Variable Message Signs Harmonisation
SPECIFIC MESSAGES RECOMMENDED

Deployment guideline

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<td>DGII</td>
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<tr>
<td>ITS</td>
<td>Intelligent Transport Systems</td>
</tr>
<tr>
<td>RE.2</td>
<td>Consolidated Resolution 2. Road Signs and Signals</td>
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<tr>
<td>TERN</td>
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<tr>
<td>UNECE</td>
<td>United Nations Economic Commission for Europe</td>
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<td>VMS</td>
<td>Variable Message Signs</td>
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1 Introduction

1.1 The concept of the EasyWay Deployment Guidelines

1.1.1 Preliminary note

This document is one in a set of documents created as part of the EasyWay project, a project for Europe-wide ITS deployment on main TERN corridors driven by national road authorities and operators with associated partners including the automotive industry, telecom operators and public transport stakeholders.

This particular Deployment Guideline is a supporting guideline therefore it differs from the other Guidelines (particularly “service” guidelines concerning Traveller Information, Traffic Management and Freight and Logistic Services) in terms of structure and wording. The focus of the present Guideline is the information elements (including structure and disposition) to be shown in VMS displays. This makes a close connection with the other Guidelines whose main focus is also the European road user. Supporting Guidelines as this one intend to ease and smooth the applicability of Service Guidelines in terms of the very last interface with road users: displayed information.

EasyWay has started in 2007 and has established a huge body of knowledge and consensus for harmonised deployment of these ITS services. This knowledge has been captured in documents providing guidance on service deployment, the EasyWay Deployment Guidelines.

The Deployment Guidelines had started with their first iteration mainly capturing best practice. This supported service deployment in EasyWay very strongly by

• making EasyWay actors in deployment cognisant of the experiences made in other parts of Europe
• helping to avoid making errors others has already made
• speeding up deployment by highlighting important and critical issues to look at

Meanwhile, this best practice has successfully contributed to ITS deployments all over Europe, so it is possible now to take the logical next step and start actually recommending those elements of service deployment that have proven their contribution to both, the success of the local deployment as well as the European added value of harmonised deployment for seamless and interoperable services.

1.1.2 Applying Deployment Guidelines – the “comply or explain” principle

The step from descriptive best practice towards clear recommendations is reflected in the document structure used for this generation of the Deployment Guidelines. Besides this introduction and the annexes that cover specific additional material, the Deployment Guidelines consist of two main sections:

Part A – this part covers the recommendations and requirements that have proven to contribute to successful deployment and have been agreed by the EasyWay partners as elements that should be part of all deployments of this particular service in the scope of EasyWay. Thus, the content of this section is prescriptive by nature and EasyWay partners are expected to ensure that their deployments are compliant to the specifications in this section. Wherever concrete circumstances in a project do not allow fully following these recommendations, EasyWay partners are expected to provide a substantial explanation for the necessity for this deviation. This concept is known as the “comply or explain” principle.

Part B – this part offers an opportunity to provide more valuable but less prescriptive information. Such supplementary information may contained – but is not limited to – regional/national examples of deployment and business model aspects like stakeholder involvement or cost/benefit analysis results.
1.1.3 Use of Language in Part A

This Guideline includes 9 numbered working packages concerning specific VMS recommended. Such recommendations involve, synthetically, the fundamental prescriptions to be followed. Road signs are legal objects already subject to two powerful dispositions: National Rules and the UNECE’s 1968 Convention terms (at least for countries having ratified the 1968 Convention). This Guideline contains no design principle counter-advising basic dispositions already established by the 1968 Convention (or the WP.1 RE.2).

All working packages contained in this Guideline are numbered, shown in italics. Such recommendations are intended as “SHOULD” recommendations, meaning that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
1.2 ITS-Service Profile

The Expert and Study Group 4 focuses on VMS harmonisation. As expressed in the Working Book [1], our compilation of the current use of VMS displays by 13 countries, “if we use the same specific VMS design to inform about the same road event we can say we have achieved harmonisation. So, in order to reach VMS harmonisation, VMS per road/traffic situation has to be specifically addressed by all participants (be it at national or international level).” (p. 13). It is important to note that both ESG4 DGI (General Principles of Design) and DGII (Specific Messages Recommended) work complementary in the same direction.

