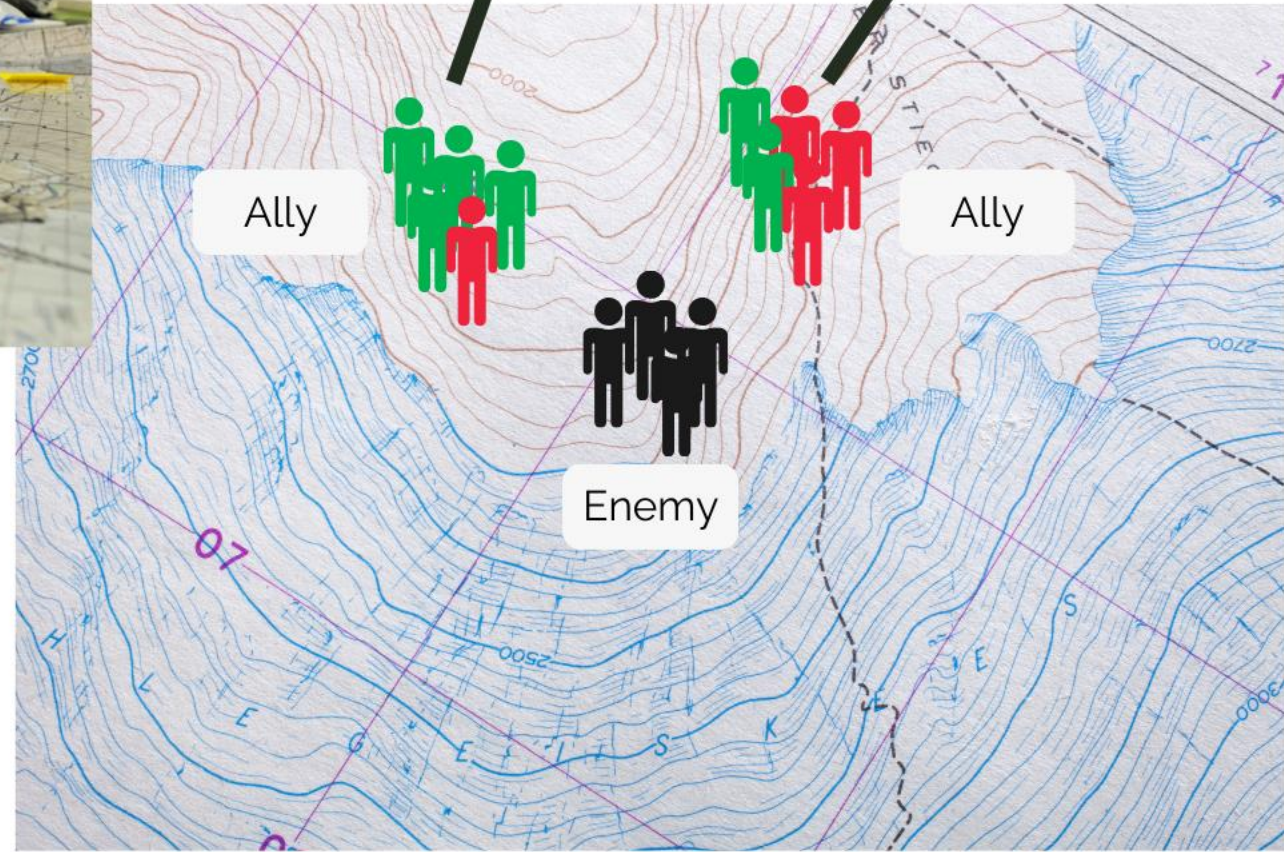


# Team selection



Send this team for crucial operation

At risk to make crucial mistakes





# Information about team partners



- Mental focus zone
- Physical state
- Readiness to perform
- Resilience
- Risk for infection
- Risk for drop-out
- ...

# THANK YOU!

info@biorics.com  
www.biorics.com  
Patents & Publications:  
<https://www.biorics.com/science/>

---

Prof. Daniel Berckmans  
CTO  
daniel.berckmans@kuleuven.be  
+32 479 983819

Mrs. Ann Goeman  
Marketing & Communication  
ann.goeman@biorics.com  
+32 478 501854

BioRICS NV  
Technologielaan 3  
3001 Heverlee  
Belgium  
+32 16 389809

BioRICS Inc.  
Old Long Ridge Road A4  
Stamford CT 06903  
USA