APPLIED ENERGETICS

Directed Energy, Anywhere

FEBRUARY 2025

Company Presentation

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ADDITIONAL INFORMATION

Applied Energetics, Inc.'s internet address is www.appliedenergetics.com The company makes available, free of charge, all SEC filings at www.appliedenergetics.com. Its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8- K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, are available as soon as reasonably practicable after they are electronically filed or furnished to the SEC. You also may request a copy of each document at no cost, by writing or calling us at the following address or telephone number:

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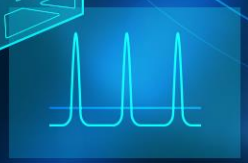
PROBLEM

Widely proliferating threats

Directed Energy, Anywhere

USPL SOLUTION

Optimal size, weight, and power



High value effects

LOCATION

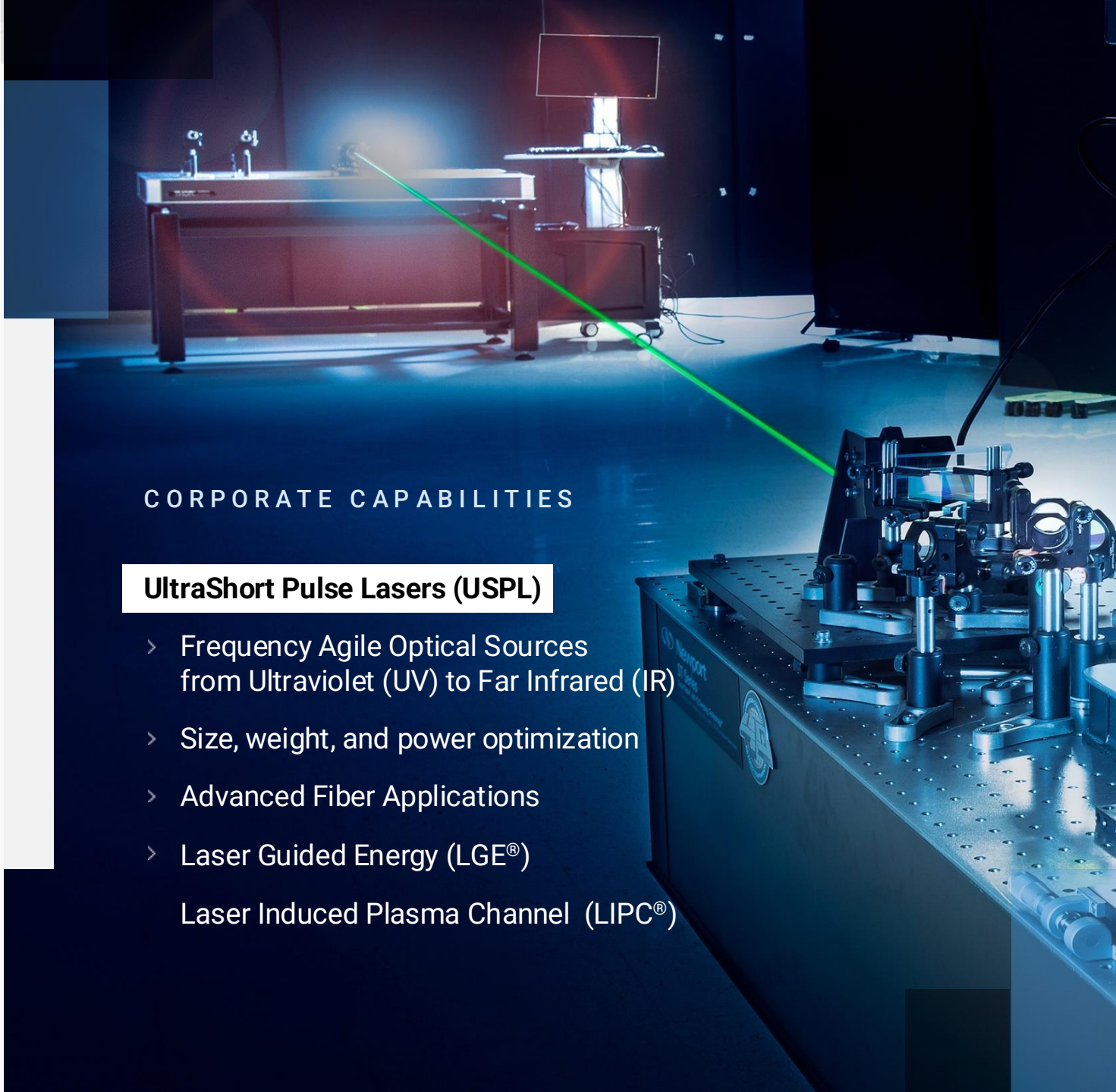
Mobile

Deployed

Fixed
(critical infrastructure)

MISSION

Innovating and shaping the future of directed energy technologies that defend our warfighters and critical infrastructure.



