

# Taking **FATE**\* on the road

\* FATE – Futures Assessed alongside **socio**-Technical Evolutions

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**Finale**

NATO SAS-RTC-176

# Through RTC-SAS-176 trainees received

1. The *FATE* method
2. How to conduct *FATE*
3. Ways to consider impact
  1. From multiple lenses
  2. In multiple futures
4. FATE reference material
  1. Access to FATE facilitators guide
  2. Access to FATE Community of Practice (COP)
5. FATE completion certificate

# The *FATE* Method

A problem – scope it as a Socio-Technical System (STS)

- Step 1 – Socio-Technical System (STS)
- Step 2 – Future scenario

Adapt a scenario into *TEMPLES*<sup>#</sup> if required

- Step 3 – Interactions between future scenario + STS

3.1 How do you see the STS evolving in future scenarios?

3.2 What are interactions of the STS (OPPPTI) in the described future scenarios (TEMPLES)?

Output: insights of components in the STS (OPPPTI) that change through drivers and resistors (D and R) in different scenarios (TEMPLES)

- Step 4 – Assess the impact on defence and security e.g., wrt capabilities

Output: Impact mitigation options for client/customer from at least two scenarios

<sup>#</sup> *TEMPLES* – Technological, Economical, Military, Political, Legal, Environmental and Social

<sup>\*</sup> *OPPPTI* – Organization, People, Processes, Policies, Technology, Infrastructure

## Through *FATE* – Impact and Relevance

- Multiple ways to consider the impact
  - Disruption calculus
  - Level of regret
- Relevance for Defence & Security
  - On capabilities
    - Drivers (D) and resistors (R)
    - Changes & potential evolutions in STS across Scenarios
    - Options to mitigate impacts, and
    - Improve preparedness

