



## OA and Wargaming for Defence Procurement

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# Outline

## The Problem

- Why procurement is hard
- Why OA is hard

## Wargaming and OA

- Typical problems
- A typical game

## Outputs

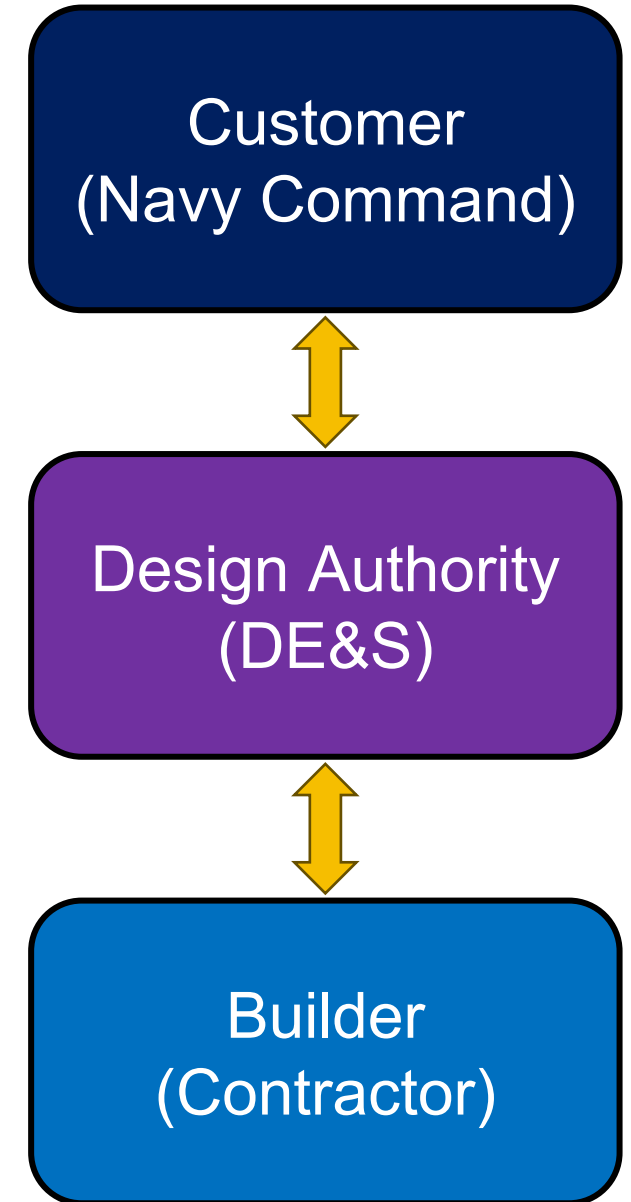
- Insight generation
- Challenges to remember



Disclaimer: The contents of this presentation are my opinions not the position of the MoD. All examples presented are fictional, not drawn from real procurement work.

