



Eating the Elephant

Analysis and Planning of NATO's Acquisition Portfolio

Nick Rose

HQ SACT CAPDEV / OA Branch

- Who am I?
- Portfolio management
- What is the NATO portfolio?
- The problem
- Portfolio management analysis maturity model

Who am I?



- Business cases & approvals management
- Studies: modelling & simulation, soft OR
- Military / political concept development
- P3M



Defensive political-military alliance of 31 (soon 32) Nations

Formed in 1949

Organization(s) to facilitate & deliver political & military direction

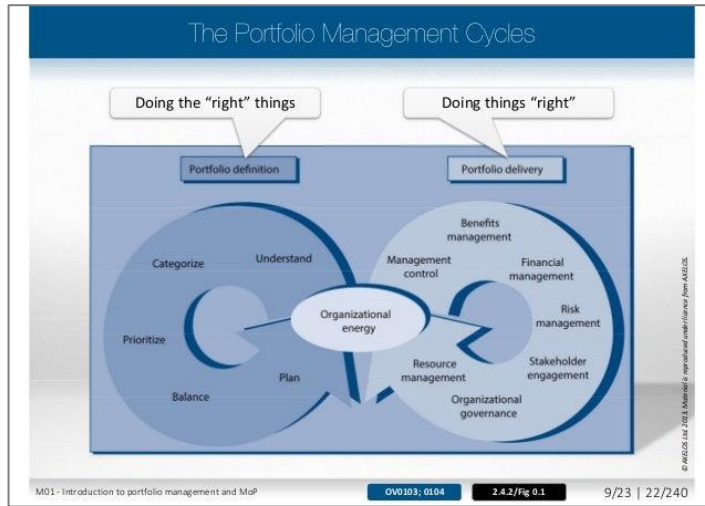
Deterrence & defence

Crisis prevention & management

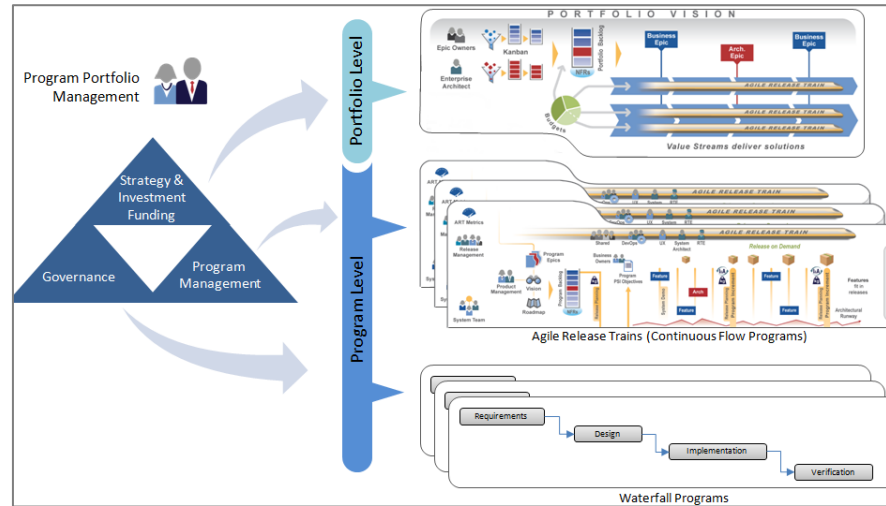
Collective defence & security



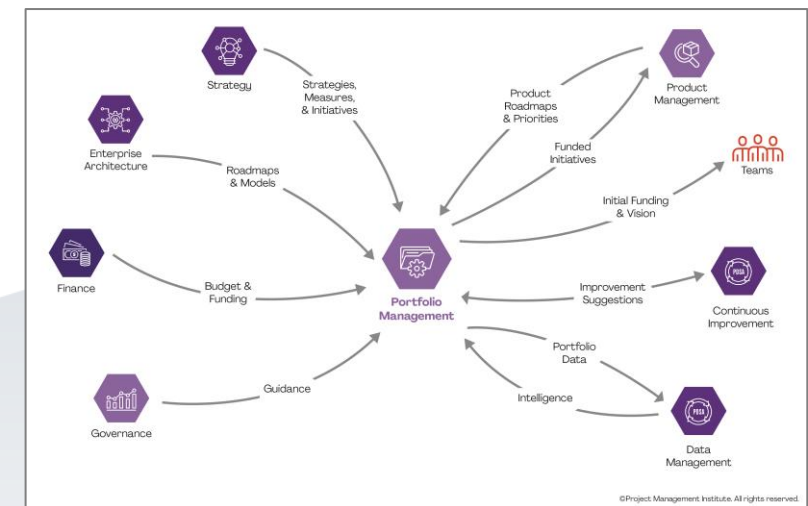
Portfolio Management



AXELOS Management of Portfolios



Scaled Agile Framework (SAFe): Portfolio Management

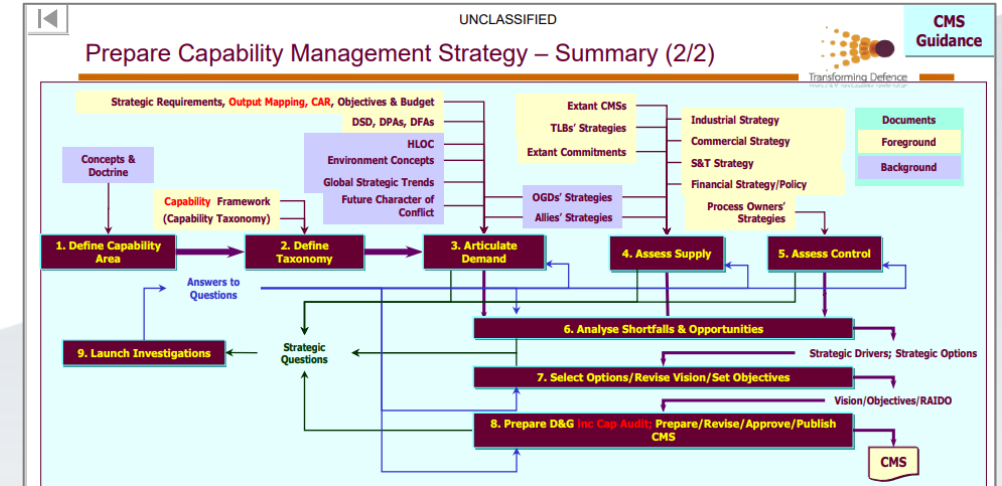
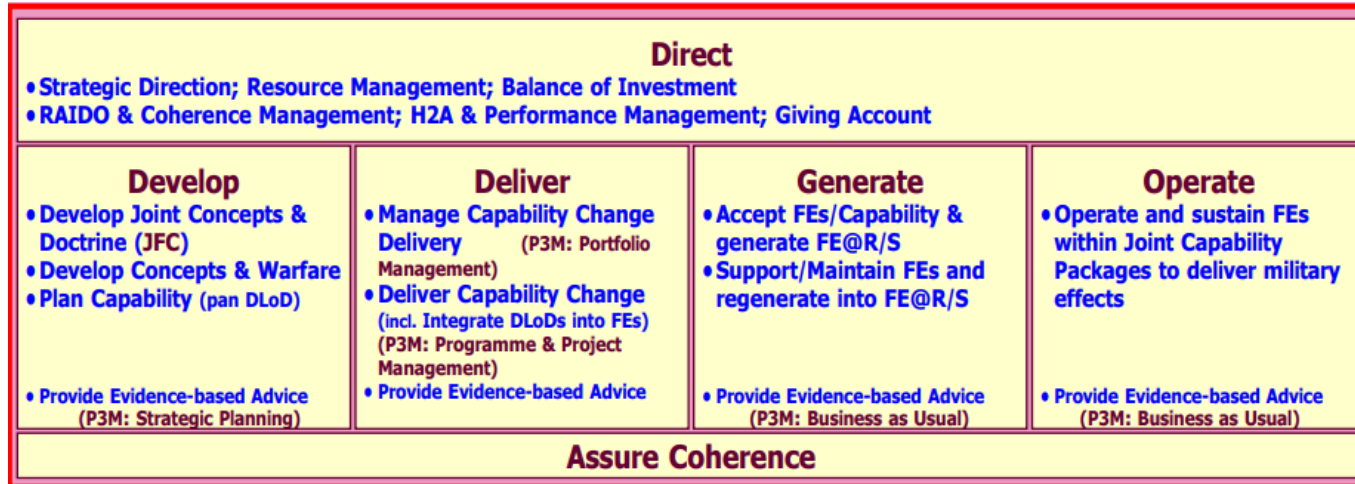


