Enabling effective introduction of next generation micro payload capabilities

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Briefing Agenda

Trends
  > Smaller Munitions

Micro Payload Example – Arming Tactical UAS

Integration of Micro Payloads

Summary
Trends
Small Weapons
Smaller, accurate munitions with stand-off capabilities

Technology Trend

> Munitions can be affordably delivered reliably within a 1m

Market Trend

> Drive for smaller munitions to ensure focused effects and low collateral
> Platform persistence is key for current and future needs

Issue

> Platforms use standards developed for high performance “fast jet use”
> Little consideration of:
  > Precision <200kg munitions
  > Non fast jet operations
  > Advanced controls, datalinking or fuzing
  > Means of “smart” dispensing systems
How small payload integration challenges are changing the platform mix.....
Micro Payloads
- Example – Arming Tactical UAS’s
Integration challenges of Small/Micro Payloads
- Headline requirement

Assumed TUAS maximum payload with no degradation in ISTAR capability is 22kg

Payload must include:
- 4 TUAS pylons, 4 munitions and on-board munition control functions
Integration challenges of Micro Payloads
- WASP System Objectives

Provides a micro payload integrator with all functions required to:

> Safe Carriage and Release
> Mechanical Fuzing
> Electrical Fuzing
> MMSI Electrical Interface
> Store on Station Sensor

Single package utilising standard MIL and Safety Board approved designs

The package has the footprint of a $1 bill and weighs less than 1kg

Benefits are management of one standard interface for all payloads instead of 8 individual interfaces

WASP system provides standard modules for:

> Platform Pylon interface
> Weapon System Interface
WASP Platform Interface System

WASP Release Unit (SRU)
- Carriage and release only
- RIFL/IFOL incorporated
- Soft ejection
- No consumables
- Mass - 600 grams

WASP Station Interface Unit (SIU)
- WASP Release Unit plus
- Mechanical Fuzing Function
- Electrical Fuzing Function
- Store on Station Sensor
- JMMI Electrical interface (19 way)
- Mass – 900 grams

WASP Payload Interface System

WASP Payload Interface Unit (PIU)

> Interoperable with WASP SIU
> Mechanical Fuzing Function
> Electrical Fuzing Function
> Separation Sensor
> MMSI Electrical interface
> Package less than 1/3” thick
> Package L (6”) W (1”)
> <4oz mass
> Electrical output furnished through ribbon or flexible circuit
> Creates sensing for SAU function to be enabled.
Example of Trials (to date)
Integration challenges of Micro Payloads
- WASP System Summary

> Providing one safety critical system level solution for small/micro payloads
> Built upon proven technology
> Sized according to the application
> System level performance of a 4/5th generation fast jet pylon
> Demonstrated through trials to date on multiple platforms and payloads to flight trials
> Unique integrator tool – Ensures ability to spiral develop the platforms
Integration of Micro Payloads
Integration of Micro Payloads

> Tactical UAS will be first adopters for Small/Micro payloads
> A common micro payload systems level interface will be required to harness the best value for future:
  > Survivable UAS – Create persistent deep magazine
  > Fast jet – Minimise integration costs
  > Sub munition dispensing from munitions – Allow concept of modularity and re-use
> Same top level system requirement with differing engineering solutions
> NUAI is a good start however…..
> Ties into the principle behind NUAI to create better commonality to ease cost and time to integration.
> This will ultimately maximise end user capability with the best value

A universal system level approach for small munitions/payloads is essential
Presentation Summary

• Trends are driving the potential for small/micro munition usage

• A system level approach is needed to provide the user and industry a ready means for exploitation

• WASP Interface technology has created a high integrity interface solution/toolkit from which to grow small munitions capabilities

• First adopter approach for Tactical UAS

• Approach can assist other “high performance” applications
Questions?