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Risk Management Group

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Using This Guidance Document

This document is intended as framework guidance for countries that have to introduce digital tachographs. It recognises that countries have different starting points from which a risk management plan for the tachograph system can be developed and implemented.

The guidance is flexible in nature – it is not meant to be prescriptive in any sense. Each country can consider and make decisions regarding the issues raised in accordance with its own preferences and priorities. It is hoped that this guidance document can play a constructive role in this process.

The recommendations contained in this document are inspired of the state of the art in risk management and are most especially based on the recommendations issued by the European Commission[1].

[1] European Commission (1996). *Technical Guidance Document in Support of The Commission Directive 93/67/EEC on Risk Assessment for new Notified Substances, and The Commission Regulation (EC)1488/94 on Risk Assessment for Existing Substances.* Commission of the European Communities/European Chemical Bureau, Ispra.

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INTRODUCTION

1. The EU legislator has decided, through Regulations (EC) n° 2135/98[2] and 1360/2002[3], to introduce a new recording equipment (digital tachograph) in order to avoid:

   - some drivers employed by road haulage companies, led by economic pressures and competition in road transport, to flout certain rules, particularly those concerning the driving and rest times[4];
   - these infringements and frauds to present a road safety hazard and a breach to fair competition for the individual driver who does respect the rules.

2. To achieve this objective and to put an end to the most common abuses of the present system (analogue tachograph), the EU legislator has considered as necessary to introduce new advanced equipment:

   - ensuring that the data recorded are retrievable, intelligible when printed out and reliable,
   - providing an indisputable record of the work done by both drivers over the last few days (by the means of driver cards) and by vehicles over a period of several months (by the means of recording equipments),
   - considering therefore the total security of the system and its components as essential if recording equipment is to function efficiently.

3. Digital tachographs are supposed to function with tachograph cards issued anywhere and at any time, to:

   - drivers,
   - control officers,
   - transport companies,
   - approved workshops.

4. This interoperability between digital tachographs and tachograph cards is ensured by type approval authorities, with the support of the European Commission (DG JRC).

5. Digital tachographs are calibrated by workshops approved by national authorities for the data recorded to be accurate.

[2] OJEU, n° L 274/1998
[3] OJEU, n° L 207/2002
[4] Regulation (EEC) n° 3820/85, OJEU n° L 370/1985

6. Card issuing authorities have to ensure, before issuing a driver card, that the applicant does not already hold one.

7. Digital tachographs' and tachograph cards' data are checked by enforcement authorities to verify the compliance of drivers' and transport companies' activities with Drivers' Hours' rules[5].

8. National authorities have also to produce and maintain a security policy covering the following processes, where applicable:

   - issuing of tachograph cards, including keys and certificates,
   - issuing of vehicle unit keys and certificates,
   - issuing of motion sensor keys
   - management of the Member State keys.

9. All these aspects of digital tachographs' and tachograph cards' introduction in the field:

   - type approval,
   - issuing of tachograph cards,
   - approval of workshops,
   - enforcement of drivers' and transport companies' activities,
   - security,

   constitute the digital tachograph system.

10. This system needs to be maintained and to be adapted whenever the objectives of the legislator are at stake. In that regards, a risk management procedure needs to be implemented at both national and international levels so as to allow the various stakeholders:

    - national authorities in charge of type approval,
    - national authorities in charge of issuing tachograph cards,
    - national authorities in charge of workshops approval,
    - national authorities in charge of enforcing Drivers' Hours' rules,
    - national authorities in charge of producing and maintaining a security policy,
    - the European Root Certification Authority,
    - the EU legislator through the European Commission and the UNECE/AETR[6],
    - digital tachograph manufacturers,
    - tachograph cards manufacturers,

[5] Regulation (EEC) n° 3820/85, OJEU n° L 370

[6] European Agreement concerning the work of crews of vehicles engaged in International road transport (AETR), see http://www.unece.org/trans/main/sc1/aetr.html

- vehicle manufacturers,
- approved workshops,
- transport companies,
- professional drivers,

to anticipate risks and to define counter-measures when applicable.

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11. The document is divided into three parts:

Part 1 provides a broad introduction to risk management decision-making – the main principles and the basis for action in the context of an effective overall strategy for decision-making for the control of the digital tachograph system; and

Part 2 concerns the preparatory tasks and considerations that can help to ensure that a solid foundation has been laid for initiating the development and implementation of a risk management plan for the digital tachograph system, and outlines a flexible, step-wise, cyclical process to foster the development and management of integrated risk reduction strategies including practical suggestions for each of the stages in the process.

Part 3 contains proposals on the best way to deal with risk management in the context of the digital tachograph system.

12. The document is not intended as a rigid authoritative manual. Rather, it is presented as an integrated yet flexible approach to digital tachograph system management based on practical knowledge and case experience. It has been written to help responsible individuals and groups develop tailored procedures to meet specific requirements and conditions of a given country as the basis for appropriate management of risk.

PART 1: RISK MANAGEMENT DECISION-MAKING FOR THE DIGITAL TACHOGRAPH SYSTEM

13. The sound management of digital tachographs throughout their life-cycle is an essential national activity in order to minimise risk, and/or prevent the occurrence of adverse impacts. The aims and implications of risk management are outlined and explained in Part 1 of this document.

The function of risk management is to decide whether a level of risk is acceptable, and if not, to translate the information into policies and actions designed to, for example, reduce risk through national legislative action, or to reduce risk in a variety of other ways.

14. Risks can occur at any, or all of the stages of the digital tachograph life-cycle, which may consist for example of:

- interoperability problems between digital tachographs and tachograph cards;
- wrong calibrations of digital tachographs;
- issuing of cards to unauthorised persons;
- manipulation of digital tachographs and/or of tachograph cards; and
- alteration of the recorded data.

15. Consequently, management of such risks is, in practice, a major task involving a series of consecutive steps. The approach described in this document is designed to help the reader gain clarity from the complexity of many problems related to the digital tachograph system.

16. Nevertheless, the process described is not complex. It focuses on the collection and analysis of information and its targeted use to reduce risk. Useful precedents that can serve as examples are outlined as part of the process for establishing effective national and international digital tachograph system management.

1.1 What is Risk Management?

17. The risks associated with a potential for harm have to be identified, assessed and managed appropriately. The distinction between assessment and management of risks is a key issue:

- risk assessment is designed to evaluate, usually quantitatively, the nature and magnitude of a potential risk. But on its own, risk assessment has limited value,
- risk management on the other hand, is the decision-making process to accept a known or assessed risk and/or the implementation of actions to reduce the consequences or probabilities of such an occurrence.

18. The risk management process can also be described as comprising a six-step process, ranging from identification of the problem to evaluation of control actions. The process is an iterative one and not a linear sequence of actions. The six steps can be considered as an important cyclical process to follow so that governments can make informed decisions on the digital tachograph system. These steps include:

    1. Conducting a situation analysis/needs assessment
    2. Developing the risk reduction goal, sub-goals and indicators
    3. Identifying and evaluating possible risk reduction options
    4. Selecting and developing the risk reduction strategy
    5. Obtaining commitment from decision-makers and taking action
    6. Evaluating Impact

1.2 Major Characteristics of Risk Management Decision-Making

19. Experience shows that certain characteristics are likely to promote an effective and successful risk management decision-making process. A lack of resources and other constraints in some countries, however, may limit their ability to incorporate all of the issues into the process.

20. The literature on risk assessment recommends that an effective risk management decision-making process should be:

    - *Cyclical/iterative.* Risk management decisions should be revisited and re-examined as further information becomes known. An iterative approach will help to ensure that risk reduction strategies remain up to date with evolving national policies and priorities, new scientific findings or technological developments and that they take into account the effectiveness of existing strategies.

    - *Participatory.* Risk reduction strategies should be developed and implemented in consultation with a wide range of interested and affected parties. Broad participation improves the quality and diversity of information and opinions that inform the decision-making process, and significantly increase the likelihood that risk management decisions will be accepted and implemented by relevant parties.

    - *Informed.* Risk management decision-making requires various types of information and thus often calls for efforts to access and review a wide range of information sources. Different kinds of information, such as statistical data, probability studies, information about local customs and practices, knowledge about the nature of past and present exposure, economic analyses, information about regulatory and other control options, etc. may also be required. While an analysis should ideally be based on the best available scientific, economic, legal and other technical information, other aspects will need to be considered such as the timeliness of action or the likely value of additional information.

- *Contextual.* Risk reduction strategies concerning identical issues may vary significantly between countries, reflecting the different circumstances of countries, such as differences in the level of training and expertise of the work force, in the state of the national economy, public perception of risk, etc. To be effective, risk reduction strategies should be adapted to the political, legal and socio-economic context as well as national/international realities.

