

Ministry of Defence



# The I3I Model

**Identifying Cultural Determinants of  
Information Sharing via C2 Information Technologies**

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# Outline

Introduction

Relevance

Multidimensionality of Information Sharing

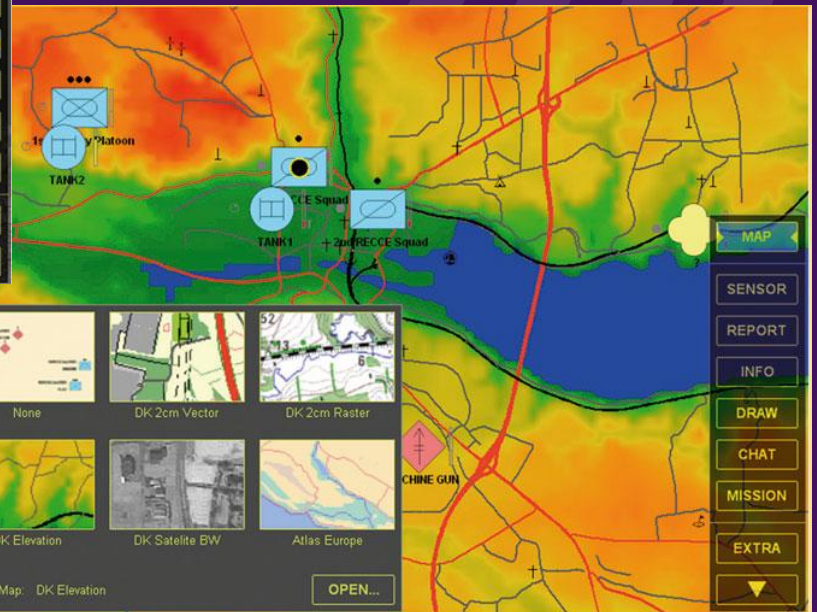
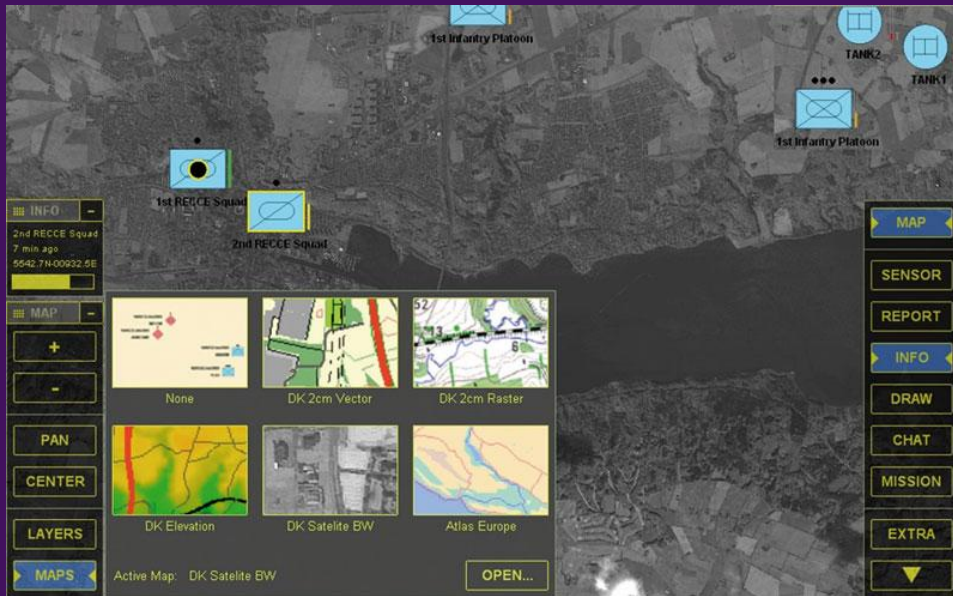
Methodology

