



*Technology Work Session for the South African Army; Hosted by the CSIR*

## Session 1: Full spectrum protection



### Protection overview

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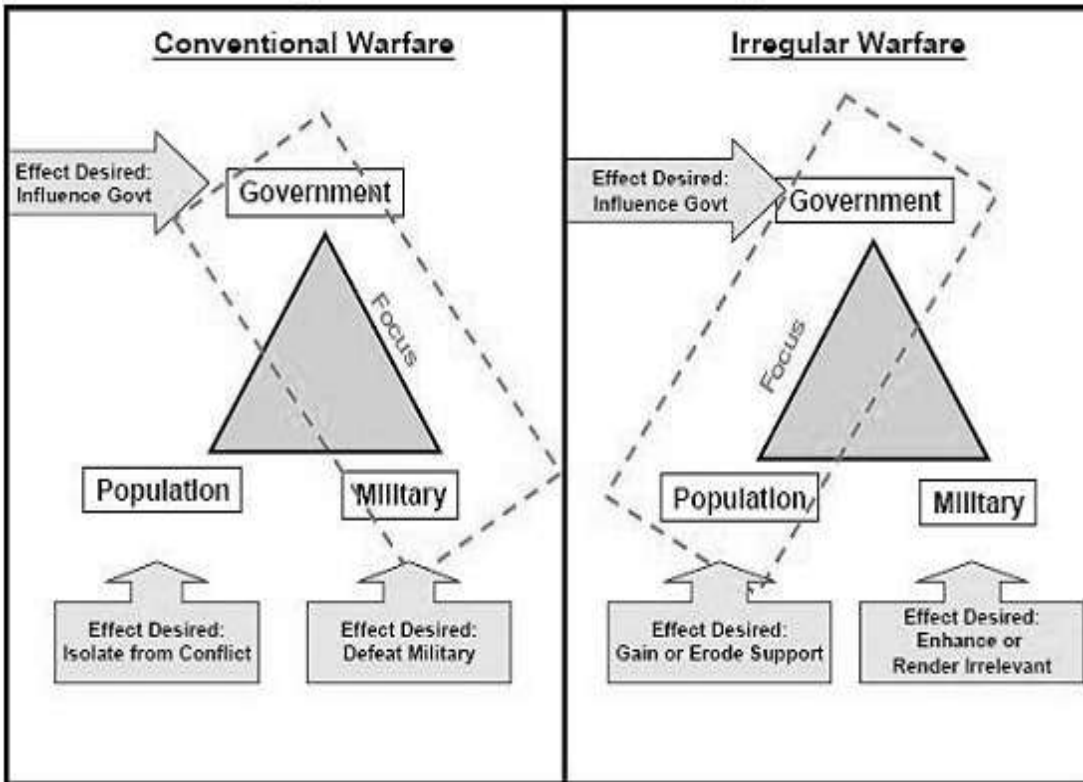
Date: 18 April 2012

# Outline of presentation

- Introduction
- A layered systems approach to protection
- Situational awareness
- Signature management
- Warning and countermeasure systems
- Direct hit protection
- Protection against secondary effects
- Conclusions

