

# GIANTLEAP

## Giantleap Improves Automation of Non-polluting Transportation with Lifetime Extension of Pem fuel cells

**Type of project:** Funded by the Fuel Cells and Hydrogen Joint Undertaking (FCH JU, H2020)  
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**Partners:**

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UFC	Université de Franche Comté, France
BOSCH	Bosch Eng. GmbH, Germany
ELRINGKLINGER	Elringklinger AG, Germany
VDL	VDL Bus and Coach BV, Netherlands
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### Abstract

Fuel-Cell Electric Buses (FCEBs) have been deployed in multiple demonstrations in Europe, Canada and the USA, but they still suffer from high costs and low availability. Giantleap aims to increase the availability and reduce the total cost of ownership of FCEBs by increasing the lifetime and reliability of the fuel cell system. This will be achieved with advanced online diagnostics of the fuel cells and the balance-of-plant components of the system, coupled with prognostics methods to calculate the system's residual useful life, and advanced control algorithms.

The Giantleap project is a European project funded by the European Commission's Fuel Cell and Hydrogen 2 Joint Undertaking, with the objective of improving the lifetime and reliability of fuel-cell systems in city buses.

Giantleap is a recursive acronym for Giantleap Improves Automation of Non-polluting Transportation with Lifetime Extension of Pem fuel cells; the objective of the project is to realise a control system that can increase the lifetime and reliability of fuel-cell systems installed in buses by means of novel diagnostic and prognostic approaches.

A similar project, Sapphire, focused on  $\mu$ CHP stationary units: Giantleap applied similar methods to the more challenging automotive applications.



Web site of the project: <http://giantleap.eu>