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Future directions

# Introduction (1)



*Joint Common Operational Picture*

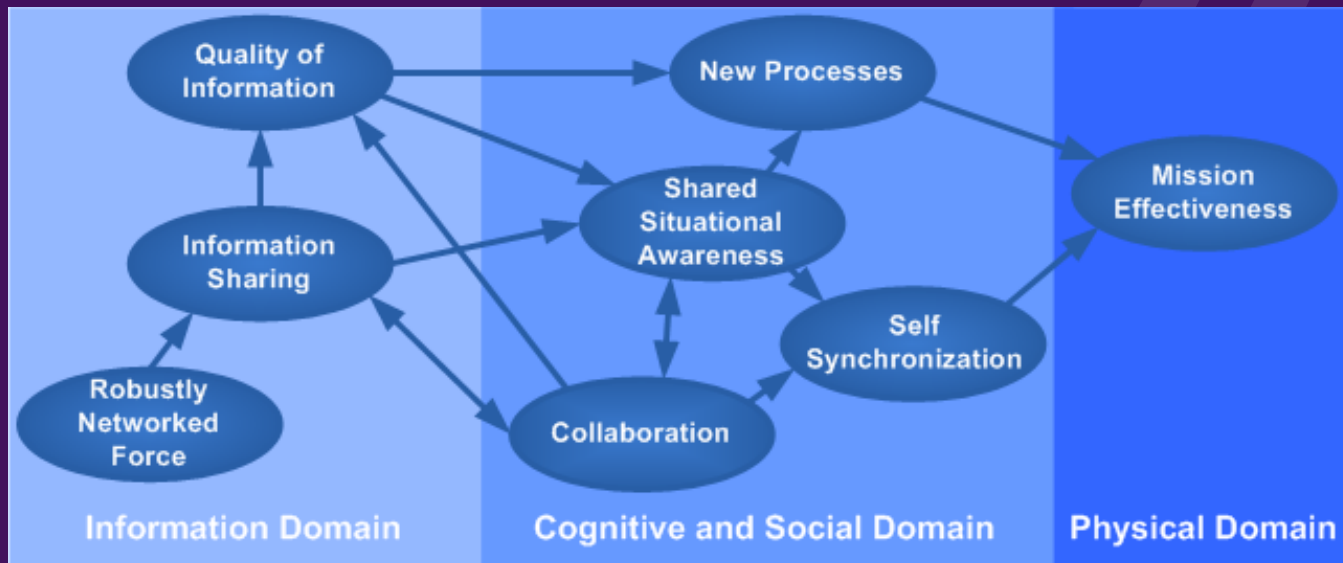
# Introduction (2)



## Introduction (3)

### Network Centric Operations and Information sharing

*“A robustly networked force improves information sharing and collaboration...enhances the quality of information and shared situational awareness...ultimately results in dramatically increased mission effectiveness.”*



## Introduction (4)

- C2 systems are designed to maximize situation awareness by *sharing information!*
- Information within joint combined coalitions?
  - Joint (organizational culture?)
  - Combined (national culture?)
  - Civil-Military (organizational/national?)
  - Multiple cultures!
- Research question:  
*How do differences in national, organizational, and professional culture influence information sharing via C2 systems during joint and combined coalition operations?*

# Relevance

- Existing research on:
  - Information sharing
    - » scattered over multiple disciplines (IS, OS, KM, IM)
    - » models information sharing as single act
    - » neglects multidimensionality of information sharing
  - Cultural influences on C2
    - » but only decision making
    - » neglects multiple levels of culture
- Need for research on:
  - *Coalition* information sharing,
  - In a cross-cultural setting at *multiple* levels,
  - Acknowledging the *multidimensionality* of information sharing

# Multidimensionality of Information Sharing (1)

- Information sharing:
  - Is a behaviour, not a technology!
  - Is embedded within multiple levels of culture
    - » National
    - » Organizational
    - » Professional
  - Consists of three dimensions!
    - » Cognitive
    - » Social
    - » Technological
  - We label this: *I3 Information Sharing*



# Multidimensionality of Information Sharing (2)

## I3 Information Sharing:

### 1. Cognitive: **Identification**

*The selection and valuation of information that may or may not be shared with coalition partners, or with assigned individuals representing these coalition partners.*

### 2. Social: **Inter-relation**

*The selection and valuation of the recipients as coalition partners, or assigned individuals representing these coalition partners.*

