

A survey on VMS concerning UNECE WP.1 members

Trans European Motorways (TEM) Project
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Background: the Trans European Motorway Project

- Questionnaire concerning:
 - Common VMS elements
 - Elements that can endanger road safety
- Initial focus: state of the art concerning VMS use by UNECE WP.1 Member States

Background: the questionnaire

1. Referent signing catalogues in use
 1. The general context for VMS use
 2. Particular VMS configurations per country
2. Main signing functions operated through VMS
3. Specific road/traffic situations managed through VMS
4. Share your specific success stories coming from VMS use
5. The role of VMS as a contributor to mobility and/or safety in your country
6. Possible cost-benefit evaluation you may have done (even if a very specific one).

Elvik & Vaa (2004). *The Handbook of Road Safety Measures*

Variable signs

- *Accident warning signs*
- *Fog warning signs*
- *Queue warnings on motorways*

Accidents type

- Injury accidents, motorways
- Accidents in fog
- Rear end collision, injury
- Rear end collision, property damage

Best estimate

- -44%
- -84%
- -16%
- +16%

Elvik & Vaa (2004). *The Handbook of Road Safety Measures*

Var. feedback signs

- *Collective feedback signs for speed*
- *CFS obliged give way at pedestrian crossings*
- *Individual feedback signs for speed*
- *IFS for gaps between vehicles*

Accident type

Best estimate

“XX percent kept the speed limit during the last hour (day, week)”

“XX percent of drivers observed the obligation to give way to pedestrians last week. The record is YY percent”

“your speed is XX kilometers per hour” “you are driving too fast”

“too close, move apart”

Background: the sample

- 9 countries: Belgium, Finland, Italy, Latvia, Luxembourg, Slovenia, Spain, Sweden, and The Netherlands.
- 11 respondents: Italy and Slovenia contributed with representatives from the public and private sector.
- Practically all countries forming the sample have ratified the 1968 Convention.
- We thank them a lot for their contribution
- However: *Is that actually a representative sample considering VMS use and UNECE WP.1 contributors?*

VMS USE

USE OF VMS

ELEMENTS

FUNCTIONS

ROAD

EVENTS

- Different technical standards used. EN 12966, a main referent:
 - Luminance, color, beam width, uniformity...
- **Interurban VMS: how many?**
 - 22% of respondents: don't actually know
 - 44.4% of respondents: VMS network <500 units
- 33.3%: a relatively large one, 1000-2000 units
- **Urban VMS: how many?**
 - 44% of respondents: don't know
 - 33.3% of respondents: relatively small VMS network <500 units
- 22.2%: a large one, 2000-2500 units.

CONCLUSION

RULING,
OPERATING,
LAW

USE OF VMS

ELEMENTS

FUNCTIONS

ROAD

EVENTS

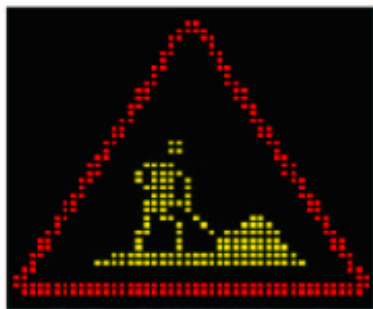
CONCLUSION

- Heterogeneous picture
- **VMS Rules** are national, but regions and municipalities also have an influence (adapting legal dispositions)
- **VMS Operators** vary considerably: public and private and at national, regional and municipal (city council) levels
- Finland, Slovenia and Sweden, the only full coherent picture concerning law referents
- *A consequence of the mild VMS regulation currently derived from the 1968 Convention?*