CORPORATE CAPABILITIES

UltraShort Pulse Lasers (USPL)

- Frequency Agile Optical Sources from Ultraviolet (UV) to Far Infrared (IR)
- Size, weight, and power optimization
- Advanced Fiber Applications
- Laser Guided Energy (LGE®)

Laser Induced Plasma Channel (LIPC®)

WHY INVEST IN APPLIED ENERGETICS?

Emerging ISR threats ideally countered by Ultrashort Pulse Lasers

Unmanned semi-and fully-autonomous threats are dramatically increasing in number and capability. These threats are vulnerable to USPL effects with limited time required to defeat ISR sensors.

Unmatched IP portfolio

More than $50 million in public and private capital invested, 25 issued patents, 11 applications held under government secrecy orders, and 10 additional patents pending.

Defense applications open door to commercial markets

Defense applications open doors to commercial markets such as advanced manufacturing, pathogen detection and neutralization, and imaging of biological tissue.

High value directed energy effects at best size, weight, and power in market

Only national-security focused USPL pure-play; USPLs deliver high-value counter-ISR effects in a SWaP footprint that allows deployment on almost any military platform.

Accelerating addressable market

Global directed energy weapons market expected to grow at 19% CAGR to $17.8 billion by 2028; Counter-Unmanned Aerial Systems (UAS) market expected to grow at 17% CAGR to $6.8 billion by 2030.

Elite management team; state of the art facilities

More than 100 years of combined executive team experience; 21,300 sq. ft. laser-dedicated development and manufacturing facility in the University of Arizona Tech Park.

PROBLEM STATEMENT

Unmanned semi- and fully-autonomous aerial, ground, and surface vehicle threats are dramatically increasing in number and capability. As unmanned systems increasingly augment humans, sensors will saturate the battlefield.

"The crisis is on the counter-UAS...we need the counter-UAS capabilities at scale. We need production lines to go up fast… the production for counter-UAS [has] to go through the roof."

Bill LaPlante

Under Secretary of Defense for Acquisition and Sustainment

December 2 at 2023 Reagan National Defense Forum

EMERGING THREATS IDEALLY SUITED FOR DIRECTED ENERGY EFFECTS

The proliferation of commercial-off-the-shelf sensors and unmanned systems are providing both traditional and asymmetric forces with **improved intelligence gathering and improvised threat capabilities enabling low-cost and low-tech solutions against high value targets.**

Most of these threats are piloted through cameras mounted on the vehicle.

