

Danube wide infrastructure standards

Discussion

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Danube wide infrastructure standards – way forward

- Key findings from the investigation
 - Pre-information from the catalogue which is still in the review phase
- Examples of several topics where standards are different
 - Proposals for a common standard using the best from all DCP countries
- How to influence national standards to upgrade them to the „Danube wide”
- Next steps?

Key findings

- In most of the countries a high-quality standard, aiming to improve the infrastructure
- In many countries standards are rather a wish or a plan than respecting the reality
- Differences in obligations to follow the standard (law, rules, standard, recommendation) but it is not highly correlated with the realized quality
 - e.g. CZ, SK, AT only technical standard but best realization in the region
- Some topics quite similar, some quite different

Comparison of several topics with proposed improvement/harmonization

1. Level of standard
2. Level of realization
3. Cycling facilities (elements of cycling infrastructure)
4. When to apply which infrastructure
5. 2 ways cycling track
6. Minimal width
7. Continuity request
8. Curbs and slope
9. Traffic lights
10. Signallization
11. Out of the scope of the cycling infrastructure standard but important
 1. 30 km/h zones
 2. maintenance

1 Level of standard

Country	document	facility	signage	parking	document type	Issued
AT	[4] RVS - 3.12.13 Road Engineering for bikes	X			technical standard	2014
AT	[5] bicycle parking in Carinthia			X	guideline	2015
BG	[6] BG - Ordinance № RD-02-20-2 transport system urban	X		X	rules	2018
CZ	[10] CZ - TP 179 - road design for cyclists	X	X	X	technical standard	2017
HR	[13] HR - Rules on CYCLING INFRASTRUCTURE	X		X	rules	2016
HR	[14] HR - Rules on traffic signs, signalization and equipment		X		rules	2019
HU	[20] HU - Cycling public road design	X		X	rules	2019
RO	[22] RO - Ordinance no. 195/2002 Road Code		X		rules	2002
RO	[23] RO - LAW no. 250 parking of bicycles in public space			X	law	2020
RO	[25] RO - STAS 10144 2 91 - street design	...			rules	1991
RS	[27] RS - Manual for road design - Bicycle	X		X	handbook	2012
RS	[28] RS - The Rulebook on traffic signals		X		rules	2021
SI	[29] SI - RULES on cycling areas	X		X	rules	2018
SI	[30] SI - Bicycle-friendly infrastructure guidelines	X		X	guidelines	2017
SI	[31] SI- Rules on traffic signals		X		rules	2019
SK	[33] SK- TP 085 - DESIGN OF CYCLING INFRASTRUCTURE	X	X	X	technical standard	2019

- Romania has no cycling infrastructure standard, just a few sentences in street design rules
- Serbia has a high-quality manual which is not binding
- Best developed countries AT, CZ and SK have „only” non binding technical standards

2 Level of realization (self assessment)

	AT	BG	CZ	HR	HU	RO	RS	SI	SK
partly - not always standard	X	X		X		X	X		
partly - stick to standard					X				X
great deal			X					X	
completely									

1. Most of the countries report having just a part of infrastructure and deviation from the standards
2. Only CZ and SK seem to be quite satisfied
3. AT answer is suspicious knowing a bit about reality

3 Cycling facilities

	AT	BG	CZ	HR	HU	RO	SK	SI	RS	DK	Crow (NL)	Presto	UNECE
Cycle tracks	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Cycle lanes	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Advisory cycle lanes /sharrows	Green	Red	Green	Red	Green	Green	Green	Green	Red	Green	Green	as one category	no sharrows
Cycle streets	Green	Red	Green	Red	Red	Red	Red	Red	Red	Green	Green	Green	Green
Cycle roads	Yellow	Red	Red	Green	Red	Red	Red	Green	Green	Green	Yellow	Yellow	Yellow
Contraflow	Green	Red	Green	Green	Green	Red	Green	Green	Red	Green	Green	Green	Green
Greenway/multipurpose path	Red	Red	Red	Red	Green	Red	Red	Green	Red	Green	Green	Red	Green
Mixed-use zones	Green	Red	Green	Green	Red	Red	Red	Green	Red	Green	Green	Green	Green
Cycle and pedestrian tracks	Green	Green	Green	Green	Green	Green	Green	Green	Green	not suggested	not suggested	Green	Green
Cycle routes	Green	Red	Green	Green	Green	Red	Red	Red	Green	Green	Green	Green	Green
Cycle highways	Yellow	Red	Red	Red	Yellow	Red	Red	Red	Red	Green	Green	Green	Green