DGI is a simplified set of grammar rules to communicate with European drivers via VMS. DGI brings 33 general principles of VMS design that focus on different aspects concerning the structure, order and functionality of the information displayed considering the end user: the European driver. For example, any VMS displayed in Europe should be functional in terms of human processing capabilities (e.g., not using too many words, avoiding scrolling, avoiding alternate messages, and the like). Also, the order and structure of the informative elements displayed (pictograms, alphanumeric, text) is important in terms of the European driver in order to create regularities when we “talk” to them via VMS (e.g., the main element should be a representative pictogram, the location should be place accordingly, the advice follows—not precedes- the main information, and the like). We are not describing road/traffic situations and actions through VMS in natural language, but using “Picto+” language. And such language only sounds well for European drivers when certain rules are followed.

DGII (specific messages recommended) is an inventory of specific, grammatically correct and frequently used “sentences” for VMS. In order to simplify the applicability of DGI’s general design principles (that one should learn by hart before designing any VMS) we focus on a number of specific road traffic situations (congestion, road closures, wind, etc.), then we consider the main specific informative elements intervening (e.g., congestion pictogram, no exit available, short distance to congestion, drivers should moderate speed) and build up the message ourselves in accordance with DGI. One has to consider, in addition, that not every road operator in Europe works with the same VMS type, so we also help translating DGI’s general design principles into this or that specific VMS type (this is not always easy). Complementary to DGI, DGII is a powerful, important vector for VMS harmonisation.

DGII is a growing and dynamic document as road traffic itself is. The signs included in the DGII are consolidated in terms of the 1968 Convention and the RE.2 [2, 3]. However, it is expected that more road traffic situations are part of them in the next months and years. The tools to widen DGII are the present and future comprehension tests, the actions undertaken at the UNECE WP.1 level and the revision of the signing practices that are already part of the 3rd edition of the WB (2011). DGI works well with general principles. DGII needs every specific informative element to make sense, notably pictograms. The 1968 Convention took 60 years to be adopted, from the first four danger warning pictograms in 1909, to the 146 regulatory, danger warning and informative pictograms in 1968 [4]. To be sure, we should progress much faster.
2 Part A: Harmonization Requirements

2.1 Service Definition

ESG4 DGII present the general philosophy of VMS design, synthesized through its 33 principles. Any VMS operator in Europe, by following such recommendations when composing VMS, will contribute to the construction of a more harmonised TERN.

ESG4 DGII goes one important step beyond, notably in terms of harmonisation. It recommends the specific messages for a number of road/traffic situations. The analogy with the 1968 Convention is appropriate here. The 1968 Convention catalogues a number of fundamental information elements for road displays. Most of them are road signs, but not only: arrow dispositions, abbreviations, even Europeanisms (e.g., Taxi) are there too. Conversely, the ESG4 DGII catalogues specific structured dispositions for information elements: where to place the main pictogram, where the text nuancing it, which location structures are recommended, etc. We have termed that particular hybrid “language” PICTO+: pictogram + the rest (numbers, words, abbreviations, other pictograms big and small, etc.). So, if the 1968 Convention catalogues the right “words” for the international signing system, the ESG4 DGII catalogues appropriate “sentences” for VMS within the European scene.

ESG4 DGII and DGII are both to be used and wisely combined. At the present time, DGII is nearer to a final stage than DGII. This is only normal as no DGII is possible without a mature DGI. Comprehension tests look for pictogram and alphanumeric combinations able to accelerate the harmonisation program. Removing the red triangle, the so-called topological signs, or the different distance-length alphanumeric combinations are the most relevant examples. The process is slow, because the more empirically solid informative elements are also brought to the WP.1 floor at UNECE, through the VMS Unit work. DGII does not pretend to harmonised European displays at the risk of disharmonising the 1968 Convention catalogue.

