

Methodological Guide

RSI

Road Safety Inspections



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Road Safety Inspections

“Tools” Collection



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Introduction

With the Itinerary Road Safety Inspection (RSI) approach, the French government aimed to design a simple and practical method for improving road safety over the national road network.

These inspections form one of the four pillars of the future European directive concerning the management of road infrastructure safety (and which will be applicable over the European network - TERN). The other three pillars are:

- upstream impact studies for projects;
- road safety audits for all new road projects;
- specific steps to improve the safety of existing roads.

This guide defines the methodology for carrying out these itinerary road safety inspections. The inspection visits, which are the core of this approach, are described and tools suggested. Visits must be made by appropriately qualified personnel who take a **fresh look** at the situation; i.e. people who are not familiar with the itinerary and who are better able to observe the particularities of the road and the roadside than local road operators who no longer see them.

In order to refine this inspection methodology, on-site experiments were carried out. The contributions from them were very much appreciated by local road operators, both for the pertinence of the observations and as a tool for team dialog and management. Concretely, they showed that on-site reports lead, in the vast majority of cases, to actions that are easy to implement at costs that can be included within a normal budget.

Finally, inspections reveal the network service quality and provide an indicator to be followed in each new inspection.

As decided by the Inter-ministerial Committee for Road Safety (ICRS) on 13 February 2008, these inspections will be carried out periodically over the entire national road network starting in 2009 and will be repeated every three years.

Road safety inspections are part of a global, coherent and shared policy of road infrastructure safety intended to lower accident rates on French roads.

Definition and Objectives

The aim of the Itinerary Road Safety Inspection (RSI) is to report on the particularities of a road, its surrounding area and its general environment (hereinafter referred to as “events” in this guide) that can influence user behaviour or affect his passive safety and thus have repercussions on road safety.

The inspection applies to existing roads:

- It differs from the safety audit of the Road Project Safety Monitoring (RPSM), which is carried out on a new project or the redevelopment of an existing road;
- It is separate from the operating visit made by patrol groups, which essentially concerns deterioration of the carriageway, related installations, restraint systems and signs etc.;
- It differs from the safety diagnosis, which relies primarily on an in-depth analysis of accident reports over a given period.

The basic concept is to provide a method that will help the road operator to improve their knowledge of their network by inspection visits made by someone from the outside who has a **fresh look**. These visits will be made by appropriately qualified personnel after being trained both in the method to be used and in the principal road safety stakes.

These qualified people, hereinafter called “inspectors” in this guide, do not make any value judgments about the road inspected and do not propose any course of action. Their mission is to identify events that strike them and to report them. Possible courses of action in response are in the competence and under the responsibility of the road operator who is familiar with the local context.

The findings of these visits are not intended to be exhaustive and do not need to make reference to standards or regulations. They are in no case inspections in the literal sense of the word; i.e. an external control with careful examination of itineraries in the form of hierarchical supervision.

The objective of this approach is to provide the road operator with a tool to improve the road safety of his network by prevention and to develop “safety vigilance” on the road; in addition, it will help him in his management by providing a fresh look.

To attain this objective, the approach aims to be:

- preventive;
- **simple, effective and practical;**
- recurrent and systematic;
- **at the initiative of and for the benefit of the road operator.**

The systematic inspection visit of an itinerary thus consists of a quick and practical rating of the main configurations that strike or surprise the user, whatever their means of transport, on an existing road. The idea is to take a “second look” in order to detect configurations that the road operator no longer notices and that merit his attention.

Furthermore, the inspection of a homogeneous itinerary (from one pole to another) should allow its consistency the user’s point of view to be assessed.



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Part One – Methodology

The road safety inspection procedure is described in this section: on the one hand, by listing its general principles and, on the other, by presenting the main steps:

- Step 1: scheduling and request by the road operator,
- Step 2: preparation of the inspection visit,
- Step 3: the inspection visit itself,
- Step 4: the feedback of observations (report, presentation to the road operator),
- Step 5: examination of inspection report,
- Step 6: production of the road operator's report,
- Step 7: follow-up and evaluation.

These different steps correspond to each of the tasks to be accomplished by the various RSI personnel, from the scheduling of the visit to its use by the road operator's services.

The **first step** is the responsibility of the road operator, who schedules and requests the on-site visit from a pool of inspectors.

The **second step** is carried out with close collaboration between the designated **inspectors** and the local **road operator** to prepare the visit at optimum conditions.

The **third and fourth steps** are the responsibility of the **visit team**. Their goal is make the visit and then communicate their results to the road operator.

The **final steps** are the responsibility of the **road operator** alone. The production of possible action or corrective measures following an examination of the inspectors' observations may involve various authorities (local officials, engineering offices etc.).

Tool files included in this guide help in carrying out these steps. They are named in the following way: [TF 1, TF 2, etc.].

General Inspection Principles

Assumptions

On the National Road Network (NRN), the itinerary road safety inspection is carried out systematically every three years.

In order to carry out inspection visits, the road operator uses an inspection team comprising two qualified people who have been specifically trained for this mission (cf. Profile of an Inspector).

Inspectors are hierarchically independent of the local road operator and are thus not involved in the maintenance and operation of the road inspected. In addition, it is essential that they do not personally know the network to be visited.

They are chosen for their **fresh look**, and their training will have allowed them to acquire the necessary road safety basis. Obviously, subsequent visits should be made by other inspectors in order to maintain the "fresh look" principle.

These inspectors note their impressions or factual events that the road operator will deal with (the inspector calls attention to certain points without suggesting how they should be dealt with) on the basis of his knowledge of the local context.

The road operator never participates in the visit.

The Inspection Visit

The inspection is carried out by car in both directions on the link section under study, at day and at night.

The RSI approach reaches its limits of usefulness when crossing overly urban built-up areas.

The inspector assesses events on the road and its environment without making reference to standards and regulations: the visit is immediate and efficient, and concentrates on the safety issue from the user's point of view. If possible, different types of vehicle¹ will be used, providing different viewing heights (motorcycles, trucks, pedestrians in small conurbations etc.).

The inspector should always bear in mind the RSI principle of a **fresh look**: observations are to be noted during the inspector's single visit.

The broad outlines of an inspection visit are based on existing road safety knowledge and on proven danger factors presenting a major challenge. Taking them into account is implicit and global, with no information grid validation which would encumber the system and would not correspond to the stated spirit of the RSI approach.



¹ in particular, for example, on major roads leading to an agglomeration

Step 1: Scheduling and Request

The road operator determines his inspection schedule on the basis of knowledge of his network (traffic, accident rate etc.), initiatives carried out in parallel (USER etc.) and scheduled roadworks.

Ideally, he draws up a multi-year inspection schedule of local itineraries in such a way that the entire network is visited once every three years.

The road operator requests two inspectors per itinerary (from the pool of National Road Network inspectors). After obtaining their agreement and that of their regulatory authority, the road operator places an order naming the inspectors (conventions to be defined between services) according to hierarchical procedure.

The road operator determines the start and end points of the zone to be studied. Experiments have shown that for an inspection visit, a distance of 80 km for a two-way road (and 120 km for a road with separate carriageways (e.g., 2x2 lanes)) takes around four hours for a day visit and three hours for a night visit. We recommend inspecting a complete, homogeneous itinerary between two major poles, for example.

On the basis of this scheduling, a request (or specification) for the itinerary is drawn up [TF 1], detailing:

- the itinerary (recommendations to be given about the length of the itinerary according to the type of road and number of small conurbations);
- the period during which the inspection visit is wanted, taking into account adverse events such as school leaving time, building sites, seasonal work in relation to harvests or planting, rush hours due to traffic at shopping centres or business parks or stopping points for school buses or public transportation;
- measures undertaken for inspector safety: authorisation to drive on the hard shoulder, preparation of protective signalling [TF 2];
- documents to be supplied for preparing the inspection, in particular maps with distances between KMs and other maps to a scale allowing a proper report (with representation of buildings for conurbations and place names), as well as traffic information (including percentage of trucks), road status and any events (construction sites, fairs, very urbanised areas etc.);
- the vehicle and the equipment provided to the inspectors;
- contact for inspection follow-up.