- *Holistic.* In many countries, statutes and legal precedents tend to dictate risk management approaches that focus on the risk posed by a single actor (e.g. driver) in a single medium (e.g. truck, bus). While these approaches have reduced road safety hazard in certain areas, they may not be adequate for solving the more complex problems many countries now face due to the introduction in the field of the digital tachograph system. More integrated strategies that consider multiple media and multiple sources of risk in order to sustain and strengthen the improvements attained in recent decades are of increasing importance. Consequently, creative and innovative approaches should also be considered that addresses risks to road safety in a more holistic and comprehensive manner.

1.3 Risk Management in the Light of Uncertainty

21. It is highly likely that *scientific/technical uncertainties, assumptions and other limitations* will be identified during the decision-making process. Information may be fragmentary and incomplete. All information, therefore, must be evaluated and its potential impact on decision-making described as part of a transparent process.

22. A narrowing of the uncertainties is an important activity for it should lead to a more precise calculation of risk. The tendency to over- or under-estimate the risks should be clearly evaluated. Uncertainties with the largest potential impacts should be identified and evaluated first. Uncertainties can have a major effect on the estimated level of risk, especially if solely based on worst-case assumptions within a precautionary approach.

23. Risk management decision-makers should include not only uncertainties, variations, possibilities and options, but also all activities of the process so that it is transparent and easily understandable by all stakeholders. Professional judgments and expert disagreements should be clearly stated as the conclusions might not be transparent to others. Although it is important to maintain clear and comprehensive documentation of the process, the extent of documentation needs to be balanced by priorities and resources, especially if the timeliness of the management response is critical. Nevertheless, a succinct summary of the process covering the underlying scientific basis, uncertainties in the facts, and the rationale for any assumptions made should be produced as a minimum.

1.4 Tools and Policy Instruments for Risk Management

24. There are numerous measures or policy instruments for achieving risk reduction and, in most cases, there will be more than one way to achieve a particular risk reduction goal. For example, in order to achieve a more secure way of issuing tachograph cards (ensuring the uniqueness of driver cards) can be imposed through regulation, or adopted voluntarily by card issuing authorities. Conversely, certain categories of measures and policy instruments may be used to address very different risk reduction goals. For instance, commercial agreements with transport companies can be promoted for approved workshops to take an active role in data download. Moreover, policy instruments are not mutually exclusive. In fact, a combination of different instruments may often be the most effective approach; for example, a voluntary agreement may need to be underpinned by regulation.

25. The most common categories of measures or policy instruments through which risk reduction options can be implemented are outlined below. The instruments/tools are presented along a continuum from the regulatory to the voluntary. The order does not imply a preference for one category over the other, but depending on the nature and particular circumstances of the problem under consideration, each tool will have its advantages and drawbacks. A key requirement for governments is to assess the extent to which different strategies are likely to achieve risk reduction in a way that is efficient (integrated and coordinated), technically competent, accountable and transparent.

1.4.1. - Regulatory Controls

26. A major driving force for road safety in most countries has been legislation backed by a regulatory regime that specifies actions to be taken by the regulated community to reach specific objectives. The major advantage of national or international regulations is its relative certainty of outcome, that is, if regulations are effectively enforced.

27. Regulatory action therefore, represents an effective and preventive approach to reducing risks from tachograph frauds, and for reducing the impact on the social conditions of professional drivers, or risks to road safety. In particular, a framework of standards to be adopted by industry also illustrates direction. In some circumstances, regulation can also be a powerful driving force for the development of less hazardous production processes.

28. The main ‘downside’ of regulatory controls is the often high financial and human resource costs related to their introduction, implementation and enforcement.

29. Additionally, unilaterally imposed, binding regulatory requirements may decrease the willingness of regulated parties (manufacturers or, professional drivers, transport companies, approved workshops, etc.) to co-operate in a risk reduction strategy. Regulations, therefore,

do not by themselves encourage industry to adopt a dynamic mechanism to reform their procedures and practices. Furthermore, incomplete knowledge and the injudicious adoption of the Precautionary Principle can result in standards being set that are unnecessarily stringent, loading industry with high cost implications. Some governments may need to undertake further research to reduce the margin of uncertainty and revise the level of a particular standard on the basis of evidence rather than one of precaution.

30. In the context of a risk management decision-making process, regulatory options to be considered may include (depending on the time available to manage the risk):

- amending existing legislation or regulations, or more effective enforcement of existing controls in order to attain the broad aims of the legislation; and
- developing new regulations and legislation including:
  - developing uniform controls and setting standards (e.g. criteria to approve workshops);
  - establishing target-based controls, such as minimum number of approved workshops audits.

31. Considering that in a number of countries with economies in transition (e.g. some non EU-AETR Contracting Parties), regulations exist that are not always, or weakly, enforced, a more differentiated view of the effectiveness of transport regulation may be warranted. In these circumstances, a careful assessment of means to control and enforce regulations should receive particular attention, including the potential advantages and opportunities of non regulatory approaches as are discussed later.

1.4.2. - Economic Instruments

32. Economic or market-based instruments aim to reduce road safety risks by giving parties that are ‘responsible’ for causing these risks a financial incentive for reducing their undesirable activities. Changes of behavior can be stimulated either by punishing, or rewarding, the actions of industry.

33. Economic instruments provide strong incentives for technological innovation and behavioral change, and offer good prospects for achieving road safety objectives in a cost-effective manner. From an industry perspective, opting on a voluntarily basis for digital tachographs, i.e. by retrofitting vehicles equipped with analogue tachographs, for example, will thus be made where they are least costly, thereby achieving a given reduction in equipment of control forces at lower costs. In this case the industry will have carried out cost-effectiveness analysis – a limited form of economic appraisal – on the alternative methods and adopted the least costly. In addition, whereas companies have little incentives to retrofit analogue tachographs once regulatory standards are met, economic instruments can provide a continued incentive for producers, suppliers and customers to reduce risks and costs beyond legally required reductions.

34. While economic instruments are not a panacea, and administrative controls are usually required as well, economic or financial incentives should be considered where possible to reinforce the effects of direct regulation. However, lack of practical experience in implementing economic instruments in the road transport sector may be a potential obstacle for some countries.

1.4.3. - Codes of Practice and Technical Standards

35. Codes of management practice embodying technical standards and/or authoritative guidance can help to achieve specific improvements. Codes in general terms can be defined as statements describing the overall results required, and may go on to discuss, for example, how to achieve the results, or how to conform with legal requirements, additional measures, etc. Their use is often to supplement existing laws, conventions, recommendations and technical guidelines, and to stimulate action in a given area at both national and international levels. Codes can take several forms:

- *Voluntary*: failure to follow the code has no direct/indirect legal consequence;
- *Advisory*: while there is no obligation to follow such codes, the extent to which they have been followed may be used as evidence if a prosecution is brought under general legislation; and
- *Statutory*: failure to comply is an offence unless it can be shown that other means are equally effective.

36. Trade associations and other bodies may be prepared to take the lead in devising and/or enforcing such codes, particularly those that are appropriate for spreading best practice.

37. However, compliance with advisory or voluntary codes is likely to be uneven. There may be particular problems in sectors with a large number of small- and medium-sized enterprises (SMEs) where there are often financial, technical and institutional barriers. Moreover, these are also the sectors where regulation and its enforcement are often most difficult.

1.4.4. - Information Programmes and Other Government Initiatives

38. Better information, or improved communication, can reduce risks if those at risk are exposed unknowingly and unavoidably and if they could take relatively simple precautions to limit the risk to themselves and others (e.g.: workshop managers and use of workshop cards by fitters). This necessarily means that those exposed to risks are in a position to influence the decisions taken to assess and manage the risks. Information programmes can also encourage the spread of best practice. Trade associations and other bodies may be prepared to assist in developing and/or running such awareness-raising programmes. Overcoming the difficulties of disseminating information to SMEs may require special consideration.

39. Incentive or certification programmes are another means to spur risk reduction and to promote and reward less harmful products/production/solutions. Examples include the establishment of internationally accepted third-party systems of certifying products/ producers/solutions. The International Organisation for Standardisation (ISO) series of management standards are widely implemented in many countries. The ISO 9000 as the lead quality management system and the ISO 17799 – Information technology – Code of practice for information security management as well as the ISO 17025 which offers the essential framework for a Quality Management System for a testing or calibration laboratory (or in this case, a workshop and the standards for calibrating and testing test equipment) - are reflections of 'good practice'. Investment in infrastructure, including the provision of training and/or research facilities, can also stimulate and facilitate the spread of good risk reduction practices.