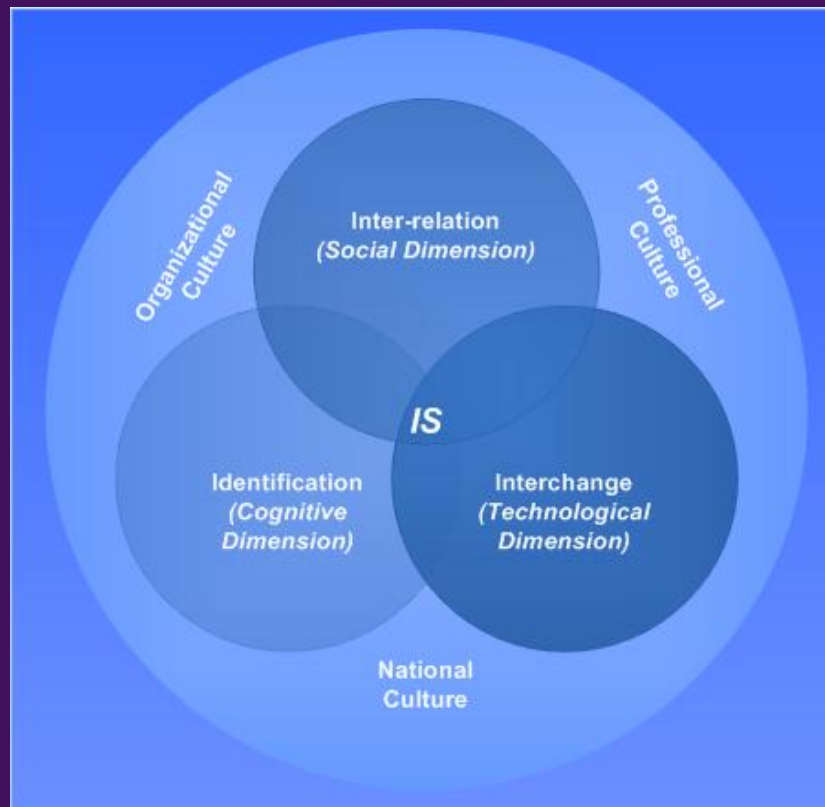
### 3. Technological: **Interchange**

*The selection and valuation of the technology used for sharing information with coalition partners, or with assigned individuals representing these coalition partners.*

# Multidimensionality of Information Sharing (3)

## I3 Information Sharing

*Information sharing (IS) only occurs when the conditions for I1, I2, and I3 are fulfilled and coexist within the source of the information sharing process!*



# Methodology

- Ongoing research project at the Netherlands Defence Academy (NLDA)
- In cooperation with the NATO Command and Control Center of Excellence (NATO C2CoE)
- Multiple Case Study: *Preliminary Findings*
  - NATO Response Force (NRF 10-12)
  - Steadfast Jaw (Naples, IT), Steadfast Juncture (Ulsnes, NOR), Steadfast Joiner (Solenzara, FRA)
  - Command Post Computer Aided Exercises (CPX/CAX)
  - 3x10 day visit: participant observations, semi-structured interviews, informal conversations

# The I3I Model (1)

Resulting set of *preliminary* determinants:

## I1: Identification

- Perceived Information Value
- Perceived Information Shareability
- Information Ownership

## I2: Inter-relation

- Anticipated Reciprocity
- Relational Trust
- Perceived Relational Characteristics

