[dstl] The Science Inside

Modernising T&E is much easier to say…

38th International T&E Symposium
“Evolution of T&E in an Age of Rapid Technological Change”
September 13-17, 2021

Ministry of Defence

DSTL/CP132439

UK OFFICIAL

Introduction

Richard Cawthorne BSc (Hons) FRSC CSci CChem

Senior Principal Scientist working for the UK Ministry of Defence at the Defence Science and Technology Laboratory (Dstl).

Dstl is a principal UK government organisation dedicated to Science and Technology in the Defence and Security field.

We supply specialist services to MOD and wider government, working collaboratively with external partners in industry and academia worldwide, providing expert research, specialist advice and invaluable operational support.

My experience of trying to modernise…

[dstl] The Science Inside

- *Four years ago some of our Test and Evaluation capabilities had fallen some way behind the technology curve*
- *Small project funded by the UK MOD's Chief Scientific Adviser (CSA)*
- *'an aspiration of modernising some of our Test and Evaluation activities'*
- *Move from "wouldn't it be nice if we could…"*
- *Towards a "let's continually develop" mindset*
- *My personal opinions and experience it may not represent the view of other UK Test and Evaluation capabilities*

My Experience of Trying to Modernise…

[dstl] The Science Inside

www.defenceimagery.mod.uk

UK strategies

"Additional Funding including £6.6m on Defence R&D"

"We must radically enhance the way we the way we understand the current and future technological landscape"

"Sustaining strategic advantage through science and technology"

Where do we start

[dstl] The Science Inside

Heilmeier's catechism

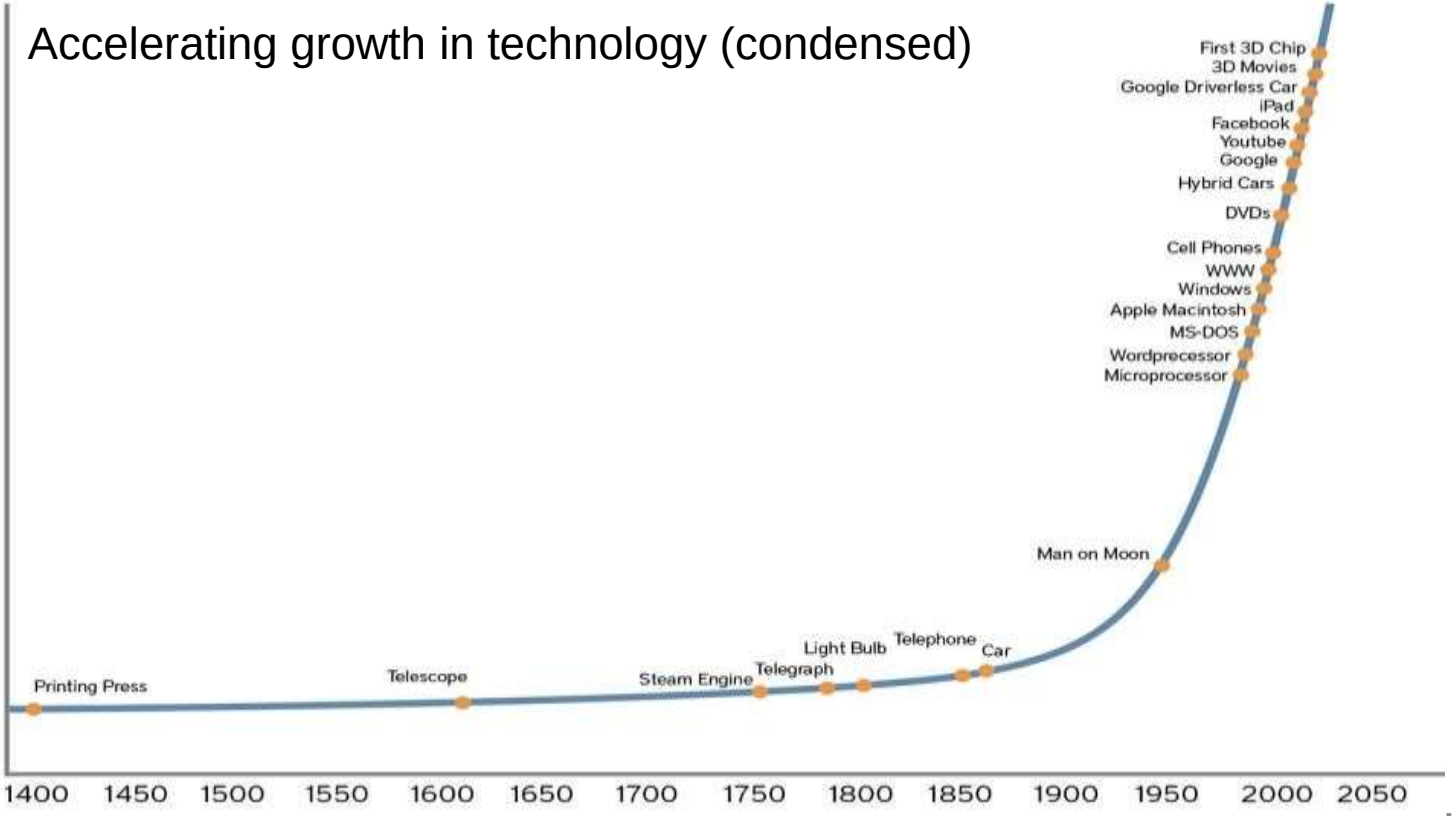
- What are you trying to do? Articulate your objectives using absolutely no jargon.
- How is it done today, and what are the limits of current practice?
- What's new in your approach and why do you think it will be successful?
- Who cares? If you're successful, what difference will it make?
- What are the risks and the payoffs?
- How much will it cost?
- How long will it take?
- What are the midterm and final "exams" to check for success?

