Traitement des appels d'urgence sur le réseau routier en Europe : rapport de la situation en Grande-Bretagne

François Malbrunot, Hélidéo Costa-Elias

▶ **To cite this version:**

François Malbrunot, Hélidéo Costa-Elias. Traitement des appels d'urgence sur le réseau routier en Europe : rapport de la situation en Grande-Bretagne. [Rapport de recherche] Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques (CERTU). 2000, 25 p., 36 p. d'annexes, illustrations, graphiques. hal-02164944

HAL Id: hal-02164944

https://hal-lara.archives-ouvertes.fr/hal-02164944v1

Submitted on 25 Jun 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

RAPPORTS D'ÉTUDE

LOGMA | sous la direction du Certu

Traitement des appels d'urgence sur le réseau routier en Europe

Rapport de la situation en Grande-Bretagne

Ministère de l'Équipement,
des Transports et du Logement

Centre d'études sur les réseaux, les transports,
l'urbanisme et les constructions publiques

Avis aux lecteurs

La collection Rapports d'étude du Certu se compose de publications proposant des informations inédites, analysant et explorant de nouveaux champs d'investigation. Cependant l'évolution des idées est susceptible de remettre en cause le contenu de ces rapports.

Le Certu publie aussi les collections:

Dossiers: Ouvrages faisant le point sur un sujet précis assez limité, correspondant soit à une technique nouvelle, soit à un problème nouveau non traité dans la littérature courante. Le sujet de l'ouvrage s'adresse plutôt aux professionnels confirmés. Le Certu s'engage sur le contenu mais la nouveauté ou la difficulté des sujets concernés implique un certain droit à l'erreur.

Références: Cette collection comporte les guides techniques, les ouvrages méthodologiques et les autres ouvrages qui, sur un champ donné assez vaste, présentent de manière pédagogique ce que le professionnel courant doit savoir. Le Certu s'engage sur le contenu.

Débats: Publications recueillant des contributions d'experts d'origines diverses, autour d'un thème spécifique. Les contributions présentées n'engagent que leurs auteurs.

Catalogue des publications disponible sur http://www.certu.fr

NOTICE ANALYTIQUE

Organisme commanditaire :

CERTU : Centre d'Études sur les Réseaux les Transports, l'Urbanisme et les constructions publiques 9 Rue Juliette Récamier 69456 Lyon Cedex 06 – Tél : 04 72 74 58 00 Fax 04 72 74 59 00 web : www.certu.fr

Titre :

Traitement des appels d'urgence sur le réseau routier en Europe

Sous-titre :	**Date d'achèvement :**	**Langue :**
Rapport de la situation en Grande-Bretagne	**Août 2000**	**Français**

Organisme auteur :	**Rédacteurs ou coordonnateurs :**	**Relecteurs assurance qualité :**
LOGMA 12, rue d'Anjou 78000 Versailles	François MALBRUNOT Hélidéo COSTA-ELIAS	Sylvie CHAMBON, CERTU Arlette RIGAUD, CERTU

Résumé :

Ce rapport d'étude décrit l'organisation institutionnelle en Grande-Bretagne, les aspects réglementaires et organisationnels des Réseaux d'appels d'urgence, l'organisation des secours, l'acheminement et le traitement des appels provenant des mobiles, l'organisation des services privés d'assistance. Une annexe présente le protocole d'accord des appels d'urgence sur les réseaux GSM, point singulier en Grande–Bretagne

Remarques complémentaires éventuelles (rubrique facultative) :

Ce rapport a alimenté le rapport de synthèse des quatre pays européen étudiés (Allemagne, Grande-Bretagne, Italie et Hollande).

Mots clés : appels d'urgence, RAU, téléphonie mobile, services d'assistance	**Diffusion :** Libre

Nombre de pages :		**Confidentialité :**	**Bibliographie** :
25 p. + annexes 36 p.		NON	NON

SOMMAIRE

1 Organisation institutionnelle

1.1 Le ministère chargé du réseau routier

Le Royaume Uni (United Kingdom), comprend quatre « provinces » de taille très inégales. La première en taille est l'Angleterre (England), les trois autres de tailles comparables sont le Pays de Galles, l'Ecosse et l'Irlande du Nord.

Les situations institutionnelles de ces trois dernières provinces sont en pleine évolution. On peut cependant dire que dans un cadre général défini au niveau du Royaume Uni, elles gèrent directement trois secteurs : les transports, la santé et l'éducation.

Le gouvernement du Royaume Uni comprend notamment le ministère de l'environnement des transports et des régions, le DETR (Departement of the Environnement, the Transports and the Regions).

Le DETR comprend plusieurs directions (appelées « agencies »), et notamment, pour l'Angleterre, la direction du réseau autoroutier et des routes principales (Highways Agency).

Cette direction est chargée de l'entretien et de l'exploitation du réseau autoroutier et des routes principales (trunk roads) en Angleterre. Le réseau géré par la HA a une longueur d'environ 3.200 km.

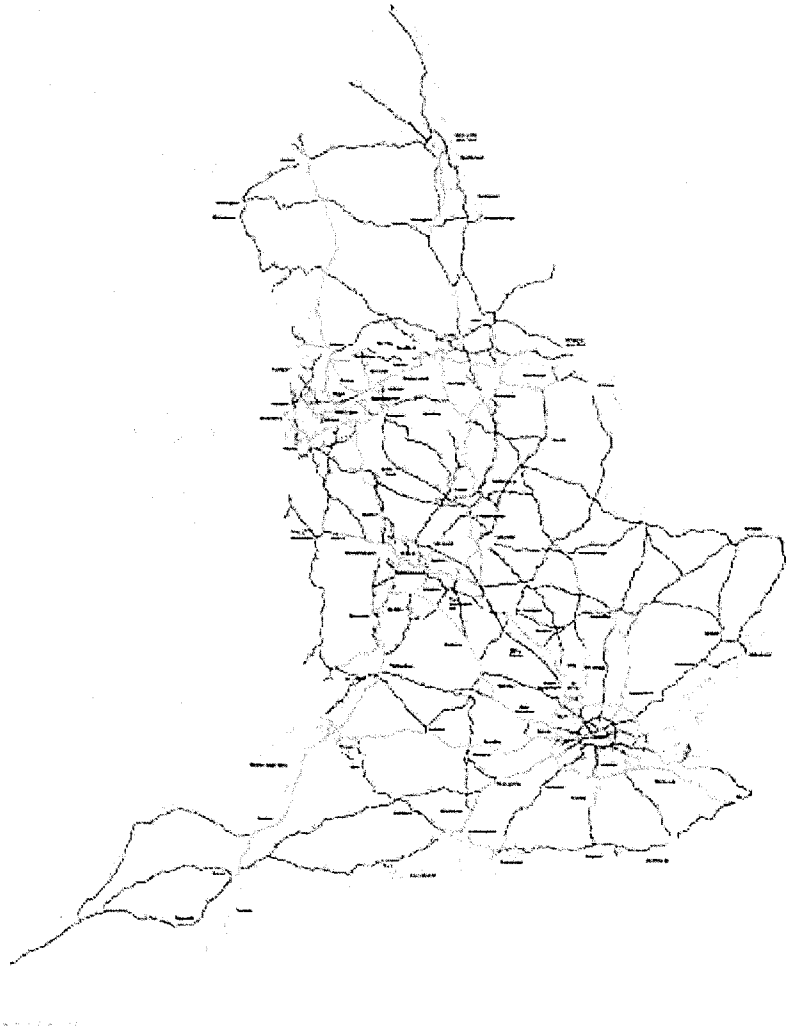
Pour le Pays de Galles, l'organisme équivalent à la HA est le département des routes (Road department) de l'exécutif Gallois (Office of the National Assembly of Wales). Il gère environ 200 km d'autoroute ou de routes principales.

Pour l'Écosse, l'organisme équivalent à la HA est le département des routes (Road department) de l'exécutif Écossais (Scottish Executive). Il gère environ 150 km d'autoroute ou de routes principales.

Pour l'Irlande du Nord, la gestion des autoroutes et routes principales, environ 60 km, est confiée au département de l'environnement (Department of Environnement).

1.2 En Angleterre : La Highways Agency (HA)

La HA est responsable en Angleterre d'un réseau de 3.200 kilomètres d'autoroutes ou de voies à grande circulation, l'ensemble constituant le « trunk network » ou réseau maillé :



La HA a été créé en 1994 pour exploiter et maintenir le réseau routier national en Angleterre. En 1998, le gouvernement a élargi les objectifs confiés à l'HA, en lui demandant de maintenir, d'exploiter et d'améliorer le réseau dans le sens de sa politique d'intégration du transport et d'aménagement du territoire.

Ces nouveaux objectifs ont conduit l'HA à étendre ses missions initiales pour devenir un gestionnaire de réseau dont l'objectif est une meilleure utilisation du réseau qui est placé sous sa responsabilité. Pour atteindre ces objectifs, l'HA a lancé un projet de création d'un Centre de Contrôle du Trafic (TCC) qui présente l'originalité d'un partenariat public/privé.

Le réseau routier exploité par HA est équipé de câbles cuivre ou de câbles optiques selon que les voies concernées sont plus ou moins récentes, et utilise ce câble pour le RAU et pour la signalisation. En effet, des systèmes messages variables ont été installés dès la construction des autoroutes en Angleterre.

La HA a lancé il y quelques mois deux appels d'offres importants, dont les résultats seront connus au mois de Juin 2000, selon le planning actuel.

L'un concerne le renouvellement de la totalité des postes d'appel d'urgence, soit 5.000 PAU; l'autre concerne la fourniture, l'exploitation et la maintenance du système centralisé contrôlant l'ensemble du réseau routier et autoroutier géré par la HA.

2 Étude des aspects réglementaires et organisationnels :

2.1 L'implantation des RAU

Les autoroutes sont équipées de PAU tous les miles (1.600m). La quasi totalité des PAU sont installés sur autoroutes, soit 5.000 PAU pour 3.200 km d'autoroutes.

Quelques PAU sont installés sur des sections très circulées de routes nationales.

Les PAU actuellement en service répondent à une norme très ancienne, qui a plus de quarante ans, qui est abandonnée dans le cadre de l'appel d'offre en cours. On peut noter qu'aucune nouvelle norme n'est établie, sauf le fait de conserver le combiné téléphonique. L'objectif est de ne pas dérouter un automobiliste qui n'a peut-être jamais utilisé un PAU de sa vie, et qui peut être stressé par ce qu'il est en train de vivre.

Les PAU sont raccordés sur le câble cuivre ou optique d'exploitation. Ils comprennent un téléphone qu'il suffit de décrocher pour entrer en contact avec l'unité de police chargée de la section autoroutière concernée.

Le Traitement des appels provenant des PAU

Les appels sont pris en charge par les PCO (Police Control Office). Il y a 32 PCO pour l'ensemble de l'Angleterre.

Les PCO fonctionnent 24h/24h, tous les jours de l'année. Ils sont en général situés dans des postes de polices principaux des régions concernées. A proximité des principales villes, les PCO ont leur propres locaux.

Les appels sont réceptionnés par les officiers de police ou par le personnel civil employé par la police.

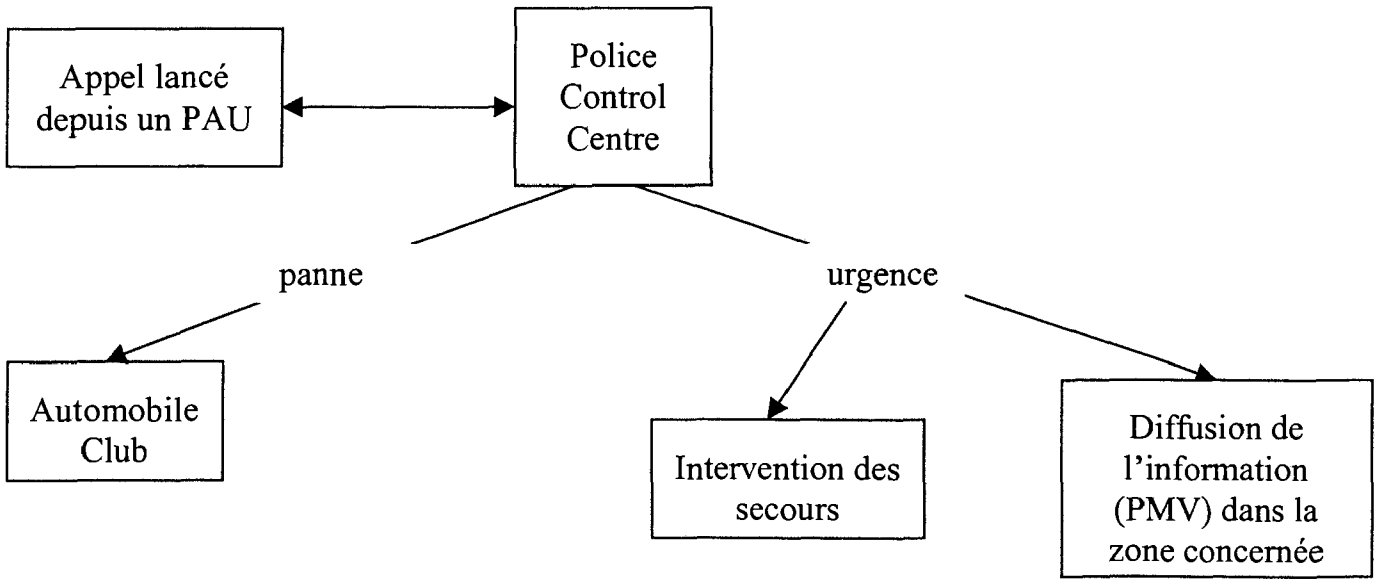
Lorsque l'appel concerne un accident ou un problème relevant de la police, les actions adéquates sont mises en œuvre.

Lorsque le problème concerne une panne et si l'automobiliste qui appelle est membre d'une société d'assistance, en général un automobile club, le numéro d'immatriculation du véhicule est enregistré, et le PCO informe la société d'assistance concerné en donnant la localisation de l'appel ainsi que le numéro d'immatriculation du véhicule concerné.

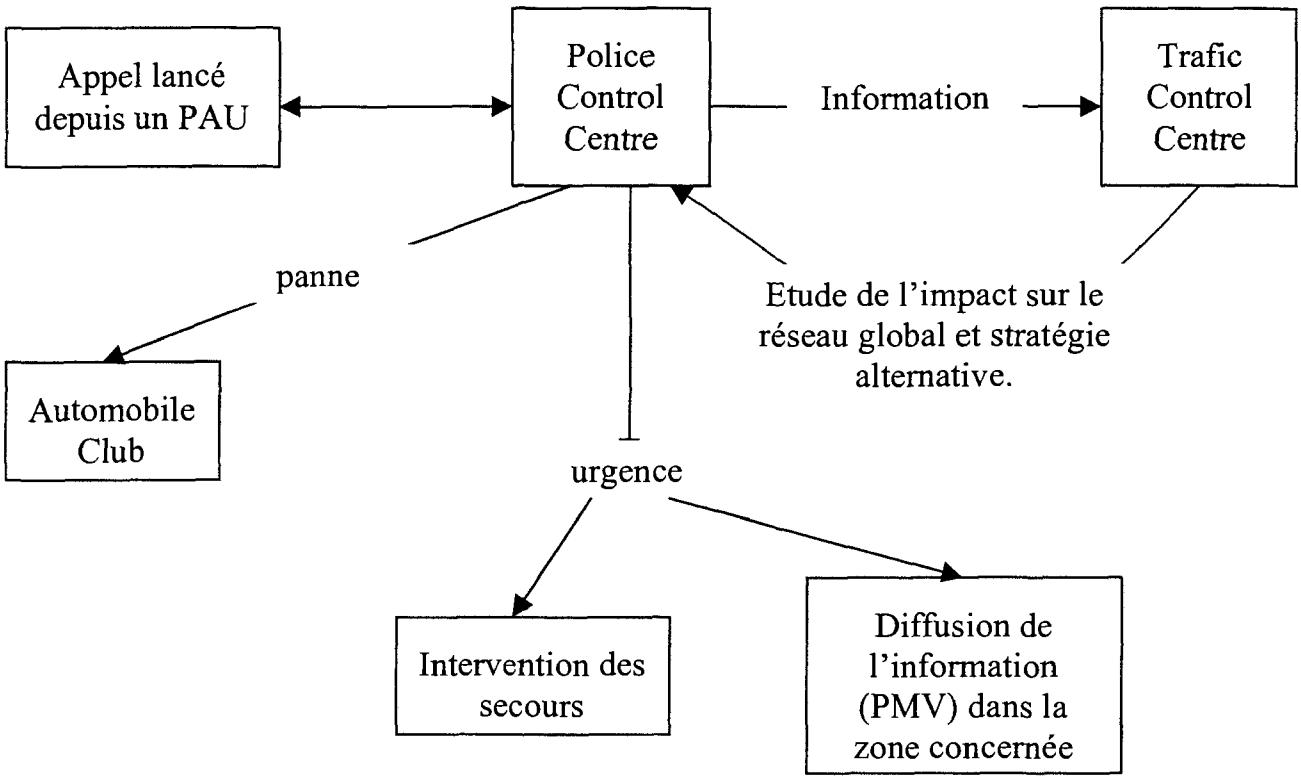
Si l'automobiliste n'est pas membre d'une société d'assistance, le PCO appelle un dépanneur local. Il est à noter que dans ce cas les prix sont libres et très élevés.

