

ETSA Special Event - I/ITSEC 2019
3 December 2019

A UK Perspective on Battlelabs

Andy Fawkes



- **A Little UK History**
- **Permanence**
- **The “5Cs” Challenge**
- **Digital Twins**
- **The Unexpected**
- **Conclusions?**
- **Virtual Battlelab?**

Presentation Overview

Definitions

- **A Battlelab is a capability that analyzes or assesses impacts on military capability of changes in equipment, technologies, organization, doctrine or environment (Wikipedia)**
- **Warfighting experimentation (WFE) is a process of validating a concept through live or virtual engagement of warfighters in an environment which allows all lines of development to be considered (UK MoD)**

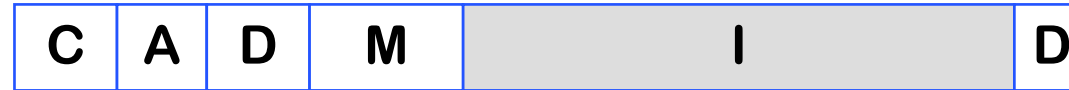
A Little UK (Joint) History

- Deputy Director of Analysis-Experimentation-Simulation
- NITEworks - 2003 - 2018
 - Network Integration Test & Experimentation Works MoD/Industry Partnership
 - Designed to explore the benefits/exploitation of Network Enabled Capability
 - Included synthetic experimentation capability representing sensor, weapon and platform systems in service/planned with potential to federate
 - With focus on current operations and lack staff, evolved away from NEC Experimentation towards support to operations, capability development and acquisition practices
- JMNIAN – 2003 onwards
 - Joint Multi-National Interoperability Assurance Network – Test & Reference expanded to support Distributed Training
 - Defence Experimentation Centre (DXC) – NITEworks + JMNIAN
- SSE - 2019
 - Single Synthetic Environment seeking to enhance HQ command processes, support mission rehearsal, and a single training environment
 - Ambition to replicate land, sea, air, space, and cyber and the associated information environment, with live feeds and supporting rapid decision support

Permanent Battlelab Capability

Lines of Development

Equipment



Training

Personnel

Organisation

Concepts & Doctrine

Information

Infrastructure

Logistics

Interoperability

C - Concept

A - Assessment

D - Demonstration

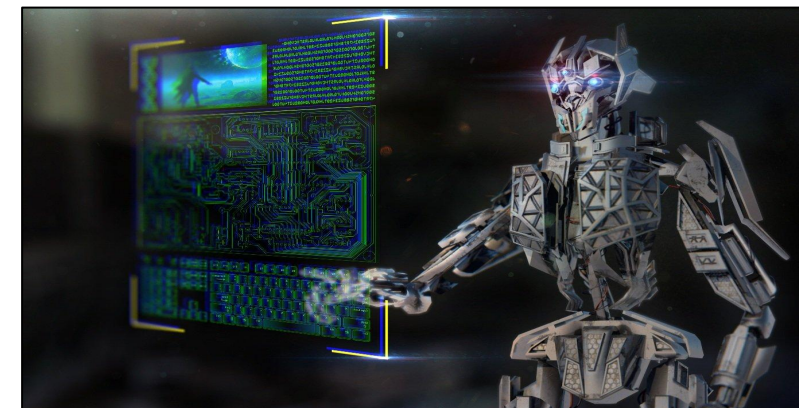
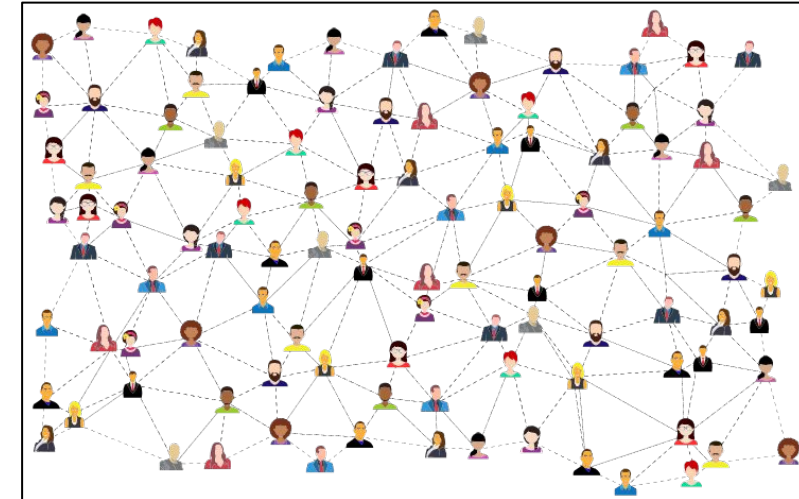
M - Manufacture

