1 Introduction

This document contains a collection of Frequently Asked Question (FAQ) and answers in the below table.

Table 1

The project	
What is a vehicle platoon?	It's a road train with vehicles, where vehicles are autonomously following a manually driven lead vehicle, driven by a professional driver.
What is SARTRE?	An EU-financed project, with seven partners from four countries in Europe, discovering the possibilities with vehicle platoons on public highways. The project started on 1st September 2009 and aims to complete by end August 2012.
What is the Project Budget?	€6.4m with around 60% of this being provided by the European Commission FP7 programme
Who are involved in the project?	It's an EU financed project with following participating partners: • Ricardo UK Ltd (UK) • Volvo Technology (Sweden) • SP Technical Research Institute of Sweden • Applus+ IDIADA (Spain) • Tecnalia (Spain) • IKA (Germany) • Volvo Cars (Sweden)
Why are you researching about vehicle platoons?	Platooning has the potential to address three key societal challenges; • Environment - 10-20% anticipated saving • Safety - Driver is no 1 contributor to road fatalities being the primary cause 87% of the time and contributor 95% of the time. With reduced driver control increased safety can be achieved • Reduced congestion – increased traffic stability In addition there is added convenience for the drivers of the following vehicles, allowing use of their travel time for other activities.
Which are the major project challenges?	There are a lot of challenges being analyzed in the project. One of them is seeking to identify an appropriate length of platoon, for good interaction with surrounding traffic. Very long road trains can block exits to slipways for other vehicles.
Is the idea of road platoons suitable for country roads and motorways only or they are also possible in cities?	At the moment we are focussing on Motorways only. There are additional complexities when you consider country roads and cities (e.g. pedestrians).
Is there a need for any infrastructure changes before introducing platoons on public roads?	No, we are aiming to have a system that doesn't require infrastructure changes
How about safety of the platoon? Have you already	We are completing a safety analysis which will lead to safety requirements. We obviously have a

made any simulations of inevitable accidents and response of the vehicles in the platoon?	goal to be as safe as the existing road system – If not safer.
How does it work	
How do the vehicles communicate with each other	Wireless through a technique which will be standardized on an EU-level (based on 802.11p). However we are still exploring which communication systems that will be used.
How long will a platoon be?	The human factors work has indicated that up to 15 cars would be acceptable. In the SARTRE prototype we will implement a platoon of 5 vehicles. One key factor is that the platoon needs to be able to interact with other road users, who for example need to be able to conveniently access or leave the motorway without being disturbed by the platoon. Computer simulation is being used to study how platoons will affect and be affected by surrounding traffic.
What will be the distance between the vehicles?	In the initial tests, the inter-vehicle gap was around 10m. We're aiming to minimize the distance in order to achieve reduced fuel consumption. The actual distance we achieve will depend on safety, human factors and environmental benefits.
What technology will be used?	A combination of sensors (such as radar, camera and laser), as well as communication between the vehicles will help the vehicles to follow the movement of the lead vehicle. For administration of the platoon, a software client will be used that for example will guide the driver to a suitable platoon and perform other platoon organizing related tasks.
How will an existing vehicle create the necessary gap to pull off?	The current intention is that the lead vehicle will control the following vehicles and create the gap.
What happens if the lead vehicle drives off the road?	We strive for preventing this from happening, and believe that the safety systems in the lead vehicle are an important factor for helping the vehicles to stay on the road (e.g. Volvo's ESP, Driver Alert Support, Lane Keeping Support…). There could however be situations where the lead vehicle (by intention or not), drives off road, and we are evaluating different solutions for handling these situations.
Can any driver with a drivers licence drive the lead vehicle?	No. Our view is that the lead vehicle should be driven by a professional driver, with high likelihood of additional training to ensure they understand particular issues with road trains. In the project, we therefore let professional truck drivers lead (as the likely first adopters). Coaches would also be an alternative. Cars could also lead but this is not the focus of SARTRE.
Isn't there a risk that the drivers	The driver should be able to relax, that is an

in the following vehicles become too passive and inattentive if the driving is autonomous?	important part of the project. However, we are also looking at supportive systems that will help the driver to take control of the vehicle again, when, for example, it's time to leave the platoon.
How will a potential joiner know if he or she can join?	The information about access will be communicated by the lead vehicle. A web based client can support the planning.
How will you handle a lane change?	The lead vehicle driver decides if the platoon needs to change lane. To achieve this the driver needs a good "view" of the surrounding traffic. To support this we will be transmitting the sensor information from all vehicles to the lead vehicle.
Will a platoon crash be more damaging than a normal motorway crash due to the shorter distance?	Not necessarily. The platoon vehicles are being driven automatically and as such we are benefiting from the faster reaction times of the platoon system, in addition the relative speed between vehicles in the platoon is less thus damage is likely to be less. One of our guiding principles is to ensure we do develop a system that is safer than existing systems.
Why not use a train instead?	We believe in using the most appropriate transport mode and the train provides an important transport alternative, however this is not always the most efficient or convenient alternative. The road train provides a good complement, since it combines the flexibility and benefits of a car with the benefits of a train.
Current status and Next step	
You stated in your press release platooning can be a reality within 10 years, is this likely?	A lot of the technology is already available. However, legislation and user acceptance, impact the date for introduction to market.
Where will we be seeing road trains in the future?	Probably in slow and middle lane on highways. Early adoption may be in the form of dedicated lanes.
Will there be a cost to join a platoon and how will payment be handled?	We are looking at different alternatives for the business model.
At which stage of the project are you now?	At the moment, we have tested one car following a lead truck in limited speed on a test track.
The project will be finished in 2012, what is the next step (from Jan 2011) at the moment?	The next step is to incorporate more following vehicles at higher speeds and shorter inter-vehicle distance. In the final step of the tests, we aim to demonstrate on public highways.