Environ 1 appel par jour est en moyenne émis à partir des PAU. Cependant, le nombre d'appel émis à très fortement diminué dans les 18 derniers mois lié au développement des téléphones mobiles et la HA n'a plus de statistiques fiables. Une étude est en cours sur ce sujet.

L'organigramme du traitement d'un appel sur PAU est donné ci-après :



Lorsque le TTC sera opérationnel, il est prévu que ce schéma évoluera pour devenir le suivant :



3 L'organisation des services de secours

Le PCO concerné par le traitement d'une urgence mobilise et coordonne l'ensemble des moyens de secours nécessaires : pompier, police, ambulances, gardes côtes, dépanneurs, etc ...

4 L'acheminement et le traitement des appels provenant des mobiles

Au Royaume Uni la loi oblige, comme en France, les opérateurs de téléphonie mobile à garantir la gratuité des appels d'urgence : 999 et 112.

Cependant, il existe une procédure d'agrément particulière qui est lourde et complexe, pour être habilité à transmettre les appels d'urgence à la police, au pompier, aux ambulances, ou aux gardes côtes.

De ce fait, seul British Telecom (BT) et Cable et Wireless (CW) ont cette habilitation.

Les autres opérateurs passent donc des contrats soit avec BT soit avec CW pour réceptionner les appels émis par leurs abonnés et les transmettre aux autorités compétentes (cf annexe « Protocole d'accord BT pour le traitement des appels d'urgences)

Le coût du traitement de l'appel est de 0,5£ soit environ 5.00 FF. Ce coût est facturé soit par BT soit par CW à l'opérateur dont l'abonné a émis l'appel. L'abonné lui ne paye rien.

BT dispose de 14 centres de réception d'appels correspondant soit à des urgences, soit à des demandes d'assistance téléphonique ou de renseignement téléphoniques. Ces 14 centres possèdent chacun environ 50 postes de travail, ce qui permet aux heures de pointe de traiter simultanément environ 650 appels téléphoniques.

BT traite 20 millions d'appels d'urgence par an, dont 12 millions correspondent effectivement à des demandes de mise en liaison avec la police, les pompiers, les ambulances ou les gardes côtes. Les 8 millions d'appels restant sont des appels fantaisistes ou des personnes qui souhaitent une assistance différente de celles des services d'urgence.

Environ 50% des appels d'urgence, soit 6 millions, sont émis par des mobiles. BT estime que le nombre d'appels d'urgence augmentera dans les années à venir de manière très sensible, grâce au développement du parc de téléphone mobile. Les prévisions sont de l'ordre de 50 millions d'appels dans les trois ans, avec un nombre constant d'appel provenant des téléphones fixes soit moins de 10 millions d'appels.

La part des appels d'urgence concernant des urgences routières n'a pas pu être déterminée.

Lorsque BT traite un appel d'urgence issu d'un téléphone fixe, l'adresse de l'abonné apparaît immédiatement sur l'écran de l'opérateur recevant l'appel. Si l'adresse où les secours sont demandés est différentes de l'adresse du lieu de l'appel, l'opérateur saisi l'adresse où les secours sont demandés. C'est le seul traitement effectué par l'opérateur qui s'ajout à celui de transférer l'appel au service de secours demandé.

Le service de secours appelé par l'opérateur correspond à la zone où les secours sont demandé. Un programme informatique compose le numéro de téléphone adéquat en fonction de la zone concernée.

Lorsque l'appel est émis par un téléphone mobile, l'opérateur ne connaît pas la localisation de l'origine de l'appel. Il saisit l'adresse où les secours sont demandé, et transfère au service de secours concerné comme précédemment.

5 L'organisation des services privés d'assistance

Deux automobiles clubs sont présents en Angleterre : l'AA (Automobile Association) et le RAC (Royal Automobile Club).

La plus importante, l'AA, exploite 3.600 véhicules de patrouilles tous équipés de système GPS et 4 centres d'assistance pour le Royaume Unis. L'AA gère actuellement 4,5 millions de pannes par an.

Grâce à la mise en œuvre de moyens modernes de localisation, le temps moyen d'arrivée sur site est passé de 45 mn en 1995 à 35 mn en 1998 et à 32 mn en 1999.

Aujourd'hui, 75% des appels proviennent des postes fixes : lignes téléphoniques, cabines publiques ou PAU les long des autoroutes ou des routes nationales, et 25% proviennent des téléphones mobiles. Les prévisions pour l'an 2003 sont de 60% pour les postes fixes et de 40% pour les mobiles.

L'AA dispose des moyens techniques d'identifier la localisation des postes fixes, mais la localisation des appels arrivant par le GSM pose problème. La solution est recherchée dans des systèmes embarqués associant GPS et GSM.

L'AA traite 4,5 millions de pannes par an, et on peut estimer que le RAC traite environ 3 millions de pannes par an.

L'Angleterre compte environ 22 millions de V.L.

Les statistiques fournies par l'AA pour l'année 1999 sont les suivantes :

- Nombre d'appels d'urgence relatifs à une panne : 92%.
- Délais d'intervention : 36 minutes
- Taux de réparation sur place : 85%
- Délais de réparation : 62 minutes
- Taux de membres satisfaits : 95%

Les appels traités par l'AA ne sont en aucun cas des appels d'urgence.

6 Les interfaces entre les différents intervenants de la chaîne de traitement des urgences routières,

La seule interface qui existe concerne les opérateurs de télécommunications habilités à transmettre aux forces de police les appels d'urgence qu'ils reçoivent.

7 Les évolutions prévues ou envisagées

La principale évolution organisationnelle envisagée est la possibilité pour le TCC de gérer directement les appels provenant des RAU à la place des centres de contrôle gérés par la police. Cependant, cette évolution est traitée avec beaucoup de prudence par la HA qui la mentionne mais précise aussitôt que cette organisation ne fait pas partie du projet initial.

L'autre évolution concerne les équipements. En effet, les PAU vont subir une modification profonde de leur design pour le rendre plus conforme aux standards actuels, améliorer leur accessibilité, et intégrer un panneau solaire pour fournir l'énergie nécessitée par le raccordement sur fibres optiques.

Un marché de renouvellement des 5.000 PAU installé est en cours de dépouillement. Ce marché concerne la fourniture, la pose, l'aménagement des abords, la maintenance sur 15 ans, des PAU.

La valeur de ce marché est de £10 Moi (110 MF) en ordre de grandeur.

Une discussion a eu lieu sur l'opportunité de réaliser de tels travaux compte tenu de la part prépondérantes des appels d'urgence transmis sur le réseau GSM. Mais la HA juge qu'il est encore nécessaire de proposer des PAU.

8 L'identification et la collecte des documents normatifs existants

8.1 Normes en vigueur ou en projet au niveau national

Les objectifs de l'HA tels qu'ils figurent dans le projet 1999-2000, sont les suivants :

- 20 accidents corporels pour 100 millions de km parcourus,
- Compléter l'installation de PAU sur 640 km (400 miles) du réseau national,
- Tester les PAU toutes les quatre semaines,
- Nettoyer les PAU toutes les huit semaines,
- Réparer un PAU dans les quatre heures après qu'un défaut a été signalé.

8.2 Standards techniques utilisés

Il n'y a aucun standard technique spécifique pour les postes d'appel d'urgence. Il existe un protocole de raccordement et de transmission des informations sur les câbles routiers pour raccorder les PAU ou les équipements dynamiques.

9 L'identification des études, expérimentation, recherches en cours dans les différents domaines.

De très nombreux projets sont en cours en Angleterre dans le domaine de l'ITS. Ces projets sont conduits soit au plan national, soit dans le contexte de la recherche co-financée par l'Union Européenne.

Le plus important projet national identifié est le projet RTA.

Le projet le RTA (Road Traffic Adviser), est un projet Britannique, financé par le UK Technology Foresight programme. Les membres du projet ont pour origine l'industrie automobile britannique, l'industrie électronique, des universités, et les gestionnaires de réseaux routiers anglais et gallois. Les membres du consortium sont les suivants :

Jaguar Cars, Rover Group, Marconi Communications, LucasVarity, Royal Automobile Club, Motor Industry Research Association, HUSAT – Loughborough, University, Southampton University TRG, VTG, CAIR, University College Cardiff., Department of the Environment, Transport and the Regions, Welsh Office, Highways Agency.

Ce projet a pour but de tester in situ l'apport de balises placées sur l'infrastructure communiquant à faible distance avec les véhicules (DSRC : Dedicated Short Range Communication) répondant à la norme TC278. Le site de test a une longueur de 350 km et relie le pays de Galles à Heathrow à l'Ouest de Londres, et concerne des autoroutes et des routes nationales en environnement urbain, périurbain ou rural. Environ 80 balises sont installées le long du site de test. Une vingtaine de véhicules sera équipée des transpondeurs nécessaires (à 5,8 GHz).

Le projet a débuté il y a deux ans, et a une durée de trois ans. C'est donc entre septembre 99 et le printemps 2000, que seront testées les applications envisagées, et en particulier la possibilité de recevoir et de localiser un appel d'urgence.

On peut remarquer cependant, que compte tenu du coût des balises et donc de leur densité faible qui peut atteindre 40 kilomètres en zone rurale, les responsables du projet ont éprouvé le besoin d'équiper les véhicules de systèmes GPS et GSM pour assurer leur localisation et les transmissions d'information.

10 Documents de référence

- ITS – Europe 99 – « Emergency incident management » AA.
- Highways Agency (plaquette de présentation) 44-345-50-40-30
- www.highways.gov.uk
- http://www.highways.gov.uk/info/corpdocs/strplan/ntwksaf
- www.theaa.com (AA)
- AA Telematics « The future of motoring is in safe hands » 44-800-55-11-88 ref. 0382)
- Memorandum of Understanding : SOS-Alerts using UK GSM Networks

ÉTUDE

sur le

TRAITEMENT DES APPELS D'URGENCE

sur le

RÉSEAU ROUTIER

Grande-Bretagne
Annexe 1 :
Protocole d'accord : Appels d'urgence sur les réseaux GSM

11 Annexe 1 - protocole d'accord : Appels d'Urgence sur les réseaux GSM

11.1 Introduction

Le présent protocole d'accord est passé entre les Parties définies dans la section 2 ci-après, et concerne l'acheminement vers les autorités concernées, des appels d'urgence en Angleterre émis à partir d'un téléphone mobile auxquels sont associés des informations relatives à la localisation de l'émetteur du réseau GSM.

Sont inclus dans cet accord, les équipements télématiques embarqués comprenant typiquement un poste GSM associé à un système GPS et à un ordinateur de bord. Le système peut être relié aux air-bag ou à des détecteurs de choc afin de lancer automatiquement un appel d'urgence, ou bien encore disposer d'un bouton « SOS » pour une activation manuelle. Ce type d'appel d'urgence s'ajoute aux appels actuellement lancés en utilisant les numéros d'urgence 999 et 112 et ne sont pas destinés à les remplacer. Ces appels consistent en une liaison téléphonique et en une transmission de message distinctes qui contient la localisation de l'appel.

Le présent Protocole est destiné à constituer un standard ouvert pour le traitement des communications et de leurs interfaces pour supporter les équipements décrits ci-avant et qui sont utilisés en Angleterre (l'île de Wight incluse), au pays de Galles, en Ecosse et en Irlande du Nord. Il s'agit d'un document évolutif qui peut être complété (cf. article 5 ci-après) sous la responsabilité du groupe stratégique « BT 999 » qui utilise une méthode de contrôle des versions.

11.2 Appels et transmissions de messages

Les organisations impliquées sont les suivantes :

- Fournisseur de Service à Valeur Ajoutée (FSVA) : Partie responsable de la spécification du matériel, du marketing et du service en accord avec le présent Protocole. Par exemple, pour les équipements télématiques embarqués, la Partie pourrait être un constructeur automobile.
- Opérateur de Réseau GSM (OR) : Partie responsable de l'appel voix et du transport des données depuis l'équipement jusqu'au Fournisseur de Service d'Appel d'Urgence.
- Fournisseur de Service de Données d'Urgence (FSDU) : Partie responsable de la réception du message de données transporté par l'OR, du traitement adéquat et de l'envoi de l'appel à l'Agence de Gestion des Appels d'Urgence. Les FSDU incluent : l'Automobile Association (AA), RTT, Tegaron et Mannesmann.
- Agence de Gestion des Appels d'Urgence (AGAU) : Partie responsable de la mise en correspondance de l'appel voix et du message de données, puis de la mise en liaison avec les Autorités d'Urgences. Les AGAU en Angleterre sont BT et Cable & Wireless Communications.
- Autorités d'Urgences (AU) : Il s'agit des services de police, des pompiers, des ambulances et des gardes côtes.

Un diagramme donné à la fin du document donne une synthèse de l'organisation.

11.3 Spécifications du Ministère de l'Intérieur pour les appels d'urgence

Le Comité 999 du Ministère de l'Intérieur a présidé les négociations entre les organisations citées ci-avant en Août 1998. Les conclusions ont été les suivantes :

- Les AU's reconnaissent les appareils équipés d'un bouton d'appel d'urgence dédié, et ne reconnaissent pas ceux qui sont équipés d'un même bouton pour les appels d'assistance mécanique, d'informations et d'appel d'urgence.
- Les appels voix sont routés directement à l'AGAU et transmis rapidement à un standard téléphonique dédié aux appels 999/112 de l'AU .
- Les informations de localisation sont traitées immédiatement et transmises à l'AGAU.
- Les données issues des appels d'urgence devront toujours inclure la référence à la carte de référence de l'Angleterre (« Ordnance Survey Map). Les données devront inclure de plus la marque du véhicule, le modèle, la couleur, le numéro d'immatriculation, le numéro de souscription, le nom de l'utilisateur, et une indication sur l'origine de l'appel : appel manuel, ou appel émis automatiquement (détecteur de choc, airbag, tonneaux, etc ....)

Ceci étant exposé, les responsabilités des organisations concernées sont les suivantes :

11.3.1 Responsabilités des Fournisseurs de Service à Valeur Ajoutée (FSVA)

- Les appels d'urgence sont activés par un bouton, ou une combinaison de boutons, spécifique marqué du sigle « SOS » ;
- L'appel voix doit aboutir à l'Autorité d'Urgence (AU) de la même manière qu'un appel standard sur le 999/112 ;
- Le matériel doit envoyer le message de données aussi rapidement que possible au Fournisseur de Service de Données d'Urgence (FSDU) avec les informations suivantes :
  - (i) Le numéro du téléphone GSM émetteur,
  - (ii) La localisation dans le format agréé des FSDU,
  - (iii) Une indication d'activation manuelle ou automatique de l'appel,
  - (iv) Des informations sur l'état des capteurs de choc (airbag, tonneau, arrière, frontal)
- En utilisant des moyens raisonnables et appropriés, les informations suivantes doivent être réunies et fournies au FSDU :
  - (i) Marque du véhicule, couleur et numéro d'immatriculation,
  - (ii) Numéro d'enregistrement et nom de l'abonné,
- Le matériel doit minimiser le temps compris entre l'initialisation de la transmission de données et l'initialisation de l'appel voix (les critères de performance devront être agréés avec les équipementiers, mais ce délai ne doit pas être supérieur à 2 secondes).

- Si pour quelque raison que ce soit, le terminal ne peut établir une liaison voix avec l'Agence de Gestion des Appels d'Urgence (AGAU), alors la procédure dégradée consistera à composer automatiquement le 112.

