



# War and the 4<sup>th</sup> Industrial Revolution: Developing the Future Intellectual Edge

Presentation to the Military Education Coordination Council  
31 October 2018

Major General Mick Ryan  
Commander Australian Defence College  
@WarInTheFuture



# The Bottom Line:

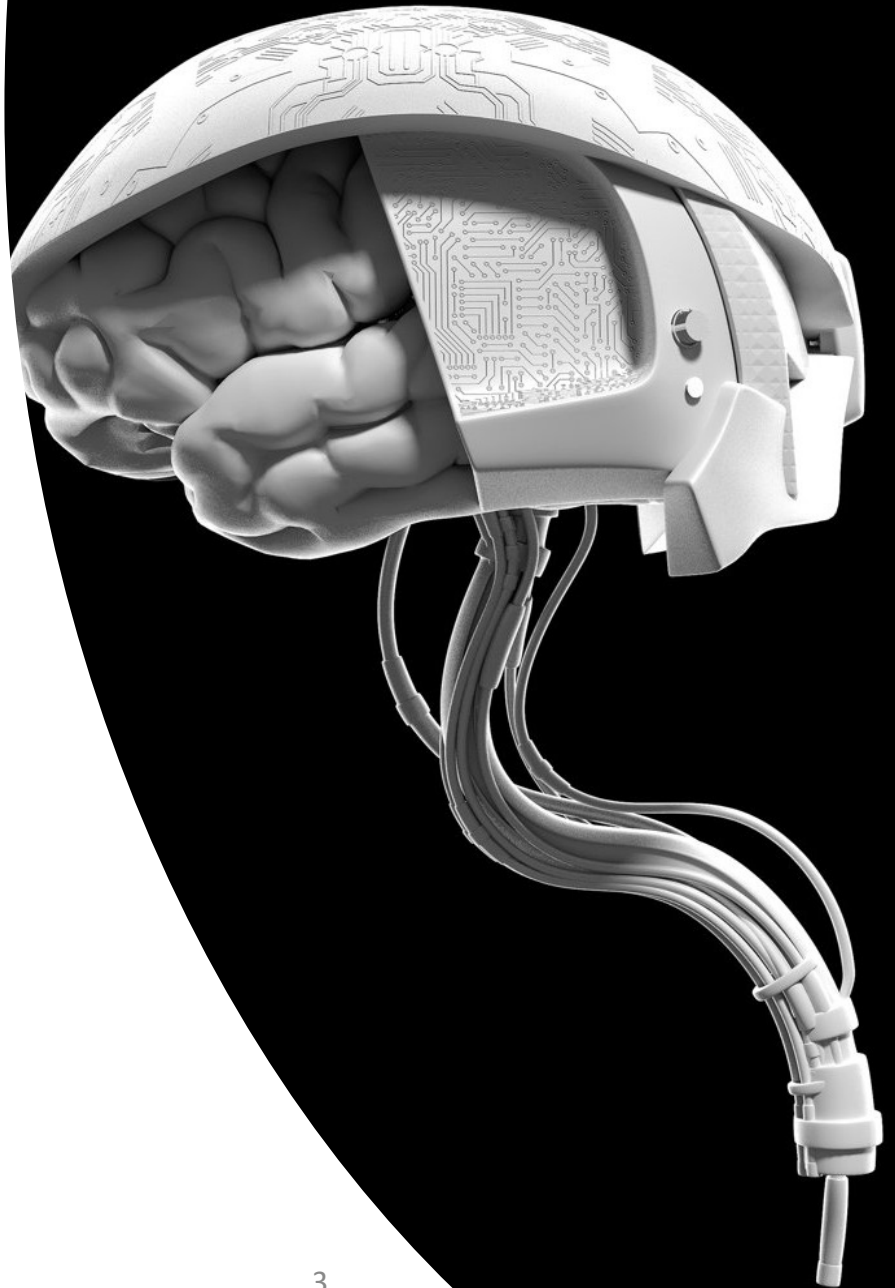
Our security environment, our world, has fundamentally changed. It is more perilous at any time in our past, and evolving more quickly than at any time in recent history. We must deal with future threats that the application of technology and mass will not solve. Only through thinking better, and building the intellectual edge in our people and institutions, will we have any hope of securing our future national interests and retaining a full measure of national sovereignty.



# A New Value Proposition

---

- Most of us are likely to be smaller than our potential adversaries.
- Level technological playing field, and only a transitory technology advantage when generated.
- To out-fight and out-influence those we are competing with, and may have to fight, we must out-think them.
- A new level of advocacy, incentivization, R&D and resourcing needed.





