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TNO Report

2008-D-R0667/A

"SMART" goals for the application of Incident
Management measures to the Dutch road network

Specified by the IM Committee

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1   Introduction

This report contains the results of a review process within the IM Committee with the aim of formulating a number of SMART goals for the application of Incident Management to the Dutch road network to be implemented in the medium term (2008 - 2015). The term SMART stands for Specific, Measurable, Acceptable, Realistic and Time-related.
The SMART goals have been developed for the following elements of the IM process:

- IM process safety
- Examining marks
- Duration of the IM process
- Information distribution to the traveller and the media.
- Organisation of the IM process (avoidance of misunderstandings).

As a supplement to these, some SMART goals of a general nature have also been formulated.

In the underlying review process, the following stages have been worked through:

- Production of a proposal for the SMART goals to be achieved on the basis of the "Guide to Professional Incident Management" report
- Discussion of this proposal in a special meeting of the IM Committee (13th February 2008)
- Presentation and discussion of the results of the meeting of the IM Committee in the Incident Management National Platform
- Further refinement of the SMART goals in two meetings of the members of the Incident Management National Platform and the Incident Management Planning Office.

The results of this process are contained in this report and they are submitted for approval to the members of the IM Committee.

The structure of this report is as follows: One or more SMART goals are shown as a distinct element of the IM process. The development and basis are then stated for each goal. The development and basis are based on remarks and points for consideration that were formulated in the above-mentioned meetings of the Incident Management National Platform. Lastly, as far as possible, the SMART goal has been specified in more detail by means of a number of considerations that are relevant to its implementation.
A summary of all "SMART" goals is provided in Section 3.

Follow-up
After approval by the IM Committee, the SMART goals will need to be further developed in a follow-up project by, among other things, translating them into Service Level Agreements (SLAs) between the parties involved and in accordance with measurable Performance Indices (PINs) for the services that are performed.

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2 "SMART" goals

2.1 IM in general

2.1.1 Smart goals of IM in general

- Availability of a zero measurement so as to be able to compare results of attempts at improvement.
- Working to a protocol during the IM process.
- Mutually agreeing and evaluating protocols (once or twice a year).

Development and basis

Importance of a "zero measurement"
For the purposes of comparison of the effects of various safety measures at an IM site it is important that a ***zero measurement*** is established. Safety must be quantified with the aid of measurable indices. The VCNL (IM Planning Office) will set this in motion[1] and at the same time start gathering data and arranging interviews. In addition it will be established whether emergency services staff will be deployed on site and are able to carry out their tasks.

Working to a protocol
In addition, the use of ***protocols*** at the incident site is essential for the optimum way of dealing with the situation. In the case of hazardous substances, everyone must of course know how they need to be handled. Notification of hazardous substances will then also have to be an element of the protocol.
It is recommended that a goal be formulated that the tasks in the course of IM aid (the IM process) be carried out in accordance with a mutually agreed protocol. One can check with an audit the extent to which work is carried out in accordance with the protocol. It is proposed that the operation of the IM process be evaluated once or twice a year.
N.B. If it is decided to work in accordance with a protocol, then these protocols must be produced (e.g. by various incident categories) and it must be established who is going to manage the protocol process.

However, with protocols we are introducing the risk of making the process rigid and of the emergency services hiding (safeguarding themselves) behind the agreements whenever anything goes wrong. It is therefore essential that the work is performed in the spirit of client-orientated IM aid and the protocols are flexibly adapted. Where considerations such as traffic flow, safety and examining marks cause conflict between the parties, only the operations manager at the IM site can decide whether to depart from the established protocols. In the development of the protocols, clarity must also be established with regard to the priority of the various tasks.

Other aspects that require consideration when working to protocols are:
- Ensuring that emergency services staff have taken into account each others' protocols. Work processes must be coordinated with each other.

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[1] An order has now been placed by RWS-DVS (Ministry of Traffic and Navigation) for the zero measurement to be established.

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- Protocols are not to be borne in mind only by those that are often at the IM site but also by emergency services staff who are present less frequently.

Moreover, the process must be set up in such a way that it becomes increasingly safer at the incident site. This means that protocols may be amended to:
- Eliminate things that are of no benefit (including risks to safety in debriefing).
- Make someone responsible for the safety at the IM site
- Ensure that emergency services staff get to know each other's way of working by means of cross-training.

The learning cycle ensures that experience is valued and that action to make improvements is taken. However, the various emergency services need to retain good information.

