

Imperial College London Participation

Euratom

Introduction

This booklet comprises the Horizon Europe Project under Euratom that Imperial participate in as an Associated Partner. Funding from UKRI Horizon Guarantee.

Table of contents

intelligent Weld inspection (iWeld)

intelligent Weld inspection

Fact Sheet

Project Information

iWeld

Grant agreement ID: 101061359

Start date

1 October 2022

End date

30 September 2026

Funded under

Improve and support nuclear safety, security, safeguards, radiation protection, safe spent fuel and radioactive waste management and decommissioning, including the safe and secure use of nuclear power and of non-power applications of ionizing radiation

Total cost

€ 1 347 558,75

EU contribution

€ 1 161 136

Coordinated by

ELECTRICITE DE FRANCE

 France

Objective

Periodic inspection of the integrity of welds is essential for maintaining safe and efficient operation of critical assets. Methods based on ultrasound have numerous advantages – they are fast, accessible and non-disruptive – but they meet serious obstacles when used on thick welds with a complex microstructure. The H2020 ADVISE project developed and demonstrated techniques to address these challenges in the nuclear energy context. For most of these, the knowledge of the internal material structure of the weld is essential. Building up foundations laid by ADVISE, iWeld aims to progress towards implementing the imaging and characterisation methods in-situ and broaden their application scope beyond the nuclear energy sector. The project will combine insights from a wide spectrum of

industries to construct a comprehensive weld library which will be used to train an AI model predicting the internal material structure of the weld. These predictions will be used in further refined inversion and imaging algorithms to deliver a comprehensive inspection planning workflow. The ambition of iWeld is to transform the way to perform ultrasonic inspection on complex welds across several branches of industry and to deliver open tools to support their development.

Fields of science

[engineering and technology](#) > [mechanical engineering](#) > **manufacturing engineering**
[natural sciences](#) > [computer and information sciences](#) > [artificial intelligence](#) > **machine learning**
[natural sciences](#) > [physical sciences](#) > [acoustics](#) > **ultrasound**
[natural sciences](#) > [mathematics](#) > [applied mathematics](#) > **mathematical model**

Programme(s)

[EURATOM.1.1 - Improve and support nuclear safety, security, safeguards, radiation protection, safe spent fuel and radioactive waste management and decommissioning, including the safe and secure use of nuclear power and of non-power applications of ionizing radiation](#) MAIN PROGRAMME

[EURATOM.1.1.4 - Nuclear science and ionizing radiation applications, radiation protection, emergency preparedness](#)

[EURATOM.1.1.1 - Nuclear safety](#)

Topic(s)

[HORIZON-EURATOM-2021-NRT-01-11 - Cross-sectoral synergies and new applications of nuclear technologies](#)

Call for proposal

[HORIZON-EURATOM-2021-NRT-01](#)

[See other projects for this call](#)

Funding Scheme

[EURATOM-IA - EURATOM Innovation Actions](#)

Coordinator



ELECTRICITE DE FRANCE

Net EU contribution

€ 273 346,00

Address

Avenue De Wagram 22

75008 Paris 08

 **France** 

Region

Ile-de-France > Ile-de-France > Paris

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](#) 

Other funding

€ 123 647,75

Participants (5)



COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES

 **France**

Net EU contribution

€ 422 890,00

Address

Rue Leblanc 25

75015 Paris 15 

Region

Ile-de-France > Ile-de-France > Paris

Activity type

Research Organisations

Links

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

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

[HORIZON collaboration network](#) 

Other funding

€ 0,00



TRANSVALOR SA

France

Net EU contribution

€ 86 100,00

Address

E-golf Park Batiment B 950 Avenue Roumanille Parc De Haute Technologie

06410 Biot

SME

Yes

Region

Provence-Alpes-Côte d'Azur > Provence-Alpes-Côte d'Azur > Alpes-Maritimes

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](#)

Other funding

€ 36 900,00



UNIVERSITY OF STUTTGART

Germany

Net EU contribution

€ 181 675,00

Address

Keplerstrasse 7

70174 Stuttgart

Region

Baden-Württemberg > Stuttgart > Stuttgart, Stadtkreis

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Other funding

€ 0,00



KAUNO TECHNOLOGIJOS UNIVERSITETAS

 Lithuania

Net EU contribution

€ 136 750,00

Address

K Donelaicio 73

LT-44029 Kaunas 

Region

Lietuva > Vidurio ir vakarų Lietuvos regionas > Kauno apskritis

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Other funding

€ 0,00



EXTENDE

 France

Net EU contribution

€ 60 375,00

Address

14 Avenue Carnot Le Bergson

91300 Massy 

SME 

Yes

Region

Ile-de-France > Ile-de-France > Essonne

Activity type

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

Links

[Contact the organisation](#) 

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

[HORIZON collaboration network](#) 

Other funding

€ 25 875,00

Partners (2)



UNIVERSITY OF SOUTHAMPTON

 United Kingdom

Net EU contribution

€ 0,00

Address

Highfield

SO17 1BJ Southampton 

Region

South East (England) > Hampshire and Isle of Wight > Southampton

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Other funding

No data



IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE

 United Kingdom

Net EU contribution

€ 0,00

Address

**South Kensington Campus Exhibition Road
SW7 2AZ London** 

Region

London > Inner London — West > Westminster

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Other funding

No data

EC signature date: 7 June 2022

Last update: 28 October 2022

Record number: 242769

Permalink: <https://cordis.europa.eu/project/id/101061359>

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