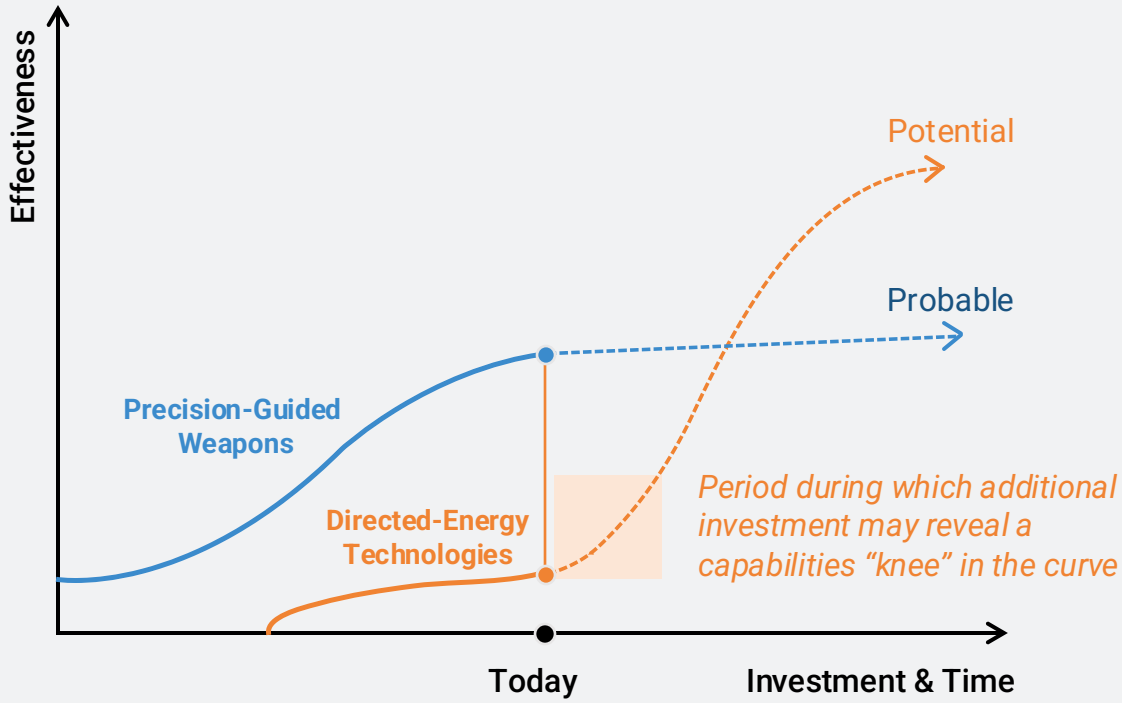
DIRECTED ENERGY STILL IN EARLY STAGES OF DEVELOPMENT AND ADOPTION

What is needed to finally cause the inflection point in the adoption of directed energy?

- A widely proliferating threat uniquely suited to being countered by directed energy weapons
- A directed energy system that delivers both
  - High value effects against the threat
  - At a size, weight, and power that makes it widely deployable across multiple platform types and fixed sites.

AE is well positioned to be a catalyst to "bend" the adoption curve of directed energy

A NOTIONAL MILITARY TECHNOLOGICAL "BREAKOUT"



SOLUTION: ULTRASHORT PULSE LASERS

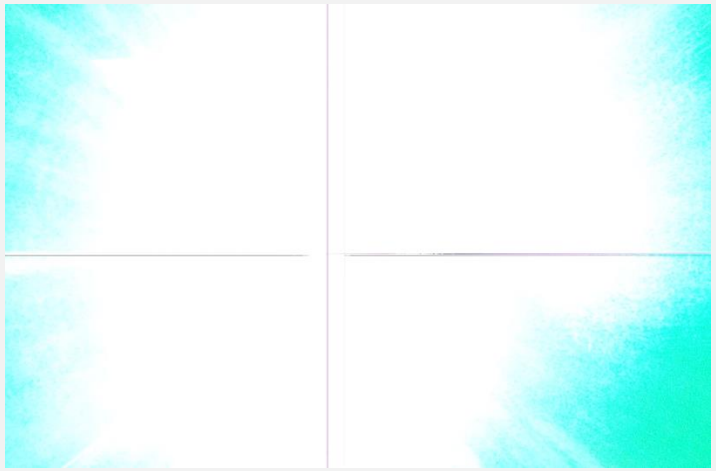
1. High peak power allows for sub-second sensor kills
2. Laser wavelength can be matched to sensor wavelength
3. Common underlying architecture across all counter-ISR applications
4. Efficient, compact, and ruggedized optical fiber-based architectures

ULTRASHORT PULSE LASER EFFECTS: COUNTER-ISR SENSORS

(Effect on common commercial sensor)

JAM

Temporarily blind the sensor

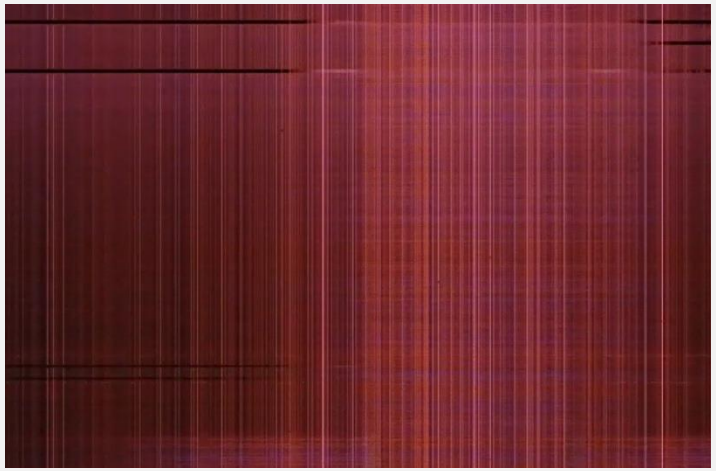


DAMAGE

Permanently damage pixels and control lines

DESTROY

Sensor fails to operate



Increasing energy on target

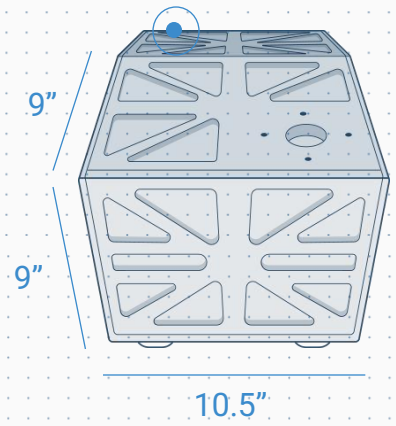
ULTRASHORT LASER SPECS

USPL offers **size**, **weight**, and **power** (SWaP) attributes that enable deployment on almost any platform