Points to consider
- There must be a zero measurement (e.g. 2008 situation) available so that the results of the intended attempt at improvement can be compared.
- During implementation of the IM process the work is performed in accordance with a protocol. The protocols of the various emergency services staff are to be mutually agreed and reviewed once or twice a year.

2.2   IM process safety

2.2.1   SMART goal of IM process safety
- Significant improvement in the perception of risks to safety as experienced by IM partners[2].

Development and basis
Safety at the IM site is difficult to quantify and evaluate in hard numbers. So the "experience" (performance) index is chosen since it makes comparison of different situations possible. Perception of safety is in fact measurable and should therefore be linked as standard to the debriefing of the emergency services after an incident. The perception of the risks to safety depends to a large extent on the (rapid) establishment of a safe work area at the incident site. The road operator is responsible for providing a safe work area for the IM partners. The establishment of a safe work area is also very necessary in a good mutual agreement of measures that are taken in the context of Dynamic Traffic Management (DTM) and measures that are taken in the context of Incident Management (such as the use of DTM scenarios, provision of information to road users etc).

Point to consider
- In 80% of accidents (according to the criteria for categorisation of incidents) of Category 1: serious accident with dead and/or injured, a safe work area must be established at the incident site within 15 minutes of the incident being reported.

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[2] This means all cooperating operational parties at incident sites i.e. emergency services (police, fire brigade, ambulance), road operators, rescuers, aid agencies

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2.2.2   SMAR T goal of IM process safety

■   The injured are helped more quickly (-25%) and better, which increases their chances of survival.

Development and basis
Because the number of accidents that occurs per year at IM sites is dependent on many factors, this cannot be used as a reliable performance index. The speed of treatment during various types of incident can in fact be objectively measured. With an increase in the speed of treatment (treatment time recorded), the chances of survival of a casualty increase. This makes speed of treatment an accurate performance index of safety at an incident site.

The improvement must be achieved compared with the 2008 reference situation. The aim is by definition not "too" ambitious because learning occurs little by little and expectations can be adjusted. The time saving must above all be achieved through arrival times (there is a study currently being conducted into whether increased ambulance capacity guarantees that an ambulance actually gets there quicker) and the coordination of tasks between the services active at the IM site. Of course, the intention is not for casualties to be treated with any less care. What is important is that responsible treatment can be provided. If it is necessary to thoroughly stabilise the patient first at the accident site in accordance with the "stay and play" principle, then stabilisation at the accident site according to that principle shall be give priority over the misery of the traffic jam. In other cases the "scoop and run" principle may be applied but then only if responsible treatment is not compromised.

2.2.3   SMART goal of IM process safety

■   The reporting of hazardous substances is a part of Incident Management

Development and basis
In many cases it is not known what substance is being transported, either through lack of recording or because of the many unknown movements of hazardous substances. To improve the above-mentioned situation, it is first of all necessary to obtain a clear picture of the movement and identification of hazardous substances. Supplementary techniques such as "tracking and tracing" and RFID tags can provide results here.

Point to consider
■   Obtain a good picture of hazardous substances.

2.2.4   SMART goal of IM process safety

■   Road users are warned when they are approaching the start of a traffic jam and in fact in such a way that 25% of secondary accidents as a consequence of this traffic jam (resulting from a first accident) are prevented.

Development and basis
It is not sufficient to monitor only the start of a traffic jam. It is important that road users are warned when they are approaching the start of a traffic jam. Warning road users upstream means that for one thing they are informed and kept up to date about

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the presence and position of a traffic jam on their route and for another they are informed of the possibility of having to slow down. This information can be transmitted via both in-car-systems (navigation systems, DSRC etc.) and roadside systems (DRIPS, VMS).

2.3 Examining marks

2.3.1 SMAR T goal of Examining marks

- Clarity (with police and road operator) when examining marks is relevant.

Development and basis
The focus within IM with regard to examining marks is on road traffic accidents. Other incidents (falling trees) fall outside its scope.
It is not so much a matter of when determining marks is relevant as when it is necessary to conduct an examination of marks. Many regions act in accordance with their own ways of working and ideas. So it is more a matter of influencing the rules and allowing everyone to work to a standardised protocol.
Since 1st April 2008 there has been a new guideline[3] in force regarding examining marks.
This guideline has been set down as a protocol and creates a clear basis for establishing a duty to carry out an examination of marks.

