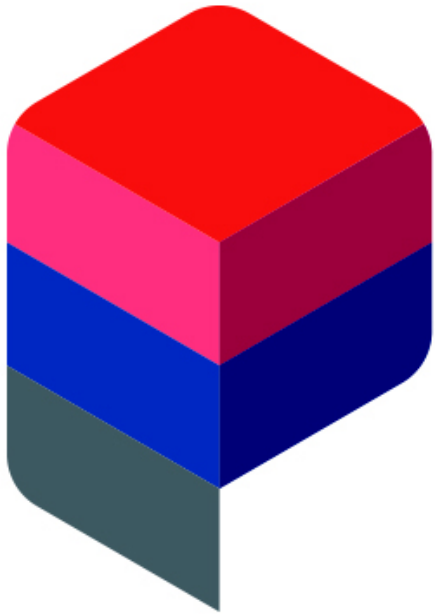




**performing
databases**

Cat Pics and Kill Chains

AI in Modern Warfare

Martin Klier 
Performing Databases GmbH
Mitterteich / Germany

Speaker

- Martin Klier
- Solution Architect and Database Expert
- My focus:
 - Performance + Tuning
 - Highly available systems
 - Cluster and Replication
- Linux since 1997
- Oracle Database since 2003

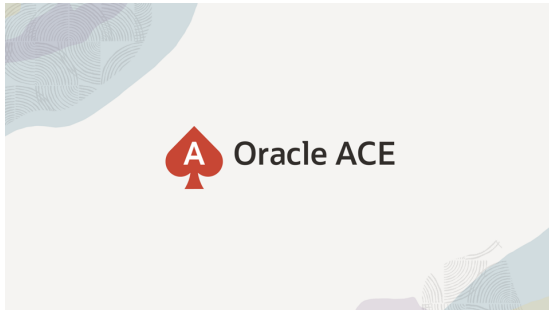


Ham Radio
DO6USN



@MartinKlierDBA
www.performing-databases.com

... it's all about Community!



SYMPOSIUM^{L2}



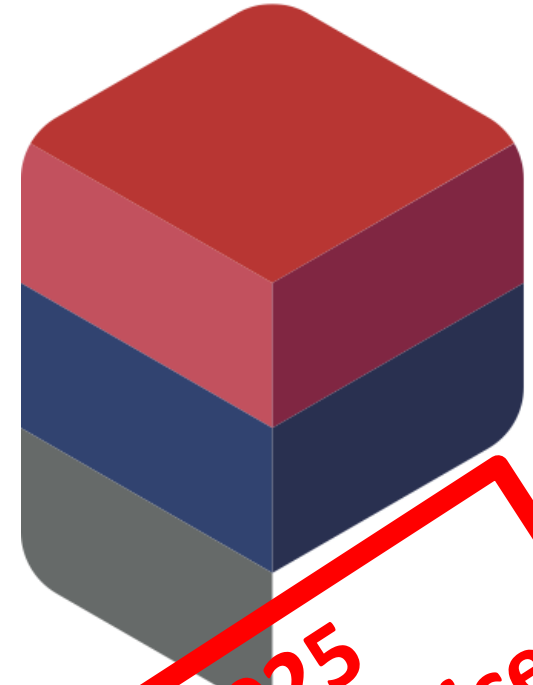
ora2know

The German Oracle Database Community

<https://www.ora2know.de>

Performing Databases

- Four Experts for Database technology
 - Concepts and Project Competence
 - Architecture- and System planning
 - Licensing
 - Implementation and Troubleshooting
- Get in touch
 - Performing Databases GmbH
Wiesauer Strasse 27
95666 Mitterteich // Germany
 - <http://www.performing-databases.com>
 - Social: @PerformingDB



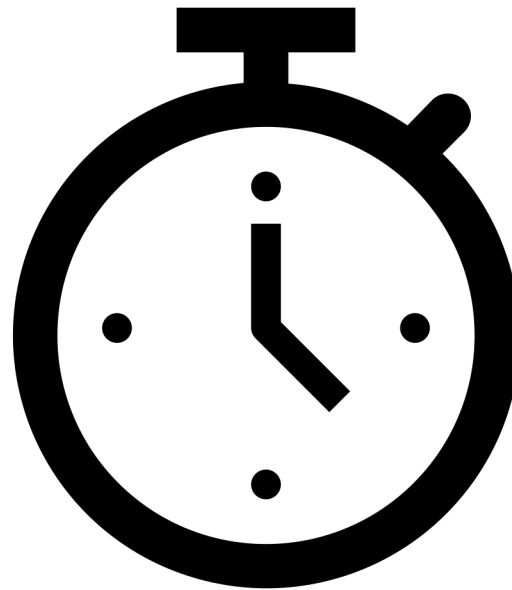
Performing Databases Services



Monitoring / Alerting



Expert Level
Knowhow



Hotline



Support

24/7 & 1h SLA
Call us!

This talk does NOT contain
any classified material.

I am no member of any military
or other government service.

I'm a military layman. My career
in the German Navy ended 2001.

War is terrible.

Never assume that I would
prefer a military solution
over a peaceful one.



"Nothing except a battle lost
can be half so melancholy as a
battle won."

Arthur Wellesley, 1st Duke of Wellington
about the Battle of Waterloo (1815)

Artificial Intelligence

What is a Vector?

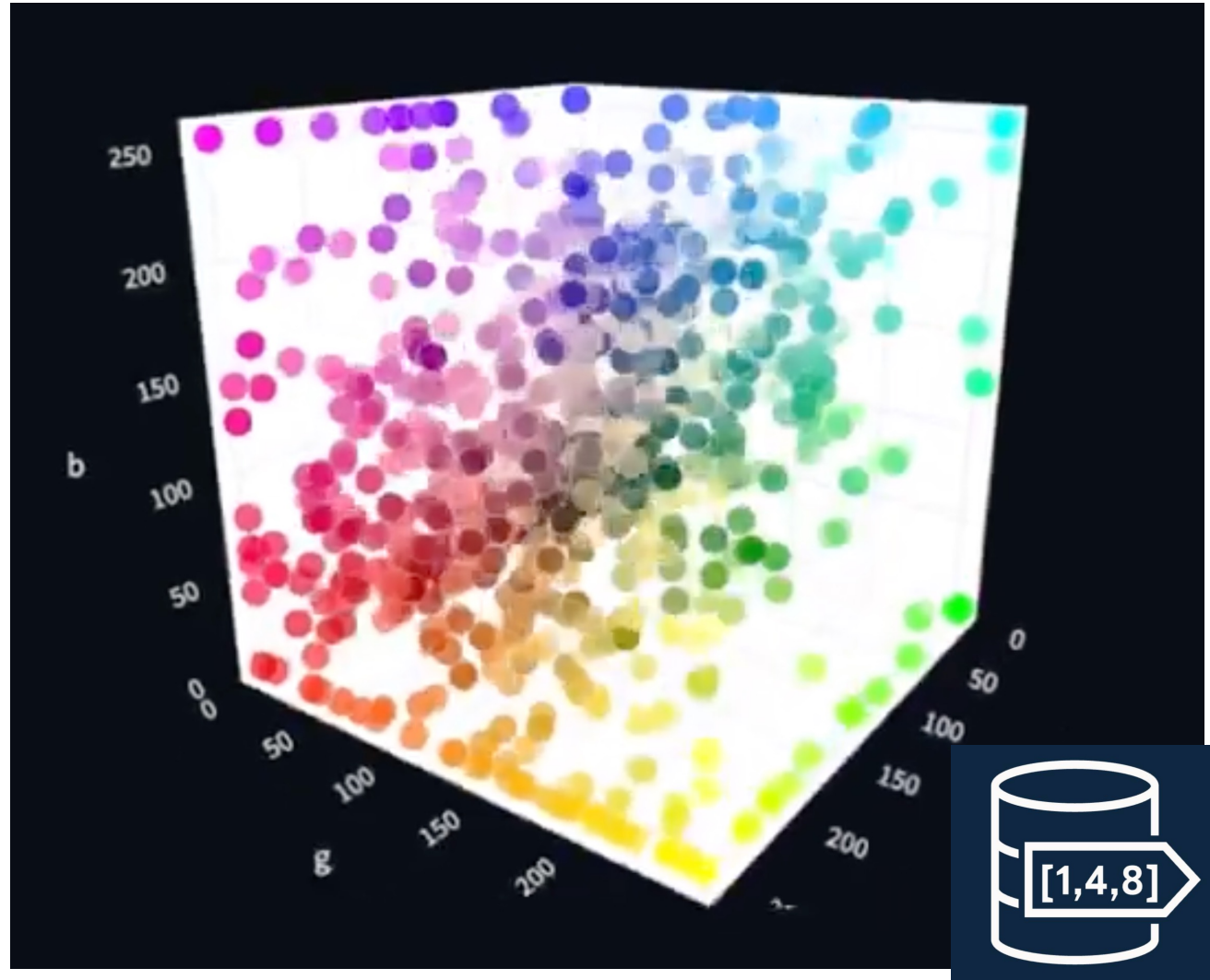
Describing things in a mathematical way (simply: data as base for AI)

