



UVAR Exchange

Annex 1 – Collection of existing UVAR signs and proposals for improved and harmonised signage plus C-ITS testing

UVAR Exchange – Demo 1 UVAR signage, Demo 2 C-ITS

Report “Practical aspects of UVAR information provision through signage”

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Existing UVAR signage in Lisbon (PT)

Lisbon: Low Emission Zone

Zona de Emissões Reduzidas (ZER)



ZER 2

pre-Euro 2
(pre-1996 vehicles)
working days from 7h to 21h
except residents and historic vehicles



ZER 1

working days from 7h to 21h
pre-Euro 3
(pre-2000 vehicles)
except residents and historic vehicles



Lisbon: Limited Traffic Zone



UVAR Exchange

Google Maps 59 Rua do Paraíso

Lisbon

Google Street View

Nov 2020

See more dates



Image capture: Nov 2020 © 2022 Google

to vehicles used for non-heavy tourism activities except loading and unloading from 8h to 20h except authorised vehicles

<https://goo.gl/maps/wCipAS4R9G73nayYA>

Google Maps – Largo Trindade Coelho 17, Lisboa

<https://goo.gl/maps/dRvjSdTJJ6n7xuTF8>



Lisbon: Pedestrian Zone



UVAR Exchange

Google Maps 38 Tv. Remolares



Image capture: Aug 2018 © 2022 Google

Google Maps – Tv. Remolares 38 (Pink Street)

<https://goo.gl/maps/8XaUznGGdGPDWAJc9>

Lisbon: camera enforcement



UVAR Exchange

usually not used for UVARs enforcement, but for public safety



Largo Trindade Coelho 17

For your safety, this location is subject to video surveillance with image capture.
Purpose under the terms of law nº1/2005: security of people and goods and criminal prevention.
Entity responsible for data processing: public security police.

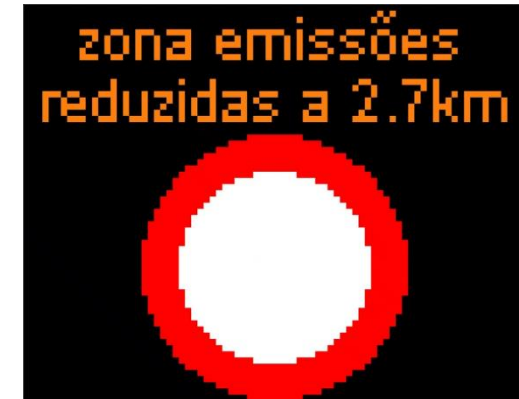
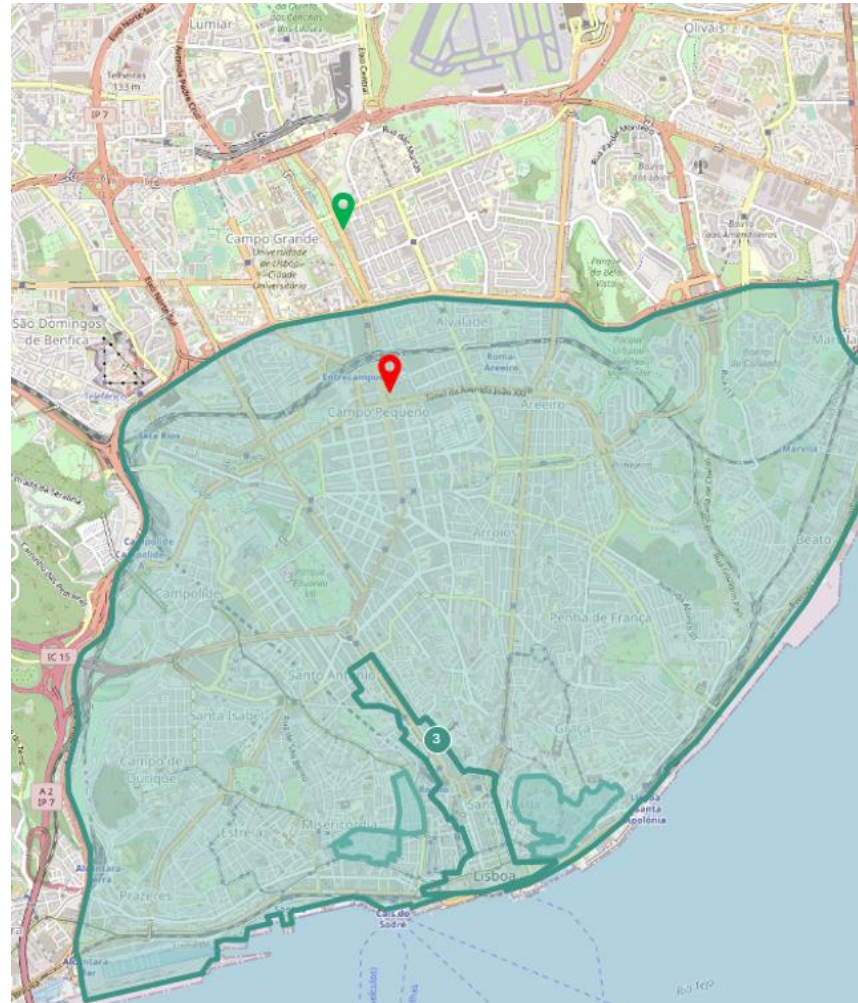
Proposals for improved and harmonised UVAR signs in Lisbon (PT)

Lisbon: proposal of variable message signs



UVAR Exchange

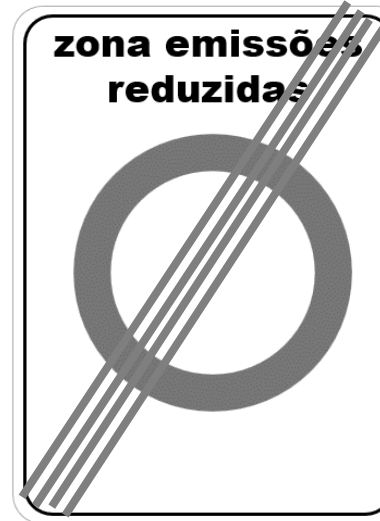
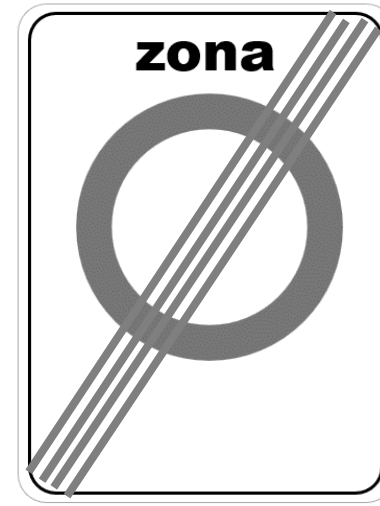
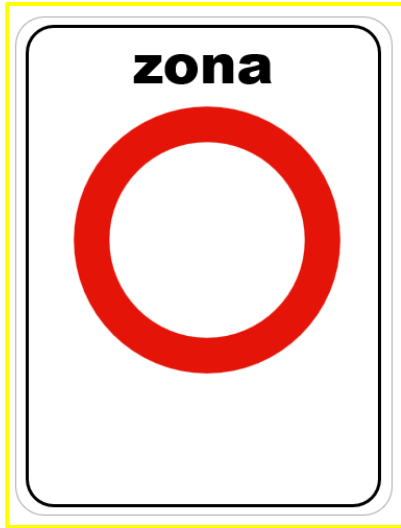
- Tested in VMS Demo, see the report "Guidelines for