Point for consideration
- Use of the guideline on examining marks that came into force on 1st April 2008 ("Road Traffic Accident Instruction") as the basis for establishing a duty to carry out an examination of marks.

2.3.2 SMAR T goal of Examining Marks

- Significant reduction in the time required for examining marks (-25%), to be achieved within the framework outlined in the "Road Traffic Accident Instruction" with no reduction in the quality of the examination.

Development and basis
The "Road Traffic Accident Instruction" is intended to outline a framework for the Public Prosecutor and the police in assessing and dealing with civil and criminal road traffic offences involving a road traffic accident. To obtain a sound basis for their opinion on the cause or the driving speed, it is necessary for the police's Road Traffic Accident Department to conduct an adequate examination on the site of the accident and an inspection of the vehicles involved. To discover the facts it is important that these examinations are conducted to a good standard and in a reproducible and controllable fashion (preferably conducted by an officer with a diploma or certificate from the police academy and therefore one who can work to technical forensic standards).
When examining marks, use must be made of aids for the purposes of photogrammetric results.

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[3]"Aanwijzing Verkeersongevallen" (Road Traffic Accident Instruction), Staatscourant (Government Gazette) 28th March 2008, no. 61 / p. 14

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The reduction in time required for recording the marks must mainly be created by the use of new methods/techniques and better coordination of the ways of working (better coordination agreements).

Points for consideration
- Investigation of which new methods and techniques can be developed and/or applied to speed up the carrying out of an examination of marks (taking into account the framework outlined in the "Road Traffic Accident Instruction."
- Investigation into what coordination agreements are desirable here.

2.4 Duration of the IM process

2.4.1 SMART goal of Duration of the IM process
The average time for dealing with incidents is to be 25% shorter in 2015 than in 2008.

Development and basis
The time saving is to be achieved by reorganising the IM process. The provinces must also be involved here. One important point is the formulation of the intention to link emergency control centres with each other so that all those involved have the same information. This may be the solution to many problems in the areas of process and organisation. The emergency control centres 2015 vision must serve as a trigger for the desired innovations in dealing with calls about incidents and thereby also to improved cooperation between the emergency control centres.
Lastly, it is important that the traffic continues to flow as long as possible so that it remains possible for the emergency services to reach the incident site and drive through it. Road users can certainly also make a significant contribution to shortening the IM process where there is an accident involving a breakdown or physical damage only. Prompt (sufficient) treatment of a road user who is involved in an incident is improved by including the preferred method of treatment in agreement with the CBR (Central Driving Licensing Centre) as part of driving skills training.

Points for consideration
- Shortening the initiation and reporting phase and achieving process improvements so that all partners in the IM chain are quickly and reliably informed of all relevant incident information.
- Partners in the IM chain have sight of /know each other's work processes/ways of working (e.g. tasks, authority).
- Distribution and availability of ambulance provision must be coordinated with IM.
- Accidents are classified into categories.
- The actions of each partner in the IM chain are linked by accident category.
- Road users know how to deal with an incident on the road.

2.5 Information distribution to travellers and the media

2.5.1 SMART goal of Information distribution to travellers and the media
- In 80% of cases the traffic information regarding incidents (reported by VCNL) shall be made available to road users on IM roads within 5 minutes.

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Development and basis
The most up-to-date information regarding the accident situation will preferably be communicated to the road user. This information must also be consistent. It is proposed that a link be sought with the NDW (Nationale Databank Wegverkeersgegevens, National Road Traffic Database) project and other forums (e.g. including the developments at NS [Dutch railways]) for the purposes of multimodal traffic information gathering. In addition there is also a benefit in using road users themselves as sources of information.
To date it has proved difficult to make money out of traffic information. The new generation of personal services that are currently on offer do in fact have the potential to do so. Here too what matters is that the information provided is up-to-date and consistent.

2.6 Organisation of the IM process (avoidance of misunderstandings, training/prevention)

2.6.1 SMAR T goal of Organisation of the IM process
- Within two years (from 2008) there is expected to be real-time open exchange of incident reporting and incident data between the partners in the IM chain.

Development and basis
What is important is the willingness of the various organisations involved (emergency control centres, emergency services) to share data. In addition there must be a medium (information medium) made available via which the data can actually be directly exchanged. (There must not be too much of a time delay between them). The information exchange between the organisations involved can be started up on a small scale and expanded according to circumstances. It is recommended that a link be established with relevant developments (such as eCall and the wet tunnelveiligheid [tunnel safety act]) that can be used as levers.
The position of the road operator in particular requires extra consideration. It is recommended that the road operator seek a link with the Raad MIV[4] (multidisciplinary information provision committee) and in particular with the steering committees for emergency control centres[5] and information provision[6].

