ITS REPORT – INTRODUCTION

Purpose

This report has been prepared by the Automotive Council as part of the Council's continuing effort to encourage the development of UK capabilities in the fields of automotive manufacturing and technology. It addresses the issue of Intelligent Transport Systems (ITS), and explores both the extent of current activities and the potential for their future development.

The term "Intelligent Transport System" has been used for many years. Early references to ITS date from the early 80's and were used at that time not only to describe the particular individual devices that were coming to market at that time, but also the wider potential of integrated electronic and communications systems and their ability to revolutionise the entire package of traffic management and driver experience. Whilst some of the particular devices cited came to fruition (and we might include adaptive cruise control, satnav, and on-board computers amongst the successes), the wider story of an integrated systems revolution has never really been delivered. It remains a tantalising possibility.

Despite the apparent lack of fruition, several important facts are indisputable:

- electronic systems are cheaper and more capable than ever before (and the rate of progress in these directions shows no signs of slackening);
- information is more abundant and more accessible via remote, wireless, connection than could ever have been imagined back in the '80's;
- the need for active traffic management systems continues to increase because of the increasing density of vehicles on our roads
- the awareness of noise, air quality, and atmospheric carbon levels, makes it increasingly necessary to develop journey management strategies that are optimised to reduce these forms of pollution.

Taken together, these facts have convinced the Automotive Council of the need to re-examine the place of ITS in modern transport systems and to examine, in particular, the role that ITS might play in the next stages of the industry's development in the UK.

Definitions and Scope

Before we can address the objectives of this report, it is necessary to define what is meant by ITS because, over a period of time, it has developed different meanings in different circles. Within the body of the report, therefore,we have adopted the following definitions of ITS and the systems included within it. These definitions are deliberately broad and have been chosen with the express intention of pushing the limits to which ITS might be extended as a central part of our future transport systems.

ITS

1. Anything that can assist the driver to optimise his/her journey within any chosen set of criteria (e.g. duration; fuel consumption; carbon footprint; etc.) AND
2. Anything that can assist the authority to optimize management of the road space within any chosen set of criteria (e.g. safety; pollution; energy consumption; carbon emissions; congestion)

Included Systems

3. Systems within the car (e.g. engine management systems; adaptive cruise control; satnav systems; proximity sensors; cameras; etc.)
4. Systems outside the car(e.g. infrastructure-based systems such as traffic signals; congestion charging systems; lane control systems; etc.)
5. Car-to-car and car-to-infrastructure communications devices (radio; mobile phones; proprietary communications devices; internet channels; etc).
6. Web-based systems for information sourcing and ubiquitous interconnection.

Structure of the Report

The first part of the report includes three sections titled **Setting the Scene; The Current State of the Art;** and **The Potential for Future Development**. These sections briefly describe the history of ITS; set out the 'big issues' (such as safety, congestion, carbon, pollution, etc) that might be addressed by future developments of ITS; explain where we are now with the current state of the art; and, finally, describe where we might go with the technology and systems in future.

The second part of the report builds on the potential identified in the first part, and brings a 'reality check' to the centre of the argument. Sections titled **Key Issues for Resolution; Obstacles to Success; and A Route-Map to Effective, Large-Scale Deployment** deal, in turn, with problems that may be designated 'for the solving'; issues that might represent absolute showstoppers (technical, economic, social, and political); and a route-map which puts all of this into some sort of time and sequence perspective.

The report is concluded by a section titled **The Possibilities for UK Employment and Global Technology-Leadership.** This section looks at the possibilities for creating stable, high quality, employment within the UK which is based on a recognised national position of genuine leadership in the field.

Throughout the report, our view is from the perspective of the UK –based Automotive industry (the OEM's and their supply-chains). However, the study has been deliberately cast wide to embrace the views of all of the stakeholders who might play a role in the future development of ITS systems in the UK. Accordingly, national government, the municipalities; the mobile phone operators; the internet providers; the systems integrators; small entrepreneurs; and academia have all been consulted and have contributed to the preparation and presentation of this document. Contributors are listed elsewhere in this document, and we thank them all for their time, enthusiasm, and contribution.