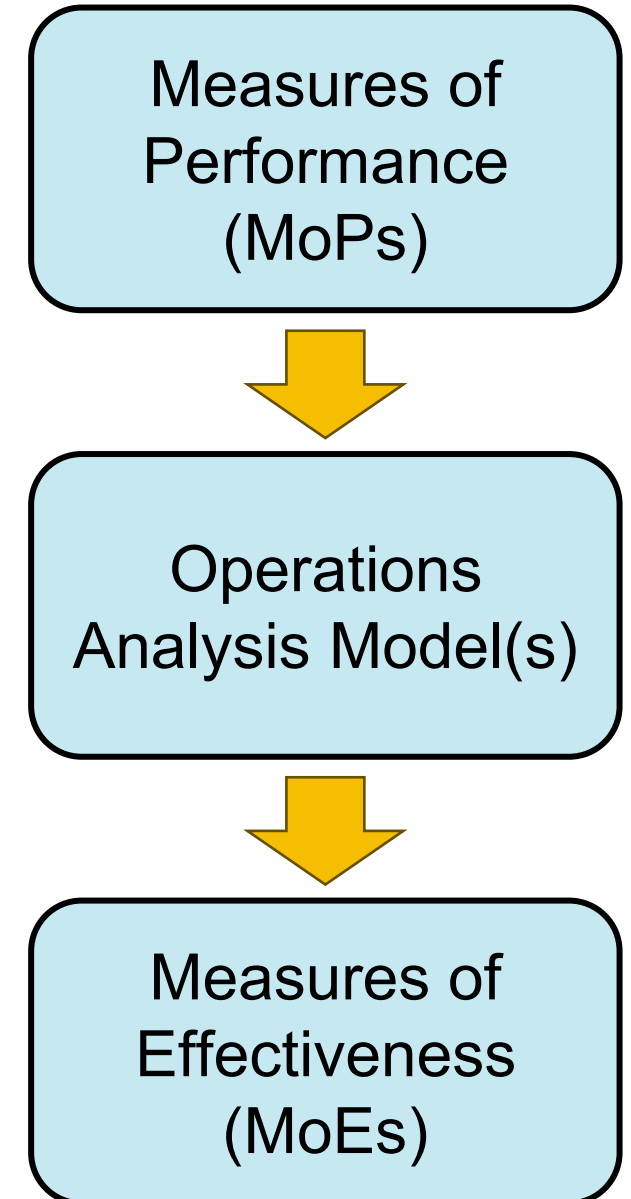
## 2. The Procurement Problem

- Customer / DA / Builder relationship
- Defining Requirements
- Need analytical data to base that on



# 3. The OA Problem

- OA produces models to derive MoEs from MoPs.
- *What metrics do we care about?*
- *How do they interact?*
- We have finite, limited OA resource.





# 5. Typical Problems

- A new warship – What weapons? How many? How fast? What sensors? How much survivability?
- A new missile system – Speed? Warhead? Stealth? EW?
- A novel capability, like USVs – Size? Payload? Autonomy? Comms?

**BRAHMOS**  
PJ-10 10

**Characteristics**

Tgt:    Hi-Hi **Hi 0**  
 Spd: Supersonic    Hi-Lo **Hi 6** **Lo 2**  
 Sig: **S**    Lo-Lo **Lo 5**

**Damage Effects (150kg charge)**

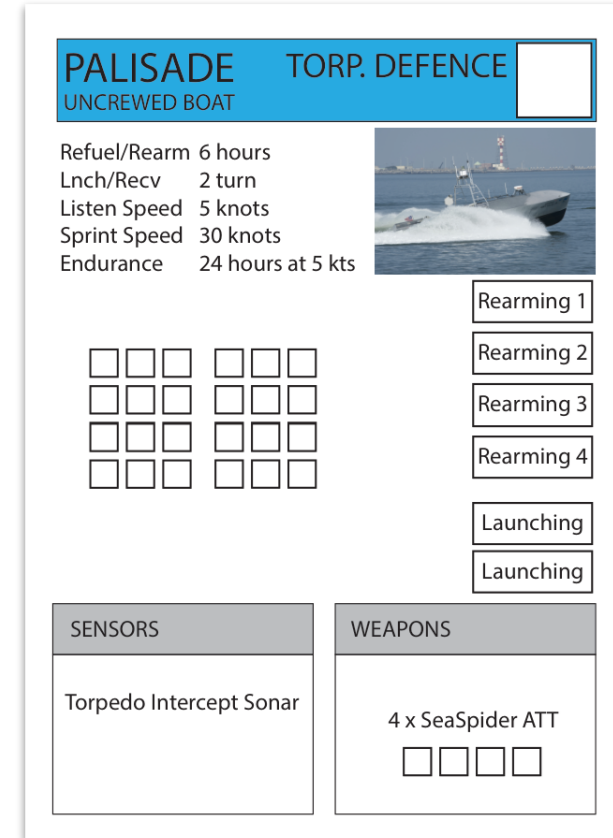
	1 - Waterline	2-3 - Low	4-6 - High
10			
7-9			
★ 1-6			