Step 2: Preparation

A non-negligible amount of time is required for proper preparation. This will guarantee optimal visit procedure and reporting.

Road operator

The road operator needs to prepare for the inspection work by supplying maps, material and vehicles [TF 2; TF 3], verifying KM markings, etc. The inter-KM distances are to be furnished to ensure proper reporting of local features, as well as any maps that will facilitate inspection (for example, representations of buildings for the agglomerations and place names).

Certain data should be given to the inspectors in order to familiarise them with the context of the itinerary to be inspected and to anticipate stewardship issues:

- traffic, including percentage of trucks;
- status of the road;
- any events (construction sites, fairs, very urbanised areas, etc.);
- list of service stations and restaurants.

Inspectors

The inspection visit is prepared by the team formed at the end of Step 1 on the basis of the specifications supplied by the road operator.

Inspectors shall:

- plan in detail and define the inspection visit based on the itinerary to be inspected and its specific features (to be decided in agreement with the road operator: visit dates, visit schedule, date of submission of the report and oral presentation etc.);
- check the safety equipment: a clean car equipped with a flashing light and red-and-white-striped bands (plus AK5-type roof lights[“highway maintenance”], with three flashing lights, if possible), high-visibility safety clothing (for visibility to other road users) for everyone involved, a hazard triangle;
- have the necessary logistics resources:
 - digital camera with high-capacity memory card,
 - report form [TF 5] and writing material,
 - on-board hectometer (if possible),
 - detailed geographical map of area,
 - mobile phone,
 - list of service stations and restaurants,
 - GPS system, possibly (to facilitate localisation of particular points),
 - recording material: digital camera, tape recorder/dictaphone;
- define roles within the inspection team (they should be alternated to maintain vigilance and effectiveness);
- obtain and test the aforesaid equipment.



Step 3: Inspection Visit

The inspection visit is intended to identify the salient points concerning road safety criteria associated with the infrastructure, its environment, signage and equipment, and, above all, to the consistency of these criteria in relation to road usage. It is not intended to be exhaustive and does not need to make reference to standards or regulations.

These findings make reference to the subjects and criteria listed below [TF 4].

The subjects were defined on the basis of to existing road safety knowledge (RSS, MRD, ICTAAL, RPSM and recent research findings) about risk factors presenting a major stake. However, the notion of a “fresh look” should prevail and these subjects are meant only to encourage inspectors to think about all aspects of a situation.

There are seven criteria for evaluating the safety of a road (cf. Road and Street Safety), which are used as an aid in inspection visits:

- visibility (the physical possibility of users seeing each other or of a user seeing obstacles, signs, traffic islands etc.);
- legibility (easy decoding of the infrastructure and its surroundings);
- appropriateness of infrastructure to dynamic constraints (rupture of the vehicle’s dynamic equilibrium);
- possibilities of avoidance and recovery (in the event of a vehicle accidentally leaving the carriageway);
- limiting the gravity of of crashes (not aggravating the consequences of any accident);
- consistency of all the elements on the road and surroundings (in relation to all the above criteria);
- flow management with the objective of safety (consideration of all users within the context of the entire road environment).



Profile of an Inspector

Inspectors need to be familiar with roads in general and with road infrastructure safety so that they can detect shortcomings, anomalies and inconsistencies while maintaining sufficient “distance” to focus on the basics (i.e. inspectors must not be “conditioned” by extensive experience in areas involving standards and regulations; they are requested to “replace” their professional point of view with that of users).

Training

While reinforcing the “fresh look” approach and keeping an inspector in the role of a road user, the qualifying training has two goals: on the one hand, to teach the methodology, and on the other, to focus on the challenges of the approach. It is not designed to train an inspector to become a road safety specialist and even less to seek out non-compliance with regulations.

Certification

Inspectors will be certified after training as recommended by trainers; they will then become part of the national pool of RSI inspectors.

Procedure

The inspector will note any events [TF 5] related to the inspection subjects [TF 4].

Inspection visits are carried out by car and may be supplemented on a motorcycle. Stops are possible (photographs, reformulation of observations etc.). Inspectors may sometimes need to retrace their steps (during the visit) to note further details, take photographs etc.

It is important that each type of user, with their specific field of vision and trajectory, be considered by the inspectors.

In order to note events observed, the inspector needs to:

- move within the traffic flow at a suitable speed for correctly recording information,
- use the camera, dictaphone, maps and dedicated computer terminal, if present,
- stop when necessary to take photographs.

KMs are noted as an event. This allows better reporting and thus better use of the inspection report results. A GPS-linked computer application is currently being studied with the aim of facilitating information gathering (KM, photos, voice recording etc.) and transfer.

During the inspection visit, inspectors should be constantly aware that all interventions on the road and roadside present a potentially dangerous situation, both for the inspectors and for other users [TF 2]. Visits are made only to link sections and do not include slip roads and rest stop areas.

Agglomerations are visited. However, for those of an overly marked urban character the road operator must decide whether they should be included in the visit, given the complex nature of the urban network.

These visits should not be made during a continuous period of bad weather; in the same way, it is preferable to avoid rush hours or demonstrations and special events.



Interactions with other Field Actions

Inspection visits are complementary with, among others, the following actions:

- operating patrols whose application and periodicity are defined by the road operator's operating policy;
- the USER approach for which, as for all other data of external origin, study managers shall use inspection reports (report 1) to help reach their conclusions;
- studies prior to the implementation of RPSM (Road Project Safety Monitoring), which the road operator will take into account for scheduling itinerary inspections around recent roadworks;
- themed visits that road operators carry out regularly on equipment and that may also be initiated by the RSI (restraint systems or railings that can be considered as part of both road maintenance and safety etc.);
- themed visits for rainwater drainage systems, civil engineering work etc. relevant in terms of regulations and standards and concerning road maintenance more than road safety.

Step 4: Communication of Observations

After the inspection visit, inspectors prepare one report only [TF 6] for the entire itinerary inspected. Addressed to the road operator, this report comprises three parts, plus annexes with maps and illustrations:

- the first part includes details of the road inspected, the composition of the inspection visit team, dates, periods and conditions at the time of the inspection visit. It highlights general data obtained in the preparatory phase in the office and re-states the road operator's request;
- the second part, which is the heart of the inspection, describes the events identified and comments on how they are problematic to users. It may include photographs in support (as thumbnails);
- events are reported without ranking them, per direction of travel, in KM order, from the start of the itinerary;
- events noted at night are also to be included by KM order and identified by using a different colour; RSS criteria that are affected are listed;
- the third part is a summary;
- annexes include photographs (e.g. in 15x10 format), explanatory diagrams and the visit report [TF 5].

Since the approach is meant to be practical, this inspection report needs to be given to the road operator at the presentation meeting within 15 days after the date of the visit.

Presentation Meeting

The road operator organises an oral presentation of the inspection visit after the inspection report (report 1) has been written by the inspectors. This presentation will allow the reasons for certain events identified to be specified and proposals for action to be oriented by taking into account user perception via the inspector's impressions.

The various people involved in the management, maintenance and operation of the itinerary inspected may be invited to this presentation.

This approach is beneficial from an educational and management viewpoint and can be considered as integral to Road Safety Practices Management (RSPM).



Step 5: Examination of the Inspection Report (report 1)

The inspection report (report 1) serves as the basis for the preparation of the road operator's report [TF 7], which includes an action plan. The road operator shall study the inspection report with all of its team. The inspection report will be taken into consideration in the daily management of the network.