Lisbon: proposals of entry and exit signs



UVAR Exchange



Lisbon LEZ: additional panels



UVAR Exchange

Time validity:

dias úteis das 7h às 21h



7h - 21h



seg - sext
7h - 21h

Applicability:

pré-Euro 2
(veíc. anteriores a 1996)

pré-Euro 3
(veíc. anteriores a 2000)

Exemptions:

exceto residentes
e veículos históricos

exceto residentes
e veículos históricos
e autorizados

exceto euro 4 ou superior
e autorizados

Enforcement
and info:

Informação em
informacoeseservicos.lisboa.pt

Lisbon: complete LEZ and LTZ proposals



UVAR Exchange



seg - sext
7h - 21h

exceto euro 4 ou superior
e autorizados

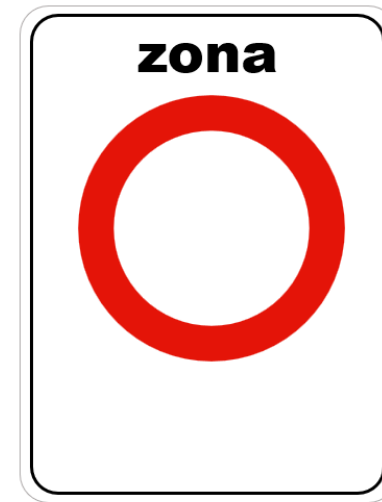
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informacoeseeservicos.lisboa.pt



pré-Euro 2
(veíc. anteriores a 1996)

exceto residentes
e veículos históricos
e autorizados

Informação em
informacoeseeservicos.lisboa.pt



a veículos afetos à
atividade de animação
turística não pesados

exceto cargas e descargas 8h-20h
e autorizados

Informação em
informacoeseeservicos.lisboa.pt



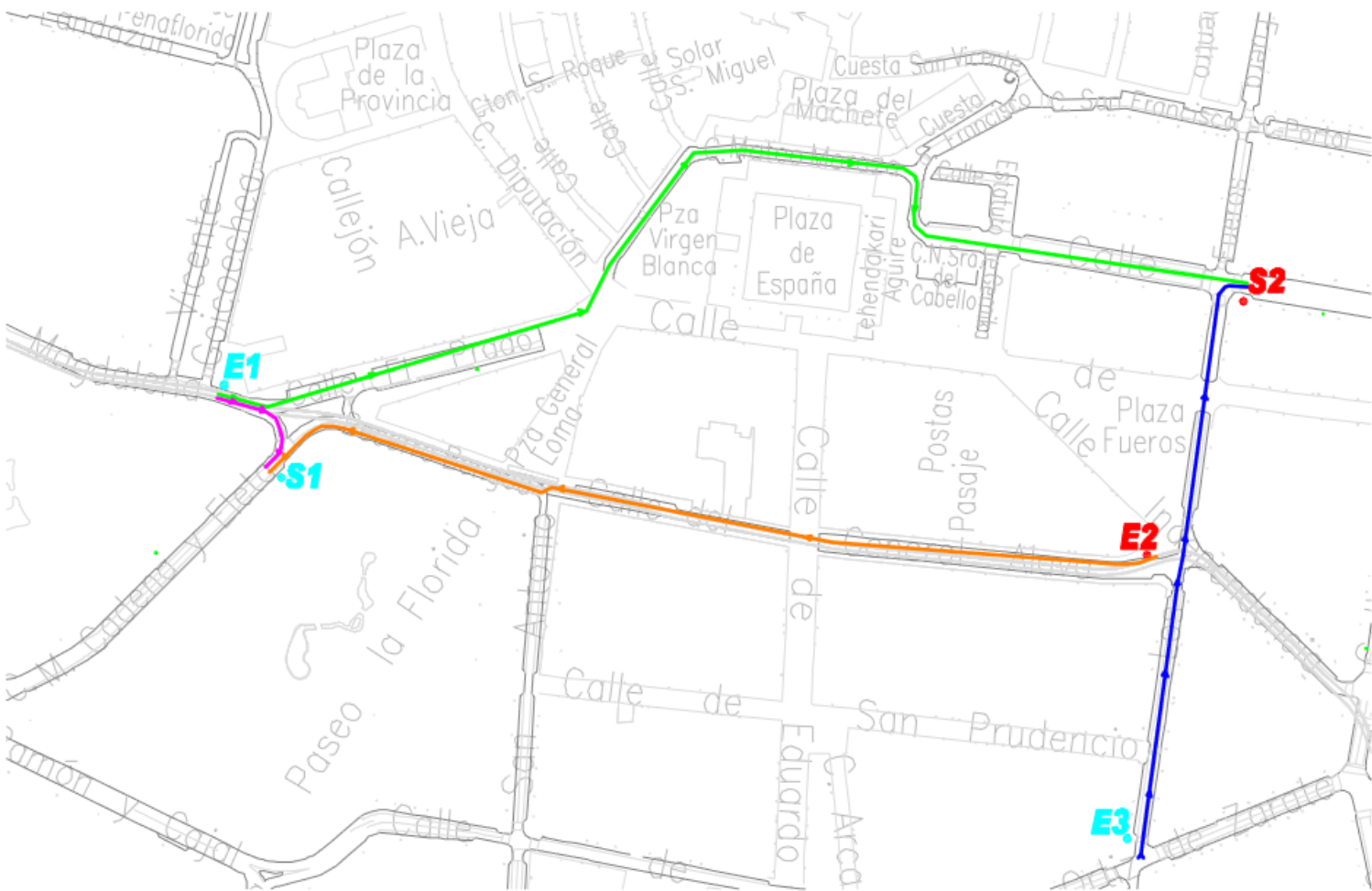
a veículos afetos à
atividade de animação
turística não pesados

exceto cargas e descargas 8h-20h
e autorizados

Informação em
informacoeseeservicos.lisboa.pt

Existing UVAR signage in Vitoria-Gasteiz (ES)