Red
255
0
0

Orange-Red
255
69
0

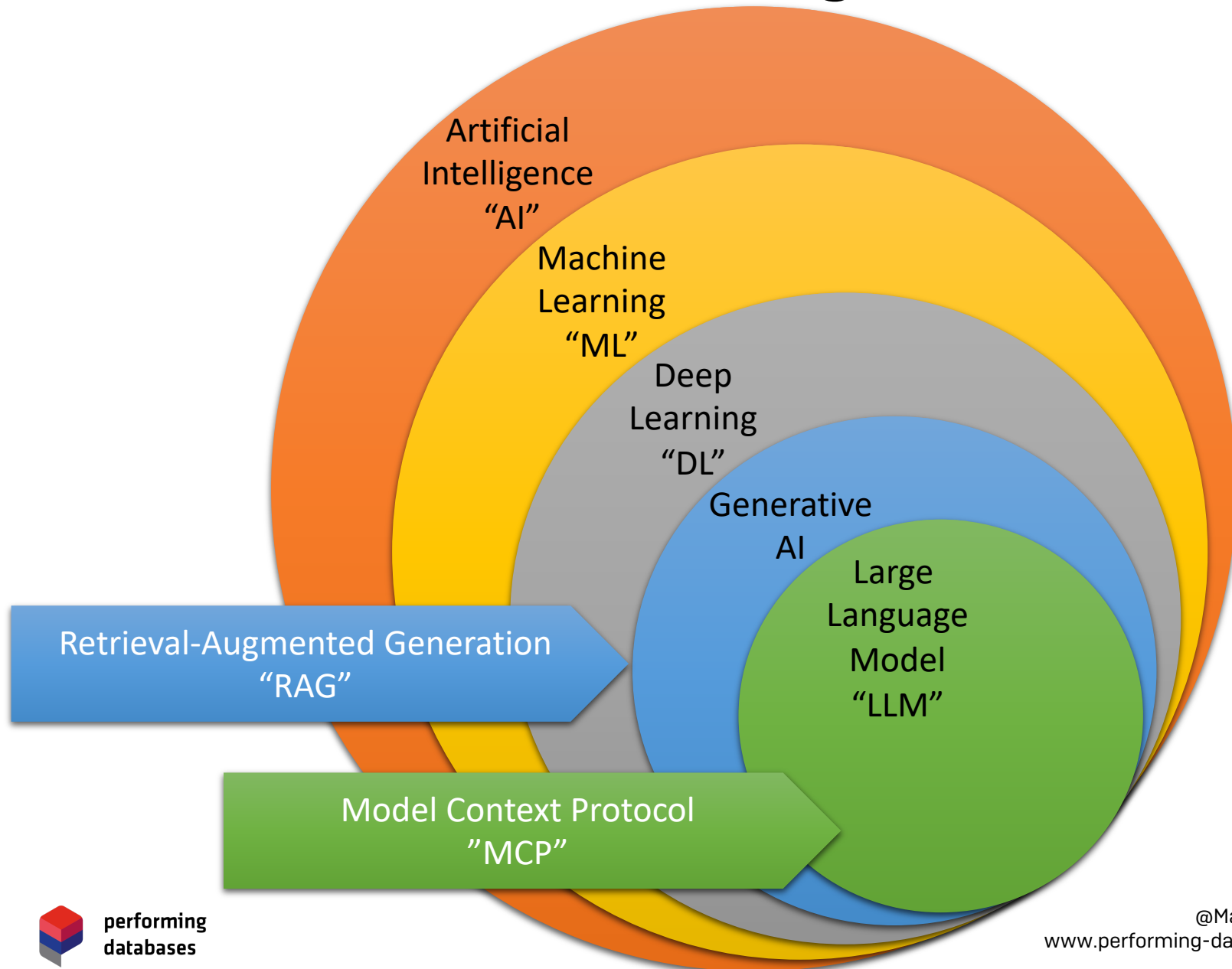
Chocolate
210
105
30

Deep sky blue
0
191
255

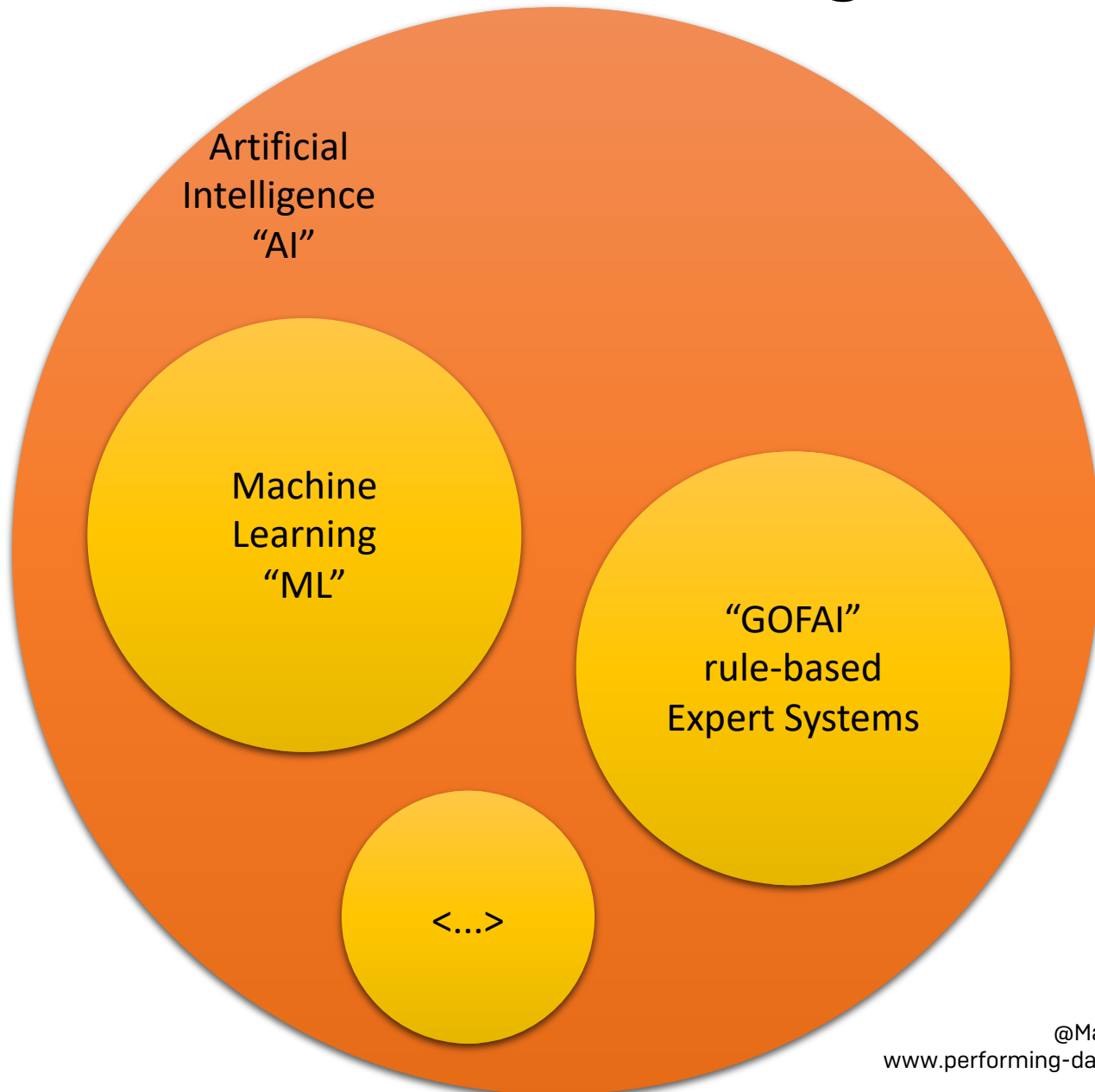


=> Proximity Search = Equality

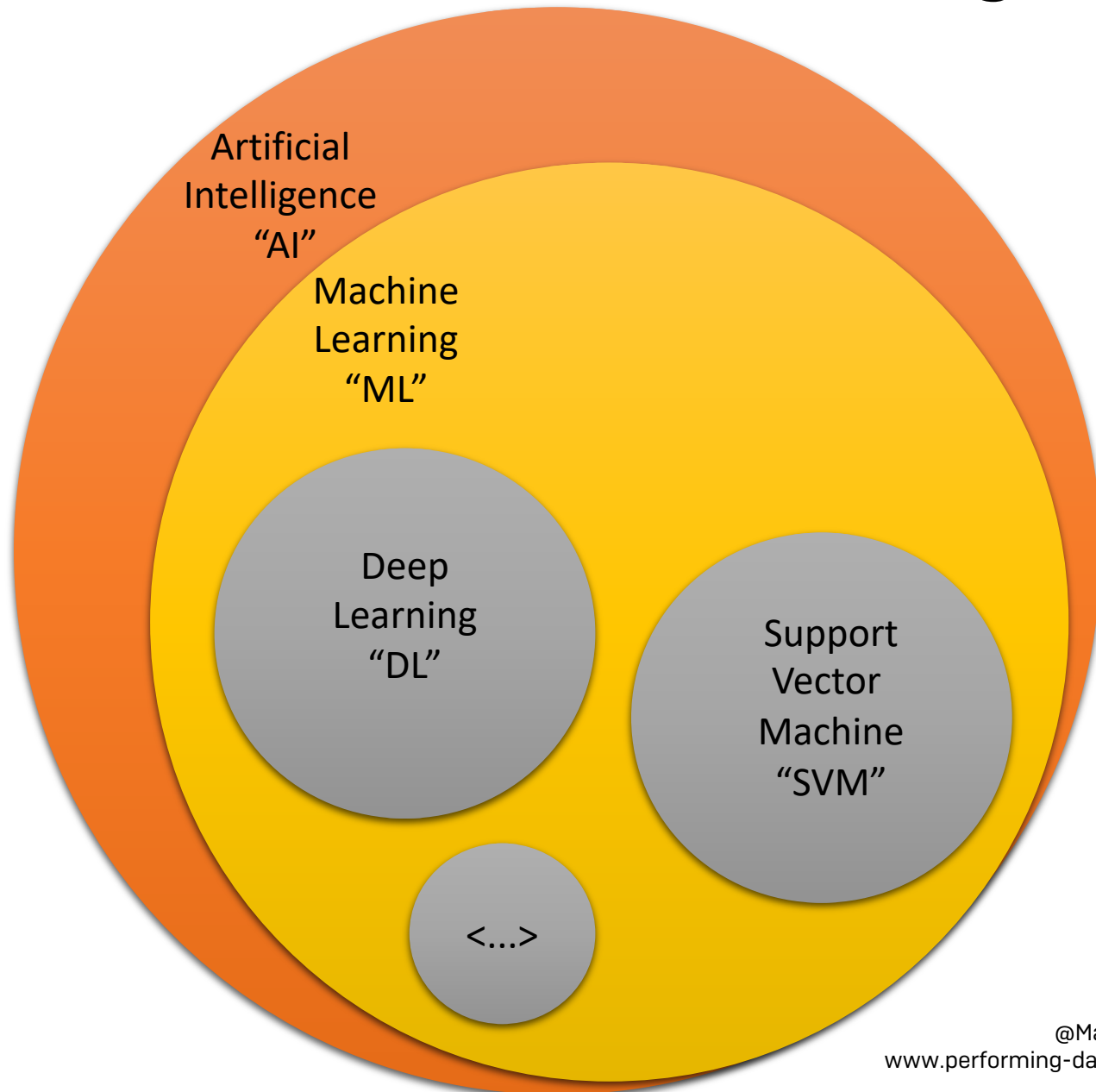
Buzzword Bingo Basics



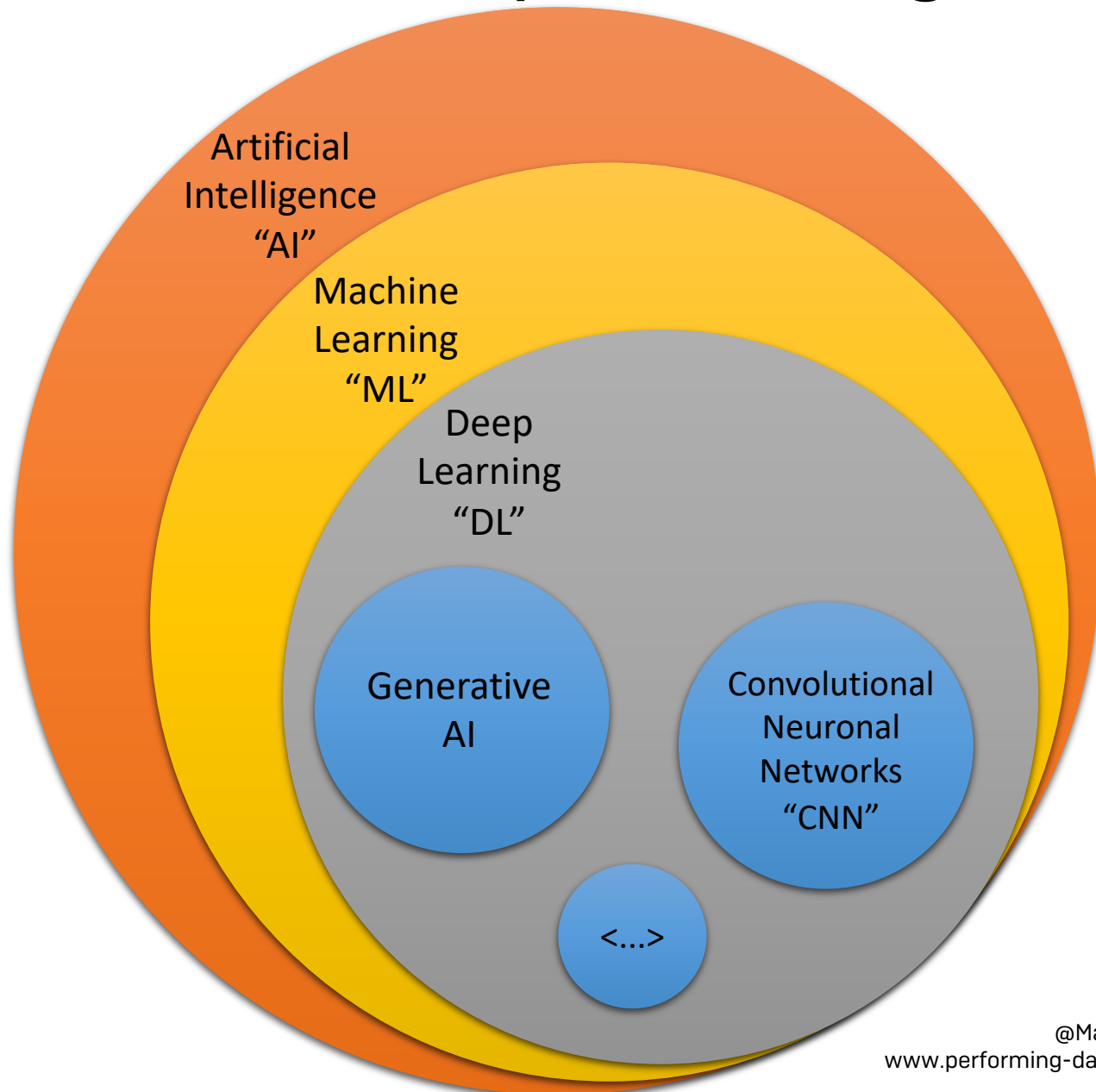
BBB: Artificial Intelligence



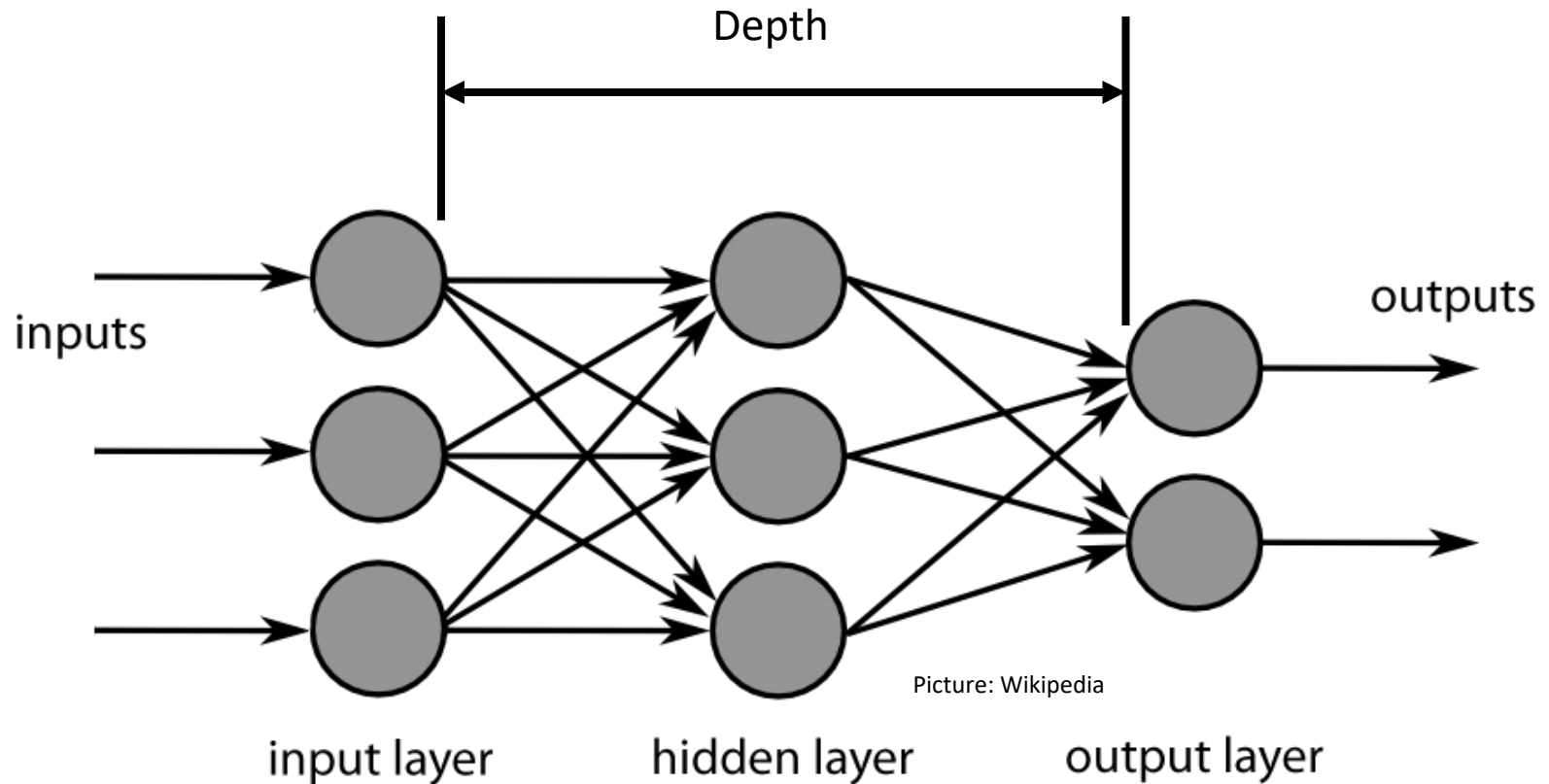
BBB: Machine Learning



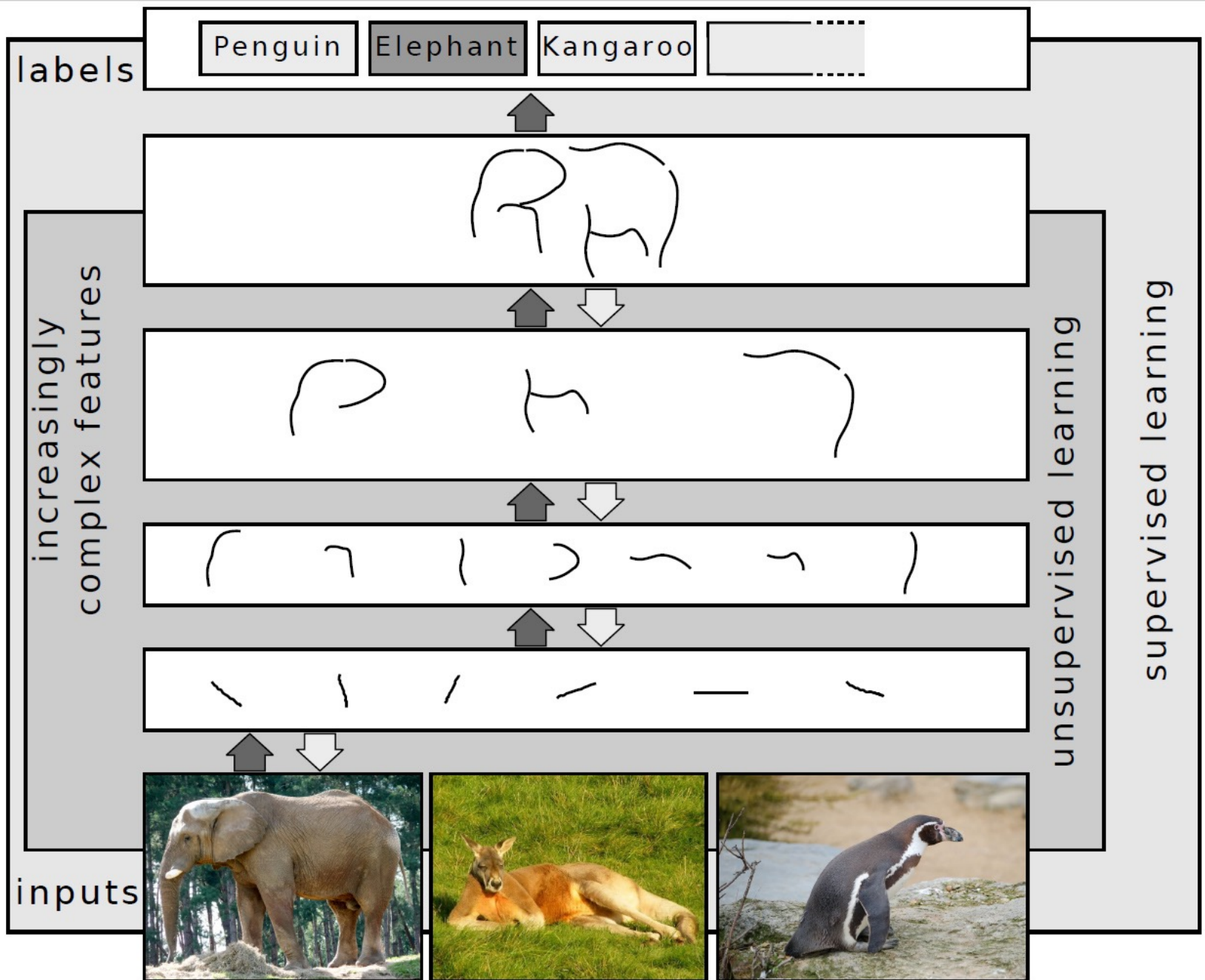
BBB: Deep Learning



