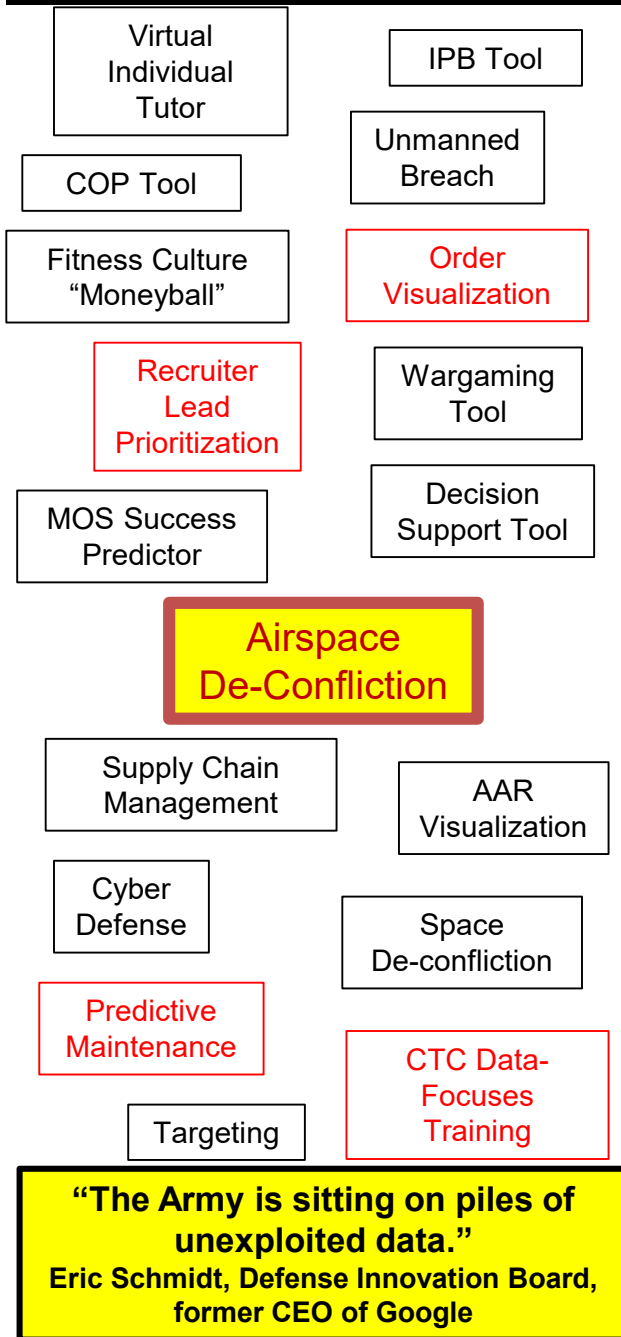


AI Quick Win Possibilities



AI Terms

Artificial neural network (ANN)

An algorithm that attempts to mimic the human brain, with layers of connected "neurons" sending information to each other.

Black box algorithms

When an algorithm's decision-making process or output can't be easily explained by the computer or the researcher behind it.

Computer vision

The field of A.I. concerned with teaching machines how to interpret the visual world — a.k.a., how to see.

Deep learning

ANNs that have multiple layers of connected neurons. This makes the process deep compared to earlier, more shallow networks.

Embodied A.I.

A fancy way of saying "robots with A.I. capabilities."

Few-shot learning

Most of the time, computer vision systems need to see hundreds or thousands (or even millions) of examples to figure out how to do something. One-shot and few-shot learning try to create a system that can be taught to do something with far less training.

Generative adversarial networks

Also called GANs, these are two neural networks that are trained on the same data set of photos, videos or sounds. Then, one creates similar content while the other tries to determine whether the new example is part of the original data set, forcing the first to improve its efforts. This approach can create realistic media, including artworks.

Machine learning

Systems that learn from data sets to perform and improve upon a specific task. It's the current area of A.I. experiencing the biggest research boom.

Explainable A.I. (X.A.I.)

A.I. that can tell or show its human operators how it came to its conclusions.

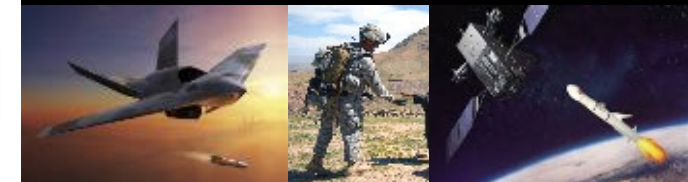
Weak A.I.

Our current level of A.I., which can do just one thing at a time, like play chess or recognize breeds of cats. The opposite would be strong A.I., also known as artificial general intelligence (A.G.I.), which would have the capability to do anything that most humans can do.

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Artificial Intelligence and Machine Learning



Operational Environment Enterprise

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For More Information

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U.S. ARMY TRADOC

TRADOC Postured to Lead Army AI Now!

