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Connected Electric Vehicle Optimized for Life, Value, Efficiency and Range

GRANT AGREEMENT No. 824295



CEVOLVER – Deliverable Report

D3.4 - Testing and calibration of implemented functions
including result aggregation

Publishable summary

The following report summarizes measurement results of roller bench test measurements performed on two BOSCH prototype electric vehicles.

In addition, the trip itinerary (TI) - functionality is demonstrated by means of an example. Here, the interaction between vehicle/user and back-end/cloud-services is shown as well as the behaviour of the TI - unction in case of deviations from the initially planned itinerary.

Concerning vehicle measurements, the focus of the measurements on the first vehicle was a comparison of measurement results with simulation models. For this purpose, measurements at constant speeds and various standardized test cycles were carried out on a roller test rig. In addition to temperature levels on component surfaces and in the cooling water side, a loss- / efficiency chain between the battery and “the road” / the rollers is shown as well as a determination of the coefficient of friction for roller conditions at different speeds.

In case of the second vehicle, the focus was on improvements through technical measures at low temperatures (-7°C as reference, generally -15 ... +7°C). Therefore, measurements were carried out with waste heat recovery from power train losses to battery and the use of a heat pump for a typical long-distance driving profile.

Under these conditions, energy benefits of approximately 5% were determined for long trip conditions and potential for improvement are shown.

Finally, there is a presentation of the implementation of the trip itinerary feature at SW and vehicle level, which was announced in Report 3.3. The trip itinerary function is described in detail – including interfaces and transferred data - based on an exemplary planned journey and a scenario is shown where the function detects deviations from the initially planned course and takes corrective action.

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Project partners:

#	Partner	Partner Full Name
1	FEV	FEV Europe GmbH
2	BOSCH	Robert Bosch GmbH
3	FORD	Ford-Werke GmbH
5	IFPEN	IFP Energies Nouvelles
6	RWTH	Rheinish-Westfaelische Technische Hochschule Aachen
7	VUB	Vrije Universiteit Brussel
8	UNR	Uniresearch BV
9	I2M	I2M Unternehmensentwicklung GmbH
10	RBOS	Robert Bosch AG
11	CRF	Centre Ricerche Fiat

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