11.3.2 Responsabilité des Opérateurs de Réseau (OR)

- L'Opérateur de Réseau doit transporter l'appel voix jusqu'au réseau de l'Agence de Gestion des Appels d'Urgence (AGAU) dans les délais le plus brefs après que l'appel d'alerte ait été lancé,
- L'appel voix doit être transporté jusqu'au réseau de l'AGAU comme un appel de type 998 (et non pas 999 ou 112) de telle sorte à garantir que le message associé à l'appel comprennent le numéro de l'appelant et les chiffres suivants : 998IIABCD (au lieu de 999IIABCD pour un appel GSM normal), où II désigne l'identifiant du réseau et ABCD désigne le code de la zone ou l'identifiant de la cellule d'où est issu l'appel.
- L'Opérateur de Réseau doit transporter le message de données selon les critères de performance qu'il a accepté et qui doivent être aussi acceptés par le Fournisseur de Service de Données d'Urgence (FSDU). Le délai maximum souhaité entre l'envoi par un Opérateur de Réseau quelconque d'un message destiné au FSDU et sa réception par l'Opérateur de Réseau sous la forme d'un SMSC (Short Message Service Channel), ne devrait pas être supérieur à 10 secondes.
- L'Opérateur de Réseau enverra un message de contact 24 h sur 24 h au Fournisseur de Service d'Appel d'Urgence (FSDU), pour vérifier que la liaison est fonctionnelle. Cette connexion sera utilisée pour tous les problèmes opérationnels.

11.3.3 Responsabilité des Fournisseurs de Services de Données d'Urgence (FSDU)

- Le FSDU convertira les messages de données (par exemple du type SMS : Short Message Service) dans un format agréé par l'Agence de Gestion des Appels d'Urgence et par les autres FSDU.
- Le message de données sera transmis à l'AGAU dans un délai moyen de 4 secondes après sa réception par l'Opérateur de Réseau selon la procédure acceptée par l'AGAU et le FSDU.
- Le message de données transmis à l'AGAU concernant un appel d'urgence, devra comprendre les informations suivantes :
    - (i) Les coordonnées sur la Carte de Référence (Ordnance Survey Map), dans le format adéquat,
    - (ii) Le numéro du téléphone GSM appelant,
    - (iii) Une indication d'activation manuelle ou automatique de l'appel,
    - (iv) Des informations sur l'état des capteurs de choc (airbag, tonneau, arrière, frontal)

Et, en utilisant des moyens raisonnables et appropriés :

(i) Marque du véhicule, couleur et numéro d'immatriculation,

(ii) Numéro d'enregistrement et nom de l'abonné,

- Le FSDU assurera un contact téléphonique 24h /24h avec l'AGAU pour vérifier la fonctionnalité de la liaison. Cette liaison sera utilisée pour tout les problèmes opérationnels.
- Le FSDU fera ses meilleurs efforts pour surveiller toutes les interfaces avec les réseaux ou les unités de traitement de l'information, de manière à s'assurer que les messages ont bien été transmis à l'AGAU.
- Le FSDU conservera une trace de tous les messages reçus de l'Opérateur de Réseau et de ceux transmis à l'AGAU, pendant une période de 3 mois après leur réception ou leur envoi, afin de pouvoir effectuer les expertises nécessaires le cas échéant.

11.3.4 Les responsabilités de l'Agence de Gestion des Appels d'Urgence (AGAU)

- L'AGAU transmettra les appels voix dans un délai moyen de 10 secondes à l'Autorité d'Urgence (AU) concernée, et à la Police si aucune AU spécifique n'est demandée.
- L'AGAU assurera le rapprochement des messages voix et des messages de données envoyés par le FSDU, et donnera la référence cartographique à l'AU, dès que l'AU répond si les données sont déjà disponibles, ou bien en interrompant la communication entre l'AU et l'appelant si les données sont disponibles plus tardivement, ou bien encore à la demande de l'AU.
- L'AGAU transmettra aussi tous les détails reçus du FSDU pour décrire la localisation de l'incident, l'incident lui-même, à moins que toutes les informations demandées par l'AU aient déjà été obtenues directement auprès de l'appelant.
- L'AGAU fournira un accès 24h sur 24h pour décrire tout problème relatif aux transmissions de données. Cet accès sera utilisé pour la liaison concernant tous les problèmes opérationnels.
- L'AGAU conservera des enregistrements des messages de données et des messages voix pendant une durée de 3 mois après leur réception.
- Dans l'hypothèse où un message de données est reçu sans qu'il soit possible de le rapprocher d'un message voix, l'AGAU appellera la Police et transmettra les informations en sa possession.

11.4 Responsabilités

Chacune des Parties impliquées dans la connexion GSM ou les équipements de localisation avec les AU fera les efforts nécessaires pour transporter les informations spécifiées pour les appels d'urgence, que ce soit des messages voix ou données, dans des délais brefs et de façon efficace, en respect des règles UK et de l'Acte de Protection sur les Données et les Transmissions (Européen Protection and Telecommunication Acts).

11.5 Clauses générales

- Tout changement au présent Protocole d'Accord ou au document qui lui attaché, incluant les nouvelles versions logiciel, nécessitera 3 semaines de préavis et devra être sanctionné par l'agrément des Parties concernées sur les modalités de mise en œuvre. Tous les changements devront être réversibles.
- Pour toute information complémentaire concernant le présent Protocole, contacter BT Agency TX Product Manager, St Michael's Court, 1 Shire Oak Street, Headingley, Leeds, LS6 2DP.

11.6 Historique des changements

(i) Version provisoire n°1 : Publiée pour commentaires en Avril 1999 et adressée à AA, RTT, BT Cellnet et Vodafone.

(ii) Version provisoire n°2 : Publiée le 7 juin 1999 après discussion avec AA, BT Cellnet et Vodafone.

(iii) Version provisoire n°3 : Publiée le 16 juin 1999 après des discussions complémentaires avec AA, BT Cellnet et Vodafone. Version diffusée à Cable & Wireless, RTT, Mannesmann et Tegaron pour commentaires.

(iv) Version 1 : Publiée le 9 juillet 1999 après des discussions complémentaires avec AA, BT Cellnet et Vodafone.

(v) Version 2 : Publiée le 31 mars 2000 incluant les commentaires de l'industrie.

(vi) Version 3 : Publiée le 10 avril 2000 incluant des commentaires complémentaires de l'industrie.

(vii) Version 4 : Publiée le 18 mai 2000 incluant des commentaires complémentaires de l'industrie.

11.7 Glossaire

FSVA : Fournisseur de Service à Valeur Ajoutée

OR : Opérateur de Réseau GSM

FSDU : Fournisseur de Service de Données d'Urgence

AGAU : Agence de Gestion des Appels d'Urgence

AU : Autorité d'Urgence : Pompiers, Police, Ambulances, et Gardes Côtes

GSM : Global Standard for Mobile phones

GPS : Global Positionning by Satellite

11.8 Signataires

- Toute Partie souhaitant commercialiser, utiliser ou être impliquée dans le traitement des appels d'urgence, doit satisfaire aux obligations du présent Protocole. Les signataires autorisés doivent signer la Déclaration de Conformité ci-jointe et la transmettre dès que possible à BT Agency TX Product Manager, St Michael's Court, 1 Shire Oak Street, Headingley, Leeds, LS6 2DP.

Protocole d'accord : Appels d'urgence sur les réseaux GSM

Déclaration de Conformité

Les soussignés déclarent que [noms de l'entreprise ou de l'organisation] se soumettra à l'esprit et au contenu des traitements, procédures et interfaces définies dans le présent Protocole d'Accord. Les dispositions du présent Protocole d'Accord et de la présente déclaration n'ont pas pour but de créer un lien légal.

Signatures autorisées :

Signature

Nom :

Titre :

Adresse :

ÉTUDE

sur le

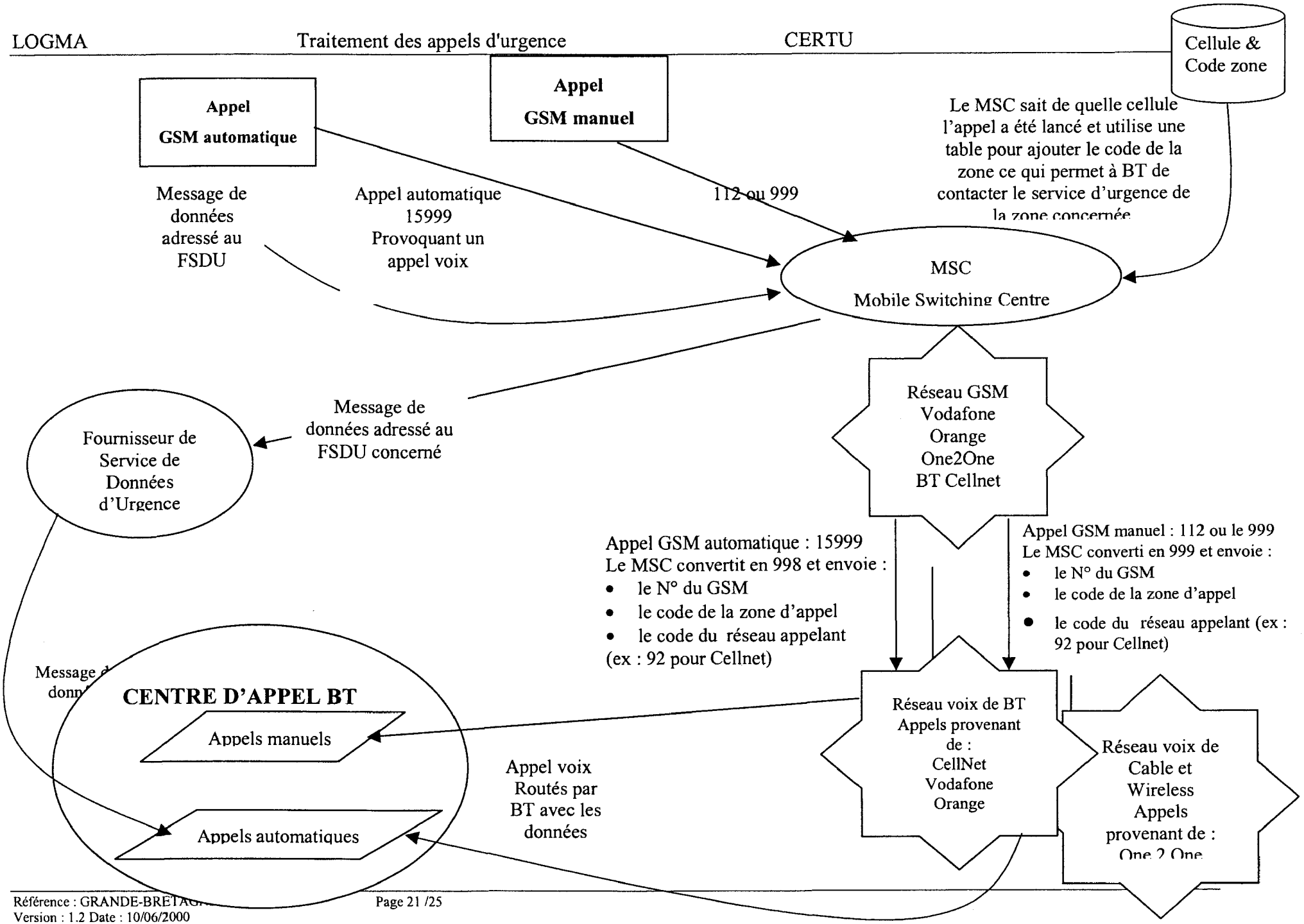
TRAITEMENT DES APPELS D'URGENCE

sur le

RÉSEAU ROUTIER

Grande-Bretagne
Annexe 2 :
SCHEMA DE FONCTIONNEMENT 999 et GPS

12 Annexe 2 - Schéma de fonctionnement 999 et GPS


Cellule & Code zone
Appel GSM automatique
Appel GSM manuel
Le MSC sait de quelle cellule l'appel a été lancé et utilise une table pour ajouter le code de la zone ce qui permet à BT de contacter le service d'urgence de la zone concernée
Message de données adressé au FSDU
Appel automatique 15999 Provoquant un appel voix
112 ou 999
MSC
Mobile Switching Centre
Réseau GSM
Vodafone
Orange
One2One
BT Cellnet
Fournisseur de Service de Données d'Urgence
Message de données adressé au FSDU concerné
Appel GSM automatique : 15999
Le MSC convertit en 998 et envoie :
• le N° du GSM
• le code de la zone d'appel
• le code du réseau appelant
(ex : 92 pour Cellnet)
Appel GSM manuel : 112 ou le 999
Le MSC converti en 999 et envoie :
• le N° du GSM
• le code de la zone d'appel
• le code du réseau appelant (ex : 92 pour Cellnet)
CENTRE D'APPEL BT
Appels manuels
Appels automatiques
Appel voix Routés par BT avec les données
Réseau voix de BT Appels provenant de : CellNet Vodafone Orange
Réseau voix de Cable et Wireless Appels provenant de :

ANNEXE 3

France & Pays étudiés

RÉSEAUX ET STATISTIQUES

13 Annexe 3 - Réseaux et statistiques

Points de référence sélectionnés en 1997

	Population totale[1)]	Longueur du réseau total[2)]	Longueur du réseau des autoroutes[2)]	Superficie[3)]	Parc total[1)f)]	Parc: deux-roues motorisées[1)]	Parc: voitures de tourisme[1)]
France	58 493	969 200	8 596	551 208	29 487	2 670	25 020
Allemagne	82 012	626 476	11 246	357 039	49 019	4 338	41 372
Belgique	10 170	144 914	1 679	30 153	5 341	225 [f]	4 415
Italie	57 461	-	6 444	301 260	37 607	6 467	31 000
Pays-Bas	15 567	115 617	2 223	41 526	6 954	882	5 871
Royaume-Uni	59 009	394 183	3 405	244 046	27 563	765	23 451

Accidents de la route corporels

	total			en rase campagne		
	1980	1996	1997	1980	1996	1997
France	248 469	125 406	125 202	60 270	40 281	41 084
Allemagne	412 672	373 082	380 835	128 374	137 073	137 664
Belgique	60 758	48 750	50 078	22 960	22 366	23 365
Italie	163 770	190 068	190 031	43 417	50 247	48 298
Pays-Bas	49 383	41 041	41 036	13 395	13 150	13 269
Royaume-Uni	257 282	243 032	247 238	60 562	65 778	68 153

Tués total et selon le lieu *)

	total			en rase campagne		
	1980	1996	1997	1980	1996	1997
France	13 672	8 541	8 444	8 317	5 850	5 777
Allemagne	15 050	8 758	8 549	8 919	6 627	6 485
Belgique	2 396	1 356	1 364	1 368	988	956
Italie	9 220	6 688	6 724	5 547	3 845	3 945
Pays-Bas	1 996	1 180	1 163	1 212	786	775
Royaume-Uni	6 239	3 740	3 743	2 978	2 166	2 229

Tués selon le moyen de locomotion *)

	Piétons			Cyclistes		
	1980	**1996**	**1997**	**1980**	**1996**	**1997**
France	2 482	1 043	982	709	317	348
Allemagne	3 720	1 178	1 147	1 338	594	679
Belgique	507	155	142	241	120	122
Italie	1 957	987	894	688	414	429
Pays-Bas	295	109	119	425	232	240
Royaume-Uni	2 035	1 039	1 010	316	208	187

	Utilisateurs deux-roues motorisées			Voitures de tourisme		
	1980	**1996**	**1997**	**1980**	**1996**	**1997**
France	2 556	1 288	1 376	7 267	5 539	5 358
Allemagne	2 631	998	1 143	6 915	5 622	5 249
Belgique	349	174	193	1 227	862	852
Italie	1 805	1 194	1 224	4 112	3 663	3 730
Pays-Bas	321	194	176	910	575	547
Royaume-Uni	1 187	447	525	2 360	1 884	1 874

ÉTUDE

sur le

TRAITEMENT DES APPELS D'URGENCE

sur le

RÉSEAU ROUTIER

Grande-Bretagne
Annexe 4 :
LISTE DES PIÈCES JOINTES

14 Annexe 4 - Liste des pièces jointes

1. Document RTCC - Making better use of the trunk road network
2. Présentation générale de la Highways Agency
3. Information TCC (Traffic Control Centre)
4. Automobile Association - Telematics
5. Documentation SIEMENS UK

Making better use of the trunk road network

Overview

The 6,500-mile trunk road network - which includes 2,000 miles of motorway - accounts for less than 4% of England's roads, yet is used for a third of all road journeys and half of all lorry journeys.

Forecasts show that this level of pressure is likely to grow and that traffic could almost double by the year 2025 if demand for road space is unconstrained. At the same time, the resources and space available to build and improve roads are limited. It is therefore important to get the best out of the existing network.

One of the best ways of achieving this is to introduce more sophisticated traffic control and network management techniques. At present, the trunk road network is only congested for limited periods of time. This is due either to peaks in demand, when a great many motorists want to use the same length of road at the same time, or because of temporary lane restrictions caused by accidents or road works.

Improved driver information can help to alleviate congestion by providing motorists with details of current and expected road conditions and real-time - or 'as it happens' - advice on the best route to take. If only a small percentage of motorists can be encouraged to use alternative, less-congested routes, or travel at a different time, or not travel at all, then the benefits could be significant to everyone.

