Urban Reconnaissance through Supervised Autonomy: Interim Insights of an LME Inclusion Effort

A presentation at the
Policy and Ethics of Intelligent Autonomous Systems
Technical Exchange Meeting
Autonomy Community of Interest
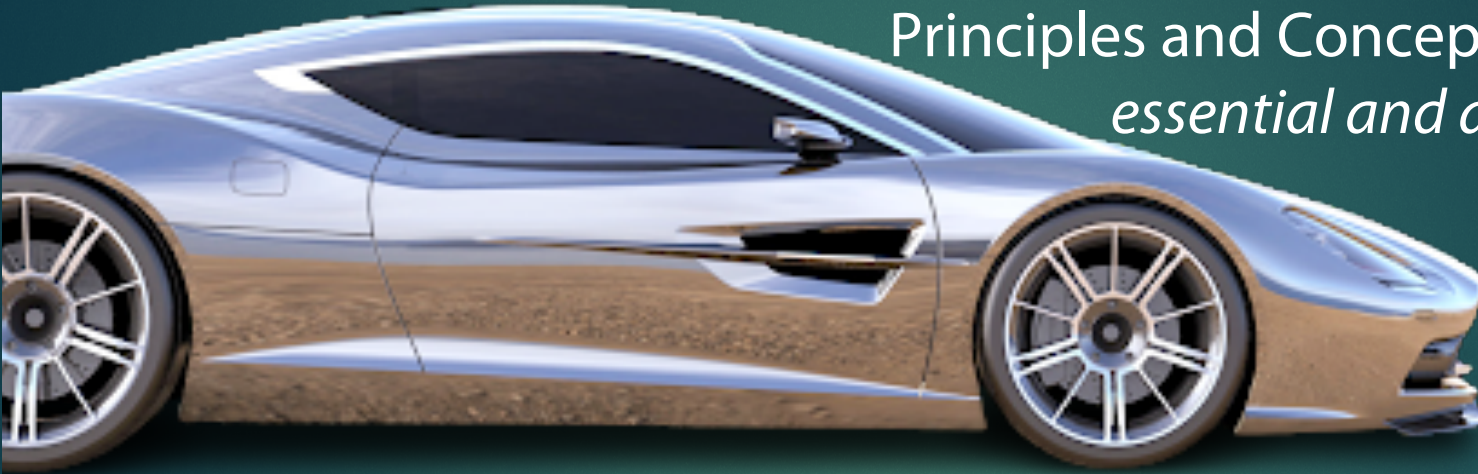U.S. Office of the Secretary of Defense
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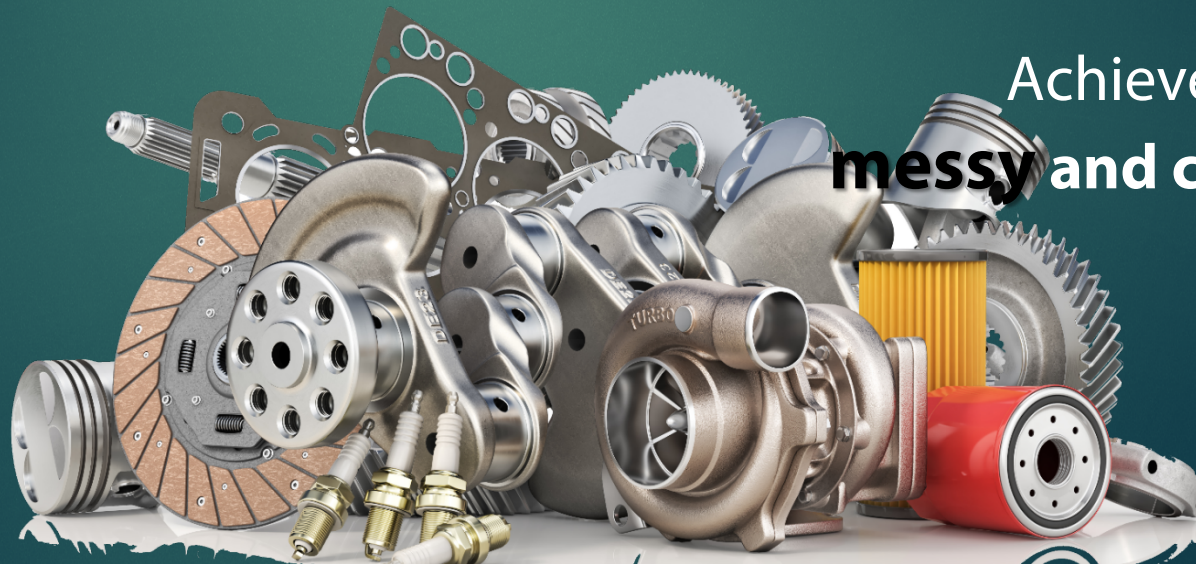4850 Mark Center Drive ● Alexandria, Virginia 22311-1882