PICTOGRAM COMBINED ALPHANUMERIC



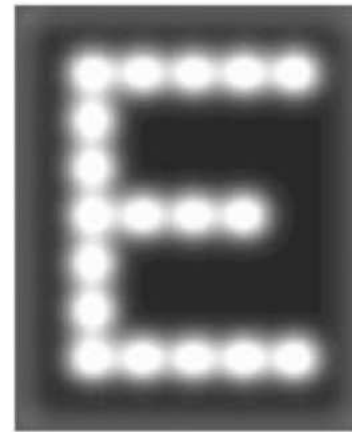
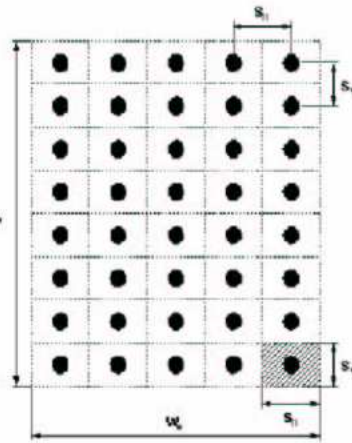
a) Example of (64 x 64) elements



b) Example of (48 x 48) elements



c) Example of (32 x 32) elements



- **Pictogram**
 - 75.6% resp
 - 87.3% of the managed by own organization (4 respondents)
- **Pictogram resolution: variable but growing**
 - 32x32 resolution in two countries (90%)
 - 48x48, 56x56, 64x64 or 72x72... (rest)
- **Color inversion** (6), “natural” (2)
- Two main strategies: pictogram and pictogram-text
- Lines and characters per line: 3x13-18
- Text displays: 2 (capitals) 4 (lowercase) 3 (highest)

PICTOGRAM-
TEXT
COMBINATION

USE OF VMS

ELEMENTS

FUNCTIONS

ROAD

EVENTS

CONCLUSION

- text (18.6%)
- pictogram only (34.9%)
- pictogram-text (18.3%),
- pictogram-pictogram-text (1.0%)
- pictogram-text-pictogram (19.1%).
- *full matrix and graphical displays:
quite scarce*

THE CLASSICAL

USE OF VMS

- danger warning (22.3%),
- informative (20.4%)
- regulatory (17.4%)
 - 60.1% of the VMS displayed

ELEMENTS

- Some highly specific ones:
- lane assignment (16.2%),

FUNCTIONS

- speed assignment (12.5%)
- rerouting (5.2%)

ROAD

- 33.9% of the VMS displayed.

EVENTS

- *hard shoulder running, ramp metering or safety campaigns: few*

CONCLUSION

THE EXPECTED

USE OF VMS

ELEMENTS

FUNCTIONS

ROAD EVENTS

CONCLUSION

- congestion (22.2%),
- road works (17.5%),
- weather issues (15.9%),
- traffic flow information (12.1%)
- dynamic traffic management (11.3%)
 - 79% of the VMS displayed.
- Other, also significant:
 - rerouting (7%)
 - unplanned events (5.5%)
 - inter-modality (5.3%)

DIFFICULT TO KNOW

USE OF VMS

ELEMENTS

FUNCTIONS

ROAD

EVENTS

CONCLUSION

- Our public administrations, even private organizations, are vast ones, having invested a lot on these infrastructures in the last 30 years
- Knowing about it is not easy... even from within!
- The number of VMS units (urban, interurban) is normally not managed by the same hands
- This knowledge is not actually centralized

TO SHARE WHAT WE DO

USE OF VMS

ELEMENTS

FUNCTIONS

ROAD

EVENTS

- If we expect to be successful in terms the internationalization of new road signs (VMS) the different strategies adopted should be known, and shared:
 - VMS structure and layout
 - VMS content
 - VMS *technicalities*
 - VMS use and results
- We are the know-how here
- We learn from each other

CONCLUSION

CALLING FOR PARTICIPATION

USE OF VMS

ELEMENTS

FUNCTIONS

ROAD

EVENTS

CONCLUSION

- An updated version of the questionnaire is going to be available:
 - The 9 countries having answered do not need to answer again
- Three **new** and very important **issues**:
 - Please, share your specific success stories coming from VMS use
 - Please, share your view concerning the role of VMS as a contributor to mobility and/or safety in your country
 - Please, share with us the cost-benefit evaluation you may have done (even if a very specific one).

**Thanks a lot for your
attention!**

*Any question?
Any suggestion?*