- ❖ AI is a current force capability with immediate applications.
- ❖ Quick wins are possible now!
- ❖ AI, if properly adopted, will change the way we fight, not just automate existing processes
- ❖ AI essential for MDO's Speed and Complexity

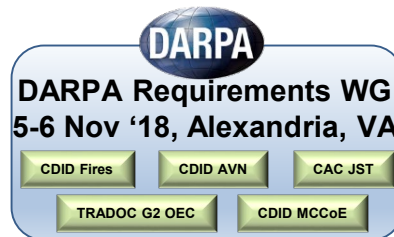
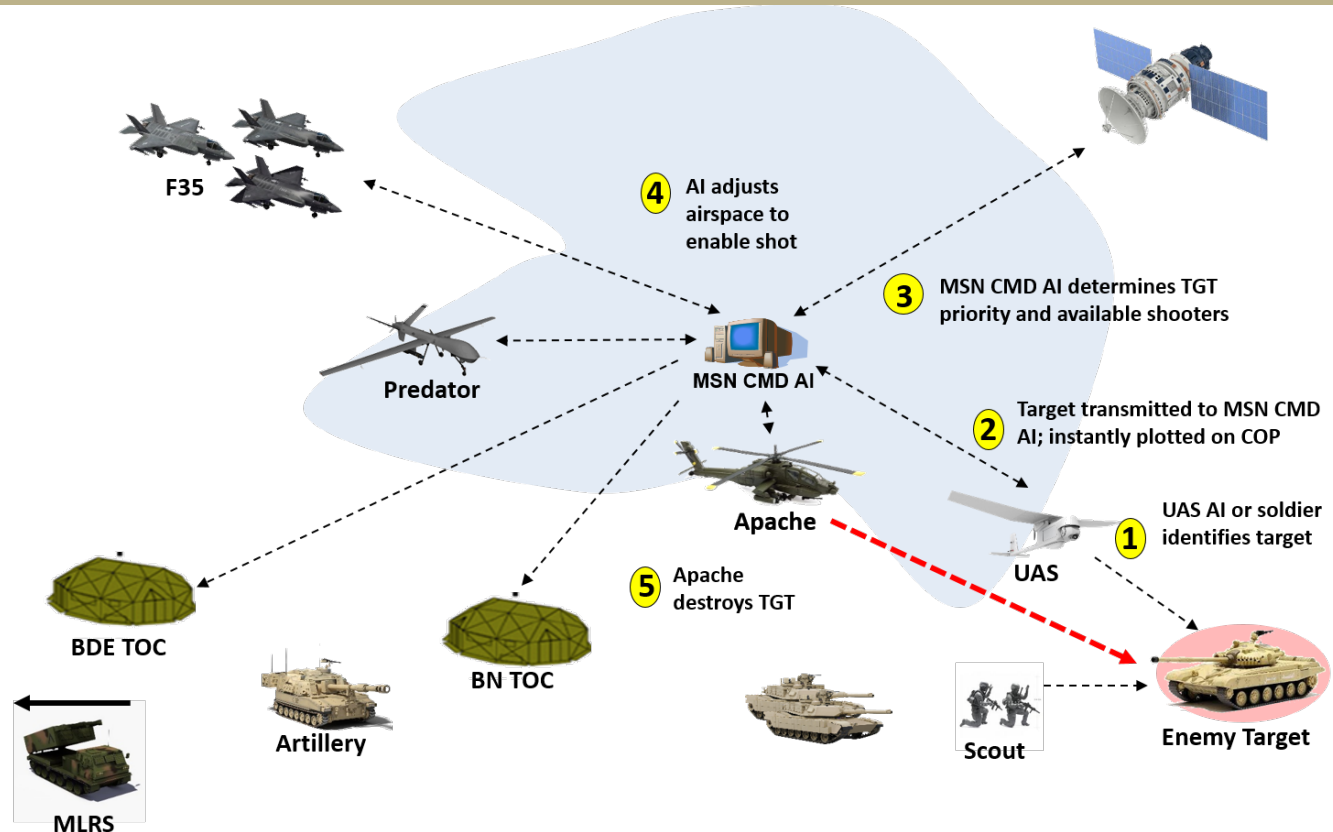


Autonomous AI Warfare (War College Study)

- ❖ Span of control not limited by human capabilities.
- ❖ Instantaneous re-tasking and reorganizing.
- ❖ Mass will dominate.
- ❖ Speed of operations will dramatically increase.
- ❖ AI will be unpredictable and innovative.
- ❖ Separation of domains will end.

Artificial Intelligence and Multi-Domain Operations

One Scenario... Airspace De-Confliction



DARPA
 Funding and
 Research

**Field
 Testing/
 Analysis**



Strategy requires reliable data, appropriate AI/ML tools, proper network and a culture change