Green = existing

Red = not existing

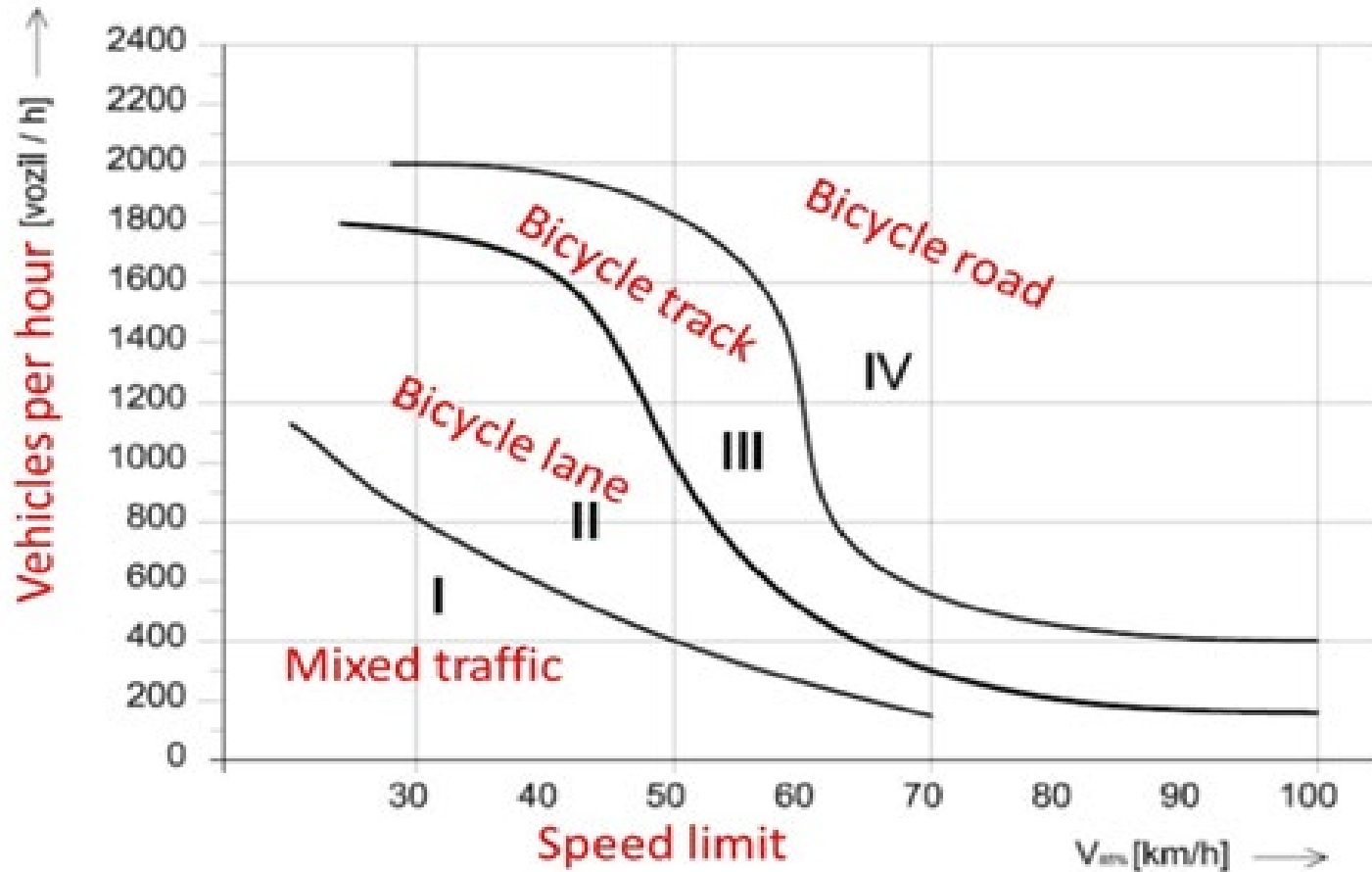
Yellow = covered partly with other categories