As a result, there is certain discrepancy between the number of road traffic situations covered by the Working Book (10 Working Packages, 54 situations) and the 3 Working Packages and 6 road/traffic situations (plus 2 more, on coming) that can be harmonised and form part of this DGII. Note, in particular, that the present ESG4 DGII covers the most important areas concerning road/traffic situations:

- Congestion
- Road Works
- Weather related information

DGII recognises that there is a big diversity in technology, and also in the types of VMS used. The recommendations given are suited for the main types of VMS used currently:

- Text-only VMS with 2-3 lines of text Road Works
- Text VMS with a pictogram area on the left side
- Text VMS with 2 pictogram areas on the left side
- Text VMS with a pictogram area on both sides
- Full matrix panels, which can display bitmaps
2.2 Functional Requirements

ESG4 DGII deals with different VMS devices. By considering these main five VMS types we intend to ease the harmonisation task, translating the principles described in DGI into specific message sets, and considering the specific informative elements (pictograms, words, symbols) that make VMS harmonisation possible. According to the PICTO+ idea, VMS harmonisation depends critically on the availability and placement of such informative elements. Hence, road operators should take care that the corresponding road sign design recommended by DGII actually can be followed given pixel matrix capabilities, for example.

An ideal pictogram will tell a lot clearly. Telling a lot clearly is not only a matter of smart design: it is also a matter of technical display capabilities. Many VMS in Europe still display pictograms on 32x32 and text in 5x7 pixel matrices (where mainly capitals may be used). The specific informative elements proposed here can all be displayed under such technical constraints. However, the need to introduce more and richer pictograms –key for VMS harmonisation non-depending on words - in the middle-long term indicates the need to think about a reasonable migration towards a better resolution when old VMS are to be substituted.

A different, yet complementary issue, concerns three essential aspects:

a) Pictograms should be in the respective road codes or legal internal dispositions in order to be displayed, followed, enforced, and the like.

b) Pictograms should be charged and updated in the corresponding databases (see 2.3).

c) Support teams may be needed for certain actions (e.g., closing road and specifying compulsory exit/s). Some road operators may rely on their own team work units, some other will rely on the national traffic police patrols. Whatever the case, the assumption and use of certain specific recommendations involve considering the traffic context as a whole.

2.3 Technical Requirements

DGII tries to ease the adoption of the specific VMS messages recommended to road operators. This is why DGII assumes differing technical capabilities and builds up and shows the way VMS should look like considering not one, but 5 different VMS devices.

However, there are specific technical requirements that road operators themselves will have to care for. The most important one is the availability of the specific recommended pictograms in their databases. Note that any road operator could say that he/she is following the DGI even if only 3 pictograms where in their database (e.g., congestion with red triangle, congestion without red triangle, and a speed limit). Following DGII requires more than this. Pictograms recommended to indicate, for example, “road closed compulsory exit” (wp5.1) or “exit closed, keep on” both in the road works section are not habitual (although they are in UNECE’s WP.1 R.E.2 since 2008). This means that road operators will have to take care that 20 pictograms are available in their pictogram databases in order to be displayed in their VMS.

Database updates and integration may not be an easy task. Some Traffic Control Centres may change and add pictograms easily using intranets, for example. But some other TCC, relying on older technical ways, may require the intervention of technical patrols changing and updating the database onsite, i.e., in the VMS gantry itself (VMS after VMS). Some countries may rely on public-based technical teams. Some others work with...
private companies (whose maintenance contracts may or may not have expired), and so on. Considering these requirements and its associated costs, is essential when actually applying or planning to apply DGII.

2.4 Common Look & Feel

"PICTO+" means the essential coordinated set of pictogram-text within the VMS. Within this set, the main pictogram is detected and read accompanying the text just beside or below (depending on the VMS type). Primary information elements within this set are the ones corresponding to the nature of event and to location formulations (space and time-based). Some special cases related with different types of rerouting situations, special vehicles and special situations also have primacy at some point.