As a research staff member of the Institute for Defense Analyses, **Brian Williams** has lead DARPA's URSA LME effort since its inception in 2018.

Views, opinions, and findings expressed here should not be construed as representing the official position of either DARPA or the Department of Defense.

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Looking at the problem through different lenses

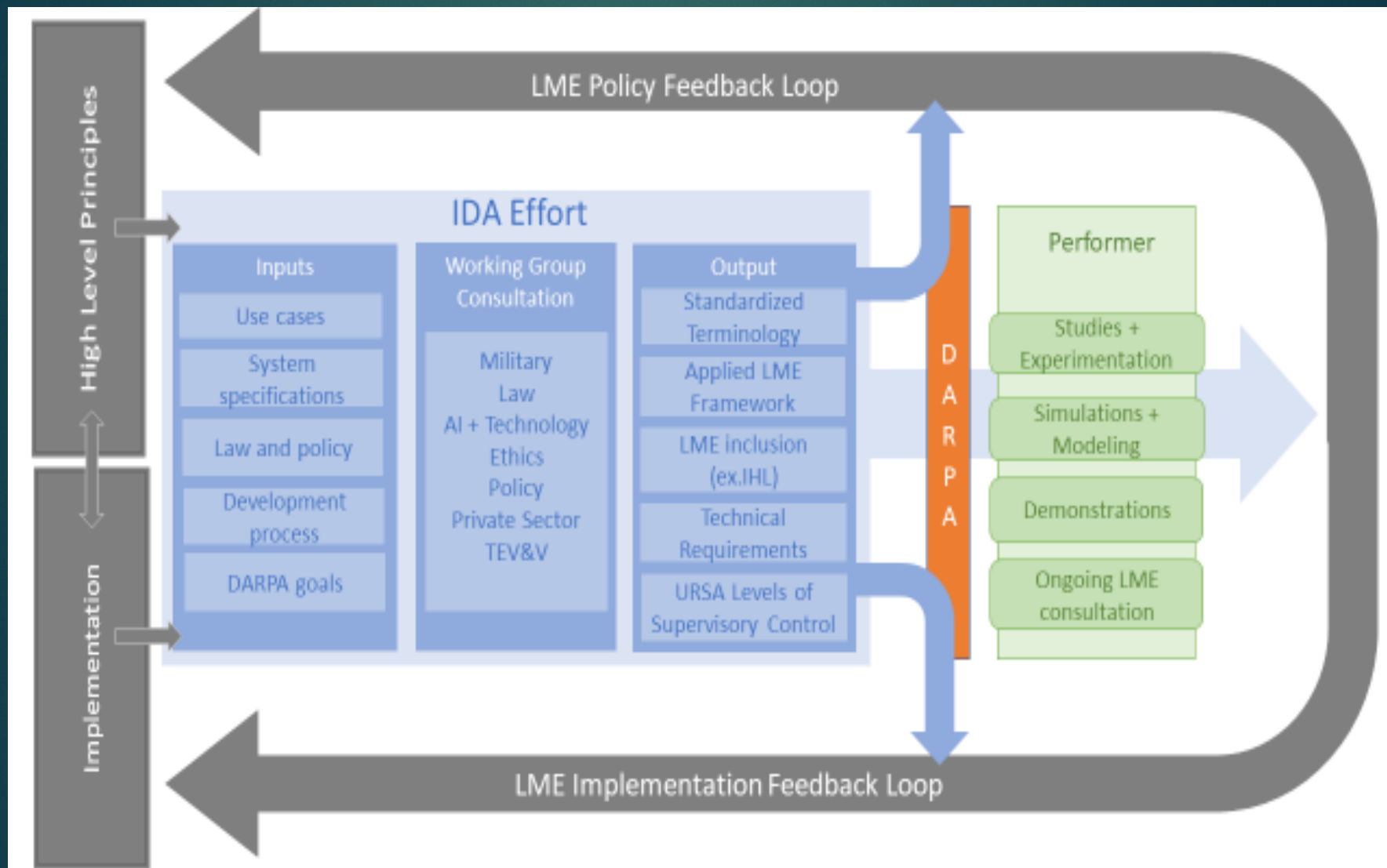Principles and Concepts are
essential and attractive