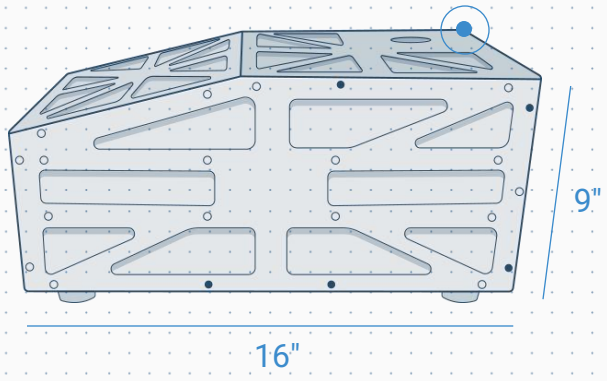
Lighter, smaller, more portable, and provides diversified lethality

SWaP-C reductions by multiple orders of magnitude

WALL POWER 1,000 W

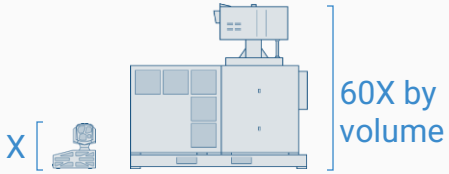


WEIGHT 58lbs (22.6796kg)



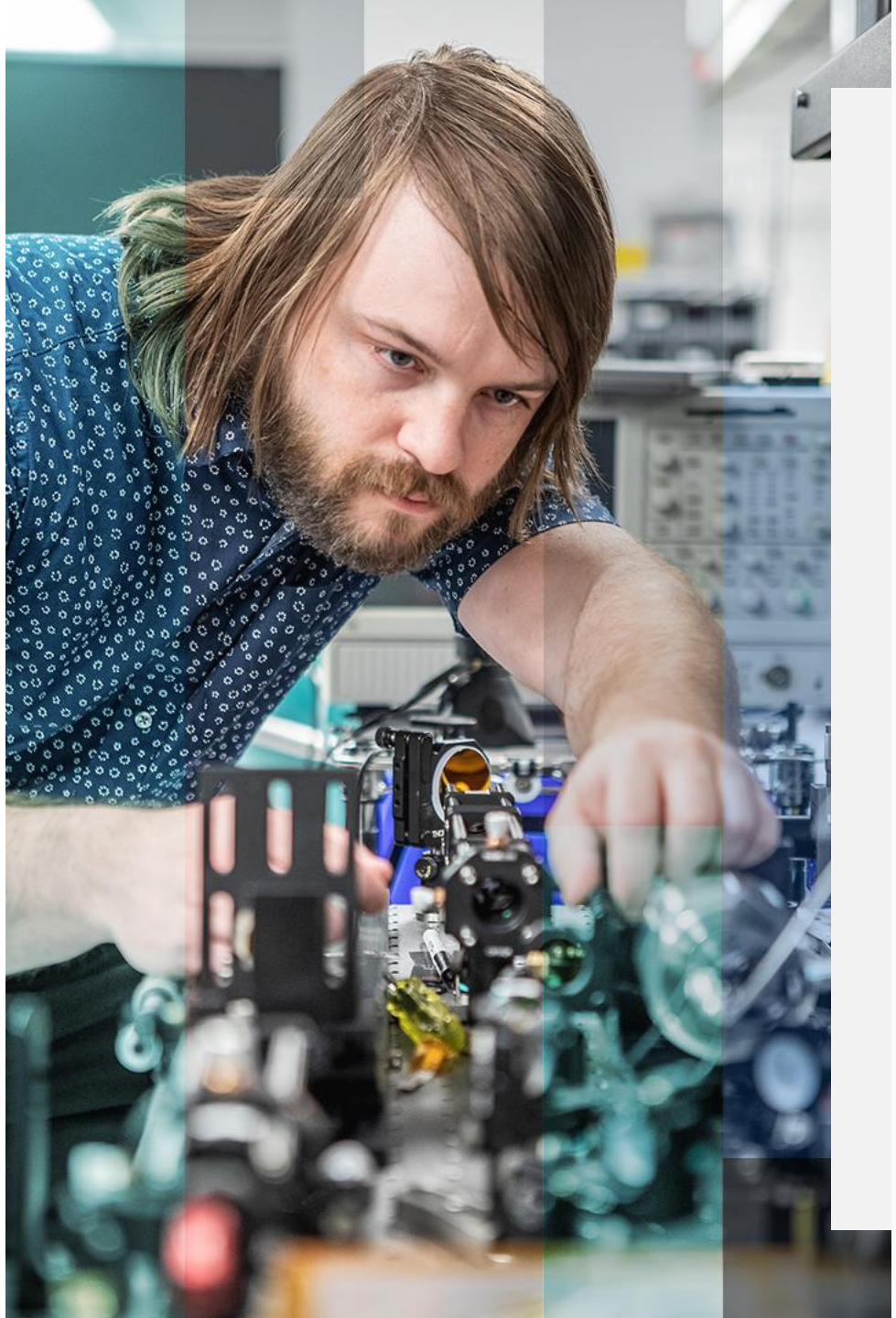
USPL OFFER SIZE WEIGHT AND POWER ADVANTAGE

ULTRASHORT PULSE



ULTRASHORT PULSE		CONTINUOUS WAVE (CW)
On-the-move	MOTION	Stationary
Uninterrupted	BATTERY	Limited
Compact and modular	FOOTPRINT	Extensive footprint
Peak 10^{10} W	LASER POWER	Peak 10,000 W
~1 kW	POWER CONSUMED	~100 kW
~10s lbs.	WEIGHT	~1,000s lbs.

CONTINUOUS WAVE (CW)



A LEADER IN ULTRASHORT PULSE LASES

We have built a substantial moat of IP, past performance, and current contracts that give AE a **leadership position in the market**

Strong IP portfolio

Over $50M of public and privately funded IP with a portfolio of 25 awarded patents, 11 applications held under government secrecy orders, and 10 additional patents pending.

Proven performance

Designed, delivered, demonstrated mobile USPL platform in the terawatt (TW) – class output for open air testing in multiple environments. 16-weeks from project start to DoD acceptance; modeling and target effects demonstrated.

Mission relevant contracts