Examination of the Visit Report

The examination consists of:

- taking note of the inspectors' remarks,
- checking any questionable points (locate, measure a height, verify conformity, absence of a restraint system etc.),
- globalising comments with respect to the itinerary etc.

To verify certain points, this examination may require a quick second visit of the site (or counter-visit) or even the use of a video camera or other devices with extensive recording capabilities (Itinerary Analysis Vehicle, Road Imagery by Digital Camera, etc.).

In concrete terms, when writing a report, we recommend providing a response to each event noted and drawing up an action plan in relation to the issues identified.

Certain events require an overview of the itinerary based on an analysis of accidents on the section inspected from reports produced by the police and on a careful study of behaviours (speeds, trajectories, etc.): this means using other approaches, such as themed visits or a USER-type approach.



On-site Counter-Visit

During the counter-visit, administrative officials must always keep in mind that all interventions at the roadside represent a situation of potential danger for themselves or for other users, as in the inspection visit.

The team of officials need to ensure that they bring with them appropriate equipment in perfect working order before moving around on site to take the various measurements [TF 3].

Step 6: Production of the Road Operator's Report

Follow-up to the Inspection Report

Using the inspection report, the road operator attempts to provide an appropriate response to each event [TF 7]. The report is to lead to the production of an action plan and a pre-programme of action that will be submitted for internal management discussion.

To ensure RSI practicality as a tool, the road operator's representative writes his report proposing a prioritised list of actions within fifteen days to a month from receipt of the inspection report.

These actions will be scheduled in such a way that they take into account various non-exclusive and interdependent concepts:

- implementation deadlines;
- need for additional on-site visits to estimate or gain a better understanding of the issue raised;
- need for an additional study;
- classification within an approach using scheduled themed visits (restraint systems, wrong-way driving, rest stop areas, etc.);
- procedure in the context of an existing operation (USER, existing structure, etc.);
- temporary palliative action and classification within an existing or future development project;
- classification without follow-up (and explanation of this choice for reasons of traceability);
- etc.

The resulting action plan will classify action on different levels; the following five levels are proposed:

- 1 - actions that are part of normal maintenance (for example: removal of vegetation hiding a sign);
- 2 - actions that are part of normal maintenance and that require a very minor commitment within the normal budget (for example: replacement of a damaged sign);
- 3 - actions requiring brief study (for example, signposting bends on the itinerary);
- 4 - actions requiring extensive study and/or specific financing (for example: modification of an junction) and those pertaining to another approach (USER, themed visit, etc.) or another road operator or party (territorial authority etc.);
- 5 - finally, the road operator may classify observations as without follow-up, depending on the context or on local policy.

For each level, the road operator shall decide on completion deadlines and set priorities according to their administrative policy.



*Example of an event resolved by the road operator between preparation of experiments and the experimental visit.
Three months later, will the inspector be able to note anything?*

For events noted that are under the mayor's responsibility, the road operator will inform the latter.

Likewise, the road operator shall provide information concerning actions planned for road junctions (other roads, trains, canals etc.) whose administration is the responsibility of another authority or road operator.

Actions should be planned rigorously to meet the safety objectives to be established. Consistency is to be ensured between itineraries and road use and function, as well as any development of the itinerary at different times.

The guide entitled "Route diagnosis and action plans" which is part of the USER approach contains information about possible actions to be implemented and their prioritisation; sheets 9 to 11 provide suggestions for action with respect to different criteria or possible further study.

Step 7: Follow-up and Evaluation

Follow-up

Follow-up concerns all the steps of the RSI approach. Subjects that should be followed up in particular are:

- scheduling of inspections over the entire road network with the objective of repeating them every three years; follow-up items are the production of a schedule and observation of it;
- the review of the implementation of inspection visits:
 - availability of inspectors,
 - conditions under which inspections are carried out (equipment used, difficulties encountered),
 - number of events noted and their RSS subjects,
 - production of reports (deadlines for reports and presentations), etc.
- scheduling of corrective action following an inspection by drawing up and observing a concrete schedule (percentage of events taken care of between two visits).

Evaluation

RSIs are evaluated with regard to the objectives assigned to the approach, which are:

- the road operator's improved knowledge of his local network;
- development of road safety "vigilance" on the part of the road operator's operating personnel, whose awareness should be raised via the inspection results;
- improvement or maintenance of road safety on the network inspected.

It would be a good idea for each road operator to identify relevant indicators to assess the effectiveness of inspection visits and of the use of their findings, as suggested by the following proposals:

- classification of events by category (for example, the seven criteria of the Road and Street Safety manual, in order to identify the broad lines of improvement for network operation, maintenance or development; changes in the number of remarks made by inspectors per category for a given itinerary will be an indicator of whether or not the conclusions of previous inspections were taken into account);
- assessment of actions carried out over the road operator's entire network following the inspections (personnel awareness-raising to inspection results, change to road operation procedures, changes to maintenance policy, percentage of events treated etc.) and listing of difficulties encountered in order to take inspection remarks into account (correction period, financing etc.);
- follow-up² of accident rate per itinerary; this requires data from at least three years ago.



² The accident rate on the national road network should be increasingly diffuse or, at least, its variability due to the infrastructure less easy to identify; therefore, a precise analysis would be hardly credible.

Part Two - Tools

Tool File 1: Inspection Visit Request Template

The present request, issued according to hierarchical procedure by the road operator for the attention of Inspectors ___ and ___, concerns the road safety inspection of highway ___ between ___ and ___.

The intervention is requested for the week of ___.

General Presentation of RSI

Because road safety has been identified as a “national priority” by the government, the Ministry responsible for road safety has rolled out three parallel approaches: Road Safety Practices Management (RSPM) and User Safety on Existing Roads (USER), which offer reciprocal support, and Road Project Safety Monitoring (RPSM).

However, these concrete actions for the highway network did not include a systematic and regular inspection such as that carried out in other areas – for example, buildings for public use. Thus, the Road Safety Itinerary Inspection (RSI) approach was created.

Inspection Visit Participants

The person responsible for the inspection visit is ___, Manager of the ___ Service, represented locally by ___.

The inspectors are:

- Mr/Ms X ___ of department ___
- Mr/Ms Y ___ of department ___

Inspection Visit Procedure

The procedure is described in the RSI guide. The on-site visit will be done on the itinerary included between ___ and ___.

The visit will take place within the normal working hours. The team may to change the visits due to weather conditions.

The team will use a regularly equipped light department vehicle provided by the road operator for on-site visits. It will be supplied with the proper equipment as described in the guide.

Preparation for the Inspection Visit

On receipt of this request, the inspectors shall contact the road operator's operator's local representative, Mr _____, to define the conditions of the inspection visit (dates of intervention and communication of results, resources etc.).

Conditions

Scheduling

The visit shall start on _____ in the presence of the road operator's manager or his representative.

This start shall allow last-minute instructions to be given to the inspectors.

Visit Report

The inspection team shall submit to the road operator a visit report (report 1) in accordance with the template found in the guide, within 15 days from the date of visit.

Presentation Meeting

The inspection team shall present its report to the road operator in the presence of the officials concerned, on _____.

**Signed for the Director,
____, by the
Departmental Manager,**

—

.....

CC:

Tool File 2: Review of Safety Instructions during Visits

Whether inspectors or road operators, those involved must always bear in mind that any intervention on the road or roadside places them in a potentially dangerous situation, either to themselves or to other users.

The inspection visit of a two-way road differs from the inspection visit of a divided carriageway road in all respects: traffic and speed, conditions for stopping at the roadside, particular points to be inspected, etc. The safety instructions are thus different in each case and are the subject of two different sections in this file.

In addition, this RSI guide suggests that when an inspection visit is made, the following should be taken into account: on the one hand, seasonal weather variations, in particular where they have a major influence on traffic and safety; and on the other, natural light conditions and visits at night. These working conditions expose those involved to risks, and they should thus follow the special safety instructions described in the third part.

