

*Market
consultation
document*

*CHARM on traffic
management
centres*



Introduction



The Highways Agency (HA) and Rijkswaterstaat (RWS) respectively, are responsible for the operation and maintenance of the English and Dutch motorway and trunk road networks.

Road traffic is monitored and influenced using roadside technology that is governed by control rooms in traffic management centres (TMCs). Both organisations have the requirement to update the control room technology. They have teamed up in order to develop requirements for a new generation of traffic management (centre) systems that may be jointly procured. This work is being executed under the CHARM programme and will be completed by the end of December 2012. The CHARM programme has identified that 90% of the functionality of HA and RWS control rooms are the same. HA and RWS senior management have therefore recently confirmed for the CHARM programme to explore the joint procurement of a replacement for their existing control room systems.

The market consultation described in this document is part of the CHARM programme. We invite both companies already active in traffic management, as well as ICT companies not yet active in the field of traffic management to participate in this market consultation. We expect that ICT solutions from outside the domain of traffic management can make a significant contribution to future TMCs. The insights of round 1 will be used to shape round 2 of the market consultation. Round 2 will be open to all interested parties. No selection will be made on the basis of round 1. All ideas submitted by Industry are treated as Commercial in Confidence. No part of these will be made public. However, relevant insights are subject to publication and may be used by RWS and HA to shape future strategies.

Background



The following provides an overview of Traffic Control systems within Traffic Management Centres.

Traffic Management Centre (24/7 operation and responsibility)

Much of the work in the TMC can be very reactive, for example handling incidents. Some work can be proactive, e.g. if operators can predict a problem on the network, measures can be delivered to alleviate prospective situations.

The TMC Operator role is to support the road operators' objectives of improving journey reliability and reduction of incident related congestion, and monitor the operation of the network by analysing information from various sources such as traffic management systems, police, CCTV, historic and predicted traffic patterns.

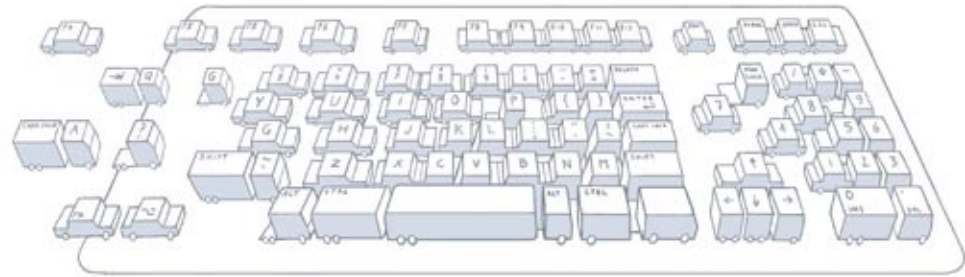
TMC operators use this information to set roadside signals/signs, deploy roadside resources such as Traffic Officers and Incident Support Units as well as liaising with Police, request the attendance of other emergency services, and provide infor-

mation to road users and others. A limited number of these tasks are safety critical (e.g. tidal flow).

Traffic Control System

Within a TMC there is a Traffic Control System. Current HA and RWS systems deliver core management of traffic detectors, cameras, telephone communications and signalling. The system facilitates traffic management with the use of proactive operational regimes such as queue protection via signalling, congestion management via automatic setting of variable mandatory speed limits and notification of desirability to use the hard shoulder as a dynamic running lane.

Operator setting of signs and signals for the management of incidents is subject to parsing by the system. This ensures that correct relationships, context and impact are delivered and inappropriate signs, signals or messages cannot be set. Large volumes of data can be involved



within a TMC where there may be in excess of 500 signs and signals, hundreds of Emergency Roadside Telephones (ERTs) and thousands of traffic detectors plus imported traffic data. Road-side communications are delivered and managed via a “cloud” type network. Additionally the system delivers relationships with stakeholders and third parties including emergency services.

The multitude of road side systems (the ‘installed base’) are a given for a TMC.

Multi-functional/Roles/Users

Within a TMC the information generated by the various systems is displayed in several ways, and communications are utilised via the “cloud” network, phone, radio, and email, as well as face to face. Information display and user interfaces are considered to be critical to correct and smooth delivery of services. Examples of data collection, manipulation and communication include:

- Manual sign or signal setting;
- ERT – Emergency Response Telephone call handling;
- CCTV – Closed Circuit TV surveillance;
- Incident management and logging;
- Resource management, including integration with communication for real-time vehicle location and status;
- Duty planning; and
- Integration capabilities with the Emergency Services.