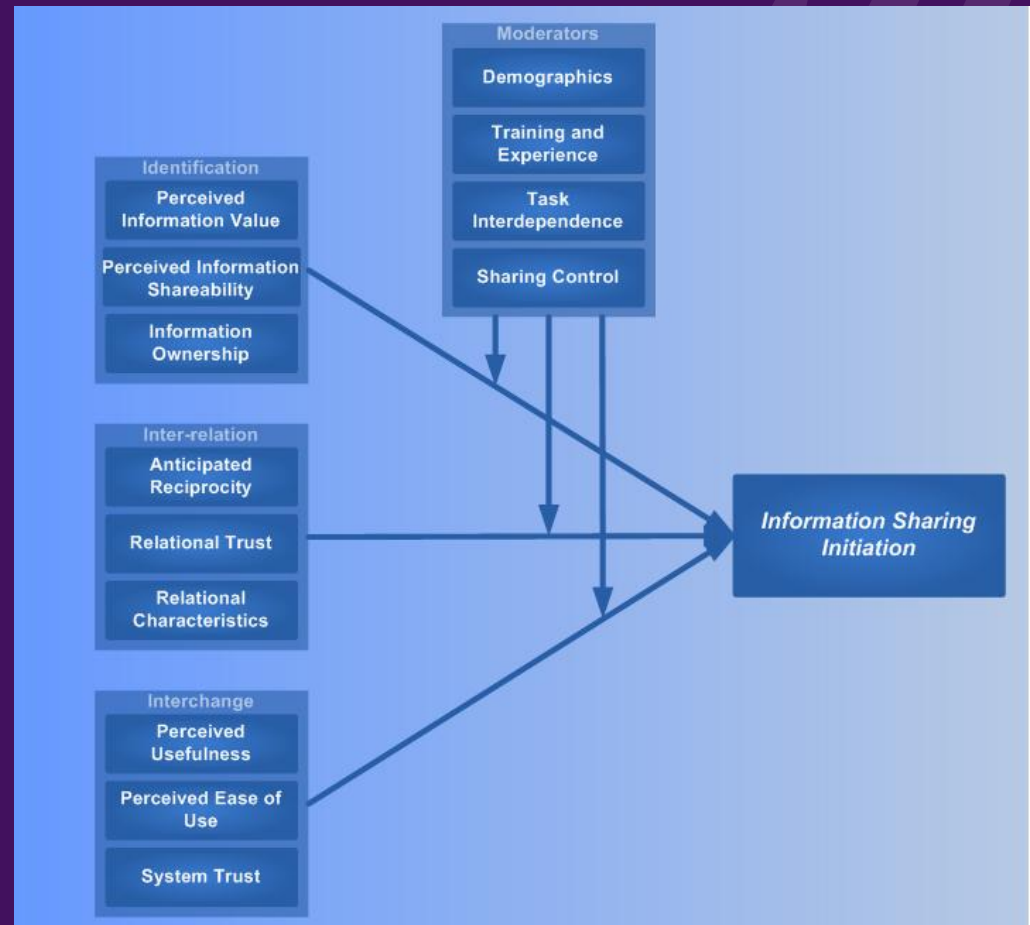
## I3: Interchange

- Perceived Usefulness
- Perceived Ease of Use
- System Trust

# The I3I Model (2)

## Integrated *multidimensional* model

- I1: Identification
- I2: Inter-relation
- I3: Interchange
- Moderators
  - Demographics
  - Training and Experience
  - Task Interdependence
  - Sharing Control



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# Implications within Joint Combined Coalitions (1)

Information within joint combined coalitions?

- Joint (organizational culture?)
- Combined (national culture?)
- Civil-Military (organizational/national?)
- Multiple cultures!

## Culture

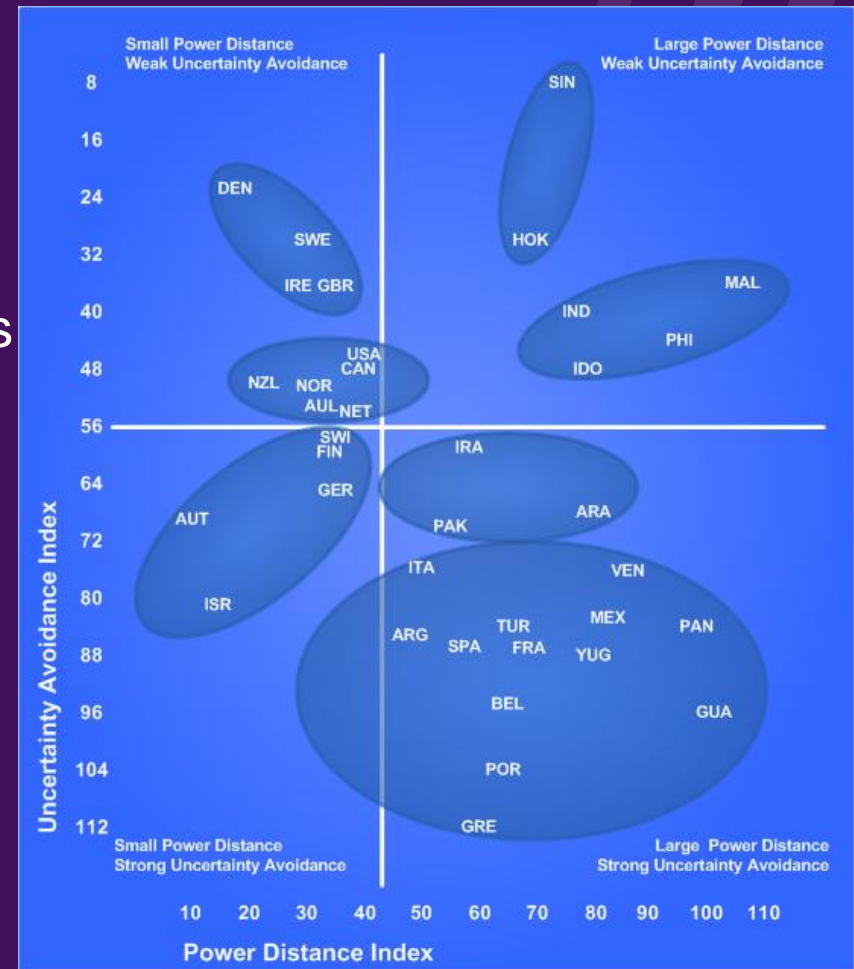
*“Fundamental system of meanings shared by members of a society, distinguishing one group or category of people from another.”*