# Introduction

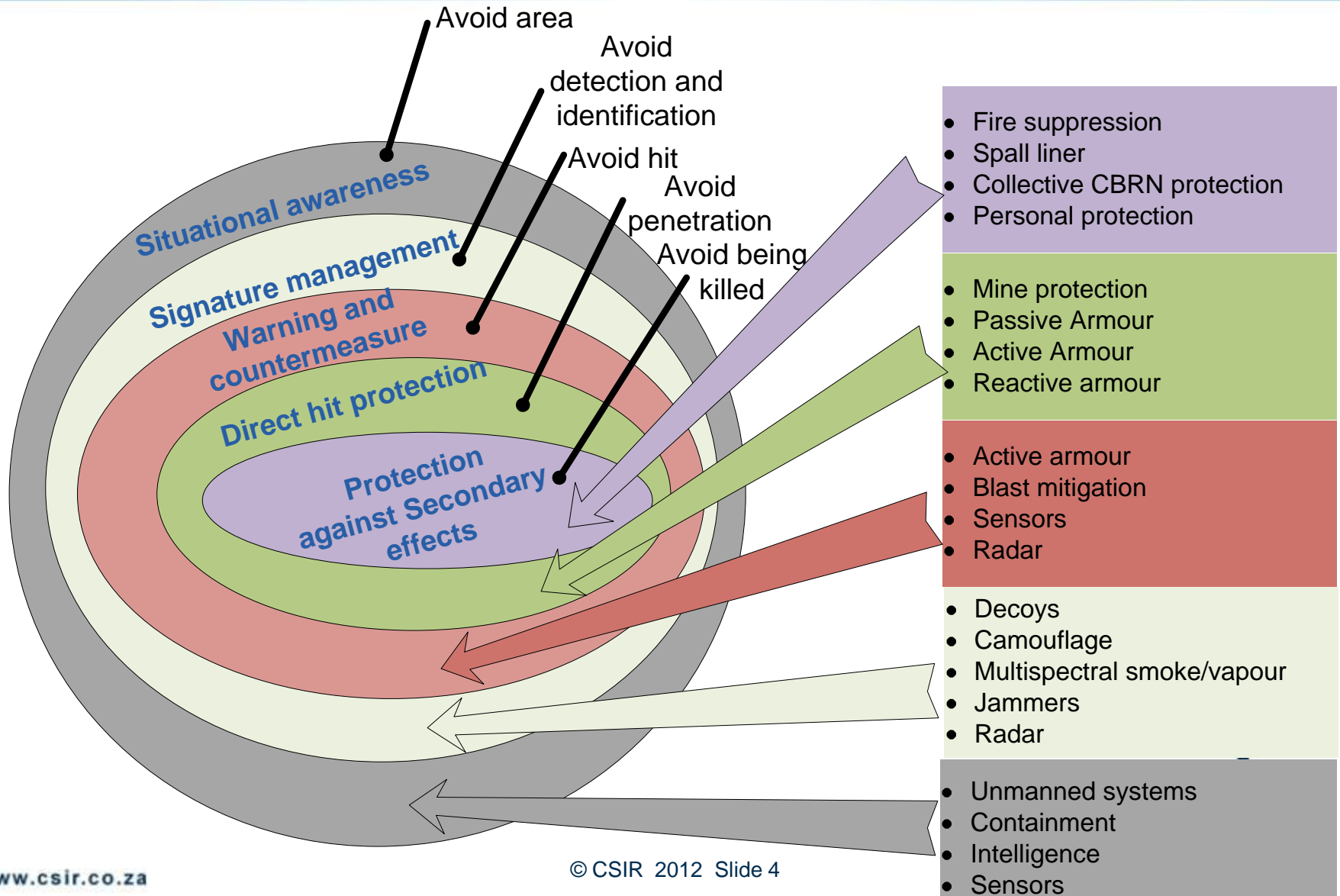
## Contrasting Conventional & Irregular Warfare



