



Asociación Argentina de Carreteras



November 6th - 8th, 2013 Hotel Panamericano – City of Buenos Aires, Argentina

“URBAN MOBILITY, ROADS NETWORK OPERATION AND ITS APPLICATIONS”

Using Variable Message Signs

Certu

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FRANCE**



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Presentation Structure

- Definition and general points
- Different sort of VMS messages
- VMS in the urban environment
- Some non technical aspects
- Conclusion and prospects



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VMS : definition and general points



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Brief history of VMS

- 1962 : 1st VMS in England
- Mid 80' : 1st signs with text and pictogram
- 2000 : 1st diagrammatic panels in Europe



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Variable message signs

Messages : composition rules,
particularly for textual messages.

Variability :

- Detection of the disturbances
- Evolution
- Management of the display
accordingly



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VMS features

VMS must inform :

- quickly
- where it is necessary
- when it is necessary
- who it is necessary

without any research nor equipment on
behalf of the road users



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But under **strong** constraints:

- Very short messages
- Very simple information



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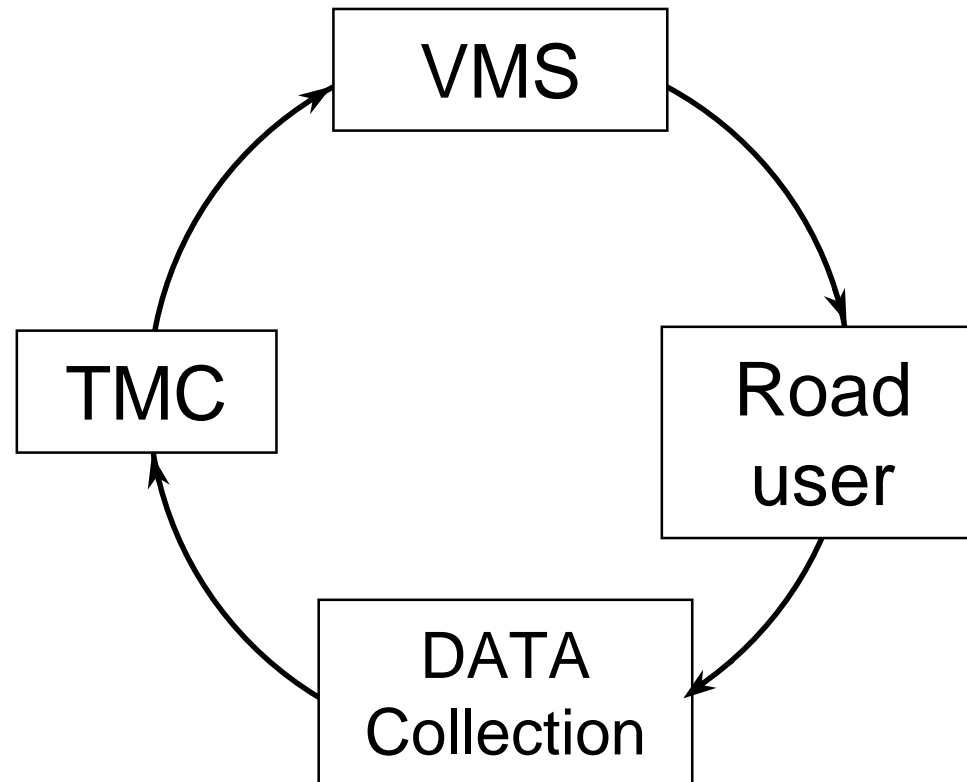


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A VMS is not isolated





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Different sort of VMS messages



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- **Objective of traffic management**
prescription
advice
encouragement
- **Objective of safety (immediate danger)**
alert
pre-alert
- **Objective of travel information**



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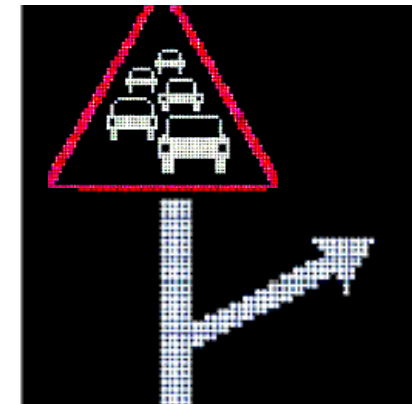
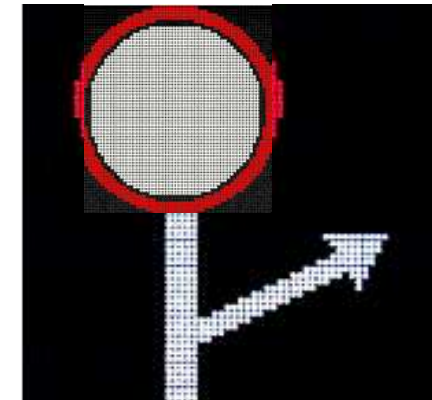
Traffic management messages

Prescription :

**MANDATORY EXIT
FLOODING**

Advice :