Example: *National* cultural dimensions (Hofstede)

- Power Distance (PD)
- Uncertainty Avoidance (UA)
- Individualism (IND)
- (Masculinity)
- (Long-term orientation)

# Implications within Joint Combined Coalitions (2)

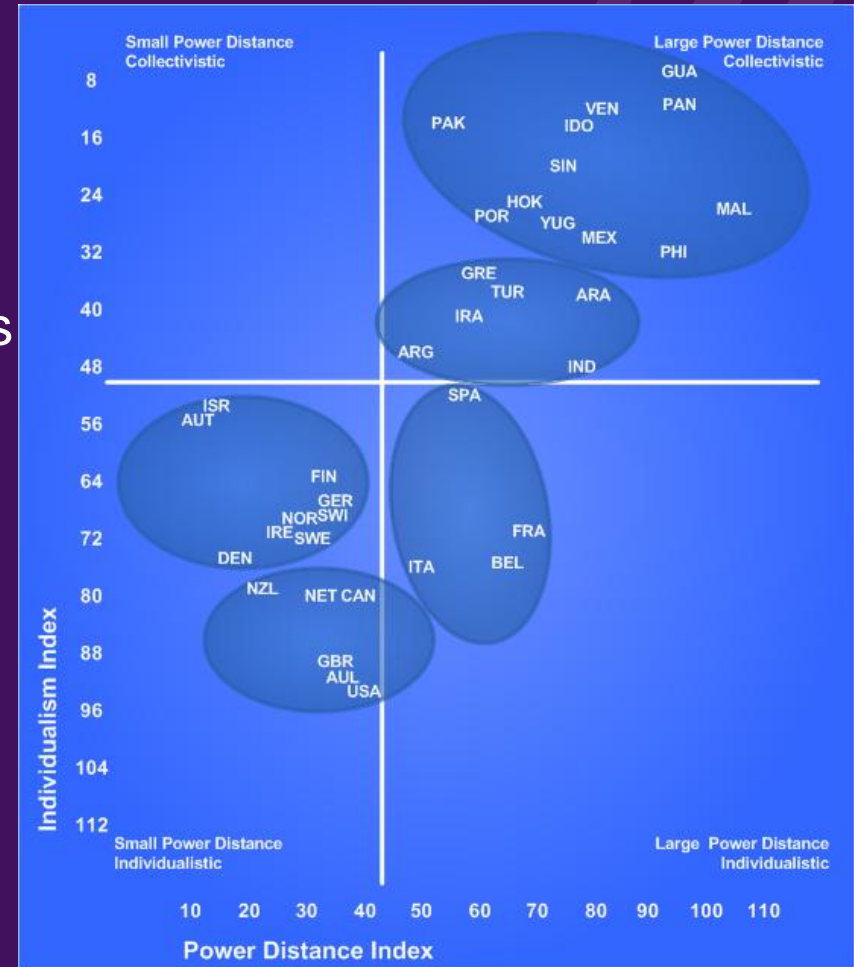
- *Multiple* national cultures within *one* combined coalition
- Some examples; PD & UA
  - Anglo Saxon cultures
  - Former Yugoslavia cultures
  - Southern Mediterranean & Latin American cultures
  - Scandinavian cultures





