Drone Dominance Program Lethality Brief

- Drone Dominance Gauntlet 1 Lethality Review
- Prize Challenge
- sUPI
- Safety
- Timeline
- Q&A

DDP Gauntlet 1 Lethality Review

- 17 vendors participated in vignette 3 (lethality range)
- 11 different ESADs/EMSADs with varying munition options (field packed and pre-packed)
- ATEC, NSWC Indianhead, NSWC Crane, AEC, PM CCS, DEVCOM, PBAS, 75th RR, NSW, and MARSOC.
- Soldier & Safety Feedback
  - Safety Requirements (ESAD/EMSAD, arming logic, indicators, timers)
  - Reducing risk in transport and employment
  - Intuitive and easy to use
  - Minimal steps to arm and employ
  - Clear safe/arm indication
  - Change effects based on mission
  - Integrate across multiple drone platforms
  - Pre-packaged payloads are preferred
  - Reliability

DDP Prize Challenge

Problem

- Drone scale is increasing; payloads are a bottleneck
- Custom integration and safety are difficult to scale

Prize challenge

- Preferred payload solution to DDG2 vendors
- sUPI TDP access for standardized integration
- ~$500k Gov-funded safety pathway for the JSWSR and safety process
- Potential follow-on contracts (not guaranteed)

DDP Prize Challenge

Core Technical Requirements

- Modular payload system: Warhead, ESAD/EMSAD and interface
  - HV or LV but HV or hybrid preferred
- Integrated with a drone, not standalone components
- Must work across multiple Group 1 sUAS platforms
- Designed for manufacturability and scale

Technical Areas and Configuration

- Effects: APERS, AMET, Anti-Armor/EFP
- Modular, interchangeable payload designs
- Prepackaged and field-packed (read-to-use systems are preferred)
- Training payload is required for all solutions

DDP Prize Challenge

Architecture and Interoperability

- Three components: warhead, ESAD/EMSAD, interface
- sUPI encouraged, alternative MOSA interface acceptable if open to Government
- Goal: A few payloads to many drones

Functional Requirements and Capabilities

- Minimum: Safe/Arm indicator, Safe Separation Timer, Command Arming
- Mission Termination and sterilization
- Detonation: Impact and Command
- Desired Detonation: Proximity, height-of-burst, configurable effects
- Redundancy and Built-In-Test (BIT) strongly encourage

Training Payload

- Training payload must match same characterizes (weight/shape) of live payload
- Must utilize the same ESAD/EMSAD
- Must simulate all variants of live payloads

DDP Prize Challenge

Integration

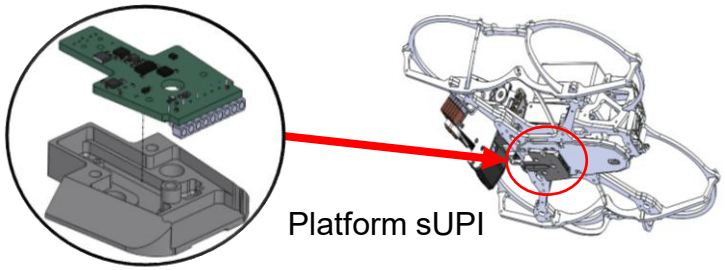
- Lethal vendors must pair with drone vendors (Gov will not integrate)
- Full mechanical/electrical/software integration required
- Must come paired with a DDG2 Qualifier participant and a DDG2 Gauntlet participant

Delivery Requirements

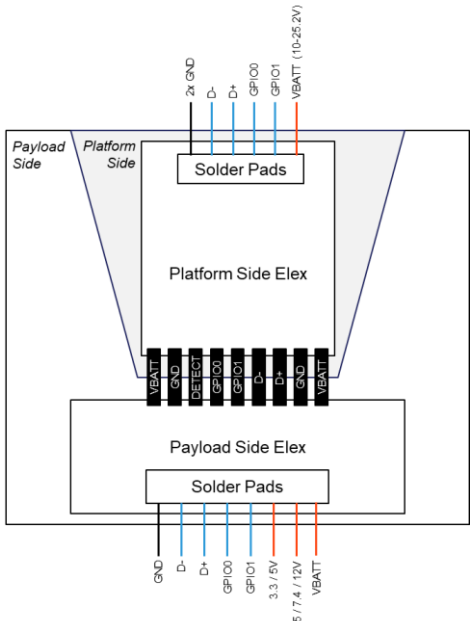
- 10 live and 10 training payloads per variant
- Delivery NLT 22 June 2206; must inform Gov of drone partner to complete safety process

