Kapsch TrafficCom

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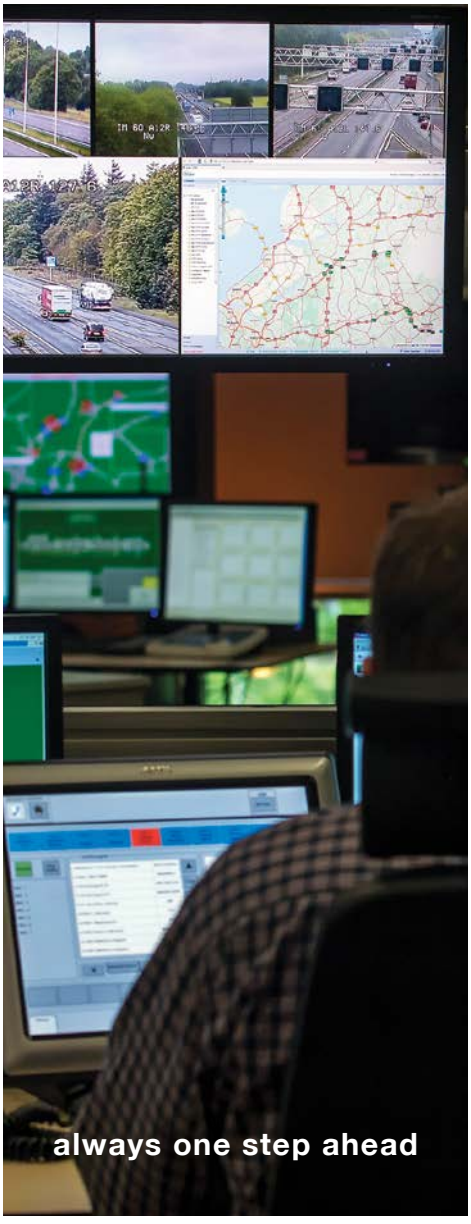
CHARM.
Advanced Traffic Management System.