Vitoria-Gasteiz: Limited Traffic Zone and Pedestrian zone/street



Lisbon: Limited Traffic Zone and Pedestrian zone/street



UVAR Exchange



<https://goo.gl/maps/dhC18fm7rra4i4Yj9>

<https://goo.gl/maps/nP6ofCS5hgyxCSEd8>

Vitoria-Gasteiz: Limited Traffic and Pedestrian Priority Zone



Vitoria-Gasteiz: Pedestrian Priority Zone



UVAR Exchange



Vitoria-Gasteiz: Pedestrian Priority Zone

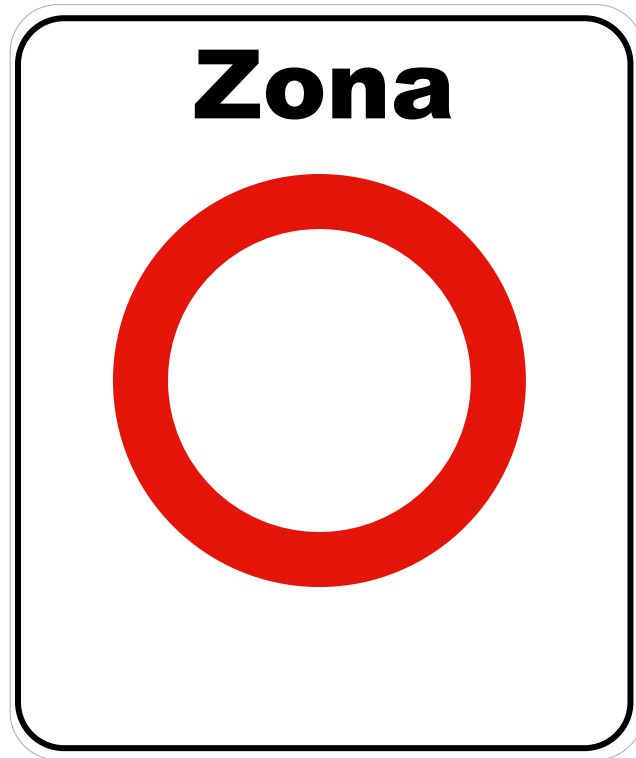


UVAR Exchange



Proposals for improved and harmonised UVAR signs in Vitoria-Gasteiz (ES)

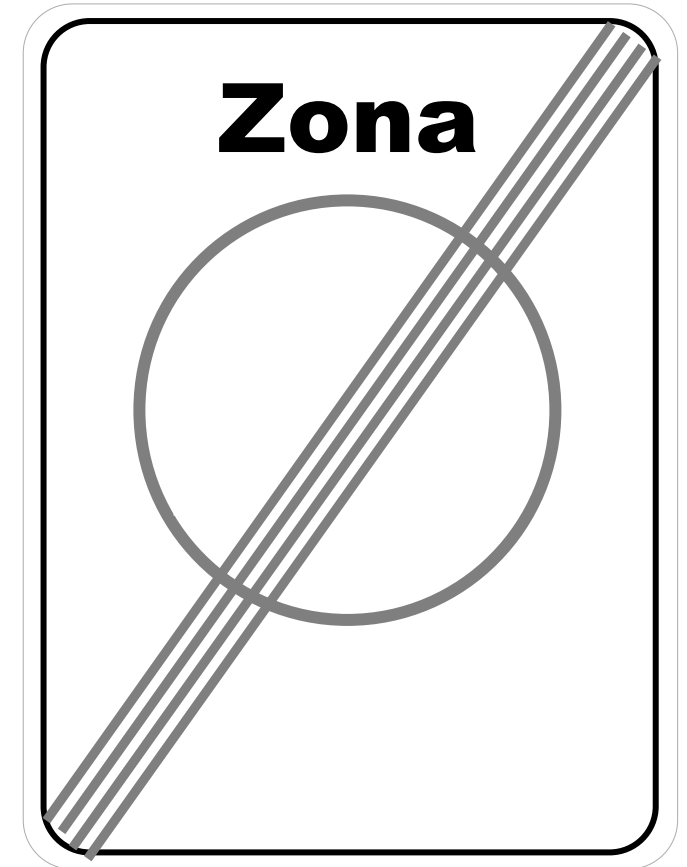
Vitoria Gasteiz Central Superblock LTZ: proposals of entry and exit signs



VG#1 basic layout small panel



VG#2 extended text small panel



VG#3 exit panel

Vitoria-Gasteiz: additional panels



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Vitoria-Gasteiz: complete proposals



More essential sign in Spanish & Basque

References to the phone number and the website could be placed on another more informative or advance warning sign, before the LTZ entry sign or just aside this one.

The problem with loading/unloading operations in case of ANPR systems is that carriers always need to obtain a permit in advance. That's why time windows are showed after the text «and authorised». The same applies for disabled people, unless in the country a centralised check of blue badges is in place (so cameras can recognize disabled users without pre-registration)



Existing UVAR signage in Barcelona

Barcelona: Low Emission Zone – Limited Traffic Zone



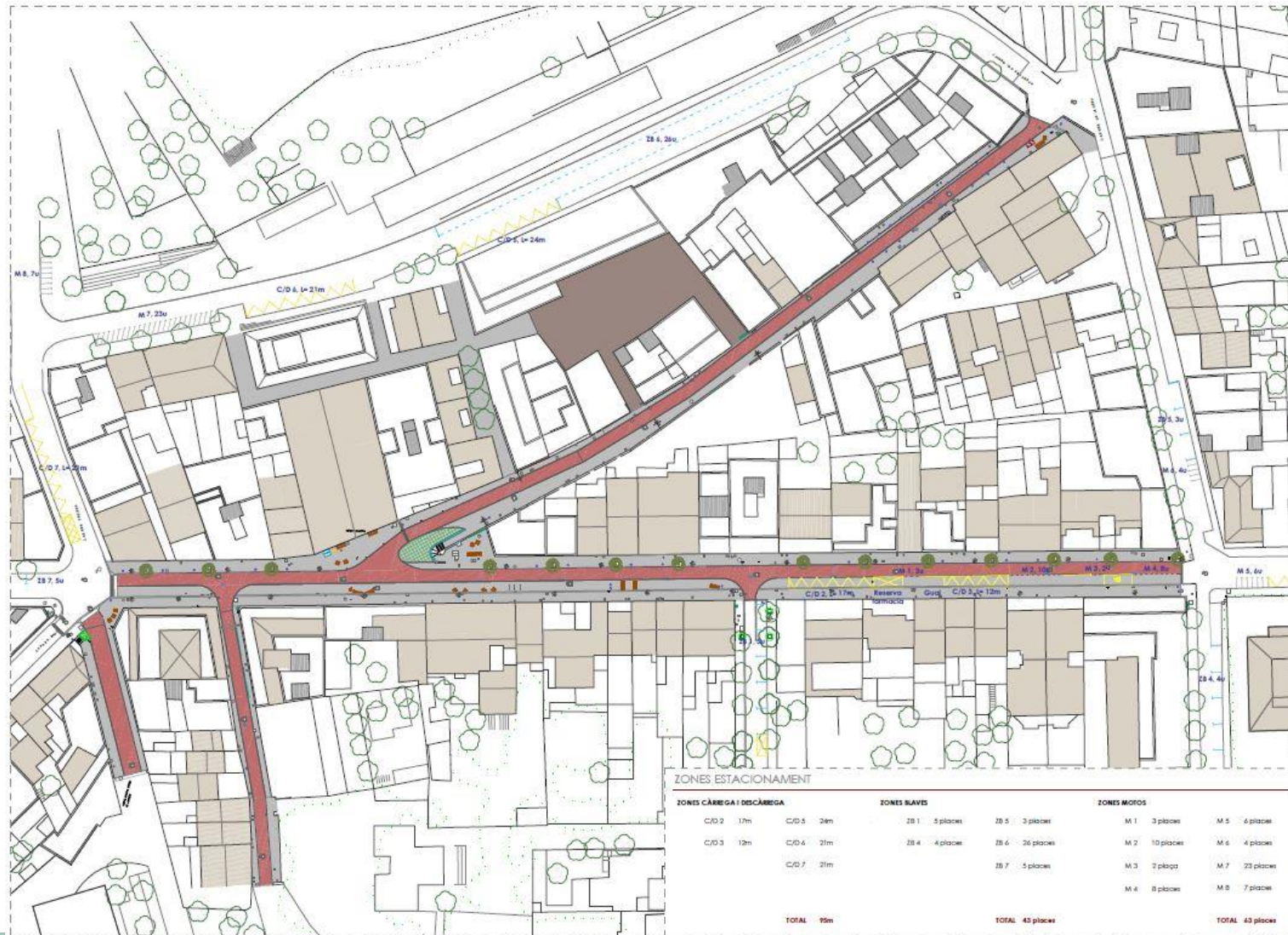
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*Sant Just Desvern
/ Barcelona
Metropolitan
Area*

