

## **VisLab's latest Autonomous Driving challenges: from intercontinental to urban tests**

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### **Abstract**

VisLab has been active in the field of intelligent vehicles for the last two decades: after the first test (2000+ km in semi-autonomous mode in 1998), VisLab designed and realized the perception system of TerraMax, the largest entry in the DARPA Challenges, which was the only vehicle that reached the end of the DARPA Grand Challenge with vision as primary sensor. In 2010 VisLab conceived and realized the longest ever test for autonomous driving: 13,000 km from Italy to China. On July 12, 2013, VisLab tested urban driving in a real environment for the first time ever with nobody behind the steering wheel: BRAiVE, VisLab's most advanced intelligent vehicle, drove in downtown Parma, negotiating two-way narrow rural roads, pedestrian crossings, traffic lights, artificial bumps, pedestrian areas, and tight roundabouts.

The presentation discusses current trends and the evolution of ADAS (Advanced Driving Assistance Systems) and also presents VisLab's vision on environmental sensing for intelligent vehicles.

### **Alberto Broggi**

Prof. Alberto Broggi received the Dr. Ing. (Master) degree in Electronic Engineering and the Ph.D. degree in Information Technology both from the Università di Parma, Italy. He is now Full Professor at the Università di Parma and the President of VisLab, the Artificial Vision and Intelligent Systems Laboratory. As a pioneer in the use of machine vision for automotive applications and on driverless cars, he authored of more than 150 publications on international scientific journals, book chapters, refereed conference proceedings. He served as Editor-in-Chief of the IEEE Transactions on Intelligent Transportation Systems, 2004-2008; he served the IEEE Intelligent Transportation Systems Society as President for the term 2010-2011. He is recipient of two ERC (European Research Council) prestigious grants.