1.4.5. - Unilateral Action by Industry

40. Industry is increasingly aware of its responsibilities and may be willing to implement certain risk reduction measures voluntarily. Encouraging such *self-regulatory action*, including codes of conduct, guidelines, principles, statement, policies, etc., is likely to be of particular relevance where risks are limited to specific industrial locations. Examples include:

- national associations of transport companies;
- national associations of approved workshops; or
- unions.

41. The IRU Academy (see http://www.iru.org/Academy/principal/principal_home.htm) and the training offered to transport companies and their drivers throughout Europe is a good example of what can be achieved through voluntary initiatives. This training is characterised by professional adherence to a number of identified commitments:

- public commitments (principles);
- codes of management practices;
- regular self-evaluations;
- executive leadership groups; and
- good faith implementation.

1.4.6. - Voluntary Agreements

42. Voluntary agreements are a relatively new approach that moves beyond the 'command and control' paradigm. Experiences of some countries indicate that industries have considerable potential for risk reduction and can often reach beyond government regulations by improving their performance. This is especially the case where the regulated and the regulator share a

common proactive approach of introducing more flexible and sophisticated techniques for setting and implementing standards and road safety targets. In practice, voluntary initiatives range from arrangements in which the parties (usually companies or their trade associations) set their own targets and often do their own monitoring and reporting, to commitments made by an industrial sector in negotiation with public authorities or government.

43. Such actions are designed to meet specific road safety targets within a certain time frame. This approach identifies the goals to be reached, but lets industry determine the most effective technical innovative route for reaching the goals.

44. Voluntary agreements can preserve flexibility in areas where regulation can be rapidly outdated by developments in scientific understanding, or by a technological breakthrough. They can be implemented relatively quickly and can offer cost savings to both industry and the regulator – although negotiation can take time and require significant resources. In some cases, agreements have been used to provide valuable practical experience on which to base subsequent regulations. However, it should be noted that monitoring of voluntary agreements may be difficult. They may work best as implementing tools when the policy objective is clear and accepted by all parties and based on some type of legislation or legal mandate. As a wide range of stakeholders are recognised as having an interest in regulatory decisions, it is no longer acceptable for decisions to be negotiated privately between regulator and the regulated.

45. Experience suggests that voluntary agreements are most likely to be effective when they are set up with:

- companies willing to participate responsibly;
- a limited number of contracting participants with well defined obligations;
- a sound government regulatory and policy framework;
- well defined and published targets, including time frames, that can easily be monitored along with mutual recognition procedures to ensure implementation of policy actions; and
- transparency and openness towards the public and political institutions.

46. Self-regulation through voluntary agreements can be a viable alternative to direct regulation for large enterprises, but direct regulation often remains the major option for SMEs. Their reasoning is that they have a defense (in terms of liability and clear lines of responsibility) if statutory targets are met, but a problem occurs. However, if such problems occur in a voluntary regime, it can be more difficult to prove that appropriate precautions were taken.

PART 2: PREPARATORY CONSIDERATIONS AND SUGGESTED STEPWISE FRAMEWORK FOR DEVELOPING A RISK MANAGEMENT PLAN FOR THE DIGITAL TACHOGRAPH SYSTEM

2.1 Who Should be Involved in Risk Management Decision-Making? Roles and responsibilities.

47. When identifying the parties to be involved in risk management decision-making, it is important to first establish what entity/entities will be responsible for, and have the authority to, organise the work, to establish its scope, and determine any boundaries to the management process. It is also important to establish who will gather the necessary information, document and develop the recommended risk reduction strategy.

48. It is furthermore, useful to identify at an early stage which public authority and/or non-governmental organisations (NGOs) might be responsible for the adoption, implementation and assumption of any liability for the risk strategy. Even if some parties are likely to play a main role only later in the process, e.g. during implementation, efforts should be made to involve them at an early stage in the process. Finally, interested and affected parties (stakeholders) that need to be consulted throughout the entire risk management process should be identified so that they adopt the concept of shared responsibilities as outlined below.

2.1.1. - Identification of Partners in the Decision-Making Process

49. Involving concerned parties and groups in the decision-making process permits the consideration of a diverse range of views, incorporates public perceptions and invites broad-based input into the search for workable strategies. Being part of the decision making process may motivate various concerned parties to move away from extreme positions and to accept pragmatic and viable compromises. This increases the chances that risk management decisions will be broadly acceptable.

50. Collaboration provides opportunities to bridge gaps in understanding, perceptions and values. Such a participatory process will also more likely result in risk reduction strategies that are effective, defensible and geared towards national needs and priorities. However, no strategy – no matter how thoughtful or appropriate – can guarantee a universally acceptable decision.

But making sure that all partners (stakeholders) are involved at each stage of the process and have opportunities to provide appropriate and constructive input can increase the chances for successful, acceptable and durable decision-making.

51. Guidelines for stakeholder involvement include the following important principles:

- Regulatory agencies or other organisations considering stakeholder involvement should be clear about the extent to which they are willing or able to respond to stakeholder involvement before they undertake such efforts. If a decision is not negotiable, stakeholders' time should not be wasted.
- The goals of stakeholder involvement should be clarified at the outset and stakeholders should be involved early in the decision-making process.
- The nature, extent and complexity of stakeholder involvement should be appropriate to the scope and impact of a decision and the potential of a decision to generate controversy.

2.1.2. - Identifying the Managers of the Process

52. As many different ministries play a role in the process of managing the digital tachograph system at the national level, any one of which may be an appropriate lead agency or supervisor for a particular problem. The title of Risk Manager(s) is sometimes applied to individuals or departments or agencies that will help supervise and manage this process. The relevant authorities involved may include:

- *Enforcement authorities*: involved in road traffic enforcement;
- *Workshops approval authorities*;
- *Card Issuing authorities*: involved in the issuing of tachograph cards;
- *Certification/Security authorities*: involved in the overall security of the system at national level;
- *Type approval authorities*: involved in the type approval of digital tachographs and tachograph cards.

53. Representatives of many of these authorities, along with national and/or international regulators and officials, should be involved in the risk management decision-making process. Technical experts as well as decision-makers may all be involved depending upon the nature of the issues and the stage of the decision-making process. Risk management responsibilities may well be shared between different ministries depending upon the complexity of the risk situation. It is unusual for only one ministry to be involved in such situations.

2.1.3. - Identifying Non-governmental Stakeholders

54. In addition to governmental participants, the risk management decision-making process should be carried out in continuous consultation with interested and affected parties, or 'stakeholders'. Stakeholders are likely to include all those who are affected by the problem, or who might be affected by a proposed risk reduction measure. They may include, for example, associations of transport companies, unions, national associations of workshops and manufacturers. Discussions involving such diverse groups with a wide range of skills and abilities should be conducted in such a manner to be meaningful to participants without specialist knowledge.
55. In some cases, stakeholders may also come from outside the country. While these 'external' stakeholders will certainly play a different role than national stakeholders in a risk management process, their involvement may be important at certain stages, for example, when identifying and discussing possible risk reduction options and when considering practical aspects of implementing risk reduction strategies.

2.1.4. - Recognising Common and Conflicting Interests of Stakeholders

56. As risk management involves scientific, technical, legal and political values, perceptions and judgment, it is a good idea in principle to involve representatives of all legitimate groups that may care about the risk-management actions that are taken. Inclusion, rather than exclusion, of interest groups is an important policy approach as different people hold different values as mentioned above. In the typical case, stakeholder groups will have many overlapping and shared interests but will also hold some concerns that are specific to their group. All parties tend to care about broad categories or possible impacts. However, each party may also have unique concerns. For example, an association of transport companies may have concerns about the economic effects on its community of modifying the digital tachographs' technical requirements. A manufacturer, on the other hand, may care about market access, or its reputation.

57. Often stakeholders will agree on certain basic principles but the relative weights that they place on these may vary considerably. When initiating risk management activities, it is often useful to understand and be aware of the perspectives of various stakeholders. In reality there are always some groups that will not become involved in the decision-making process. For example, if the number of concerned parties is very large it may be impossible, for practical and financial reasons, to involve everyone. In such cases, it is generally advisable to involve groups that will span the range of relevant perspectives and to avoid redundancy in views; the aim is not to hear from everyone but to obtain a representative input of views and perspectives. Stakeholder collaboration is especially important for risk management decision-making, for the different value positions will be made explicit which will help with communications between stakeholders. Some groups may adopt a deliberate strategy of not supporting any initiative. Although it is useful to understand their perspectives, it may be prudent not to directly involve such parties.