Disciplined Agile Framework: Portfolio Management

- Coordination of all activities to optimize the achievement of strategy within organizational constraints



Portfolio Management



UK MOD Generic Capability Management Model (GCM)

- Coordination of all activities to optimize the achievement of strategy within organizational constraints

Portfolio Analysis

Portfolio Optimization

- Assessment method & process
- Strategic alignment
- Project pipeline management

Resource Management

- Identification & capacity assessment for scarce resources
- Estimation & planning
- Supply / demand assessments

Performance Management

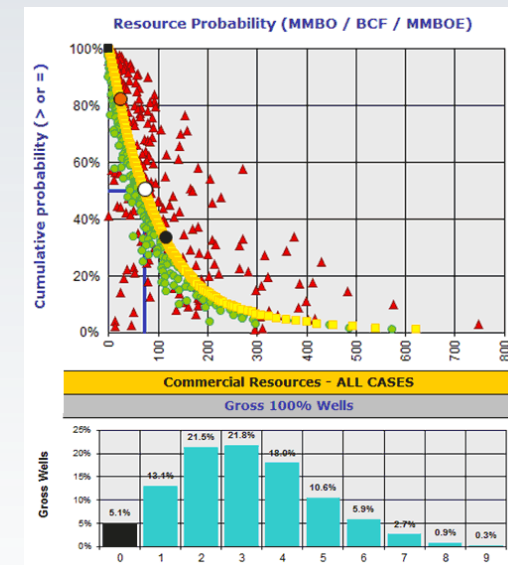
- Risk analysis
- Cost & schedule performance analysis (e.g. EVM)

Portfolio Management

- Data status & reviews
- Portfolio visualization & communication

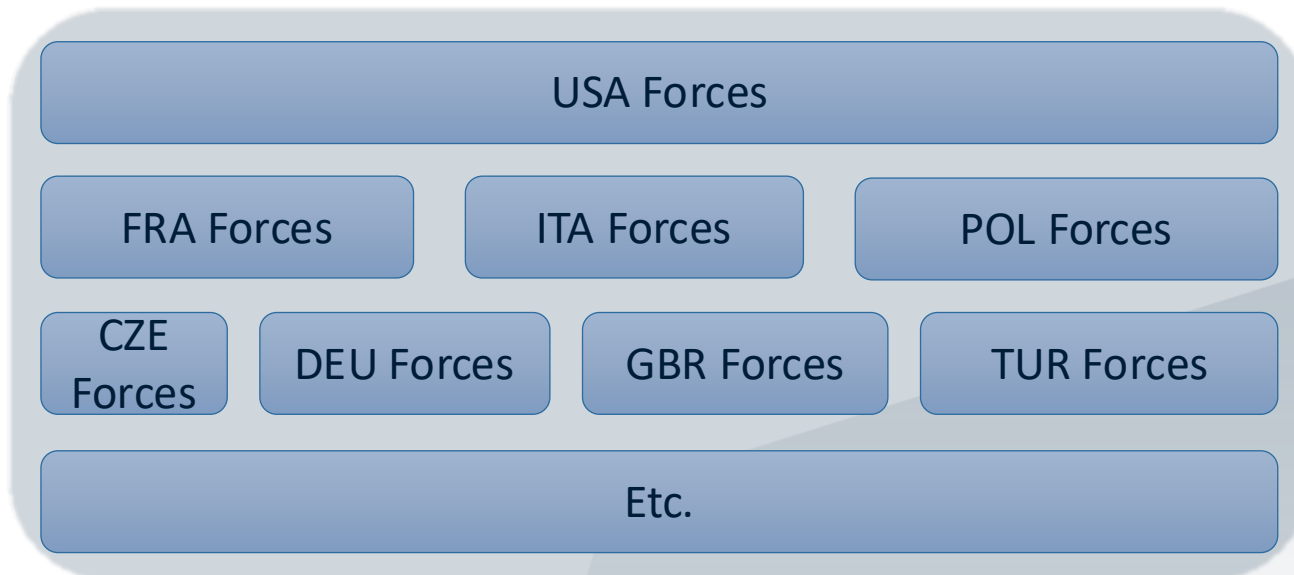


ProModel Blog: <https://promodel.files.wordpress.com/2014/01/ms-conf-2014-blog-post-ellen-pic1.jpg>