Current Situation

Currently all TMCs are custom-built. The evolutionary development of TMCs has led to a collection of hardly integrated, partly legacy systems. The technology in these centres remains highly fragmented and prone to vendor lock-in and the cost of ownership is high. There is no overall ICT architecture available that is open, modular and adaptable to future development.

CHARM



This market consultation is one of the activities in the CHARM programme.

The CHARM programme will deliver a strategy for procuring a joint solution that will meet the following requirements for both HA and RWS:

Flexible:

the control room systems need to be flexible so that they can operate their road networks in order to provide 24/7 operation for 365 days of the year and provide resilience in the event of any control system not being operational and passing its authority to another control system.

Scalable:

the control room system must be able to cope with current volumes of data created by thousands of roadside assets across thousands of kilometers of road network. Any schemes to be delivered within a 3 year horizon should be included. The data volume could also potentially increase with developments in in-car technology.

Cost Effective:

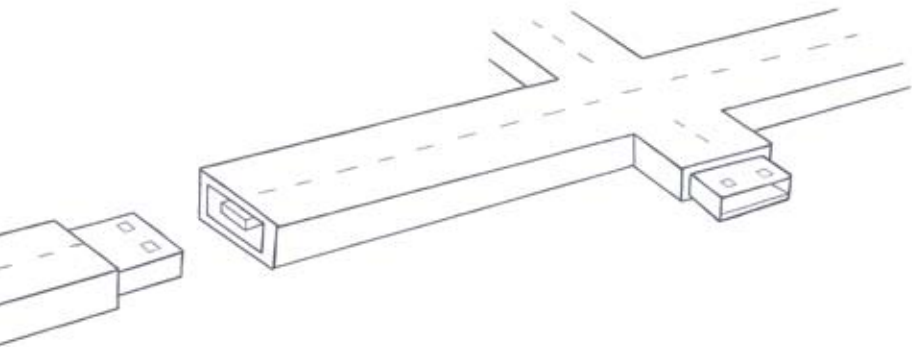
there is a requirement to significantly reduce the whole life costs of control systems, through increasing competition for their supply, reducing the need for maintenance, allowing changes to be made quickly and efficiently.

Continuity of service:

there should be a seamless transition/migration of the new system at the beginning, during and end of the service that will allow operation of the network to be unaffected.

Easily configured:

the control room system must be safely, easily and quickly configured (e.g. to adjust for changes in the roadside systems algorithms) by operators without the need for external contracted support.



Easy to do business with:

Interfacing with the control system should be open to all other technology and third parties (internal and external) who we may provide or receive information from.

Adaptable:

the control room system must be adaptable to accommodate new technology or techniques.

No technology or vendor lock in:

the control room system must not be dependent on any proprietary technology hardware, platform, or software. The system needs to be portable and transferable to other future technology as it develops.

Ergonomic Design:

current control room systems have evolved over a number of years which has resulted in operators having to interact with several systems, most of which have their own operator interface. There is a requirement to streamline and integrate the design of these operator interfaces ensuring that it is ergonomic and allows business processes to be completed efficiently.



Market consultation



Future procurement

In the next decade it is expected that the Highways Agency will be replacing its seven regional TMC's. In the Netherlands at least two out of five regional TMC's are expected to be replaced. This will involve multi-million euro procurement both by the Highways Agency and RWS. Insights from CHARM in general, and this market consultation specifically, will be used in future procurement. The first TMC replacement is expected to be Geldrop in the Netherlands.

Objective of market consultation

The objective of the market consultation is to enable the market place to show how the future strategy and objectives of HA & RWS can be realised from a wide range of leading suppliers.

Process

This market consultation has a two step approach described in the next paragraphs.

