

TRANSFORMERS – test drive results of a new hybridisation concept for truck-semitrailer combinations

The TRANSFORMERS project (EC grant No. 605170) followed different approaches to increase transport efficiency and help reduce CO2 emissions.

Besides aerodynamic measures and loading efficiency improvements, a prototype hybrid on demand driveline and its corresponding trailer based control architecture has been designed, built and successfully integrated in a trailer. This has been demonstrated with two OEM tractors. The performance and fuel efficiency of the Volvo vehicle combination has been tested on the road in Sweden with real-world fuel measurements that are representative of long haul missions. With the DAF vehicle combination this technology has been tested in a dedicated test cycle that is representative of haulage truck operation in dense urban traffic conditions. With a relatively simple non-optimized control setting for the hy-

brid on demand system, a significant fuel saving was realised, often exceeding 3%. Further optimisation is expected to yield considerably higher savings. Even more savings are to be expected when hybrid on demand control can be combined with the tractor VCU control towards an integrated energy management, leveraging the full potential of the system. The outcome of the development presented in the research is a vehicle proofing the concept on public roads.

The results show that this TRANSFORMERS innovation is a realistic and important enabling technological solution to meet with the ambitious EU CO2 reduction targets for transportation. The successor European funded project AEROFLEX (EC grant No. 769658) takes up the developments of the TRANSFORMERS project and builds a demonstrator vehicle with an enhanced global energy management system •