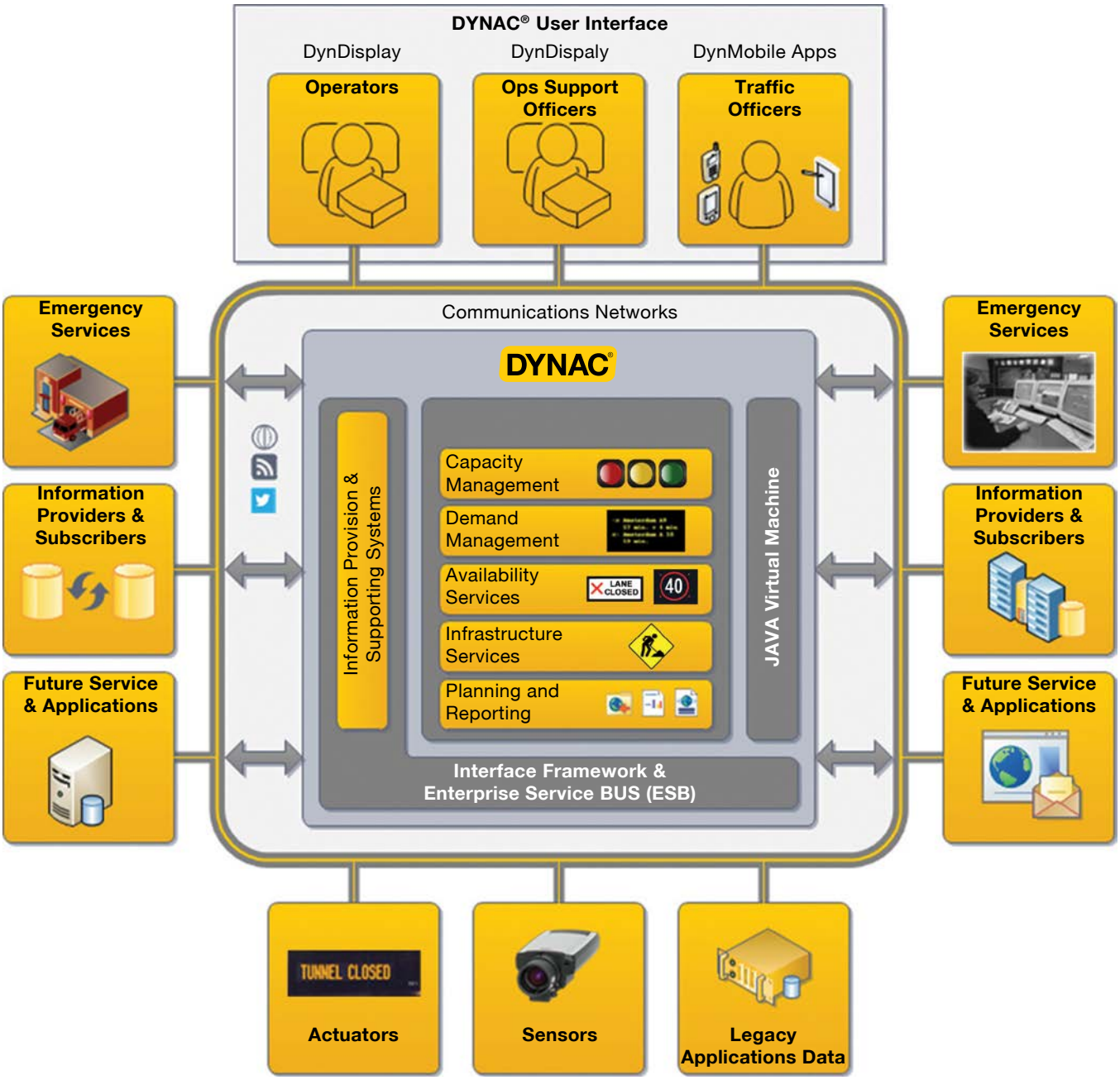


Advanced Traffic Management System.

Kapsch TrafficCom was awarded two contracts by Highways England (HE) and Rijkswaterstaat (RWS) to supply the DYNAC® Advanced Traffic Management Software for implementation throughout England and the Netherlands as collaborative programme between Highways England and Rijkswaterstaat - CHARM. Once fully deployed, CHARM will replace the current legacy systems and serve as the next generation Advanced Traffic Management Software (ATMS) that will modernize and consolidate Agency traffic management services, maintain road network safety, assist in optimizing commutes (e.g. travel times and routes), support road network maintenance measures and provide motorists with richer traveller information services.

As part of the CHARM programme DYNAC was measured against industry recognized ATMS offerings following strict selection criteria established for the procurement based upon technical and functional specifications as well as specific use cases envisioned for the HE and RWS implementations. The Kapsch DYNAC solution was selected given its proven track record for mission critical ATMS applications, adherence to the technical standards, configurability and future proofing capabilities, sustainability, and overall value to the Agencies commensurate with the CHARM programme objectives.

At the completion of the CHARM implementation and roll-out, DYNAC will be utilised by Highways England and Rijkswaterstaat to more efficiently and safely manage their motorways and enhance transportation services under a unified software platform and integrated ATMS / Information and Communications Technology (ICT) environment comprising the traffic control centres, a complex network of fixed roadside assets, mobile users and other stakeholders.



CHARM Integrated Systems and Services

This focus on integration and standards-based design approach is a key element of the CHARM programme strategy, which promoted the re-use of existing assets to the greatest extent possible as a means to reduce vendor dependencies, manage the migration/cutover risk, streamline the project schedule and reduce costs.
Projected Outcome:

- An open, modular ICT architecture for all regional and national TMCs in both countries that accommodates current operations and maintenance demands as well as scalability and flexibility to meet the future needs of the agencies.
- More efficient management of traffic operations and improved road user experience.
- Innovative prequalification and tender process that may serve as a model for other road authorities and network operators across Europe for future procurements.
- Programme collaboration represents shared investment and risk mitigation between EU member states.

A New Generation of Traffic Management.