Cooperative Missile Technology

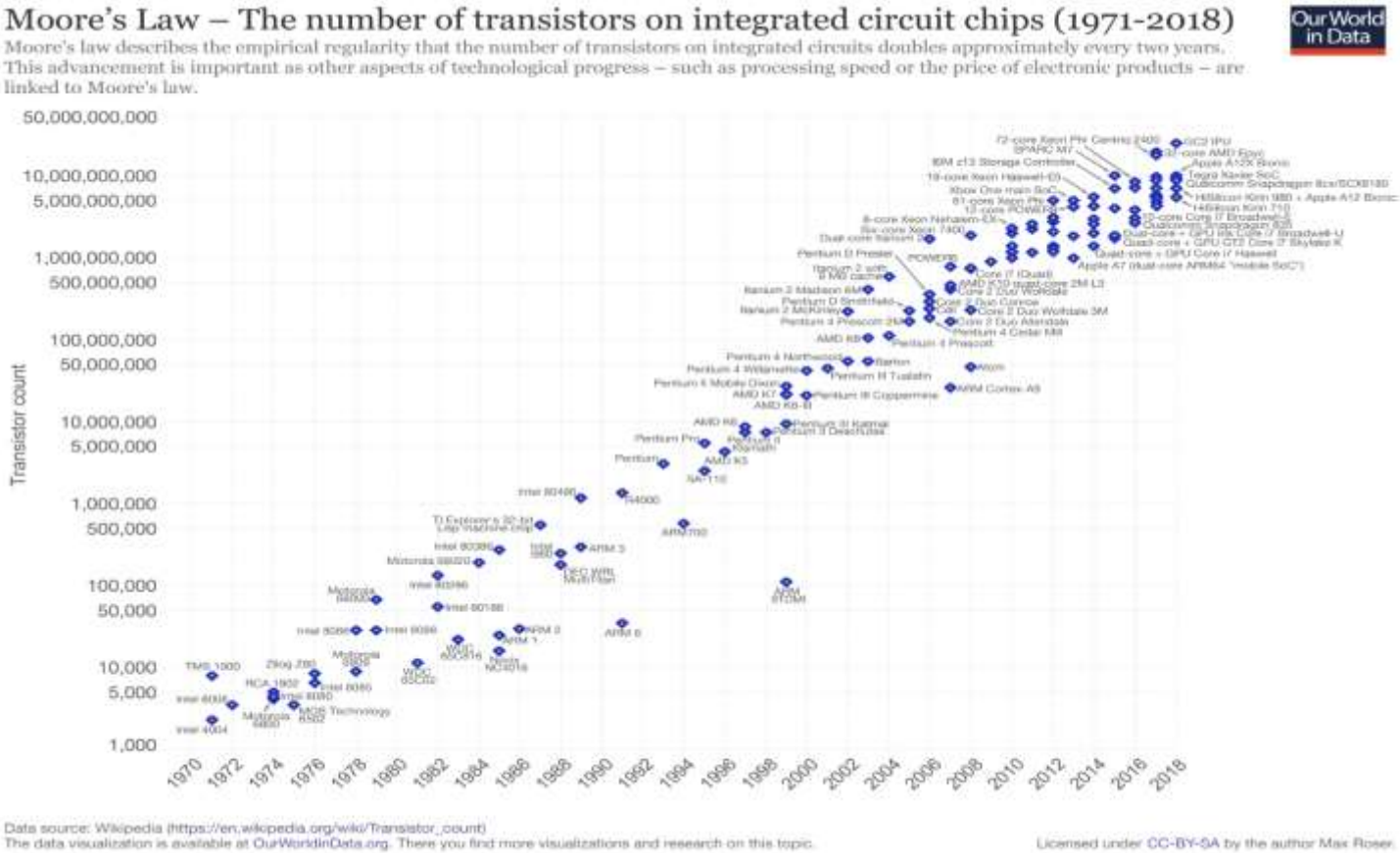
Change in target priority detected

They communicate to share