Secondary elements are not unimportant, yet not essential. By secondary elements we generally understand advices, causes and general recommendations. The importance of these messages concerns drivers comfort as drivers like to know the causes and complementary information in order to picture out what’s going on.

2.4.1 Some interpretation keys

Optional terms are put into brackets. Words, terms or expressions which we could use optionally on the VMS are indicated using round brackets (...).

Locating informative elements using these Guidelines and building the VMS message

Pursuing European harmonisation, it is important to show specific messages, as concrete as possible, because too many degrees of freedom on the part of road operators will introduce heterogeneity in the resulting messages.

What DGII provides is the elements necessary for the message to be built according to the particular operator needs. For obtaining the recommended message one has to know what recommendations are strict (e.g., main pictogram selected, location formulations) and which degrees of freedom are allowed for operators to select and use the corresponding message.

Three main steps will suffice, but before let us remember that, from left to right, we are working with five main VMS types:

- Text-only VMS (no pictograms)
- Pictogram-text VMS (only one pictogram and three lines of text)
- Pictogram-pictogram-text VMS (three lines of text)
- Pictogram-text-pictogram VMS (three lines of text)
- Full-matrix VMS (flexible configurations of pictograms and text).

The first step consists on identifying the situation and the corresponding VMS in use: in the example below, congestion when no exit is available, and the VMS is far from the congestion (see wp1.1 to get all the message variations in terms to distance VMS-event).

1 Note that these five VMS types generically represent most configurations in Europe, but not all of them. It is also easy to work out design from some of them. For example, some road operators have pictogram-text VMS with only two lines of text (not three). The basic elements of our second VMS would be enough then. Additional configurations (e.g., for lane control systems or variable directional signs) could also be worked out and added to this frame of specific messages recommended.
Figure 2: The main information elements for a given road/traffic situation (e.g., congestion, no exit) and the five main VMS devices where it could be located

Figure 3: The main information elements for a given road/traffic situation (e.g., congestion, no exit): paths for placing the information elements

Note than the text-only VMS only will get the word congestion (in blue). Note also that in the rest of the VMS, the congestion pictogram is placed so the secondary, accompanying information makes sense besides it (left/right or below) depending on the VMS type. The green line concerns location (second line in all VMS except the full matrix one).

The third step consists on selecting the specific informative elements and structure for the specific VMS type, following the adequate and necessary distribution:
Figure 4: The main information elements for a given road/traffic situation (e.g., congestion, no exit, due to road works) and the order and structure assigned in the five main VMS devices.

Figure 4 shows (grey rectangle) the basic components to be used for that specific situation [congestion (no exit available), located at... and caused by...]. As you can see in the recommendations below (pages 12-15) each case is verbally described and also represented by a graphical sketch.

The main (big) pictogram on the left is the informative element leading the disposition of the rest: this is a key role. Any additional information, location, advice, makes sense after (or before) that pictogram. Note that some VMS (pictogram-pictogram-text, full matrix) must place the cause (e.g., road works) before the consequence (congestion) for the message, including the complementary text, to make sense. DGII is been thought to take into account the “individual differences” of the corresponding VMS devices. There is a need to provide with flexible display formulations to ensure the same interpretation on the part of drivers considering the specific VMS they look at. Disregarding that fact means that VMS harmonisation would not be possible in Europe.

Note that, in this example, the pictogram has not red triangle (see DGI, principle 4.2). Then the alphanumeric elements follow, in order: nature of event-location-cause/advice (see DGI, principles 3.1 and 3.2). Note that the word congestion is in blue and between brackets. This is because, although pictogram-text redundancy is generally not advised (DGI, principle 1.9), text-only VMS must use it (no pictogram is available in such devices). Location formulations may vary a lot depending on the specific road/traffic context (DGI, principle 4.4), and the use of the specific location may condition the possibility of using or not additional information. Finally, the grey rectangle shows (just below) an array of possibilities to display the third basic element, cause and/or advice: either using text or a pictogram, depending on display possibilities (some VMS cannot show a second pictogram) and/or on pictogram availability (not all ideas can be communicated using pictograms, not always the needed pictograms are available).