**ADVISED EXIT
CONGESTION**



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Speed Dynamic regulation



SECTION
À VITESSE
RÉGULÉE

FIN DE
SECTION
À VITESSE
RÉGULÉE



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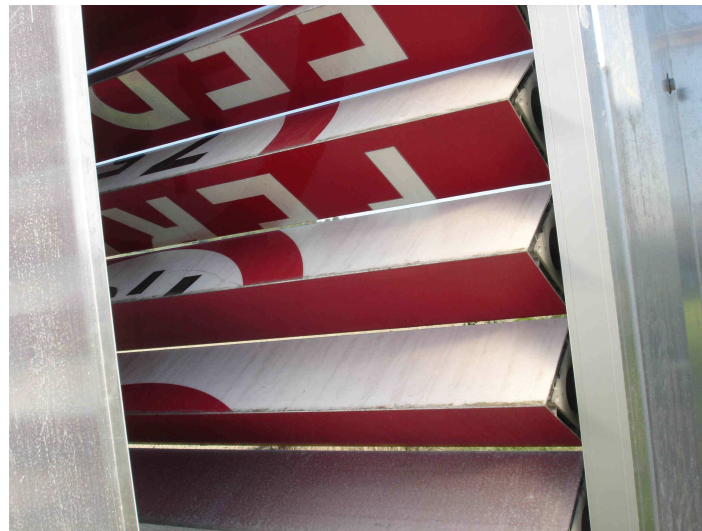




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Road winter VMS



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Alert signs

Alert :

**CONGESTION
SLOW DOWN**



Pre-alert :

**CAUTION !
ACCIDENT REPORTED**



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Information messages

Example :

**FREEZING FOG
BETWEEN X and Y**

or :

**A40 to GENEVA
ACCIDENT
AFTER EXIT 15**



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A particular display : travel time

- Complicated message :

- * 2 arrows of direction

- * 1 arrow « of tendency »



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Provisional message

18/4 to 23/4

***MT BLANC TUNNEL CLOSED
FOLLOW CHAMBERY***

or

***TOMMOROW AT 6 PM
AVOID « STADE DE FRANCE »
AREA***



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Information services messages about parking spaces for truck drivers



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VMS in the urban environment

- For "road" information
- For the dynamic marking of parking spaces
- For "multimodal" messages



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Dynamic lane management



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Signalling dynamic systems of parking spaces



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Some features

- Many different systems
- Two major approaches :
 - number of available parking spaces
 - synthetic display of the various states : free, full, closed



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In France

- Synthetic display
- Respect of signalling rules
- Staggered arrows
- On the right, recommended solution





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Multimodal messages

BELLECOUR ***40 min***
P+R MERMOZ ***5 min***

or

METRO : NORMAL TRAFFIC
P+R MERMOZ : 5 min

or

ACCIDENT ON N 138
P+R ZENITH RECOMMENDED



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Multimodal VMS





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VMS for bike sharing users



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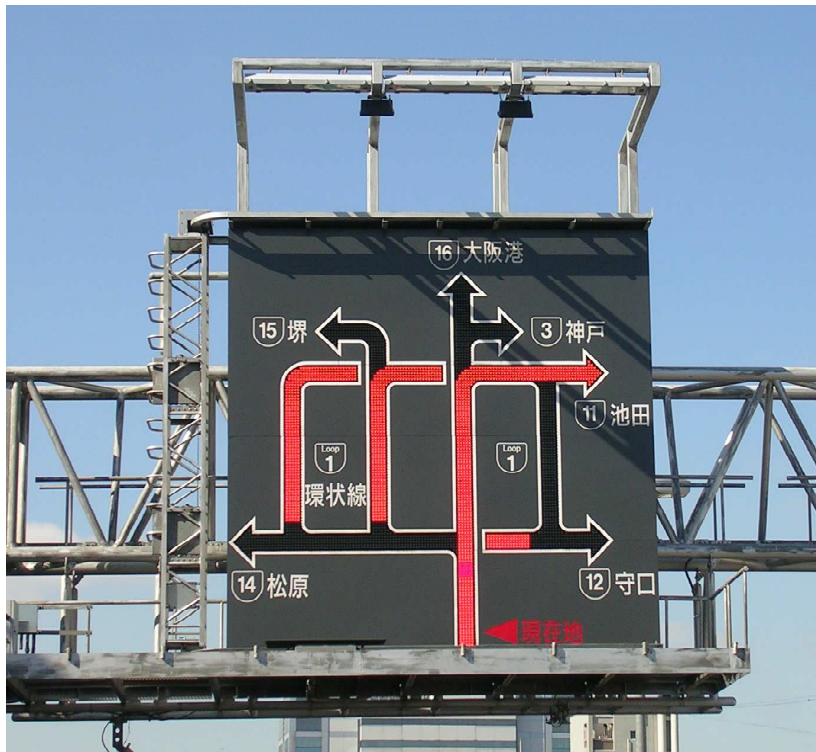
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Other VMS

Diagrammatic signs

Lane control sign



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Some non technical aspects



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VMS : regulatory situation

- At an international level, variable signalling to be integrated in Vienna Convention (consolidated resolution RE2 - 2008)
- European harmonization of variable signalling :
 - WG 09 works of CEDR (2009 report)
 - ES4-Mare Nostrum (2003-2009)