situational awareness

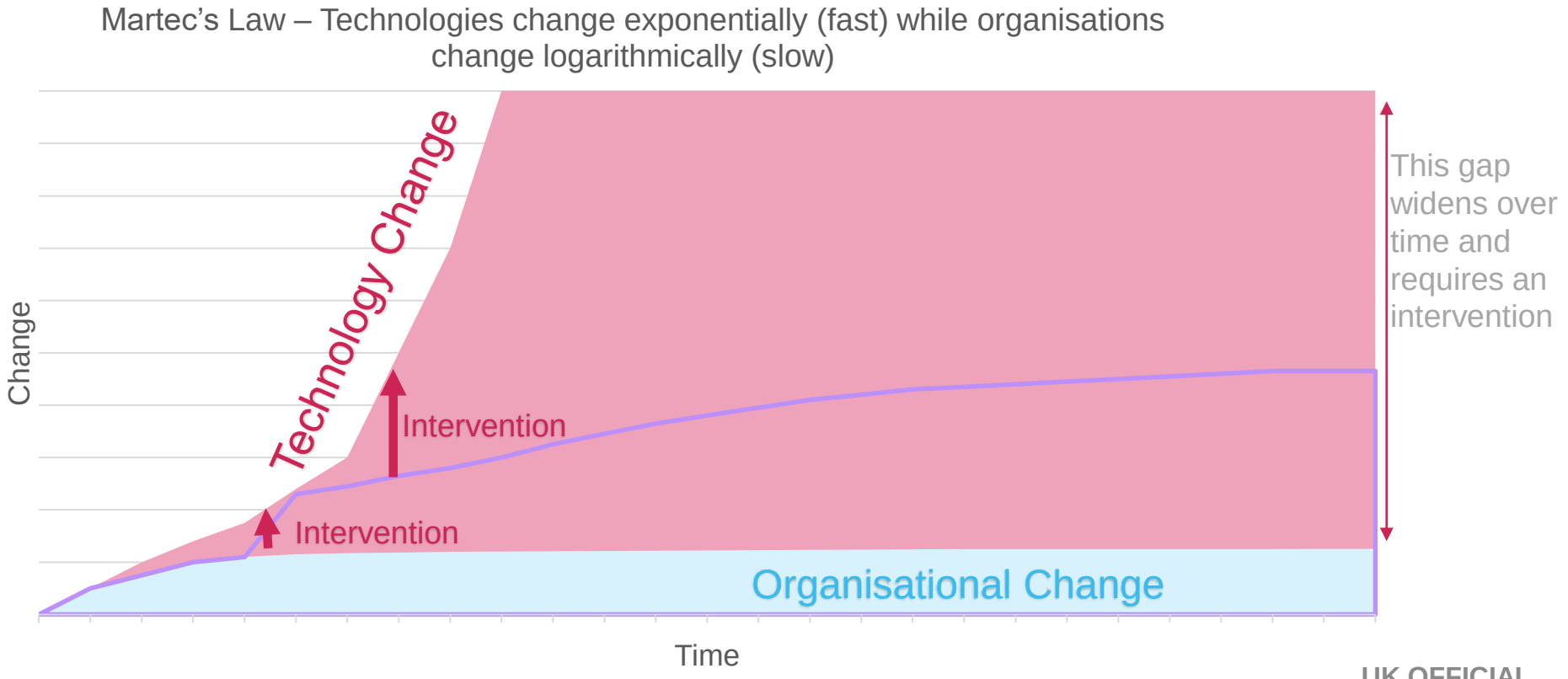
Rate of change



Rate of change



Rate of change