Round 1

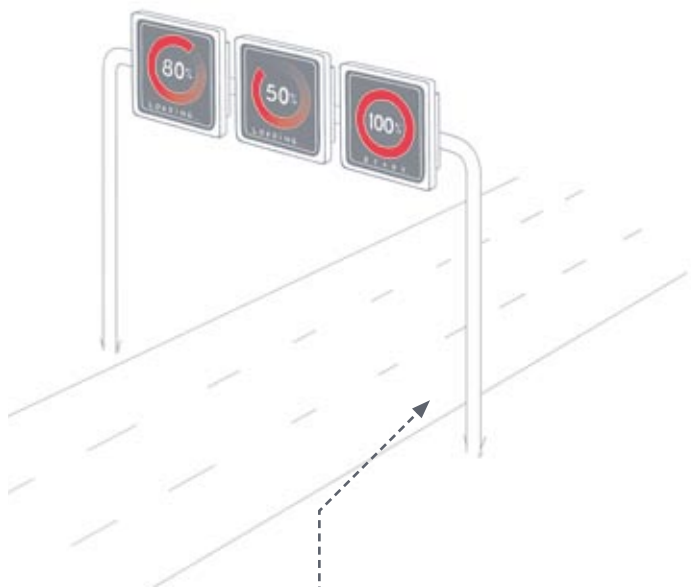
Round 1 consists of a questionnaire, to be submitted by 1 May 2012. The questionnaire can be found at our website: <http://www.rijkswaterstaat.nl/charm>

This questionnaire is designed to:

1. give HA and RWS an overview of relevant available capabilities in the market place.
2. give companies the opportunity to give feedback to RWS and HA on the ambitions and the planned approach.

The kick-off of the market consultation is an Industry Event at Intertraffic Amsterdam on 29 March 2012. HA and RWS will use this event to inform Industry on the content of the market consultation.

Questions posed by industry about the market consultation and the answers of RWS and HA will be published on tenders electronic daily by 17 April. All questions



posed on the Industry Day or by e-mail by 10 April to the CHARM consortium will be published.

The completed questionnaires submitted by industry will be analysed by HA and RWS. Insights from this analysis will be used to shape the function definition of TMCs, the exact procedure for round 2 of this market consultation and the future procurement strategy. Insights from this analysis will be made public and sent to all participants.

We expect to enter into one-on-one conversations with any parties interested in discussing their ideas regarding CHARM with us. The completed questionnaires for round 1 will be an excellent starting point for this.

Round 2

Round 2 has the objective to obtain clearer, more detailed, insights into the

solutions that industry can offer in order to meet the requirements of HA and RWS.

Round 2 will be open to all interested parties. No selection will be made on the basis of round 1. The exact procedure for round 2 will be determined and published in June 2012. Round 2 will be concluded in October 2012.

In round 2 more detail will be given by HA and RWS on the specifications of the future TMC. A draft function definition, user needs and requirements will be published in round 2.

Similar to round 1 the ideas submitted by industry will be analysed by HA and RWS. Insights from this analysis will be used to review the function definition of TMCs and be input for the future procurement strategy.

Timetable

- Industry Event – PIN Notice
- Publication of Market consultation round 1
- Industry Event
- Deadline for questions about the market consultation
- Publication of answers of the CHARM consortium to the questions about the market consultation
- Deadline for return of questionnaire
- Insights of round 1 to be communicated widely
- Market consultation round 2
- Insights of round 2 to be communicated widely

9 March 2012

29 March 2012

29 March 2012

10 April 2012

17 April 2012

1 May 2012

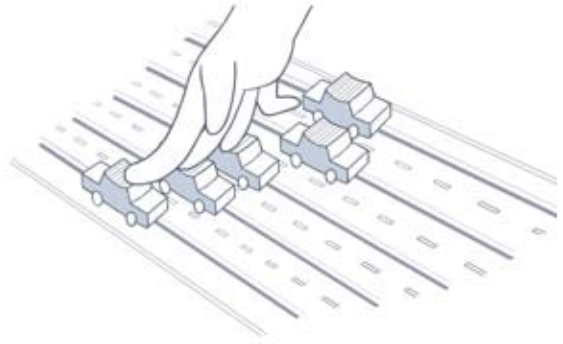
June 2012

June – October 2012

December 2012

This time-table may be amended





Legal aspects

Any company may participate in this market consultation. Participating in this market consultation is free of any engagement and will never lead to any obligation between either HA or RWS and your company. (Non-)participation by a company will neither exclude this company from future tenders nor will it have any influence on its opportunities.

All ideas submitted by Industry will be treated as Commercial in Confidence. No part of these will be made public. However, relevant insights are subject to publication and may be used by RWS and HA to shape future strategies.

Further information

The following documents are an integral part of the market consultation:

- Questionnaire market consultation round 1
- Key CHARM Business requirements

They are available at our website:
<http://www.rijkswaterstaat.nl/charm>

If you have any questions you can pose these by e-mail to:
PINCHARMININDUSTRYDAY@highways.gsi.gov.uk



Rijkswaterstaat
Ministerie van Infrastructuur en Milieu



HIGHWAYS
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