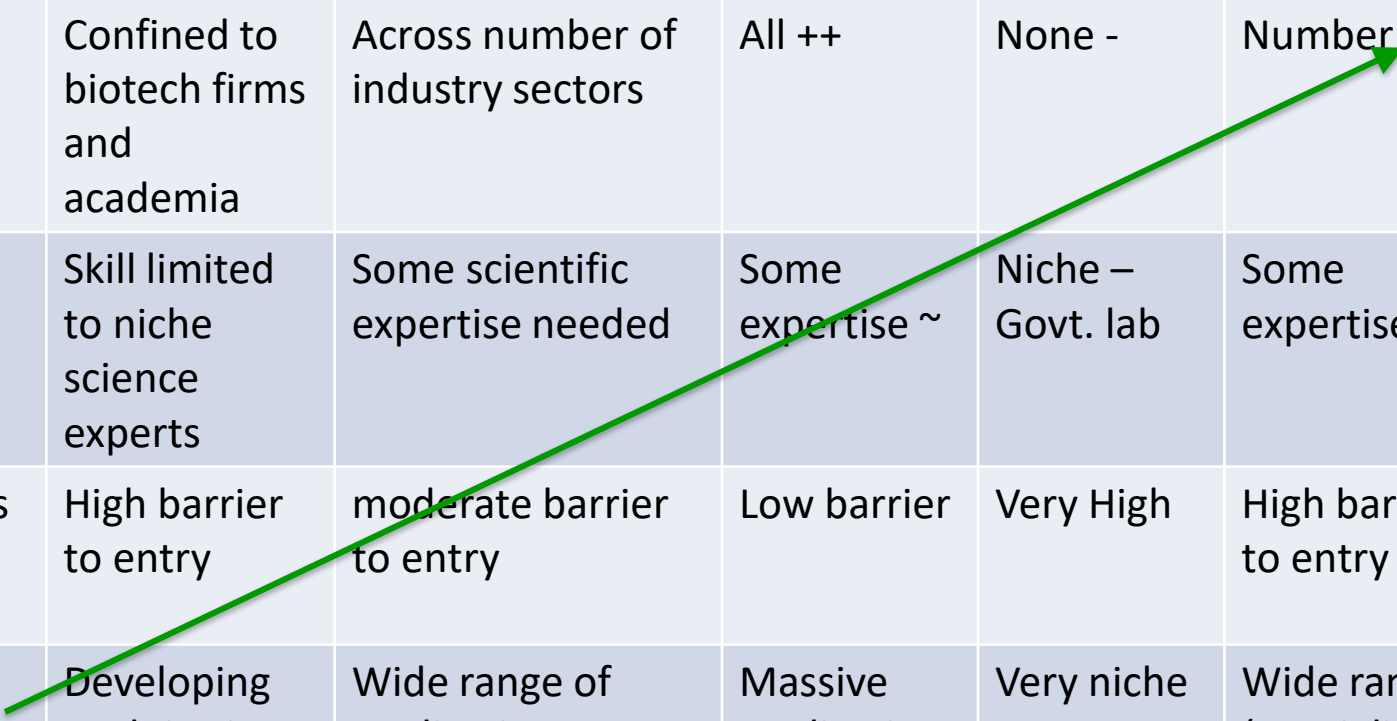
*FATE* – in action with past examples

Step 4 = Steps 1+2+3

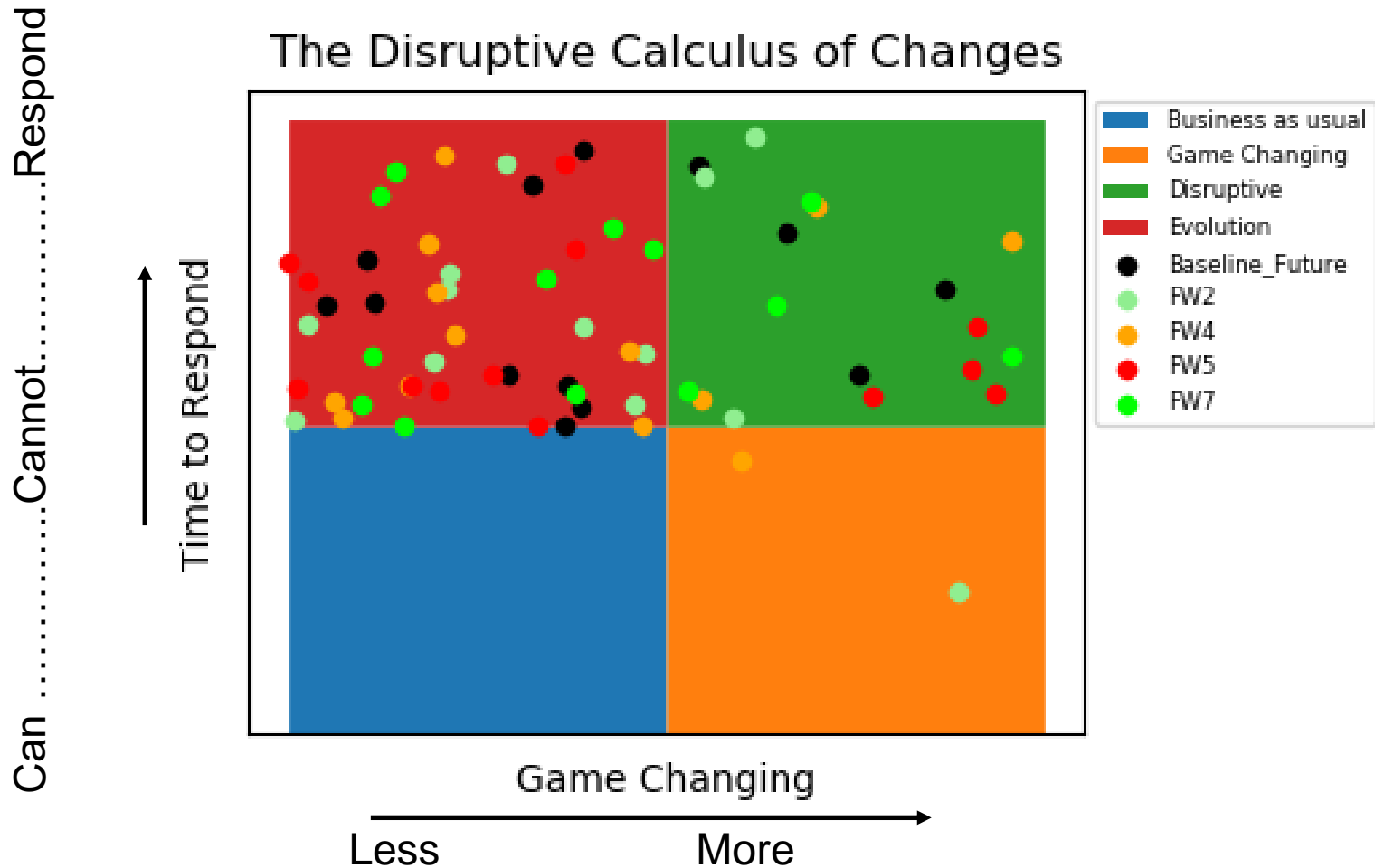
Practice with interaction

# Step 4 – Building on Steps 1-3, e.g., Biotechnology

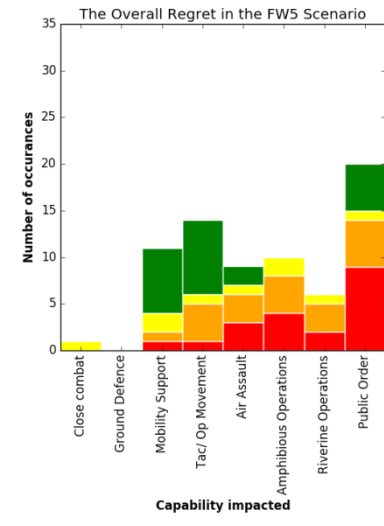
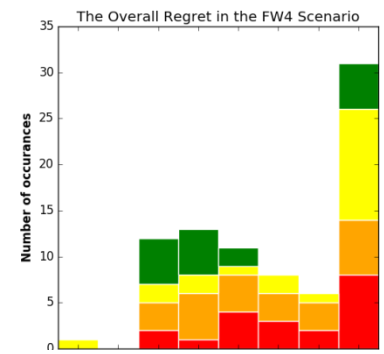
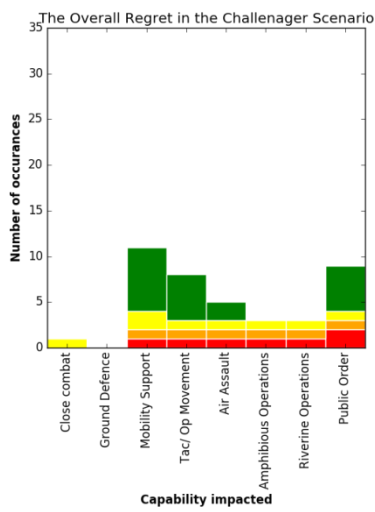
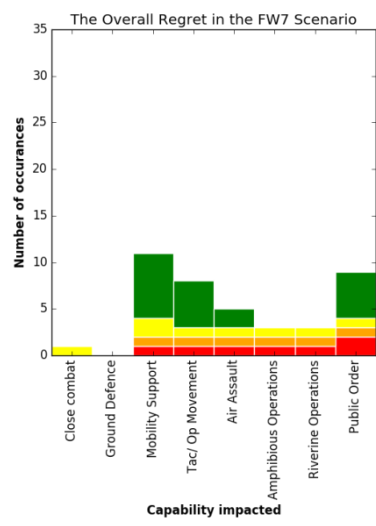
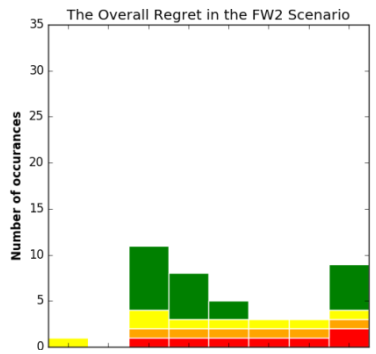
	Step 1		Step 3			
	1.1 Current	1.2 Future	Scen 1	Scen 2	Scen 3	Scen 4
Org	Confined to biotech firms and academia	Across number of industry sectors	All ++	None -	Number ~	Majority +
People	Skill limited to niche science experts	Some scientific expertise needed	Some expertise ~	Niche – Govt. lab	Some expertise ~	Some expertise ~
Process	High barrier to entry	moderate barrier to entry	Low barrier	Very High	High barrier to entry	moderate barrier
Tech	Developing exploitation	Wide range of applications	Massive applications	Very niche	Wide range (specialist)	Wide range
Infra	Limited to research labs	Commercialised manufacturing	Commercial and home	Govt. only	Research and industry	Commercial