58. In other cases, concerned parties may be missing from discussions because they are not organised, e.g. approved workshops. No one method for determining or articulating people's values provides a guaranteed solution. The procedures used have to be refined in the light of experience.

2.2 Organising the Decision-Making Process

59. The risk management decision-making process should ideally be orchestrated by a core working group who can draw on the expertise of, and promote communication among, the various concerned ministries as well as other stakeholder groups. Such a group (or committee) should typically include, as a minimum, representatives of:

- type approval authorities,
- enforcement authorities,
- card issuing authorities,
- authorities approving and auditing workshops,
- authorities in charge of defining, implementing and auditing security policies at national and international level.

60. Representatives of other concerned and interested parties outside of government should also be involved, either directly or through some other mechanism. For instance, a technical group could be established comprised, *inter alia*, of experts from industry associations, public and transport interest groups, universities and national research institutes, to provide input on an ongoing basis to the work of the core working group.

61. The mechanisms for involving a broad range of stakeholders in the process will also need to be considered. For obtaining specific input, a meeting could be held to solicit views of the various stakeholders and to identify their perceptions of the risks posed by the problem. Draft materials could be distributed and reviewed by participants as a means for obtaining practical input. Another approach might be to meet individually with each of the concerned parties so as to obtain their views through one on-one interaction. Alternatively, a combination of approaches could be used.

62. The appropriate role of external experts or consultants should also be considered. Such individuals can provide guidance, based on their experience, about what might happen if a particular decision is taken. However, their involvement should be such that the final decision is the result of a nationally-owned process and thus reflects the history, context and culture of the country.

63. Each country will have to find the organisational arrangement that best meets its needs and that will be most likely to lead to co-operation among concerned parties. The *process* through which risk management decision-making is carried out and the degree to which concerned parties feel appropriately involved often is a key determinant of success and should be

carefully considered and clearly communicated from the outset. While each problem may require a different approach for stakeholder involvement, formulating a decision-making process can help to increase transparency and ensure that the various concerned parties know what to expect and understand how they can effectively contribute to the process. Clearly, such a process should ensure that the credibility of the regulators and the government is upheld.

2.3 Introduction to a Suggested Stepwise Framework

64. Establishing a stepwise process for risk management of the digital tachograph system assumes that a problem has been recognised, that a particular risk has already been identified and that the adoption of possible risk reduction measures has been discussed. This decision may have been taken based on concerns raised at the national or international level.

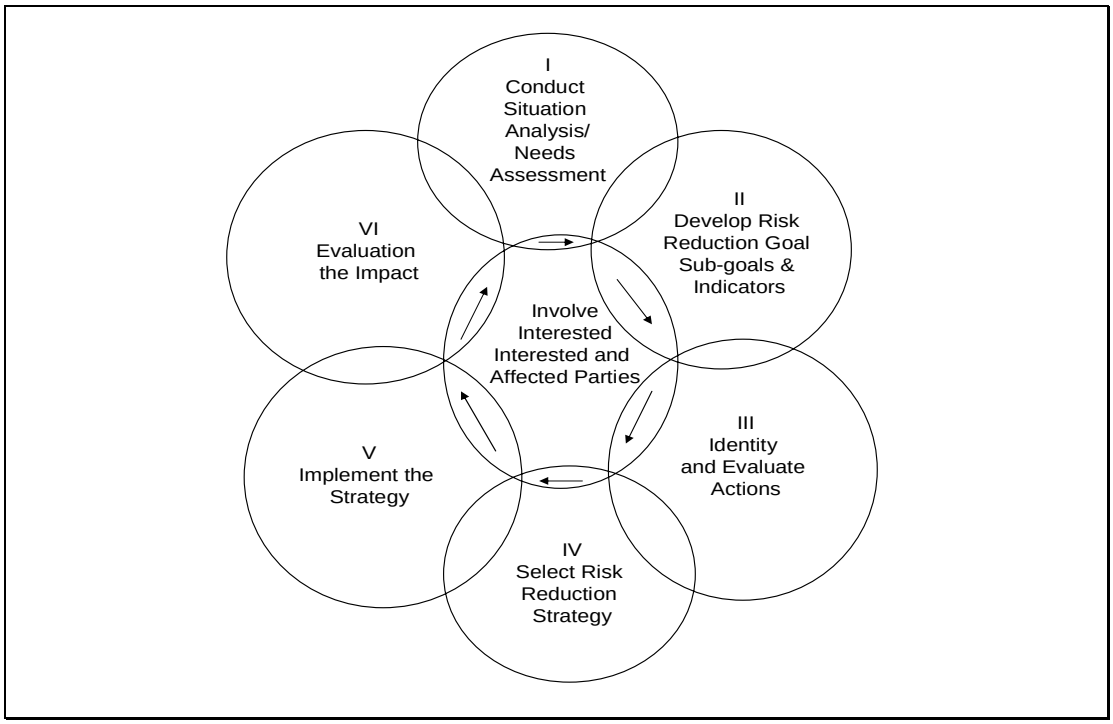
65. A suggested six-step process has been developed which outlines a systematic and comprehensive process for organising risk management at the country level (but which can be used at international level as well). Each of the steps is discussed separately in chronological order. The emphasis placed on each of the steps, and the time and resources devoted to them, will vary accordingly to the problem and the reliability and comprehensiveness of the information available on that problem. It is understood that such a process must be carried out in the light of the particular institutional mechanism and circumstances of each country. Thus the guidance and broad suggestions contained in this document should be used and applied in a flexible manner. Briefly described, the steps are as follows:

Step	Action/Task	Aim
1	Conducting a situation analysis/needs assessment	To understand the national/international situation and to identify the actual or potential hazards and problems posed by the issue.
2	Developing risk reduction goal, subgoals, and indicators	To develop risk reduction goal, sub-goals and indicators on the basis of the situation analysis/needs assessment and relevant national/international situations
3	Identifying and evaluating risk reduction actions	To identify and evaluate options that could achieve the risk reduction goal and thus control the identified problem(s)
4	Selecting and developing the risk reduction strategy	To select the risk reduction option(s) and develop the implementation strategy to address the risk of concern

5	Obtaining commitment and taking action	To submit the proposed risk reduction strategy to decision makers and to take steps to ensure its adoption and effective implementation
6	Evaluating impact	To evaluate impact of the risk reduction strategy and whether additional action is required

66. The key features that distinguish the six-step process from national actions in some countries are:

- the explicit separation of functions between the analytical process of identifying risks and the policy issues that may involve legal, political, security, social, economic, national and other considerations;
- the comprehensive description of the types of analysis required to support decisions, their assumptions and uncertainties;
- the emphasis on stakeholder involvement at all stages, especially from recognizing and defining the problem through to formulating a strategy for implementation; and
- the transparency and openness of all stages in the decision-making cycle.



2.4 Step 1: Conducting a Situation Analysis/Needs Assessment

Objective: *To develop a detailed situation analysis/needs assessment within which the actual or potential problem posed by the issue in the country can be identified.*

Suggested output: *A refined situation and problem statement, addressing questions such as: At what stages of the life-cycle of digital tachographs/tachograph cards are the most important risks/problems occurring? Are there specific stakeholders that are particularly affected?*

67. A clear identification of the issue, which involves both *an analysis of the situation* in which the issue occurs, as well as *an identification of the problem*, can provide an important foundation for the risk management decision-making process. It is important to note that the order outlined for this step is not necessarily fixed but rather will likely require revisiting certain components. For example, it is likely that the situation analysis can be initiated but not adequately completed without obtaining information through the development of a problem statement.

2.4.1 - Establishing and Evaluating the Situation

68. *An analysis of the situation* is the first step and is really an examination of the national/international circumstances or conditions in which the issue occurs. This can provide insight into where challenges lie and where opportunities exist. It involves asking in broad terms: 'what do we have?', 'what do we lack?', and 'what is inadequate?'. Some basic questions could include:

- Which Ministry/Department(s) is/are involved in managing the digital tachograph system?
- What specific legislation/regulations are in place in the country?
- Is enforcement of regulations undertaken as necessary?
- What relevant industry(ies) is involved? Are there university departments, research institute or industry(ies) that are undertaking relevant research/investigations?
- What level of understanding exists in government and industry about the hazards the problem poses?
- What level of awareness exists among the various stakeholders?
- What related technical infrastructure exists (e.g. information on quantities of defective cards or digital tachographs in use)?
- Are there any 'bottlenecks' in the management of the problem nationally and/or internationally?

2.4.2 - Developing a Problem Statement

69. *Identification of the problem* is the second important component when initiating the analysis. This means that the risks to – the problem – will be considered in the national or international context – the situation. When identifying the issue it is important at this stage to have *an appreciation of the magnitude of the problem*. Was it a 'one-off' event, or is the problem an on-going one? Are large numbers of stakeholders directly affected or has the problem arisen through misuse?