The change in emphasis from road-building to network management is reflected in the Green Paper *Transport - the Way Forward*, which recognises possibilities for making better use of the existing network at lower cost. Our *Road User's Charter* - part of the Citizen's Charter initiative - sets out the need to develop quality-of-service indicators which will enable us to measure the network's performance in terms of congestion, journey-time reliability and safety.

One of the key objectives of our network control policy is:

"to deliver a reliable level of service to users of the trunk road system by deployment of traffic control systems and the provision of high-quality advice and information to drivers both before and during their journey."

(HA Business Plan 1996/97)

Our strategy for managing and controlling traffic is to:

- improve road safety - and hence reduce delays due to incidents;
- improve network efficiency and journey-time reliability;
- reduce the environmental effects of road traffic;
- provide relevant and reliable traffic information to drivers.

▲ *return to top of page*

The road user's needs

A recent Highways Agency driver survey showed that:

- before embarking on an unfamiliar trip, more than 70% of drivers use at least one source of information about traffic conditions;
- even for long journeys where the driver is familiar with the route, 60% require some traffic information;
- the most common request from drivers is for up-to-date information on congestion and roadworks.

Road users are not always fully aware of the extent or effect of congestion upon their journeys. There is considerable demand for

relevant and reliable traffic information to enable motorists to choose the best route for their journey.

▲ return to top of page

Existing arrangements

Driver information services are already provided by both the private and public sectors. These include variable message signs (VMSs), radio broadcasts and in-car systems. But there is scope for considerable improvement.

New intelligent transport systems and improved information services are being developed. These include: navigation and route-guidance systems; systems to give drivers new types of information; and new ways of presenting information more clearly, to mee the road user's specific needs.

Each of these systems and services will require an up-to-date source of high-quality traffic information for a market which is just developing and has considerable growth potential.

▲ return to top of page

Network management

The present - tactical network management

Tactical network management involves controlling traffic in response to localised incidents and conditions. This function is carried out by 32 police control offices (PCOs). Their role is to ensure motorists' safety by enforcing road-traffic regulations and managing traffic during incidents. Current tactical control facilities include:

- emergency telephones;
- the matrix signalling system - usually located on the central reserve of motorways;
- variable message signs;
- closed circuit television;
- on selected sections, automatic incident-detection systems that set signals automatically when traffic queues form, using a system called MIDAS;
- the controlled motorway pilot scheme between Junctions 10 and 15 on the M25. This is helping to improve traffic condition by using variable speed limits to control traffic.

An extensive communications network, comprising copper and some optical fibre links, is used to connect all of the above system and equipment.

Tactical traffic-management has meant that signal- and sign-switching have been controlled locally and are largely based on information about conditions on the local network. This structure works well where a quick response to incidents is required for safety reasons and the resultant traffic effects are localised. However, there is a need to deal with incidents and conditions which have an effect over a wider area.

The future - strategic network management

A more strategic approach to network management would help motorists to avoid delays by giving them information about congestion while they are still a relatively long distance from the problem - or even before congestion occurs.

We commissioned a study to look at the optimum structure for strategic traffic-management and this considered a range of possibilities. The study concluded that the most effective solution would be a two-tier structure consisting of:

- existing tactical PCOs; and
- a new strategic level - Regional Traffic Control Centres (RTCCs) - to provide additional network-wide facilities.

This hierarchy offers the advantages of:

- a complete overview of conditions on the network as a whole to enable strategic decisions to be made;
- a seamless system to permit strategic traffic control across police boundaries;
- a specific wide-area network management expertise to complement PCOs;
- cost-effective development and deployment at a limited number of RTCC sites, rather than the more expensive process of equipping all existing PCOs.

▲ return to top of page

How would strategic management work?

Drivers on the M20 in Kent heading for Birmingham are faced with a number of route options. They can use the M25 clockwise to the M40, or anti-clockwise to the M1 and M6. The differences between these routes in non-congested conditions are small - arour ten minutes' travel time and around ten miles' distance.

Should congestion occur - perhaps due to a major accident on the M25 - then the equation could alter significantly. By giving motorists information on the preferred route - through VMS and in-car systems - before they reach the congested area and while they can take alternative routes, a good deal of time, environmental pollution, accidents and frustration could be saved.

However, directing all of the traffic on to one single diversion route is not always the best answer - it may just move the problem from one part of the network to another, creating even worse congestion.

Strategic management therefore requires information on traffic conditions over much of the network, including alternative routes. Computer models can be used to predict what traffic conditions will be like in several hours' time, so that motorists can be warned via VMS and in-car information services.

Strategic management systems using VMS are already being put in place in Kent and in the London-Birmingham-Nottingham triangle, known as the Midlands Driver Information System.

▲ return to top of page

Looking to the future

Many changes will occur in the way traffic is controlled on the road network as we head into the next century and beyond.

At present - and for the foreseeable future - the Highways Agency is focusing its activities on making the best use of the existing trunk road network. This can be done by improving the management and control of traffic in busy sections of the network and providing drivers with better advice and information to help them make decisions about their journeys.

In the longer term, a number of technological advances may arise. These may include 'intelligent roads' - which navigate vehicles automatically along routes without the need for driver intervention. Even so, information on network conditions would still have a significant role to play.

Any new initiative will need to be flexible enough so that it can be developed and adapted to support these changes as they take place.

▲ return to top of page

Summary

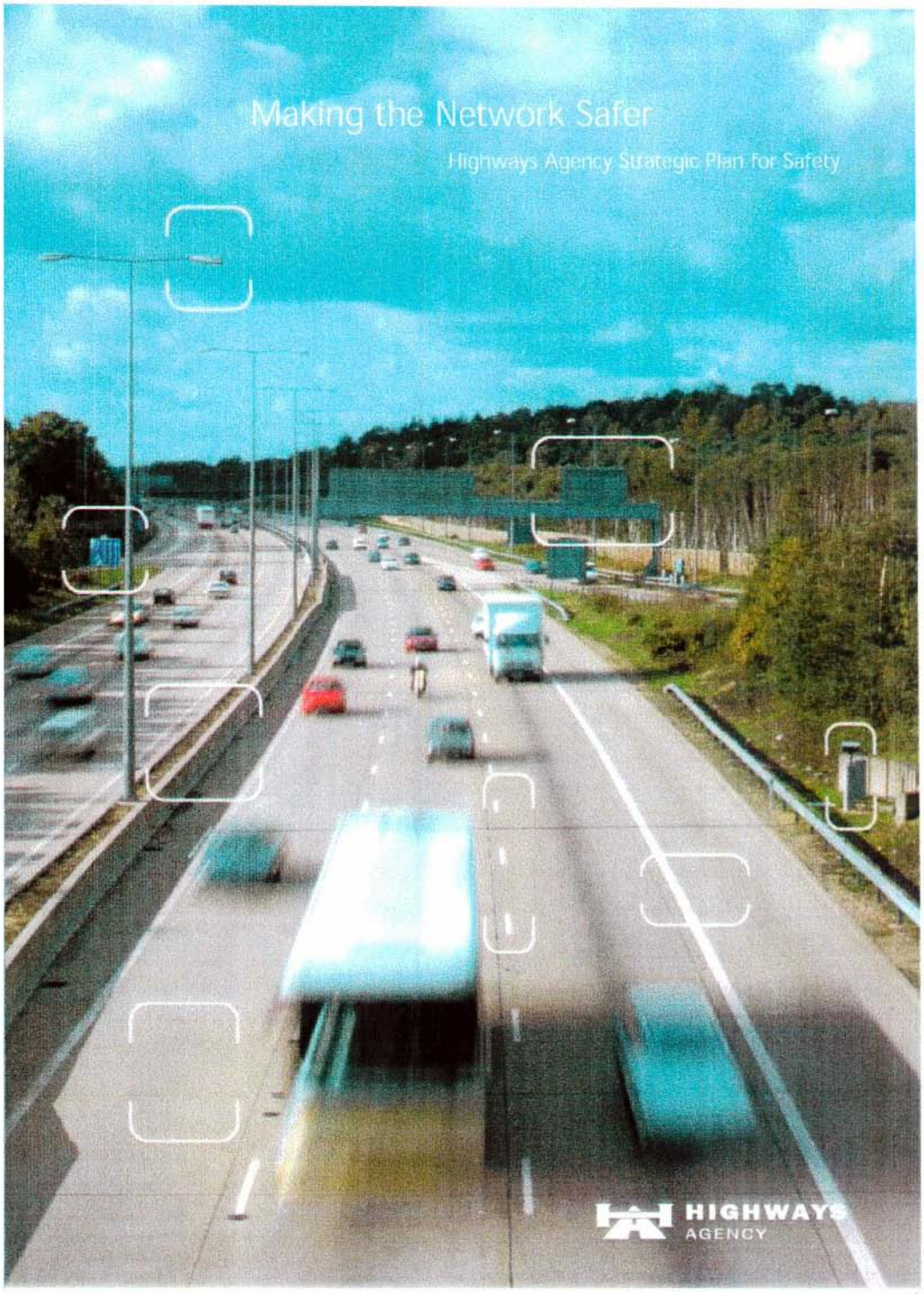
By introducing strategic traffic management we will be able to provide motorists with information and advice about traffic condition: and the best action to take to avoid congestion. This will reduce accidents, delays and pollution.

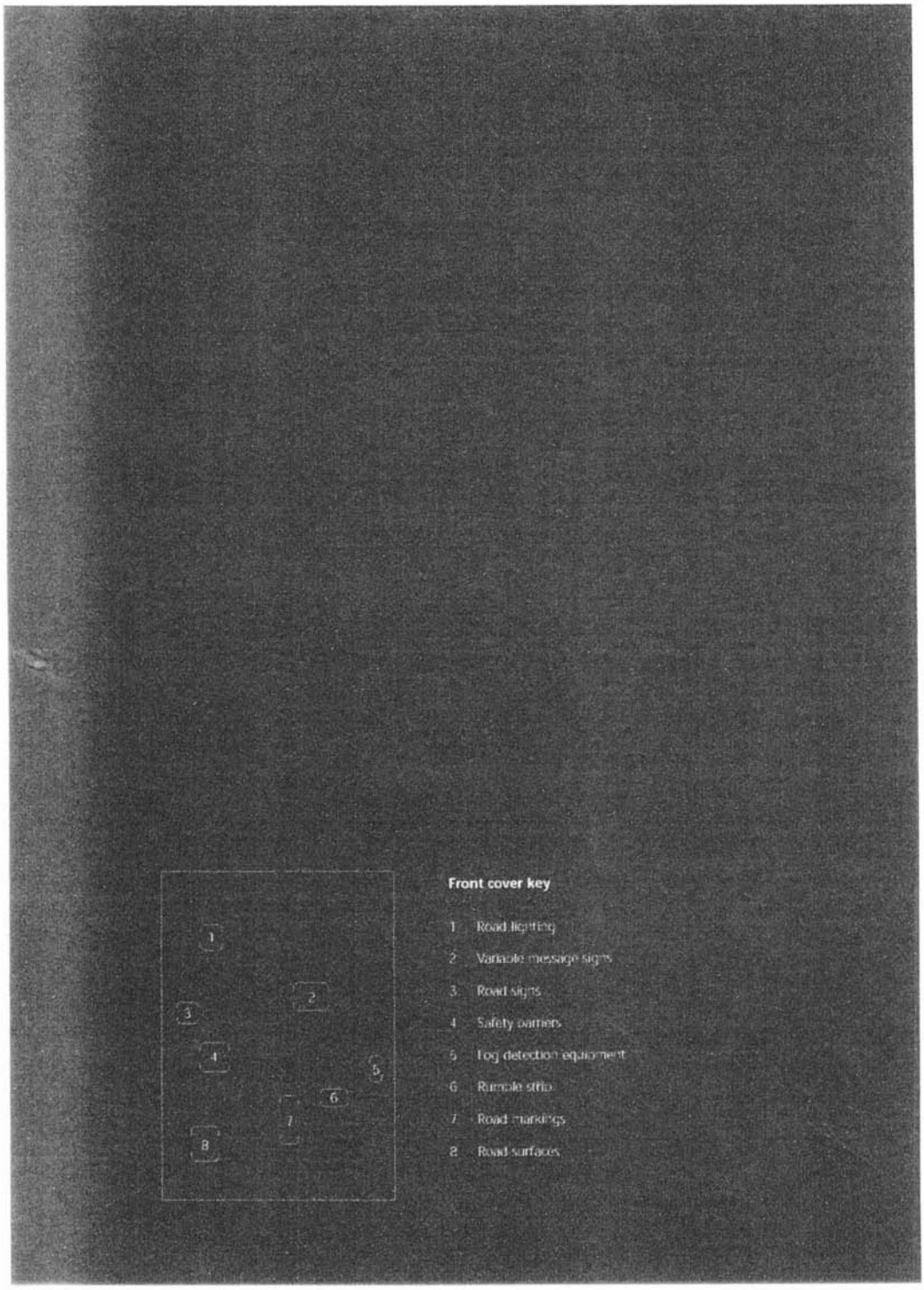
▲ return to top of page

regional traffic control centres - making better use of the trunk road network

previous page ← document contents → next page

agency information | documentation | road improvements | contact information | press releases | youth section
contractors information | home page

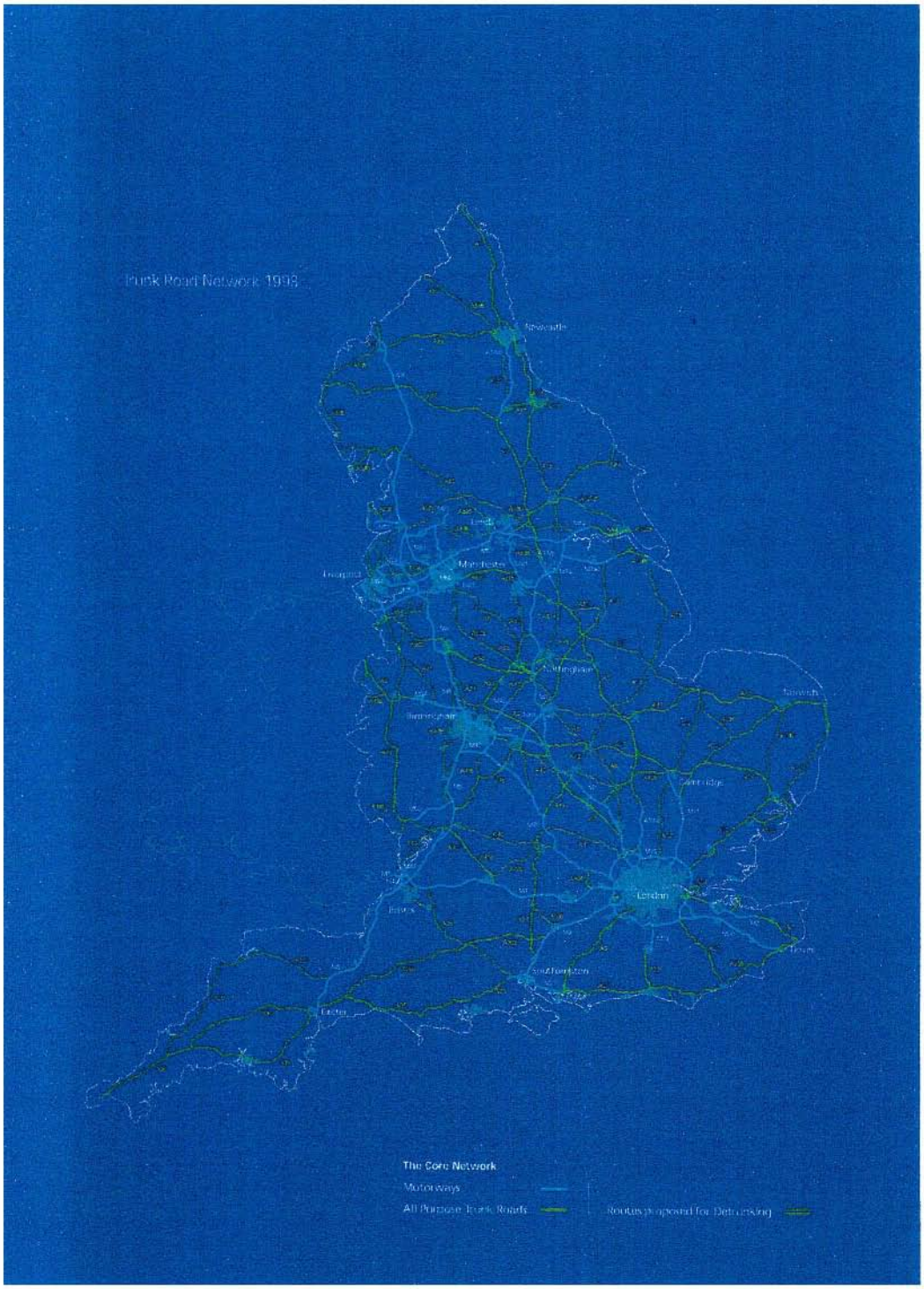

Making the Network Safer
Highways Agency Strategic Plan for Safety
HIGHWAYS AGENCY



Front cover key

1. Road lighting
2. Variable message signs
3. Road signs
4. Safety barriers
5. Fog detection equipment
6. Rumble strip
7. Road markings
8. Road surfaces

Contents


Trunk Road Network 1998
Newcastle
Manchester
Liverpool
Nottingham
Norwich
Birmingham
Cambridge
London
Bristol
Southampton
Exeter
The Core Network
Motorways
All Purpose Trunk Roads
Routes proposed for Detrunking

Foreword by the Chief Executive

Safety is a high priority for the Highways Agency. Improvements to the road infrastructure have been successful in reducing fatal and serious casualties on the trunk road network, to meet the targets set by the Secretary of State for the year 2000.