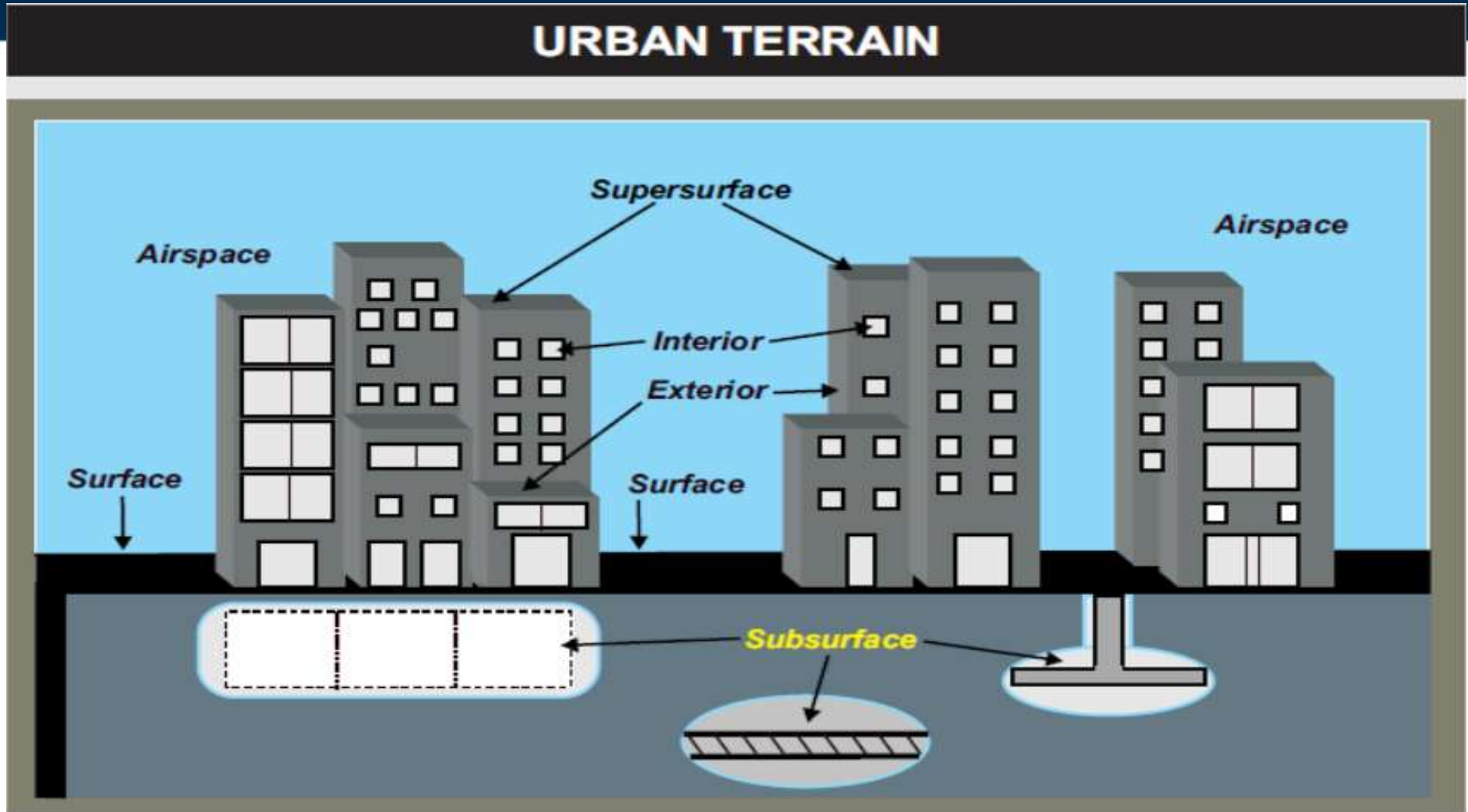
- Conventional warfare
- Operations other than war
  - PSO
  - Border Safeguarding
  - FIBUA/ FISH & CHIPS
  - Support to other government departments

[Plant, 2008]

# Layered protection system



# Situational awareness



[US Department of defense, 2002]



# Signature management



- Camouflage
- Decoys
- Smoke
- OOTW
  - National Parks
  - FIBUA
  - Thailand use of commercial vehicles against IEDs

