

HORIZON
2020

DEsign, development, manufacture, testing and Flight qualification of nExt geNeration fuel storage system with aDvanced intEgRated gauging and self-sealing capabilities

Fact Sheet

Project Information

DEFENDER

Grant agreement ID: 738078

[Project website](#)

DOI

[10.3030/738078](https://doi.org/10.3030/738078)

Project closed

EC signature date

30 January 2017

Start date

1 January 2018

End date

31 December 2022

Funded under

SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

Total cost

€ 1 426 470,00

EU contribution

€ 1 115 004,00

Coordinated by

POLITECNICO DI TORINO



Italy

Objective

The DEFENDER project is aimed at developing, manufacturing, testing, and qualifying innovative next generation fuel storage system with advanced integrated

gauging, self-sealing capabilities and high performing closed cells foams to be integrated into the Next Generation Civil Tiltrotor (NextGenCTR) framed in the Fast Rotorcraft (FRC) Innovative Aircraft Demonstrator Platform (IADP). As integral part of the whole activity, the consortium will support the WAL in all the activities related to the Permit to Fly achievement and will provide technical support during the installation of the lightweight bladder tanks in the aircraft prototype and during flight testing. The first step will consist in a specification review and preliminary system design activity and a technological study, both aimed at full design of fuel system and assessing the effectiveness of the proposed innovations. In particular, the fuel storage subsystem (FSS) shall be capable of storing fuel and providing a sufficient mechanical resistance against punctures and impacts avoiding any leaks. The Fuel System architecture will be used to drive the next detail design phase. Starting from the requirements, the specification of the interfaces and the digital mock-up, the DEFENDER consortium will proceed with the design and analysis, maximising low weight and safety, fully compliant with the Rules requirements and WAL Requirements. The manufacturing of the FSS will be carried out according to the EASA Part 21 subpart G (POA). Design and qualification will be performed on the strong heritage of the consortium in the development and qualification of aeronautical/military/automotive/marine fuel storage system. The project consortium, made of 2 SMEs, the Italian Aerospace Research Centre (CIRA) and an academic centre (Politecnico di Torino), has heritage and certifications to adequately fulfil the JTI-CS2-2016-CFP03-FRC-01-10 requirements.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [mechanical engineering](#) > [vehicle engineering](#) > [aerospace engineering](#) > [aircraft](#) > [rotorcraft](#)

[engineering and technology](#) > [environmental engineering](#) > [energy and fuels](#)



Keywords

[bladder tanks](#)

[civil tilt rotorcraft](#)

[innovative materials](#)

[fuel system](#)

[CS-29 compliance](#)

[crash](#)

[test](#)

[crash simulations](#)

Programme(s)

Topic(s)

[JTI-CS2-2016-CFP03-FRC-01-10 - Next Generation Fuel Storage System](#)

Call for proposal

[H2020-CS2-CFP03-2016-01](#)

[See other projects for this call](#)

Funding Scheme

[IA - Innovation action](#)

Coordinator



POLITECNICO DI TORINO

Net EU contribution

€ 140 000,00

Total cost

€ 140 000,00

Address

CORSO DUCA DEGLI ABRUZZI 24

10129 Torino

 **Italy** 

Region

Nord-Ovest > Piemonte > Torino

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

Participants (4)



MARE ENGINEERING GROUP SPA

 Italy

Net EU contribution

€ 255 500,00

Address

VIA EX AEROPORTO SNC

80038 POMIGLIANO D' ARCO NA 

SME 

Yes

Region

Sud > Campania > Napoli

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 365 000,00



C.I.R.A. CENTRO ITALIANO RICERCHE AEROSPAZIALI SCPA

 Italy

Net EU contribution

€ 248 250,00

Address

VIA MAIORISE

81043 Capua 

Region

Sud > Campania > Caserta

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 248 250,00



ARESCOSMO S.P.A. 

 Italy

Net EU contribution

€ 0,00

Address

VIA DELLE VALLI 46

04011 Aprilia Lt 

SME 

Yes

Region

Centro (IT) > Lazio > Latina

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



AERO SEKUR SPA

 Italy

Net EU contribution

€ 471 254,00

Address

VIA DELLE VALLI 46

04011 Aprilia 

Region

Centro (IT) > Lazio > Latina

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

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Total cost

€ 673 220,00

Last update: 21 May 2024

Permalink: <https://cordis.europa.eu/project/id/738078>

European Union, 2025