Generally speaking, to ensure the travel safety of inspection teams, the following are required:

- use of a vehicle fitted with an emergency light and red-and-white stripes (and possibly a roof message panel of the AK5, “road work ahead” type, with three flashing lights);
- the donning of class 2 or 3 high-visibility safety clothing to be seen by other users;
- a check that there is a warning triangle in the vehicle;
- finally, the carrying of a mobile phone in proper working order.



The inspection visit should be carried out primarily by car. However, it could be instructive in urban areas to get out of the car.

An additional examination can also be carried out on a motorcycle in order to better understand risks for this type of vehicle travelling on certain road configurations. If a motorcycle is used, the following remarks are to be noted:

- it is unwise to ask the motorcycle driver to navigate and observe potentially dangerous road situations at the same time;
- it is difficult to envisage all services being able to provide a motorcycle for inspection. This presupposes the availability of a properly maintained motorcycle (in perfect working order), as well as the availability of an experienced driver familiar with the motorcycle³.

Whatever the inspection mode, participants must observe the following safety rules:

- observe the Highway Code;
- keep hands on the wheel: the driver must concentrate on driving and must never, in any case, let go of the wheel to write down an event or to take a photograph of the road.

³ Motorcycle accident statistics show that unfamiliarity with the cycle is a factor in a large proportion of traffic accidents involving physical injury.

Safety Instructions for Two-way Roads

On this type of road, an inspection of an existing network can proceed in different ways:

- by car at the speed limit;
- by car under the speed limit, without stopping;
- by car with stops;
- by motorcycle;
- on foot.

The visit is by car at the speed limit

This type of inspection offers a good level of safety for the inspectors and needs no particular comment. Participants may signal their presence by turning on the vehicle lights.

The visit is by car under the speed limit

For certain inspection visit needs (filming the road, for example), the inspection team may travel at a slower speed. In this case, participants must:

- travel by adapting speed to traffic and by avoiding the creation a *lengthynuisance* to other users;
- if necessary, turn on their vehicle emergency light when travelling at a slow speed.

The visit requires stops

The inspection visit team might have to stop their vehicle in order to take photographs or write notes. In this case, participants should follow these instructions:

- turn the emergency light slightly before and when stopping to allow other road-users to anticipate the event and change their behaviour accordingly;
- pay careful attention to traffic;
- carry out manoeuvres safely, following the Highway Code;
- if possible, pull off the road in a place with good reciprocal visibility;
- prefer short-term parking on a neighbouring secondary road, a car park or a nearby petrol station;
- on the link section, ensure there is sufficient width on the road side for parking;
- stop on a straight section rather than on a bend;
- turn around preferably on secondary roads (remember to keep the vehicle's drive wheels on the stable part of the carriageway to help when setting off again);
- stand behind an existing restraint system or, if there is none, stand in such a way as to be protected by the vehicle;
- group together travel by different participants;
- partners should always be ready to alert each other to an approaching vehicle when taking photographs outside the vehicle;
- set off again by merging into the traffic flow without creating a nuisance for other users;
- turn off the emergency light once the vehicle is back in the traffic.

For visits to small towns, the instructions are similar to those described above (moving and stopping, with the exception of special provisions for open country).

The visit is by motorcycle

An additional visit can be made by motorcycle. To do this, the motorcycle can be followed at a distance by a support car. The motorcycle driver, as well as the car team, must observe the following additional safety rules:

- the motorcyclist must wear high-visibility safety clothing;
- the motorcyclist must record observations by talking into a dictaphone (or by transmitting this information to the co-pilot of the support car for transcription);
- the driver of the support car must maintain a sufficient safety distance to avoid collision in the event of a sudden manoeuvre or halt by the motorcyclist (count two seconds).

Safety Recommendations for Roads with Divided Carriageways

In this section, we distinguish between motorway inspections and inspections of 2x2 lanes and similar.

Working conditions are more dangerous on divided roads, since speeds are higher on these roads and travellers using them may be surprised to suddenly encounter a light vehicle moving at a slower speed or a pedestrian at the side of the road. For this reason, the inspection team should be especially vigilant during this type of visit.

In all cases, stopping on the left shoulder and pedestrian movements on the left shoulder or on the central median are prohibited.

On the motorway

On the motorway, stopping on the hard shoulder for inspection purposes should be avoided. Basic safety rules are the same as those listed above, fully complying with the Highway Code, in particular:

- travel by adapting to the traffic and by avoiding the creation of a lengthy nuisance to other users;
- keep hands on the wheel: the driver should concentrate on driving and must never, in any case, let go of the wheel to write down an event or take a photograph of the road;
- on a motorcycle, observe only and talk into a dictaphone (or transmit information to the co-pilot of the support car for transcription).

Very exceptionally, if the inspection visit requires driving slowly on the hard shoulder, the inspectors must obtain the appropriate safety means and authorisations from the road operator. Movement on foot should be the exception.

Participants should preferably park their vehicle at rest areas or service stations.

As a second choice, they may park on the emergency bays on the link section or behind an existing restraint system. In any case, 200 m of visibility should be maintained when parking on a link section.

Movements on foot shall be behind restraint systems where there are any.

On divided roads other than motorways

On other types of divided roads, the number of temporary stops should be limited (the situation should be evaluated on a case-by-case basis) and on the strict condition that inspectors follow the safety instructions below, which are in addition to those for two-way roads:

- park preferably on a nearby slip road or emergency bay;
- when stopping on a link section and leaving the car to take notes, stay as far as possible from the road, behind an existing restraint system.

These instructions are to be geared to the traffic conditions (speed and density).

Exposure to Risk

In this RSI guide, it is suggested that inspection visits be carried out with allowance for seasonal weather variations, in particular where they have a major impact on traffic and safety.

The inspection team may thus need to travel during the winter or when it is raining. Depending on the quantity of rainfall or on road conditions, the team may have to postpone its inspection mission. On a wet road, inspections can still proceed, bearing in mind grip is less than normal.

During the colder seasons (autumn, winter), when there is a possible risk of black ice or snow, inspectors should remember that grip may be insufficient to allow a high level of safety when carrying out the inspection.

In addition, this RSI guide stipulates night-time inspections (in addition to daytime inspections). They should be done at a speed that will in no way be a nuisance to other users. Stops are to be limited and visits at a lower speed are inadvisable; if necessary, the emergency light should be turned on to alert other users.



Tool File 3: Preparation of Equipment

Whether inspectors or road operators, participants must be constantly aware that all interventions on the road or roadside place them in a situation that is potentially dangerous, for themselves and for other users. Consequently, equipment should be geared to this situation.

In addition to these safety obligations, the on-site intervention team should prepare for the visit. It is to ensure it carries the appropriate equipment in perfect working order before travelling to site in order to avoid the nuisance of forgotten items where the inspection is a long way from base.