Since mid-2022, AE has received three awards each addressing critical customer missions:

Marine Corps
Counter-ISR

Army
Infrared Countermeasures (IRCM)

Navy
Platform defense

OUR FACILITIES

Applied Energetics' corporate headquarters is in the **University of Arizona Tech Park**

4,830 sq ft.
Class 1000 cleanroom

Multiple integrated laser labs

26,800 sq ft. facility

- Secure server room with network capability
- Dedicated inventory, shipping and receiving areas
- ITAR, DCSA, and NIST compliant
- Shop assembly area (outside of cleanroom)
- New space for manufacturing and advanced laser/drone test range

APPLIED ENERGETICS

CEO Priorities

NEAR-TERM PRIORITIES DISCUSSION

- Highest priority: On demand demonstrations in AE's Battle Lab (1H25)
  - Initial operational capability in February 2025

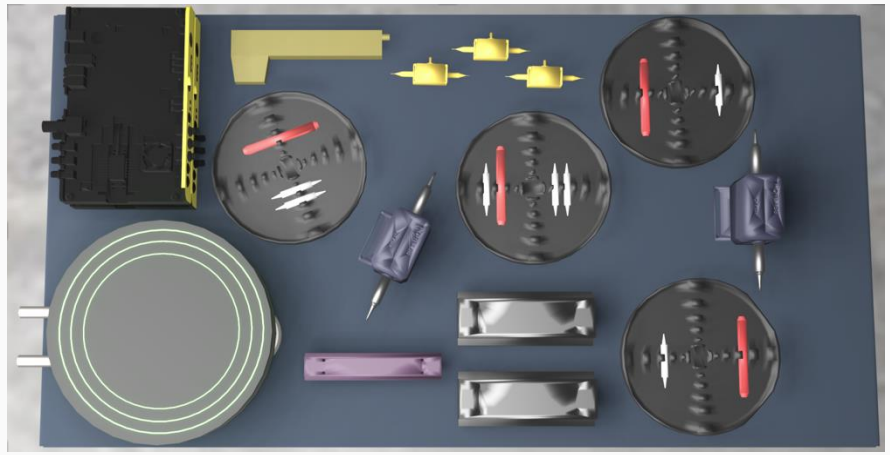
- Acquire Kord Firefly platform
  - Existing capability already being sold in the market; familiarity to customers
  - Adds capability AE does not currently have organically
    - Support systems: power management, housing, cable/optics routing
    - Command & control: power up/down, laser fire control/interlocks, operator station
    - ISR: target acquisition, tracking, pointing from multi-function gimbal
  - Full system Battle Lab demos (1H25), full system external range demos (2H25)