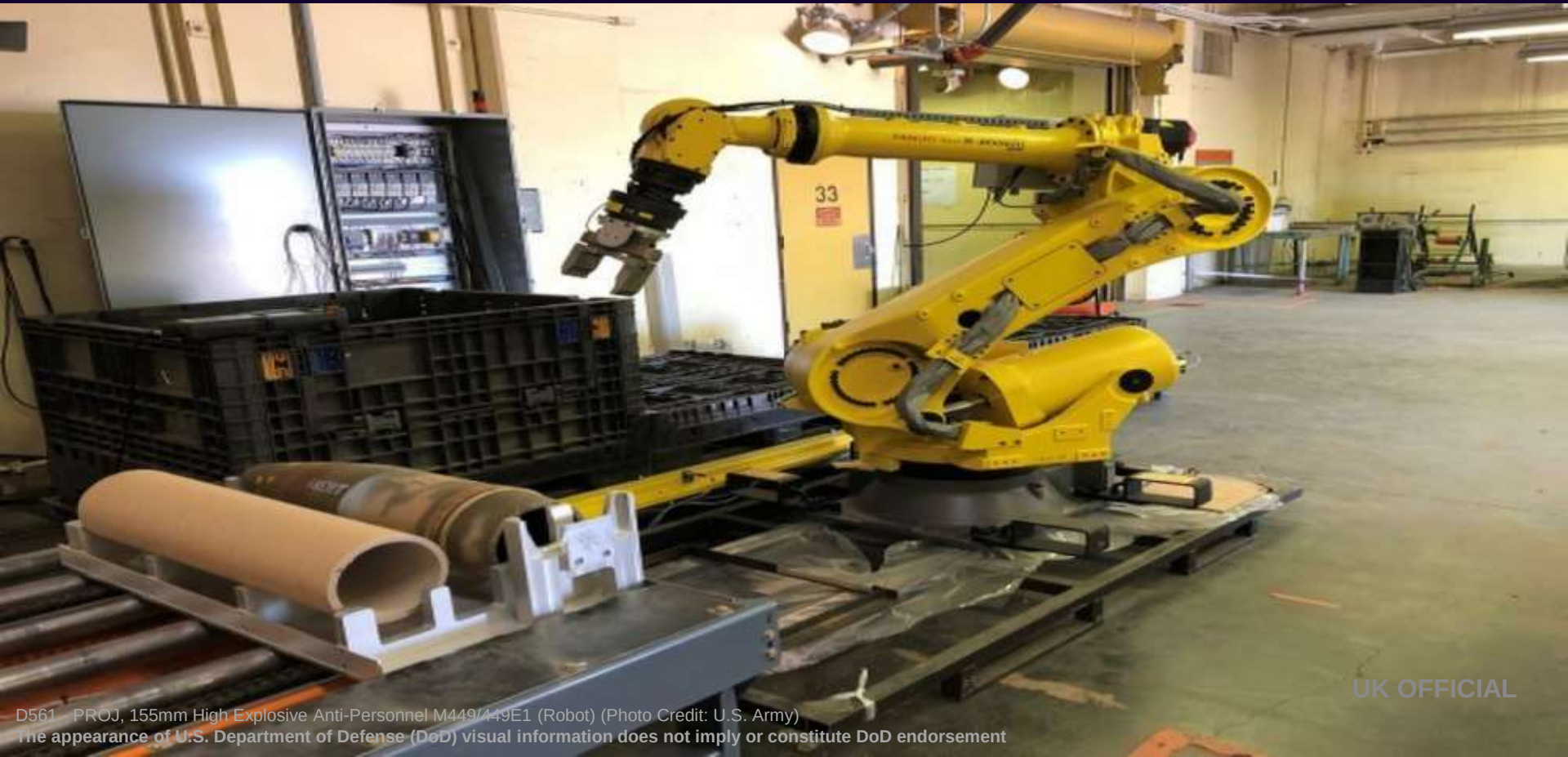
Modernise from within

[dstl] The Science Inside

People are key

[dstl] The Science Inside

Time