The paragraph above further explains the need and adequacy of DGII: all this principles mentioned (4.2, 3.1, 3.2, 1.9, 4.4, and the like) are already embedded in the specific messages recommended and listed in DGII, within the grey boxes. These VMS are built up according to DGI general design principles.

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2 At the present stage, this seems to be the most synthetic way of listing the specific recommended messages for 5 VMS types. Future developments more specifically concerning such or such VMS type, at national or regional level, could bring more concrete (less schematic) inventories of the corresponding VMS devices in use (e.g., pictogram-text) and the specific VMS recommended for that VMS device.
Some road/traffic situations allow for different selections for the case: general or specific (e.g., use of travel times, or specific messages for trucks). Most times only the general case is the only one available however.

Finally, once the specific VMS has been obtained, one should do the last check. Make sure the message obtained can be applied to one’s VMS (placement, number of characters per line, etc.). A complete VMS will have been obtained.

### 2.4.2 VMS Harmonisation: Specific Messages Recommended

A reminder: messages listed below refer to three main situations: a) when the VMS is far from the event (> 5 km), when the VMS is near the event (≤ 5 km), when the VMS is within the event.
WP.1 Congestion

WP.1.1 Congestion - no exit

Messages intended to warn against a traffic jam on the road section, no exit available.

Figure 5: Congestion - no exit

WP.1.2 Congestion - exit available [ONCOMING CASE]

Messages intended to warn against a traffic jam on the road section, one exit available.

Figure 6: Congestion - exit available

3 Speed limits and recommendations listed below are only examples of possibilities. The specific decision concerning the use of specific speed limits, recommendations or generic advices (“moderate speed”) belongs to the TCC responsible of the management of such road section.
WP.1.3 Congestion - exit available [ONCOMING CASE]
Messages intended to warn against a traffic jam on the road section, one exit available.

![Figure 7: Congestion - exit available](image)

WP.5. Road works

WP.5.1. Road closed – exit available
Messages intended to indicate that the road is closed ahead due to road works and that there is a compulsory exit available.

![Figure 8: Road closed - exit available](image)
**WP.5.2. Next exit closed due to road works**

Messages intended to indicate that the next exit is closed due to road works and that drivers should remain in the main road or take a different exit.

![Next exit closed due to road works diagram](image)

**Figure 9: Next exit closed due to road works**

**WP.7 Weather information**

**WP.7.1 Strong wind**

Messages intended to warn against the existence of strong wind

![Strong wind diagram](image)

**Figure 10: Strong wind**
**WP. 7.3.1 Slippery road due to snow/ice**

Messages intended to warn on the existence of a slippery road section due to ice or snow.

![Figure 11: Slippery road due to snow/ice](image)

**WP. 7.3.2 Slippery road due to rain, water, pools, flooding**

Messages intended to warn on the existence of a slippery road section due to excess of water or pools.

![Figure 12: Slippery road due to rain, water, pools, flooding](image)
2.5 Level of Service Definition

2.5.1 Preliminary remark

The scope of EasyWay is to provide Core European Services to the European road users. These services are harmonized in content and functionality, but also in their availability: The road users shall be able to expect a certain services offer in a specific road environment. In order to provide a basis for the harmonization process EasyWay needs a tool to define such environments in an agreed manner. This tool is the Operating Environments – a set of pre-defined road environments combining physical layout of the road and network typology with traffic characteristics.

In essence, EasyWay has agreed on a set of 18 pre-defined Operating Environments (OE) where each OE is a combination of three criteria:

- Physical characteristics – Motorways, other 3/4 lane roads or 2-lane roads
- Network typology – Corridor, Network, Link or Critical spot
- Traffic characteristics – Traffic flow and road safety situations (with optional additions)


2.5.2 Level of Service Criteria

The VMS management in itself is not a real service, but a tool to provide services in the different fields: Traveller Information, Traffic Management, Freight and Logistics. Therefore it does not appear very appropriate to define a level of service for VMS, while clearly their European harmonization can give a good contribution to the level of the above mentioned different services.

