

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

Standards reflect history of large stores on fast jets – not small munitions on future platforms

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



4 munitions



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



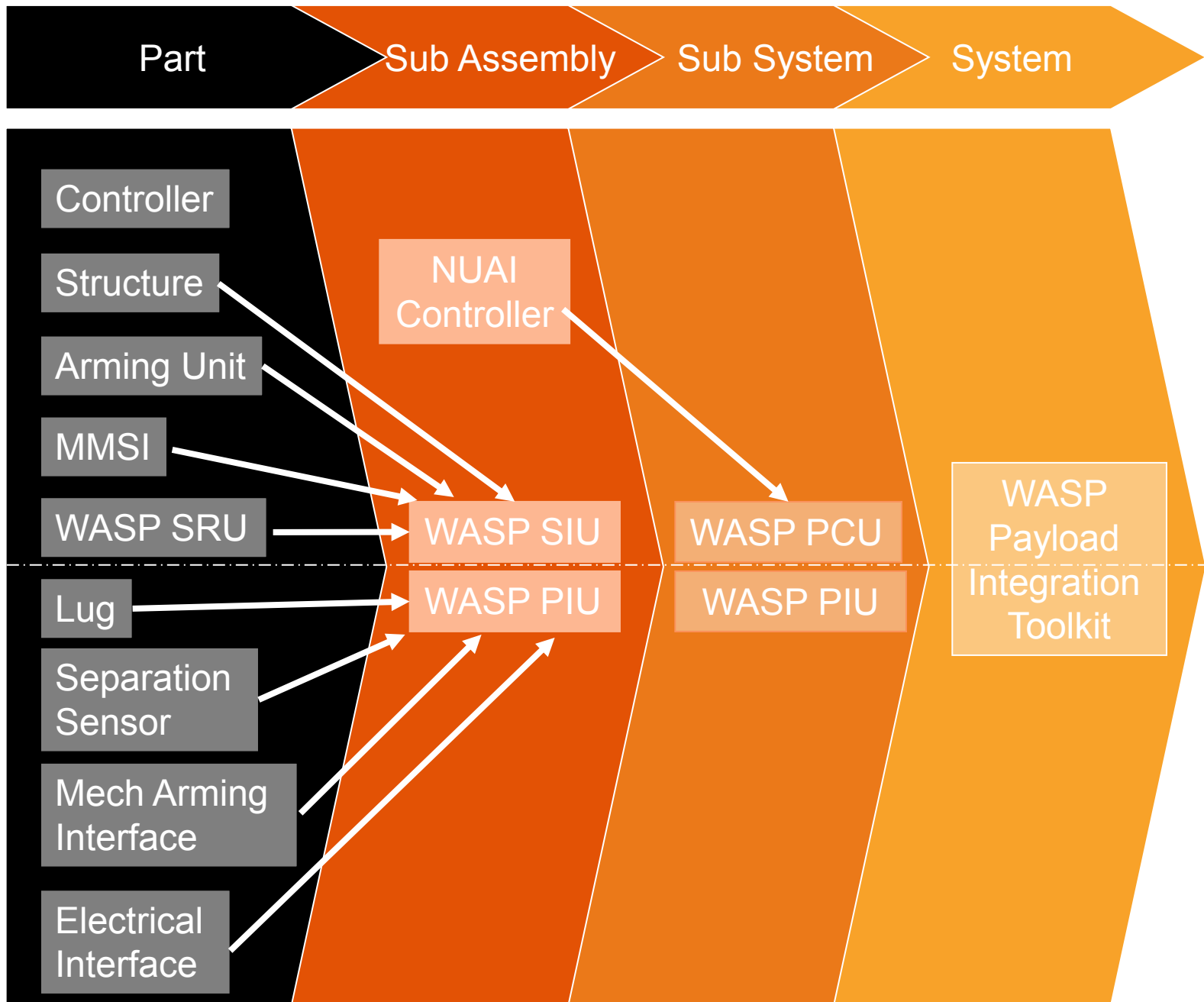
Single package utilising standard MIL and Safety Board approved designs

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:

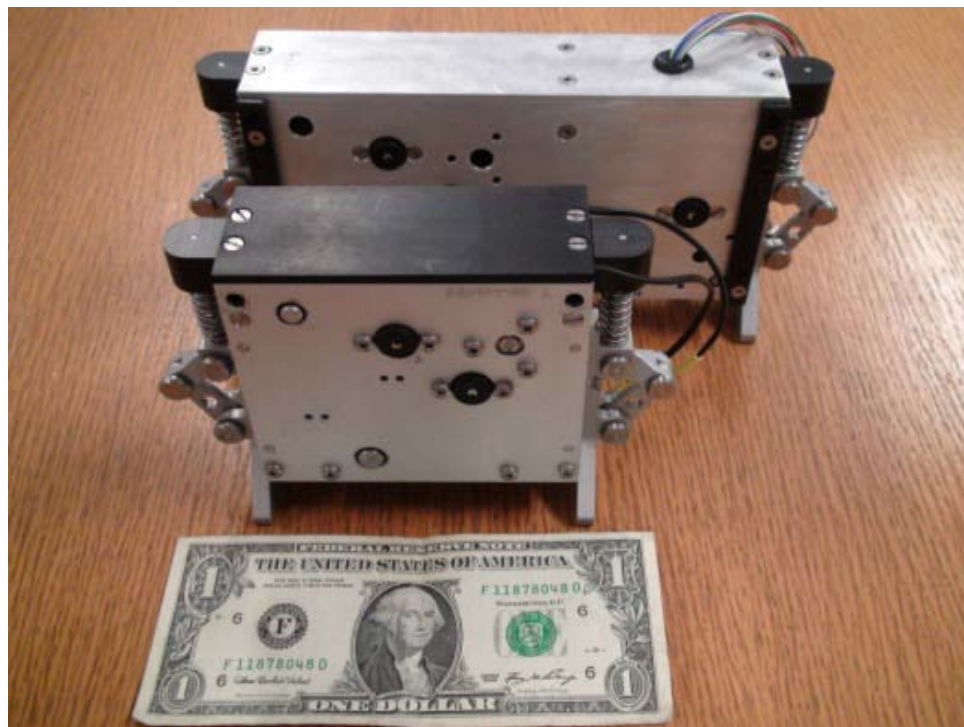
- > Platform Pylon interface
- > Weapon System Interface