But the Agency is not content to rest on past success. The new targets set by Government for the year 2010 are more demanding and we welcome the challenge to find new ways further to reduce casualties on trunk roads. In particular, as operator of the trunk road network, we plan to work actively with others to reduce casualties, by continuing with the implementation of effective accident reduction measures and the introduction of innovative ideas. This document sets out our new strategic plan for achieving the Highways Agency's contribution to the road safety targets.

> "we welcome the challenge to find new ways further to reduce casualties on trunk roads"

Peter Nutt, Chief Executive

What we do

The Highways Agency, part of the Department of Environment, Transport and the Regions, maintains, operates and improves the trunk road network in England, which includes motorways and all other trunk roads.

This booklet is one of a series outlining the Agency's strategic plans for the next five years. Others are available from the address on the back page.

Introduction

The Government has set out its plans for a new integrated transport system within its White Paper *A New Deal for Transport: Better for Everyone*, published in July 1998. It sets out policy for a transport system that is safe, efficient, clean and fair and which allows people to make more sustainable transport choices. Making it easy and convenient to travel by public transport, cycle or to walk, will reduce dependence on the motor car for many journeys so that people's travel will have less of a detrimental effect on the environment, our health and the economy. Improving accessibility will also help to achieve the Government's aims of creating an inclusive society.

A New Deal for Trunk Roads in England (Roads Review), also published in July 1998, gave, amongst other things, a new strategic aim and new objectives for the Highways Agency as a network operator, identifying three main investment areas and five investment criteria. These are:

Investment areas maintain; operate; improve.

Investment criteria safety; environment; economy; accessibility; integration.

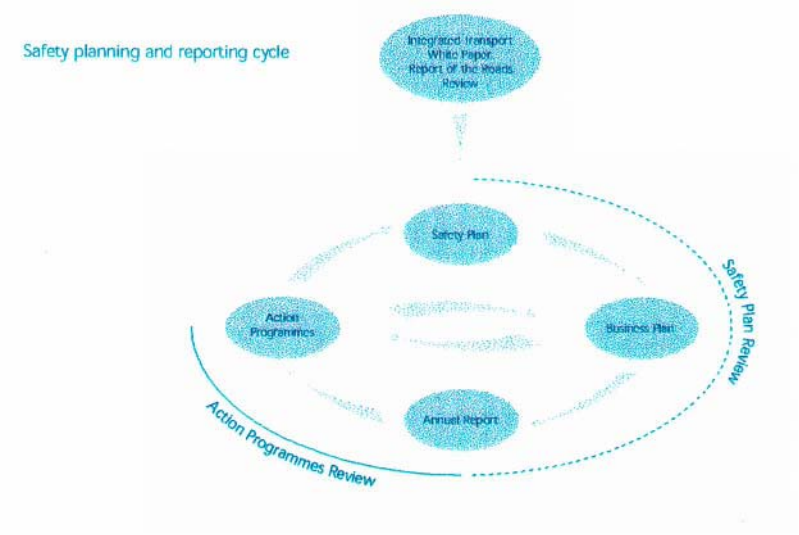
Each area has its own Agency strategic plan. There are obvious links between the eight areas and the strategic plans cross-refer where appropriate. These strategic plans are also linked to the Agency's other strategies on route management, procurement and performance indicators.

The Highways Agency now has a clear remit to manage, maintain and improve its network for all road users, including cyclists and pedestrians, as well as equestrians and disabled people, to increase accessibility, to promote integration and improve safety.

This document outlines our strategic plan for road safety, detailing the broad scope of actions we intend to pursue across the full spectrum of user groups. We are now working to develop detailed action programmes in support of the plan.

Clear messages warn drivers of hazards ahead

Targets for programmes will be defined annually in our business plan. Implementation of the programmes together with our performance in meeting targets will be recorded in our annual report.



The new approach to appraisal

In *A New Deal For Trunk Roads in England*, the Government set out details of a 'New Approach To Appraisal' (NATA). This aims to assess trunk road investment proposals against the Government's five criteria of accessibility, safety, economy, environment and integration.

As our detailed action programmes in support of this plan are developed, they will be tested as appropriate against the principles of the NATA.

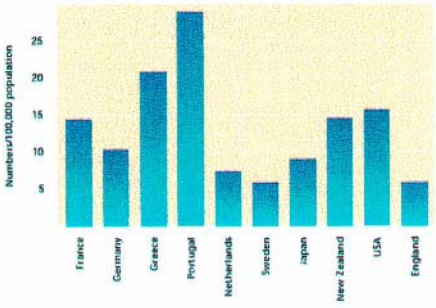
Background

The Highways Agency make an important contribution to road safety in England. Everything we do as an operator of the major road network has safety implications. We are committed to contributing to Government's targets for reducing road casualties and to providing a safer network for all our customers.

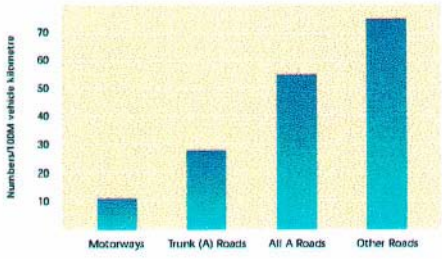
Although roads in England have a good safety record there were still 2,834 people killed in 1998 and over 288,216 injured in accidents.

Motorways are the safest roads in the country and English roads are amongst the safest in the world

Road deaths



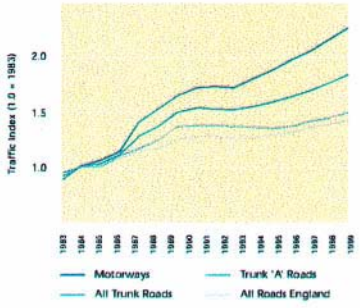
Accident rates on roads in England



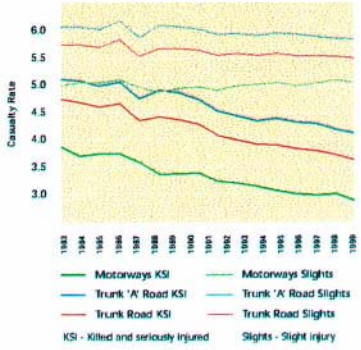
The motorway and trunk road network accounts for 3.7% of all roads in England and only 12% of all reported injury accidents occur on the network, yet it carries 34% of all traffic. This makes it the safest road network in England.

The Agency have always pursued high standards on the trunk road network. Whether this has been achieved through upgrading, maintaining or managing of the network, improvements in safety and accident reduction have been key considerations. The result has been a steady reduction in the rates of the more severe casualties, killed and seriously injured (KSI's), against an ever-growing demand for travel on our network.

Traffic growth on all roads in England



Casualty index for motorways & trunk 'A' roads



This record of reduction in road casualties has been achieved through a range of improvements in vehicle technology, national initiatives such as the drink/driving campaign and the compulsory wearing of seat belts. In addition it is as a result of the Agency's activities such as:

- Improved road design through an extensive research and development programme
- Removing heavy through traffic from town centres
- Provision of surfaces with improved skid resistance
- Provision of safety fences
- The use of speed cameras at problem sites with high accident rates
- Programmes to identify, evaluate and improve sites with poor accident records
- Improved lighting

Casualty reduction targets

Current year 2000 target

In 1987 the then Government set a target to reduce the number of casualties on the roads of Great Britain by one third (by the year 2000).

On the trunk road network by 1998, the programme of maintenance and improvement, coupled with road safety initiatives by others, reduced the number of people killed and seriously injured by 34%. Slight casualties increased by 47%, principally due to a 85% increase in traffic volumes on the network since 1987.

New Year 2010 Target

The Government has launched a new road safety strategy to reduce further road casualties. The target is a 40% reduction in the number of killed and serious casualties by the year 2010, and a 10% reduction in the rate of slight casualties on all non motorways and trunk roads of Great Britain.

Motorways and other trunk roads are built to high standards and because of this they already have relatively low accident rates, and also carry higher proportions of any increases in road traffic. Consequently the targets set by the Government for motorways and trunk roads are to reduce by one third the number of killed and serious casualties by the year 2010 and reduce by 10% the rate of slight casualties. These new targets represent a stretching but achievable goal for the Agency.

The Highways Agency will work with others to achieve safety improvements, contributing to the reduction of road casualties through the programmes of maintenance and improvement, using the tools described in this plan. Maintaining the network to high standards and developing innovative ideas for reducing further road accidents will be key activities.

Agency's key objective

A New Deal for Trunk Roads in England set a new aim and objectives for the Agency, one of which is:

> "To improve safety for all road users and contribute to the Government's new safety strategy and targets for 2010"

How the Agency will deliver their strategic plan

To achieve this objective, the Agency have identified target user groups, established objectives for each group and will be delivering those objectives through a range of actions employing a combination of the measures listed on page 10. The Agency is working with the Department of the Environment, Transport and the Regions, the police, other agencies, local highway authorities, motoring organisations, and other interest groups.

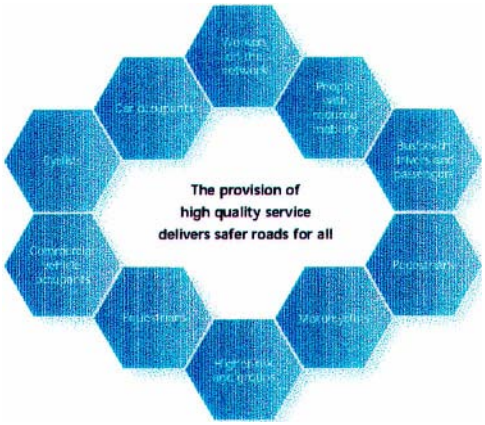
All road users can contribute to reducing accidents

Key tools

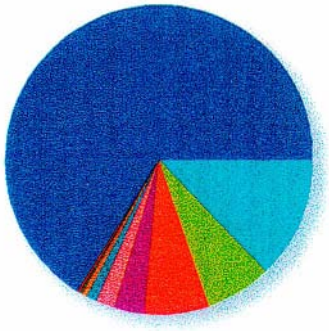
Infrastructure	• Identify and address accident problem sites • Upgrade existing routes by improving the skidding resistance of road surfaces at junctions and crossings, using clearer signing and road markings and better junction layouts • Calm traffic through villages • Trial innovative ideas through the Agency toolkit, a programme of 70 or more techniques and innovative ideas
Technology	• Introduce high-technology control equipment to warn drivers of potential hazards • Use traffic data collection technology to control access on to and speeds on the congested sections of the motorway network • Introduce new trunk road communications systems • Develop new equipment to monitor the performances of road surfaces to assist in maintaining and improving a safe road surface • Use new materials such as colour surfacing to enhance safety measures • Provide new equipment for keeping roads safe in winter conditions
Education	• Disseminate research knowledge to others involved in road design and operation • Support road safety officers in delivering safety education to local communities
Encouragement	• Support safety initiatives by other agencies or outside bodies • Investigate the display of safety messages on variable message signs
Enforcement	• Strengthen and improve liaison with the police • Aid the targeting of offenders through the provision of high-technology equipment to assist the police
Partnerships	• Strengthen links with other agencies and outside organisations to deliver a co-ordinated approach to the strategy • Encourage users to play their part in safety improvements
Management & Monitoring	• Ensure that agents, local authorities and Design, Build and Finance Operators are clear on their roles and responsibilities in supporting and implementing the strategy • Provide quality data for planning, priority setting and monitoring purposes • Report on progress to Ministers and user groups

Target user groups

The Agency have identified the following target user groups. They have specific requirements when using the network and it can be made safer for all users by developing and delivering safety objectives tailored to their needs.



Casualties in all trunk road accidents



- Car occupants
- Commercial vehicle occupants (HGV & LGV)
- Cyclists
- Equestrians
- Higher-risk age groups*
- Motorcyclists
- Pedestrians
- People with reduced mobility*
- Bus/coach drivers and passengers
- Workers on the network*

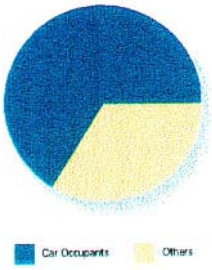
Note: Casualties in groups marked with an * also appear in other groups

Car occupants

Issue

In terms of accident per unit of distance travelled, car drivers and their passengers are among the least vulnerable of users on the network. However, because this group is by far the largest, they account for 75% of casualties on trunk 'A' roads and 85% on motorways. Driver misjudgement is often the cause, with a majority of these accidents occurring at junctions.

Casualties in trunk road accidents



Objective

To improve the network where appropriate and assist others in making car drivers aware of the consequences of poor driving behaviour.

Controlling speed using camera enforcement reduces accidents

Actions will include:

- Introducing road layouts that will encourage safer driver behaviour particularly at junctions
- Continuing to develop improvements in road engineering
- Supporting national initiatives on drink driving and speeding
- Continuing the use of speed cameras at speed-related accident problem sites
- Developing automatic motorway signalling systems to warn drivers of congestion and queues ahead

Future actions might be to:

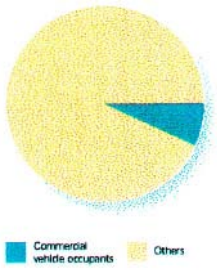
- Make greater use of new technology, for example, signals and variable message signs to promote national and local safety campaigns
- Provide rest areas to reduce driver fatigue

Commercial vehicle occupants

Issues

Although occupants of commercial goods vehicles account for only 8% of all casualties on trunk roads, accidents involving these vehicles account for 26% of all casualties.

Casualties in trunk road accidents



Objective

To encourage the development of a safer environment and safety measures which lessen the severity of collisions with lighter vehicles.

Actions will include:

- Provide sites and facilities from which police and vehicle inspectors can enforce regulations involving the safety aspects of commercial vehicles and drivers
- Undertake research to evaluate the extent of the problem on the network

Future actions might be to:

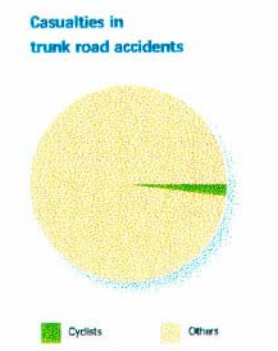
- Provide designated lanes or routes for commercial vehicles
- Promote safer on-road interaction between car and heavy vehicle drivers

Accidents involving commercial vehicles are often more serious

Cyclists

Issue

Pedal cyclists account for 2% of all casualties on the trunk road network. While in overall terms this figure is relatively low, cyclists are one of the most vulnerable users, and are known to be particularly at risk at certain types of junctions. However, cycling is being encouraged as a healthy and environmentally-friendly form of travel for going to work and for leisure pursuits. The Agency needs to be ready to cater for increasing demand through the provision of a safer network.



Objective

To provide (where appropriate) suitable routes to improve safety, comfort and convenience for cyclists

Dedicated facilities minimise conflicts with vehicles

Actions will include:

- Supporting further research into innovative measures to improve safety for cyclists
- Co-operating with other parties in continuing to develop links to the National Cycle Network and other dedicated cycling facilities
- Supporting and, where applicable, implement safer routes to school initiatives

Future actions might be to:

- Inform car drivers of the vulnerability of cyclists at junctions
- Develop and install safer cycle facilities at roundabouts
- Carry out cycle audits of all new schemes and where appropriate conduct a cycle review of the existing network

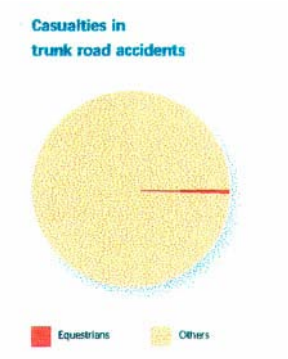
Equestrians

Issue

Horses even under the control of an experienced rider can be unpredictable and therefore extremely vulnerable when their route crosses that of motorised traffic.