However some parameters can be identified characterising the effectiveness of the VMS, and some suggestions given for their implementation and management as general guidelines for road operators. Below such parameters and recommendations are reported in summary, considering that the compliance with these issues determines, in a certain sense, the level of impact on the related different services:

- About quantity and location, a VMS should always be available along the interested road or motorway road before each “decision” point (entrances, exits, main parking and service areas, links to other roads/motorways, etc.).

- About quality, various aspects are significant:
  - Visibility at the right distance (size of pictograms and/or texts and technology used)
  - Correct number of information units
  - Timely and complete information (depending on TCC, monitoring systems, telecom infrastructure, operations organization, data exchange, etc.)
  - Coherence with other information tools (radio, TV, internet, on board units)

- In general, European harmonization is the core target, i.e. observance of the principles described in previous chapters.
2.5.3 Level of Service Criteria related to Operating Environment

As no formal level of service exists also the relationship to the operating Environment is not applicable and the direct correspondence to Operating Environment has to be found in the Guidelines for the services making use of VMS.

Nevertheless here as well we can consider and suggest, in general, that the more critical the operating environment is (high traffic, trucks relevance, weather problems, etc.), the more important the correct and timely utilization of VMS and the observance of the given recommendations become. All in all, the following aspects can be mentioned:

- The appropriate (operative) levels in terms of congestion (for example, for suggesting rerouting alternatives), strength of wind, possible danger caused by water, as well as limits in terms of type of vehicle that can circulate as a function of the levels of ice or snow on the road differ a lot in different road administrations and have not been object of our analysis.

- Speed limits and recommendations in the messages listed above are not meant to be but examples or possibilities. At some point, to display a specific speed recommendation using a pictogram (e.g., recommended speed of 70km/h, 90km/h, and the like) can be more appropriate than displaying a generic “moderate speed” message. But at some other point the contrary may be also true.

- Although recommending speeds and limiting them is not the same, there is little use of recommendations (compared to prohibitions). However, credible recommended speeds should be a good management tool, provided that recommendations are opportune. In addition it would limit the reactance towards prohibition experienced by most drivers as well as the complementary aids (surveillance, enforcement...
3 Part B: Supplementary Information

3.1 Examples of deployment

The 3rd edition of the Working Book [5] shows the actual VMS displays in 13 countries belonging to ESG4. Some, already are compliant or nearly compliant with DGI and DGII. The working packages listed above show some examples of the recommended messages. Below some of these examples per working package and country taken from the Working Book follow. Contact persons/countries are the corresponding ESG4 members (listed at the beginning of this DGII).

3.1.1 Examples of “good practice” working package 1.1 (congestion, no exit)

<table>
<thead>
<tr>
<th>VMS FAR (&gt; 5KM)</th>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>CODA DT 5 KM</td>
<td>RÖDRA LÄKEN</td>
</tr>
<tr>
<td>Slovenia</td>
<td>SOKAACAEPHAVA</td>
<td>RESTID TILL</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>PESCIRA</td>
<td>(155) NYBO 25 MIN.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(167) HAGA 45 MIN.</td>
</tr>
</tbody>
</table>

Table 1: Examples of “good practice” working package 1.1 (congestion, no exit)

3.1.2 Examples of “good practice” working package 1.2 (congestion, exit available)

<table>
<thead>
<tr>
<th>VMS FAR (&gt; 5KM)</th>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>BOUCHON - 26km</td>
<td>km 190 nehoda provoz omezen</td>
</tr>
<tr>
<td>Ireland</td>
<td>CONGESTION AFTER J-9</td>
<td>MODERE VELOCIDAD</td>
</tr>
<tr>
<td>Spain</td>
<td>ALTERNATIVA R/2</td>
<td>TRÁNSITO LENTO MATA - AS SANTAS ALTER.MATA</td>
</tr>
</tbody>
</table>

