

The Connected Car VIP

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About WWRF



WWRF is the unique forum where the wireless community can tackle the key research challenges. By searching out the issues, flagging them up to opinion leaders, and then working with our liaison partners, and you, to deal with them, we drive the development of the Wireless World.

The Vertical Industries Platform Working Group, the Connected Car, seeks to develop WWRF as a bridge between the automotive industries and standards organisations such as 3GPP



About TRL

- Est. 1933 (RRL Harmondsworth)
- Independent Privatised company since 1996
- 320+ staff including many world recognised experts
- TRL is an internationally recognised centre of excellence providing world-class **research, consultancy, testing and certification** for all aspects of transport.
- TRF, which owns TRL, is a non-profit-distributing foundation with >80 sector members and no shareholders

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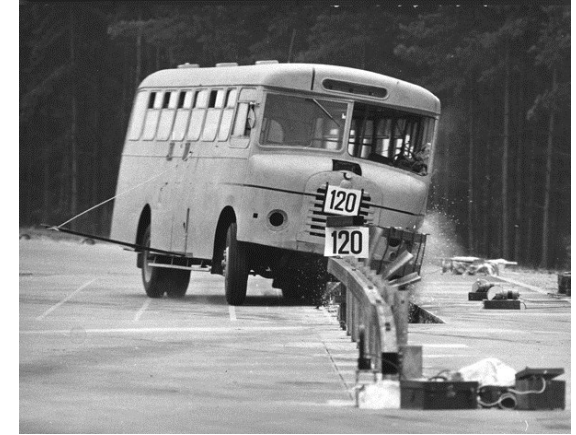
TRL THE FUTURE
OF TRANSPORT



Early TRL research

WIRELESS WORLD
RESEARCH FORUM™

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Connected Car

- First “connected car” probably McLaren F1 (1994) which had a remote diagnostic capability via phone modem
- Modern concept of an internet connected car was GM OnStar in 1996 in the US
- Modern concept of a vehicle with ubiquitous connectivity, allowing implementation of wide range of safety, efficiency and convenience features
- Two types of connectivity
 - Long range (cellular)
 - Short range, low latency (DSRC/WAVE/ITS G5 etc)



Connected Car Benefits

- Safety – initial focus of EC and others
 - Further benefits with automated driving, relying on connectivity
- Efficiency – better use of road infrastructure, reduced emissions
 - Potential for reduced infrastructure
- Convenience – providing services which users want
 - Intelligent routing
 - Parking

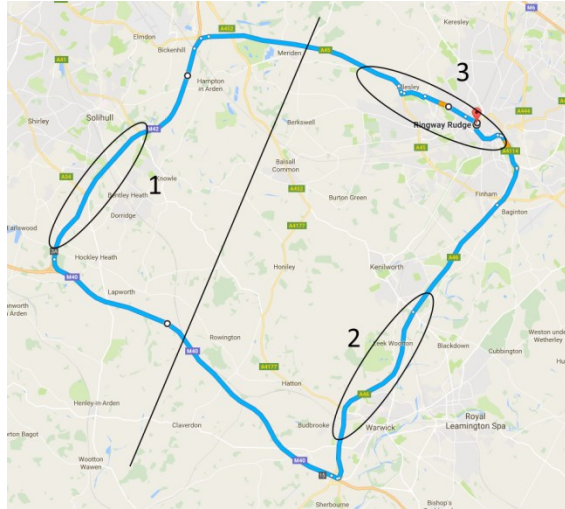


Use cases for Connectivity

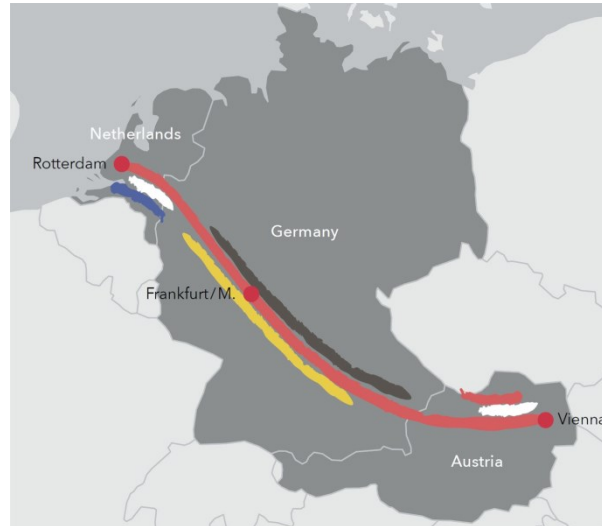
- Initial use cases based on safety
 - Hazard warnings (Emergency Vehicle Warning, Traffic Condition Warning, Roadworks Warning)
 - In-vehicle signage, leading to ISA and automation
- Being tested in a number of pilots through
- Other use cases for efficiency and infrastructure reduction



Pilot projects in Europe



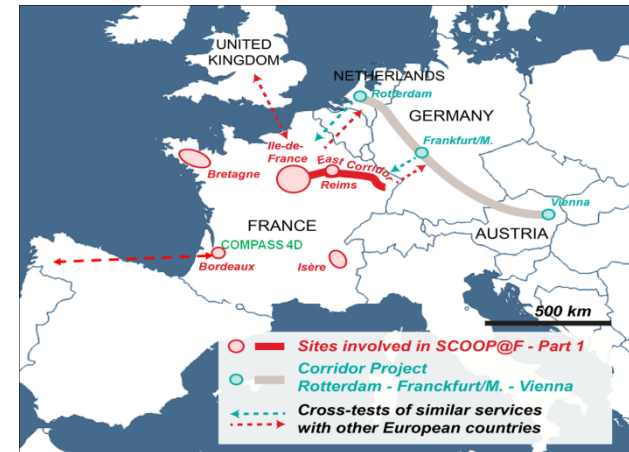
UK CITE



ITS Corridor



Nordic Way



SCOOP @F

Pilot projects in Europe

InterCor



Use of 5G for Connectivity

- Primary needs for connectivity
 - Broadband internet access – provided for by LTE
 - P2P, low latency – the realm of DSRC
 - Currently covered by 802.11p based networks – WAVE and ETSI ITS-G5
 - Alternative being proposed by LTE(V)
 - Significant spectrum sharing and interference issues to be resolved



Thank you !

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