



D1.1 – Definition of models’ interface and adaption of optimised models

Research Innovation Action

EUROPEAN COMMISSION
Grant Agreement No. 874972

HORIZON 2020 PROGRAMME
Topic LC-GV-04-2019
Low-emissions propulsion for long-distance trucks and coaches

Deliverable No.	LONGRUN D1.1	
Related WP	WP1 Emission, energy management/thermal management framework	
Deliverable Title	Definition of models’ interface and adaption of optimised models	
Deliverable Date	2021-06-30	
Deliverable Type	REPORT	
Dissemination level	Confidential – member only (CO)	
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Status	Final	2021-06-30



This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 874972

Publishable summary

The Work Package 1 (WP1) will provide a simulation framework, platform tool and methodology that can be used to design the next generation of Heavy Duty (HD) powertrain concepts, while also supporting the evaluation of CO₂ reductions made in the other LONGRUN WPs based on the current CO₂ emission determination approach for heavy-duty vehicles (VECTO).

Task 1.1 of WP1 focuses on the definition of specifications and requirements for the LONGRUN simulation platform while considering the capability of SiL (Software In the Loop). For achieving the objectives of Task 1.1 various subtasks were defined and divided among the partners. This included determining the simulation model and SiL approach, system architecture and model block interfaces, collection and optimization of suitable models and their scalability for heavy-duty components and subsystems. Through this, the requirements of models and SiL (including thermal management) were also assessed and a workflow was identified. The simulation environment was set considering the operational constraints of the different use cases as well as component models with upgraded and optimized interfaces.

The model scalability approach was established to represent the Heavy-Duty components with adaptive and scalable component models whose size could be optimised to meet the requirements of chosen HD powertrain and corresponding development activity. The powertrain simulation architecture was designed in line with the outcome of other European projects. Either highly detailed or simplified versions of the models were nominated and then optimised based on the requirements which will be implemented in Task 1.2.

8 Acknowledgement

The author(s) would like to thank the partners in the project for their valuable comments on previous drafts and for performing the review.

Project partners:

#	Partner	Partner Full Name
1	FEV	FEV EUROPE GMBH
2	DAF	DAF TRUCKS NV
3	FPT	FPT INDUSTRIAL SPA
4	FORD	FORD OTOMOTIV SANAYI ANONIM SIRKETI
5	IRIZAR	IRIZAR S COOP
6	IVECO	IVECO S.p.A.
7	VOLVO	VOLVO TECHNOLOGY AB
8	VDL	VDL ENABLING TRANSPORT SOLUTIONS BV
9	ABEE	AVESTA BATTERY & ENERGY ENGINEERING
10	AVL	AVL LIST GMBH
11	EATON	EATON ELEKTROTECHNIKA SRO
12	GARR	GARRETT MOTION CZECH REPUBLIC SRO
13	IDIADA	IDIADA AUTOMOTIVE TECHNOLOGY SA
14	IFP	IFP Energies Nouvelles
15	AVL	AVL MTC MOTORTTESTCENTER AB
16	NESTE	NESTE OYJ
17	PRIMA	PRIMAFRIO SL
18	SHELL	SHELL GLOBAL SOLUTIONS (DEUTSCHLAND) GMBH
19	SIE	SIEMENS INDUSTRY SOFTWARE SAS
20	TECHNA	FUNDACION TECHNIALIA RESEARCH & INNOVATION
21	TOTAL	TOTAL MARKETING SERVICES
22	UMIC	UMICORE AG & CO KG
23	UNR	UNIRESEARCH BH
24	JRC	JRC -JOINT RESEARCH CENTRE – EUROPEAN COMMISSION
25	CHALM	CHALMERS TEKNISKA HOEGSKOLA AB
26	RWTH	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN
27	TU/e	TECHNISCHE UNIVERSITEI EINDHOVEN
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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 874972. The information and views set out in this publication does not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions and bodies nor any person acting on their behalf, may be held responsible for the use which may be made of the information contained therein.