Table 2: Examples of “good practice” working package 1.2 (congestion, exit available)
3.1.3. Examples of “good practice” working package 1.3 (traffic congested on next exit)

<table>
<thead>
<tr>
<th>VMS FAR (&gt; 5KM)</th>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>United Kingdom</td>
<td>Spain</td>
</tr>
<tr>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
<td><img src="image3" alt="Image" /></td>
</tr>
</tbody>
</table>

Table 3: Examples of “good practice” working package 1.3 (traffic congested on next exit)

3.1.4. Examples of “good practice” working package 5.1 (road congested ahead, compulsory exit)

<table>
<thead>
<tr>
<th>VMS FAR (&gt; 5KM)</th>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>Portugal</td>
<td>Spain</td>
</tr>
<tr>
<td><img src="image4" alt="Image" /></td>
<td><img src="image5" alt="Image" /></td>
<td><img src="image6" alt="Image" /></td>
</tr>
</tbody>
</table>

Table 4: Examples of “good practice” working package 5.1 (road congested ahead, compulsory exit)
3.1.5. Examples of working package 5.2 (next exit closed due to road works)

<table>
<thead>
<tr>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE A</td>
<td></td>
</tr>
<tr>
<td>TERMINATE A</td>
<td></td>
</tr>
<tr>
<td>UTO A</td>
<td></td>
</tr>
<tr>
<td>SAIDA CURTIDA</td>
<td></td>
</tr>
<tr>
<td>para A• Naturales</td>
<td></td>
</tr>
<tr>
<td>DESVIO ASSINALDO</td>
<td></td>
</tr>
<tr>
<td>azzo Šankted</td>
<td></td>
</tr>
<tr>
<td>ZAPRTO</td>
<td></td>
</tr>
<tr>
<td>CORTE</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
</tr>
<tr>
<td>USE</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
</tr>
<tr>
<td>EXIT CLOSED AT J</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Examples of “good practice” working package 5.2 (next exit closed due to road works)

3.1.6. Examples of working package 5.2 (next exit closed due to road works)

<table>
<thead>
<tr>
<th>VMS FAR (&gt; 5KM)</th>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Netherlands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N256 brug dicht</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zierikzee volg 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALBORAYA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PUZOL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPOIOXHN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XIIIPOUL AENEMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WINDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT LETTERKENNY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRIVE CAREFULLY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOR 10 MILES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Examples of working package 5.2 (next exit closed due to road works)

3.1.7. Examples of working package 7.3.1 (Snow-ice)

<table>
<thead>
<tr>
<th>VMS FAR (&gt; 5KM)</th>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6 J10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- J12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RISK OF ICE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-&gt; A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHUTE DE NEIGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOYEZ VIGILANT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLEDICA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICE 80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7: Examples of working package 7.3.1 (Snow-ice)
### 3.1.8. Examples of working package 7.3.2 (rain-water)

<table>
<thead>
<tr>
<th>VMS FAR (&gt; 5KM)</th>
<th>NEAR (≤5KM)</th>
<th>VMS WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>Ireland</td>
<td>The Netherlands</td>
</tr>
<tr>
<td></td>
<td>Sweden</td>
<td>United Kingdom</td>
</tr>
</tbody>
</table>

Table 8: Examples of working package 7.3.2 (rain-water)
4 Annex A: Compliance Checklist

4.1 Compliance checklist "should"

<table>
<thead>
<tr>
<th>#</th>
<th>Requirement</th>
<th>Fulfilled?</th>
<th>If no – explanation of deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Functional requirements</td>
<td>none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisational requirements:</td>
<td>none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical requirements</td>
<td>none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required Common Look &amp; Feel</td>
<td>WP.1.1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP.1.2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP.1.3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP.5.1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP.5.2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP.7.1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP.7.3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP.7.3.2.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5 Annex B: Bibliography