2 About the partners

SP Technical Research Institute of Sweden *is a leading international research institute. We work closely with our customers to create value, delivering high-quality input in all parts of the innovation chain, and thus playing an important part in assisting the competitiveness of industry and its evolution towards sustainable development. For more information, visit www.sp.se*

Ricardo plc *is a leading independent technology provider and strategic consultant to the world's transportation sector and clean energy industries. The company's engineering expertise ranges from vehicle systems integration, controls, electronics and software development, to the latest driveline and transmission systems and gasoline, diesel, hybrid and fuel cell powertrain technologies, as well as wind energy and tidal power systems. A public company listed on the London Stock Exchange, Ricardo plc posted sales of £162.8 million in financial year 2010. Ricardo is participating in the SARTRE project through its UK business, Ricardo UK Ltd. For more information, visit www.ricardo.com.*

The Robotiker-Tecnalia Technology Centre *is an all-round supplier of contracted R+D+I, which has a complete range of services and products ranging from foresight and technology surveillance to new technology based business launching. Of this wide range of methods for collaborating with companies, development of R&D projects and technology consultancy services stand out. Robotiker-Tecnalia operates in its reference markets through five business units: ENERGY, TELECOM, AUTOMOTIVE, INFOTECH and INNOVA. This helps the technology centre to specialise by orienting research towards the needs of companies in these key sectors. Its mainly objective is to actively contribute to sustainable development in Society through Research and Technological Transfer. Over the years Robotiker-Tecnalia has taken part in more than 85 European projects, 24 of which remain ongoing. www.robotiker.com*

Volvo Technology Corporation *is a Business Unit of the Volvo Group, which is one of the world's leading manufacturers of commercial transport solutions providing products such as trucks, buses, construction equipment, drive systems for marine and industrial applications as well as aircraft engine components. Founded in 1927, Volvo today has about 100,000 employees, production in 19 countries and operates on more than 180 markets. Volvo Technology Corporation is an innovation company that on contract basis invents researches, develops and integrates new product and business concepts and technology for hard as well as soft products within the transport and vehicle industry. Volvo Technology's primary customers are the Volvo Group Business Areas & Units. In addition, Volvo Technology participates in national and international projects in certain strategic areas, organised in common research programmes. For more information see www.tech.volvo.com*

Applus+ IDIADA*, as a global partner to the automotive industry, provides complete solutions for automotive development projects worldwide. Applus+ IDIADA's Technical Centre is located 70 km south of Barcelona (Spain), having subsidiaries and branch offices in 16 European and Asian countries with a total work force of around 1000 employees. The core services Applus+ IDIADA provides are: Engineering, Proving Ground and Homologation. Main fields of engineering activity are power train, emissions, noise & vibration, vehicle dynamics, braking systems, fatigue & durability and passive safety. Applus+ IDIADA's proving ground is recognised as one of the best facilities in the world, and is renowned for the quality of its costumer service. As a multi-user facility, safety and confidentiality are of the highest priority. Weather conditions make this facility the first choice regardless of the type of testing. For more information, visit www.idiada.com*

The Institut für Kraftfahrzeuge of the RWTH Aachen University (ika) *with its centennial history is engaged in education and in industry-orientated research on vehicles - e.g. cars, commercial vehicles, busses and motorcycles - as well as neighbouring issues such as traffic and environmental conditions (noise, exhaust gas, etc.). ika is headed by Univ.-Prof. Dr.- Ing.*

Lutz Eckstein. In 2009 ika had more than 200 employees. ika increasingly links research projects with development tasks that have to be financed by third-party funding. ika´s activities are tailored to industrial demands and comprise the departments: Chassis - Body - Drivetrain - Acoustics - Electronics – Driver Assistance - Strategy and Process Development. The Driver Assistance department focuses on the development and assessment of driver assistance systems. Since the first introduction of advanced driver assistant systems (ADAS) ika has been one of the leading test facilities for independent tests and certifications of the system's components and overall applications. For more information, visit www.ika.rwth-aachen.de

***Volvo Car Corporation** is one of the car industry's strongest brands, with a long and proud history of world-leading innovations. Volvo sells around 400.000 cars per year in about 120 countries and comprising some 2,000 sales outlets and service workshops around the world. Volvo Car Corporation's headquarter and other corporate functions are based in Gothenburg, Sweden. For more information, please check www.volvocars.com.*

What kind of task has every partner within the project?

- Ricardo – coordination and overall management, Safety analysis, development of autonomous control, development of platoon management strategies (e,g, join, leave maintain)
- Volvo Cars – development of sensor and sensor fusion and development of low level actuation (e.g. power steering) for following vehicle cars, lead on implementation work package, installation of the system into the cars
- Volvo Technology – development of sensor and sensor fusion and, development of low level actuation (e.g. power steering) for lead and following trucks, lead on implementation for lead vehicle, system installation into trucks
- SP – lead use case definition, development of vehicle to vehicle communications, lead dissemination work package
- IKA – traffic modelling, development of on-board unit, development of back office support system
- Tecnalia Robotiker – human factors study, development of in-vehicle HMI for lead and following vehicle
- Applus+ IDIADA – assessment of system including road trial

MEDIA CONTACTS

Ricardo UK Ltd (SARTRE project leader)
Anthony Smith
Ricardo Media Office
Tel: +44 (0)1273 382710
E-mail: media@ricardo.com

SP Technical Research Institute of Sweden (responsible for SARTRE project dissemination)
Carl Bergehem
Tel: +46 (0) 10 516 55 53
E-mail: Carl.Bergenhem@sp.se