

# ENGINE

ZERO-DEFECT MANUFACTURING FOR  
GREEN TRANSITION IN EUROPE

HORIZON-CL4-2021-TWIN-TRANSITION-01-02



Co-funded by  
the European Union

## Short introduction

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4ZDM Cluster Workshop  
Brussels, 23<sup>rd</sup> Nov 2022

## Project Information

### ENGINE

Grant agreement ID: 101058179

#### Start date

1 June 2022

#### End date

31 May 2025

#### Funded under

Digital, Industry and Space

#### Total cost

€ 12 040 934

#### EU contribution

€ 8 939 318



#### Coordinated by

TEKNOLOGIAN TUTKIMUSKESKUS VTT OY

+ Finland

# Project data sheet

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Grant Agreement Number: 101058179

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Title: Zero-defect manufacturing for green transition in Europe

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Call: HORIZON-CL4-2021-TWIN-TRANSITION-01

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Duration: 1/6/2022-31/5/2025 (36 months)

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Total budget: 12 m EUR

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Total EU funding: 9 m EUR

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Consortium: 17 partners from 8 countries

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Project page on CORDIS:  
<https://cordis.europa.eu/project/id/101058179>



## The challenge

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The manufacturing process of different metal products, such as nuts, bolts, cutlery to boilers, valves and engines, is energy-intensive and requires substantial amounts of natural and financial resources. Moreover, defective components and engines cannot be easily reworked or recycled without significant effort.

# The project

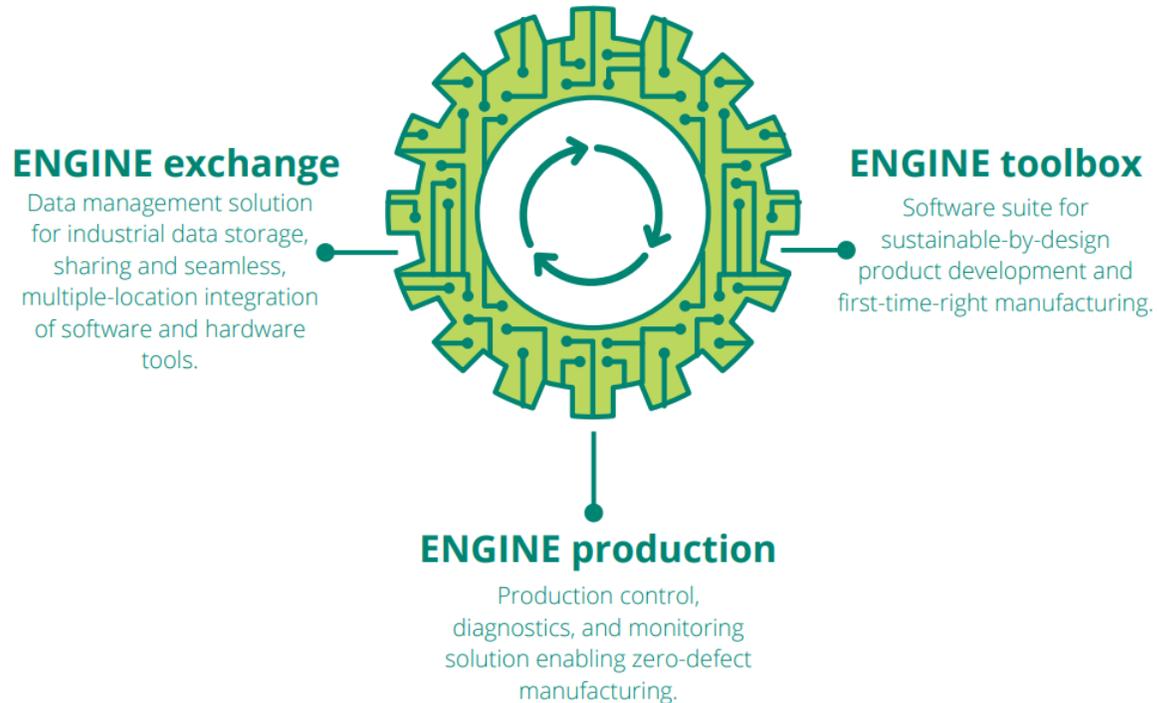
The overall goal of the ENGINE project is to reduce the environmental impact and improve competitiveness of metal product manufacturers by developing a novel metal product design and manufacturing system, which integrates life-cycle analysis and business decisions, reduces defects, waste, and shrinks product time-to-market.

The project will develop a first-time-right and zero-defect metal product design and manufacturing system, which will be applied on marine engine supply chain.



## ENGINE system

The metal product design and manufacturing system that integrates the separate modules to enable sustainable-by-design product development and first-time-right and zero-defect manufacturing.



# The project

1. Create and demonstrate a novel metal product design and manufacturing system
2. Develop computational modelling toolbox for product and process design, non-destructive diagnostic tools for production monitoring, and data solution for seamless integration of the whole supply-chain
3. Research methodologies for first-time-right and zero-defect manufacturing
4. Investigate life-cycle analysis and life-cycle cost methods for design and business decisions
5. Present strategy for employee skills development
6. Transform innovations into promising business cases

# Impact

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The main impact that ENGINE aspires to achieve is to increase the global competitiveness and reduce the environmental impact of European-made metal products by creating a novel, digital, zero-defect way of manufacturing. The ENGINE system demonstrator will show increase in the sustainable production of steel at the ENGINE partners' manufacturing plants.