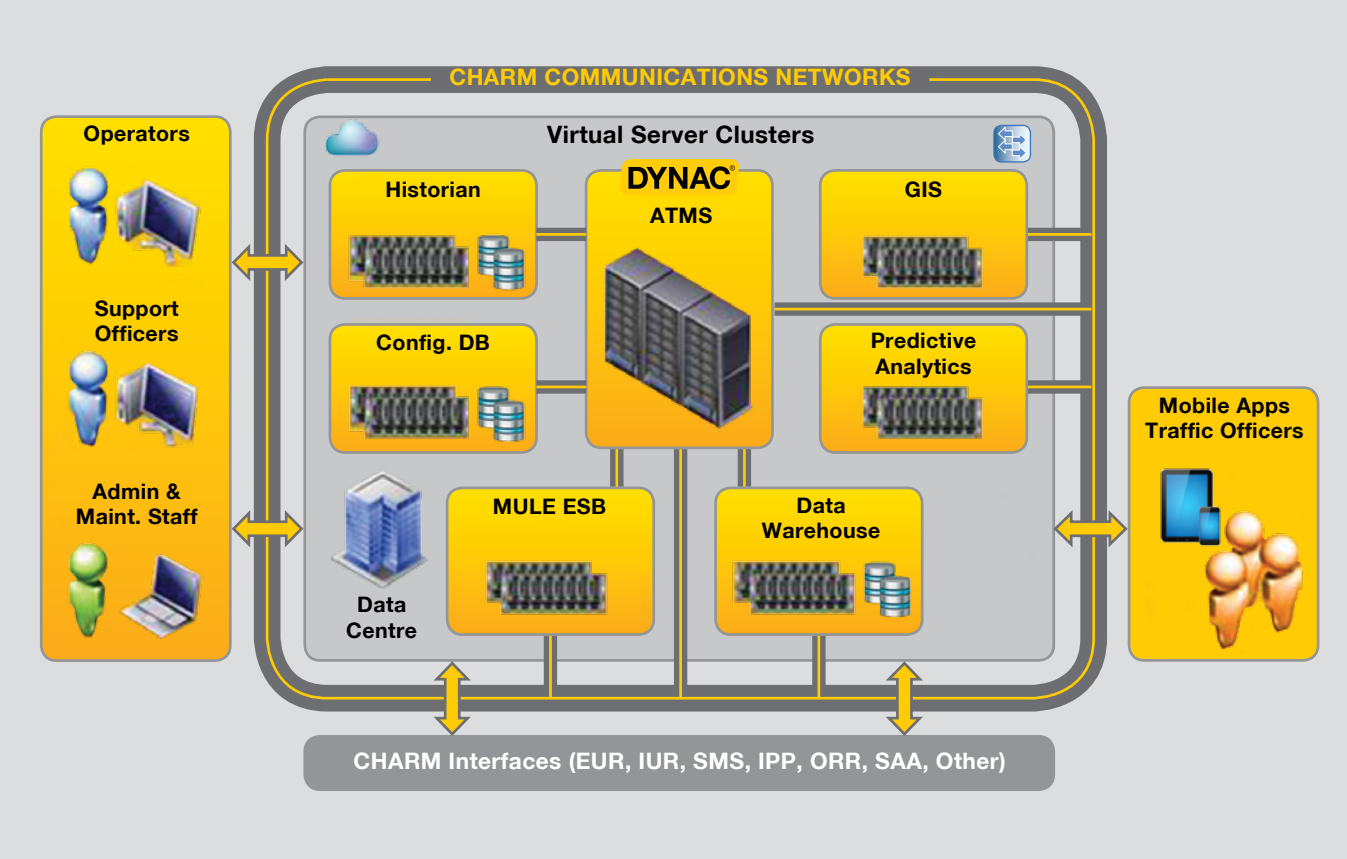
Highways England and Rijkswaterstaat have taken important steps towards the realisation of traffic management models that will consolidate their existing systems and business processes under a fully integrated ATMS/ICT architecture with common unified interfaces. Their vision will result in state-of-the-art systems to help manage the Agency's strategic road networks and improve road user services and safety for the coming decades. The implementation of the DYNAC ATMS software is the primary tool by which the Agencies will manage traffic, detect and respond to congestion, incidents, emergency situations and other network conditions.

Kapsch will develop the new ATMS focusing on scalability, resiliency and interoperability of the central ATMS while leveraging the capabilities of existing technical infrastructure and road network assets to more effectively control and manage traffic. This architecture will serve as a modern framework upon which future services and innovation modules can be deployed more timely and cost effectively to support the changing needs of the Agencies, road users and other stakeholders.

Scalable.
- Server Virtualization
- Load Balanced
- No client software

Resilient.
- Data Centre Deployment
- Fault Tolerant Redundancy
- 24/7x365 Availability

Interoperable.
- Modular Integration Platform
- Flexible Interface Framework
- Enterprise Service Bus (ESB) Adapter Layer



CHARM System At-A-Glance.

Highways England:
System at a glance.

Assets and interfaces:

- 7 regional TMCs / 1 national TMC
- 7000 km motorway / 4M vehicles per day / 20k incidents per month
- 100 ramp metering devices
- 3,000 CCTV
- 3,500 message signs
- 100 meteorology devices
- 6,000 MIDAS sites (loop detectors)
- 10,000 signals (LUS, BOS, VSLS)
- 7,000 emergency telephones
- 3,000 NTIS devices (Incl. ANPR)
- 900 traffic officers
- 100 on-road supervisors
- 34 ATMS interfaces

Commercial details:

- Best value procurement
- DYNAC ATMS software, implementation and maintenance
- 26 month implementation schedule
- 13 year maintenance (option)

ATMS requirements:

- Variable Speed Limit Signs
- Lane Use Signs
- Variable Message Signs
- Fog Detectors
- Ice Detectors
- Present Weather Detectors
- Anemometer
- Visibility Sensor
- Ambient Light Monitors
- Loops
- Traffic & alert web services
- Traffic Lights
- Ramp Metering
- Variable Message Signs
- Video Wall
- CCTV management
- Network Video Recorders
- Telephone Text Controller
- Automatic Vehicle Location
- Automatic Number Plate Recognition
- HA Weather Central System
- DATEX II v1.0, v2.0, v2.3, Incident Exchange
- Traffic & Roads Information Service
- Email Server
- ControlWorks Integration
- Public Switched Telephone Network
- Emergency Roadside Telephones
- Two-way Radio Network
- Police Force Incidents
- National Vehicle Recovery Manager
- Police National Computer
- Driver & Vehicle Licensing Agency

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- Police Force Incidents
- National Vehicle Recovery Manager
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- Driver & Vehicle Licensing Agency

Rijkswaterstaat: System at a glance.