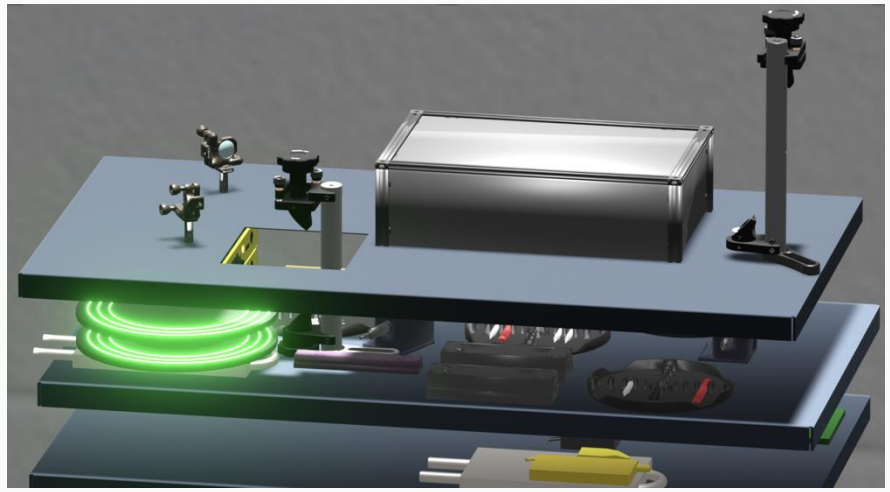
- Increased Staffing: Engineering, administration highest priorities

- Standalone AE prototype development: contractor candidates identified, engagement discussions begun

RACK MOUNTED DEMONSTRATOR

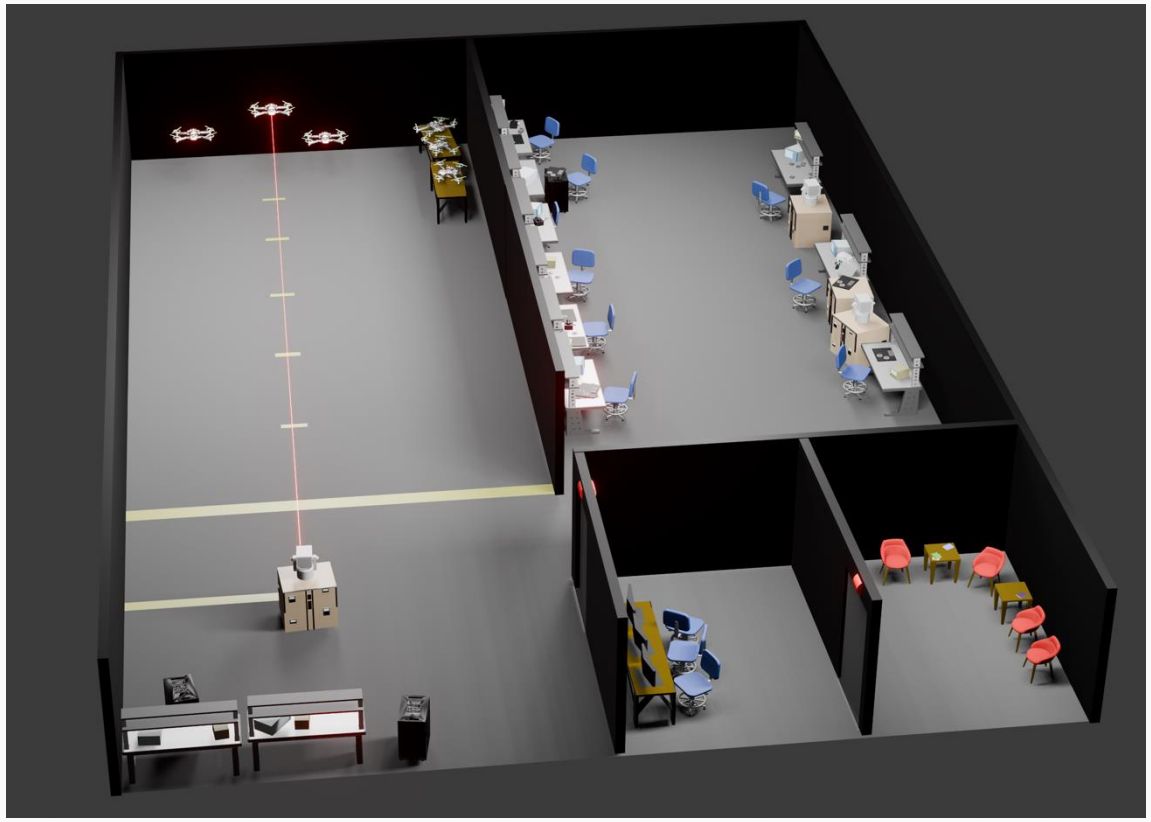
- Enables on-demand demonstrations in a portable form factor in the Battle Lab

