REWARD

REal World Advanced Technologies foR Diesel Engines

EUROPEAN COMMISSION
Horizon 2020
H2020-MG-2014-2015
GA No. 636380

Deliverable No.	REWARD D3.13	
Deliverable Title	Exp. & numerical investigations on optical engine	
Deliverable Type	REPORT	
Dissemination level	Confidential – member only (CO)	
Written By	Ezio Mancaruso (IM) Bianca M. Vaglieco (IM)	2016-10-15
Status	**Final**	2017-01-18
Checked by		
Submitted to Executive Board (1st version)	Submitted to EB on 20.10.2016 for approval on 27.10.2016	2016-10-27
Approved by Executive Board (EB) (1st version)	Approved by EB on 27.10.2016	2016-10-27
Revised version on comments of Project Officer (3rd version)	Approved by Coordinator on 19.01.2017	2017-01-19

H2020-MG-2014-2015 – 636380 – REal World Advanced Technologies foR Diesel Engines

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:
1 - AVL - AVL List GmbH - AT
2 - REN - Renault SAS - FR
3 - VCC - Volvo Car Corporation - SE
4 - CRF - CRF SCpA - IT
5 - CNRIM - Istituto Motori – Consiglio Nazionale delle Ricerche (CNR) - IT
6 - JM - Johnson Matthey Plc - UK
7 - RIC - Ricardo Plc - UK
8 - SCF - Schaeffler AG - DE
9 - LMM - Le Moteur Moderne - FR
10 - DELPHI - Delphi Automotive Systems Luxembourg S.A. - LU
11 - UNR - Uniresearch BV - NL
12 - IFPEN - IFP Energies Nouvelles - FR
13 - VIF - Virtual Vehicle Research Center - AT
14 - CTH - Chalmers Tekniska Högskola - SE
15 - CTU - Czech Technical University - CZ
16 - UPVLC - Universitat Politecnica de Valencia – Motores Termicos - ES

Disclaimer:
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 636380.

Publishable Executive summary

Within the REWARD project, there is a subtask, which is focused on the study of new injectors in a single cylinder research engine. Baseline and variant injectors, from 1.6l multicylinder engine were tested. Real engine data was analyzed and replicated on the research engine. Different injection strategies as well as two swirl ratios were tested. The objective of this research activity was to verify the efficiency of the suggested variant injector in several operating conditions. Moreover, useful information was transferred to the task operating with CFD to calibrate injection model. The variant injector showed to be a good solution to improve injection and combustion efficiency in a real engine even if other parameter like swirl ratios and injected fuel amount per event have to be adjusted.