Objective

To make road users more conscious of the vulnerability and unpredictability of horses and enhance crossings and signing provision on the network.

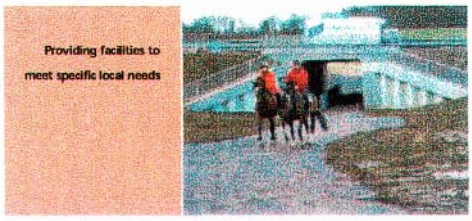


Actions will include:

- Developing advice for route managers on equestrian facilities
- Considering greater dedicated provision

Future actions might be to:

- Use signs and other indicators to enhance driver awareness of ridden horses particularly on rural trunk roads

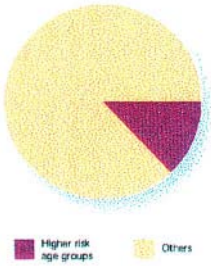


Higher-risk age groups

Issue

Certain age groups are over-represented in casualty statistics. Young drivers and passengers (16-19 year olds) have the highest killed and seriously injured rates of any age group. Older drivers (70 plus), given their comparatively low levels of travel, also tend to be over-involved in crashes. Two-thirds of all fatal accidents involving school-aged children are road accidents. While all these groups are not present in large numbers on the trunk road network, actions can be taken to reduce the number of casualties.

Casualties in trunk road accidents



Objective

To develop and implement techniques specifically aimed at these groups in relation to the motorway and trunk 'A' road network.

Junctions pose a particular risk for older persons. Clear layout and signs assist in reducing that risk

Actions will include:

- Implementing the safer routes to school initiative on trunk roads
- Directing research to establish the reasons for the over representation of these groups in trunk road casualty statistics
- Improving the road environment to reduce risk and make them aware of their limitations

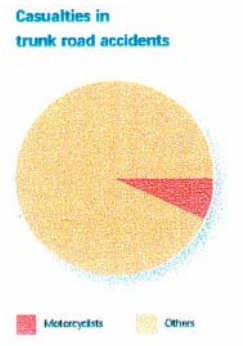
Future actions might be to:

- Co-operate with other bodies through sharing results of research and operation of trunk roads to ensure that the best road safety education is being provided

Motorcyclists

Issue

Although motorcycles represented only 2% of all licensed vehicles (1998), riders amounted to 7% of all casualties on trunk roads and 3% on motorways. Motorcycle riders are nearly twice as likely to be fatally injured as car drivers.



Objective

To assist in the reduction of the risk to motorcyclists travelling on the network.

Actions will include:

- Working with other government organisations, the motorcycle industry and rider groups to improve the road environment for motorcyclists

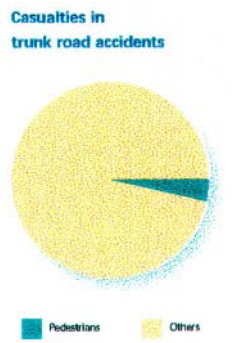
Future actions might be to:

- Consider road layouts and operating methods that could increase awareness of motorcyclists by other road users

Pedestrians

Issue

The Government's Integrated Transport White Paper, *A New Deal for Transport: Better for Everyone*, encourages highway authorities to make walking a more viable option for short trips. Analysis of the accident data for 1998 indicates that pedestrian casualties represent 4% of all casualties on trunk roads.



Objective

To improve safety, comfort and convenience for people crossing trunk roads or walking beside them.

Controlled crossing facilities provide safer and easier crossing points on heavily trafficked roads

Actions will include:

- Encouraging drivers to slow down in built-up areas
- Improving pedestrian routes and provide more crossing facilities
- Continuing the introduction of traffic calming schemes in villages

Future actions might be to:

- Seek new methods for crossing of rural trunk roads

People with reduced mobility

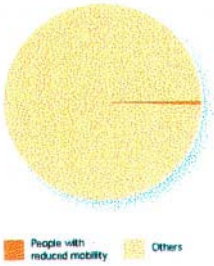
Issue

Some people by the nature of their impairment may face greater problems when using the network.

Objective

To ensure that all facilities on the network are accessible at minimum risk.

Casualties in trunk road accidents



Actions will include:

- Continuing to work with support groups who represent reduced mobility users to ensure our facilities meet their needs
- Upgrading existing facilities as new ideas are introduced

People with reduced mobility also need to be able to call for assistance in cases of difficulty

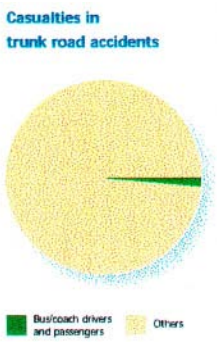
Bus/coach drivers and passengers

Issue

Although accidents involving buses and coaches account for only 3% of casualties on all trunk roads, these accidents are likely to have a high number of casualties due to the number of passengers these vehicles can carry.

Objective

To encourage the development of safety features to lessen the severity and number of on-board casualties.



The features of the road can be designed to minimise the severity of impact

Actions will include:

- Providing information from research and operation that will support the enforcement of regulations involving the safety aspects of bus/coach drivers and passengers
- Designing roadside features to minimise the effect of collisions with vehicles leaving the carriageway

Future actions might be to:

- Assist in the promotion of driver-training improvements especially for the occasional driver of minibuses

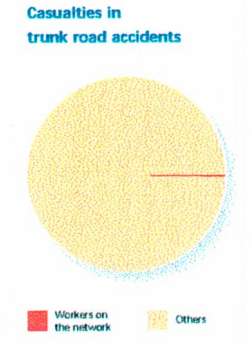
Workers on the network

Issue

Working in close proximity to moving traffic raises the risk of injury to vehicle recovery operators, emergency services staff, Agency staff, construction workers and those regularly undertaking maintenance work.

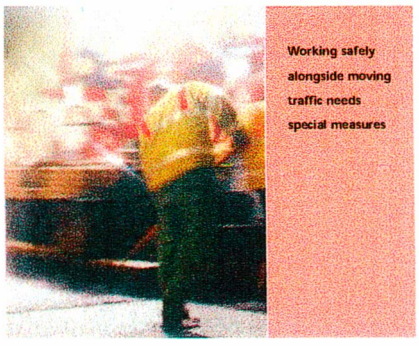
Objective

To ensure that the working environment is as safe as possible and that workers and those managing the work are aware of all appropriate health and safety regulations.



Actions will include:

- Continuing to promote good working practices on the highway and assist in the enforcement of Health and Safety regulations
- Updating standards and advice in line with new developments in technology
- Continuing to use speed cameras at roadworks



Monitoring our performance

Issue

To achieve our safety key objective and support our strategic aim. The monitoring and evaluation of the performance of safety schemes must become an integral part of our management systems.

Objective

To improve, across the whole Agency, the quality of data collection, reporting, and monitoring systems associated with our programme of safety schemes.

Actions will include:

- Developing robust action programmes to deliver safety schemes, ensuring that we have the same commitment to achieve them
- Ensuring that the strategy is implemented throughout the Agency
- Improving the type and quality of accident information made available to Agency staff and partners involved in safety work
- Putting systems in place to deliver effective monitoring of safety schemes
- Monitoring our performance against targets through performance indicators
- Providing appropriate and effective training for staff
- Striving for continuous improvement

Tracking our performance

The Agency are committed to delivering a safer network for our users. Our performance is measured through safety performance indicators (PIs).

These indicators enable us to monitor our performance over time and measure the effectiveness of our safety management processes.

Current PIs are published in our business plans and our performance year by year is reported in the Agency's annual report.

Our partnership with the road user

Making the network safer is not only our responsibility, it is a partnership between the Agency, users and other organisations who have a role in road safety.

For our part we will continue to:

- Develop and promote innovative ways of reducing accidents
- Continue to identify and treat accident problem sites
- Support national road safety campaigns

But we look to our partners, principally the users of the network, to:

- Be responsible drivers, aware of the needs of other more vulnerable users
- Take heed of advice offered
- Use facilities, such as motorway access, pedestrian crossings or emergency telephones, in the appropriate manner

"By working together the network can become a safer place for all those who use it"

Safety is a major theme at the Agency's stands at major exhibitions like motor shows

The Agency welcome comment on this safety plan. Please contact:

John Smart at
The Highways Agency, Traffic Safety & Environment Division
Room 4/36, St. Christopher House, Southwark Street, London SE1 0TE

Telephone: 020 7921 4986 Facsimile: 020 7921 4411
E-mail: john.smart@highways.gov.uk

If you have a road safety issue which is specific to a location on the trunk road network please direct your enquiry to the appropriate area or route manager. Their names can be found in the Contact Information section on the Agency's website at: http://www.highways.gov.uk, by area number or write to:
The Information Line
Room 13/16, St. Christopher House, Southwark Street, London SE1 0TE

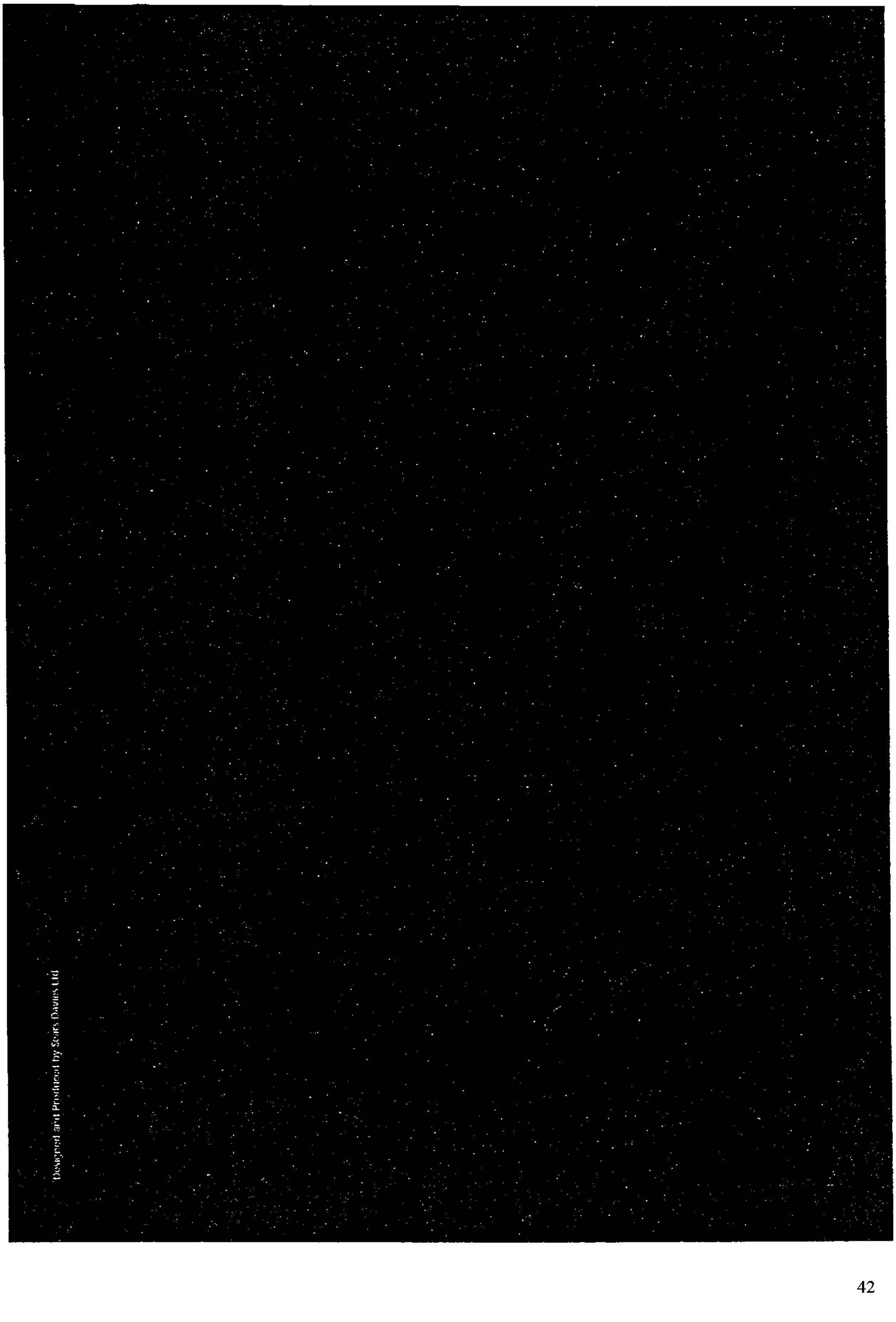
Your enquiry will be passed to the appropriate person.

For more information

about the Highways Agency and its new role contact:
the Public Relations Department on 020 7921 4443.

For information about journey conditions on the motorway and trunk road network, contact: the Highways Agency Information Line on 0345 50 40 30 8am to 8pm weekdays and 9am to 5pm at weekends and public holidays, or website: http://www.highways.gov.uk

From 22 April, the number changes to 0845 7 50 40 30.


Designed and Produced by Scots Davies Ltd

Foreword

The Government's aim is to make better use of the existing trunk road network to bring about a sustainable, modern and integrated transport system. An important step in achieving this will be to exploit new technology to provide better information to drivers and co-ordinate traffic flows across the network. As part of this aim we announced in the Integrated White Paper that we had asked the Highways Agency to work up proposals for Traffic Control Centres. This document sets out the proposals envisaged for this vital project.

The Highways Agency will use the Traffic Control Centre project to manage actively the level and flow of traffic on the network. It will also provide road users with high quality information to make informed choices about how and when they travel.

The TCC project is a key part of the Agency's strategy for developing the new role the Government has given it as a network operator. It will greatly improve the Agency's ability to manage the traffic flows on the motorway and trunk road network in addition to maintaining and improving it. I am looking forward to this important project being delivered as quickly as possible, in partnership with the private sector.

Lord Whitty, Roads Minister

What is The Highways Agency?

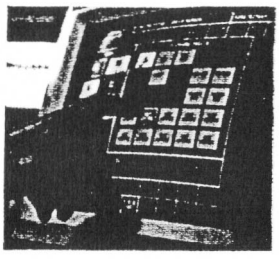
The Highways Agency was established in 1994 to manage and maintain the trunk road network in England. In July 1998 the Government gave the Agency the wider strategic aim of "maintaining, operating and improving the network in support of the Government's integrated transport and land use planning policies".

With this new aim the Agency has extended its original role to become a network operator, focusing on a newly defined core network of strategically important routes in England. The Agency's priorities are to maintain, make best use of and improve the core network.

Purpose of Traffic Control Centres

The Traffic Control Centres (TCCs) project will provide the platform for the traffic management, control and information systems required for the next century.

TCCs will allow the management of traffic at a strategic level on the nationally important core network in England.



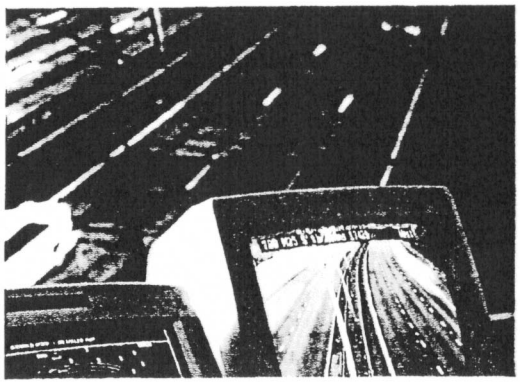
They will:

- **Improve journey time reliability.**
- **Reduce disruption caused by major incidents.**
- **Provide alternative route advice to minimise the effect of congestion and incidents.**
- **Minimise delays due to roadworks.**
- **Influence road users' decisions before they set out on a journey about potential route, time and means of travel by providing reliable and accurate information.**

Benefits TCCs will bring

The TCCs will benefit travellers, particularly road users, by:

- Providing quality traffic and travel information to travellers even before they start a journey and helping them decide the best way to reach their destination. This will help to balance traffic across the network and encourage drivers to consider alternative forms of transport, to change their time of travel, or perhaps encourage them not to travel at all.
- Providing roadside information, via a national network of variable message signs, advising drivers of conditions on the network and suggesting alternative routes or other means of travel. This will warn drivers of queues ahead, help the police to manage traffic after accidents and help smooth flows to minimise 'stop-start' conditions.
- Making relevant and reliable information available to private sector organisations for them to pass onto their customers both in their vehicles and before they start their journeys.



- Helping the police and other emergency services by removing some of the burden of dealing with congestion caused by incidents on the network.
- Improving monitoring of the network performance aiding better management.
- Providing an organisational and technical framework for the introduction of new traffic systems (eg ramp metering) as they become generally available.