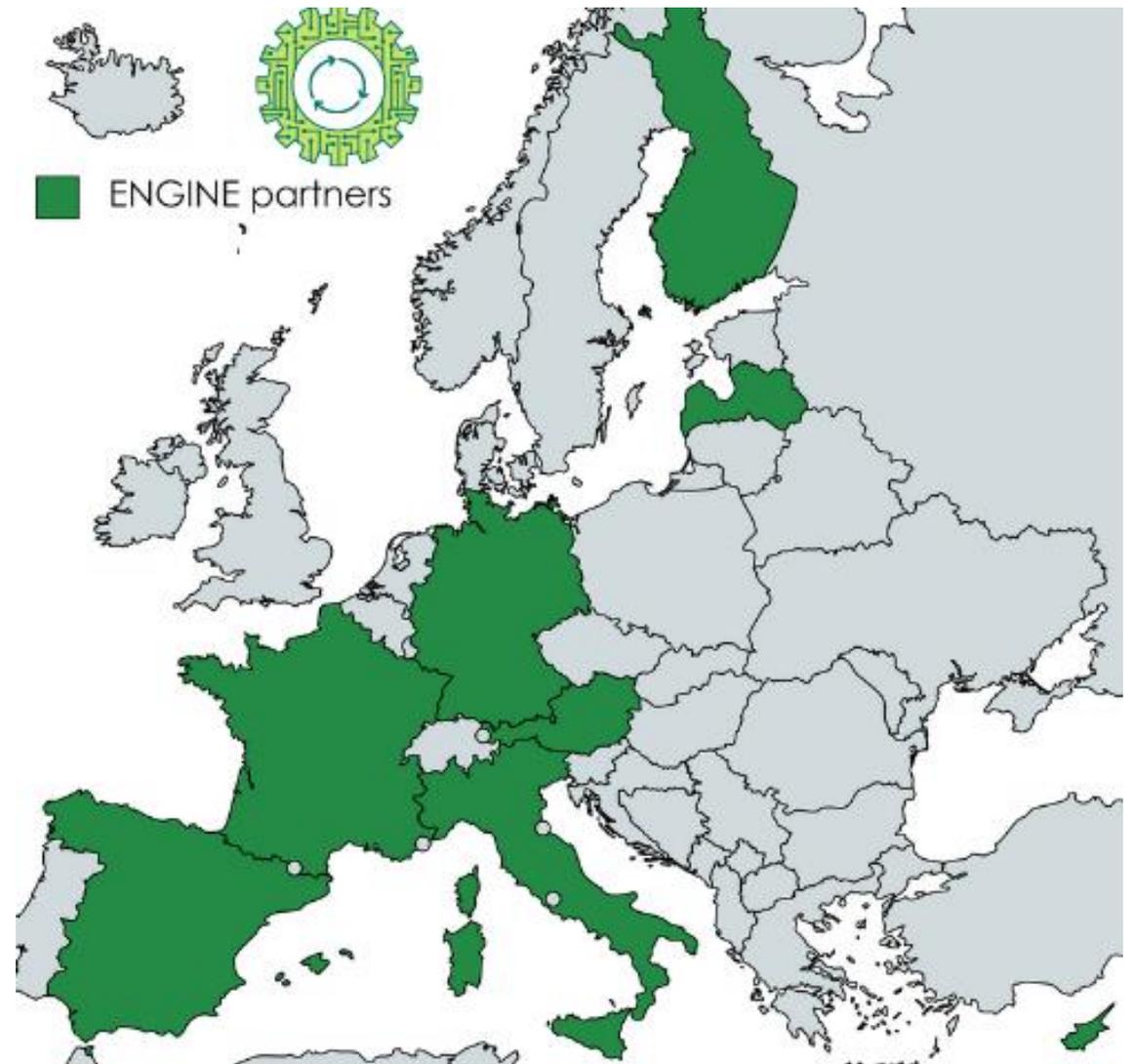
Over 5 year following ENGINE, partners will increase their revenue by 20130M EUR, reduce CO2 emissions by 850M tons, iron consumption by 35350 tons, coal by 18685 tons, and limestone by 3030 tons.

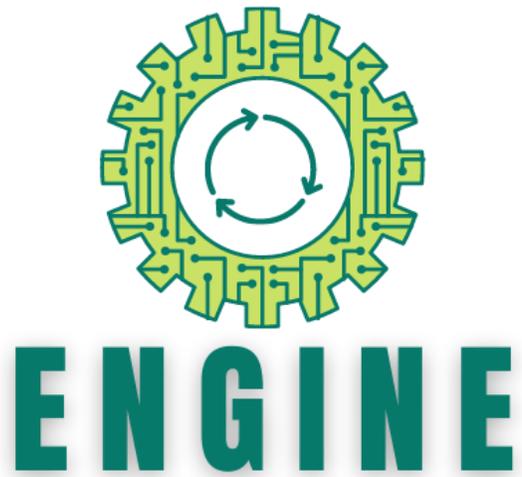


# Consortium

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The ENGINE consortium is an interdisciplinary and intersectoral team of professionals including research organisations, technology providers, manufacturing companies, standardization specialists and experts for skill development, communication, dissemination and exploitation.





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GREEN TRANSITION IN EUROPE

# Thank you for your attention

More information:

[www.theengineproject.eu](http://www.theengineproject.eu)

[www.twitter.com/ENGINEProjectEU](https://www.twitter.com/ENGINEProjectEU)

<https://www.linkedin.com/showcase/engineproject>



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