

PROJECT

## ECOSYSTEM

### High Performance Gas Expansion System for Halon-Free Cargo Hold Fire Suppression System

**Funding:** European (Horizon 2020)

**Duration:** Oct 2019 - Sep 2021

**Status:** Complete

**Total project cost:** €998,805

**EU contribution:** €699,164



**Call for proposal:** H2020-CS2-CFP09-2018-02

[CORDIS RCN : 225332](#)

#### Objectives:

The ECOSYSTEM project will develop and demonstrate at TRL 5, a high-performance inert gas expansion system as a halon-free cargo hold fire suppression system. The demonstrator will be capable of storing inert gas over the temperature range -55°C to +85°C and expand (discharge) it over the temperature range -40°C to +70°C. The demonstrator will be capable of a constant high rate of inert gas flow over the range 230 - 350 g/s and a subsequent low flow rate of 10 - 30 g/s. The demonstrator will include safety features to allow safe aircraft operation and will contain all of the necessary instrumentation to characterize the static and transient conditions during its operation.

The ECOSYSTEM TRL 5 prototype will be tested at the Fraunhofer Institute under both ground and simulated altitude conditions.

The project will leverage previous work by UTRC and Collins Aerospace on the modelling, fabrication and testing of aircraft fire suppression systems and will benefit from Collins Aerospace's deep understanding of the aircraft fire suppression business since Collins Aerospace currently develops and supplies commercial systems for various aircraft platforms.

#### Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

**Other programmes:** JTI-CS2-2018-CFP09-LPA-02-29 - High performance gas expansion system for halon-free cargo hold fire suppression system.

#### Lead Organisation:

**United Technologies Research Centre Ireland, Limited**

**Address:**

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T23  
Cork  
Ireland

**Organisation Website:**

<http://www.utrc.utc.com>

**EU Contribution:** €144,504

#### Partner Organisations:

**Kidde Graviner Limited****Address:**

FORE 1 FORE BUSINESS PARK HUSKISSON WAY STRATFORD ROAD SHIRLEY  
SOLIHULL  
B90 4SS  
United Kingdom

**EU Contribution:** €49,520**B/e Aerospace Systems GmbH****Address:**

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23560 LUBECK  
Germany

**EU Contribution:** €98,264**Utc Aerospace Systems Wroclaw Spolka Z Ograniczona Odpowiedzialnoscia****Address:**

BIERUTOWSKA 65-67  
51 317 WROCLAW  
Poland

**EU Contribution:** €18,050**L'hotellier****Address:**

4 RUE HENRI POINCARE  
92160 ANTONY  
France

**EU Contribution:** €388,826**Technologies:**

Safety systems  
Safety and certification  
testing

**Development phase:** Demonstration/prototyping/Pilot Production**STRIA Roadmaps:** Vehicle design and manufacturing**Transport mode:** Air transport**Transport sectors:** Passenger transport, Freight transport**Transport policies:** Safety/Security**Geo-spatial type:** Other