Rose & associates: <https://www.roseassoc.com/software-oil-gas-prospect-play-portfolio/portfolio-risk-analysis/>

NATO Portfolios



- Identifying and agreeing National forces (“Defence Planning”)
- Connecting and cohering National forces (NATO Common Funded acquisition)

Cohering the Common Funded Portfolio

The Problem

- How can we tell if activities are aligned to strategy?
- How can we tell if strategy is fully being implemented?
- If we add up all the costs, are we getting good value? Are 'priorities' aligned to objectives?
- How do we address structural issues?
- If we only have organic visibility on a small part of the portfolio, how can we plan?

Cohering the Common Funded Portfolio

The Analytical Problem

- We can't even see all the activities!
- “Strategy” is loosely defined
- Collected data is variable quality and not always trustworthy

Allied Command Operations
Hundreds of urgent requirements

NATO HQ
>50 capability acquisition programmes

Other Orgs
Tens of special urgent requirements

Allied Command Transformation
>50 capability acquisition programmes

Individual Nations
Hundreds of infrastructure “minor works”

NATO Delivery Agencies

31 Individual Nations



Typical PfM Maturity Model

5 - Continuous Improvement Optimization of R&D and delivery to strategy

- R&D / innovation initiatives clearly feed project delivery in line with strategy
- Increased coherence across the business
- Whole enterprise 'DevOps'

4 - Proactively Managed Portfolio driven by strategy; strategy driven by portfolio

- Strategy is clearly traceable to action
- Strategy is informed by delivery capacity and shape of current business
- Outcome: P3M clearly adds value to delivery and to business planning.

3 - Fit-for-Purpose Processes Integrated project delivery & portfolio coordination

- Scarce resource supply-demand management
- Increasing focus on skills, experience, data fusion
- Roles & responsibilities are clear and valued

2 - Developing Full portfolio coordination processes being defined

- Focus on process adherence over tailoring suitability to types of portfolio
- PfMO created

1 - Ad Hoc Sub-portfolios (sometimes) coordinated

- No real resources
- Mostly focused on firefighting
- Treating symptoms, not causes
- Inconsistent processes and data

PfM Analysis Maturity Model

5 - Continuous Improvement
Optimization of R&D and delivery
to strategy

4 - Proactively Managed
Portfolio driven by strategy; strategy
driven by portfolio

3 - Fit-for-Purpose Processes
Integrated project delivery &
portfolio coordination

