



Ministry  
of Defence

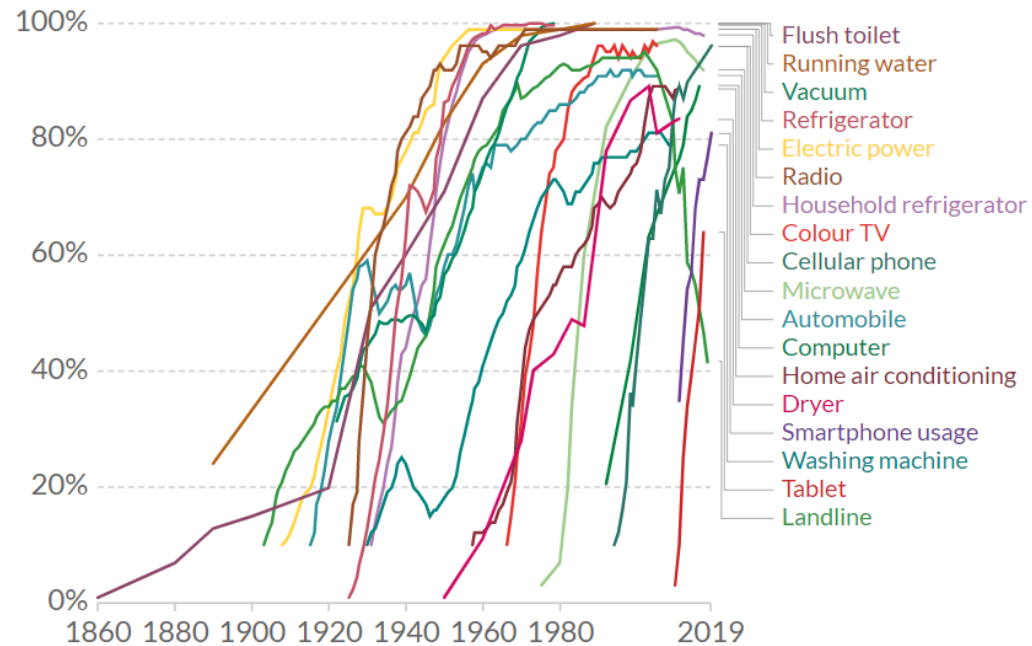
# **Emerging and Disruptive Technologies and Operational Research and Analysis**

**Professor Dame Angela McLean**

Chief Scientific Adviser, UK Ministry of Defence

# Current global context

- Increasing pace of technological change
- Increase in sub-threshold activity
- COVID-19 pandemic



# The role of the Chief Scientific Adviser

- Scientific advice to support MOD decision-makers
- Prepare for the future: led by threats and challenges



# The MOD Science & Technology Strategy

- Focused on generation after next, led by outcomes and evidence
- Sustaining critical capabilities and seizing opportunities to secure the future we want



# Slides 5-12

- **Slides supporting a personal reflection on providing scientific advice during COVID-19**

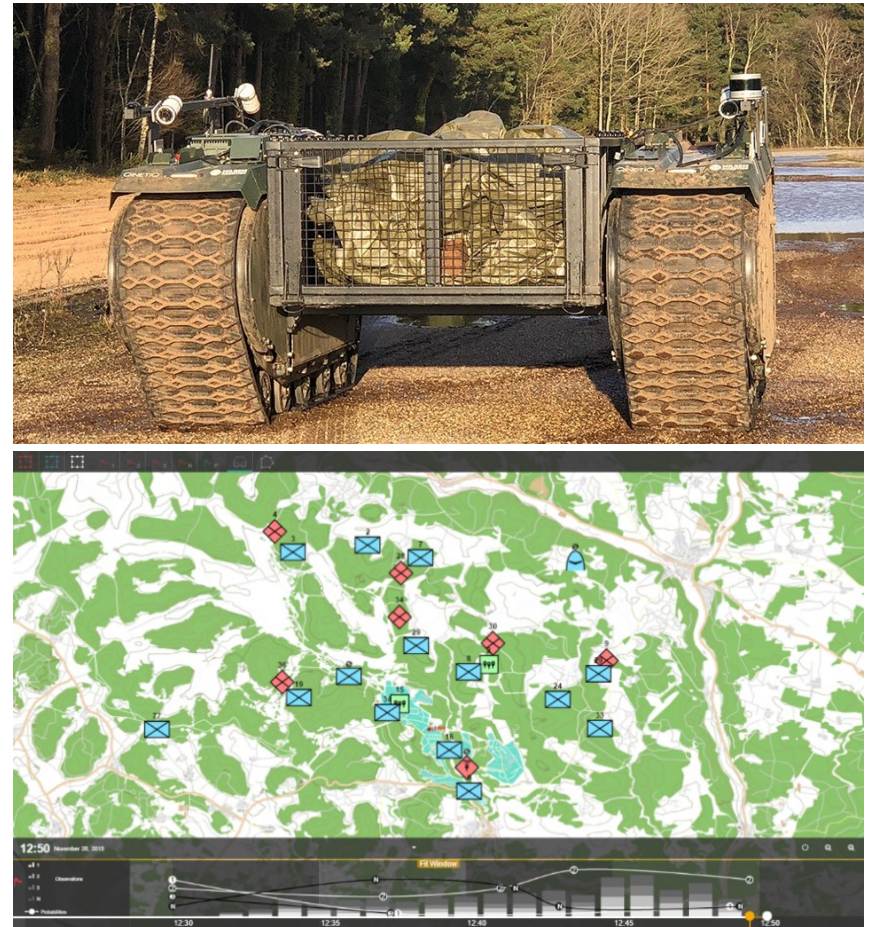
# Emerging and Disruptive Technologies

- Emerging and Disruptive Technologies (EDTs) are changing the way we and potential adversaries operate
- NATO's technological edge cannot be taken for granted
- We need to carry out detailed assessments of EDTs, including threats and uses

