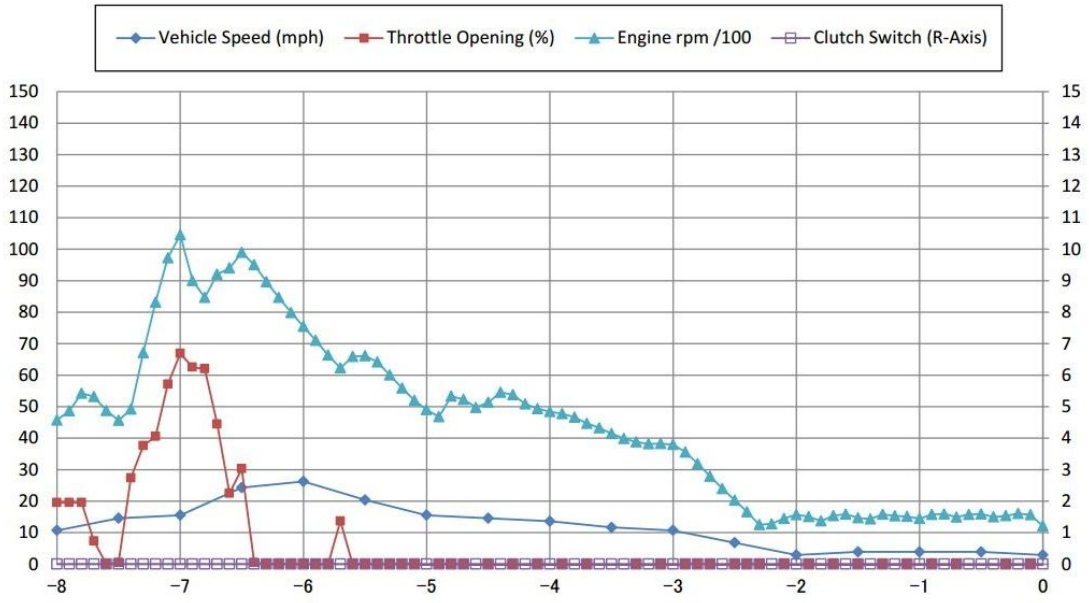
Event Data Recorders and Powered Two-Wheelers: regulation

EDR Event data 2

ECU Part Number	21175-0946
Model Name	EX300A/B
Model Year	2015/2016/2017
Spec	California



EDR-data

This short publication is the second in a row, concerning the development, regulation and implementation of Event Data Recorders for Powered Two-Wheelers (P2W). Please accept this as invitation to connect and collaborate, aiming at a profound contribution to safety of P2W-riders.

Urge

In our previous publication 'EDR and P2W's: Introduction' (http://bit.ly/MODARTS-EDR) [1], it was explained why EDR for P2W's makes sense, especially with respect to safety and accident statistics. And there's more to it: EDR data not only provides insight into the causality of an accident but can be used in road design, training (driving schools) and vehicle design policies to ultimately achieve greater road safety.
There are technical solutions (for example the "extended vehicle" concept) assuring data is available earlier or can offer an extension of the eCall exchange. Various ADAS facilities use the same sensor data that is available in modern PTWs.

Drivers for EDR

Regulation is a strong driver for development and implementation of EDR, by regional regulation or anticipation on this. Nevertheless recent history has shown that OEM's might take the initiative to offer EDR functionality for various reasons, others than regulation. Although the fitment of EDR is not mandatory in the US, all cars need to satisfy a number of requirements if data is recorded. De facto all cars sold in the US are equipped with EDR. How the data is stored is not standardized, but the manufacturer has to make available equipment to read the data.
In Europe some large manufacturers have done the same as in the US (e.g. Volvo, VW) but others have encrypted the software or haven't installed an EDR.

General Safety Regulation
As was announced recently, Event Data Recorders (EDR) will be mandatory in the EU for new cars, vans, heavy goods vehicles and buses, as a part of a package of safety measures in the General Safety Regulation (GSR), approved by European Parliament on the 16th of April 2019, and to be published officially December 16th. The new regulation will require new vehicles to be fitted with a large number of Advanced Driver Assistance Systems (ADAS) and also an Event Data Recorder (EDR). Powered Two-Wheelers haven't been taken in account yet, but surely this will come in the future.
This will take time. Even if there's a Publication of a Regulation, the entry into force is 20 days after the date of publication. New type approvals have to comply after a certain time after the entry in to force (eg. for cars and vans 30 months, for the latest GSR March 2022) and new registrations have to comply after a longer period of time (cars and vans 54 months).
Powered Two-Wheelers (Category L) are not part of the recent GSR, which means still RI. 2002/24/EC ofVo. (EU) Nr. 168/2013 is leading.