70. Several general tasks are listed below that can help with identification of the problem, although these will vary depending upon the root cause of the event.

71. Identifying the Issue and its Context – General Tasks

Content-related tasks:

- identify the issue;
- begin to characterise the risk;
- put the issue into an appropriate context; and
- identify issues relevant to hazard and risk assessment.

Process-related tasks:

- allocate resources for issue identification and hazard and risk assessment;
- establish the hazard and risk assessment team if necessary;
- identify roles, responsibilities and accountabilities; and
- identify interested and affected parties.

72. Both the sequence of these tasks and whether they are performed sequentially or simultaneously may vary depending upon the specific issue and the context involved.

73. As is shown above, a distinction can usefully be drawn between *the content*, which may raise important considerations that need to be raised with regard to problem, and *the process*, which is associated with administrative action to deal with such a problem. The quality of the decision will be determined by how well both tasks are undertaken. While national problems caused by a risk are likely to be of major concern, risk reduction strategies may in some cases also be initiated based on concerns raised at the international level. Thus, in certain circumstances the identification of risks may also take into account problems which are caused outside the geographical boundaries of the country.

74. The problem statement summarises the reason for considering action and defines (to the degree it is understood) the problems, which are being encountered. In addressing these issues, the problem statement should highlight areas that are not well understood and that should be clarified through the risk characterisation. In developing the problem statement, countries may want to focus on two main questions:

- Why is action being initiated?
- What is the exact nature of the problem?

75. Concerns in relation to road safety risk are raised, either because there is some evidence that a particular problem is already occurring, or because a problem may occur in the near or more distant future. Other concerns may have arisen through reports from misuse of digital tachographs and/or tachograph cards, or lack of enforcement of legislation.

76. In other cases, there may be evidence that a problem may occur in the near future if no preventive action is taken. For example, if national authorities do not enforce the rules, it is

likely that risks will occur. Broadly speaking, identifying a problem can be based on, and take account of, various types of information, including:

- national data and information regarding incidents;
- national and local information on existing management practice, etc.; and/or
- information, data and assessments that are available internationally.

77. The nature and importance of such sources will vary with the specific issue involved. Where possible a multi-disciplinary approach should be used to ensure that as many aspects of the issue are identified as possible.

78. While in some cases the problem/risk may be well understood, in other cases there may be considerable amount of uncertainty. Based on current knowledge, the problem statement should provide a brief summary of the issues that are being confronted, as well as areas of uncertainty that may need to be addressed through a more detailed risk characterisation. Questions to be addressed may include:

- Through what activities is the problem causing harm (e.g. through normal use, due to accidental spills or intentional misuse)?
- What is the magnitude of the problem?
- Is urgent action needed?
- What are potential implications for the future if action is not taken?

79. Elements of the Process of Hazard and Risk Assessment

80. Risk assessment is a conceptual framework that provides the mechanism for a structured review of information relevant to estimating risks.

❖ *Making Use of Availability of Hazard and Risk Assessment Information*

81. It is recommended that countries make maximum use of available information and materials. Some main sources of information which countries may want to consult at this stage include the websites of various organisations and institutions and data networks.

82. Internationally available data and information can also be used in specific models to gain a better understanding of potential risks under certain specified conditions.

❖ *Assessing Exposure to risks*

83. Information from international sources is often very useful at the exposure assessment stage. Often this information provides some benchmark on exposure levels under ‘normal’ conditions of use, i.e. in accordance with manufacturers directions, etc.

84. Gathering sufficient exposure information does not need to be a costly and time consuming endeavor and can be based on estimates or available facts. The objective of this step is to gather information held by individuals or organisations.

85. Information obtained at this stage should indicate the extent to which, and at what stages of the life-cycle of the digital tachograph and/or tachograph cards, exposure to the risk is occurring, or is likely to occur. Also, data gaps will undoubtedly be encountered and there will be aspects for which national/international information will simply not be available. It is important to assess the reliability of information and to note possible information gaps and deficiencies, so that these can be taken into account in the risk characterisation.

86. Risk characterisation is the final step in the process and aims to summarise and assess scientific evidence and exposure information in order to help risk managers determine whether there is a need for action, and to assist in identifying possible risk reduction options and strategies. Scientific/technical uncertainties that exist as well as public perceptions of the risk are further factors to consider.

87. In order to determine risk characterisation, that is the accumulation of risk information, the following components of a checklist should be established:

- Are particular stakeholders' interests at risk?
- What is the damage scale of the risk?
- What is the probability of occurrence of this risk?
- What are the characteristics (irreversible, reversible, transient) of the risk?

88. The risk characterisation therefore summarises risk in an integrated and evaluated form that is clear and transparent and includes attendant uncertainty.

89. Documentation of the Situation, the Problem and the Analysis

90. A record of all of the information used in the problem analysis should be established as an example for future evaluators to study. Specific details should include not only the basic data and information, but also assumptions, controversies, uncertainties, etc. What data gaps were uncovered and how they were considered within the risk management options under discussion, are two further critical questions. Information should be stored not only on the immediate problems and their effects but also on the underlying causes so that a longer-term perspective is established. Such as approach should also help increase the degree of confidence within which the options were considered.

91. Receiving feedback on the problem analysis from affected stakeholders and will also help strengthen the analysis. This sharing of knowledge helps create the shared responsibility necessary to select and develop the risk reduction strategy in Step 4. The collection of such information constitutes in itself an important element of the analytical process.

Checklist for Step 1

- *Detail the main conclusions of the situation analysis, relate them to the broader digital tachograph system management context and report whether weaknesses in the national/international infrastructure are connected with the problem.*
- *Establish the causes of the problem in hierarchical order.*
- *Develop the problem statement, i.e. the main reasons why the issue is considered as a potential target for risk reduction measures.*
- *Characterise the main risks associated with the issue, the basis for the risks and report whether a risk assessment was necessary, or whether other national or international assessments were reviewed.*
- *Specify whether particular vulnerable target groups or stages in the digital tachograph's and/or tachograph cards' life-cycle are posing a particular problem.*

2.5 Step 2: Developing the Risk Reduction Goal, Sub-goals and Indicators

Objective: *To develop a risk reduction goal, sub-goals and a series of related indicators based on the problem statement.*

Suggested output: *A concise statement of the risk reduction goal.*

Goal Setting

92. Based on the Situation Analysis/Needs Assessment and Problem Statement described in Step 1, the aim of Step 2 is to develop the risk reduction goal, the sub-goals to be met so that the goal can be reached and to develop indicators to reflect successful risk reduction actions. The sub-goals provide the basis for the development of the actions and options for the risk reduction strategy during Steps 3 and 4.

Setting a goal for the risk reduction strategy is an important part of the decision-making process, in that it sets the direction for subsequent stages and makes clear the intended results or outcomes of the implementation phase.

It should be recognised that defining a goal is also a form of decision-making. Thus it is important that the process be transparent, that stakeholders be involved, and that it be explicitly acknowledged if there are any issues/aspects of the problem that have been forsaken.

Further Guiding Principles for Setting a Risk Reduction Goal

93. Experience has shown that it is often useful to *link a risk reduction goal to the broader national goals* and policies pertaining to the digital tachograph system management. For example, reference can be made to national laws, policy initiatives and/or obligations as a party to international conventions, to which the risk reduction effort will contribute. In situations in which additional policy support for risk management activities is sought, identifying such linkages may be a particularly important aspect to consider.

94. When identifying a risk reduction goal, efforts should be made to ensure that the goal can be described as '*SMART*':

- **S**pecific
- **M**easurable
- **A**ssignable
- **R**ealistic
- **T**ime-related

95. A measurable goal is by definition quantifiable for it indicates when the goal has been reached. While defining a smart goal is often helpful for the risk management process, there may also be situations which are fairly complex and where goals should be defined in a more generic manner. For example, given the complexity associated with a particular tachograph manipulation, it may be useful to state as a goal that: "Risks from manipulation X should be reduced to an acceptable level, taking into account the overall objectives of the legislation".

96. Although such a goal may not be easily quantifiable, the goal is still action-oriented and indicates the direction of the action. While goals may in some cases be phrased in a more generic manner, all efforts should be made to ensure that management goals are 'SMART'.

97. Experience has shown that when establishing a risk reduction goal, *uncertainty about risk estimations* should also be taken into account. Uncertainties can result from incomplete or unavailable scientific/technical data thus making it difficult to accurately determine the level of risk involved and hence the exact goal to be achieved.