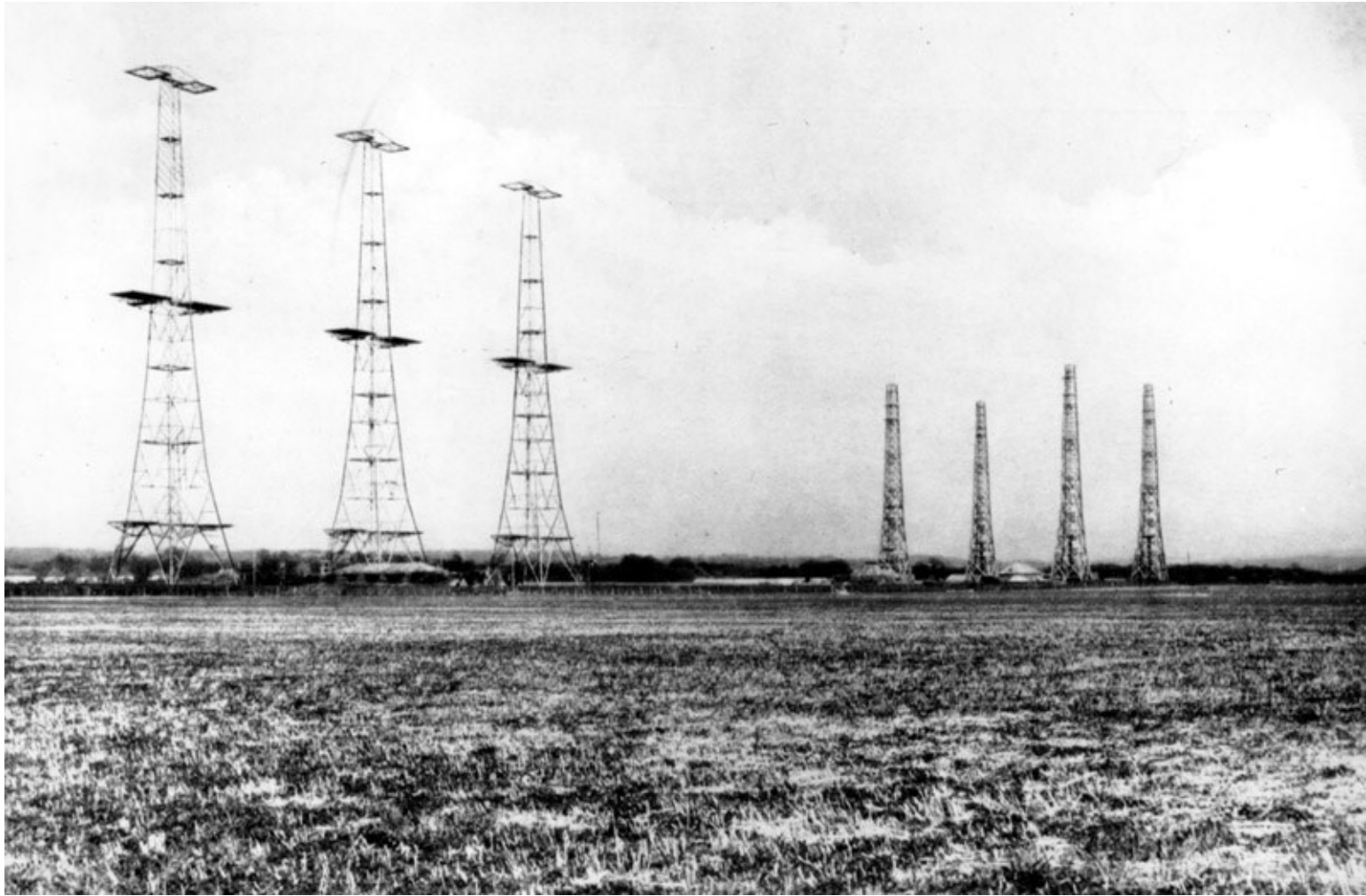


# Emerging and Disruptive Technologies and Operational Research and Analysis

- Likely impact on Operational Research and Analysis (OR&A) – how effective are our current methods?
- New approaches to OR&A that will better support decision regarding these technologies
- For example, how can we assess the impact of sub-threshold activity on AI derived tactics?



# Radar: a technology that changed warfare





# Horizon scanning and Scientific Intelligence

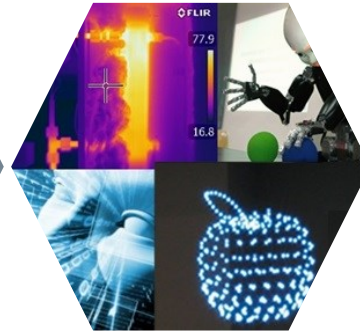
- We need to be proactive in scanning the extensive breadth of EDTs
- We must involve industry and academia to understand and exploit EDTs
- Existing analysis and OR&A experiences are key to understanding how to exploit these new technologies



# Collaboration in EDTs for Defence

Industry Technology  
Development Exploration

Emerging  
Technology  
Horizon  
Scanning



Strategic  
International  
Collaboration

Innovative  
OR&A Models,  
Methods  
and Tools



Identifying  
Defence  
Efficiencies

Technology Development  
and Exploration Academia

# Recap

- Emerging technologies will require new approaches to operational research and analysis
- We must get better at scanning the breadth of new S&T and EDTs
- Enhancing our collaboration with industry, academia and international allies is important