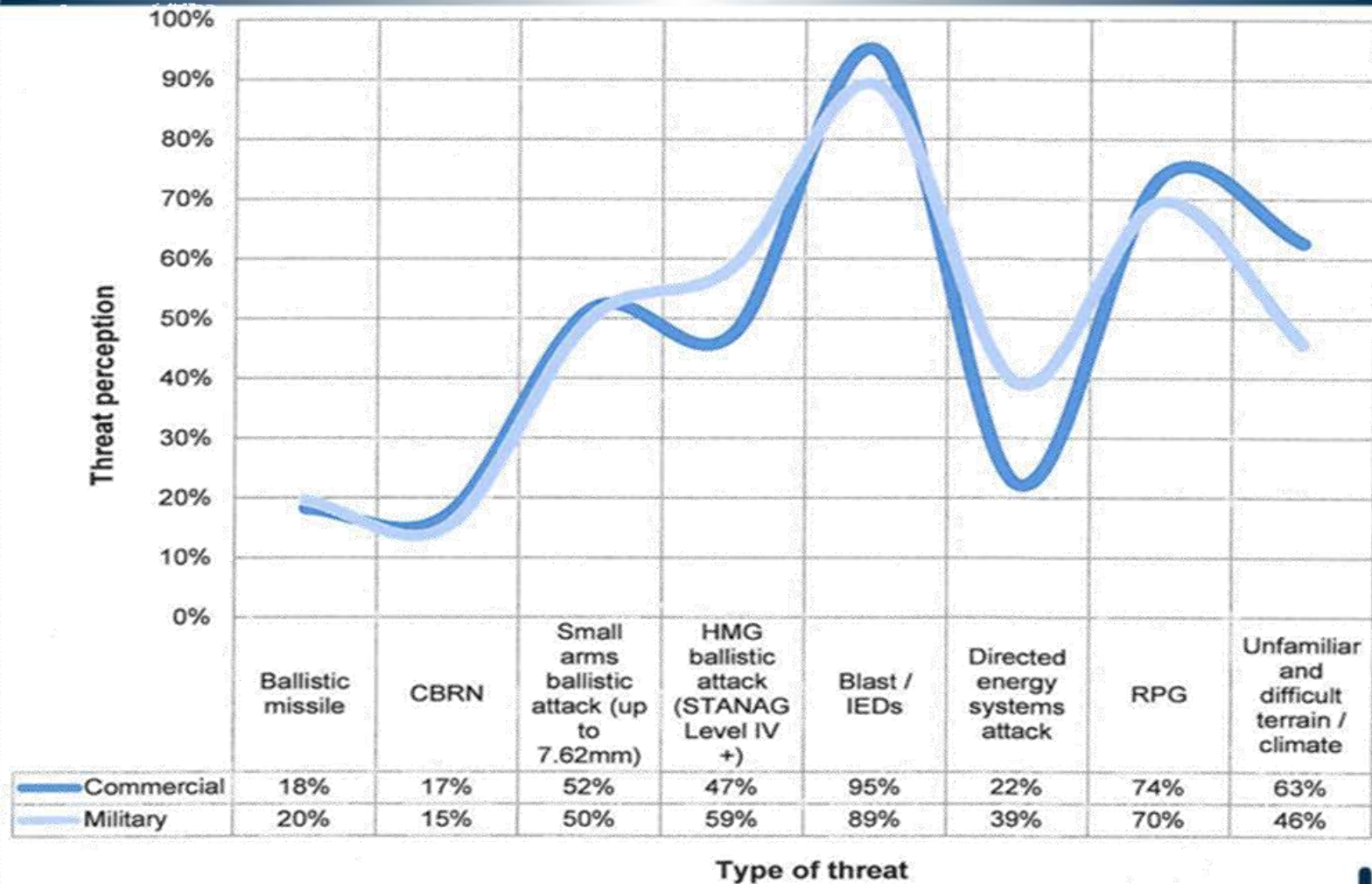
# Warning and countermeasure systems



- Radar
- Sensors
- Electronic countermeasures
- Active armour



# Direct hit protection



[Elwell, 2012]



# Protection against secondary effects

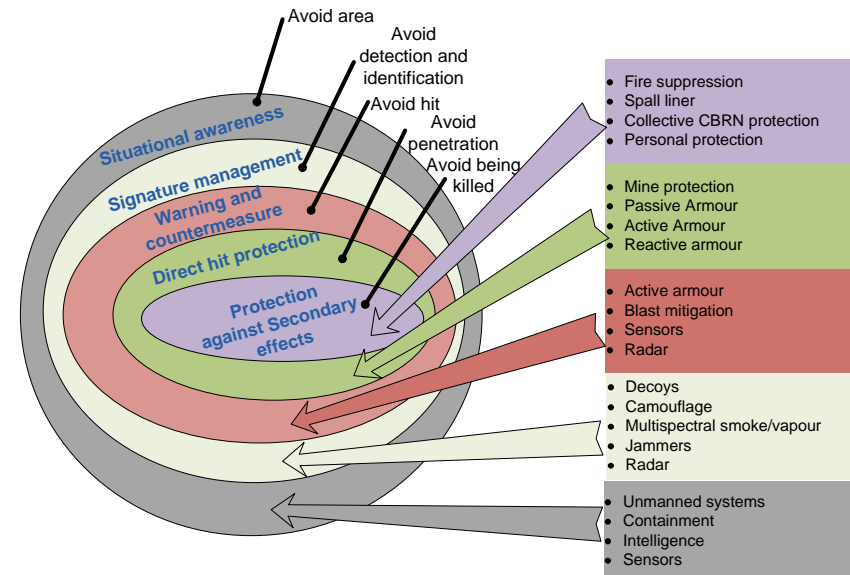


Trojan - first full exoskeleton  
ballistic suit of body armour

- Spalling
- Vehicle interior systems
- CBRN
- Personal protection
  - Ballistic protection
  - Mobility
  - Firepower
  - CBR protection

# Conclusions

- A systems approach rather than single technology can provide protection
- Understanding and information of local factors are essential
- Trends in protection
  - Use of unmanned systems
  - Sophisticated materials
  - Sophisticated active and reactive systems
  - “Left of the boom techniques”



# Thank You



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