I - In-service

D - Disposal

Simulating the “5Cs” Challenge

- **Congested**
 - Land/Sea/Air/Space/Cyber/Electromagnetic with civilian, commercial & military activity
- **Cluttered**
 - Distinguish individuals, items or events
- **Contested**
 - Understanding Enemy/Neutral/Friend Intent
- **Connected**
 - Interconnectivity and globalisation
- **Constrained**
 - Legal and societal norms



Digital Twins – The Data Challenge

- **Models**
 - Accessibility
 - Portability
 - Reconfigurability
- **Data Ownership**
- **Data Cost**
- **Role of Defence Simulation Centre**



10 Jan 2019

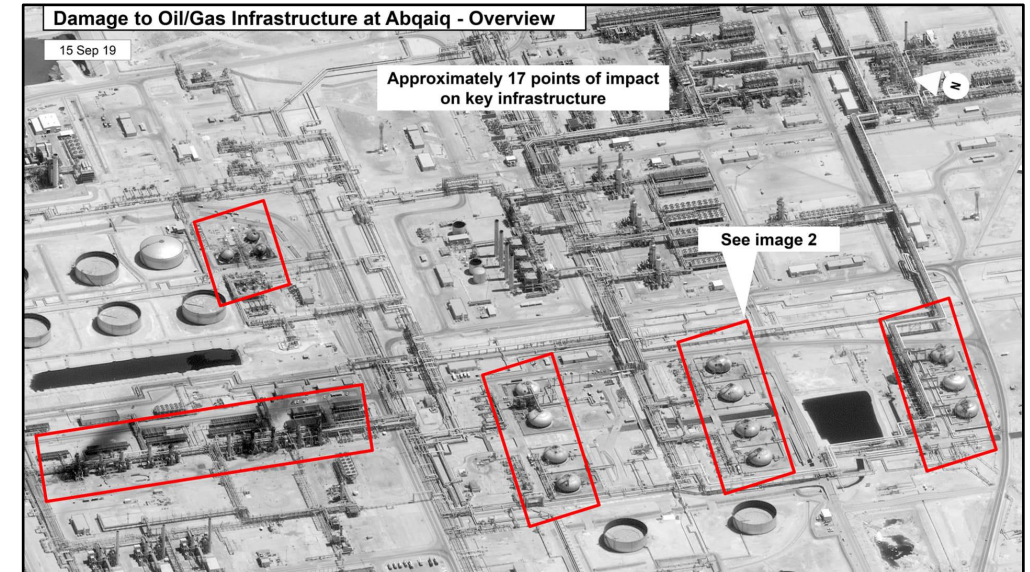
Sep 2019



Low
Cost
-
High
Impact

Thinking

14



CNBC MARKETS BUSINESS INVESTING TECH POLITICS CNBC TV SEARCH QUOTES

POLITICS

How Saudi Arabia failed to protect itself from drone and missile attacks despite billions spent on defense systems

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Natasha Turak @NATASHATURAK

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KEY POINTS

- Saudi Arabia in 2018 spent an estimated \$67.6 billion on arms — second only to the U.S. and China.

THINKE

- **People**
- **Permanence**
- **Culture**
- **Models**
- **Think the Unexpected**

**To Make
Battlelabs Work**