# Agenda

- I. Foundation, Continuity and Disruption
- II. The Future Joint Officer:  
A Performance-based Approach.
- III. Design for a future intellectual edge.



# Part I

Making strategy requires a determination to avoid the assumptions of present-mindedness or at the very least use an analytical framework to mitigate their effects. The starting point of that process is to comprehend more thoroughly the significance of the changes taking place, but also the continuities.

Prof Rob Johnson

The Changing Character of War: Making Strategy in the Early Twenty-First Century,  
RUSI Journal February/March 2017.



## Foundation: The Profession of Arms

- Expertise
- Adaptation
- Stewardship
- Institutional Cohesion
- Exceptionalism
- Service to State



# Continuity: Humans, War and Military Institutions

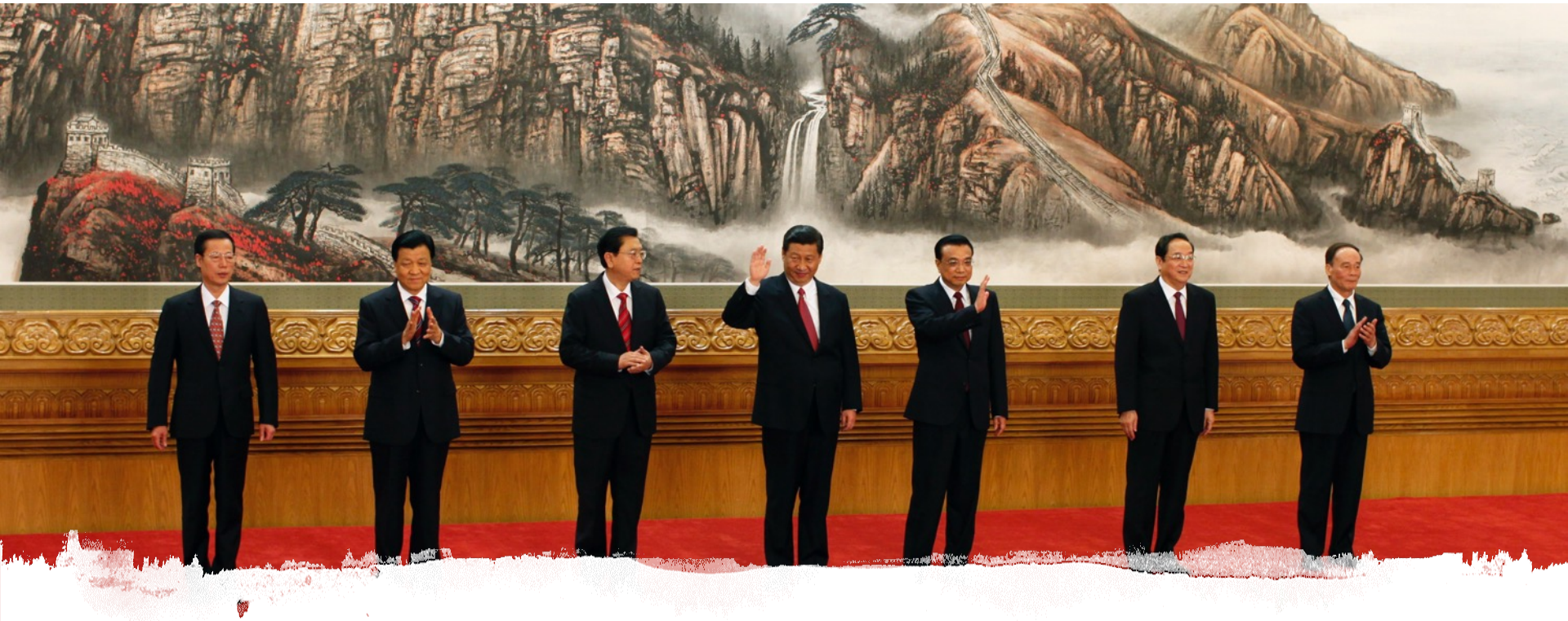
- War will remain part of the human condition.

“...the solution to the enigma of war is that no enigma exists. Violent competition is the rule throughout nature. Humans are no exception to this general pattern.” Gat, A., *War in Human Civilisation*, 2006, p. 663.
- States will continue to protect their sovereignty.
- Military institutions will still exist, and will continue evolving to remain relevant and capable.
- Military institutions will need a systemic approach to attracting, recruiting, training and intellectually developing their people.
- Requirement for excellent command and leadership.





# Disruption: The New Strategic Environment



- ❖ Geopolitics.
- ❖ New technologies and the info-bio tech convergence.
- ❖ Changing global work environment.
- ❖ Demographic trends.
- ❖ New integrated approaches to national security.