98. Other important factors to consider in goal setting include *social, economic, legal or political considerations*. For example, due to particular societal values and perceptions, it may be decided that protecting road safety may be of high priority. Or, due to impact on international trade, a country may decide that the focus of the same risk reduction strategy should be of medium priority only.

In many cases, it will not be realistic to assume that the risk reduction strategy will be able to address all risks associated with the issue. For example, it may be too optimistic, and thus not feasible, to aim at eliminating all risks posed by the issue. In this context it may often be useful to highlight and explain why certain risks are not intended to be addressed through the risk reduction strategy.

99. Identifying Sub-goals

As an overall goal may be the object of various actions, it is often broken down into a range of sub-goals, each of which has to be attained before the goal can be said to have been achieved.

Indicators to Quantify and Qualify Attainment of Goals and Sub-goals

100. A risk reduction goal or sub-goal may be expressed in either, qualitative or quantitative terms. It will depend on the situation at hand whether a quantitative or qualitative description of the goal or sub-goal is more helpful. In any event it is important to draft the statement in a format that will allow for subsequent assessment of whether, and to what extent, the goal or sub-goal has been reached. Measurements of the achievement of the action can be presented as an indicator that can be reported periodically.

101. Considering that the goal will be the ultimate benchmark against which the success of a risk reduction strategy should be measured, it is important to consider already at this stage how he achievement of the goal could be measured (quantitative) or evaluated (qualitative) in practice. An indicator-supported goal, or sub-goal, provides one effective method for evaluating the planning and implementation strategies. For example, are there certain 'indicators' that could be used as evidence that the desired outcome has been realised?

102. It is not necessary to discuss in any detail during Step 2 how the achievement of the goal and associated sub-goals would actually be measured or who would undertake the measurements. A more detailed discussion on measurements of goal attainment is provided in Step 6.

An indicator is not an activity or a task but describes the result of an action undertaken.

Checklist for Step 2

- *Develop a well-defined risk reduction goal statement to address the problem.*
- *Ensure transparency in goal selection especially through stakeholder forum discussions.*
- *Prioritise problem-solving sub-goals in order to reduce first the most important risk to road safety.*
- *Link the selected goal and/or sub-goals into the wider national/international digital tachograph system forum.*
- *Establish preliminary qualitative and quantitative indicators to benchmark progress toward attainment of the goal and/or sub-goals.*

2.6 Step 3: Identifying and Evaluating Possible Risk Reduction Actions

Objective: *To identify and evaluate options that should achieve the risk reduction goal and thus control the identified problem.*

Suggested output: *An evaluation of the advantages and drawbacks of possible risk reduction options that could be used to prevent, or reduce the risk of concern.*

Development of a Shortlist of Actions

103. The main objective of this step is to identify and critically analyse potential actions to prevent, or reduce the risk of concern – to deliver the goal. It is useful at this stage to provide an open-ended listing of known actions that risk managers can refer to when seeking to identify activities that may prevent or reduce the risk. National and international circumstances are likely to influence the range of actions. Nonetheless, the following are three approaches that may be useful:

- strengthening of existing national measures including enforcement of national legislation;
- reviewing risk reduction measures which have been introduced in neighbouring or other countries, or measures that have been implemented for other but similar issues; and
- identifying new and innovative risk reduction measures. Brainstorming sessions can be particularly helpful in this regard.

Learning from Others about Risk Reduction Actions

Information about the measures and policy tools used elsewhere for a particular issue or problem can often be a valuable input into the risk management decision making process. Suggestions can be obtained from:

- consulting the laws and regulations of other countries;
- interacting with neighbouring countries and countries in the region;
- finding out what other countries are doing to reduce risks.

Several challenges may be encountered when making use of this information. These may include difficulties of accessing information on risk management decisions made by countries, given that such information may not always be documented in a useful form and insufficient information about whether alternative solutions are really less risky than the issue that is causing problems.

104. As always, it is important to involve stakeholders in this process, particularly when novel risk reduction actions are being considered. Industry representatives, for example, may be able to provide valuable insights on where in the production process new risk control measures could be introduced. NGOs may also have valuable ideas to contribute, such as insights on how to reach particular target groups.

Identifying Criteria for Selecting Actions

105. Once an initial list of potential actions has been developed, it may be useful to conduct a preliminary screening that would result in a more manageable shortlist that can then be subjected to a detailed analysis. The screening process aims to eliminate those actions that are highly unlikely to be effective and/or manageable or enforceable by the country. For example, one may decide to remove all actions that require 'excessive resources' for successful implementation, or that would require long-term external support. Similarly, actions may be eliminated that require sophisticated technologies and highly trained staff.

106. In other circumstances, the risk reduction goals may state that risks need to be eliminated in a very short time period. Thus, all actions that may take longer than two months to have an impact can be eliminated. Again, the precise circumstances will determine what kind of screening may be most appropriate.

107. In order to conduct a transparent and objective evaluation of the actions included in the shortlist, it is essential to identify decision criteria, i.e. criteria against which the various

actions can be evaluated (see below). The expected effectiveness of potential actions and legislation, national obligations and limitations are key considerations.

Decision Criteria for Analysing Risk Management Options

- How quickly must the risk be addressed?
- What are the risks versus the benefits?
- What are the costs of implementation?
- What are the risks and their costs compared with the benefits, i.e. efficiency?
- How are the distribution of risks, costs and benefits distributed, i.e. fairness?
- What are the available resources?
- What are the unintended consequences, i.e. creation of new risks?
- What is the residual risk, i.e. the level that remains after implementation?
- What are the perceptions, concerns and values of interested and affected parties?
- How do interested and affected parties view risk acceptability, options and residuals?
- What other criteria can be used for option analysis in similar situations?

108. The decision criteria mentioned in this list provide a tentative inventory of actions but they may have to be adapted to the circumstances of the country. Other criteria may be required to ensure compatibility with existing national policies, goals and prior practices.

Evaluating Risk Management Actions

109. From a practical point of view, a simple way to structure and summarise discussions between stakeholders consists of developing an overview table for evaluating the best of a range of actions. The table below outlines one such approach – an Option Assessment Matrix – using pre-defined criteria. As such, it can be used as a means of comparing risk management actions listed as options, and/or prioritising them through discussions within the group of stakeholders.

Criteria	Option 1	Option 2	Option 3	Option 4	---
Effectiveness	2[7]	1	4	5	
Feasibility	4	3			
Acceptability	5				
Monitorability					
Practicability					

[7] The numbers in the table can be interpreted in the following manner:
1= decision-criteria speak strongly against the action;
2= decision-criteria speak against the action;
3= decision-criteria does neither support no speak against the action;
4= decision-criteria supports the action;
5= decision-criteria strongly supports the action.

Cost					
Cost/Benefit					
Risk/Benefit					

110. Evaluating all of the actions against the decision criteria will allow a simple comparison of the relative advantages and disadvantages of the each and thereby facilitate further group discussion. However, such a table, or other mechanistic tool, should not be seen as an end in itself. It is, first and foremost, an evaluative tool. Also it is not a mechanism to determine overall risk-management decisions. Simple addition of numbers does not include the different weights that may be assigned to particular criteria. The score means nothing in isolation, it represents but one useful approach to prioritisation of actions.

111. In some countries simpler prioritisation schemes can be considered that avoid the need for extensive detailed discussions on trade-offs between the different risk criteria outlined in the table above. For example, a more flexible matrix scheme could be based on a comparison of the risk versus the need for resources to reduce the risk. This approach helps identify which action produces the greatest outcome for the least costs. Such an approach is easily grasped but it involves real understanding of the situation and its context (Step 1) as discussed earlier and the goal (Step 2).

112. One key consideration when analysing actions and determining priorities is that the same measures proposed can affect different stakeholders in different ways. It may be necessary to tailor actions to meet the needs of specific groups, such as enforcement authorities, card issuing authorities, etc...

113. Thus the evaluative process should involve:

- scientific and professional criteria;
- national policy considerations; and
- economical/financial acceptance.

The options being addressed must be checked against the set of sub-goals to show that if implemented, the risk reduction goal can be achieved.

Who gains the benefits arising from risk reduction and who bears the costs are further important aspects when options are being evaluated.

114. Finally, an examination of the actions should include a consideration of whether any action may give rise to an adverse consequence. In other words, while reducing the risk of concern, it may increase a different type of risk.

