

**Dutch Space**

*an EADS Astrium company*

# SPADES

## Smart Parafoil Autonomous Delivery System 300 Mk2 (750 lbs) Ultra Light Weight System



### System description

SPADES is a reusable autonomously guided air delivery cargo system and is intended for use by military personnel when delivering cargo safely and accurately in support of civilian and re-supply missions or direct support of tactical operations. The SPADES Ultra Light Weight (ULW) system is designed to provide accurate, low-risk airdrops with payloads ranging from 100 to 350 kg (200 - 750 lbs) with the same high level of accuracy throughout the payload range. In addition, the system is designed for portability, ease of operations, ruggedness, and simple maintenance procedures to lower costs, reduce training time, and maximize operational effectiveness.

Since the year 2001, SPADES systems have participated in over 300 test drops and with a 50m Circular Error Probability (CEP) capability, they are ideal for supporting tactical missions of resupplying reconnaissance forces operating in denied areas. SPADES can be used with standard military riggings and is compatible with a number of different parafoil types, basically to be applied at operator's choice.

The SPADES ULW system weighs only 15,5 kg (35 lbs) including batteries, allowing easy handling throughout the rigging process and when being man-carried from the landing area. An optional telemetry unit can be clicked underneath the main Airborne Guidance Unit (AGU) enabling two-way communications between system and operating personnel. This feature can be used for all kinds of testing purposes and remote control during flight.



### Ease of Operations

The SPADES feature of real-time wind detection eliminates the need for gathering wind data before the air drop and consequently does not require an additional fly-by to make actual wind measurements prior to the drop. For mission planning no other wind information is needed than what is generally available and used for standard manned flight mission planning. Minutes before drop-off, changes in target locations and waypoints can be entered. The independent SPADES mission planner software can handle up to 15 drops at the same time, each having its individual mission profile. The mission planner software can be installed on any commercial laptop pc. SPADES is also fully compatible with the JPADS mission planner.

The system is easily checked for operational performance before loading and on-board the aircraft through a built-in test that visually identifies a ready or failed status.

The quick-link steering line connections are easily accessible for attachment / detachment within 1 minute without having to open the AGU.

### Ruggedness

Results accumulated from the demonstration and test drops show that the design is rugged and capable of consistently performing in harsh conditions. The internal structure and stiffened skin of the AGU protects the components inside, allowing for high shocks both at impact and during transport.

### Accessibility & Maintainability

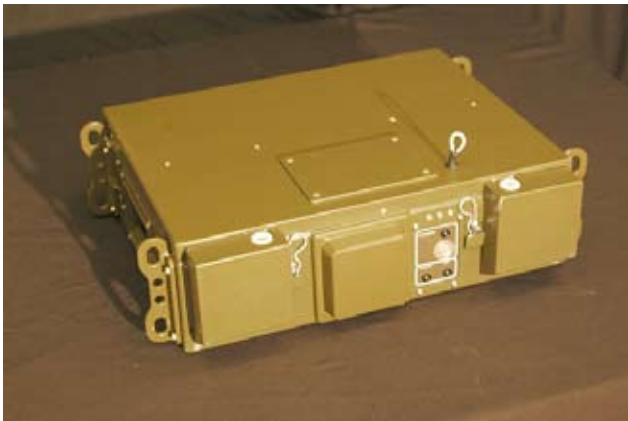
The system has a modular design and enables easy access to all major components / line replaceable units (LRUs). Standard tooling is used to assemble/ disassemble all components, which can all be replaced within two hours. Maintenance and repair procedures are therefore simple and fast which lowers cost, reduces training time, and improves system availability. SPADES 300 can be used at least up to 30 times without major overhaul

### Customer support

SPADES is ready to provide logistic and maintenance support in the domestic area of our customers by utilizing our world-wide EADS network and other liaised specialist companies.



*SPADES 300 system in rigged configuration*



*SPADES 300 Mk2 Guidance Unit (operator panel side)*

*SPADES 300 Mk2 Guidance Unit (rear side with cable connectors, zeroize button and Mil-GPS bay)*



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