# Part II

## The Future Joint Officer: A Professional Journey



# The Future Joint Officer: A Professional Journey

<b>Professional Foundations</b>	<b>Developing Tactical Mastery</b>	<b>Operational Artist</b>	<b>Nascent Strategist</b>	<b>National Security Leader</b>
Training and Years 0-4 in commission	Years 5-10 in commission	Years 10-15 in commission	Years 15-25 in commission	Years 25 onwards in commission



# Part III: Evolution

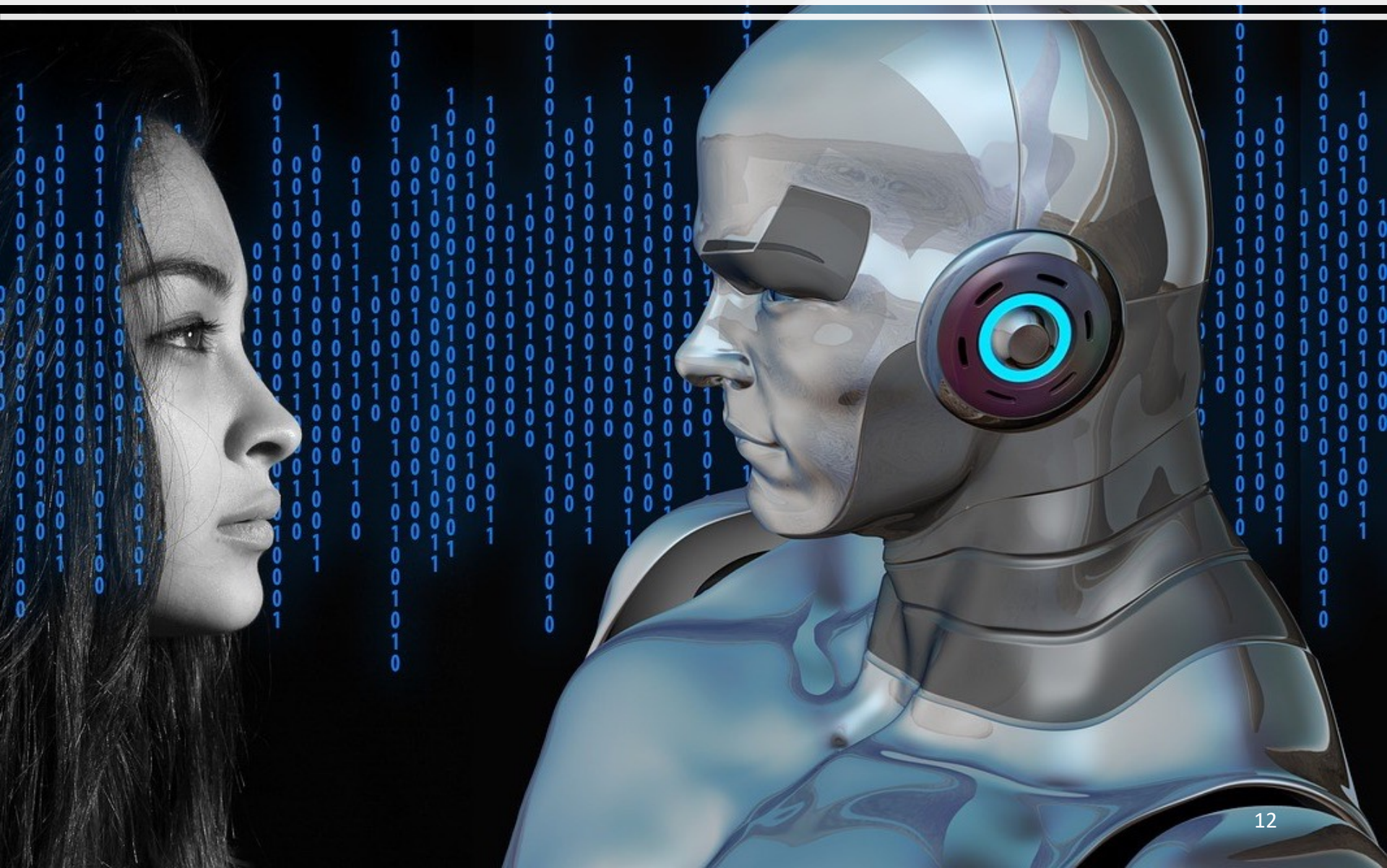


*The Industrial Revolution has bequeathed us the production-line theory of education. At the sound of a bell, you go to one of these rooms together with 30 other kids who were all born the same year as you. Every hour some grown-up walks in and starts talking. One of them tells you about the shape of the Earth, another tells you about the human past, and a third tells you about the human body. Almost everybody agrees that no matter its past achievements, it is now bankrupt. But so far we haven't created a viable alternative.*

