



Intelligent Transport Systems for rail – A summary

ITS United Kingdom is the UK's society for all who work in Intelligent Transport Systems (ITS). ITS is the use of IT and communications technologies for surface transport applications. ITS (UK) has some 160 corporate members and is an independent association financed by members' subscriptions.

There are a number of ITS applications with the potential to assist rail operators and passengers. Many are already in use, although not always referred to as ITS. This document summarises ITS technologies relevant to rail, and gives examples of real life implementations.

ITS (UK) Members gain significant benefits through the opportunity to meet and discuss with fellow transport professionals the deployment of intelligent transport systems with trans-modal benefits (such as journey planning and through journey management), and to improve the journey experience at modal interchanges.

This summary briefing note is designed to highlight those aspects of intelligent transport systems which are already being deployed in the rail sector . or may be deployed in the future . highlighting the potential impact and usefulness to other modes of transport and therefore of potential interest to transport professionals working in these sectors.

The ITS technologies have been grouped under the headings identified by the Railway Industry Association as priorities for the industry: Cost, Carbon, Capacity and Customers.

Cost

ITS technologies which can be used to reduce operators' costs

1. Automatic Train Location
2. Train movement management
3. Train data management
4. Remote train maintenance management
5. Smart ticketing
 - a. Ticketing via mobile phone using barcodes
 - b. Print your own ticketing
 - c. Smartcards
 - d. RFID
6. Passenger counting. Including boarding planning and management, use of toilets and shops.
7. On-vehicle security and surveillance
8. Infotainment, for example Heathrow Express

Carbon

ITS technologies which can assist in bringing down the carbon emissions associated with rail travel



Low cost solar powered display by Nexus Alpha Low Power Systems

1. Parking guidance at stations
2. Information to enable informed modal choice for journeys to and from rail stations, for example Transport Direct
3. Passenger counting for intelligent time tabling and train formation

Capacity

ITS technologies which can assist in maximising the use of track and rolling stock in terms of passenger numbers

1. Ticketing via mobile phone, using barcodes for example
2. Reliable passenger counting, exact details of spot loading and general overcrowding
3. Intelligent ticketing / pricing to spread journeys
4. Average crowding information included in journey planners / ticket purchasing portals to enable informed choice

Customers

ITS technologies which can assist rail travellers in planning their journeys effectively and in travelling comfortably, safely, and enjoyably

1. Ticketing via mobile phones using barcode
2. On-Train Displays capable of displaying real time information regarding connecting train status and platform number
3. Through Journey App. location-based mobile apps advising of which platform to catch required train, how to get to that platform from current location, where to stand for correct carriage (if pre-booked seat), when to prepare to get off, route through station (with active guidance) to exit, connecting mode of transport, or platform for connecting train. Such an app could also guide to café, toilets, assistance. The app would also need to advise of disruption and journey plan updates.

Live updates	
Liverpool Street to	
Chingford	Good Service
Enfield Town	Good Service
Cheshunt	Good Service
Hertford East	Good Service
Cambridge	Minor Disruption
Stansted Airport	Good Service
Shenfield	Good Service
Southend Victoria	Good Service
Braintree	Good Service
Clacton-on-Sea	Good Service
Ipswich	Good Service
Norwich	Good Service
There are currently 8 line and service reports and no underground reports	
View real time information	

Image courtesy of Nexus Alpha

4. On train multimedia systems (audio and visual)
5. Train information on services connecting with rail . road network VMS, buses, trams, ferries, national coach services, and air . and vice versa
6. Taxi availability and booking information on train
7. Full end to end information and planning including walking / cycling segments
8. On-train security and surveillance
9. Station security and surveillance
10. Car park security and surveillance
11. Infotainment
12. Real time departure board and other station display
13. Station parking information and guidance
14. On train information on follow-on journeys by train and other modes
15. Advanced booking systems . choose seat, types of accommodation, facilities, request assistance

If you are working in or with any of these areas of technology, ITS (UK) members would like to hear from you, and would welcome the opportunity to exchange ideas and thinking with you.

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Better transport through technology
The Intelligent Transport Society for the UK

ITS United Kingdom Interest Group Information Sheet

Public Transport Interest Group

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The purpose of the Interest Group –

The Public Transport Interest Group provides a focus for ITS (UK) members and others who are interested in the use of Intelligent Transport Systems in public transport: passenger information systems pre- and during trip, safety and security systems, fleet management, AVL, smartcards and other forms of ticketing, ticket retail systems, etc.

Typical activities of the Interest Group –

The group's primary activity is to hold seminars, usually three a year, two in London and one in Scotland. It also provides a conduit for those interested in CEN and ISO standards development in public transport. The focus of the seminar activity is on the dissemination of high quality technical information and the exchange of experience, without the formality and expense of commercial conferences. The interest group is chaired by Chris Querée, who is always keen to hear of ideas to extend and develop the range of the group's activities.

To find out more about the Public Transport Interest Group, contact
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