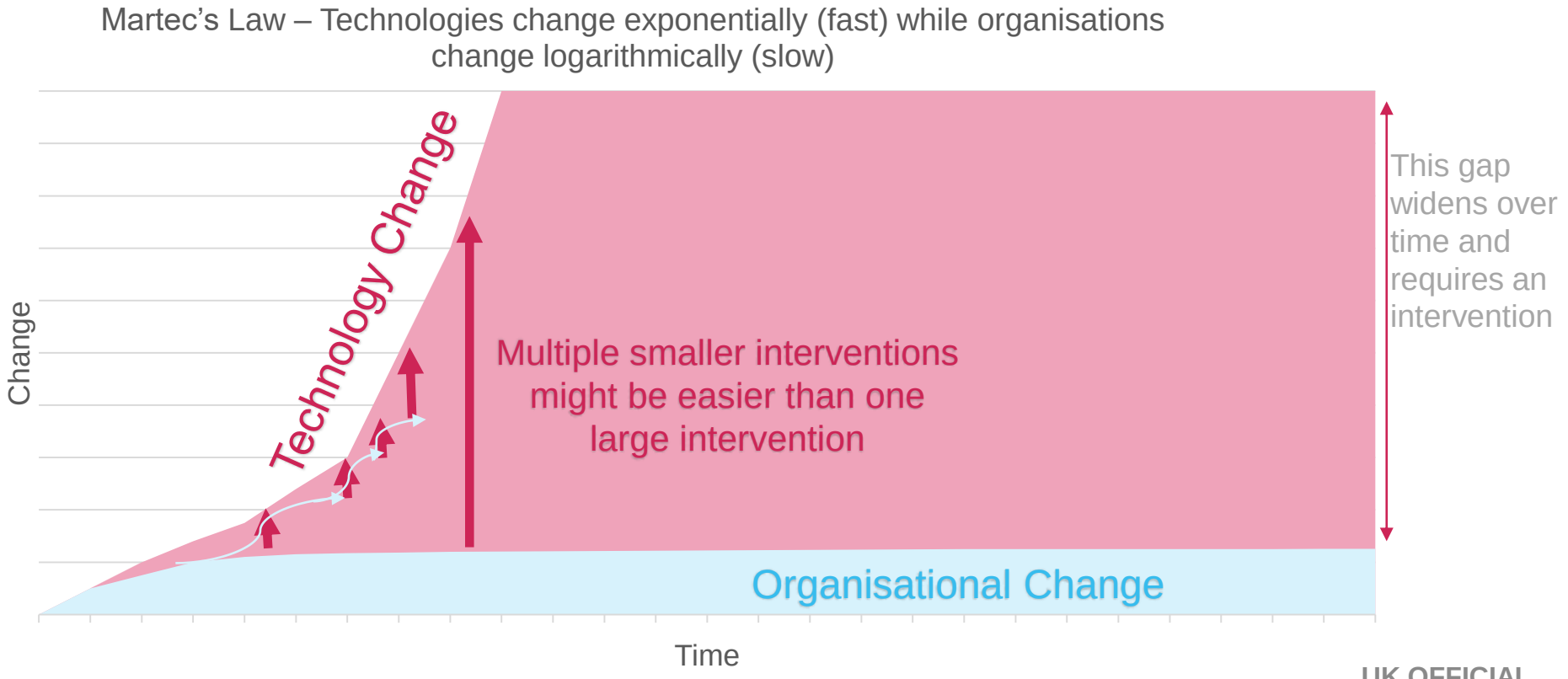
D561 - PROJ, 155mm High Explosive Anti-Personnel M449/449E1 (Robot) (Photo Credit: U.S. Army)