For more information

Concerning TCCs contact:

Steve Nicholson, TCC Project Manager on 0121 678 8451

or email HYPERLINKmail to:

stephen.nicholson@highways.gov.uk

Information about the Highways Agency and its new role contact:

the Public Relations Department on 0171 921 4323.

For information about journey conditions on the motorway

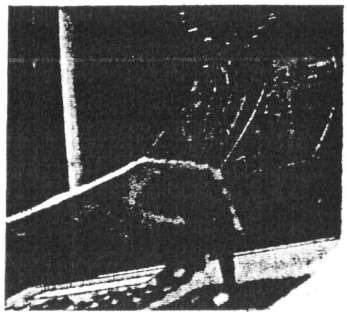
and trunk road network, contact:

the Highways Agency Information Line on 0345 50 40 30

8am to 8pm weekdays and

9am to 5pm at weekends and public holidays, or Website:

HYPERLINK http: //www.highways.gov.uk



Regional Traffic Control Centres (RTCCs)

The RTCC Initiative

The RTCC Initiative aims to provide for the strategic management of England's trunk road network into the next century. It would combine the best new technologies and skills available from the public and private sectors - and create a new opportunity for providing the following core services:

- traffic-monitoring and strategic traffic control;
- driver information;
- emergency roadside telephone call-handling;
- network performance-monitoring.

Traffic-monitoring and strategic traffic control

This would involve providing driver information and re-routing advice on VMS and other information services across several PCO areas. The RTCC would have the flexibility to adopt new functions and systems as they become applicable and available.

Providing this service would involve:

- assembling 'static' network information, for example on roadworks and planned events affecting road capacity;
- helping to co-ordinate PCOs within the RTCC region, in partnership with the police and other authorities;
- monitoring - on a continual basis - current traffic conditions as they change across the network;
- developing a real-time computer model of the trunk road network;
- developing network management strategies based on current and predicted traffic conditions;
- developing VMS messages to implement the best traffic-management strategy for current or predicted conditions;
- ensuring that driver information service-providers are aware of the strategy by providing consistent, effective and reliable data to them;
- adding to the existing number of VMSs and sensors on the network;
- measuring the strategy's performance, in terms of its effect on driver behaviour;
- using this feedback to modify strategies for future use.

Data for the motorway network would come primarily from existing systems installed in PCOs. Data for the rest of the trunk road network would come from a dedicated network of sensors and from external traffic reports - including those from the private sector - to identify trouble-spots and areas where spare capacity exists.

As a minimum, monitoring will be required on every link of the network and at every junction. Approximately 2,000 sites are required to cover the English trunk road network. Not all of these are currently equipped and so the provision and installation of extra sensors would form part of the RTCC operator's function.

The RTCC would collate all traffic data into a knowledge base, which would provide a coherent picture of conditions over the whole network.

Provision of driver information - the traffic information highway (TIH)

Motorists must receive consistent driver information and advice - whichever information source they use - in order to minimise the wider impact of incidents, roadworks and recurrent congestion. To achieve this, RTCCs would make information available via a traffic information highway, from which all driver information service-providers would be able to access the data.

The TIH would use 'open' standards for communications and a standard 'language' for describing road conditions. This is currently being developed through the European Union's DRIVE research programme.

Initially, the TIH would be used to give driver information service-providers access to omprehensive real-time data for the trunk road network. Eventually the facility could expand to include information from other - non-Highways Agency - road authorities and travel modes. This would stimulate the provision of new services and, by the introduction of a charging mechanism, initiate a market for traffic data.

RTCCs would also support the Highways Agency Information Line, which gives advice to motorists on current traffic conditions, incidents and roadworks on the trunk road network.

Emergency roadside telephone call-handling

Emergency roadside call-handling is currently carried out by the various PCOs. Under these proposals, the calls might instead be received by RTCCs. The operator would identify emergency calls and immediately pass them to the police for action. This would ensure a continued rapid response by the police to accidents. All non-emergency calls, such as straightforward vehicle breakdowns, would be handled by the RTCCs directly, relieving police resources for more important work. Roadside call-handling, and related information about conditions on the network, would be brought closer to the RTCC strategic traffic managers.

Network performance-monitoring

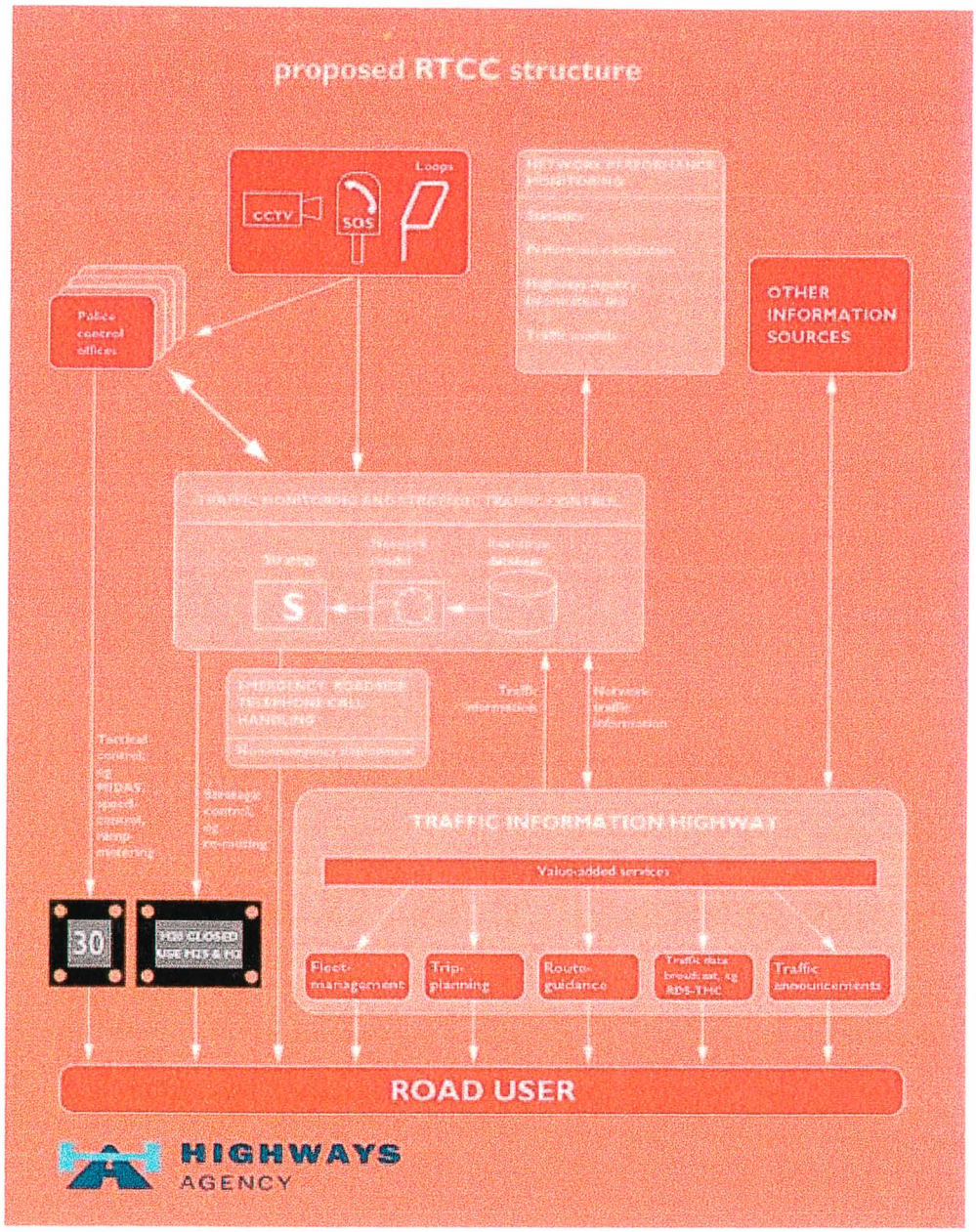
RTCCs would provide important management information on:

- the real-time status of traffic conditions on the trunk road network;
- traffic statistics related to the operational characteristics of the network;
- performance indicators that measure *Road User's Charter* objectives;
- information for developing and updating traffic models of the network.

▲ *return to top of page*

The RTCC structure

At present we envisage having three RTCCs based on three broad geographical regions: the North; Midlands and West; and South and East of England. This would minimise the need to interface between traffic areas and would allow the rapid prediction of traffic conditions on the network. We would, however, be prepared to consider other options - for example, one single national control centre - if the consultation process can prove that this offers additional benefits. We would also consider implementing one RTCC as a pilot scheme - perhaps within a reduced operational area - in order to fine-tune our requirements.


proposed RTCC structure
CCTV
SOS
Loops
Police control offices
OTHER INFORMATION SOURCES
TRAFFIC INFORMATION HIGHWAY
Value-added services
Fleet-management
Trip-planning
Route-guidance
Traffic announcements
30
ROAD USER
HIGHWAYS AGENCY

We have proposed an RTCC structure based on regional centres and this is shown on the above diagram. In doing so, we have built on the findings of relevant European Union research projects, particularly the PLEIADES project - which demonstrated a wide variety of road-traffic information services in Kent. The experience we gained through the Midlands Driver Information System has also proved valuable in this respect. In addition, the Automobile Association has given us useful advice on the needs of road users and information service providers.

The diagram shows how the RTCC would be a free-standing facility which would bring together all the necessary elements for providing the four core services. RTCCs would also need to link to a number of existing services and systems. It may be possible to convert existing facilities by adding additional equipment and personnel - or alternatively an entirely new facility could be developed.

The RTCC structure must be flexible to allow for progress, both in terms of technology and expansion. Ideally, RTCCs would eventually develop links with: urban and rural road authorities; similar traffic information centres in Scotland, Wales and Northern Ireland; and other transport operators. The driver information which RTCCs produced would be compatible with services and equipment being developed in Europe.

▲ *return to top of page*

Institutional arrangements

One of the most important issues to address is the respective roles and responsibilities of the police, the Highways Agency and any potential RTCC operator in managing traffic on the trunk road network. Although the police currently perform tactical traffic-control and traffic-regulation enforcement duties on England's motorways, their resources are limited and they have other pressures to consider. There is a need to redefine this partnership. The RTCC Initiative gives the police, the Highways Agency and the private sector the opportunity to work together to perform their respective responsibilities and provide the best possible service to the road user.

The Highways Agency has opened discussions with the Association of Chief Police Officers to clarify these issues and the outcome will have an impact on future network-control strategy. It will also be necessary to reach agreement with other highway authorities on the effect of strategic traffic control on their roads.

▲ *return to top of page*

Key issues for consultation

- What are your views on the overall concept of strategic traffic management and the RTCC?
- What further core systems and services could add value to the RTCC?
- What effect would RTCCs have on other businesses, organisations and institutions involved in managing and operating services on the trunk road network?
- What arrangements are needed to maintain a rapid response to emergency calls?
- How important is compatibility between RTCC operators - both within the UK and Europe - and how can this be achieved?
- What are your views on the proposed traffic information highway (TIH)?
- What problems will arise from the technical and institutional boundaries between tactical control, strategic control and existing road operations?
- Would the availability of traffic information help to generate more driver information services?
- What organisations should be involved in managing and operating RTCCs?
- What are your views on the desirability of extending RTCC coverage to the non-trunk road network or other transport modes?

▲ *return to top of page*

Summary

RTCCs would:

- help make the best use of the existing trunk road network;
- give a better quality of service to motorists, saving time and fuel - and helping to reduce frustration, accidents and environmental pollution;
- minimise overall costs by centralizing resources;
- provide information and quality of service indicators to support *Road User's Charter* initiatives;
- provide a platform for developing new driver information systems and services, creating new opportunities for private sector investment.

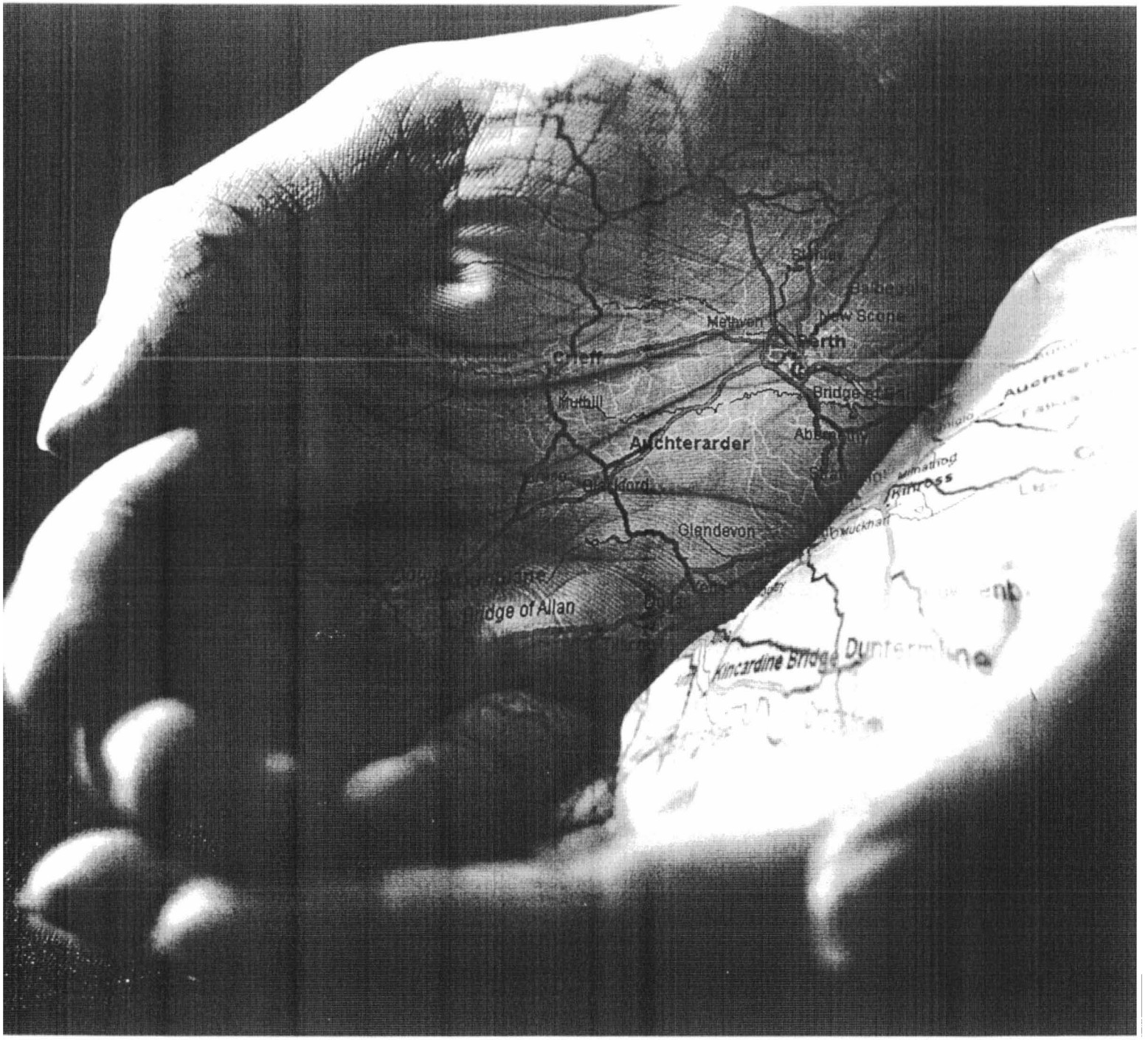
▲ *return to top of page*

regional traffic control centres - regional traffic control centres (RTCCs)

previous page ← document contents → next page

agency information | documentation | road improvements | contact information | press releases | youth section
contractors information | home page

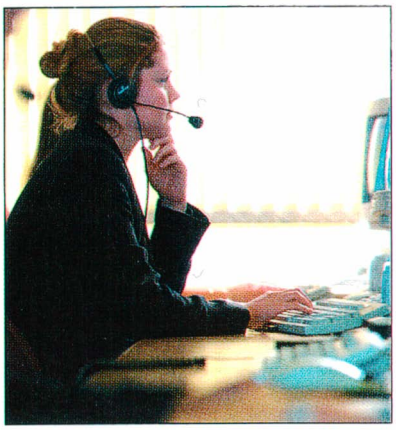
The **future** of **motoring** is in safe hands



AA Telematics

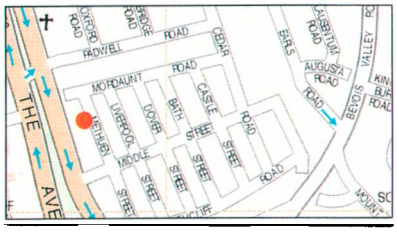
Location technology that adds value to **people** on the **move**

The AA and Cambridge Positioning Systems (CPS) in conjunction with the UK's largest mobile phone network, Vodafone and mobile phone manufacturer Maxon have recently completed a successful trial of a revolutionary mobile phone location service called CURSOR.