*Even though it is called
a Low Emission Zone,
corresponds to a
Limited Traffic Zone*

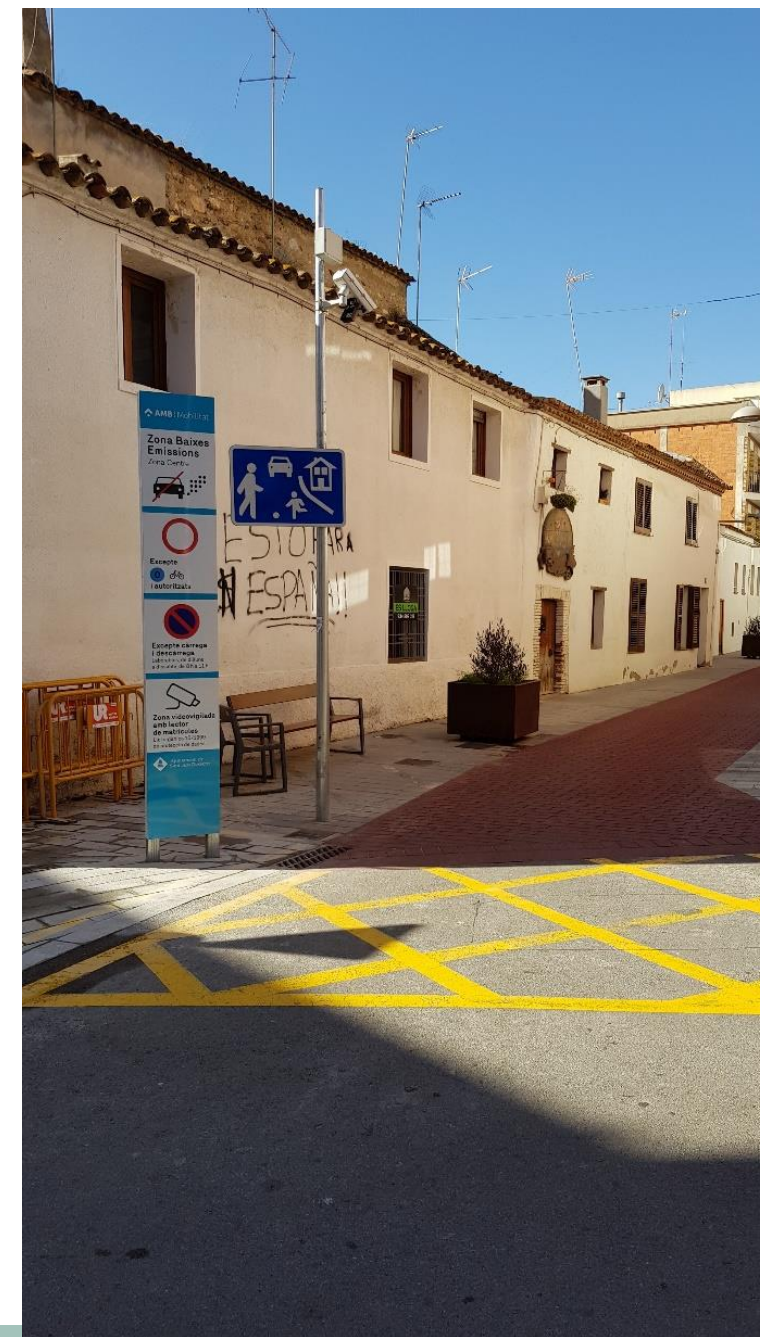
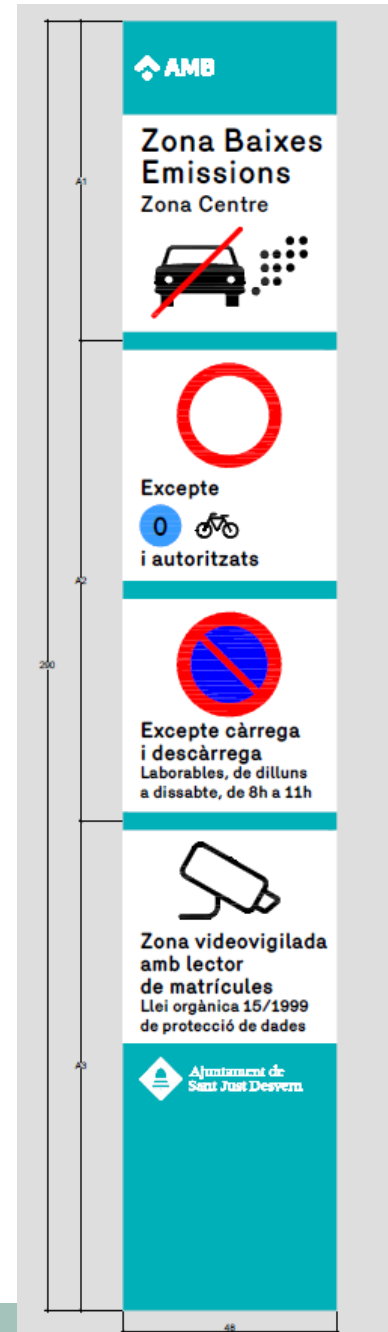
*Access only for
pedestrians, neighbors,
bicycles and electric
vehicles.*

*Urban delivery access only
labor days from Monday
to Saturday from 8:00
a.m. to 11:00 a.m.*



Limited Traffic Zone

Sant Just Desvern /
Barcelona
Metropolitan Area



Barcelona: Limited Traffic Zone



UVAR Exchange

The LTZ of Sant Just Desvern has allowed the creation of a “de facto” pedestrian area.