The appearance of U.S. Department of Defense (DoD) visual information does not imply or constitute DoD endorsement

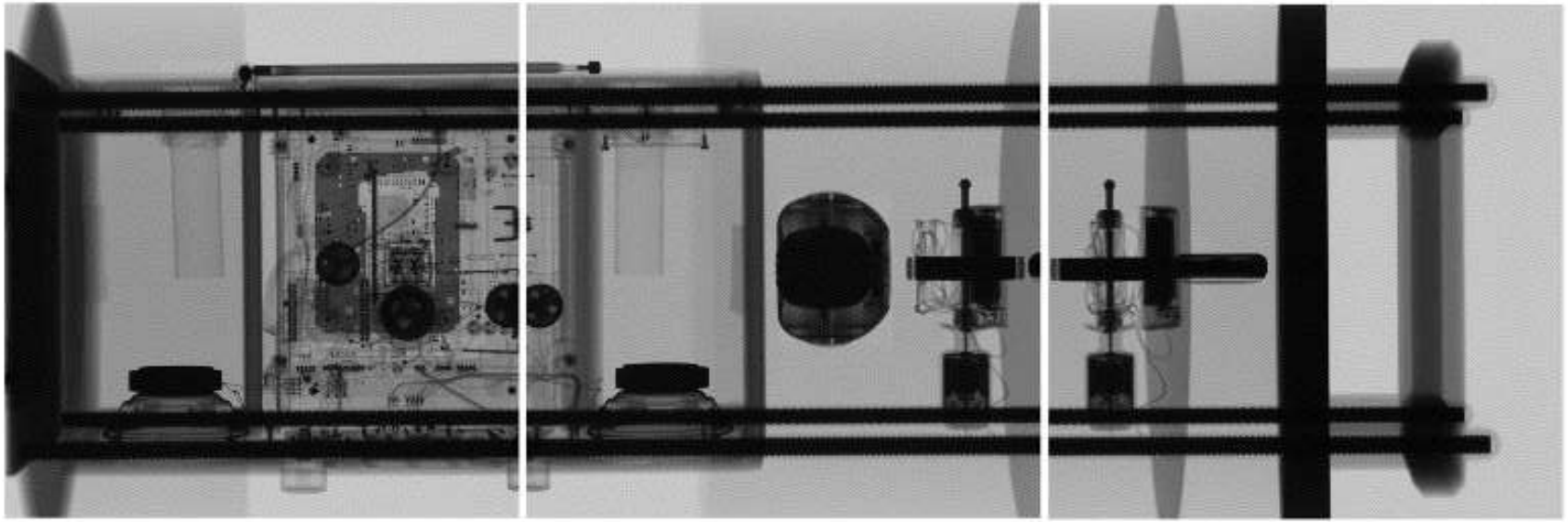
Consider your priority areas

dstl The Science Inside

Consider your approach

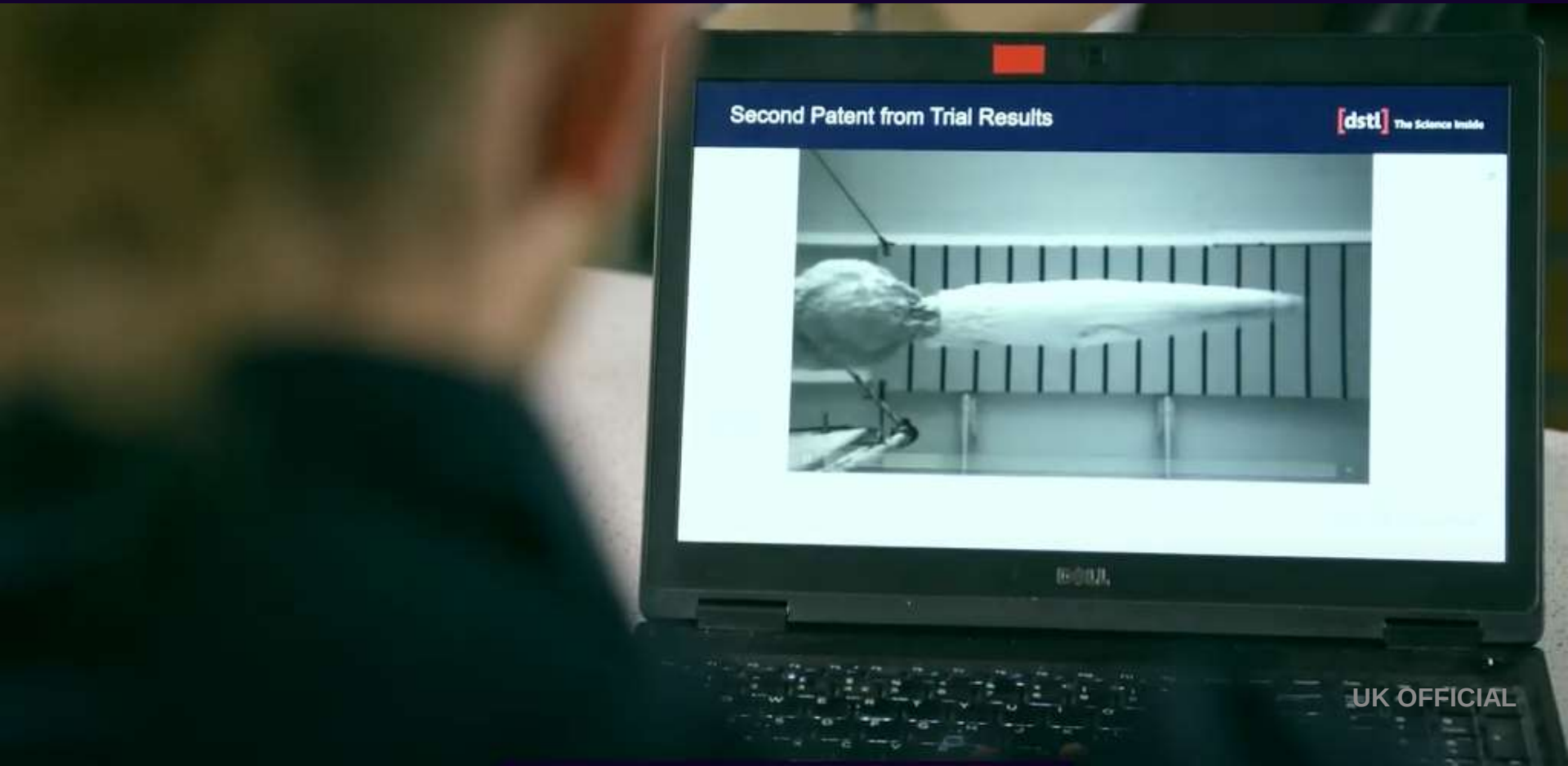


Break it into smaller steps



Invest in developing new skills

[dstl] The Science Inside



Invest in developing new skills

(a) Light Image (b) Dark Image

Machine learning used to enhance images

(c) Phantom Image

Summary

What I've learned about trying to modernise our T&E

- Get stakeholder buy in for change
- Consider the priority areas for T&E improvements and how best to approach them
- Break it down into smaller interventions where you can
- Take a step back often to review your approach and your longer term strategy
- Engage with the right expertise including externally
- Invest in future proofing your own skills
- It will take time, so try to think ahead of the technology curve

[dstl] The Science Inside

Discover more