The GSM digital phone market currently consists of 100m users worldwide and by 2005 it is anticipated that this will rise to 730m*. As the market expands the opportunities to develop value added services will also grow. The AA and Vodafone are confident that significant opportunities exist for the development of a range of mobile location services that can:

- Precisely locate the motorist in a breakdown.
- Help travelling business people locate their employees/customers, the nearest car park, the nearest petrol station, bank, hotel and other useful places.
- Locate the driver with precision and deliver relevant information to support the journey.
- Provide field sales or engineering team management.
- Support vehicle management for smaller fleets, taxis and couriers.



Copyright the Automobile Association 1998

CURSOR works in conjunction with any GSM network and is accurate better than 75m. It does not use GPS (Global Positioning Satellite) technology and therefore can be used anywhere – whether inside buildings, vehicles or in built-up areas. The system can be integrated into existing and future digital mobile phones through a minor software upgrade. There would be no additional cost required to buy a CURSOR mobile phone – making it a cost-effective alternative to GPS.

The Trial

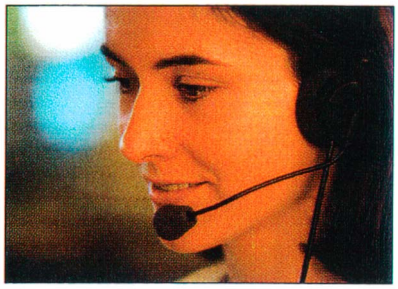
The world's first successful large-scale demonstration of a location system provided 'Where's the nearest?' information and a 'Where am I?' service to CURSOR-enabled Maxon handsets. All trial phones were connected to the Vodafone network, both contract and Pay As You Talk. Callers in the demonstration telephoned a dedicated number. Location data was automatically sent to the AA, who in turn was able to convert the digital location into useful street level information whilst also providing details of nearby petrol stations, restaurants, hotels and other points of interest. Participants in the trial identified personal safety and convenience as the key benefits of the location services – with the majority saying that they would pay for location-enabled services.

For further information about how Telematics can benefit your customers and your business now and in the future, please contact AA Business Direct on **0800 551188**
(quote reference 0417)

Telematics

*Source: OVUM 1998

AAHELP harnessing **telematics** within the AA's business operation



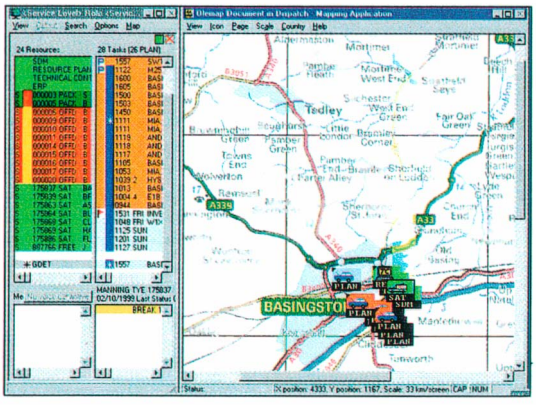
AAHELP is real-time scheduling and despatch system developed in-house by the AA and specifically designed to enhance their service delivery capabilities.

The system, that has facilitated benefits of £25m a year, has won the prestigious 1999 Information Systems Management Award. Run by the British Computer Society in association with the Financial Times, the award recognises achievement, improvement and innovation in IT management.

Calls to the AA's breakdown service are made to a single national free phone number and allocated automatically to the next available call handler. Satellites pinpoint the location of 3,600 patrols and AAHELP can dynamically recalculate thousands of options a second before automatically despatching data to the most appropriate mobile unit.

As the call handler gathers breakdown details from the customer, the AAHelp system identifies the most appropriate AA resource with the equipment and skills required to carry out the repair. This data, plus information on the current status and location of each patrol, enables the system to calculate an ETA that can be immediately confirmed to the motorist. Resources are deployed automatically and dynamically, via data links to a mobile terminal, often before the motorist has put down the phone.

Should the AA be in danger of breaking its commitment to a customer, for example a patrol's current job takes longer than expected, the system can automatically deploy an alternative unit, thus ensuring that if possible, the original response time is maintained. It is the most sophisticated method of selecting and monitoring resources and 90 per cent of jobs are dealt with this way, freeing incident managers to focus on providing a more personalised service based on an individuals specific needs.



AAHelp has directly contributed to the steady improvements in the average time taken from a driver's call to an AA patrol arriving – from 45.5 minutes in 1995 to 33 minutes in 1999. 25 per cent of breakdowns are now reached in less than 20 minutes.

AAHelp illustrates how Telematics technology has been applied within the AA to meet real business needs.

For further information about how Telematics can benefit your customers and your business now and in the future, please contact AA Business Direct on **0800 551188**
(quote reference 0421)

Telematics

AA Telematics
Norfolk House
Priestley Road
Basingstoke
Hampshire RG24 9NY

The information contained within this brochure is believed to be correct at the time of going to press, but the Automobile Association reserves the right to alter it, and services may be modified, supplemented or withdrawn.

© Automobile Association 1998.

DM98582/1.OCT98

Designed and produced by Dutton Merrifield, Bristol.

For further information about how Telematics can benefit your business now and in the future, please contact AA Business Direct on 0800 551188. (quote reference 0382)

SIEMENS UK
Traffic systems

Emergency Telephones

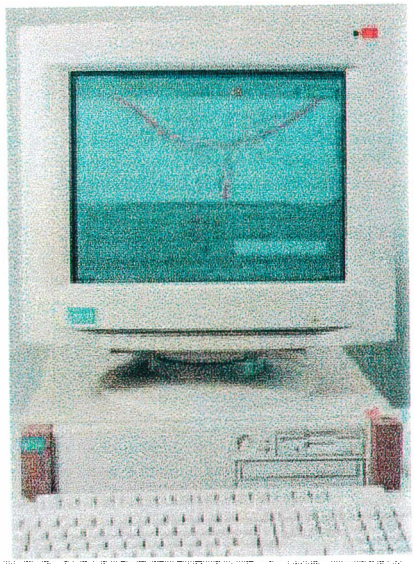
With rising volumes of traffic on expressway networks, it becomes increasingly necessary to install an effective emergency communication system. Siemens emergency telephone systems provide a secure and reliable link between motorists and the expressway control centre where requests for medical, emergency or breakdown assistance are communicated to the relevant authorities.
STCL is currently working closely with the UK's Highway Agency in the development of a new generation of emergency telephones, the benefits of which include improved suppression of background noise.

Siemens are able to offer two emergency telephone systems to meet the individual needs of expressway operators;

i) Mk 93 system - designed for the expressway manager who requires several operator positions and multiple routing of cables to outstation equipment.

ii) ALERT (Advanced Low power Emergency Roadside Telephones) - designed for the expressway operator who requires telephones to be installed along a long stretch of expressway, but has limited power availability. As well as its user-friendly ALERT Instation, STCL has developed a cost-effective ALERT outstation.

Both systems are available as stand alone systems or as integrated sub-systems forming part of a complete expressway control and communication system.



MK 93 System

Features
Designed to UK specifications for NMCSII
Maximum safeguards for communications with 4-wire connections and in-built system redundancy
Capacity for 6 operator positions and over 3000 roadside telephones
Provides logging and coordination facilities for all incoming and operator initiated calls.

Instation
Each operator has control of a dedicated speech circuit and, using the system console, may navigate the area being controlled using a graphical representation of the network. Each call is presented visually and audibly, and may be "Queued" chronologically at all operator positions should several simultaneous calls be received at the instation. Each call may be held or cleared as appropriate by the operator.

During peak times, when all operator positions are manned, incoming calls may be taken by the first available operator. The call may be transferred to a more appropriate operator should the need arise.

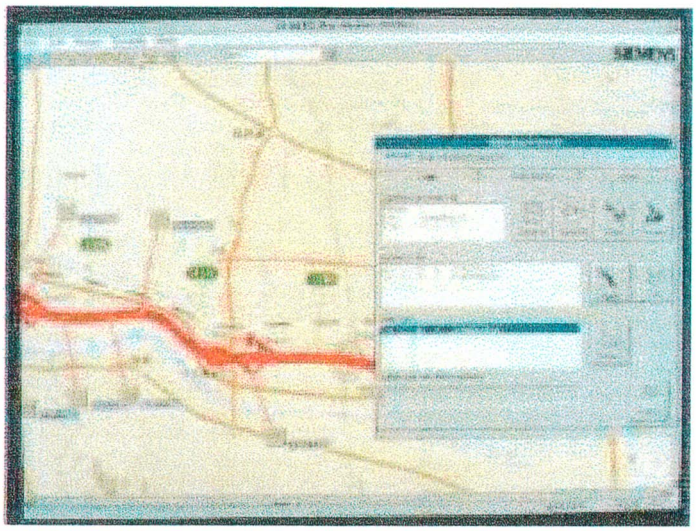
System Capability

The system can be equipped with up to 6 operator positions, each with a graphic interface. Access is provided to over 3000 roadside telephones.

As the systems use up to six dedicated lines connected to each responder, there is a high degree of redundancy built in to the system. This ensures that any single point failure will sever communications with no more than one roadside telephone.

Optional Facilities

Hands free telephones can be installed on the system.
Telephones can be supplied with flashing beacons (key for use in tunnel installations).
A tape recorder can be provided at the instation to automatically tape all conversations.



ALERT Instation

Features

- Pre-recorded announcements
- Conversation recording facilities
- Ability to interface to existing systems
- Call transfer between instations available

Application

The instation equipment provides the operator interface to the roadside phones.

The system can be supplied with either line powered outstations or leased line telephones, depending upon the environment into which the system is being installed and the degree of redundancy required.

Operator Console

The operator console comprises a PC and an audio headset (or handset). A printer provides hard copy records of all events, such as times of conversations, fault reports or call reports.

The PC provides all necessary data and indications to the operator and provides the inputs to control the system. It also controls the output of recorded messages and the interface to the fibre optic system.

The control of data message transfers between the instation and outstations is transparent to the operator.

Line Interface Unit

The line interface is a separate unit providing the physical interface between the PC and the audio line circuits to the telephones along the road, as well as providing the line DC power.

Options

UPS - maintains services during mains supply failure, and provides protection from mains borne interference, spikes and brown outs.

Pre-recorded messages - facility whereby pre-recorded messages are played to motorists as "announcements". It is useful in situations where the operator is unavailable to answer a call at any given time.

Conversation recording - either manual or automatic tape recorders can be supplied for this function.

ALERT Outstation

Telephone outstation - China

Features

Telephone outstations line powered by DC current from longitudinal cable

- Low power consumption
- Multi-drop configuration
- Pole or cabinet mounted
- Handsfree or handset versions available

Application

An ALERT system comprises up to 511 Emergency Telephones distributed along the highway network, connected to each instation.

The system provides a secure and reliable communications link between motorists and instation operators to report accidents, breakdowns or other problems on the Expressway.

Telephone Outstation

The outstation is a self-contained line-powered unit. It comprises a telephone microphone and speaker, a call button, an internal PCB and a battery contained in a weatherproof housing.

The telephone outstations are powered along the communications cable by DC current. This current is derived from mains at convenient points along the network and is then used to power the telephones between mains power points using regenerators. A maximum of 20 telephones can be powered in a given section, up to a maximum of 20km.

When not in use, the outstation is in standby (sleep) mode to keep the power consumption as low as possible, charging its battery from the line power. When the call button is pressed it switches to operational mode to signal to the instation that there is a new call. When the power required exceeds that available from the line (e.g. during speech or ringing) the excess power is drawn from the battery.

Regenerators are situated approximately every 20km or 20 phones. They amplify the signal and maintain the line power at 48V DC. They are mains or line powered, and, hence, need to be located at convenient sources of power along the Expressway, e.g. toll plazas. In general, the positioning is not critical.

HIGHWAYS AGENCY

TOWARDS A BALANCED TRANSPORT SYSTEM

New Emergency Roadside Telephone (ERT)

Existing Emergency Roadside Telephone

New Emergency Roadside Telephone

THE PROBLEM

- Limitations of the existing ERT :
  - Cannot be used by the profoundly deaf
  - Difficult to communicate in a foreign language
  - Not ideal on noisy roads
  - Obsolete design

THE SOLUTION

- Purpose built ERT conforming to European standards and meeting the needs of users and the emergency services

THE BENEFITS

- More conspicuous and easier to find
- Provides for speech and pushbutton communication and can be used by callers who are deaf or can not speak English
- Improved speech quality, particularly on noisy roads
- Lower whole life cost

STATUS

- ERT replacement contract pending

Version 1 09/01/98
Amended July 1999

Emergency Telephone Systems

327 telephones at strategic locations along 135km of motorway

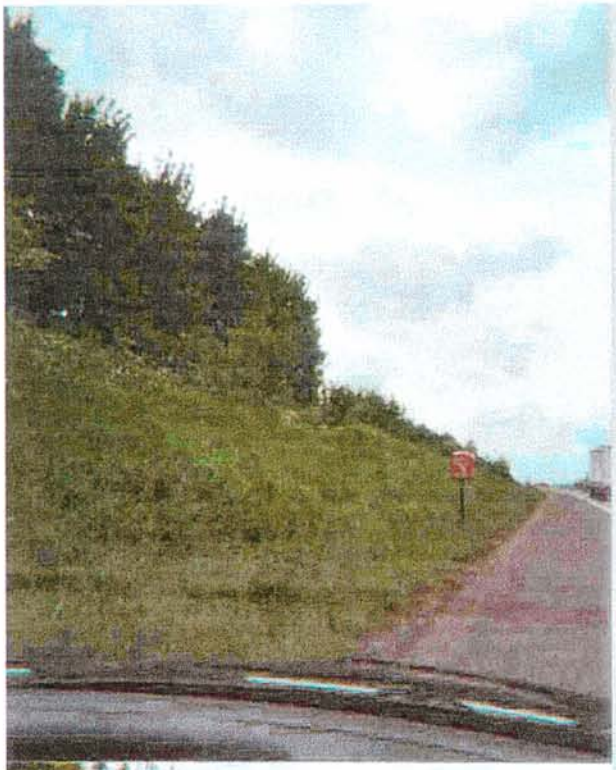
Trunk road telephones at 115 strategic locations on major non-motorway roads

The Welsh Office road network emergency telephone systems provide an essential means of communication between motorists in difficulty and the emergency services and motoring organisations.

- Motorway telephones along entire M4, M48 & A48M
- Phone spacing 1.5km maximum reducing to 500m on bridges
- 327 motorway telephones along 135km of motorway
- Welsh Office motorway emergency telephone system technology leader using 4-wire transmission and sidetone suppression techniques thus virtually an ambient noise free system
- Transmission path protected using digital PCM network
- Key motorway telephone sites automatically observed by CCTV when phone lifted off hook
- Multiplexing of speech and data allows economy of transmission circuits
- Call queuing allows large number of calls to be handled by two operators at each control room
- Trunk road telephones at 115 strategic locations on major non-motorway roads
- Cellular phone technology employed for trunk road phones in 35 remote locations
- Motorway type emergency telephone system in A55 tunnels and on Brittania Bridge

Y SWYDDFA GYMREIG
WELSH OFFICE

WELSH OFFICE HIGHWAYS DIRECTORATE



67

© Ministère de l'Équipement, des Transports et du Logement
Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques

Toute reproduction intégrale ou partielle, faite sans le consentement du CERTU est illicite (loi du 11 mars 1957). Cette reproduction par quelque procédé que ce soit, constituerait une contrefaçon sanctionnée par les articles 425 et suivants du code pénal.

Reprographie : CETE de Lyon ✆ 04 72 14 30 30 (septembre 2000)
Dépôt légal : 3e trimestre 2000
ISSN : 1263-2570
ISRN : CERTU/RE -- 00 - 22 -- FR

CERTU
9, rue Juliette-Récamier
69456 Lyon Cedex 06
✆ 04 72 74 59 59
Internet http://www.certu.fr

Traitement des appels d'urgence sur le réseau routier en Europe

Service technique placé sous l'autorité du ministre chargé de l'Équipement, des Transports et du Logement, le CERTU (Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques) a pour mission de contribuer au développement des connaissances et des savoir-faire et à leur diffusion dans tous les domaines liés aux questions urbaines. Partenaire des collectivités locales et des professionnels publics et privés, il est le lieu de référence où se développent les professionnalismes au service de la cité.

Certu

Aménagement et urbanisme

Aménagement et exploitation de la voirie

Transport et mobilité

Constructions publiques

Environnement

Technologies et systèmes d'information

ISSN 1263-2570
ISRN Certu/RE--00-22--FR