PRESS RELEASE

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PLD Space and Airborne Systems North America sign two contracts to develop PLD Space launcher recovery systems

- PLD Space is developing a family of recoverable launch vehicles
- Airborne Systems has almost 100 years of experience in the EDLS systems

Elche, 3rd October 2018. Airborne Systems has developed a parachute recovery system for PLD Space to advance the development of their recoverable launch vehicle family (ARION 1 and ARION 2). Drawing on almost 100 years of experience with the design and development of Entry, Descent and Landing Systems (EDLS), Airborne Systems provide a solution consisting of a Drogue parachute Subsystem and a Main parachute subsystem.

The first step will be the recovery of ARION 1. In conjunction with PLD Space's proprietary technologies for re-entry, ARION 1 will use a combination of two different types of Airborne System parachutes, a drogue parachute and a main parachute. The Drogue parachute is a 3 m parachute with decades of heritage. It was used as part of the Space Shuttle Orbiter landing deceleration system, the NASA Orion Earth Landing System and the Blue Origin New Shepard Space Capsule Earth Landing System. In addition, a 15.3 m diameter quarter spherical polyconical parachute, designed for the Air Force Security Assistance Training (AFSAT) platform in response to a requirement for an extremely stable, drag efficient, lightweight and reusable parachute.

PLD Space is also working in parallel with Airborne in a second technology development contract that will conclude with a qualification test of the proposed recovery system to be used on ARION 2. This qualification test will be performed next year from Spain.

In recent years the idea of recovering and reusing expensive launch vehicle assets, such as engines and even entire boosters, has gained much attention and there are several companies looking at a variety of concepts. PLD Space is one of the pioneering companies and is leading the way in Europe with their ARION 1 and ARION 2 reusable launch vehicle concepts. *"Airborne Systems is proud to be working with PLD Space to make this dream a reality and is excited to be working with this European company as one of the*

pioneering early adopters of the smart reuse concept that Airborne Systems has been trying to bring to market", explains Kurt Hempe, Director, Space & Inflatables Business Unit of the company.

"We are building a strategic and strong portfolio of technological partners to develop reliable and state-of-the-art launch vehicles. Today we include Airborne Systems North America to develop one of the most critical subsystems of our first launcher. Airborne's strong technical expertise provides us with the confidence to develop reusable launcher technologies. The proven reliability of their EDLS helps us to guarantee success of the mission during the re-entry phase. These aspects of the technology partnership are crucial to the mitigation of risk in a challenging technical field. Following from the work of PLD Space and Airborne, next year, ARION 1 will become the first liquid propelled booster to be launched and recovered in Europe.", said Raúl Torres, CEO and co-founder of PLD Space.

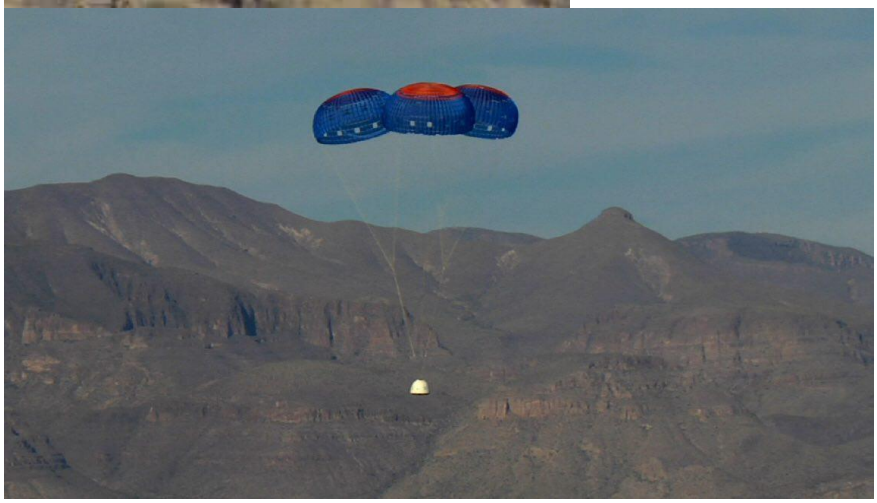
For several years, Airborne Systems has been working with a great number of new emerging launch vehicle contractors to help them design and develop EDLS that would enable the recovery and reuse of expensive launch vehicle assets such as engines (1st and 2nd Stage engines), Boosters, Fairings, etc. The recovery and reuse of these expensive assets helps drive launch costs down, making space access more affordable for a multitude of end users.

About Airborne Systems

Airborne Systems has been developing parachute recovery systems since its founding as Irvin Aerospace in 1919 and is the world leader with respect to the design and development of EDLS. In 2006 Airborne Systems formed a new division specifically focused on the emerging commercial space market. Since that time, Airborne Systems has been developing EDLS for a variety of space applications including the para-brake for the Space Shuttle, the parachute system for the NASA Orion spacecraft, the SpaceX Dragon

spacecraft, the Boeing CST-100 spacecraft, the Blue Origin New Shepard spacecraft and the NASA Mars 2020 spacecraft to name a few.

Picture 1. Raúl Torres (CEO of PLD Space) and Kurt Hempe (Director, Space & Inflatables of Airborne Systems) together at IAC 2018



Pictures: Parachutes of Airborne Systems North America and Image of suborbital launcher ARION 1