Checklist for Step 3

- *Compile an open-ended list of known risk reduction measures as possible options that address the problem.*
- *Identify the options that make existing measures more effective as well as outline new initiatives.*
- *Consider whether all the options listed are likely to achieve the required risk reduction goal bearing in mind a range of risk factors, i.e. countries concerned, type of transport companies concerned, etc.*
- *Obtain stakeholder agreement on decision-criteria to use to select likely options from those proposed, including their feasibility, benefits, acceptability, etc.*
- *On the basis of the decision-criteria, evaluate strengths and weakness of each option.*

2.7 Step 4: Selecting and Developing the Risk Reduction Strategy

Developing the Strategy Further

115. Countries should now select the risk reduction strategy based on the evaluation of actions conducted during Step 3. The detailed strategy would include:

- selecting and prioritising the specific courses of action as option(s) for risk reduction;
- developing the risk reduction strategy necessary to achieve the sub-goals;
- planning the implementation assignments; and
- drafting of the risk reduction strategy.

Selecting the Specific Option(s) for Risk Reduction

116. When selecting the option(s) *it may be useful to consider that a combination of various actions may be the best way forward*. For example, a decision to restrict the use of the workshop card may be complemented by training of fitters and the promotion of a different type of card to get access to data (by allowing control card to have access to calibration data).

117. Another way forward could entail the adoption of a step-by-step approach in which increasingly stringent measures are implemented, if previous less stringent measures prove not to be sufficient. This may also be an effective way forward providing the choices are not limited by legislation. Thus the strategy may also involve various actions that are implemented in a sequential manner, taking into account results of interim evaluations and or monitoring.

Developing the Risk Reduction Strategy

118. When developing the strategy, the extent to which interested and affected parties were involved in selecting the risk management options should be considered. Strategy development based on decisions made through consensus may require more time and effort than a decision imposed by a regulatory agency.

119. An effective strategy should lead to a reduction or elimination of risks in the ways illustrated below.

Possible Guidelines for Decision-Making

- Maintaining and improving road safety, social protection and fair competition is the key objective of risk management.
- Where possible, give priority to preventing risks rather than controlling them.
- Consider government, departmental, branch and programme priorities when selecting risk management strategies.
- Consider the issue in context, to ensure that the strategy is comprehensive enough to achieve the desired risk management goal.
- Base the decision on the best available legal, political, scientific, economic, and other technical information. Take note of the weight of evidence supporting conclusions and uncertainties, assumptions and their potential impacts.
- Select risk management options that are feasible, effective and whose expected benefits are reasonable given the cost.
- Be sensitive to potential legal, political, economic and other indirect road safety impacts. Consider these relative to the expected benefits.
- Where possible, use a flexible approach for risk management, rather than relying solely on regulation.

120. A key factor for developing an effective risk reduction strategy, and generating necessary support, is to clearly spell out the goal and sub-goals.

121. In simple terms: an analysis of the risk reduction strategy will help determine whether the goal is being achieved. Both management and policy activities need to be clearly identified in the risk reduction strategy.

Planning Implementation Arrangements

122. The detailed risk reduction strategy should include arrangements for successful project implementation and including:

- *How* – under what legal mandate will the activity be undertaken and with what resources;
- *When* – what is the realistic timeframe for the actions; and what milestones that indicate key events should be identified; and
- *By whom* – which ministry, agency, or stakeholder group will be involved in implementing the strategy.

123. In addition, any action needs to be placed within the legal, political, administrative and scientific/technical framework of the country or international area.

124. In order to proceed logically with the planning arrangements, the specific option should be broken down into a range of *activities* and still further into *tasks* depending upon the size and complexity of the problem.

125. Resource requirements and the timelines necessary for implementing the activities and tasks also need to be identified. Identifying resources – financial, personnel, facilities, equipment, materials – for each of the activities and tasks can be tabulated in a matrix to simplify subsequent allocation of resources. Such a matrix will help establish responsibility for subsequent implementation.

126. Assigning responsibility or identifying those who would be responsible for implementing the risk reduction strategy may be a relatively easy task if a particular Ministry/Department has staff and facilities available. More usually in non EU-AETR countries, and if the problem and hence the option is not a simple one to implement, a multidisciplinary project team may be required as mentioned in Part 1. In such situations responsibilities will have to be assigned based on:

- which organisation will be involved, and who will assume overall responsibility;
- which persons have the expertise and experience to participate; and
- who has to agree to the commitments to undertake the activities, tasks and work assignments.

127. Various tools can be used to help organise responsibilities, where the tasks and organisations are matched depending upon the three points mentioned above. However, the details of specific project planning, financial and resource assignments and overall project implementation are the responsibility of the country and are outside the scope of this document.

Considering the Evaluation Criteria

128. Evaluation must be considered as integral part of any proposed risk reduction strategy for it will provide a justification for action and help determine whether further measures may be needed. Although the actual evaluation will be undertaken during Step 6, the use of indicators to quantify or qualify fulfillment of the sub-goals as mentioned earlier in Step 2 should be further discussed and relevant indicators adopted as part of the risk reduction strategy. Indicators that evaluate *both the process and the implementation strategy* should be considered. Necessary monitoring data and/or implementation information will need to be agreed and related to the agreed sub-goals for achieving the road safety and/or enforcement goal.

Drafting the Risk Reduction Strategy

129. In order to communicate the proposed risk reduction strategy to decision-makers as well as other parties that may have a role in its development and/or implementation, it is recommended that a Risk Reduction Strategy Document be prepared. The document is meant to clarify the goal, sub-goals, activities, tasks and implementation arrangements of the risk reduction strategy. It is one of the most important documents prepared during the risk management process. Once adopted, it will provide a reference document for those involved in the implementation and/or evaluation of the strategy.

130. The precise format and level of detail of such a document will depend on a number of country and problem factors. Among others, it will depend on the:

- international/national legal or regulatory framework;
- requirements for risk management;
- decision-makers to which the document will be submitted, their level of interest and awareness on the issue;
- urgency of action; and
- specific authorities/ministry requirements.

Checklist for Step 4

- *Involve all interested and affected parties in the development of the risk reduction strategy.*
- *Identify which risk reduction option, or combination of options should be selected and developed into the strategy document.*
- *Consider the option in context to ensure that the proposed strategy and its sub-goals is likely to achieve the desired risk reduction.*
- *Prioritise options into timely activities and tasks that are feasible, effective and whose expected benefits are reasonable, given the cost.*
- *Establish the parameters necessary to draft and hence submit a Risk Reduction Strategy Document with regard to its 'audience' and future implementation.*

131. While many of these factors will need to be considered prior to drafting the risk reduction strategy document, it will be particularly important to consider whom the document will be submitted to, and how it is expected to be used by the country in the future.

2.8 Step 5: Obtaining Commitments from Decision-Makers and Taking Action

Objective: *To submit the proposed risk reduction strategy to decision-makers and to take steps to ensure its adoption and effective implementation.*

Suggested output: *Adoption of the strategy, commitment of resources and implementation of the plan.*

The Decision-Making Process

132. As actual decision-making will often be the responsibility of the relevant public authorities, such as regulatory agencies, ministerial departments, ministers, several ministries acting jointly, etc., decision-makers should be explicitly briefed on:

- the problem and its context;
- the proposed goal and relevant sub-goals;
- the costs and resources that will be needed; and
- the implications and benefits of the proposed risk reduction strategy.

133. Linkages between the proposed risk reduction strategy, national policies and on-going budget priorities, should also be made to increase the likelihood of obtaining the necessary resources and support (see below).

Obtaining Decision-maker Support

When communicating with high-level decision-makers it is important to focus the message on a few key issues, in particular those likely to be of political importance. The expected benefits of risk reduction should be sensitively presented within international, national, legal, political, technical and economic norms, so that decision-makers can feel responsible for undertaking such actions.

134. Good timing can in many cases also be an important aspect in obtaining necessary support for a risk reduction strategy. Experience has shown that governments are sometimes more likely to act upon a problem following certain recent incidents. Presenting a risk reduction strategy on an issue that has just received major attention may substantially increase the chances of obtaining necessary policy support and resources. This approach is, in effect, *converting the problem into an opportunity* for effective implementation.

135. Several further points should be made clear to the decision-makers:

- *What are the specific decisions that will need to be taken and by whom?* For example, will the legislator need to pass a new act? Will certain ministers need to adopt/revise policies? Will an industry association need to formally adopt the strategy and make it a requirement for its members?
- *What specific actions will be needed to implement the strategy?* For example, if a specific regulation will need to be written, which ministry/agency will be responsible for taking this action? What actions will be expected of industry and/or other concerned parties? What action will be needed by national/international authorities?

136. Answers to such questions will help to focus the decision-makers on those actions needed on their part to set the strategy into motion.