Harari, Y., *21 Lessons for the 21<sup>st</sup> Century*, 2018

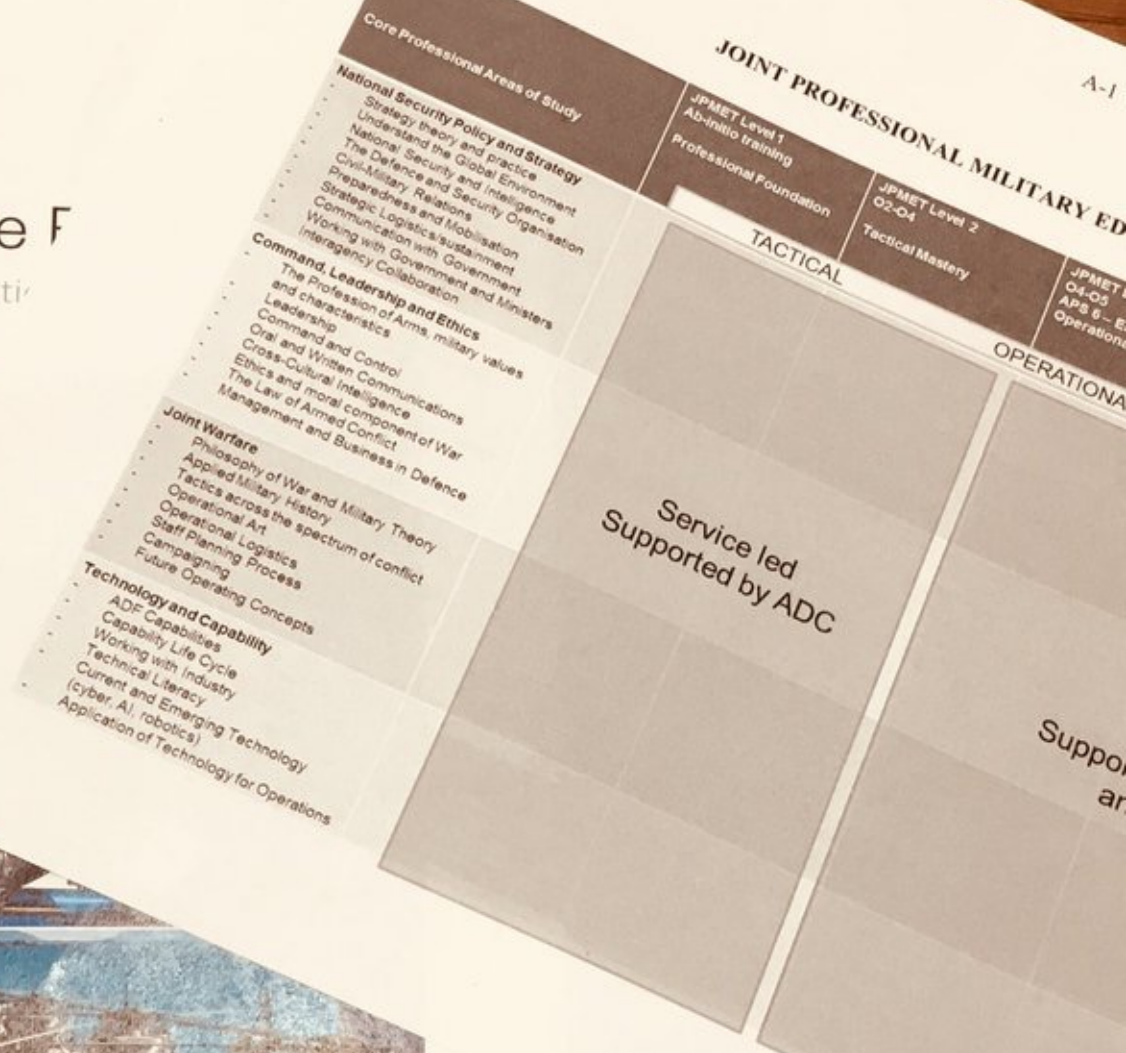


# I. A System Linking Education, Futures and Adaptation





# Australian Defence Force Joint Professional Military Education



## II. A Continuum & Continuous Learning



# III. Improved Access





# WHAT'S OUT THERE?

US



UK



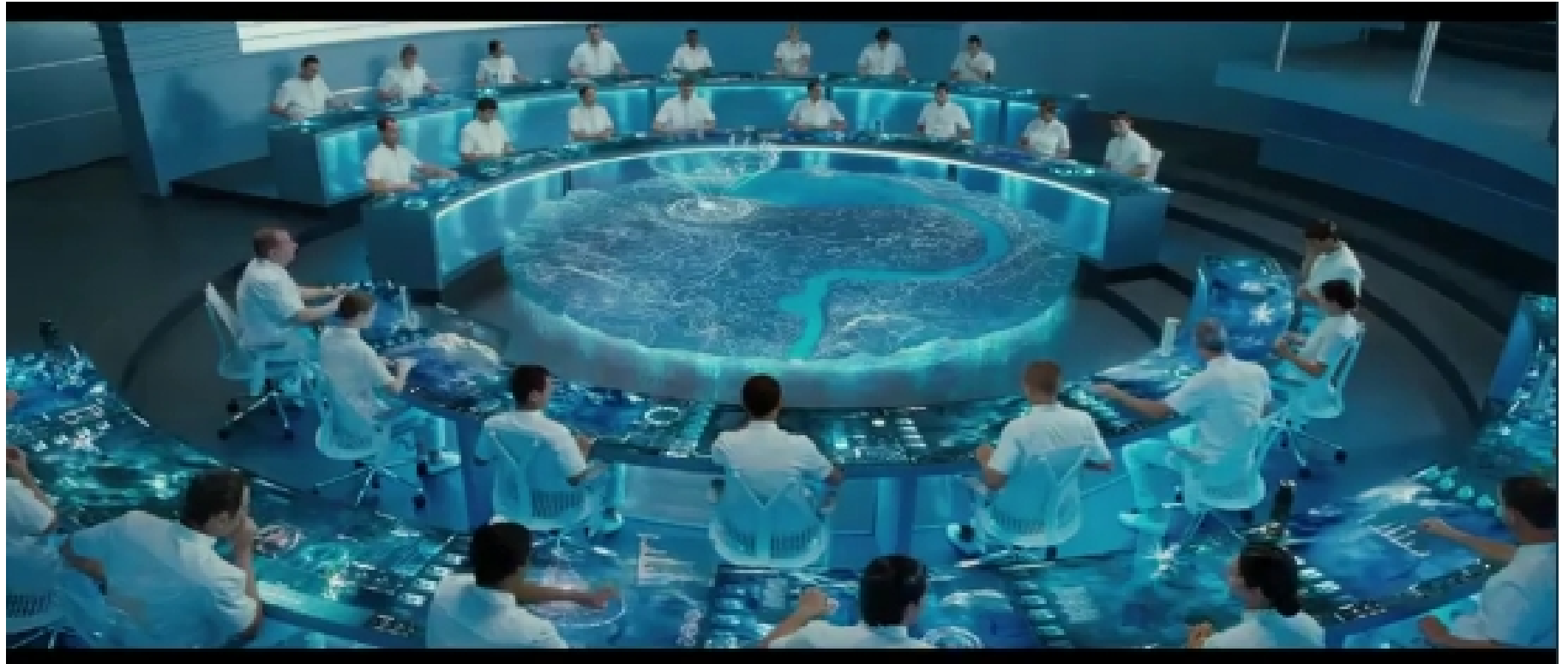
AUS



## IV. Guided Self Development in a Global PME Ecosystem

*The responsibility for professional development between periods in formal programs rests with the individual officer. This is inherent in the nature of the military officer's calling. It is inherent because the body of knowledge which constitutes the art and science of war is not only broad and deep but is also dynamic.*

Van Riper, P., *A Self-Directed Officer Study Program*, 1982.



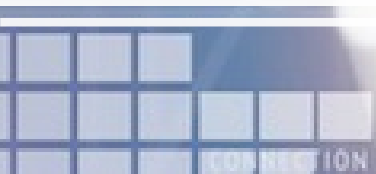
V. Skill, Re-skill, Repeat

---





## VI. Innovation and Engagement





French General Reille hands surrender letter from Napoleon III to the Prussian King, Sedan 1870.



The Prussians fundamentally reformed their military – recruiting, organization, tactics and command – after the defeats at Jena-Auerstedt in October 1806.

Significant elements were reforms in officer education and their superior capacity to leverage changes in technology.

*The social and economic developments of the past fifty years had brought about a military as well as an industrial revolution. The Prussians had kept abreast of it, and France had not. Therein lay the basic cause of her defeat. Howard, M., *The Franco-Prussian War*, 2001.*



#ThankYou!



#MakePMEFunAgain