



Schedule Advisory System

by Unipart Rail

Delivering energy & emissions savings, improved train punctuality and consistent driver standards



Real-time Information

Individual driving styles can make significant differences to energy consumption, the emissions produced and mechanical wear. The Schedule Advisory System delivers real-time information on how these quantities can be consistently reduced. These reductions are true for electric, diesel and hybrid traction units.

At the heart of the Schedule Advisory System is a comparison of the train location and an ideal route profile. The results of the comparison can be conveyed to the driver continuously or at dedicated timing points.

Versatile Configuration

With the Schedule Advisory system the level of integration with the train is carefully selected dependent upon the operational requirements. The Schedule Advisory System can range from a stand alone system with internal GPS and 2G/3G receivers to being fully integrated with the train communications system.

Driver Machine Interface

The driver machine interface is provided by a long life, Touch Screen, LCD monitor with an anti-reflective coating. Special attention has been paid to the interface format to provide clear indication whilst preventing conflict with safety critical equipment. The interface can also be modified for individual cab layouts and driver requirements.

Driver Information

The information that is provided to the Driver follows a logical sequence and is intuitive to use. The time required to instruct the Driver in the operation of SAS is therefore minimal

Route Profile

The comparison between the actual train position and the ideal route profile is continuously updated during the course of each journey. The ideal route profile can be tailored to maximise energy efficiency, punctuality, line capacity or to reflect ideal driver standards.

The parameters for the route profile generation, changes to the working timetable and temporary speed restrictions, are automatically uploaded to the train.

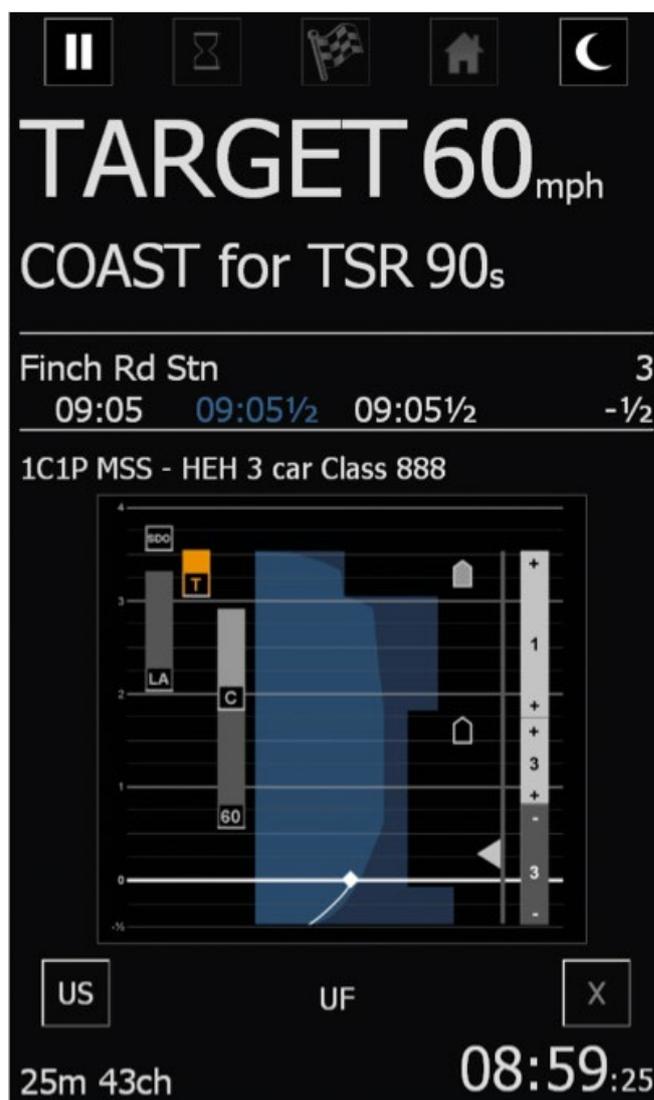
Display Format

The display format and the screen information is configurable and is normally the result of an in-depth consultation program with Drivers. In addition to advising the time relative to the timetable, the typical interface provides:

- A count down to coasting point(s)
- The next scheduled stop
- An estimated time of arrival

Depending on the level of driver advice required, information can also be displayed for recommended speed, speed holding, acceleration power setting and motoring power setting.

It is also possible to enhance the on-train system to be aware of nearby timetabled trains on the same or crossing routes and adapt the driving advice to maintain headways between them. Furthermore, neighbouring SAS-equipped trains can communicate with each other and co-ordinate their advice to optimise overall energy-saving and on-time performance.



Data Log

The Schedule Advisory System not only offers real-time advice to the driver but provides the storage and downloading facility of journey data. The data stored can cover a wide range of parameters for evaluation at the ground station which can be used to evaluate journey and driver performance.

The specially developed data warehouse holds the data downloaded from the train at a high level of detail.

The associated reporting package provides the operator with a simple to use interface to generate any number of routine or ad-hoc reports. This allows a meaningful analysis to be made quickly of the recorded data.



Implementation

The Schedule Advisory System has been developed by Unipart Rail and CH2M Hill, two companies dedicated to the Rail Industry and offering the benefit of vast proven experience. Our dedicated Schedule Advisory System team provides a full service that ranges from initial concept design through to approval and installation.

The overall design concept is to provide a system for which:

- Operation is safe, intuitive and user friendly
- An early return on investment is realised
- Integration with ERTMS and other management systems is achievable
- Future upgrades are possible to ensure compatibility with real-time traffic regulation information from the Next Generation Traffic Management (NGTM) System

The Schedule Advisory System has been designed by Unipart Rail and CH2M HILL to deliver real operational savings and improvements in service for train users.



With the Schedule Advisory System, the driver now has more control over achieving on-time arrival of the train. The train's location is continuously compared with an optimum route profile that is engineered to save energy by utilising unused recovery time in the timetable.

Real-time advice to the driver ensures that the most efficient driving manner is maintained throughout the journey. The advice includes coasting points, recommended speeds and reduced tractive effort during acceleration and motoring phases.

Extensive data logging facilities are also available for evaluating delay attribution and train performance.

Benefits

- Delivers up to 20% energy savings
- Reduces CO₂ emissions
- Supports recovery of delay minute costs
- Improves train punctuality & line capacity
- Minimises the occurrence of SPADs
- Reduces mechanical wear

Features

- Promotes a consistent & economical driving style
- Designed for Passenger & Freight Operating companies
- Flexible configuration
- Suitable for new build and retrofit



About Unipart

The Unipart Group is a leading UK manufacturer, full service logistics provider and consultant in operational excellence. Operating across a range of market sectors, including automotive, manufacturing, mobile telecoms, rail, retail and technology, Unipart offers a breadth of services to a wide range of blue chip clients internationally.

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