

Technologies to identify overloaded vehicles

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European legislation sets rules on the maximum authorised weights in international traffic. In article 10d of this Directive 96/53/EC is stipulated that Member States shall take measures to identify overloaded vehicles by 2021. The proposed solutions in the legislation are automatic weighing systems in the road infrastructure and on-board weighing (OBW) systems installed in all vehicles. This means that Member States have to make a decision in the near future which solution they will choose, but they should not be limited to these two options. Other options that can identify overloaded vehicles include dynamic weighbridges, weighing in motion systems incorporated in bridges, volume scanners or portable wheel load scales that are all established instruments in use.

With this paper CECIP, the European association of the weighing industry, wants to provide further guidance regarding the possibilities to identify the overloaded vehicles. This is only focused on the weighing aspect. CECIP's position is technology neutral and CECIP only wants to support Member States in making their decision.

One choice for whole of EU or region

First of all, CECIP is in favour of a coordinated choice in Europe. This means that one system is chosen for the whole of the EU or at least a region. If the choices are not coordinated certain trucks are checked double, while others are not checked at all.

For example, when a transport company is located near the border in one country where it is decided to set-up systems in the road, the OBW is not mandatory. A vehicle can pass the border avoiding the road infrastructure systems and drive overloaded in the full neighbouring country where OBW systems are mandatory. Still this vehicle is not checked once.

Maturation of technologies necessary

Although CECIP is convinced that the mentioned weighing technologies have a high potential, these technologies are not yet mature enough to meet the necessary criteria to provide an added value that justifies the investment. To reap the full benefits of using the technologies it is necessary that a certain level of accuracy and reliability is reached. Otherwise compliance levels are not increasing significantly, and the number of unnecessary checks is not lowering.

If the accuracy is low, this means a large number of unnecessary checks is still necessary to increase the compliance level to the levels estimated by the European Commission in the impact assessment.

CECIP believes that the caution is needed to introduce mandatory technologies which may not be cost-beneficial. Technologies should be slowly introduced to stimulate further development of the technologies without installing a system that is not meeting the essential requirements.

Meet minimum criteria

According to CECIP it is necessary that certain requirements are met before fully implementing a system. The most important ones are accuracy and reliability. Accuracy of the systems should be at least 5% to provide information that is good enough for authorities. Without a certain level of accuracy there are still trucks that are overloaded that are not checked or the success rate of the checks is no significantly higher as it is now. Moreover, the system should work on or identify any kind of vehicle and should therefore have a type neutral design to fulfil the needed requirements. It should not be that someone can officially bypass a control being not compatible with the used technology.

One other aspect that should be considered is the possibility to tamper systems installed on the vehicle itself. Despite periodic inspection tests it might be possible to make changes to the system. Although the periodic inspection test aim at striking the right balance between practicability and reliability, the weighing systems can be altered in the current system. Reducing the chance of tampering would be possible with OBW systems type-approved under EU legislation.

Based on the objective criteria, CECIP has serious concerns about the level of accuracy and reliability required by OBW systems according to the requirements in the delegated acts. The requirements are not sufficient to justify the costs for installation in the whole transport sector. Particularly when also taking into account the results from the Commission Impact Assessment published in 2013, where the costs didn't outweigh the benefits for OBW systems.

With respect to Weighing-in-Motion systems for high speeds installed in the road infrastructure (WIM), CECIP believes the potential is there, but further developments in the coming year are necessary to meet the needed requirements. At the moment, all known WIM systems are limited (by physics) to 10% accuracy or more due external factors like vehicle dynamics or pavement characteristics. An alternative, or a complement, is for example dynamic weighing systems (speed range <20 km/h) in strategic locations (ports, larger border controls, industrial areas, along larger high ways etc) consisting of a shorter weigh bridge,

identification system and a reporting system to the authorities for automatic recording of weighing and the results.

Flexibility for Member States with on-board weighing inspections

Finally, there is the possibility for Member States to allow in national legislation to having OBW inspection tests done over the course of three months at different certified weighing bridges. CECIP recommends that Member States don't allow for this option in their national legislation as it makes it easy to tamper the results. A vehicle with an on-board weighing device that is generally not accurate, still indicates the right weight sometimes (i.e. even a broken clock indicates the right time twice a day). The owner of the vehicle can decide to only go to the certified weighing device when the indication is accurate. Therefore, this provision makes it easier for inaccurate or tampered systems to pass the test.

Conclusion

With this document CECIP wants to provide further guidance to Member States when making the decision which measure to identify overloaded vehicles will be introduced. Generally, CECIP does not favour one technology over another, however considering the requirements set in the legislation there are doubts if the choice for OBW systems will lead to a situation where the benefits of OBW systems justify the costs. Furthermore, developments in WIM and other dynamic weighing systems are necessary to meet the needed requirements. Other technologies than the ones mentioned in the legislation should be carefully considered as well as part of the strategy to identify overloaded vehicles. Particularly technologies that can meet the objective criteria in terms of accuracy, cost, etc.

Moreover, CECIP and its national member association are always open to support Member States with making the decision.

*CECIP (www.cecip.eu) is the European association representing the weighing instrument industry. Founded in 1958, CECIP has currently members in 14 countries. The weighing instrument industry in Europe is world leader and consists of around 700 companies that are mostly SMEs. The total turnover is approximately 3 billion euro and the industry employ about 50.000 persons.
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