The Inspectors

<i>Visit Vehicle</i>	<i>Comments</i>
Light vehicle equipped with an emergency light and red-and-white stripes, plus roof message panel of the AK5, “road work ahead” type, possibly with three flashing lights	Removal of distinguishing marks is not required since inspectors are not concerned with user behaviour. Safety instructions to be applied on-site can be found in Tool File 2 of this guide. In the case of a visit by motorcycle, a support car may need to be planned.
Warning triangle ⁴	In case of unexpected problems (flat tyre, breakdown, accident)
On-board hectometric counter, if possible	To facilitate localisation of events detected
Map reader (multi-directional roof light)	For night-time visits
Fuel card	
<i>Inspectors</i>	<i>Comments</i>
High-visibility safety clothing for each participant	To be seen by other users
Appropriate clothing for the weather conditions	Possibly, have a pair of boots for movements on foot on loose or damaged roadsides
Mobile phone	To call or be called
<i>Localisation of Events</i>	<i>Comments</i>
Possibly a GPS (system integrated into the study)	GPS indicates the surrounding secondary network
Detailed geographical map of the area	
<i>Measurement Devices</i>	<i>Comments</i>
Digital camera with high-speed shutter and a set of charged batteries	Ensure the memory card is sufficient to take around a hundred photographs. A spareset of batteries is recommended.
Possibly a digital video camera	Filming the road allows an issue to be recorded which traffic circumstances prevent from being detected “live”
<i>Data Collection</i>	<i>Comments</i>
Tape recorder/dictaphone	To record observations
Pad of paper and writing materials or a dedicated computer terminal	

⁴ Mandatory in all vehicles as of 1 July 2008 in France

Road Operators

<i>Counter-visit Vehicle</i>	<i>Comments</i>
Light vehicle equipped with an emergency light and red-and-white-striped bands, plus roof message panel of the AK5, “road work ahead” type, possibly with three flashing lights	Same observations as for inspectors
Warning triangle	ditto
<i>Possibly, for Measurements</i>	<i>Comments</i>
Can of spray paint	To indicate a specific location on the road or shoulder
Decametric measuring tape	
Measuring wheel	
Spirit level	To evaluate the transversal profile, particularly on a bend
Stopwatch	To measure travel times and distances
Hand-held radar (optional)	To measure instantaneous speeds
Digital camera with high-speed shutter with a set of charged batteries	
Digital camera	

Tool File 4: Inspectors' Reference Material

Reference material is a non-exhaustive set of indispensable items that the inspector should be familiar with when visiting the infrastructure.

This visit shall be approached differently when carried out at night, since certain items in the reference material may require special attention as compared to others (legibility, for instance).

This reference material is based on key challenges and known safety factors. The subjects below concern more precisely the safety of the road and its immediate surroundings; however, the inspector is also to consider the consistency of the road with its environment.

Two-way Roads

Overall legibility of the itinerary

- non-appropriateness of the layout and equipment for the type of road;
- heterogeneity of road type;
- discontinuity and heterogeneity of equipment and layout.

Bends

Geometry

- presence of an isolated bend with a small radius or a bend on an easy section (radius less than about 150 m; cf. RSS, section 5);
- presence of a bend with a moderate radius (less than about 250 m; cf. RSS, section 5) featuring either a diminishing radius or low grip.

Legibility

- presence of a bend with poor legibility; users do not clearly see the bend;
- inconsistent bend signage (reference guide: "How to Signal Bends," SETRA 2002).

Visibility

- presence of a bend hidden by a rise and presenting insufficient visibility of the bend (less than three seconds – MRD reference)



Roadside

Possibilities of avoidance and recovery:

- presence of grass or hard-core;
- presence of loose gravel;
- presence of a height difference of more than 6 cm between the road and the verge.

Limitation of the gravity of crashes

- presence of obstacles in the safety zone (4 m): trees, posts, non-chamfered pipe heads, masonry, overly large sign supports, overly large guardrails, lighting columns etc;

- absence of a motorcycle barrier rail on bends with a radius of less than 250 m;
- presence of an abrupt change in level of more than 4 m;
- superfluous or improperly fixed restraint systems: unnecessary items, dangerous extremities, insufficient heights, insufficient lengths.

Junctions and access roads

Type of junction

- type of junction inconsistent with traffic;
- grade junction including more than one direct road per direction.

Reciprocal visibility

For users crossing the road or turning left at junctions with heavy traffic on the secant:

- presence of hidden markings on the horizontal alignment or the longitudinal profile;
- presence of occasional masking due to signing, vegetation etc;
- excessive width of a secondary road that encourages users to form two lanes.

Legibility

For users of a secondary road:

- poor legibility of the presence of a junction, as well as the way it works, trajectories to be followed and priorities

“Access only” roads

- presence of numerous “access only” roads

Cross-section

Three-lane road

- presence of a centre lane not allocated to either traffic direction;
- absence of lane for turning left at junctions or “access only” roads.

Overtaking zone

- absence of a merging area at the end of an overtaking zone;
- presence of a difficult point upstream: bend with a small radius, grade junction, urban crossing without anything to encourage users to slow down;
- overtaking zone longer than 2,000 m that encourages users to get accustomed to driving at speed.

Carriageway width

- poor distribution of carriageway width and shoulder width (MRD, page 54)

Vulnerable users

- absence of or interruption in pedestrian and cycle paths near scattered buildings or at the edge of a conurbation;
- presence of a zone of conflict between different types of users;
- no allowance for the disabled.

Vertical and horizontal signage

- discontinuity, lack of homogeneity, inconsistency, lack of legibility and visibility;
- speed limit inappropriate for location and users.

Divided Roads

Overall legibility of itinerary

- unsuitability of layout and equipment for type of road;
- heterogeneity of road type;
- discontinuity and heterogeneity of equipment and layout.

Bends

Geometry

- presence of an isolated bend with a small radius or a bend on an easy section;
- presence of a bend unlike the preceding bend;
- presence of a bend with a moderate radius having either a diminishing radius or low grip.

Legibility

- presence of a bend with poor legibility; users cannot clearly see the bend

Visibility

- presence of a bend hidden by a rise and with insufficient visibility of the bend

Longitudinal profile

- presence of a difficult point after a section with a major change in level;
- presence of a section with a moderate slope between two sections of steep slope (on a motorway);
- absence of a lane for slower traffic, uphill or downhill.

The roadside

Possibilities of avoidance, recovery and emergency halts

- absence or insufficient width of the hard shoulder shoulder on the right;
- absence of shoulder on the left;
- presence of a large difference in level between the road and the left shoulder or between the road and the hard shoulder or right shoulder.

Limitation of gravity of crashes

- absence of restraint system on the central median (except for widths over 12 m) on motorways;
- presence of obstacles in the safety zone (4 m): trees, posts, non-chamfered pipe heads, masonry, overly large sign supports, overly large guardrails, lighting columns etc;
- absence of a motorcycle barrier rail on the outside of bends with a radius less than 400 m;
- superfluous or improperly fixed restraint systems: unnecessary items, dangerous extremities, insufficient heights, insufficient lengths that do not take into consideration the exit trajectory;

- absence of restraint systems for trucks by a sensitive installation (railway, road, catchment area etc.) or on a structure for crossing a route (road, railway, river).

Junctions and access roads

Type of junction

- presence of a grade junction or access for nearby residents at the same level;
- geometry favouring entry in the wrong direction;
- presence of non-isolated fixed obstacles inside a wider section of road or on the central island of a roundabout: trees, posts, non-chamfered pipe heads, masonry, overly large sign supports, overly large guardrails, lighting columns etc.



Legibility and visibility

- poor visibility or legibility at interchange entries or exits

Discontinuity of cross-section

- presence of a change from a dual-carriageway cross-section to a single-carriageway cross-section without any layout which would substantially change the driver's behaviour

Special users

- bicycle, pedestrian or slow-moving vehicle travel on divided roads with a speed limit of 110 km/h or 130 km/h

Vertical and horizontal signing

- lack of consistency, legibility, visibility;
- speed limit not appropriate for location.

Crossing of agglomerations

Credibility of entrances

Indication of transitions

Junctions

- clarity of priorities

Pedestrian users

- continuity of pathways;
- length of crossings;
- reciprocal visibility.