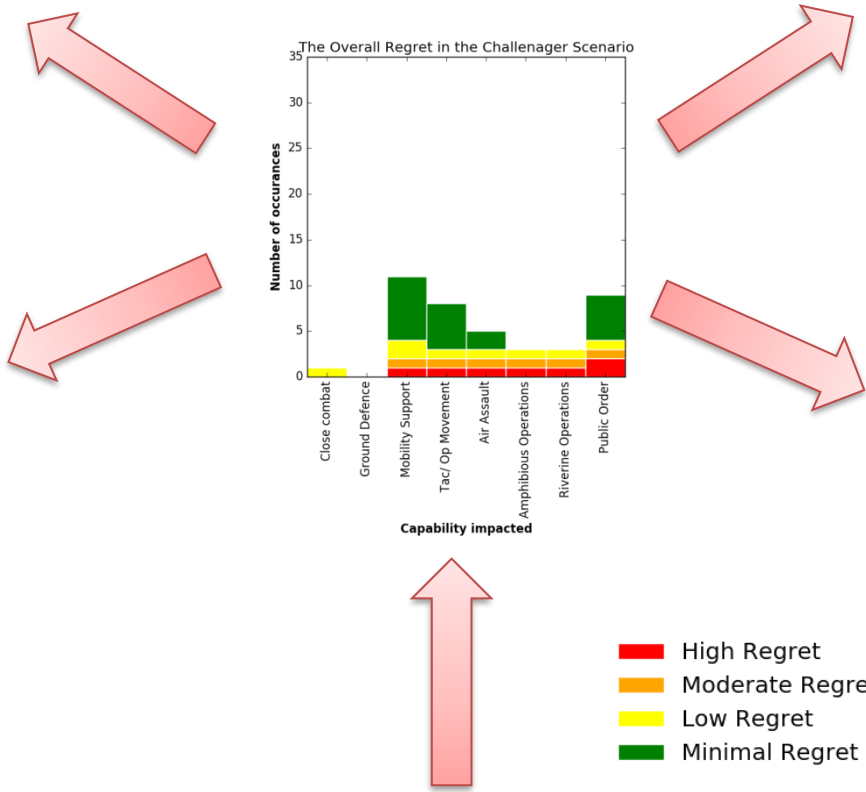
# Impact visualized in terms of a Calculus of Change



# Are impacts from STS coupled in different scenarios?



- High Regret
- Moderate Regret
- Low Regret
- Minimal Regret





# Unintended Consequences of not using a *FATE* like method

## 1. Electronic Health Records

- Problematic data entry/retrieval
- End-user resistance
- Complexity
- Physical space for PCs etc.

## 2. Mobile phones and healthcare in India and China

- Correlation between mobile phone use and healthcare access
- During illness, individual phone usage increases (e.g., to access online diagnosis etc.)
- Increases burden on, and access to, healthcare professionals and facilities

## When *FATE* is not the method of choice

1. When the timeframe of research question does not go into the far future
  - 10-15 years out
2. When the research question involves a non-complex question
  - e.g., both the system and relevant influence factors can be described quantitatively in an adequate and sufficient way
3. When an answer is required immediately

- *FATE* is unique because it invites dialogue and provides:
  - Drivers(D) , resistors (R), Impacts
  - Changes & potential evolutions in STS across Scenarios
  - +++
  - Options to mitigate impacts, and
  - Improve preparedness and futures literacy !
  - As a course participant you are now a member of the FATE Community of Practice or FATE COP

## *FATE* provides

1. A multi-disciplinary examination of transitions of technologies (emerging or potentially disruptive) in the form of an STS
  2. An understanding of complex interactions that enable transitions
  3. Also provides opportunities for *FATE*-lite (modular form)
- All above in the context of Defence and Security
  - All facilitate our understanding of how **disruptions** may occur, how to plan for them, **how not to have regret....**

.....

and thus *FATE* provides an anticipatory answer

## *FATE* would be even better if....

- ... *it had a broader user base (i.e., not just defence),*
- ... *it was used in combination with other tools*

# Acknowledgments

*FATE* would not have been possible without

- ...*SAS-176 and SAS-123 Teams*,
- ... *NATO STO-CSO, + each of our organizations*

# References

1. Adlakha-Hutcheon, G. et al (2021) Futures Assessed alongside socio-Technical Evolutions (FATE), DOI: 10.14339/STO-TR-SAS-123, ISBN 978-92-837-2322-6.

Annex E – Facilitator’s Guide

2. Adlakha-Hutcheon, G., Bown, K., Lindberg, A. Nielsen, T. G. Roemer, S. Maltby, J.F.J. (2020) The Use of FATE for Illuminating Disruptions, Proceedings of The 14th Annual NATO Operations Research and Analysis Conference, 2020.

Compares examples

3. Global Trends 2040 as scenarios (2021) [Office of the Director of National Intelligence - Global Trends \(dni.gov\)](#)

Publicly available source of scenarios