Before



After



Barcelona: Low Emission Zone – Highroads



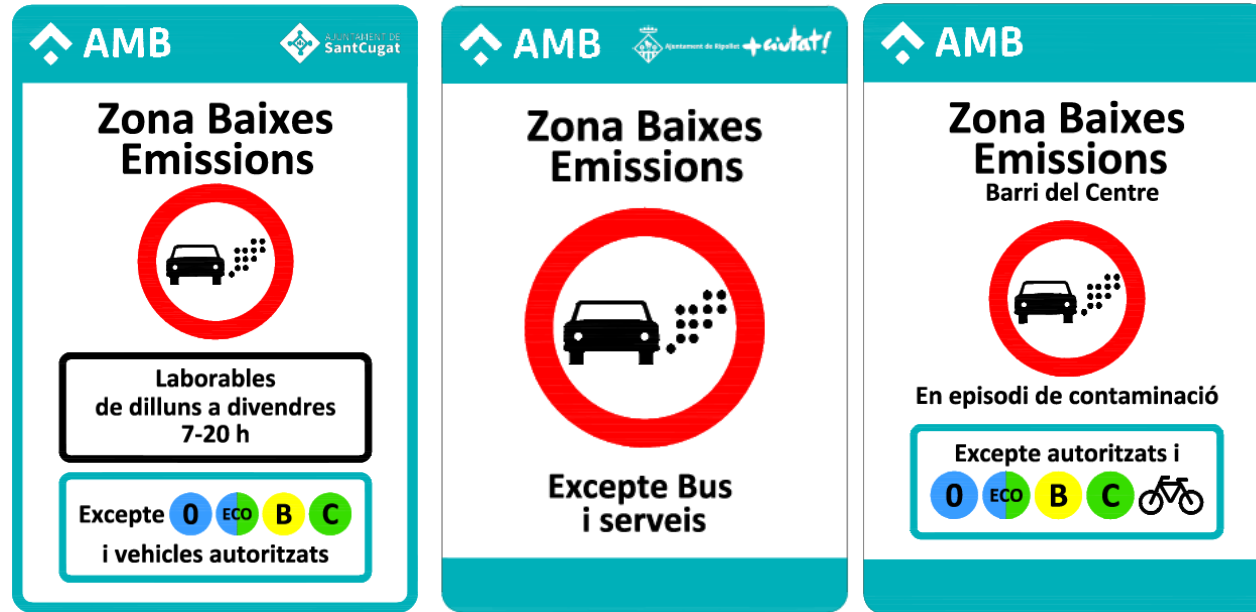
UVAR Exchange



Barcelona: Low Emission Zone – Urban areas



UVAR Exchange

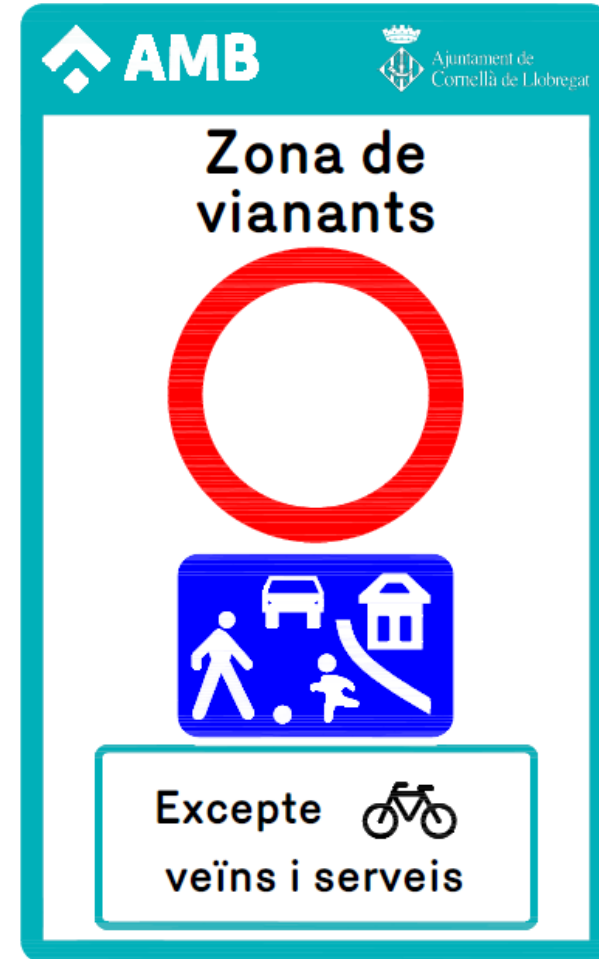


Barcelona: Camera enforcement



Advance warning

Pedestrian Zone



Existing UVAR signage in Milan

Milan: Area B – Low Emission Zone



UVAR Exchange



Milan: Area B – Low Emission Zone



UVAR Exchange



1. Text not visible (different font sizes with some inscriptions too small)
2. Correct indication of the goods vehicle symbol but text redundant
3. Restricted Euro standard not indicated (only reference to the Ordinance)
4. Text «divieto di transito» redundant
5. Text «except authorised» too small and linked to the Ordinance (redundant)
6. Text «controllo elettronico degli accessi» but no camera symbol
7. Generic indication to milan municipality website (no dedicated url)
8. VMS useless (no information - only the local LEZ name)



Milan: Area C – Congestion Charge zone



Source: TRT UVAR Exchange



Milan Area C – Congestion Charge zone



UVAR Exchange



1. Text not visible (different font sizes with some inscriptions too small)
2. Correct indication «except authorised»
3. Correct indication of the goods vehicle symbol but text redundant
4. Restricted Euro standard not indicated (only reference to the Ordinance)
5. Text «divieto di transito» redundant
6. Information for goods vehicles separated
7. Congestion charge reference via the text «accesso a pagamento»
8. correct use of symbols for exceptions but public transport redundant
9. Text «controllo elettronico degli accessi» but no camera symbol

Milan: Limited Traffic Zone



UVAR Exchange



Milan: Pedestrian Zone



UVAR Exchange



Milan: Pedestrian Zone



- Text not visible (different font sizes with some inscriptions too small)
- Text «authorised vehicles» after the loading/unloading symbol means that delivery operations during workdays 10:00-12:30 are not subject to permits (i.e. the ANPR is off)
- No indication of the goods vehicle symbol with length size limit
- Compact and clear despite not in line with prescriptions (for the additional panel)



Milan: VMS



UVAR Exchange



Some references and examples



When a prohibition/restriction applies to certain vehicles categories, these are indicated below the C,2 sign or in supplementary panels as first symbol (no need to include a text "applies to")

These examples are taken from Italy:

NO ENTRY sign for heavy duty vehicles (on the left) > not a zone but the rectangular panel is used because of the specification of a vehicle category

Limited Traffic Zone for buses and freight vehicles longer than 7,5 m with different time validities



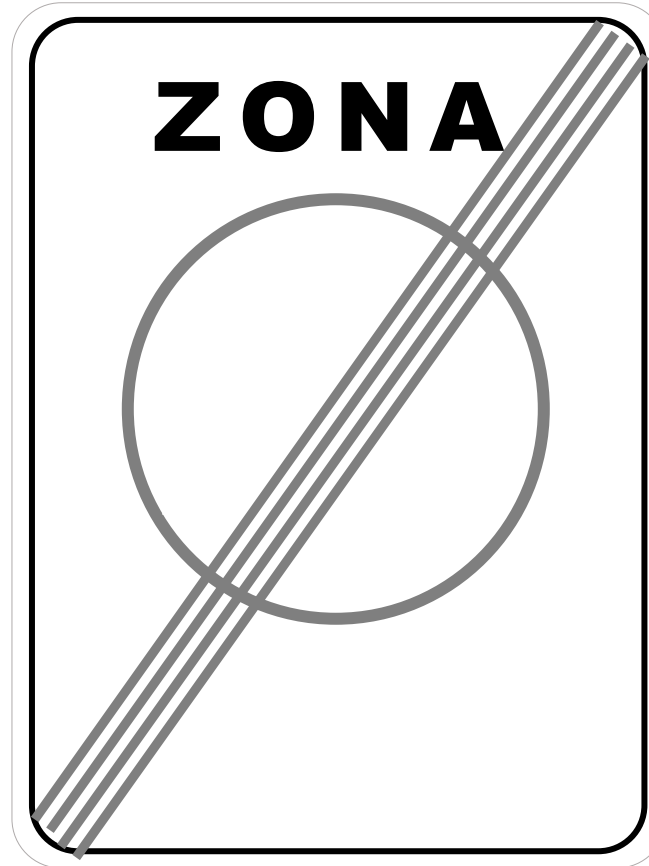
Proposals for improved and harmonised UVAR signs in Milan (IT) and Lombardy

Milan: main zonal panel

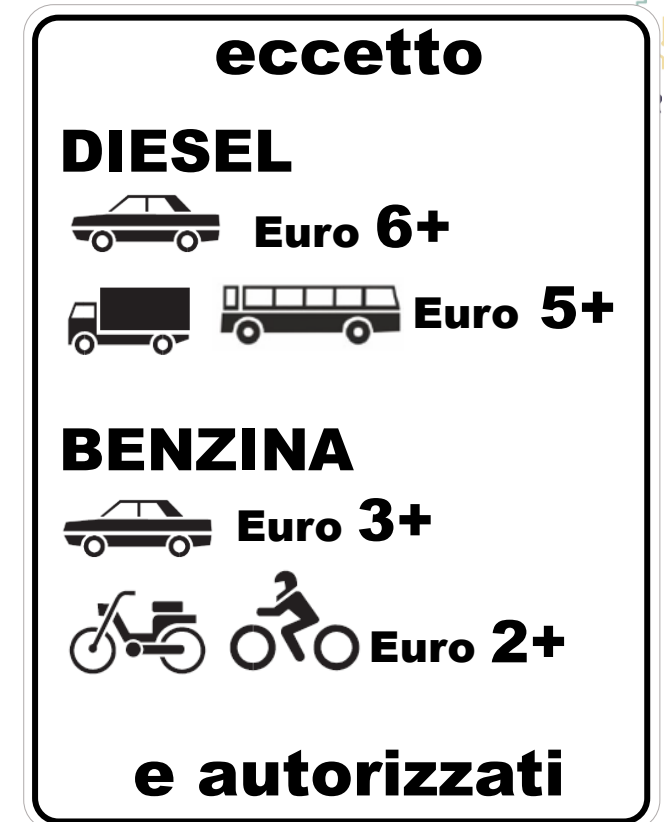
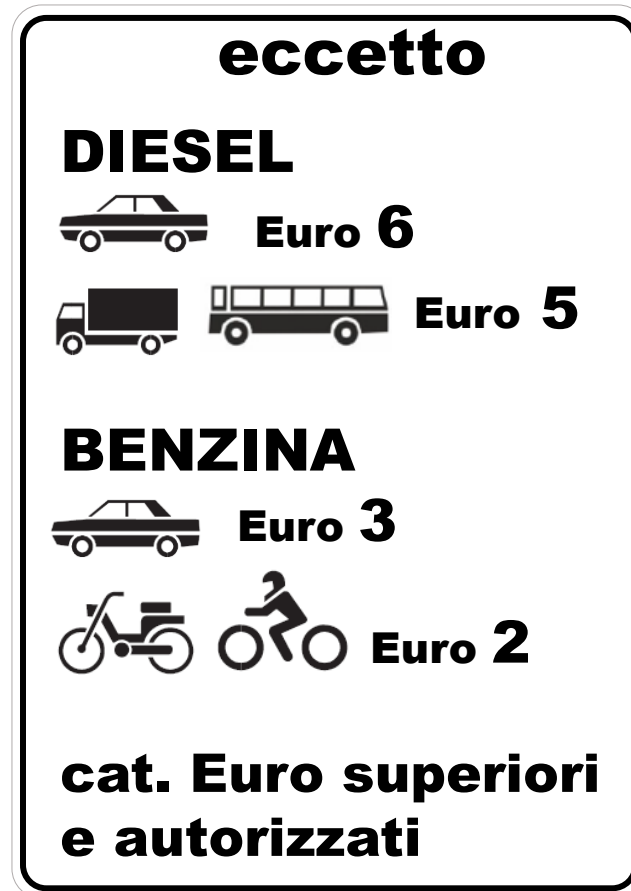
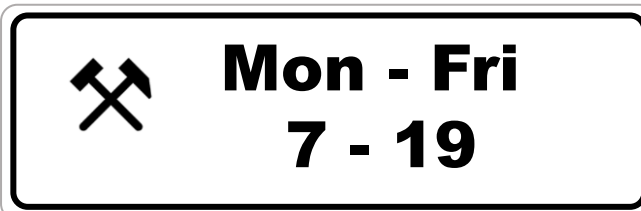
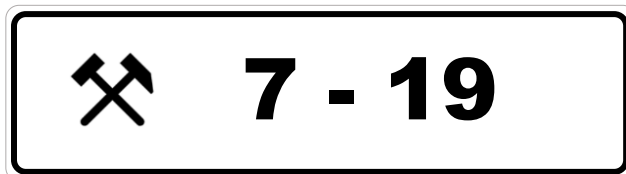