Achievement is
messy and complex

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What is unique about URSA?

- It is in its simplest form, URSA is Reconnaissance supported by AI Enhanced Autonomous Capability (AIEAC)
- It focuses on supporting the mission commander by assisting in acts of distinction in the urban population. It helps to filter the "human noise" in the population, which allows the warfighter to focus on persons of interest.
- It is **not** only a **passive** reconnaissance sensing system—it **actively engages** with the population to help with population distinction.
- It is **not** intended as a **lethal weapon** system, yet it could cause Harm.
- It is **not** stationary, but on the move.
- It has evolved from
  > — an AI autonomy-centric idea to a human-centric Man/Machine partnership;
  > — a concept of Legal/Moral/Ethical as a constraint to LME as an enabler to the virtuous warfighter

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| Our View of the Task

| **7** Things that distinguish the DARPA/IDA LME Effort

1   The program's understanding of LME inclusion is grounded in the realities of a system's applications and use.

2   The effort's independence from other internal project pressures and processes.

3   The effort's freedom and agility to quickly adapt to the changing needs of the program.

4   The continuity of the high-caliber and diverse skills and <u>viewpoints</u> of the consulting Working Group. Opposing views included.

5   The internal staff's continuity and commitment in their dedication to exploring the topic.

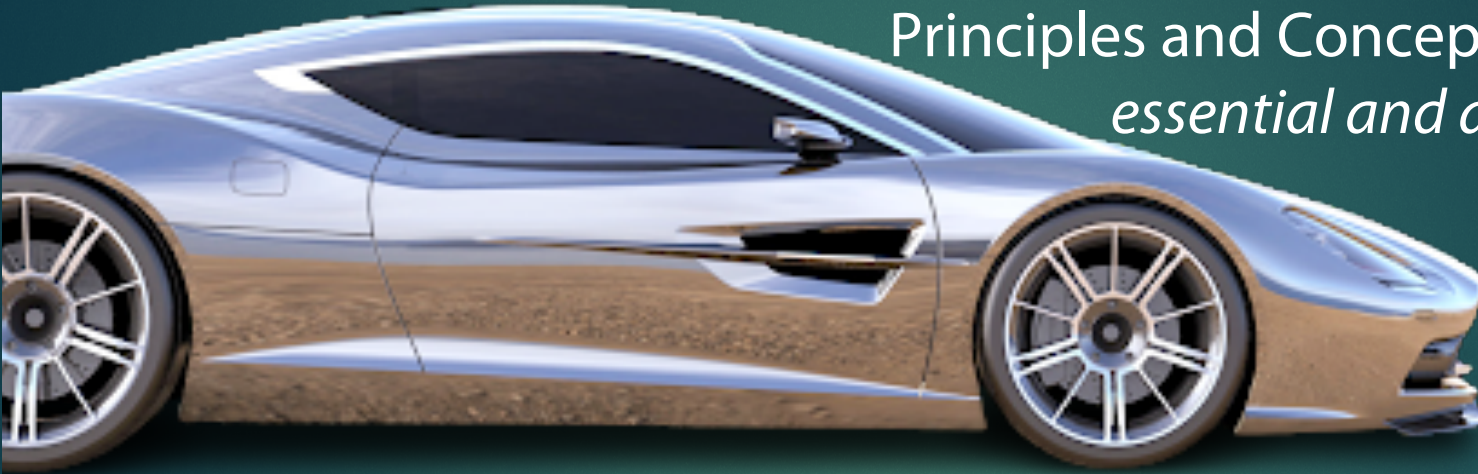6   The ability to reach back into IDA for subject matter expertise.