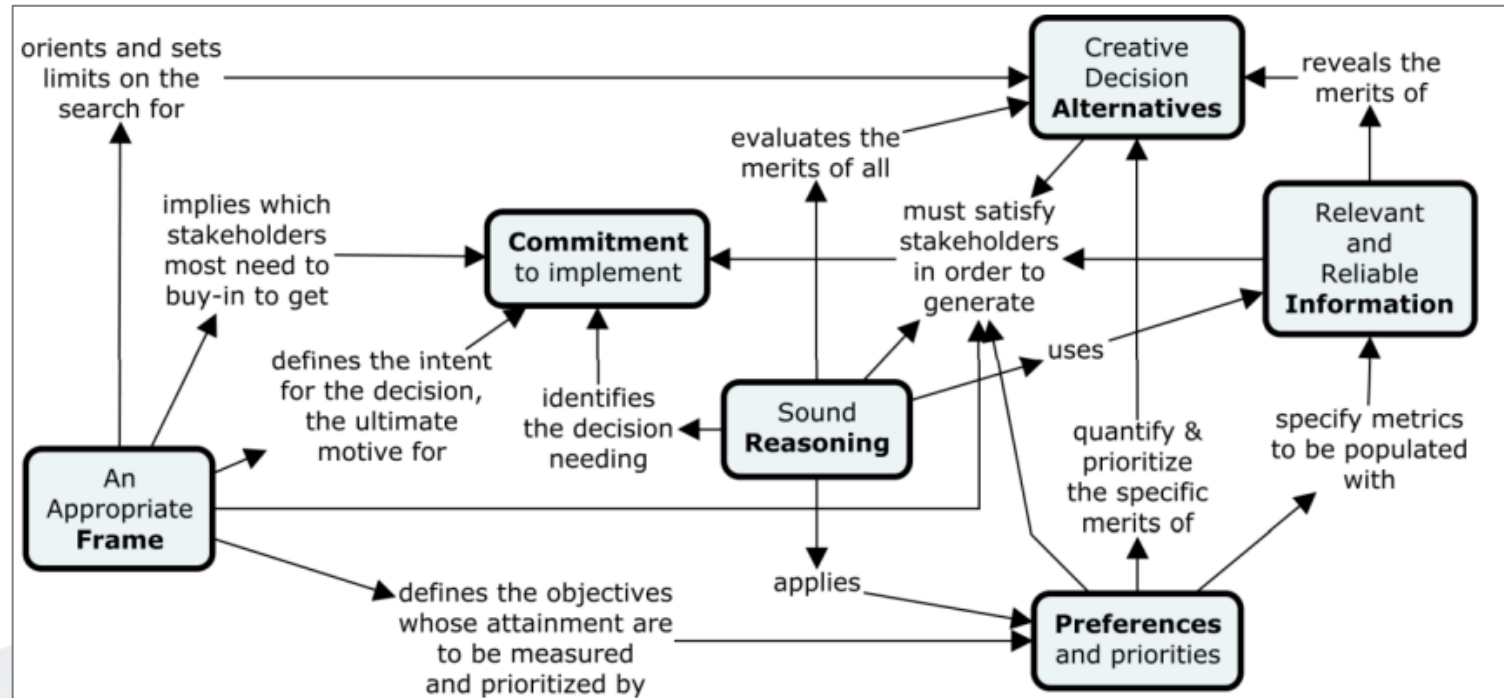
2 - Developing
Full portfolio coordination
processes being defined

1 - Ad Hoc
Sub-portfolios (sometimes)
coordinated

0 - None
Projects are managed as
completely standalone activities

Column Headings

- Appropriate Frame
- Commitment to Implement
- Creative Decision Alternatives
- Sound Reasoning
- Preferences and Priorities
- Relevant & Reliable Information
- ... So what?



From NATO STO SAS-134 Improving Defence Investment Portfolio Decisions: Insights from the Literature and National Practice

What should analysts be trying to do?

PfM Analysis Maturity Model

Appropriate Frame	Commitment to Implement	Reliable & Relevant Information	Creative Decision Alternatives	Preferences and Priorities	Sound Reasoning	Example Analyses	Analytical Team Should Work On
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Where am I?

What should I be doing?