ATMS assets and requirements:

- 5 regional TMCs / 1 national TMC
- 3,000 km main highways
- 1,500 km slip roads, exits and connecting roads
- 50 hard shoulder running sections
- 200 operators
  (180 regional TMC's RWS / 20 national TMC RWS)
- 300 mobile traffic officers
- 400 variable message signs
- 3,000 cameras
- 18,000 detection loops
- 16,000 lane signals
- 100 ramp meters
- 32 interfaces

Commercial details:

- Best value procurement
- DYNAC ATMS software, implementation and maintenance
- 26 month implementation schedule
- 15 year maintenance (option)

ATMS requirements:

- Traffic Management
- Incident Management
- Motorist Breakdown Alerts
- Email notifications
- Weather Alerts
- Data Warehousing
- Data collection – Network Management Information System
- Communication and coordination with local / regional partner road authorities (DVM exchange)
- Travel Times
- Loops
- Lane Use Signals
- Mobile Variable Message Signs
- Variable Message Signs (DRIP's)
- Tracking & Tracing of Traffic Officer
- Traffic Officer iPad App
- Reversible Lanes (Tidal Flow)
- Hard shoulder running
- Ramp Metering
- Traffic Lights
- Dynamic Lighting
- Occupied Emergency Bay Detection (VAD)
- Wind Warning System
- Faulty device alert system
- Audio management
- CCTV management
- Video wall

About DYNAC.

DYNAC® is a high-performance, integrated ATMS software suite deployed for motorways and at vital transportation facilities around the world. Combining mission critical reliability and security with the latest software technology, this software solution is used to monitor and control traffic, life safety and manage road network assets and processes. The highly configurable design of the software allows it to be deployed in a variety of Intelligent transportation applications including motorways, toll roads, tunnels, bridges, managed lanes and reversible roadways.

DYNAC has a proven track record of reliably managing some of the world's largest transportation facilities with demanding 24/7x365 requirements. The software collects real-time traffic data and delivers data to Traffic Management Control (TMC) centres allowing operators to detect and respond to congestion, incidents, emergency situations, and other conditions. Information such as travel times, incidents, roadway and weather conditions, and other messages relevant to drivers can be quickly disseminated to the public allowing motorists to make informed travel decisions.

The effectiveness of any traffic management centre can be measured by the speed and efficiency in responding appropriately to incidents. The DYNAC GIS-based Incident Response Manager (IRM) allows operators to provide rapid and appropriate responses to planned or emergency conditions with greater situational awareness and traceability. IRM unifies traffic operations and simplifies system use by combining control of incidents, alarms and other situations along with response plans into a single user interface. The DYNAC Automatic Incident Response feature provides automated response plans to operators. Additionally, responses may also be manually generated from predefined or dynamically created plans, all of which are editable and previewed before they are executed.

Core DYNAC modules.

- DynDisplay – GIS Maps & Schematic Graphics
- Security Manager
- Alarm and Alert Management
- Event Viewer
- Communications Monitor
- Scheduler
- Notification Manager
- Device Editor
- Script Editor
- Aspect Manager
- DynDraw Graphics Editor

Standard ATMS modules.

- Active Traffic Management
- Incident Response Manager
- Automatic Incident Detection
- Tunnel Incident Management Program
- Sign Manager
- Video Manager
- Roadway Weather
- Audio Manager (HAR & RRB)
- Travel Time Manager
- Ramp Metering
- Managed Lanes
- Work Zone Management
- Data Warehousing & Reporting
- iOS iPad & iPhone App
- RSS, NTCIP C2C, APIs

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About Kapsch Group.

Kapsch is one of Austria's most successful technology corporations to specialize in the future-oriented market segments of intelligent transport systems (ITS) and information and communications technology (ICT). Headquartered in Vienna, Kapsch is organized as a group of companies with the key entities Kapsch TrafficCom, Kapsch CarrierCom, and Kapsch BusinessCom. The companies of the Kapsch Group employ more than 5,000 people around the world. Kapsch. Always one step ahead.

www.kapsch.net

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