UVAR Exchange

- Adapted entry and exit sign



Milan LEZ Area B: elements



Milan LEZ proposal



Source: own elaboration

ZONA



 **Lun - Ven**
7 - 19

eccetto

DIESEL
 Euro 6
  Euro 5

BENZINA
 Euro 3
  Euro 2

cat. Euro superiori e autorizzati



info e permessi
 **02.02.02**
www.comune.milano.it

ZONA



 **Lun - Ven**
7 - 19

eccetto

DIESEL
 Euro 6+
  Euro 5+

BENZINA
 Euro 3+
  Euro 2+

e autorizzati



i permessi
www.areab.it
 +39 02 02 02

Main zonal panel:
rectangular with
polluting car symbol

Time validity changed
7am to 7 pm to avoid
half hours


Right-hand sign: time
validity changed
Monday to Saturday
(working days) to
avoid text for days


No vehicles carrying
inflammables or
explosives and HGV
length limit 12 m
removed (to be put on
another sign prior to
the LEZ)

*The main panel uses
the Tern symbol
(credit: Mr Stefan
Egger.*




https://iidre.weebly.com/symbols.html#/




ZONA




 **7 - 19**


eccetto

DIESEL
 Euro 6
  Euro 5

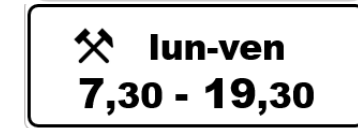
BENZINA
 Euro 3
  Euro 2

cat. Euro superiori e autorizzati



info e permessi
 **02.02.02**
www.comune.milano.it

Lombardy Region: LEZ sign proposal



The main panel uses the Tern symbol (credit: Mr Stefan Egger.
<https://iidre.weebly.com/symbols.html#/>)

Existing UVAR signage in The Netherlands

The Hague: Pedestrian & Pedestrian Priority Zone



UVAR Exchange

Pedestrian zone



Pedestrian Priority Zone



The Hague: Limited Traffic Zone and Pedestrian Zone



The Hague: LEZ



UVAR Exchange



*Authorised
4 and higher*

*Authorised
6 and higher*

Example of Low Emission Zone – Warning Signs



Rotterdam



The Hague

NL: Zero Emission Zone Sign



toegestaan
nul-emissie

*Authorised
Zero emission*

- Not yet implemented but already defined in the Regulation

Some references and examples



Denmark -
Miljøzone -
Environmental
Zone

Miljøgodkendte
køretøjer undtaget
- Environmentally
authorized vehicles
exempted



Sweden -
Miljözon -
Environmental
Zone

Applies to
Klass 2

In both DK and SE the text «Environmental zone» is indicated without the repetition of the word «zone»

In SE this is combined with a the polluting car symbol and the «klass 2» below the sign indicates «applies to» (no need to put a text for it)

In DK they generically use the indication of exemptions for authorised vehicles but without any reference to the emission Euro class (this is more as in a LTZ)



The Netherlands -
Milieu Zone -
Environmental zone

The term **UITGEZONDERD** (except) instead of **TOEGESTAAN** (authorised) is widely used in Belgium but also in NL: why not harmonising the practice in Dutch speaking countries?



The Hague



Brussels



Brussels



Brussels

Proposals for improved and harmonised UVAR signs in The Netherlands

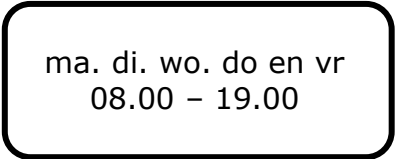


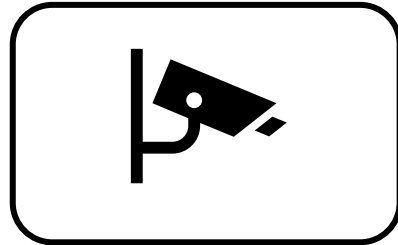

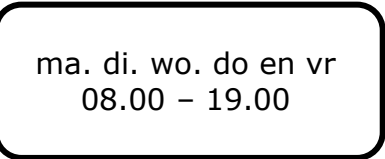

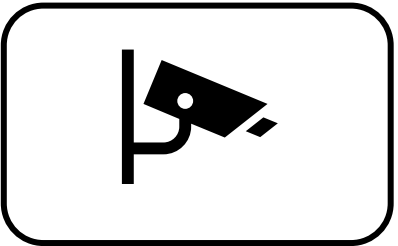

Supplementary panels in NL: what is allowed?

According to the Reglement verkeersregels en verkeerstekens 1990 (RVV 1990), subplates must be placed under traffic signs and may include:

1. A further explanation of the traffic sign;
2. If only symbols appear on a lower sign: the traffic sign only applies to the road users or the traffic behavior indicated in this way;
3. If a lower sign contains the word "except" in combination with symbols: the traffic sign does not apply to the road users or the traffic behavior thus indicated.
4. If the intended traffic behavior is indicated by means of texts or signs, whether in combination with symbols, the intended traffic behavior is apparent from the bottom sign.

<https://wetten.overheid.nl/BWBR0004825/2021-07-01#Bijlage1>

NL: additional panels proposals

	Time validity of the scheme, if applicable	The vehicles that are permitted to enter through the general LEZ rule	Enforcement	Further information
LEZ examples		 		
LTZ examples				

NL: LEZ proposals of additional panels



Text "and authorised" added (in case of other exceptions)