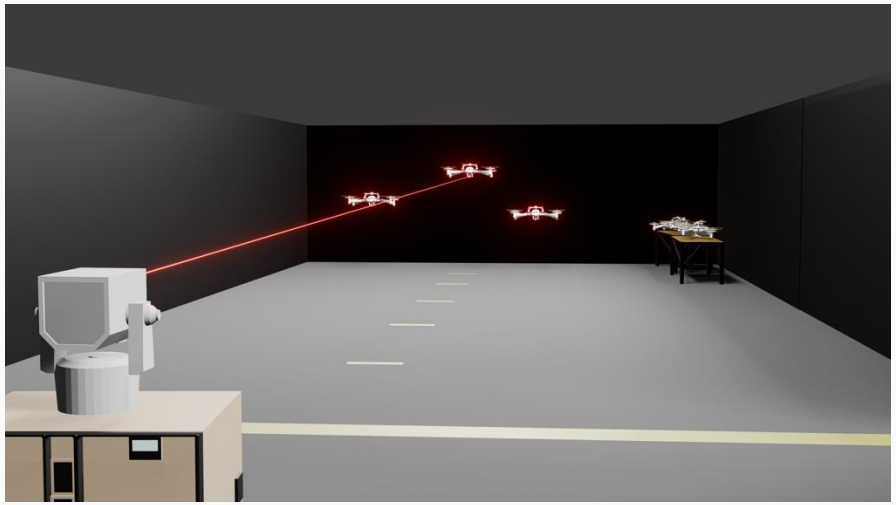


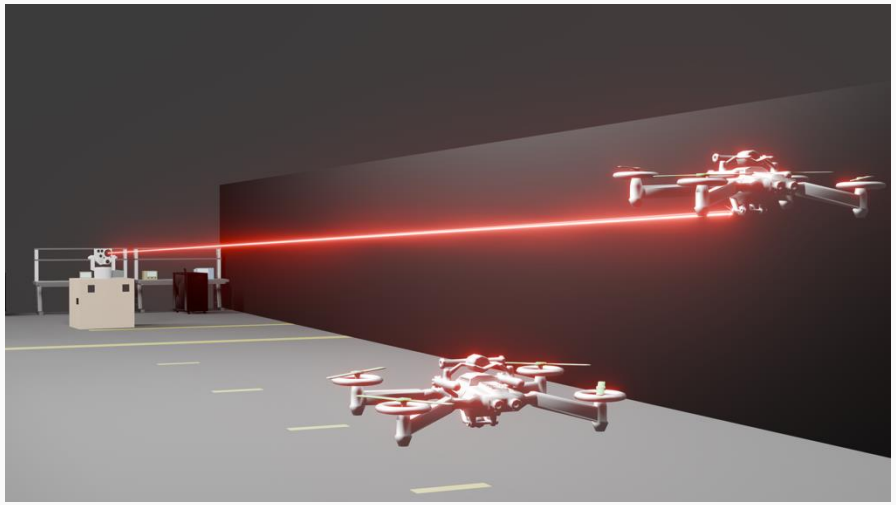


BATTLE LAB AND DEMONSTRATOR RENDERINGS

- Provides an ability to test, demonstrate, and advance emerging laser technologies in dynamic environments

