**HPR*net***
Human Performance Research
*network*

# Training and intervention strategies to enhance warfighter situation awareness

- high levels of Situation Awareness (SA) are vital for success in complex environments.

- current approaches to enhancing SA focus on training individuals for specific tasks or roles

- though valid, such approaches can be time-consuming, costly, and non-generalizable.

## This project aims to:

1) identify the cognitive skills underpinning SA

2) test whether training these cognitive skills can improve SA

3) determine whether tailoring automation to these cognitive skills can improve SA

## Exploitation paths (e.g. Projects)

- *Land 400-3* – assessing cognitive skills of personnel selected for Infantry Fighting Vehicle commander training

- *Training courses* – measuring if formal cognitive skills assessment correlates with, or predicts, trainees' performance on course.

THE UNIVERSITY OF
WESTERN
AUSTRALIA

DST GROUP | Science and Technology for Safeguarding Australia

# Project Design

**HPR*net***
Human Performance Research
*network*

**1** Hypotheses
- SA can be linked to specific cognitive skills
- training cognitive skills underpinning SA will benefit SA and performance
- automation enhancing cognitive processes linked to SA will benefit SA and performance

**2** Experimental methodology
- laboratory studies using civilian personnel
- in-situ data collection with military personnel (e.g., School of Armour, Puckapunyal)

**3** Deliverables
- App-based SA training program
- test battery for SA-linked cognitive skills
- guidelines on selecting personnel on the basis of SA-linked cognitive skills
- guidelines on tailoring automation to operators to enhance SA
- reports documenting study outcomes

**4** Timelines
- *Q3-4, 2018*: training intervention in civilian personnel
- *Q1-2, 2019*: training intervention in School of Armour personnel
- *Q4, 2018 – Q1, 2020*: customising automation for SA in civilian personnel

THE UNIVERSITY OF
WESTERN
AUSTRALIA

DST GROUP  Science and Technology for Safeguarding Australia

# **HPR*net***
Human Performance Research
*network*

# **Progress, challenges, lessons learnt, opportunities, insights**

## Progress

- overall the project is on track and to date all deliverables have been received on time

- papers to be presented: Defence Human Sciences Symposium, Australasian Cognitive Neuroscience conferences

## Challenges

- project brings together SMEs from Army, DST and UWA with varying levels of knowledge of the each other's domains

- Army, DST, and UWA stakeholders geographically dispersed; travel costs greater than originally anticipated

## Lessons learned

- frequent communication essential to ensure stakeholders have shared understanding of data collection plans and requirements

- Dedicated project staff (LTCOL Melberzs, Tom Radkte, Michael Harris) essential for success.

THE UNIVERSITY OF
**WESTERN
AUSTRALIA**

DST GROUP | Science and Technology for Safeguarding Australia

# **Progress, challenges, lessons learnt, opportunities, insights**

**HPR*net***
Human Performance Research
*network*

## Opportunities

- UWA is collaborating with Curtin to collect data on the relationship between individual SA and team resilience

- training app and cognitive test battery may have utility for other areas of Army and military services

## Insights

- leveraging off opportunities has the potential to provide additional benefits to all stakeholders

- while researchers and practitioners recognise the importance of SA, there are a variety of definitions and models. It's important to develop a consistent definition of SA and clear understanding of Army-specific behaviours associated with good and poor SA

THE UNIVERSITY OF
WESTERN
AUSTRALIA

THE ARMY
AUSTRALIA

DST
GROUP    Science and Technology for Safeguarding Australia