Compact (1 panel) and consistent with current legislation



Text "Euro" added
Text "higher Euro and authorised" added



The Hague: LEZ complete proposal

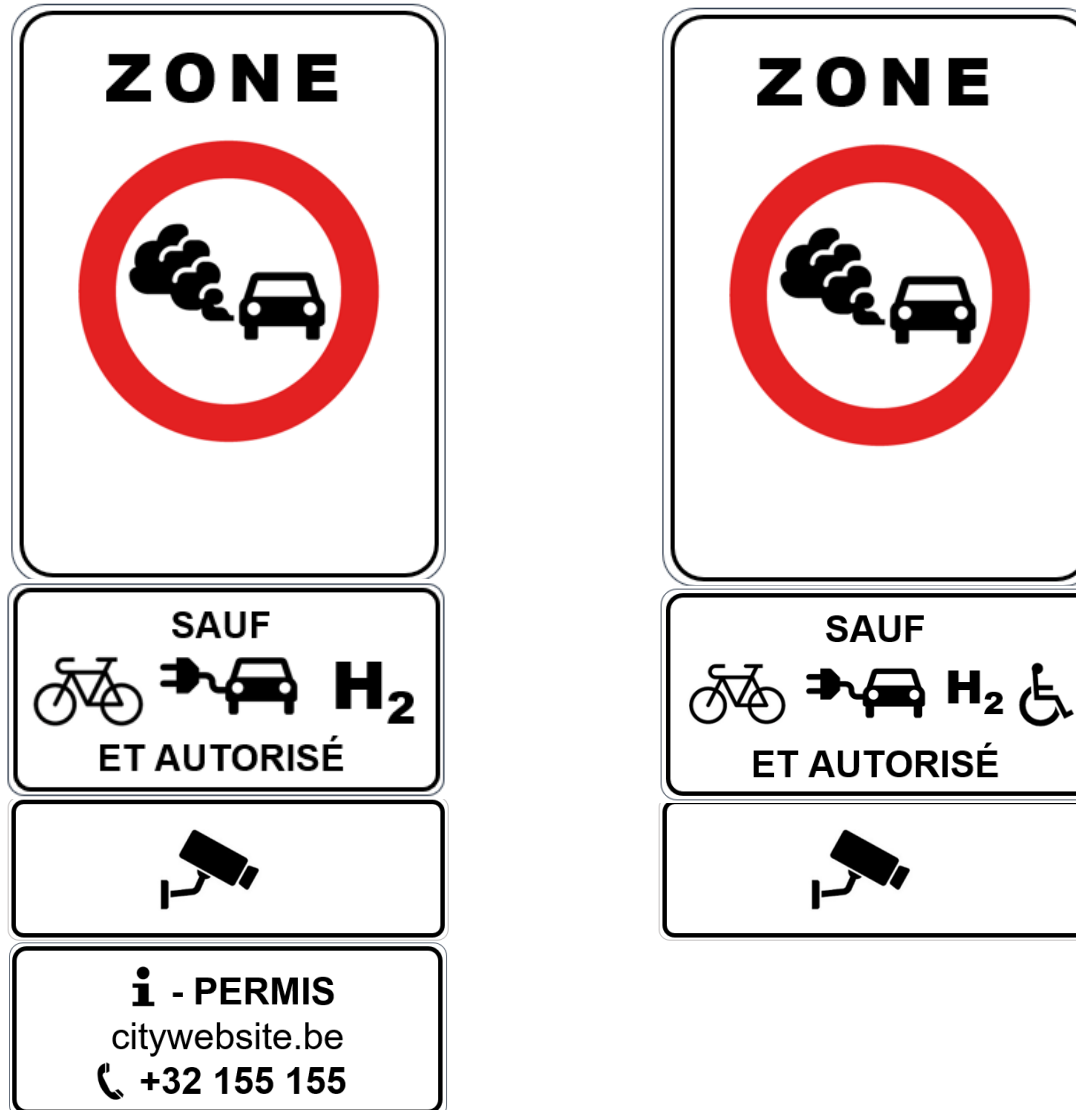


Proposals for Zero Emission and Congestion Charge Zones

Zero Emission Zone - proposal



UVAR Exchange



Only put the disabled people symbol if manually enforced or EU disability card and centralised database in place

Hydrogen symbol refers to fuel cell

Congestion Charge Zone - proposal



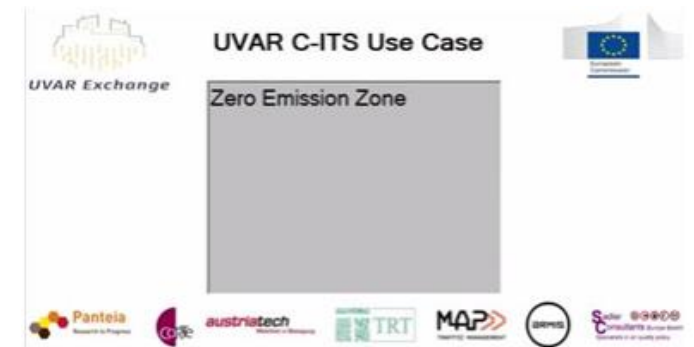
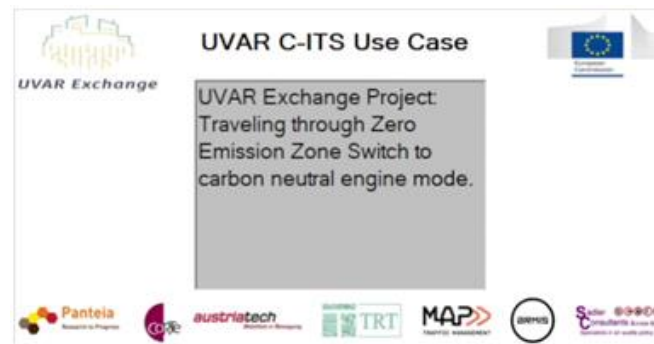
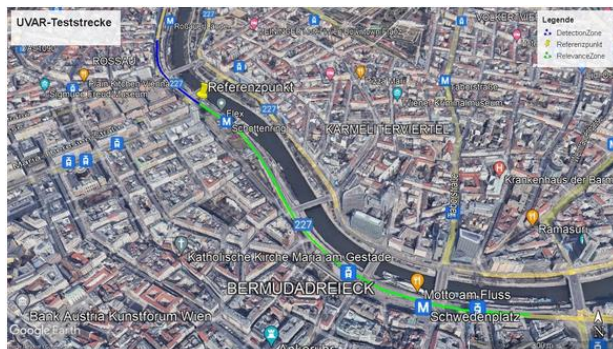
UVAR Exchange



C-ITS Demo in Vienna (AT) and Trento (IT)

C-ITS Demo in Vienna

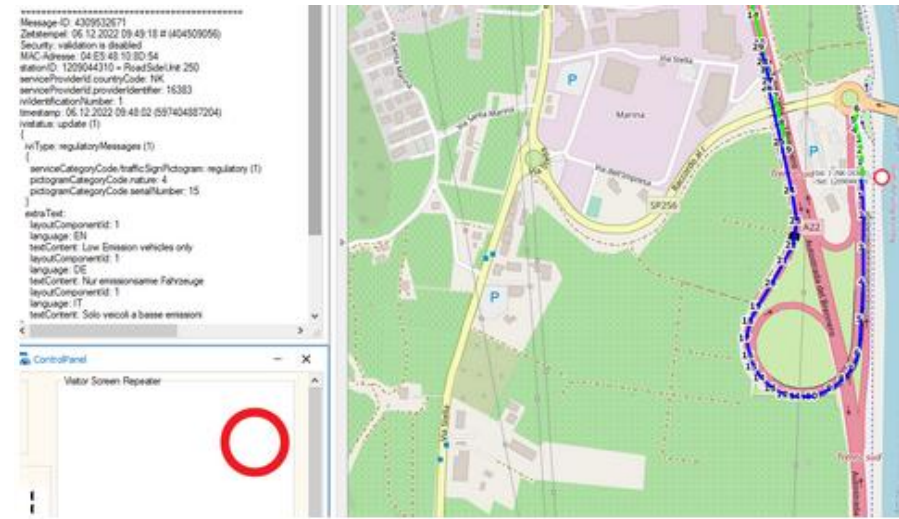
- Demo of C-ITS Use Case „Free Text Message“
- Aim of demo was to verify that correct message is sent out
- Message was shortened to „Zero Emission Zone“
- Easier for driver to comprehend complex information



C-ITS Demo in Trento



UVAR Exchange



- Demo of C-ITS Use Case „Traffic Sign“
- Aim of demo was to verify that correct message is sent out as early warning
- Specific pictogram is displayed to inform the driver on the Low Emission Zone
- Early warning on upcoming UVAR has positive effects on traffic regulation in cities and urban areas.