Smart tachograph 2

Briefing note

Regulation *(EU) 2020/1054* entered into force on 20 August 2020 and introduced a new type of tachograph for new registration vehicles from 21 August 2023. Called Smart tachograph 2, the new device provides additional features enhancing the functionality of the previous Smart tachograph 1.

This briefing note explains the systems and features of the new unit and the challenges being encountered with the implementation process. The information is correct at the time of writing but subject to change.

Introduction

The development of digital and smart tachographs has primarily been to record driving periods, rest periods and working time, using activity modes, and allowing the enforcement of social legislation in road transport.

Smart tachograph 1 (ST1) became mandatory on all newly registered vehicles from 15 June 2019 and built on the original Digital tachograph introduced in 2006. Although the physical appearance of the smart tachograph is very similar to the original Digital tachograph, ST1 came with several improvements to physical functionality and capability, most notably the addition of location data.

Smart tachograph 2 (ST2) builds on this development and requires the tachograph to provide additional information capability including:

- Automatic recording of country border crossing.
- Recording of position at loading and unloading activities.
- Recording whether the vehicle is used for carriage of goods or passengers.
- An independent internal motion sensor to detect 'motion conflict' from other motion indicating sources.

The added information provided supports monitoring and enforcement of additional transport legislation, namely Cabotage and Posting of workers.

Requirements

Regulation (EU) 2020/1054 entered into force on 20 August 2020 and provided a timeline for the introduction of the new devices. The requirements apply to the UK through the *UK/EU Trade and*

Cooperation Agreement (TCA) implemented in the UK through *The Drivers' Hours, Tachographs, International Road Haulage and Licensing of Operators (Amendment) Regulations 2022*[1]. The regulation requires that from:

- 21 August 2023 – ST2 is required to be fitted to all newly registered vehicles.
- 31 December 2024 – Vehicles used for international transport fitted with analogue and digital tachographs must be retrofitted with ST2.
- 21 August 2025 – Vehicles used for international transport fitted with ST1 must be retrofitted with ST2.
- 1 July 2026 – Light commercial vehicles (2.5t to 3.5t) used for international transport must be fitted with ST2.

Additional information provided by ST2

Automatic recording of country border crossing

Using the global navigation satellite system (GNSS) the vehicle's position will automatically be recorded every time it crosses the border:

- Of the UK and an EU member state.
- Between EU member states.
- Connecting an EU member state and another country.

Additionally, ST2 will communicate with data authentication system Galileo Open Service Navigation Message Authentication

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1   https://www.legislation.gov.uk/uksi/2022/1260/contents/made

(OSNMA) to confirm that the navigation message is coming from the vehicle and has not been modified.

When crossing a border, the following data Is recorded:

- The country that the vehicle is leaving.
- The country that the vehicle is entering.
- The position where the vehicle has crossed the border.
- The related GNSS accuracy, date and time.
- A flag indicating whether the position has been authenticated[2].
- The vehicle odometer reading at the time of border crossing detection.

Recording of vehicle position when loading/ unloading

Using GNSS, ST2 has the facility for the driver to input manually through the tachograph menu one of three options when carrying out loading/unloading activities. Below are the three options and the corresponding pictograms:

 Loading operation.

 Unloading operation.

 Simultaneous loading/unloading operation.

The entry of loading/unloading Information must be entered before the vehicle leaves the location where the loading/ unloading operation took place. When loading and unloading, the following data is recorded:

- The type of operation (loading, unloading or simultaneous loading/unloading).
- The position where the loading/unloading operation has occurred.
- The driver and/or co-driver card number and card issuing country.
- The card generation.
- The date and time of the loading/unloading operation.
- The related GNSS accuracy, date and time if applicable.
- A flag indicating whether the position has been authenticated[2].
- The vehicle odometer reading.

Although the ST2 device has this functionality, EU Drivers' Hours regulations does not currently require loading/unloading information to be specifically recorded. Loading/unloading activity recording with ST2 by the driver is optional and good practice, particularly for those undertaking international journeys.

> *Note:* to record loading/unloading requires a manual action by the driver and is not automatic as for border crossings. If not selected, the tachograph will continue to record the mode that has previously been selected.

Recording of vehicle use

ST2 has the facility to be set with the load type the vehicle will carry, either goods or passengers. The approved tachograph centre is responsible for setting the device with the type of load to be carried. This load information is then recorded on the driver card when it's inserted. Below are the three load type options and the corresponding pictograms:

 Passengers.

 Goods.

 Undefined load type.

Independent motion sensor

ST2 devices are fitted with a manufacturer dependent motion sensor lodged within the unit which works independently from GNSS and the vehicle motion sensor. If the internal sensor detects movement but the vehicle motion sensor does not, a 'motion conflict' event will be triggered and recorded.

Transitional tachographs

ST2 requires the use of a new OSNMA satellite service to operate. As a result of technical difficulties meaning the service will not be available until at least December 2023, the European Commission adopted Implementing Regulation *(EU) 2023/980*[3] which introduced the concept of a 'transitional tachograph'.

This is essentially a ST2 vehicle unit with a slight variation in the software programming removing the need to receive the authentication satellite signal. Transitional tachographs will be installed initially and are programmed to 'assume the vehicle position is authenticated'. Once the OSNMA satellite service becomes available, installation of Transitional tachographs will cease.

Previously installed Transitional tachographs would then have required a software upgrade. The IRU had been involved In discussions with the European authorities as to when, how, and who pays for the software update to be rolled out when the authentication issue had been resolved. The European Commission revised it stance recognising the costs involved, resulting in no requirement to update Transitional tachograph's software, they can continue to operate this way for the rest of their in-service life.

Delay to implementation

Material delays with availability of the new devices meant that a large number of newly registered goods vehicles and coaches couldn't be fitted with ST2 to comply with the 21 August 2023 implementation date. Department for Transport (DfT) Ministers made amendments to relevant UK legislation and laid new regulations on 7 July 23 that delayed the implementation of ST2 (and any transitional units) in vehicles operating domestically in the UK until 21 February 2024, see *The Drivers' Hours and Tachographs (Amendment) Regulations 2023*[4].

We have been informed anecdotally that Member States of the EU are also introducing similar delays in their domestic legislation. It is not known if the European Commission will intervene to harmonise any delay in introduction. The European Commission has invited that countries apply enforcement tolerance to new

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2   OSNMA Is not operational before the end of 2023 at the earliest. 'Transitional smart tachograph 2' devices have been Introduced to work around this problem, see *Transitional tachographs* section below for further Information.

3   https://eur-lex.europa.eu/eli/reg_impl/2023/980/oj

4   https://www.legislation.gov.uk/uksi/2023/739/made

vehicles which are not fitted with the new devices, UK authorities are working to establish how this will affect UK operators.

Identification

ST2 looks almost identical to its predecessor, distinguishing features are highlighted below:

- VDO DTCO 4.1 has a small Bluetooth icon on the top right-hand side of the display:

- Stoneridge SE5000 smart tachograph 2 shows 'Smart 2' above the SE5000 name:

Downloading the vehicle unit

To download the ST2 vehicle unit may require some updates to your download devices, contact your tachograph download supplier for more information. For Logistics UK services, a frequently asked questions document is available on our website[5].

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5   https://logistics.org.uk/vision-help-site/changes-and-updates-articles/compatibility-of-generation-2-smart-tachographs-an