# Implications within Joint Combined Coalitions (3)

- *Multiple* national cultures within *one* combined coalition
- Some examples; IND (&PD)
  - Anglo Saxon cultures
  - Former Yugoslavia cultures
  - Southern Mediterranean & Latin American cultures
  - Scandinavian cultures



# Implications within Joint Combined Coalitions (4)

## I3I Information sharing

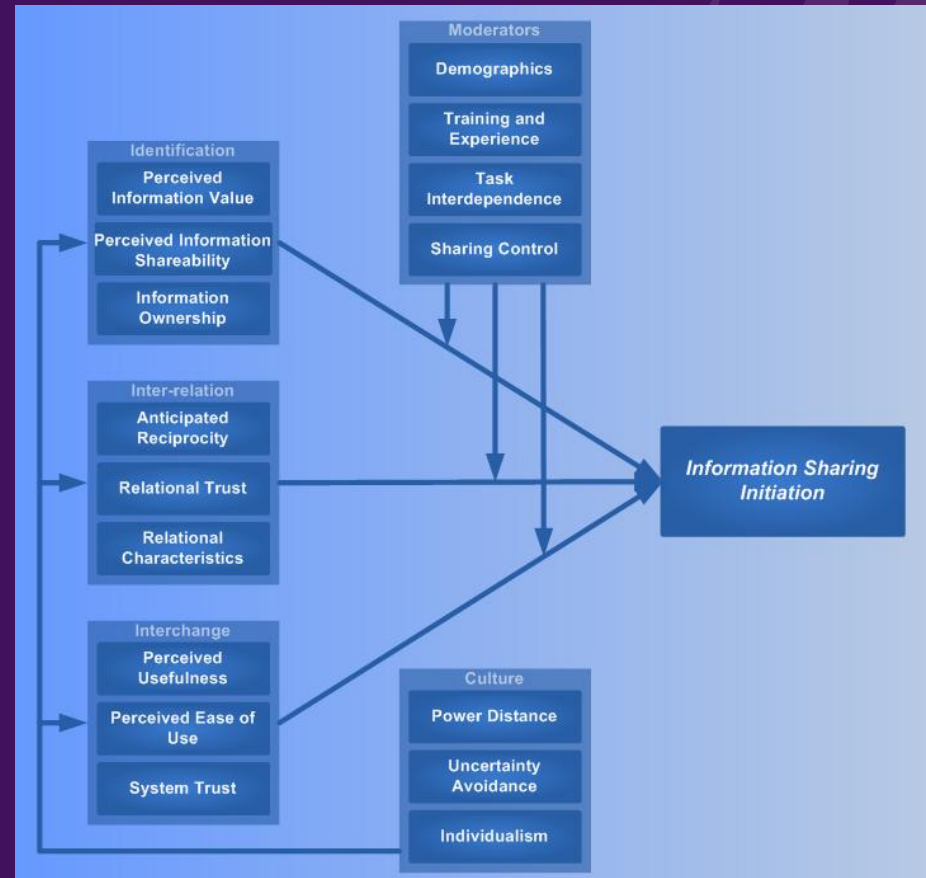
Identification  
Inter-relation  
Interchange

## Cultural dimensions

Power distance  
Uncertainty avoidance  
Individualism

## Examples

Anglo Saxon cultures  
Former Yugoslavia cultures  
Southern Mediterranean & Latin American cultures  
Scandinavian cultures



## Discussion

- Important:
  - Scope of this paper is on *national* cultural influences, at the *individual* level. However:
    - » Multiple levels of culture exist!
    - » Culture influence information sharing behavior at the individual *and* at the organizational level!

	Individual	Organizational
National	✓	
Organizational		
Professional		

- Furthermore:
  - Multiple theories and frameworks of culture exist!

## Future directions

- Empirically explore the determinants and implications of I3I information sharing within joint combined coalitions (EX & OPS):
  - Qualitative (subject matter expert interviews)
  - Qualitative (multiple case studies)
  - Quantitative (survey)
- Focus on:
  - National, organizational, and professional level
  - Both individual and organizational level
- Partnerships:
  - NATO C2 Center of Excellence
  - Tilburg University, The Netherlands

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**Thank you for your attention**

Questions or comments?

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