MISSILE PLACEMENT ROLL: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

UNCLASSIFIED ABF: OPERATIONAL v2.0

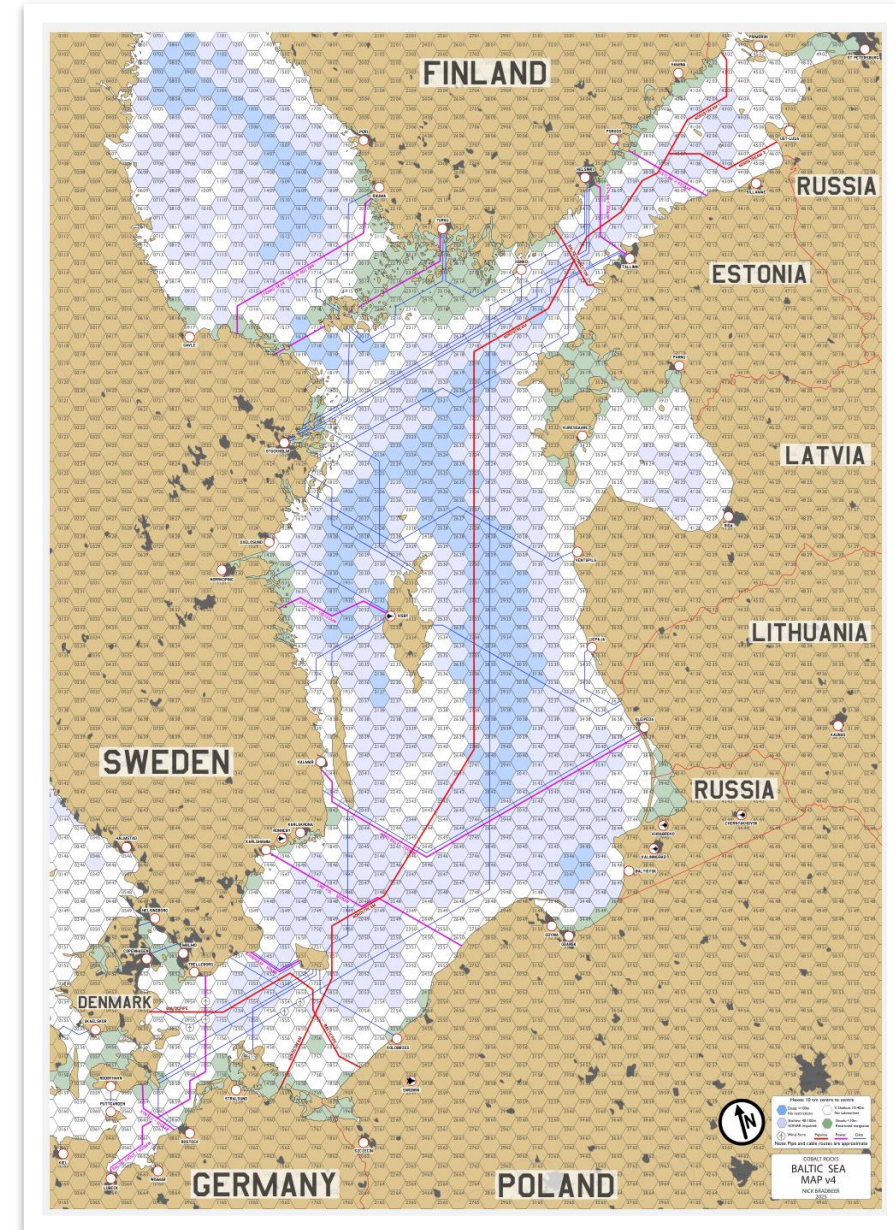
# 6. Necessary Assumptions

- How to tactically employ?
- How will it interact with other friendly systems?
- How will the enemy react to counter it?
- How might we react to their counter?
- Are there enabling capabilities which would make it work better?