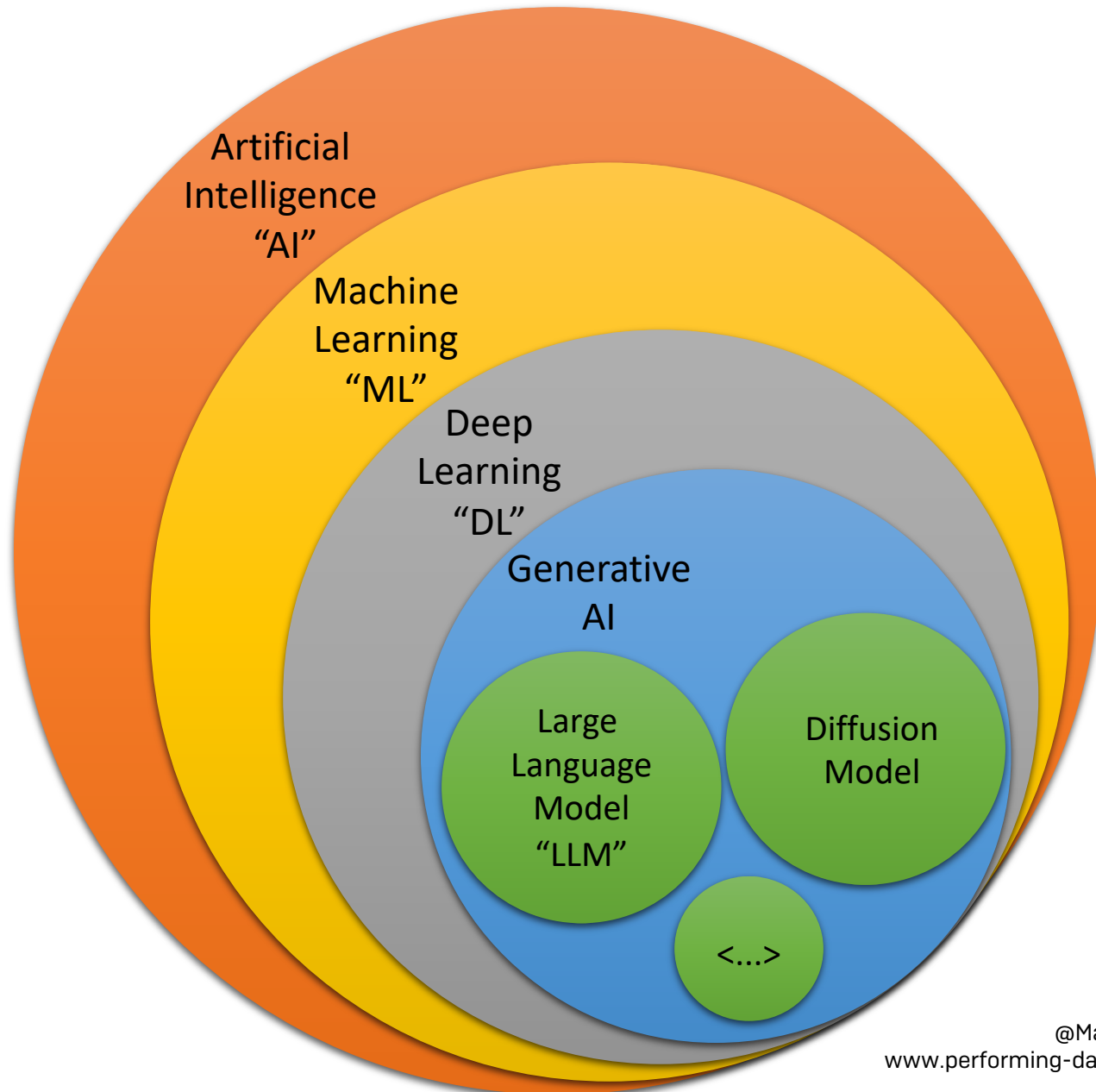
BBB: Deep Learning



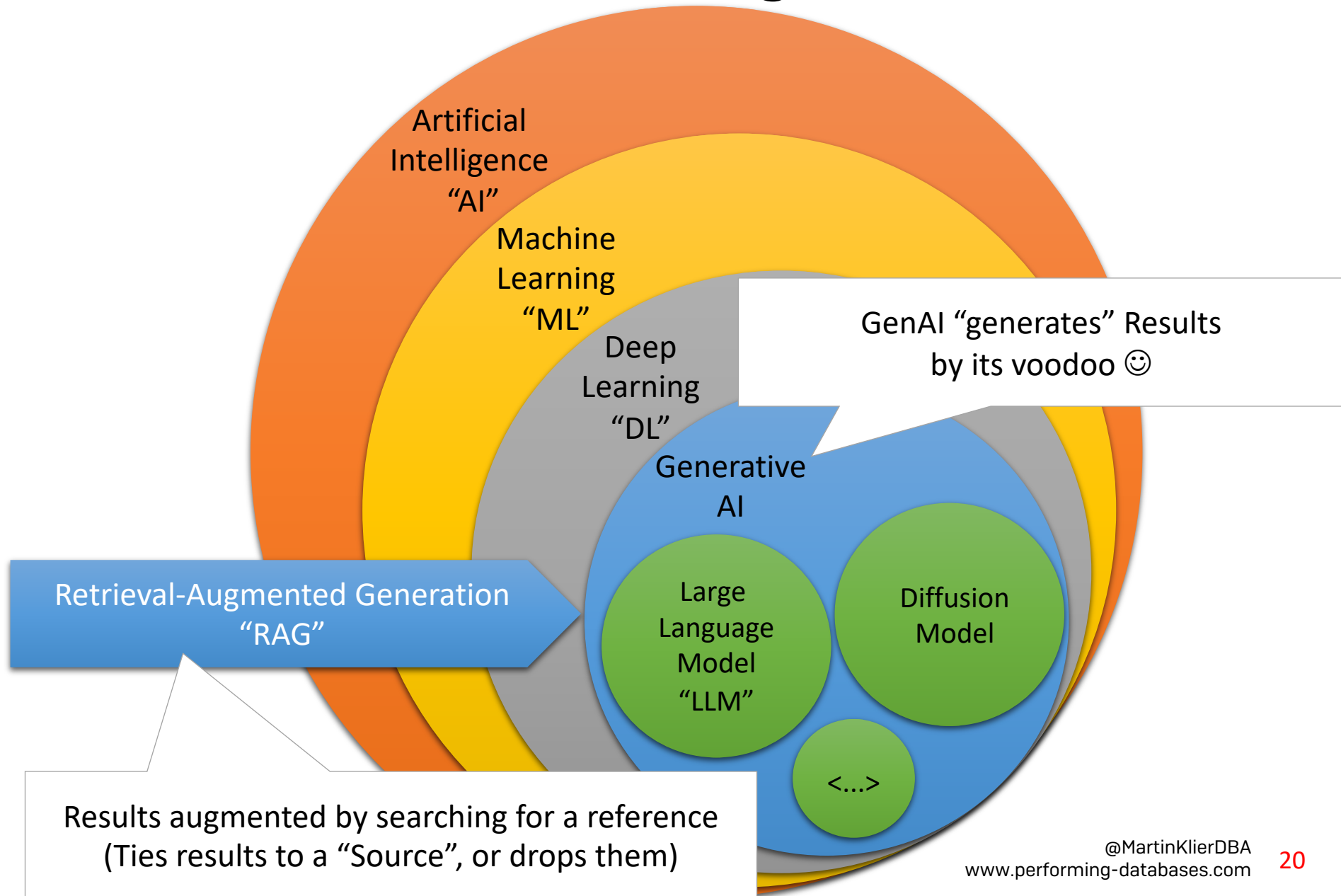
Picture: Wikipedia



BBB: Generative AI

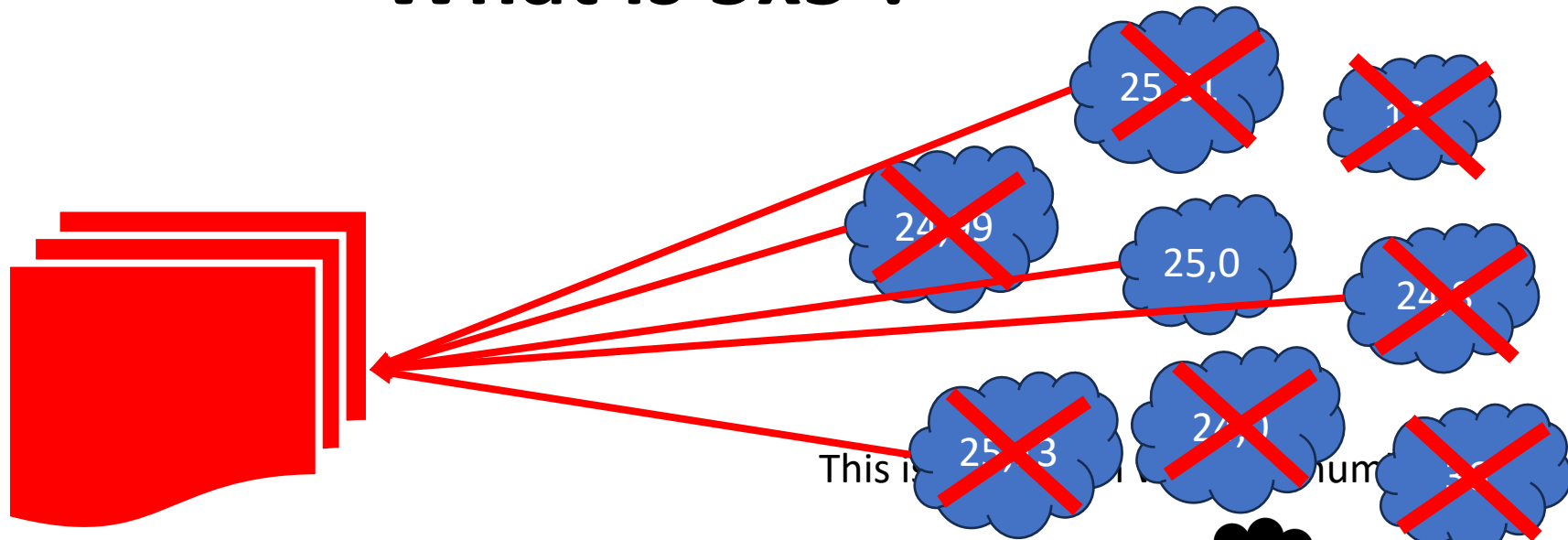


BBB: Retrieval-Augmented Gen.

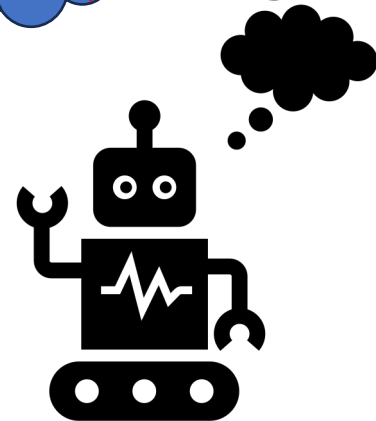


BBB: Retrieval-Augmented Gen.

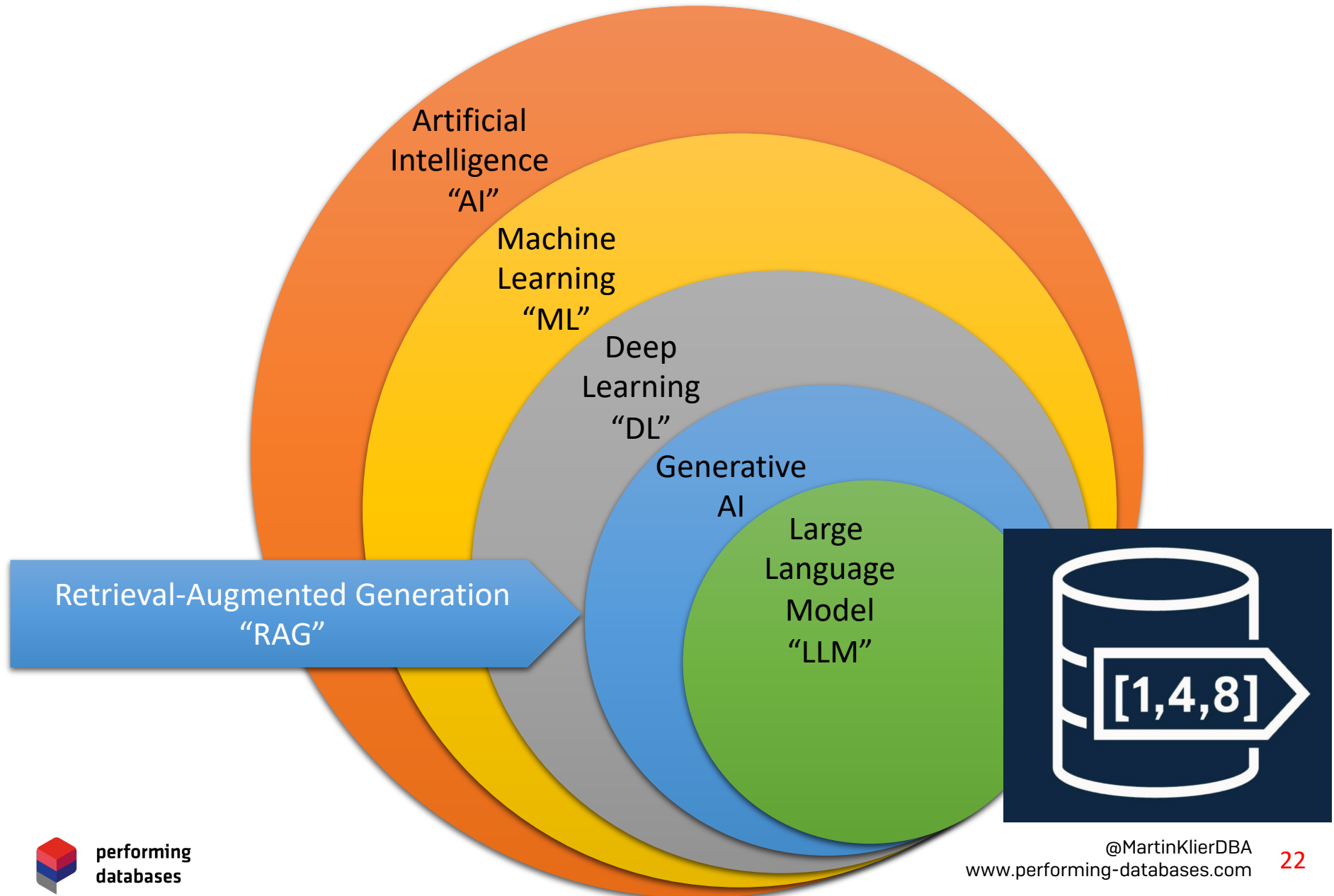
What is 5x5 ?



Machina intelligentia non calculat



Questions?



"Real stupidity beats artificial intelligence every time."