Tool File 5: Example of Visit Report (Report 0)

Visit Report concerning Road Safety Inspection (RSI) of Itineraries

Road Inspected
<i>RN 10</i>

General data

Information about the RSI visit	
The RSI visit was carried out by:	<i>G�rard Dessiaume – Assistant Study Director, SETRA</i> Certification no.: <i>Daniel Lemoine – Study Director, CERTU</i> Certification no.: 
Description of site	<i>RN 10 from Poitiers to Montlieu La Garde</i> <i>2x2; two-way; Km 0 to ... KM..+... to KM..+...</i>
Date and time	<i>3 August 2007</i> <i>from 14:20 to 18:20</i>
Weather conditions	<i>Sunny and warm</i>
Other participants	/
Preparatory work	<i>Information on the existence of a long-term construction site</i>
Request	<i>Calibration of an experimental visit for COTTECH</i>

Documents and equipment used (Images/drawing/text)		
Quantity	Type of information	Description
<i>2</i>	<i>Michelin road maps</i>	
<i>1</i>	<i>Writing pad</i>	
<i>1</i>	<i>Camera</i>	

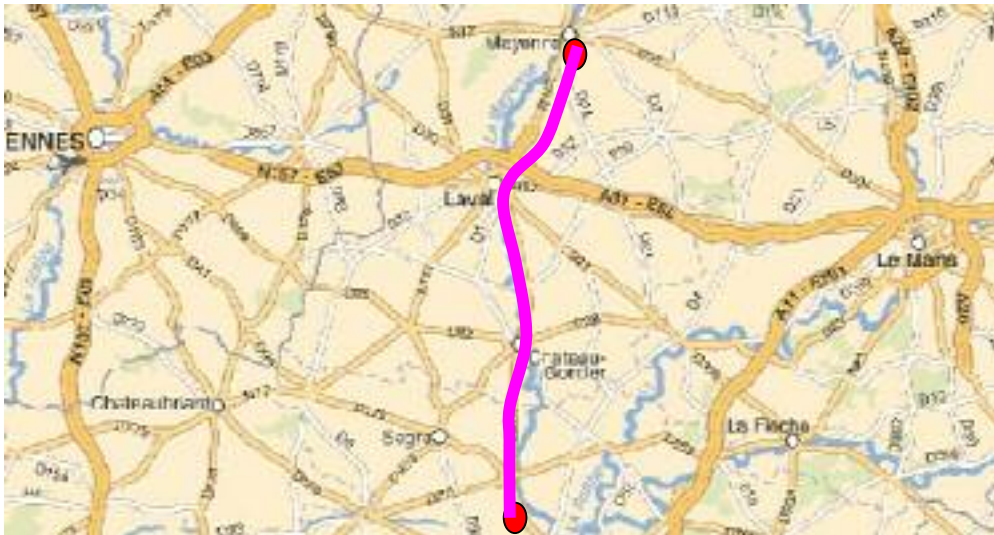
List of observations – “+” direction

	KM of nearest upstream road	Km veh.	Observations	Comments	Photos y/n
<i>1</i>	<i>60+000</i>		<i>Event no. 1</i>	<i>14:20</i>	<i>n</i>
<i>2</i>			<i>...</i>		<i>y</i>

Tool File 6: Example of Inspection Report (Report 1)

RSI Visit Report

RN 162 from Mayenne to Lion d'Angers





General data about the RSI visit

Visit carried out by:	G�rard Dessiaume – SETRA – Certification no.: 001 Daniel Lemoine – CERTU – Certification no.: 007
Description of site	2x2; two-way; beltway; agglomerations KM 0+150 to KM 82+867
Date and time	27 July 2007 From 9:15 to 15:30, then from 21:10 to 23:50
Weather conditions	Drizzle for the first hour in the morning
Preparatory work	SETRA vehicle, maps with KMs provided by the district
Request	DIR West on 4 June 2007

Documents and equipment used (images/drawing/text)



Quantity	Description	Type of information
2	Michelin road maps	Geographical reference points
1	Dictaphone	
1	Camera	
1	Note pad	

List of events in increasing order

No.	KM	Observations ⁵	Comments	RSS Criteria Affected ⁶	Photographs Thumbnails
1	1+600	Small 70 sign lost in visual pollution; blocks the footpath.	Poor legibility and visibility due to proximity of the shopping centre	L, V	
2	1+800	Trucks prohibited sign + small “directional” signs, including advertising.	Mix of sign types: interferes with signage visibility	V	



⁵ In yellow: events noted at night.

⁶ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ⁷	Comments	RSS Criteria Affected ⁸	Photographs Thumbnails
3	2+700	EB10 and 70 sign located 50 m after.	50 m at 50 km/h!	C	
4	2+900	"2x2" sign at 3,500 m hidden by vegetation.		V	
5	3+200	Group of traffic lights sign+50+town silhouette: small, low and partially hidden from a distance.	Confused Non-professional sign	L	


⁷ In yellow: events noted at night.

⁸ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ⁹	Comments	RSS Criteria Affected ¹⁰	Photographs Thumbnails
6	4+000	Town of Moulay, steep descent with dangerous turn to the right at the bottom. Junction located just before the turn with half-erased and confused markings.	Loss of legibility	L	 
7	6+000	Guardrails on turn appear low		G	


⁹ In yellow: events noted at night.

¹⁰ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ¹¹	Comments	RSS Criteria Affected ¹²	Photographs Thumbnails
8	6+300	<p>Zone preceding left turn at grade junction poorly defined: zebra crossing, then no-man's-land with dubious surfacing.</p> <p>Dubious advance signage for left-turn.</p> <p>End of 2x2 in the opposite direction.</p>	<p>Confusing junction</p> <p>See diagram in Annex A</p>	L, V	
9		Delineators on guardrail only	For what purpose?	C, L	
10	8+200	Grade junction with crossing of median on 2x2	Consistency	C	



¹¹ In yellow: events noted at night.

¹² V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ¹³	Comments	RSS Criteria Affected ¹⁴	Photographs Thumbnails
11	10+400	Absence of directional sign for road to right	Risk of hesitation	L, V	
12	11+400	Junction with left turn forbidden but presence of sign indicating this direction.	To right: towards SACE	C, L	
13	15+100	Start of discontinuous line before summit of small hill. Presence of building.	Visibility seems reduced	V	
14	16+200	Abandoned section of road creates false perspective.	Loss of legibility	L	
15	> 17+100	No possibility of stopping on the 2x2 section, except at emergency call box at a distance of about 10 km.	Up to ~KM 28	E	

¹³ In yellow: events noted at night.

¹⁴ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ¹⁵	Comments	RSS ¹⁶ Criteria Affected	Photographs Thumbnails
16	19+650	Row of trees closely bordering the road.		G	
17	21+300	Shoulder in poor condition.		E	
18	23+900	Pedestrians on shoulder in agglomeration.	Non-treated shoulder resembling a traffic lane	F	

¹⁵ In yellow: events noted at night.

¹⁶ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

Summary

Divided sections

On 2x2 sections, no major problems; however, the absence of possible parking between Mayenne and Laval over 10 km (see Point 15) and the presence of delineators that are not necessarily useful should be noted.

Finally, two or three grade junctions pose legibility and signage problems (points 10, 11 and 12).

Two-way sections

On the two-way sections, some signs are hidden by vegetation (points 4 and 5).

The possibility of overtaking at the summit of hills should be reconsidered.

A junction with buffer area beforehand is poorly identified with a confusing left turn not indicated on the road.

Agglomerations

In the agglomeration at Moulay, a junction at the bottom of a descent could cause problems.

Non-professional EB10 signs, signs drowned in particular in the visual pollution of a shopping centre.