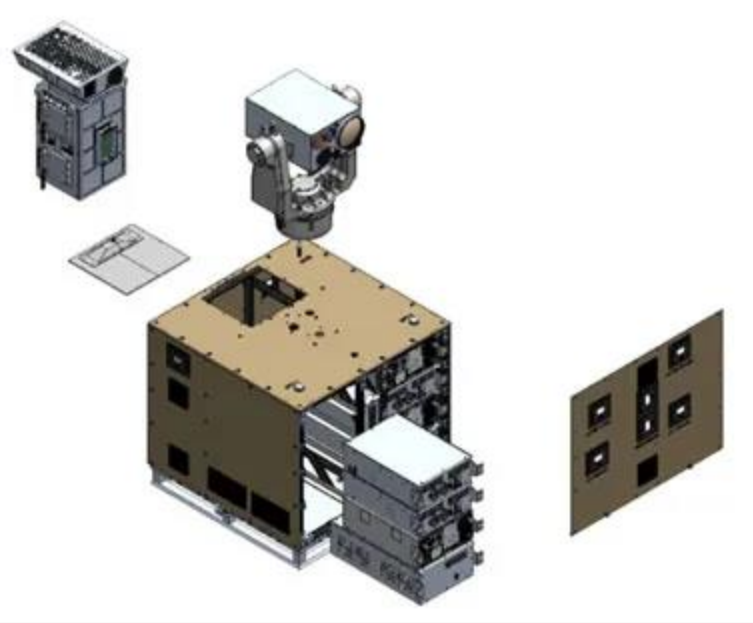


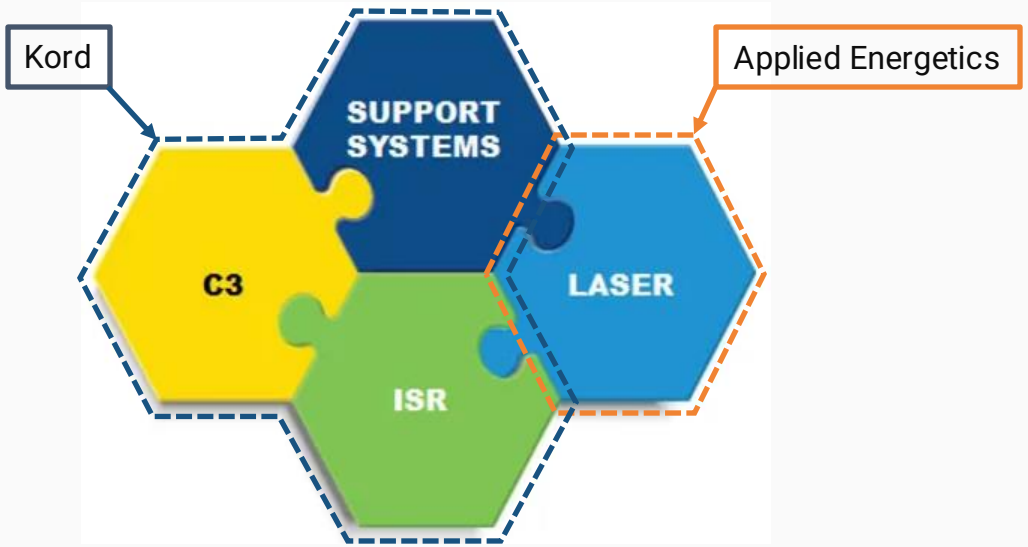


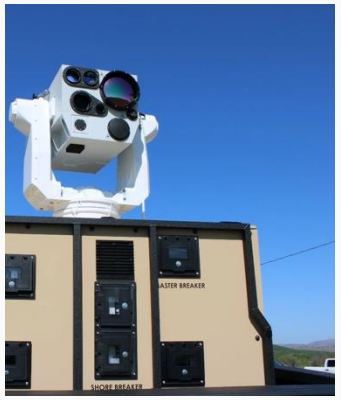


KORD FIREFLY

- Accelerates Applied Energetics ability to do full system integration and testing in preparation for laser productization







OUR PROGRESS

CURRENT APPLICATION

FUTURE APPLICATIONS AND INNOVATION

NATIONAL SECURITY DOMAIN

U.S.M.C
C-ISR

U.S. Army
IRCM

U.S. Navy

Advanced applications

Laser guided energy

Core laser technology

Enabling technology and components

Biomedical research and scientific

Advanced manufacturing

COMMERCIAL DOMAIN

LARGE ADDRESSABLE MARKETS

NATIONAL SECURITY DOMAIN

Directed energy weapons

Expected to grow from $6.2 billion in 2022 to $17.8 billion in 2028, a CAGR of 19.2%

Directed Energy Weapons Market, Research and Markets, January 2023 Source

Counter UAS

Expected to grow from $1.7 billion in 2021 to $6.8 billion in 2030, a CAGR of 17.0%

Global Counter UAS System Market, Research and Markets, December 2022 Source

Directed infrared counter measures

Expected to be worth $10 billion over the next 10 years

Airborne DIRCM & Missile Warning Systems Source

COMMERCIAL DOMAIN

Commercial ultrashort pulse laser

Expected to grow from $1.5 billion in 2020 to $5.2 billion by 2030, a CAGR of 15.0%

Ultrafast Lasers Market, 2021 Source

Additive manufacturing

Expected to grow from $15 billion 2022 to $95.6 billion by 2032, a CAGR of 20.4%

Additive Manufacturing, 2023 Source

Medical laser market

Expected to grow from $5.6 billion 2022 to $19.9 billion by 2032, a CAGR of 14.5%

Medical Laser Market, 2023 Source

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APPLIED ENERGETICS

Thank you

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