Small Universal Payload Interface (sUPI)

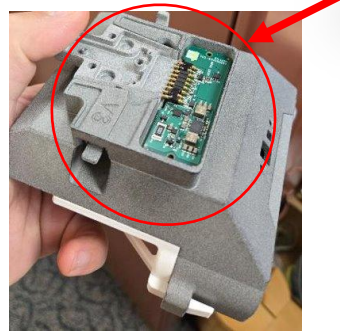
- Picatinny CLIK-compliant lightweight design ideal for small platforms (19-pin vs 9-pin connector)
- Establishes common mechanical & electrical interfaces
- Enables rapid integration of different payloads to platforms through quick-connect interfaces for sUAS Platform & Payload
- Distro A Interface Control Document (ICD) available for distribution



Pin Connections between Platform and Payload



Payload sUPI



DDP Safety – The Pathway to Concurrence

A Formal, Data-Driven Process

- Safety is a formal engineering discipline, not a checklist. Your success depends on the quality and completeness of the data you provide.
- Your primary reference is the "Vendor's Guide to Data Requirements for Weaponized UAS Safety Concurrence." This is your roadmap.
- Your data submission is the primary source for the Government's Hazard Analysis and Mishap Risk Acceptance (MRA) process.

Your Role: Provide the Technical Data

- Your primary responsibility is to deliver a complete Data Package.
- This TDP must comprehensively describe the "as-built" design of the air vehicle, ground control station, and all payload variants.
- This data is the factual basis for all subsequent safety analysis. Incomplete or inaccurate data will delay the entire process.

Our Role: Analysis & Concurrence

- The Government team will conduct the formal analysis and objective quality evidence (OQE)
- The Government team will develop and submit a Safety Data Package to the Boards
- Our analysis combines your data with a user-defined Concept of Operations (CONOPS) & Lifecycle Environmental Profile (LCEP) to identify and assess risk.

Board Concurrence is the Goal

- Achieving a formal safety concurrence is non-negotiable for fielding your system.
- Concurrence is based solely on the design details, analyses, and test evidence you provide.

DDP Safety – Core Payload Requirements

ESAD/EMSAD Requirements

- The ESAD has numerous, stringent requirements derived from standards like MIL-STD-1316 & MIL-STD-1911.
- These are not just goals; they are non-negotiable pillars of the safety case. Key examples include:
- Redundancy: At least two independent safety features to prevent unintentional arming.
- Safe Separation: Arming is prevented until after launch. No manual arming capability.
- Explosive Train Interruption: A physical, dual-locked interrupter must separate the detonator from the main charge until the system is armed.

Warhead & Energetics Requirements

- A complete data package is required for all warhead variants (APERS, AMAT, EFP).
- Configuration & Performance: Provide detailed drawings, explosive type, Net Explosive Weight (NEW), and fragmentation or penetration data.
- Energetics Qualification: All energetic materials must have official qualification data (e.g., compliant with MIL-STD-2105E).

Training Payloads

- Must be physically and functionally representative of the live payload.
- Must utilize the same ESAD/EMSAD to ensure realistic training on the complete arming sequence.

DDP Prize Challenge

03 April 2026 – DDP Lethality Prize Challenge published

03 April – 16 April 2026 (10 Business Days) - Industry response period

17 April – 23 April 2026 (5 Business Days) - Government evaluation and down select

20 April 2026 - DDG2 Request for Solutions (RFS) released & JSWSR and safety evaluation process begins

20 April – 22 June 2026 - JSWSR safety review, Vendor integration with paired drone platforms, Safety documentation development and submission, Iterative feedback with Government

NLT 22 June 2026 - Delivery of10 live payload systems per variant & 10 training payload systems per variant, Vendors must identify paired drone vendor(s), Systems must be fully integrated and ready for evaluation

22 June – August 2026 - Arena testing, Penetration testing, Additional hands-on Government testing

June 2026 (TBD) - DDG2 Qualifier (training payloads)

August 2026 (TBD) - DDG2 Main Event (live + training payload evaluation)

Post-August 2026 – Potential Follow-on contracts, Additional procurement, Continued testing and scaling