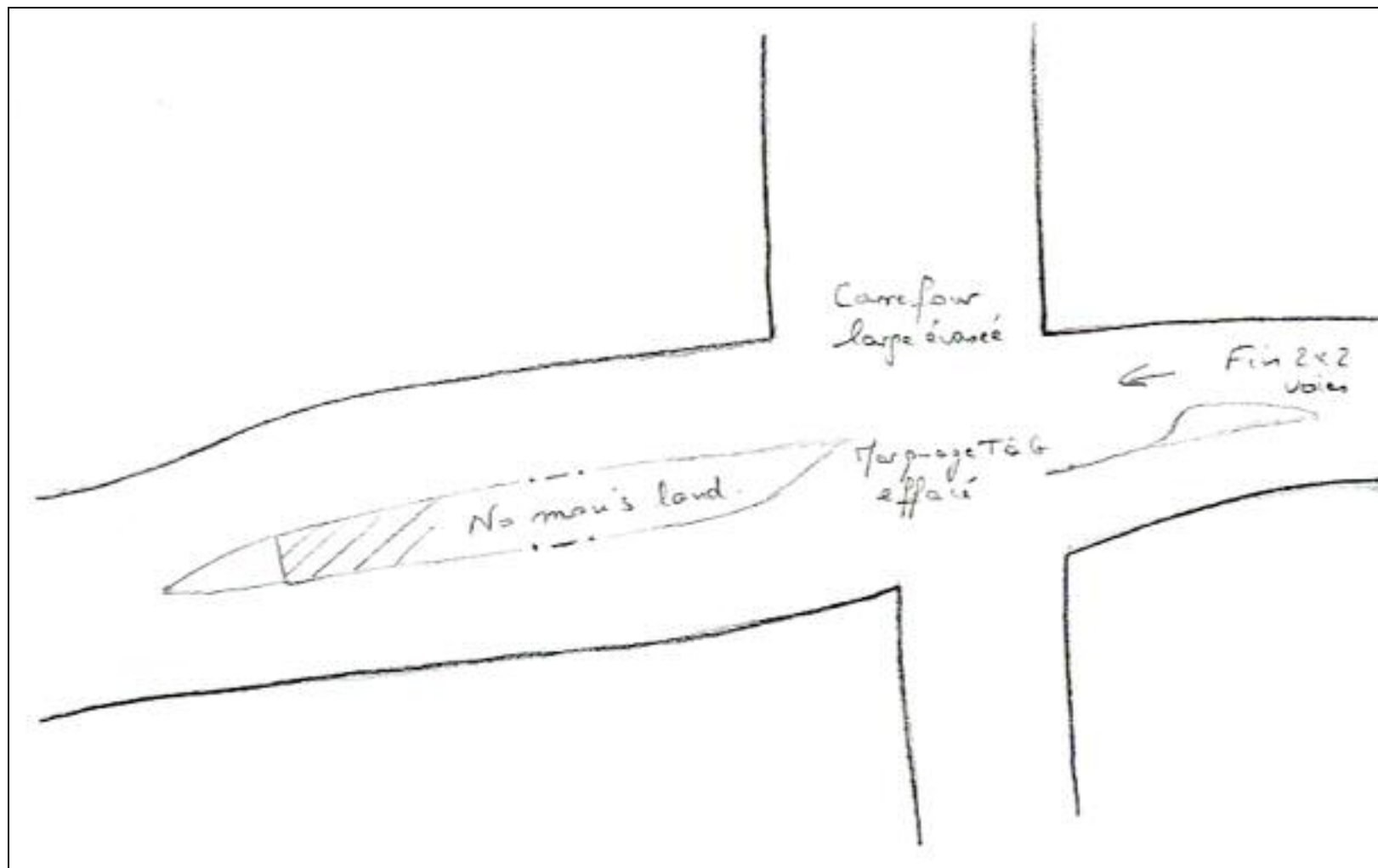
Special points

Guardrails appear too low (see Point 7).

Annexes

Annex A

Diagram of junction, point 8



Annex B



no. 1



no. 2



no. 3



no. 5



no. 6



no. 6



no. 8



no. 8



no. 8




no. 13

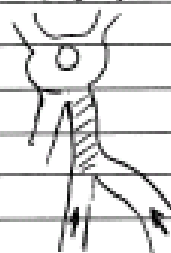


no. 16



no. 18

- Pb. visibilité approche girant. des? Gome
 - ↳ ouillage coté B
francise p. l.
ne p. l. : $\frac{1}{2}$ p. l. bien
visibilité
SD à l'entrée
- fontie de P en 1/4 k
- de gres à feu coté B. bott. très chial
 - ↳ obstruc. p. 
- envref. industrie liti
obstr. bord. chass. roue
- so. traq. dur
- girant avec mass
trajicane dirigé
Ø traversée p.
- Cor. vaste (6) ne A. Chiquet
zone de pas prise en compte par l'après 1/3 k
- pp affai face Aviz
- 1° gir. depuis CH voie adj. - 2nd gir. barymche (ai on arrive).
Pb. liti



Tool File 7: Example of Road Operator’s Report (Report 2)



Road Safety Inspection Report



General data about RSI Visit	
Visit carried out by:	Gérard Dessiaume – SETRA – Certification no.: 001 Daniel Lemoine – CERTU – Certification no.: 007
Description of site	2x2; two-way; beltway; agglomerations KM 0+150 to KM 82+867
Date and time	27 July 2007 From 9:15 to 15:30, then from 21:10 to 23:50
Weather conditions	Drizzle for the first hour in the morning
Preparatory work	SETRA vehicle, maps with KMs provided by the district
Request	DIR West on June 4, 2007



Documents and equipment used (images/drawing/text)		
Quantity	Description	Type of information
2	Michelin road maps	Geographical reference points
1	Dictaphone	
1	Camera	
1	Note pad	

List of events noted in increasing direction

No.	KM	Observations ¹⁷	Comments (in particular with respect to RSS criteria)	RSS ¹⁸ Criteria Affected	Photographs Thumbnails	ACTIONS PLANNED
1	1+600	70 sign small and in visual pollution; blocks the footpath.	Poor legibility and visibility due to proximity of the shopping centre	L, V		Contact the mayor (4)
2	1+800	Trucks prohibited sign + small “directional” signs, including advertising.	Mix of sign types: signage visibility	V		Contact the mayor (4)



¹⁷ In yellow: events noted at night.

¹⁸ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ¹⁹	Comments (in particular with respect to RSS criteria)	RSS ²⁰ Criteria Affected	Photographs Thumbnails	ACTIONS PLANNED
3	2+700	EB10 and 70 sign located 50 m after.	50 m at 50 km/h!	C		Relocate 70 sign right after the EB 10 (4)
4	2+900	"2x2" sign at 3,500 m hidden by vegetation.		V		Have vegetation trimmed (1)
5	3+200	Group of traffic lights sign+50+town silhouette: small, low and partially hidden from a distance.	Confused Non-professional sign	L		Change sign (2)


¹⁹ In yellow: events noted at night.

²⁰ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ²¹	Comments (in particular with respect to RSS criteria)	RSS ²² Criteria Affected	Photographs Thumbnails	ACTIONS PLANNED
6	4+000	Town of Moulay, steep descent with dangerous turn to the right at the bottom. Junction located just before the turn with erased and confused markings.	Loss of legibility	L	 	Carry out on-site study (3)
7	6+000	Guardrails on turn appear low		G		Have guardrails checked (1)


²¹ In yellow: events noted at night.

²² V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ²³	Comments (in particular with regard to RSS criteria)	RSS ²⁴ Criteria Affected	Photographs Thumbnails	ACTIONS PLANNED
8	6+300	<p>Zone preceding left turn at grade junction poorly defined: zebra crossing, then no-man's-land with dubious coating.</p> <p>Dubious pre-signage for left turn.</p> <p>End of 2x2 in the opposite direction.</p>	<p>Confusing junction</p> <p>See diagram in Annex A</p>	L, V		Make an on-site diagnosis (3 or 4)
9		Delineators on guardrail only	For what purpose?	C, L		Modify when guard rails are replaced (4)



²³ In yellow: events noted at night.