Terry Pratchett



Military Euphemisms aka "Professionalism"

Very Basic Terms

Military
Policy



Doctrine

“Military Abilities”

Warfare

“What Kind of War”

Strategy

“The Big Goals”

Rules of Engagement

Operational
Art

“Efficient use of Forces”

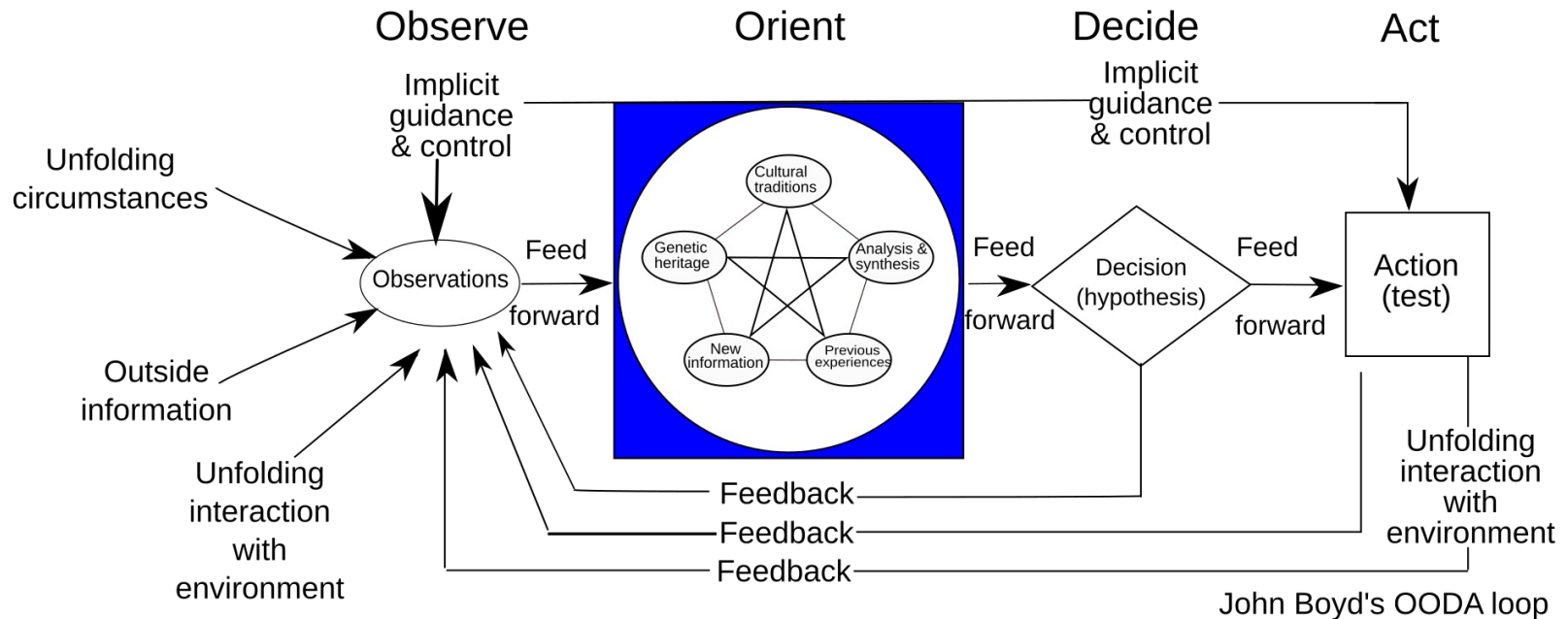
Tactics

“Implementation”

Decision Making

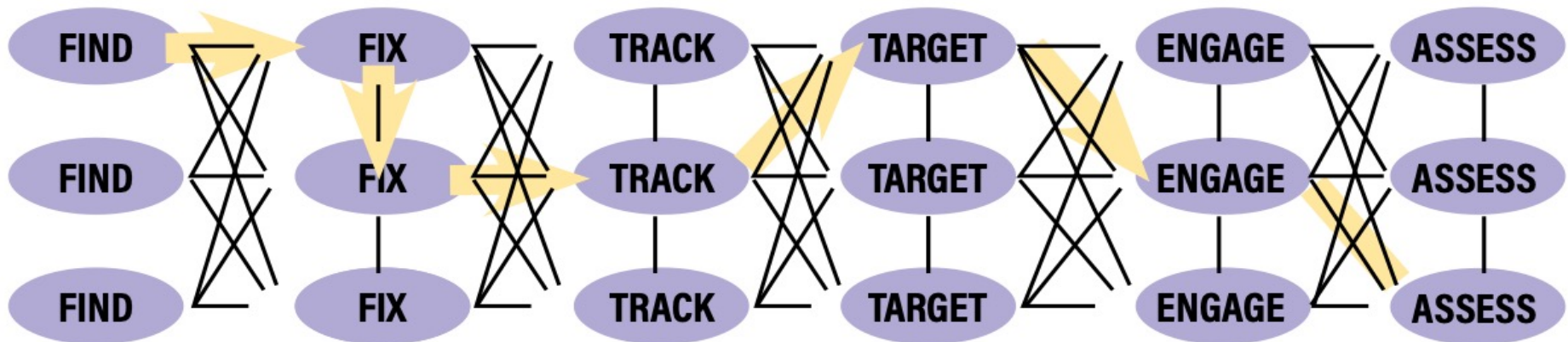
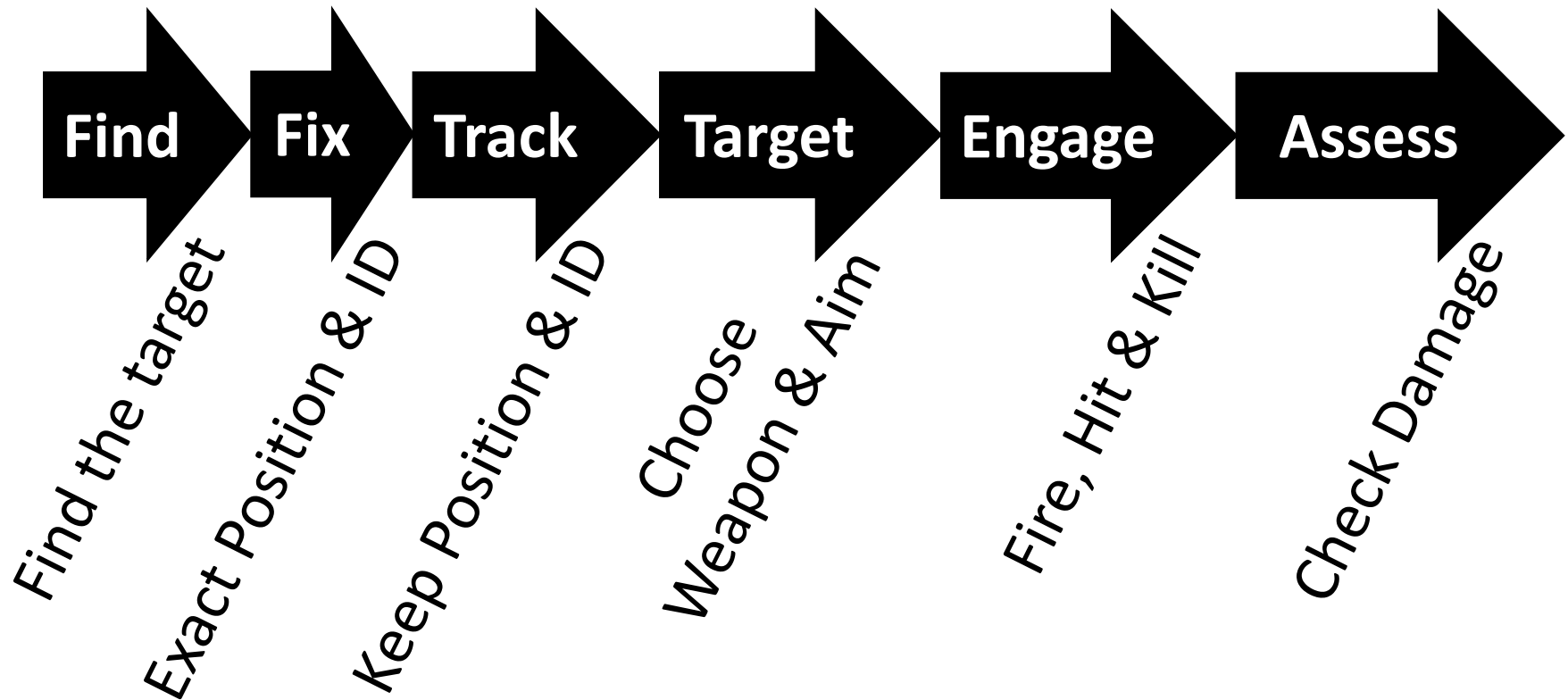
not only in Military