It is difficult for the police to commit to an open exchange of information because privacy legislation hinders this. In addition, the money is lacking for standardising the necessary operational processes. It is suggested that this point be included for consideration by the DGOV (Director General of Public Order and Safety).

During handling of an incident it is to be absolutely clear how authority to take decisions is divided between the various emergency services.

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[4] The Raad MIV promotes effective and efficient information and communication provision for the joint involvement of the emergency services so as to limit damage in incidents and disasters.
[5] "It is not just the management of GMS and the preparation for a new emergency control centre system (NMS) but also topics that contribute to the maintenance, use and improvement of the emergency control centre function that are part of what the steering committee has to consider. This concerns the giving of important advice to the strategic managers of C2000. The promotion of the collective interests of the users instructed in the purchase of peripheral equipment C2000 and associated services. The management of project organisations, the implementation and further development of the multidisciplinary emergency control centre vision, the promotion of multidisciplinary cooperation and the creation of framework conditions for the implementation of projects are also among the steering committee's tasks."
[6] The Information Provision steering committee has the aim of improving the multidisciplinary information provision in large-scale activities. Moreover, the steering committee stimulates multidisciplinary cooperation.

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2.6.2   SMART goal of Organisation of the IM process

- Each IM partner sends to the incident site only staff who are technically skilled in their own disciplines and who are also familiar with:
  - The mutually agreed IM procedures
  - The work practices employed by other IM partners.

Development and basis

It is especially important that the handling of an accident is carried out by emergency services staff (IM partners) who have been well trained and who have knowledge of each other's ways of working and responsibilities. In line with the requirements that are made with regard to the professionalism with which the tasks are performed, the IM partners' training includes 2 elements:

- One element directed towards the application of the required expertise needed to carry out their own emergency tasks
- One element directed towards learning to cooperate with the staff of the other emergency services (cross-training).

To promote consistency in the IM approach and to limit misunderstandings, it is recommended that specific modules form part of the training of all the emergency services staff.

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3 Summary of SMART goals

Smart goals of IM in general
- Availability of a zero measurement so as to be able to compare the results of attempts at improvement.
- Working according to a protocol during the IM process.
- Mutually agree and evaluate protocols (once or twice a year).

SMART goal of IM process safety
- Significant improvement in perception of risks to safety as experienced by IM partners .

SMAR T goal of IM process safety
- Injured are assisted faster (-25%) and better, which increases their chances of survival.

SMART goal of IM process safety
- Reporting hazardous substances is part of Incident Management.

SMART goal of IM process safety
- Road users are warned when they are approaching the start of a traffic jam and in fact in such a way that 25% of secondary accidents as a consequence of this traffic jam (resulting from a first accident) are prevented.

SMART goal of the Issue of blame
- Clarity (with police and road operator) when examining marks is relevant.

SMART goal of the Issue of blame
- Significant shortening of the time required for examining marks (-25%), to be achieved within the framework outlined in the "Road Traffic Accident Instruction" with no reduction in the quality of the examination.

SMART goal of Duration of the IM process
- The average time for handling incidents is to be 25% shorter in 2015 than in 2008.

SMART goal of Information distribution to travellers and the media
- In 80% of cases on IM roads, traffic information about incidents (reported by VCNL) shall be available to road users within 5 minutes.

SMART goal of Organisation of the IM process
- Within two years (from 2008) there is expected to be real-time open exchange of incident reporting and incident data between the partners in the IM chain.

SMART goal of Organisation of the IM process
- Each IM partner shall send to the incident site only those staff who are technically skilled in their own disciplines and who are also familiar with:
    - The mutually agreed IM procedures.
    - The work processes practised by other IM partners.

[7]This includes all operationally cooperating parties at the incident sites i.e. emergency service staff (police, fire brigade, ambulance), road operators, rescuers, aid agencies

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Actions required from the IM Committee

1. The Incident Management National Platform asks the IM Committee to approve the Incident Management proposals described above.

2. The Incident Management National Platform asks the members of the IM Committee to ensure that the Incident Management proposals described above can count on support within everyone's own team.

3. The Incident Management National Platform asks the IM Committee to agree to the further development of the proposals and their translation into concrete projects to be carried out under the control of the Incident Management Planning Office.