²⁴ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ²⁵	Comments (in particular with regard to RSS criteria)	RSS ²⁶ Criteria Affected	Photographs Thumbnails	ACTIONS PLANNED
10	8+200	Grade junction with crossing of median on 2x2	Consistency	C		No follow-up (5)
11	10+400	Absence of directional sign for road at right	Risk of hesitation	L, V		Check direction signage on entire itinerary (3)
12	11+400	Junction with left turn forbidden but presence of sign indicating this direction.	At right: toward SACE	C, L		Check direction signage on entire itinerary (3)
13	15+100	Start of discontinuous line before summit of small hill. Presence of building.	Visibility seems reduced	V		Make on-site verification (3)
14	16+200	Abandoned section of road creates false perspective.	Loss of legibility	L		To be studied (4)
15	> 17+100	No possibility of stopping on the 2x2 section except at emergency call box at a distance of around 10 km	Up to ~KM 28	E		Carry out study on entire itinerary (4)

²⁵ In yellow: events noted at night.

²⁶ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

No.	KM	Observations ²⁷	Comments (in particular with regard to RSS criteria)	RSS ²⁸ Criteria Affected	Photographs Thumbnails	ACTIONS PLANNED
16	19+65 0	Row of trees closely bordering the road.		G		Plan for installation of restraint systems (3)
17	21+30 0	Shoulder in poor condition.		E		Check entire itinerary and rank danger levels (1 – 4)
18	23+90 0	Pedestrians on shoulder in agglomeration.	Non-treated shoulder resembles a traffic lane	F		Contact the mayor and suggest the study of a pedestrian pathway (4)

²⁷ In yellow: events noted at night.

²⁸ V: visibility, L: legibility, D: appropriateness of infrastructure to dynamic constraints, E: possibility of avoidance and recovery, G: limitation of crash severity, C: consistency of all road elements with environment, F: flow management with the objective of safety

Actions

	Action level				
	Pertaining to normal maintenance	Pertaining to normal maintenance requiring minor budget commitment	Requiring brief study	Requiring an in-depth study and/or specific financing or pertaining to another approach or another road operator or contact	No follow-up
Event no.	4, 6, 7, 17	5	6, 8, 11, 12, 13, 16	1, 2, 3, 8, 9, 14, 15, 17, 18	10

It would then be a good idea to draw up a schedule listing the deadlines, people responsible, partners and financing.

Tool File 8: Road Operator’s Guide

To analyse the *points raised by the inspectors* that require in-depth study, the road operator may usefully refer to two RPSM guides, the “Audit Guide” and the “Quality Approach Guide, since the RSI approach is not meant to define all the good practices.

These guides were created in 2003 for road projects on the national road network with the objective of considering road safety at all stages of a project, from planning with the quality approach, to monitoring with an audit before implementation, to follow-up assessments at six months and three years.

These guides include lists of questions organised by main topic (link section, interchange, roundabout, junction etc.) and by secondary topic (the seven safety criteria found in RSS).

If necessary, road operators may refer to them in order to provide a response to observations made by the inspectors.

Organisation by main and secondary topic facilitates searches.

The audit guide allows the issue raised to be identified and departures from the rule to be measured. For each question, references to texts, guides, standards etc. are provided.

To provide a response, road operators may if necessary refer to the quality approach guide which deals with design phases.



Tool File 9: Example of RSI use in the DIRs

		Actions à mener	Direction	Service référent SR de la DIR	Inspecteurs	Districts	Service ingénierie	Observations
Avant	étape n°1	Propose à la direction la liste des itinéraires à inspecter		P				
		Arrête la liste des itinéraires à inspecter chaque année	P					
Visite d'inspection	étape n°2	Propose à la direction la liste des inspecteurs et les lettres de commande pour chaque itinéraire		P				
		Organisent les visites avec les inspecteurs		P		a		
	étape n°3	Mettent à disposition des inspecteurs les moyens (ex. véhicules, doc, ...)		a		P		
		Réalisent les visites d'inspection			P			
	étape n°4	Rédigent les compte rendu			P			sous 15 jours
		Organise la réunion de restitution				P		
Après	étape n°5	Participent à la réunion de restitution		a	a	P		
		Examinent les compte rendu et réalisent une contre visite de terrain			P	a		
	étape n°6	Rédigent un rapport de propositions d'actions hiérarchisées		a		P	a	sous un mois après la visite
		Propose à la direction la liste des actions à entreprendre et les modalités de financement		P				La mise en œuvre des actions urgentes ne doit pas attendre cette phase
		Arrête les actions à entreprendre	P					
	étape n°7	Lancent la mise en œuvre des actions				P	a	
		Assurent le suivi, l'évaluation de la mise en œuvre des actions			P		a	

légende : P = pilote de l'action a = assiste le pilote

This table summarises all the actions to be carried out at each step to implement the RSI approach. (see table in English next page)

		Action to be taken	Management	DIR referral department	Inspectors	Districts	Engineering Department	Observations
Before	Step 1	Propose a list of itineraries to be inspected to the management		P				
		Draw up the list of itineraries to be inspected each year	P					
		Propose to management the list of inspectors and request letters for each itinerary		P				
Inspection visit	Step 2	Organise visits with inspectors		P		a		
		Provide inspectors with necessary resources (car, documents etc.)		a		P		
	Step 3	Carry out inspection visits			P			
	Step 4	Write inspection reports			P			Within 15 days
		Organise presentation meeting					P	
		Attend presentation meeting		a	a		P	
Step 5	Examine inspection reports and make a counter-visit to the site			P	a			
After	Step 6	Propose a prioritised list of actions		a		P	a	Within a month after the visit
		Propose to management a list of actions to be undertaken and the financial conditions		P				Implementation of urgent actions must be done before this phase phase
		Decide which actions to undertake	P					
		Launch implementation of actions				P	a	
	Step 7	Ensure follow-up and evaluation of action implementation		P		a		

Key: P = pilots action; a = assists pilot

Abbreviations or acronyms

AADT	Average Annual Daily Traffic (in France: TMJA)
BAU	Emergency lane
COS	Contractor services
DGR	French Roads Directorate
DIR	French Interdepartmental Roadway Directorate (operator of national roadway network)
DSCR	French Roadway Safety and Traffic Directorate
GPS	Global Positioning System (by satellite)
IBI	Inspection Before Implementation ((in France: IPMS)
IIRS	Interministerial Instructions on Roadway Signage (in France: IISR)
ITCDLH	Instructions on Technical Conditions for Design of Linking Highways (in France: ICTAAL)
ITCDUE	Instructions on Technical Conditions for Design of Urban Expressways (in France: ICTAVRU)
KM	Kilometric Marker
MRD	Main Roadway Design (in France: ARP)
NRN	National Roadway Network
PL	Truck
PVU	Private Vehicle Unit (in France: UVP)
RAU	Emergency call network
RD	Departmental Road
RN	National Road
RPSM	Road Project Safety Monitoring (in France: CSPR)
RSII	Road Safety Itinerary Inspection (in France: ISRI)
RSPM	Road Safety Practices Management (in France: MPSR)
RSS	Road and Street Safety (in France: SSR)
TERN	Trans-European Road Network (in France: RTE)
UOC CEI)	Upkeep and Operation Centre (local administration of national roadway network) (in France:
USER	User Safety on Existing Roads ((in France: SURE)
VRU	Urban expressway

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The purpose of the Itinerary Road Safety Inspection (RSI) is to identify events on roads, roadsides and their environment that may influence user behaviour or affect the user's passive safety, thus having an impact on road safety.

To this end, a method has been developed that allows road operators to request inspections with the main objective of taking a "fresh look" when visiting a given itinerary. Certified personnel will make these visits; since they are not familiar with the itinerary, they will be able to identify particularities of the road that are no longer seen by local road operators.

The objective of this approach is to provide the road operator with an additional tool for improving road safety on the local road network.

To achieve this objective, the approach is designed to be:

- preventive;
- simple, effective and practical;
- recurrent and systematic;
- done on the initiative and for the benefit of the road operator.

This guide describes the method in seven steps. It also includes nine tool files that will allow the inspectors and road operators to carry out inspection visits and utilise the results of these inspections.