PfM Analysis Maturity Model

	Appropriate Frame	Commitment to Implement	Reliable & Relevant Information	Creative Decision Alternatives	Preferences and Priorities	Sound Reasoning	Example Analyses	Analytical Team Should Work On
5 - Continuous Improvement Optimization of R&D and delivery to strategy	<ul style="list-style-type: none"> There is clear, enterprise-wide, understanding of decision variables and both soft and hard constraints 	<ul style="list-style-type: none"> Portfolio analysis results are expected to support C-suite decision making, with full business and enterprise support 	<ul style="list-style-type: none"> Portfolio data is linked with, and managed coherently with, all other enterprise business data 	<ul style="list-style-type: none"> Both soft and hard constraints are regularly 'stress-tested', including outside of the mandate of imminent decisions 	<ul style="list-style-type: none"> The enterprise hierarchy of priorities are transparently reflected in actual decision-making 	<ul style="list-style-type: none"> The value of high-quality portfolio analysis is evangelized by the enterprise. Analytical skills are widespread 	<ul style="list-style-type: none"> Managed, data-driven common operational picture of the current enterprise and potential futures 	<ul style="list-style-type: none"> Maintaining business engagement and value proposition Maintaining data, skills, tools in line with business direction
4 - Proactively Managed Portfolio driven by strategy; strategy driven by portfolio	<ul style="list-style-type: none"> Clearly sets out the conceptual and temporal boundaries, as well as the Ends, Ways, and Means of portfolio decisions 	<ul style="list-style-type: none"> Portfolio analysis is held at the center of management processes, and are shared across the enterprise 	<ul style="list-style-type: none"> Planning information and strategy tokenization; automated generation of documents Data quality is always reflected in analysis confidence 	<ul style="list-style-type: none"> Analytical processes for collecting and integrating enterprise perspectives when identifying options are valued and used 	<ul style="list-style-type: none"> Strong feedback loop between stated and revealed preferences and priorities. Assessment methods vary to fit contexts 	<ul style="list-style-type: none"> Analytical skills are valued in non-analysts. Analytical rigour is applied on a risk-based approach. Confidence in findings, and limits / voiding conditions are understood by decision-makers. Complex analyses are automated; data collection is a project priority 	<ul style="list-style-type: none"> Balancing efficiency and business resilience under constraints thresholds Analysis to support strategy – forecasting the competition landscape; strategic risks & opportunity assessment Analysis of the strategy – decomposition into themes & tasks 	<ul style="list-style-type: none"> Business data-centricity driven by visible analysis benefits Aligning analytical resources (cost, including people) to business value provided
3 - Fit-for-Purpose Processes Integrated project delivery & portfolio coordination	<ul style="list-style-type: none"> Lays out the strategic landscape and highlights external legal and policy constraints on decision-making. Dependencies are identified at many levels 	<ul style="list-style-type: none"> There are clear delegated authorities and pathways for accessing greater authority based on analytical findings 	<ul style="list-style-type: none"> Portfolio data is seamlessly linked across the business. Data captures quantitative and qualitative aspects of projects and programmes, and is formally managed 	<ul style="list-style-type: none"> Creativity is valued in the creation of options Options must reflect more than just three choices: 1) ineffective, 2) too expensive, and 3) the preferred approach 	<ul style="list-style-type: none"> Priorities, and assessment methods, are known and agreed across all stakeholder groups 	<ul style="list-style-type: none"> Analytical skills are managed as a portfolio management resource. Processes for analytical rigour are being defined. Simple analyses are automated 	<ul style="list-style-type: none"> Resource supply and demand mapping Maximizing delivery value under a budgetary threshold Future portfolio options assessments & scenario analyses 	<ul style="list-style-type: none"> Integrating qualitative strategic assessment with quantitative analysis Broadening analyst business / strategic understanding Developing bespoke problem formulations and tools
2 - Developing Full portfolio coordination processes being defined	<ul style="list-style-type: none"> Sub-portfolio analysis boundary agreed in line with organizational responsibilities. Project dependencies are identified and managed 	<ul style="list-style-type: none"> There are mechanisms for escalation of portfolio decision-making with analytically-driven business cases 	<ul style="list-style-type: none"> Portfolio data is linked across the business through manual or infrequent automatic means. Quantified data captures many aspects of projects, and is regularly checked 	<ul style="list-style-type: none"> Business cases are required to demonstrate options 	<ul style="list-style-type: none"> Priorities integrate the perspectives of many business stakeholders. Analytical assessments match options to priorities 	<ul style="list-style-type: none"> Analytical skills are valued as a source of rigour, and used when available 	<ul style="list-style-type: none"> Integrated portfolio cost, schedule, and risk management Root cause analyses Enterprise opportunity optimization 	<ul style="list-style-type: none"> Delivering benefits from portfolio-level analysis to create supporters Engagement across scarce resource owners Developing predictive relationships and models
1 - Ad Hoc Sub-portfolios (sometimes) coordinated	<ul style="list-style-type: none"> Frame is poorly bounded and thought-through, with no agreement of analytical scope 	<ul style="list-style-type: none"> Results must be 'sold' to senior executives, and may be opposed or stopped by other executives 	<ul style="list-style-type: none"> Programme and sub-portfolio data is aggregated locally in organizational stovepipes. Data quality is irregularly and / or inconsistently managed 	<ul style="list-style-type: none"> No analytical support to identifying and assessing decision alternatives 	<ul style="list-style-type: none"> Priorities are defined. Analytical support to priority-setting and assessment is inconsistent 	<ul style="list-style-type: none"> Simple sub-portfolio cost, schedule, and risk management Simple dependencies mapping & root-cause analysis Investment opportunity identification and quantification 	<ul style="list-style-type: none"> Integrating data stovepipes Ensuring data is trustworthy Ensuring data supports high-value analyses Acquiring analytical tools Developing descriptive and diagnostic analyses 	
0 - None Projects are managed as completely standalone activities	<ul style="list-style-type: none"> No coordinated decision-making 	<ul style="list-style-type: none"> No mechanism for portfolio analysis to drive change 	<ul style="list-style-type: none"> Activity data held at project-level 	<ul style="list-style-type: none"> Decision-making is not coordinated, and is constantly reactive. Staff constantly feel like they are "fire fighting" 	<ul style="list-style-type: none"> Priorities are entirely implicit, or may be explicitly stated in ways that do not match business behaviour, or do not aid decisions 	<ul style="list-style-type: none"> Project-level cost, schedule, and risk management Workshops: collecting and aggregating SME judgement-based assessments 	<ul style="list-style-type: none"> Collecting and aggregating data. Identifying high-visibility incoherence / missed opportunities Getting analytical resources 	

