

ITS DEPLOYMENT GUIDELINES

FACT SHEET - UPDATE 2015

Incident Warning and Management

Incident management is defined as the implementation of a systematic, planned and coordinated set of responsive actions and resources to prevent accidents in potentially dangerous situations and to handle an incident safely and quickly. It proceeds through a cycle of several stages: from incident detection to the restoration of normal traffic conditions, including the use of immediate and advance notice of possible dangers or problems, i.e. warnings, in order to prevent accidents.

Harmonisation requirements

Functional Requirements

To realize IM as traffic management measure, the parties involved have to go through three phases in an iterative process.

- In phase 1 the cooperating parties jointly identify who should be responsible for what. They define a common approach with common goals and common priorities.
- The phase 2 relates to the practical implementation of the agreement between the IM partners. This includes the logging and monitoring of incidents which will serve as input for phase 3.

Organisational Requirements

Incident management typically involves many different partners like the road authorities, road operators (public or private), the police, the fire brigade, ambulance services, recovery services and the media.

The cooperating parties jointly identify who should be responsible for what. They define a common approach with common goals and common priorities. The TMS-DG05-08 provides a list of 3 organisational requirements.

Moreover, there are a number of relevant laws, directives and guidelines, often defined at national level, that have to be considered and respected when an accident occurs and the responsive actions are activated. For example removing damaged vehicles (incidents), stalled vehicles and lost cargo (spilled loads) from roads is based on laws in the private domain and result as a tort (wrongful act) committed against the road operator.

Technical Requirements

The basis for incident warning, and consequently for its management, is the monitoring of real time traffic conditions (including weather and road conditions) and the detection of incidents.

Detection can be done both through technology and human force.

There are, between the detection systems, those placed on or embedded in the road surface and those above the surface, sometimes recognised also as contactless systems.

As sensors for the detection of traffic data, a number of solutions or detectors may be applied, of which the most commonly deployed technologies are inductive loops, magnetic sensors, microwave radars, laser radars, passive infrared, ultrasonic sensors, instruments based on acoustic and video image processing.

- In phase 3 the IM partners should continuously monitor the quality of IM. The lessons learned lead to improved and enhanced procedures for elements like communication, traffic management, finance and education.

The TMS-DG05-08 provides a set of 12 functional requirements to be fulfilled by the IM-partners in the process of incident management before, during and after an incident.

It is essential to take this legal framework into account in the organization and the cooperation between multiple partners.



Technical and technological equipment such as sensors, cameras, VMSs, etc., are used both for incident detection and warning as well as for the daily management of the network.

It is also advised to use the Vienna Convention on VMS and applicable national standards.

Moreover the Incident Warning and Management service is characterized by the following elements:

- a) The location of the incident
- b) The type of incident
- c) The actions taken by the road operators to face the incident

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These elements and other Incident Warning and Management related elements must be described in the DATEX II model, which has dedicated classes for this type of information.

Common Look & Feel Requirements

A common look and feel (CLF) concerns the road users' expectations when they meet a situation where incident warning and management is required, like a breakdown or collision or traffic management measures activated to support IM.

Level of service criteria

The "level of service" (LoS) can be defined as the amount, kind and quality of service that, on one hand, is appropriate to the needs and desires of the customers or users that a company - or a public body or agency - serves or wishes to attract and, on the other hand, is not high for the investments or costs of the company.

The service level therefore describes the quality levels of the service from the perspective of the user of the service or the road operator providing the service.

The service level is also expressed as "a percentage of a goal", for example, the percentage of time that a network or system is operative or the percentage of successful transactions processed.

The service level process implies the following steps:

- 1) Definition of goals: e.g., the time for emptying a tunnel in safe conditions, the number of vehicles passing through a gate within a certain time to identify expected waiting times in queuing conditions;
- 2) Fixing one or more levels of quality, which may vary according to the goal that is pursued. Consequently, it could be a % (of drivers or vehicles; in this case the level of efficiency of the service), a waiting time (in this case the level of quality of the service), time for passing from a dangerous situation into a safe situation (in this case the level of efficiency of the service associated to quality without any problem or deviation from a standard procedure);
- 3) Fixing the parameters and methods for analysing how to evaluate the level of service.

On the issues above reported, 3 technical requirements have been defined.

The TMS-DG05-08 provides a list of Common look & feel requirements both in case the service is provided through ITS- and non ITS-measures.

Furthermore, few Common look & feel advices are proposed.

Levels of Service: Incident Warning and Management			
Core Criteria	A	B	C
RESPONSE TIMES	Informal No formalized Service Level Agreements on response times (example: formal agreement to arrive at the incident scene within 30 minutes.)	Individual Every IM partner has its own independent Service Level Agreements.	Coordinated The Service Level Agreements are coordinated to limit the time to resolve an incident.
INFORMATION QUALITY	FREQUENCY of information service (with VMS, media, navigation systems, etc.)	Messages are updated every hour	Messages are updated every 30 minutes
	CONTENT of the information	Information about the kind of alert and location (e.g. incident on A4)	Detailed information about the kind of alert, the exact location of the event, the possible consequences (e.g. incident on A4 between Exit 1 and 2, traffic jam 5 km is growing, take diversion A)
	RELAY TIME of the information (from the detection of the incident)	Information within 1 hour	Information within 30 minutes
SAFETY OF THE ROAD USER recognisability of the incident scene and of IM-partners; protection of the incident scene	Recognisability of cars is not co-ordinated and IM responders all wear safety jackets Incident scene is indicated (e.g. via a red cross or a VMS warning message), but road users can access the incident scene	Cars of IM responders have clearly visible logos and IM responders all wear safety jackets Incident scene is indicated and protected in such a way that it is difficult for other road users to access	Cars of IM responders are recognizable e.g. via uniform stripes and IM-partners all wear safety jackets Incident scene is indicated and protected in such a way that other road users are not able to access (the barrier of) the incident scene

Further Information

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Questions and help

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