137. The absence of adequate legislation, or policies for digital tachograph system management, can pose a challenge to this approach. In some countries where the legal framework has not been fully developed, the management policy of who has the authority and ability to control the digital tachograph introduction may not have been formally established. It may not even be clear who the relevant decision-makers are. There may not be anyone, or any organisation, that has been given the legal mandate needed to act upon the proposed strategy. Consequently, the approach outlined here may have to be adapted to re-frame the proposal within a less coordinated institutional setting.

Considering that decision-makers are unlikely to read an extensive Risk Reduction Strategy Document, it is often useful to prepare a separate Briefing Paper that provides a summary of the key points where decisions are required.

Financial Commitments

138. In order to implement a risk reduction strategy, support by decision-makers is necessary including their commitment of financial and other resources. Acquiring the budget needed to implement the strategy can be a particular challenge. Understanding the government's budgetary and policy priorities, and making a link between those issues and the strategy, can increase the chances that the strategy will be funded. Points to consider include:

- *What preparatory steps and resources may be needed to ensure that the strategy can be effectively initiated by the relevant parties?* For example, what are the specific information needs to implement the strategy? Is there a need for certain awareness raising activities? Is training needed to provide relevant individuals with the necessary skills? In case certain regulatory provisions are proposed, how can their implementation be enforced?

- *What are the likely resource requirements and time frames?* For example what funds are needed and at what point in time? Are ministerial budgets sufficient to implement the strategy, or are additional resources needed? Are national sources of funding sufficient?

139. The inclusion of a benefit statement – a comparison of risks and benefits – could be included in the briefing package for decision-makers. Only those benefits of most relevance would be included, highlighting for example, the need to address specific at risk groups or other affected parties. This approach differs from the more traditional cost/benefit approach where costs of control measures are compared with the expected benefits. Such an approach can contribute to the decision-making process.

Taking Action

140. Once the enforcement mechanisms, training plans and local communication plans and cooperation have been established, staged implementation will get underway as resources permit. Not only must the actions required be fully identified, but they must also be undertaken in a logical sequence as mentioned in Step 4. As it may be necessary to complete one action, or set of actions before another should begin, the time schedule also has to be followed.

141. Critical paths, i.e. the timing of crucial actions, may also need to be followed depending upon the risk management issue. Consequently a countermeasures plan should be considered if relevant in order to either prevent the cause of the problem, or to minimise its effects.

142. In some cases it may not be possible to implement the action plan all at once due, for example, to resource constraints. In such cases, it may be useful to consider whether there are aspects of the strategy that can be implemented immediately to reduce risks to road safety in the most cost-effective manner.

Monitoring the Implementation of Activities

143. In all cases it is important to follow and monitor the implementation of activities and tasks. Monitoring should reveal any deviation from the plans and the reasons for this will have to be addressed. It may be that the implementation plan will have to be modified if the length of time for implementation of particular tasks by partner organisations was underestimated, or when delayed as already mentioned. Monitoring in this situation is in effect a *feedback* on the implementation process.

144. Monitoring the progress of implementation can also be considered as part of *learning by doing*.

Checklist for Step 5

- *Identify the decision-makers who need to endorse/adopt the strategy and provide them with the Risk Reduction Strategy Document plus supporting Briefing Papers.*
- *Obtain the financial and other resources needed to support the risk reduction strategy.*
- *Identify whether any initial steps are needed to ensure effective strategy implementation, e.g. training of those involved in implementation.*
- *Involve interested and affected parties in implementation of the risk reduction strategy and identify milestones and other important timelines.*
- *Monitor the effective implementation of the risk management strategy with regard to milestones and timelines.*

2.9 Step 6: Evaluating Impact

Objective: *To evaluate progress with, and impact of, the risk reduction strategy and whether additional action is required.*

Suggested output: *An evaluation on the strategy's effectiveness as measured against the baseline situation and in light of the risk reduction goal; whether the current strategy should be continued, and if not, recommendations for additional risk reduction measures.*

The Benefit of an Evaluation

145. The risk reduction sub-goals and associated indicators, as identified in Step 2, and adopted in the risk reduction strategy (Step 4) should serve as the basis for the evaluation. An evaluation is an important and integral part of the risk management decision-making process for it helps quantify the attainment of the goal and sub-goals. It provides information on results of present actions as well as on what lessons can be learned to guide future risk management decision-making, including:

- whether the actions were implemented as planned (milestones and time frames) – as conducted in Step 5;
- whether assumptions made during identification of the problem and its context were correct;
- whether the actions have resulted in risk reductions; and
- whether new information has emerged that requires a strengthening and/or modification to the risk management plan.

The evaluation results should be communicated to all stakeholders as part of an accountability process.

Planning an Evaluation

146. Means and mechanisms for an evaluation will have been built into the risk reduction strategy procedure at Step 4. Issues to consider include:

- why is the evaluation being conducted;
- when will the evaluation be conducted;
- who should conduct it and what resources are required;
- what should be evaluated; and
- who will receive the evaluation and what will they do with it.

147. In reality, evaluation is concerned with examining the outcomes of the strategy, gathering the supporting information and determining if the actions implemented successfully reduced the risk – did the results measure up to the goal?

Undertaking the Evaluation

148. **Evaluation of the strategy asks simply 'did it achieve the goal'?** This often involves an evaluation of the **longer-term outcomes** that may take several or more years to be measurable let alone clearly apparent that the risks have been reduced. Such a delay before the outcome may be seen may arise from the time between exposure reduction to a particular risk and speed of development of the effect.

As the credibility of the evaluation and the evaluators is involved, stakeholder participation is essential. However, the amount of effort devoted to the evaluation should be commensurate with the magnitude and severity of the risk.

149. In order to evaluate the risk reduction strategy, several basic steps are involved. These involve especially an evaluation of the chosen indicators to examine whether the sub-goals were met and the overall goal achieved. The steps include:

- collection of relevant information, and listing of the actions taken;
- analysis of the information, methods adopted and judgments made;
- preparation of conclusions of the effectiveness of the strategy and recommendations; and
- documentation and reporting on the evaluation.

150. To ensure cost-effective evaluations, maximum use should be made of existing information rather than develop extensive monitoring programmes. It is usually not necessary to have an elaborate information and resource intensive monitoring scheme. Linkages should be made with other types of monitoring programmes for use in establishing baseline information. The indicators developed in Step 2 for quantifying sub-goals would be used as the evaluation tools.

The Role of Indicators

151. Indicators as outlined in Step 2 are part of the reporting procedures for evaluating the extent to which actions taken during Steps 1 – 5 have achieved the required outcome and hence the desired goal.

152. An example could involve compliance with regulatory guidelines. Did the enforcement programme achieve the stated sub-goal? Have the actions achieved the necessary road safety protection as envisaged in the initial policy development? If not then what elements within the six-step cycle have to be revised and re-applied?

153. Irrespective of the evaluation approach adopted, a view on how successful the implementation plan has been – the purpose of Step 6 – can be gauged with reference to 'evaluating progress towards meeting the goal of risk reduction'. This evaluation of progress is often referred to as measuring 'distance to goal'.

The Need for Change

154. The evaluation may reveal that the implementation process was not effectively addressed by some stakeholders, or, there were faults in the design of the risk reduction strategy. Alternatively, critical information gaps during the planning stage meant that the effectiveness of the risk reduction was reduced.

155. Irrespective of the reason for the evaluation being only a partial success, further action may be necessary. This could take the form of other information being sought that initiates a modification to the risk reduction strategy. Consequently the sub-goals may need to be revised, but the goal remains the same. The implementation process may have to be revised and re-drafted as necessary and several of the cycle steps repeated.

156. The whole six-step process may not have to be modified following an evaluation. Rather it may entail a re-definition of a particular step(s). The process is an iterative one but as the time-scale is often long between initiating Step 1 and the outcome as measured by Step 6, a flexible risk reduction procedure should be adopted. The extent of the problem(s) and whether it frequently occurs will affect the implementation of the six-step process. New information, new ideas, new procedures and new perspectives may need to be integrated into the procedure to revise management actions.

157. Risk management does not end with successful implementation. The risk reduction plan may start slowly and with increasing experience may gradually build in momentum and enable other priority issues to be tackled more rapidly. An opportunity to 'wave the banner' to raise the visibility of the risk management programme should be promoted through the stakeholders, as well as through the lead government agency. In this way the action can become a promotional device for addressing the next risk management activity.

Checklist for Step 6

- *Were the agreed-to sub-goals met?*
- *Was the risk reduction goal achieved, was it cost-effective?*
- *Is further action required to modify the strategy and/or to continue with the implementation?*
- *What lessons can be learned regarding the basis for the strategy, i.e. a review of adverse problems, unexpected effects, and institutional cooperation?*