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)

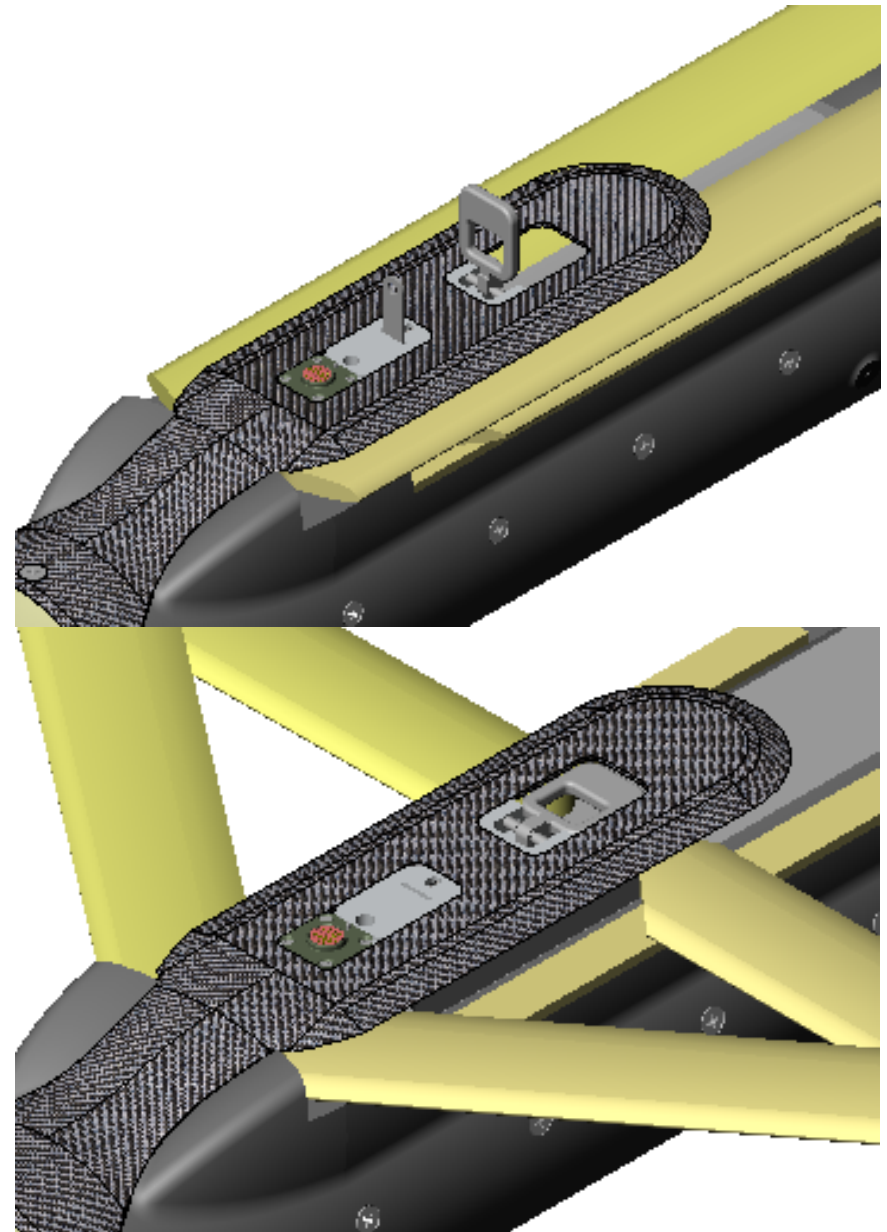
- > WASP Release Unit plus
- > Mechanical Fuzing Function
- > Electrical Fuzing Function
- > Store on Station Sensor
- > JMMI Electrical interface (19 way)
- > Mass – 900 grams



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.

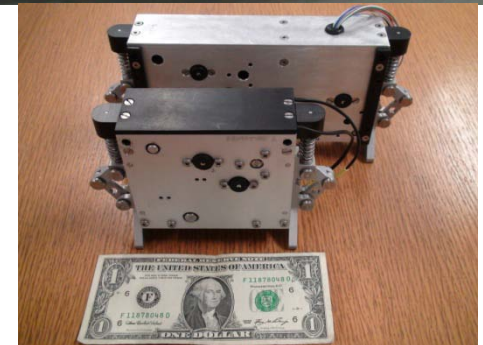


Example of Trials (to date)



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
- > NUAL is a good start however.....
- > Ties into the principle behind NUAL 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

System level approach will drive user capability today and tomorrow

Questions?