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Some recommendations for regulatory aspects (1)

- ***Stimulate countries to establish rules linked with VMS***
- ***Use regulatory messages without any text, if possible***
- ***When using VMS with pictograms the main information is given by the pictogram***
- ***Stimulate countries to respect Vienna Convention***
- ***Stimulate countries to use « video inversion »***





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Some recommendations for regulatory aspects (2)

- *Alert messages (using the red triangle) should only be used when the dangerous spot is nearby the VMS (for instance, no more than 2 km)*
- *Minimize the number of words and symbols (e.g. maximum seven)*
- *Commercial/advertising messages are not permitted*
- *Question : preeminence of VMS on other signalisation ? One country (Spain) has already introduced the preeminence of variable message signing into its traffic regulations*



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Legal aspects and liability of the road operator

Some examples :

- **« Fluid Traffic » displayed upstream an accident**
 - **Message displaying wrong travel time**
 - **Wrong way vehicles**
 - **Transmission of a message if VMS is out of order**
- etc.**



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Some recommendations for road operator :

- Before implementing VMS, assess correctly and anticipate all technical and human resources of the network to ensure that it is particularly reactive to events, particularly to unforeseen events
- Keep the proofs of displaying messages (3-4 years)
- Be careful with internet



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Conclusion and prospects

- **VMS at the heart of the traffic management : road users are requiring more and more traffic information**
- **Technical means develop very fast**
- **Multimodal information is getting more and more important**
- **New perspectives offered by « cooperative » driving : information is on board - harmonisation**



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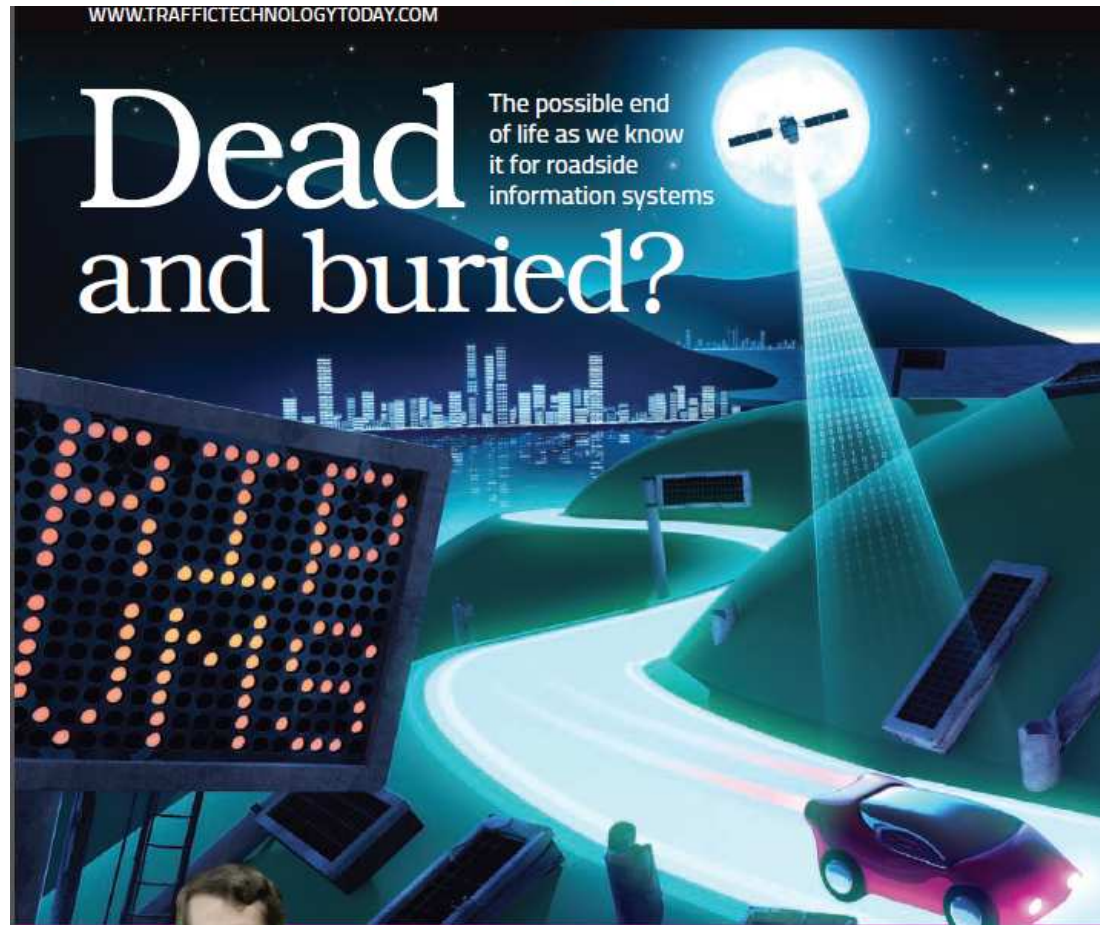


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Thank you for your attention



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