PfM Analysis Maturity Model

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Prescriptive

Predictive

Diagnostic

Descriptive

What do I want from you?

Feedback please!

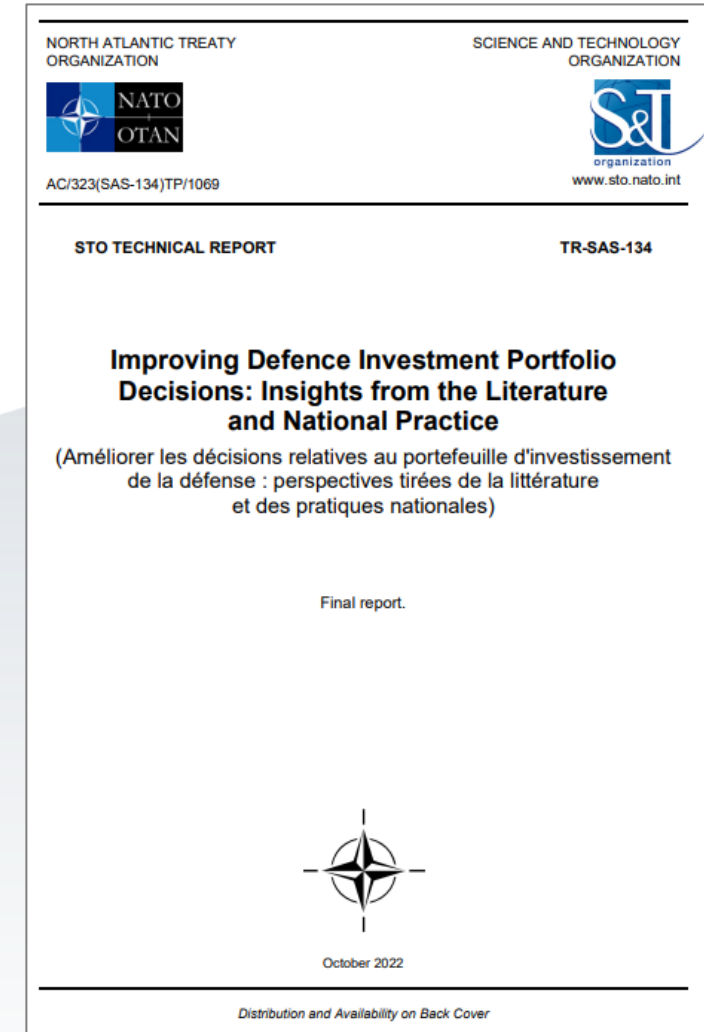
If you're interested:

1. Come collect a copy of the detail
2. Tell me what you think

If you're interested in portfolio management and analysis:

- Management of Portfolios (Axelos)
- Scaled Agile Framework
- Disciplined Agile Framework
- NATO SAS-134 Report

- [NATO STO SAS-178 Defence Investment Portfolio Decision-Making and Analysis Support: workshop in Germany 12-14 Sept](#)
 - for COL to 1* MIL & “senior portfolio analyst” CIVs



Questions?

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