and most importantly—

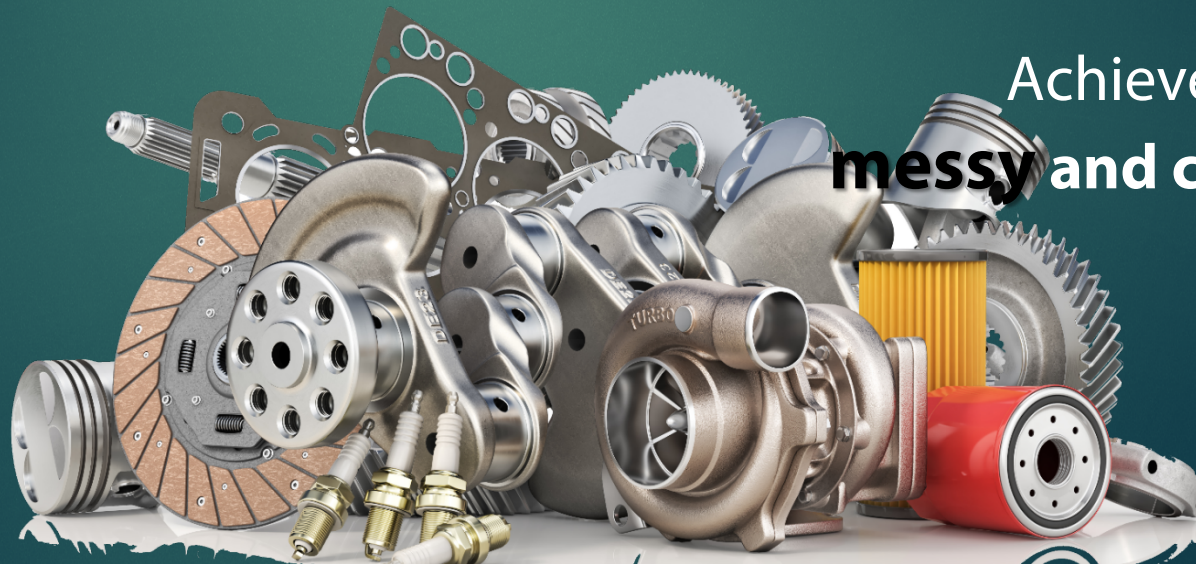7   The program sponsor's dedication to the topic.

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Lessons Learned

- Words are important—Do not assume you know what the other person is talking about. Maintaining an active glossary is essential.

- Traceability is critical—The capabilities process needs to be fully understood not by the designers/coders, but by all parties.

- Transfers of agency need to be explicitly understood between the machine and the human.

- Ideas and concepts for how the capability operates need to be continually challenged to consider the LME ramifications.

- Re-examine design and development processes
  - Early and Often, including human factors not just tech,
  - DevEthOps - embedding the process throughout
  - Crossing development responsibility seams,
  - Test and Measure, start thinking about this early in design; it will require more effort than you think.

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For further information you can contact—

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