Observe-Orient-Decide-Act

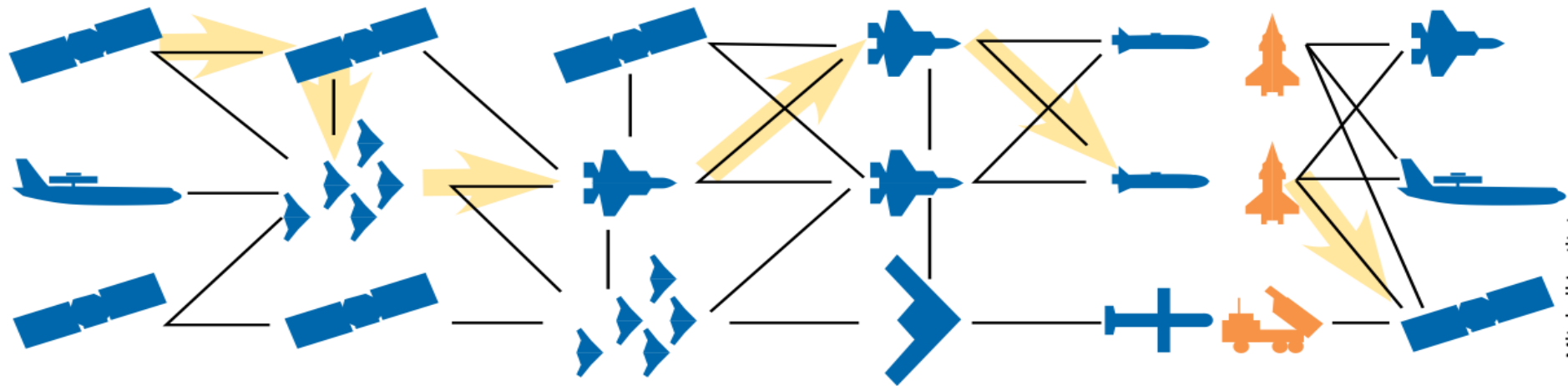
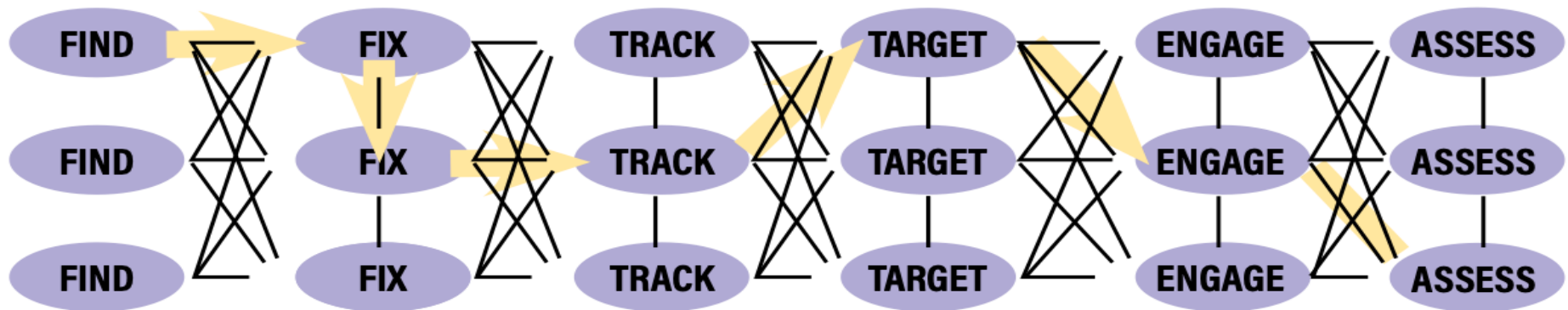


"OODA-Loop"

The Kill Chain (F2T2EA)

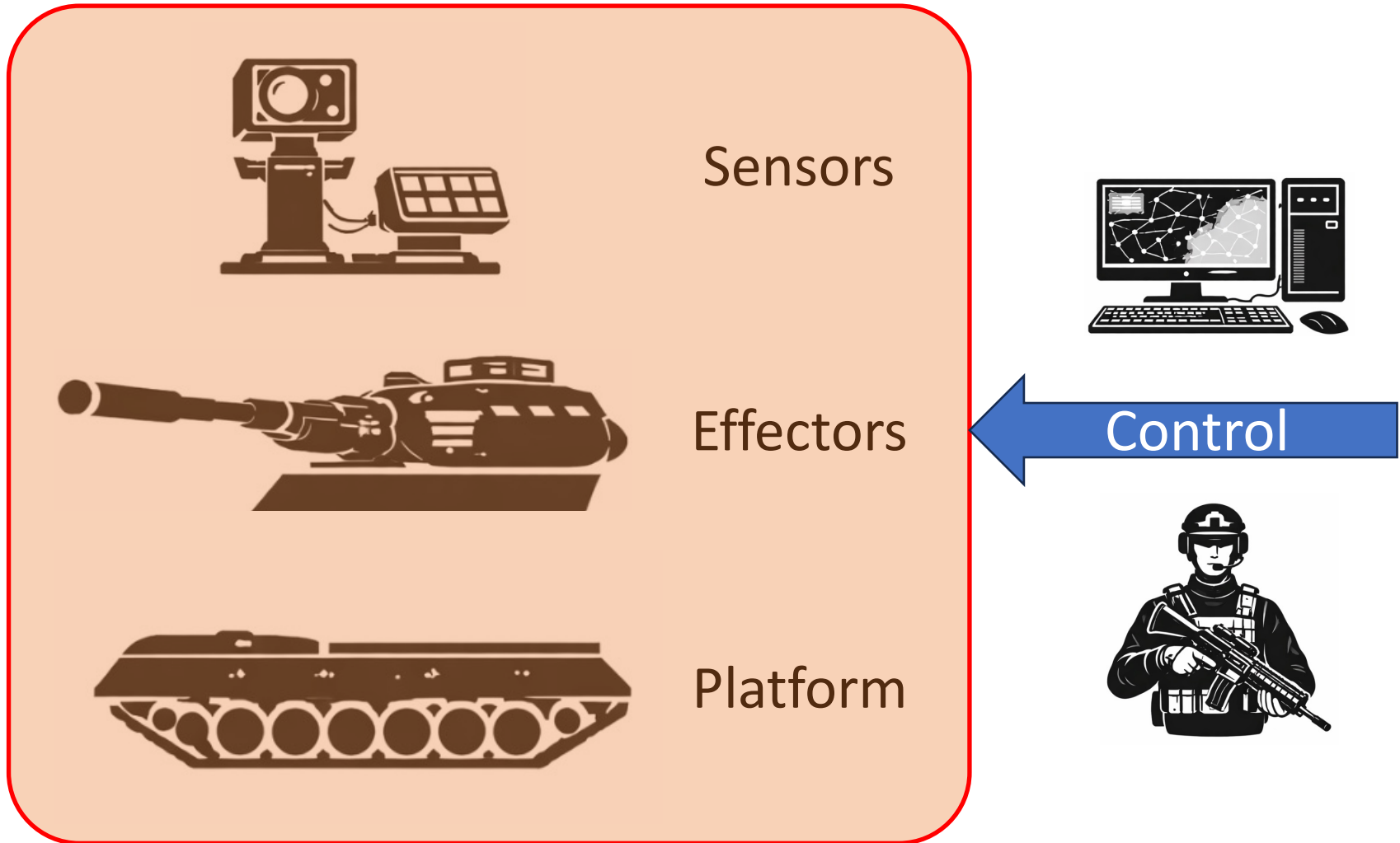


The Kill Chain (F2T2EA)





Weapon System



Seamless Integration

Autonomous Weapon System



Sensors



Control



Effectors



Platform



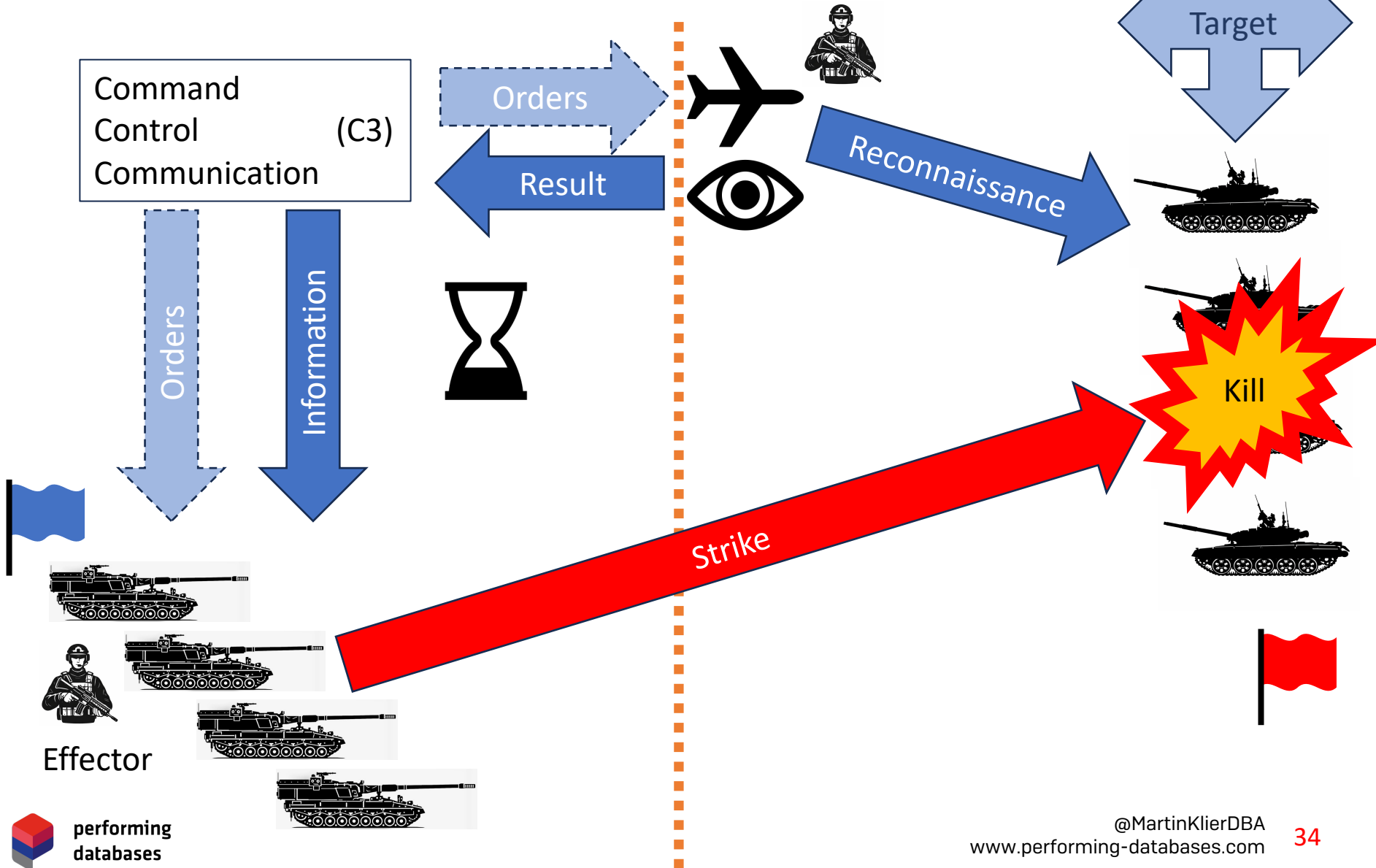
Seamless Integration

What is

“Meaningful Human Control”