Regulations and directives on motorcycles
In Europe there is on going development of regulation concerning safety and sustainability, especially by application of modern techniques in data sensoring and communication.
Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles contains the current legislation. Following the Lisbon Treaty in 2007, regulations in this area are determined by regulations that were previously directives. From 2013 up to and including 2018, a number of Implementing and Delegated appeared [3]. Most recent is Regulation (EU) 2019/129 of the European Parliament and of the Council of 16 January 2019 amending Regulation (EU) No 168/2013 as regards the application of the Euro 5 step to the type-approval of two- or three-wheel vehicles and quadricycles. NB: it shows that European Parliament and Council don't delegate the environmental and sustainability issues to the Commission.
Of the Regulations on Powered2Wheelers published since 2013, none is aimed at the application of electronics and data for the direct or indirect improvement of active safety, apart from ABS and monitoring functions via an OBD. This contrasts with the GSR of April 2019, which describes a range of ADAS features for other motor vehicles, and EDR.

Roadmap
We expect that EDR for cars must first be worked out before Commission, Council and Parliament will pay attention and further improve the safety of P2Ws, including the application of EDR. Legislation comes into being if either the industry as a whole so wishes or if utility and necessity has been demonstrated.
Only the Commission can make a proposal for legislation. Once convinced of a certain priority, the Commission will launch a study assignment through a tender procedure; on the basis of the reporting and demonstrating the usefulness and necessity, the Commission can have a proposal for a regulation worked out in a working group; it is also possible that Geneva regulations are followed.
The duration of this process can be plus 5 years. With MODARTS we want to raise the usefulness and necessity, arouse serious interest, and ultimately to further improve safety for P2Ws by learning from accidents and preventing casualties.

Definitions

Event Data Recorder (EDR)
EDR is a device or function that records the measurements, in chronological order before, during, and after an event happens, such as collision involving the deployment of an air bag, of vehicle speed and other vehicle conditions.
Information obtained from EDR will give information on accident causation. This will allow researchers to better assess the effectiveness of countermeasures, manufacturers to improve future vehicle design and it will allow to determine the liability for the accident more accurately and objectively determined, therefore reducing time and legal costs and providing road users and society with access to justice.

Powered Two-Wheelers (PTW)
The term "Powered Two-Wheeler" (PTW) covers a wide diversity of vehicles. The products are divided into different segments such as moped, scooter, street, classic, super-sport, touring, custom, supermoto and off-road motorcycles.
PTWs are one of the most affordable forms of personal transport in many parts of the world. In various regions, PTWs are also the most common type of motor vehicle.
In the international regulatory environment, in particular UNECE, PTWs are referred to with the term: 'vehicles of category L'. At first, we focus at the category L3, motorcycles: a two-wheeled vehicle with an engine cylinder capacity in the case of a thermic engine exceeding 50 cm3 or whatever the means of propulsion a maximum design speed exceeding 50 km/h. See the UNECE Consolidated Resolution on the Construction of Vehicles [2] for further information.

EUDARTS
This topic is initiated by MODARTS. Within EUDARTS the MODARTS division focuses at EDR for PTW's. The EUDARTS Group (European Data Analysis Research Training & Service)[1] is an association with experts and trainers in more than 30 countries and cooperates with 23 European police forces and 500+ private enterprises.
MODARTS aims to facilitate and encourage the development and usage of EDR in PTW's and will offer services in the field of diagnosis and analyses, training & service in respect to EDR for PTW's. This is our contribution to safety of –in various regions- the most common type of motor vehicle.

References

[1] MODARTS, *Event Data Recorders and Powered Two-Wheelers*: introduction, October 2019.
[2] https://ec.europa.eu/growth/sectors/automotive/legislation/motorbikes-trikes-quads_en

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[1] https://www.eudarts-group.com/home