

# A predictive model for European Modular Systems consumption

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## Abstract

In recent years, the use of High-Capacity Vehicles (HCV) has increased in different countries as a solution to reduce the carbon footprint of road freight transport. HCVs can be defined by their length, weight, or both [1]. The European Modular System (EMS) is a typology of HCVs, it is a solution to combine existing loading units (modules) into longer and sometimes heavier vehicle combinations that can be used on some parts of the road network [2]. The EMS consists of the combination of two semitrailers of 13.6 m length each, combined with a tractor and a converter dolly [3]. In Spain, the circulation of these vehicles requires a special permit from the “*Dirección General de Tráfico*” and they are currently being tested under real operating conditions. Research on EMS has mainly focused on the performance of the vehicle to reduce transport costs [4], and the reduction in CO<sub>2</sub> emissions [5,6]. Consumption prediction models have been developed for light duty vehicles [7] and heavy vehicles [8], however, to our knowledge no model has been developed in the framework of EMS. To fill this gap, this research presents a model for the prediction of EMS consumption based on data collected in real operation on a freight transport route in Spain.

## References

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