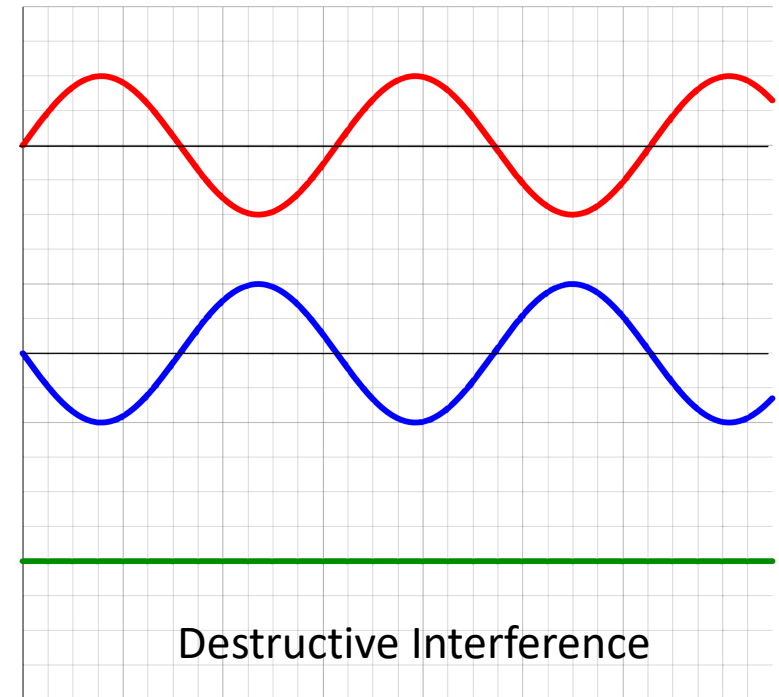
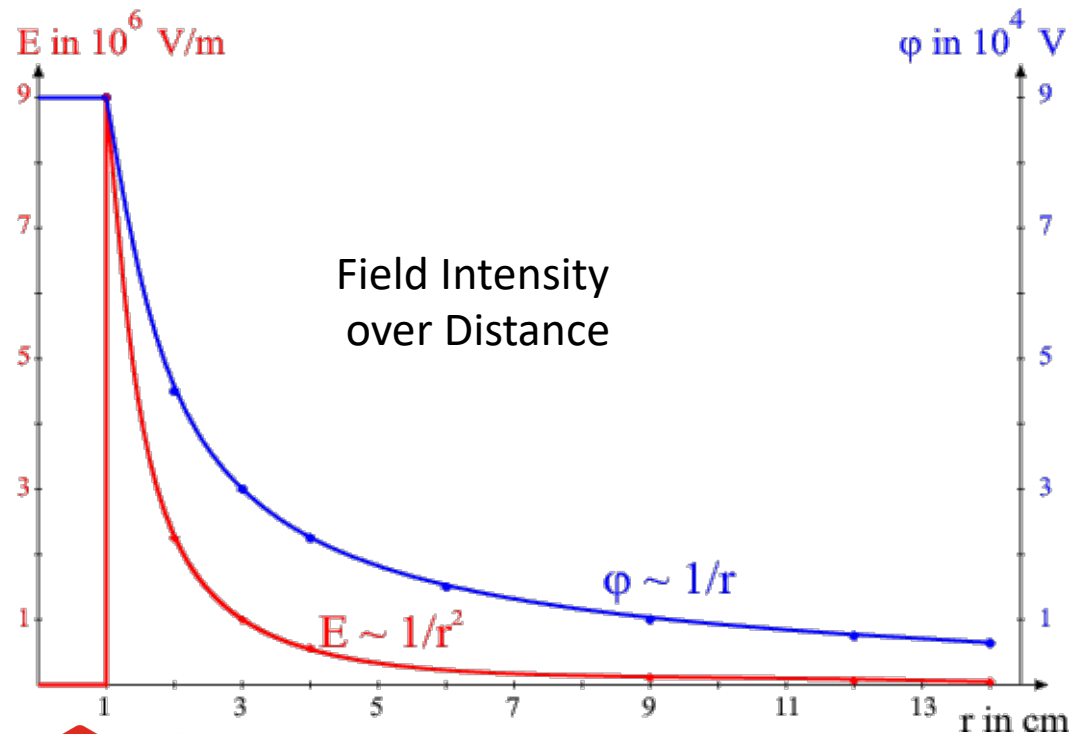
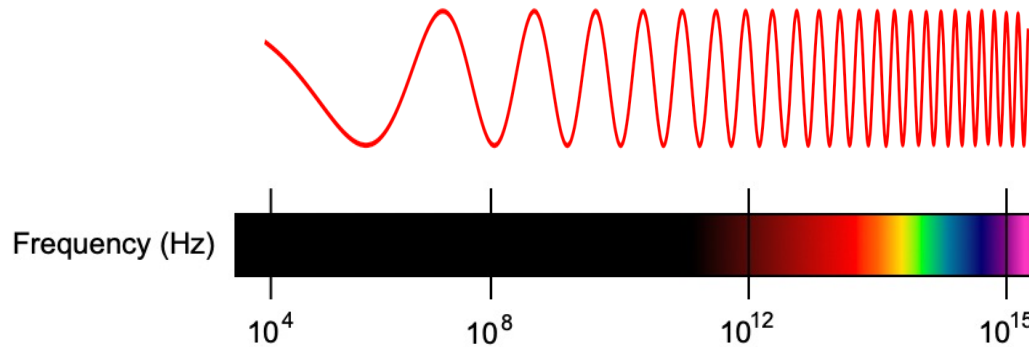
Operational / Tactical Level

“Implementation by Efficient use of Forces”

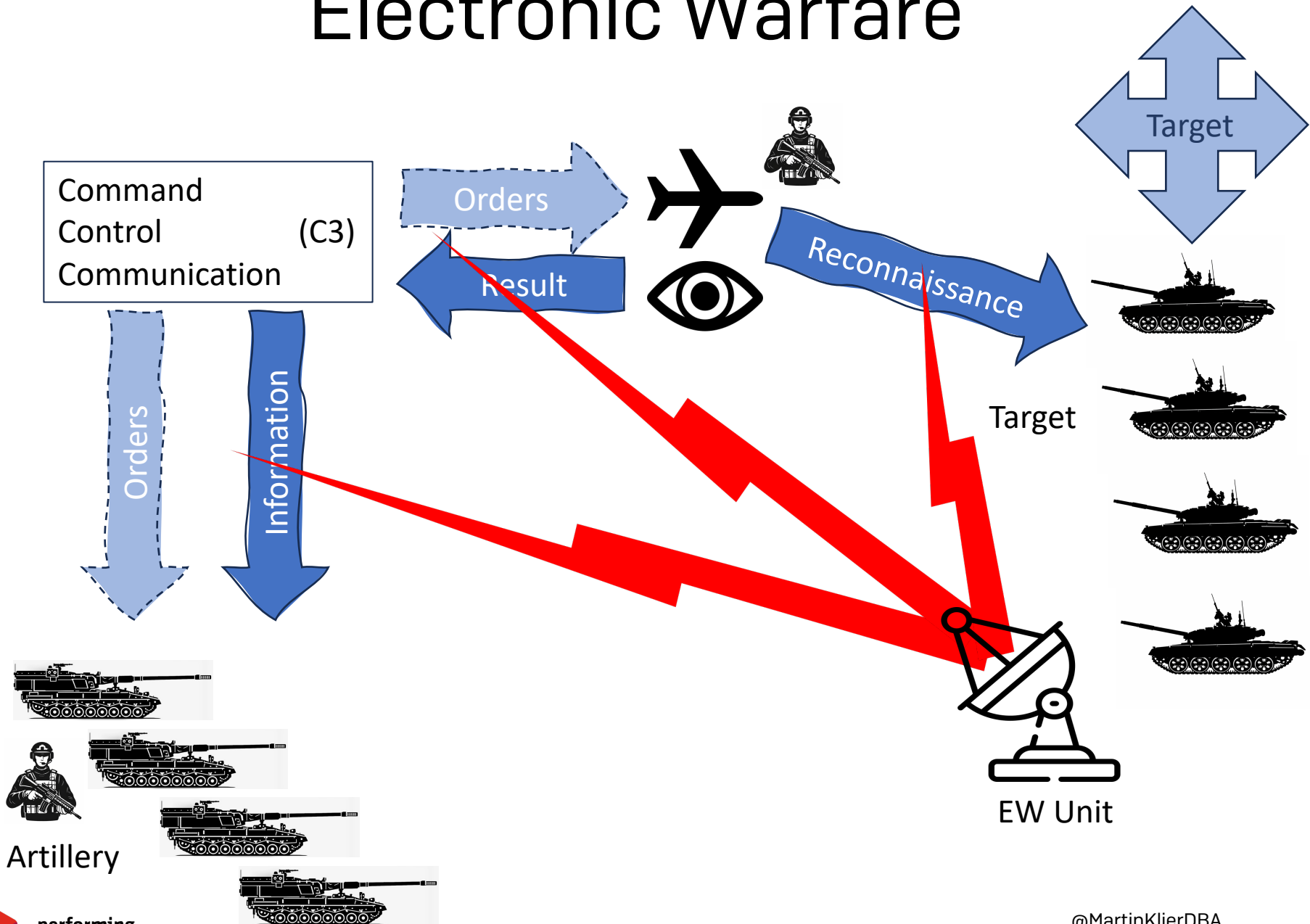


Electronic Warfare

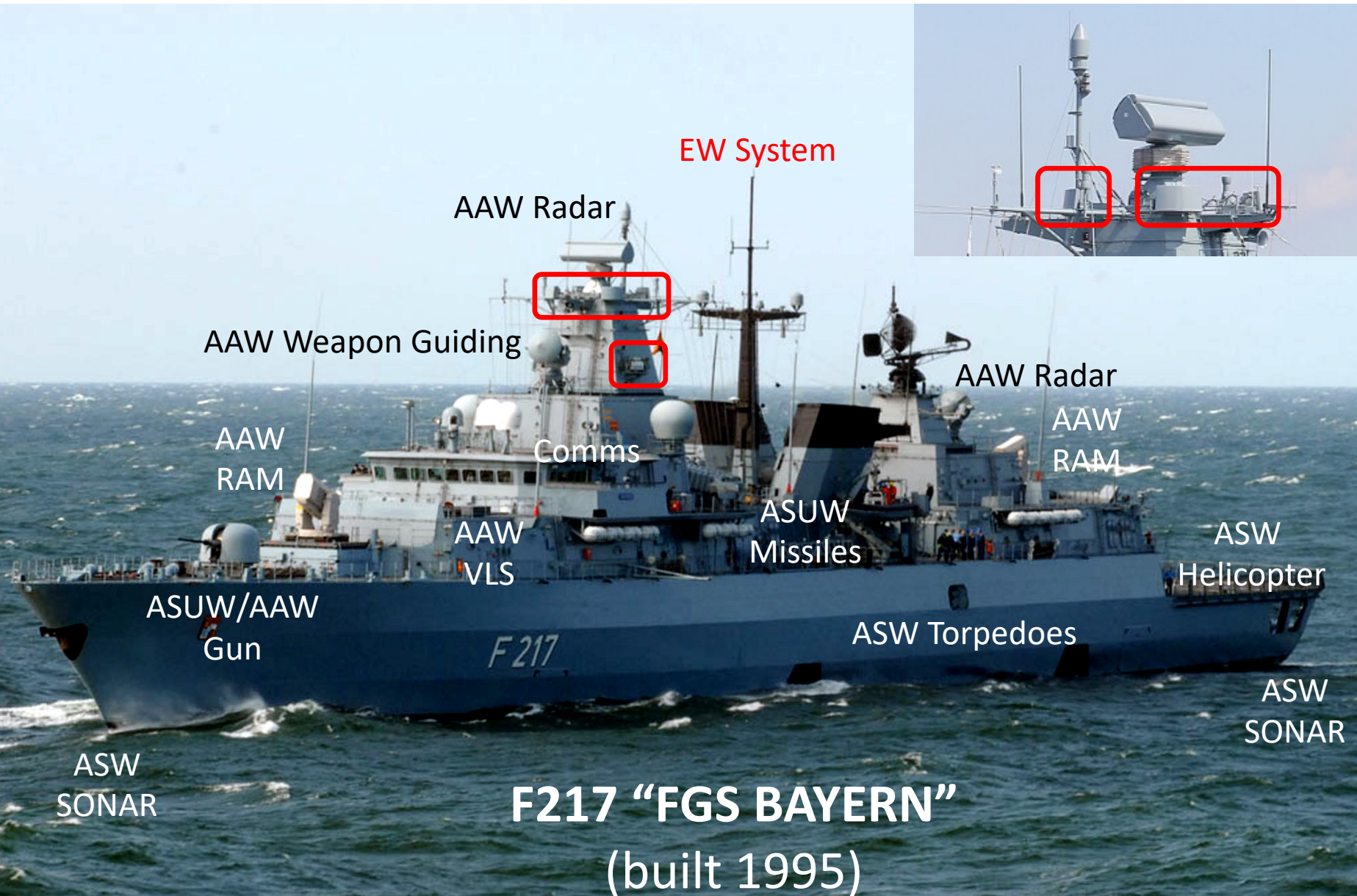
Battling in the Electro-Magnetic spectrum, including light (LASER)