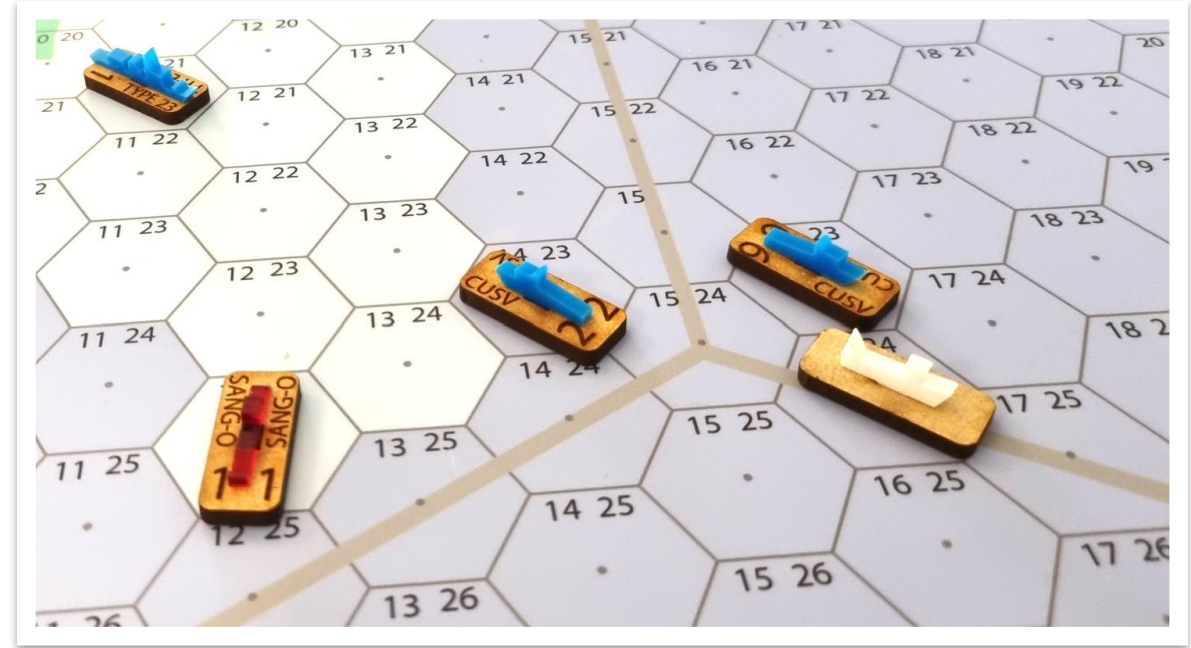
# 7. A Typical Game

- 3 days – half day training, four games, half day washup
- 15-30 people (heavy on WHITE cell)
- OAs and SMEs on hand for advice and reachback
- Hotwash after every game
- Iterate between games



# 8. Insight Generation

- Game research phase
  - TTX
  - Wargame, via hotwash
  - Non-player SME observations
- 
- We shift the question from “what capabilities should this have” to “how would I use this operationally” – which is easier to game



# 9. Challenges and Limitations

- Sensitivity to Assumptions
- Data Gaps
- Non-Repeatability

**UNCLASSIFIED** **LADA Class SSK**

ABF: v2.0

Patrol Speed **1**

Pounce **0**

ASW Dice

	Deep	Shallow
Approach:		
Escape:		

Attack a Task Force:

Approach: Task Force's best ASW die:

1-5: Continue our attack  
 6-8: We abort attack  
 9-10: We are sunk

Attack: We roll 3d10 (6 torpedoes)  
 1-4: We miss

Encounter a submarine:

Approach: Enemy's best ASW die:

1-5: We are undetected  
 6-10: We are detected

Attack: We roll 1d10 (2 torpedoes)

Weapons

Torps

**UNCLASSIFIED** **Sachsen class FFG**

ABF: TACTICAL v2.0

RAM

C	C	C	C	C	C
C	C	C	C	C	C

AVIATION

2 x NH-90  
ASW HELO

MOVEMENT SPEEDS

Max **3**

Cruise **2**

Dmg **1**

FUEL

DC Zone 5

DC Zone 4

DC Zone 3

DC Zone 2

DC Zone 1

DAMAGE TOLERANCE: 3

STRIKE

NSM 3 Hex

AAW: Mk41

M	M	M	M	S	S	S	S
M	M	M	M	S	S	S	S
M	M	M	M	S	S	S	S

SM-2

ESSM

76mm

AAW: Mk41

Aviation

Strike

MOVE

1 2 3 4 5,6 7 8 9 10

v2. Design by Nick Bradbeer. Ship silhouette from wikipedia.org