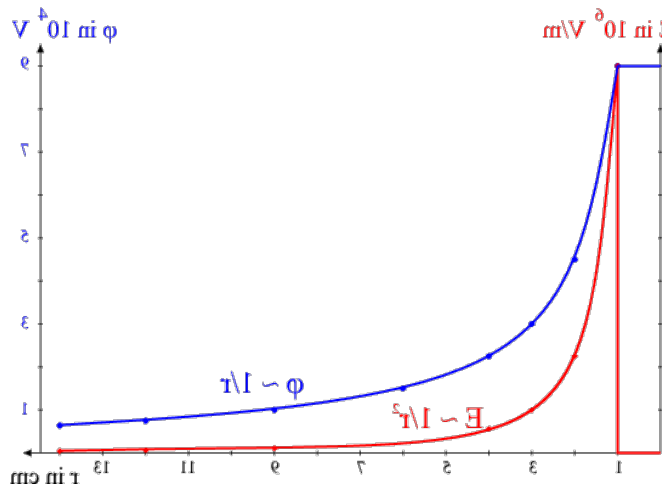
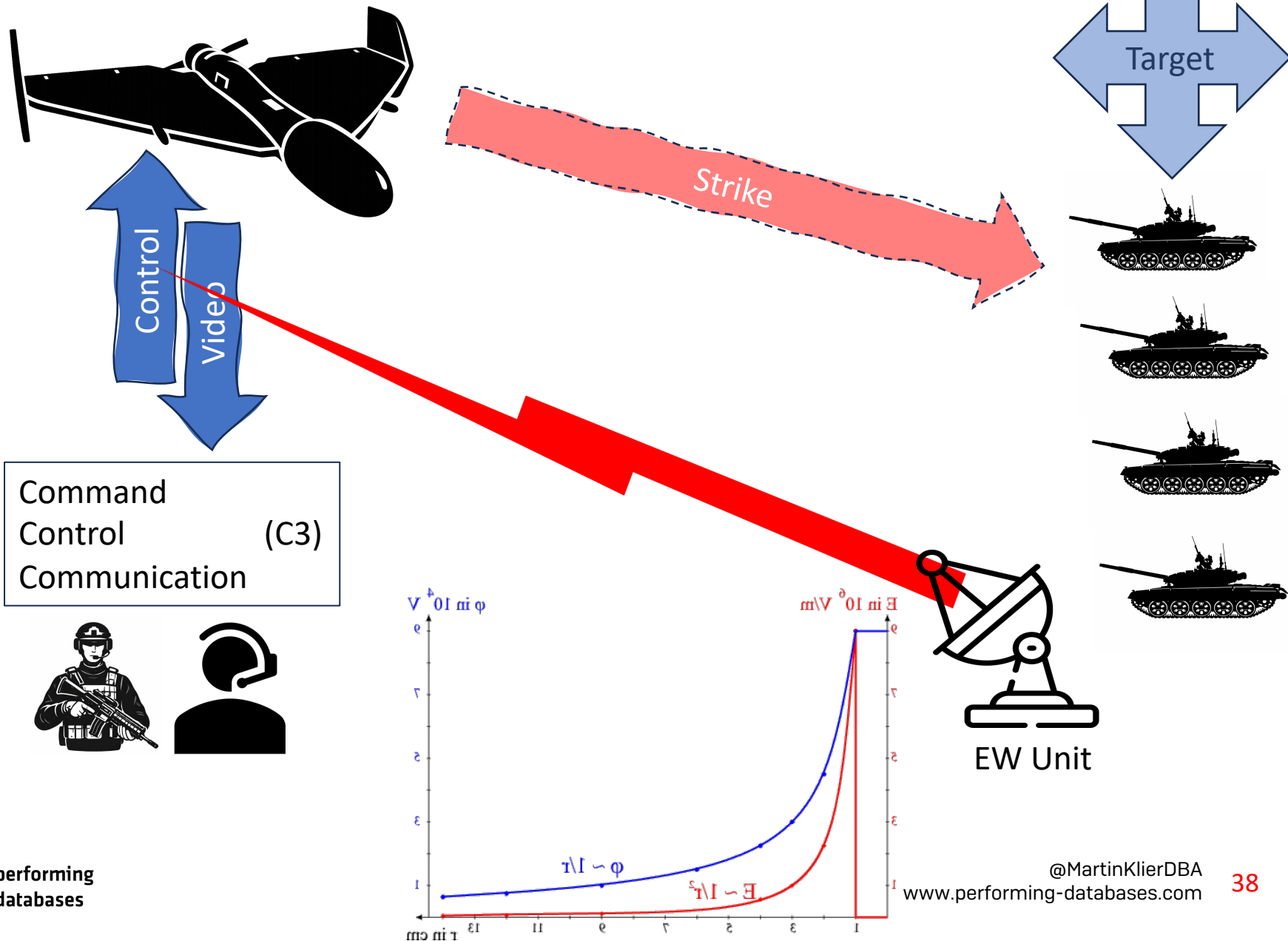
Electronic Warfare



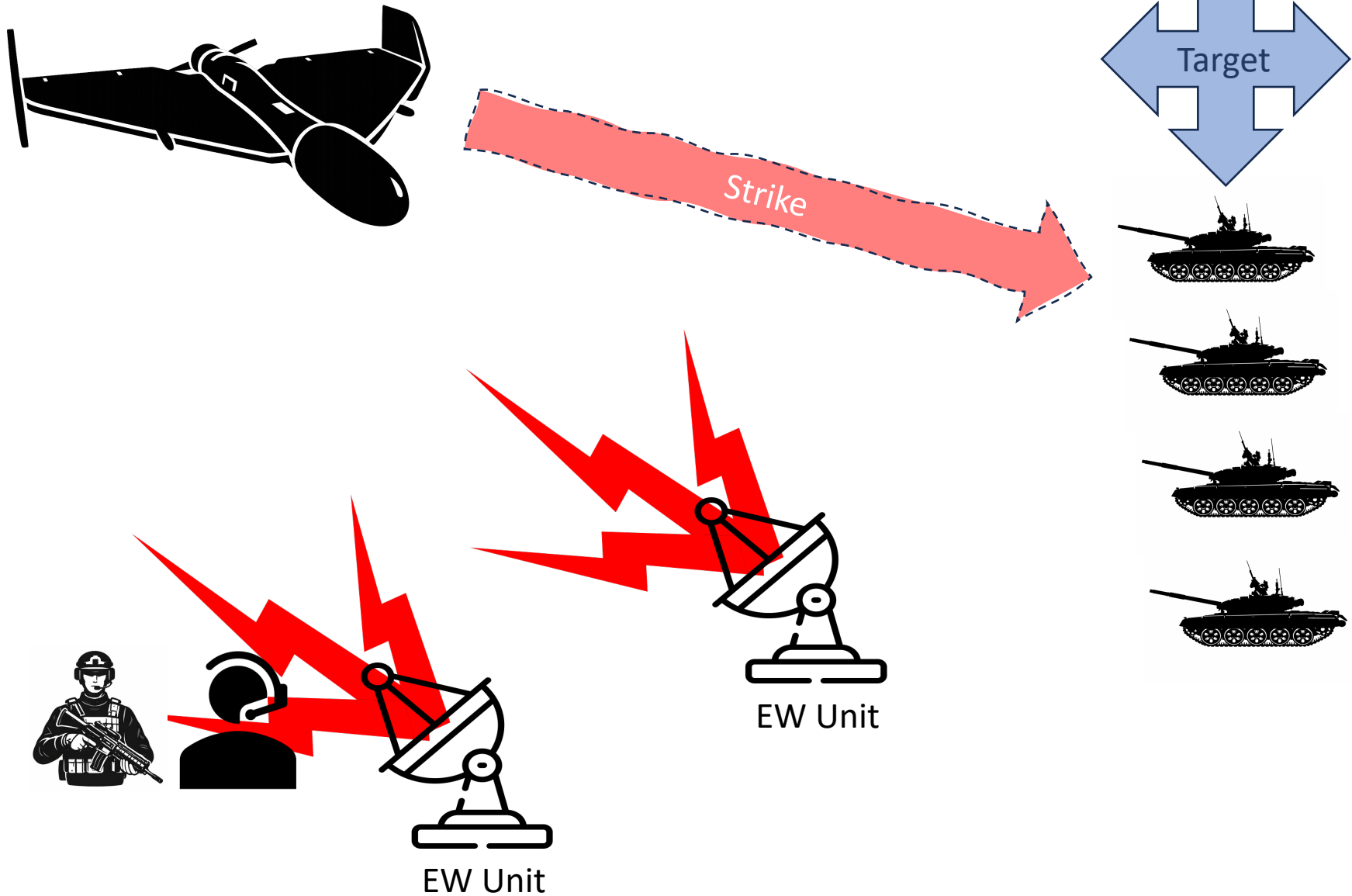
Electronic Warfare



Drones vs. Electronic Warfare



Drones, Cut Off



Drones, Cut Off



Drones, Cut Off



ID Problems

Friend or Foe?



1 2 3 4 5 ?

Note to self:
RAG failed... ☹️

	Wheels	Turret
Russian	6	round
NATO	7	angular



1 2 3 4 5 6 7



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ID Problems

Friend or Foe?

Leopard 2A8



	Wheels	Turret
Russian	6	round
NATO	7	angular

Russian T-90

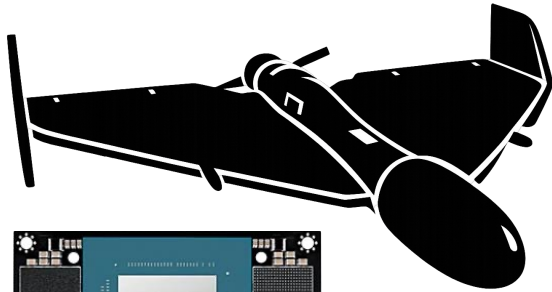
Very helpful ...

and decision TIME is critical!

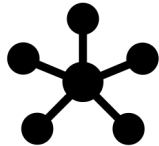


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databases

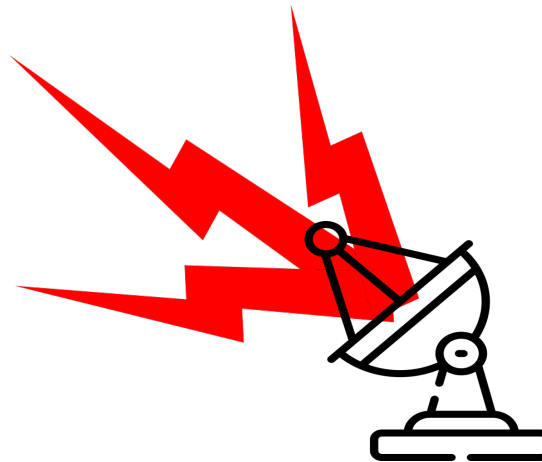
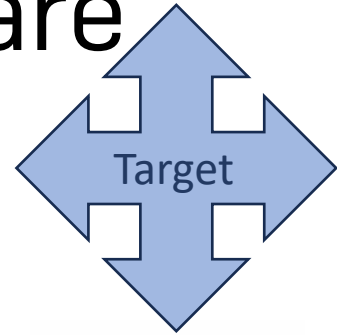
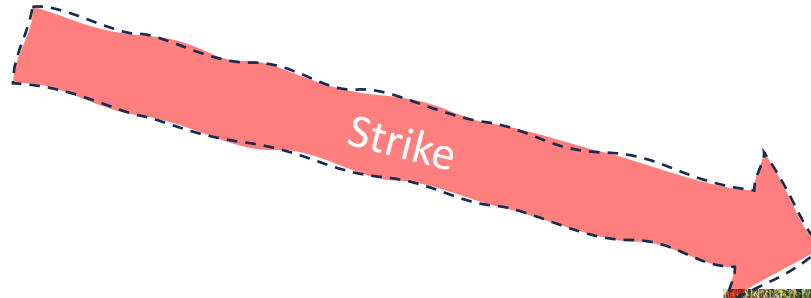
Drones vs. Electronic Warfare



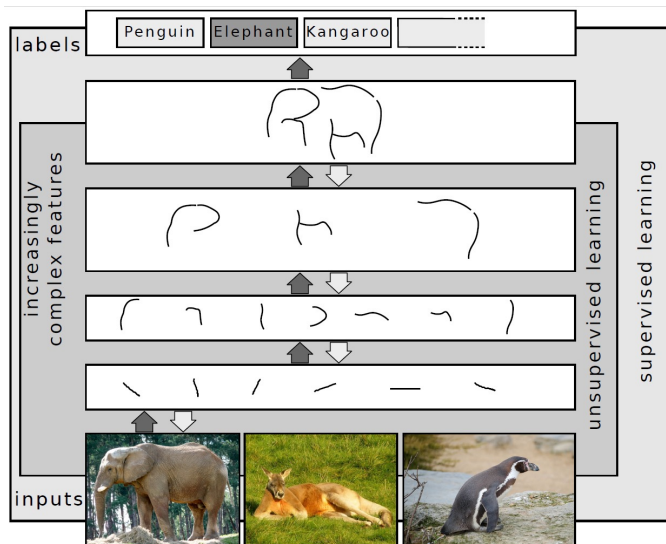
Nvidia Jetson Orin



Data
+
Models

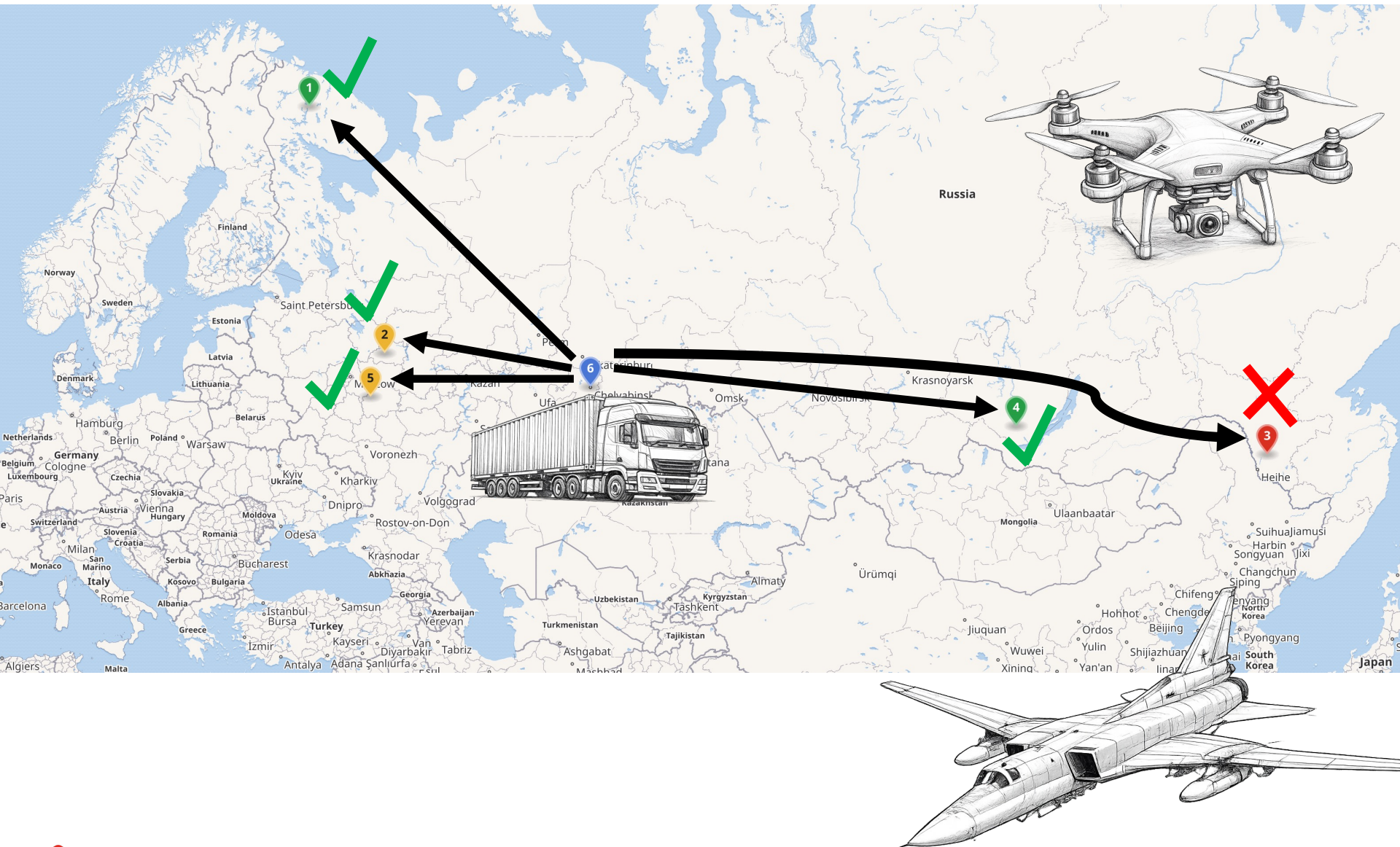


EW Unit

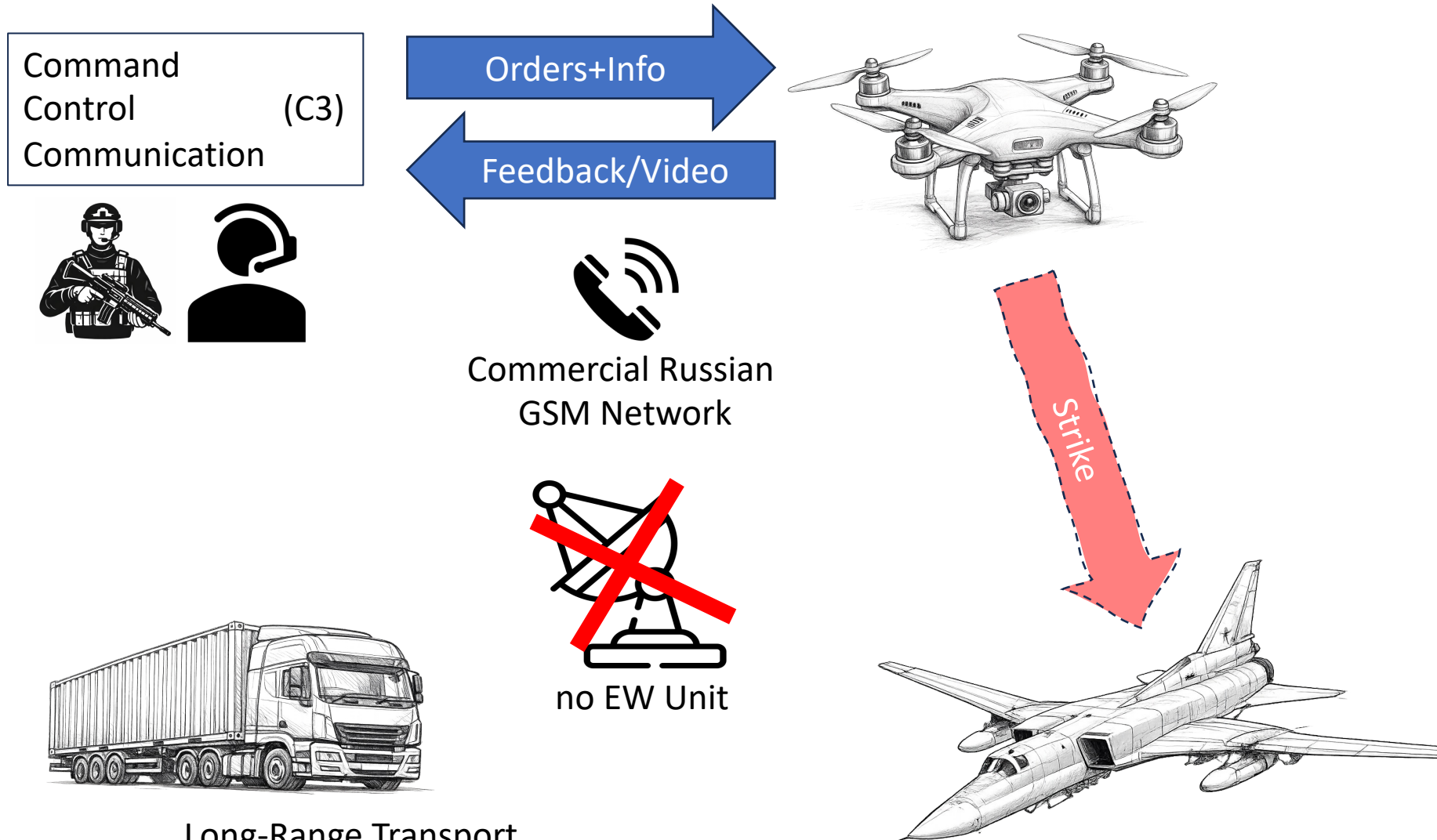


What is "Dual Use"

Operation Spiderweb



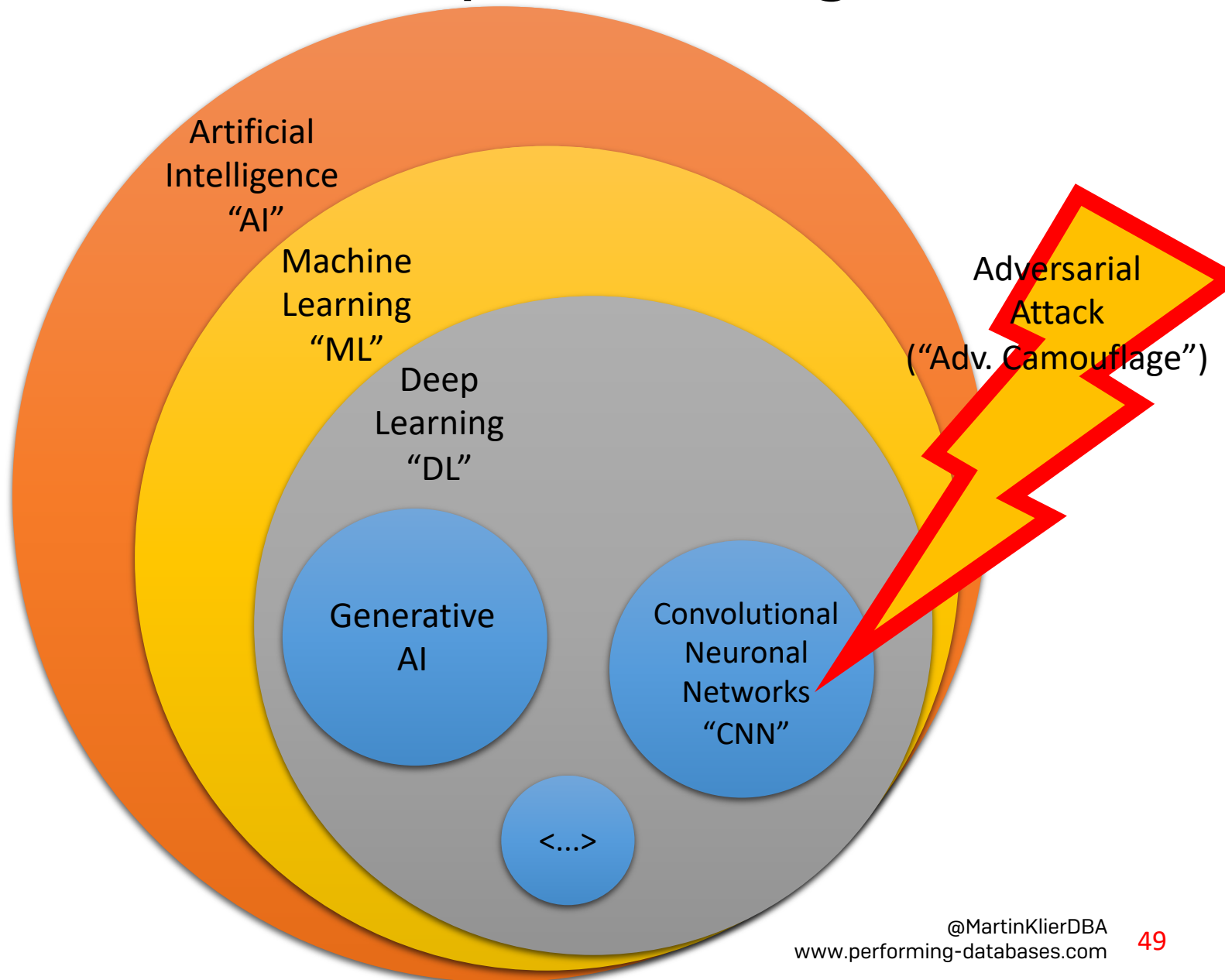
Operation Spiderweb



Operation Spiderweb



BBB: Deep Learning



Adversarial Camouflage

- Exploit pattern recognition:
Disturb the classification by unusual shapes, textures, clutter
- Create misleading signals:
Wrong classification by elements that resemble other objects or background
- Manipulate key features:
Lead to misidentification by changes in contrast, edges, or surface patterns
=> shift the features the algorithm extracts (e.g., shapes, contours)
- Reduce confidence:
Trigger false-negatives by hiding important features
(occlusion, shadows, irregular coverings)

Adversarial Camouflage





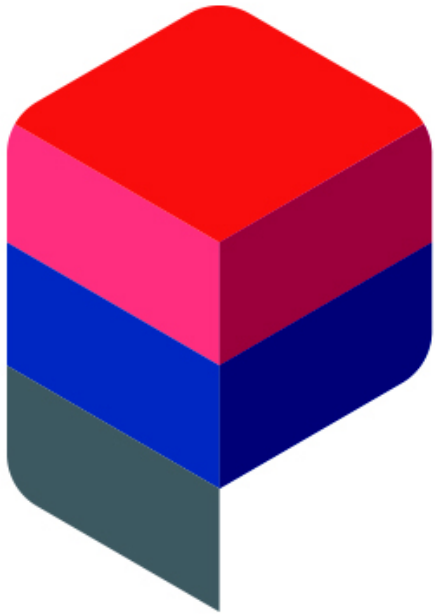
What is

“Ex-Post Assessment”

War is terrible.

Never forget the humans.

Thank you for your attention.



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