- Recommendation: introduce all categories in all countries in the same way.
- The only „overall green” country is DK

4 when to apply which infrastructure

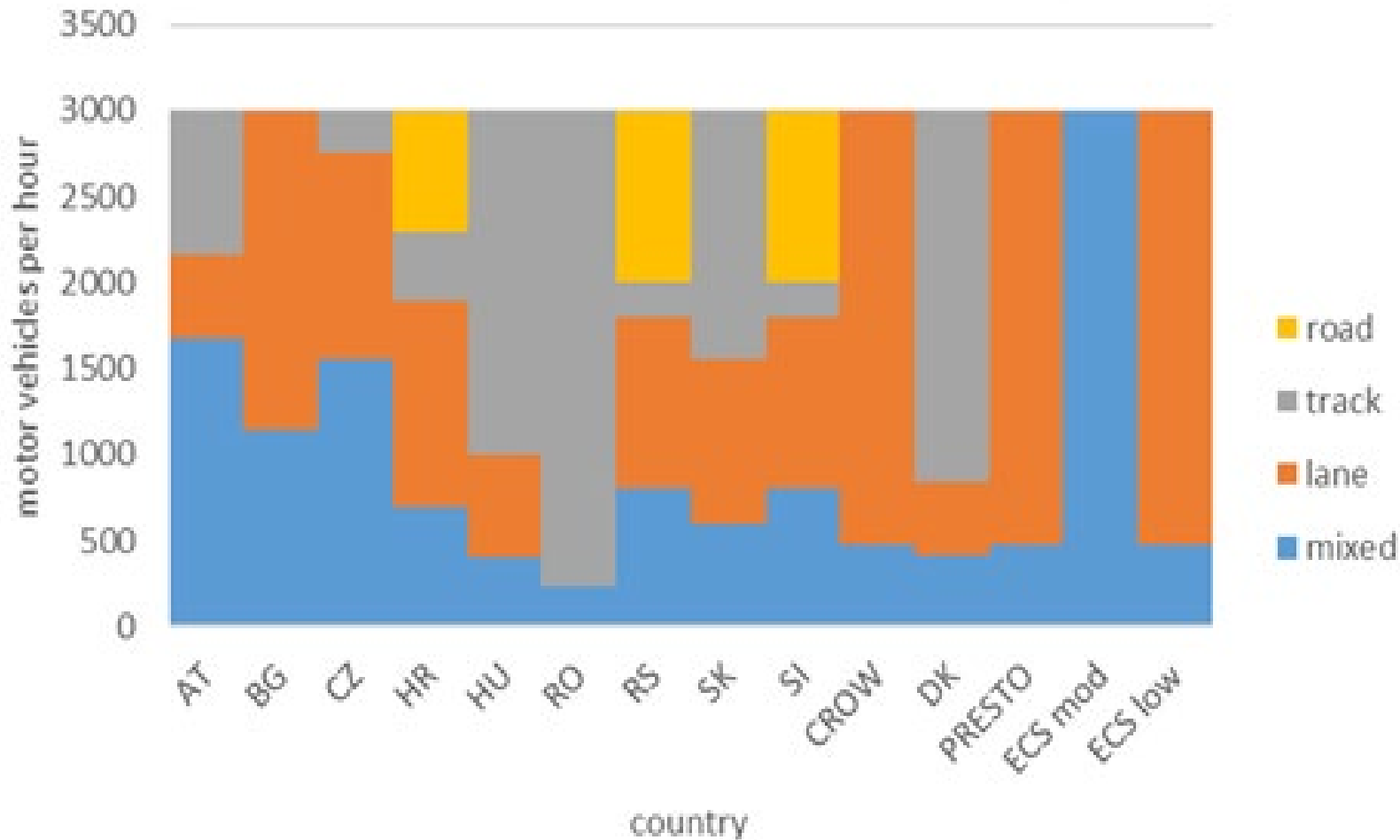
- Typical challenge considered in every country: in which situation
 - Mixed traffic with motorized vehicles
 - Cycle lane
 - Cycle track (along the road, separated by the parapet)
 - Cycle road (separated from the road)
- In most of cases criteria is a speed/density matrix
 - Significant differences among the countries
 - In several countries not defined limits but wide ranges of overlapping

Example of national standard SI



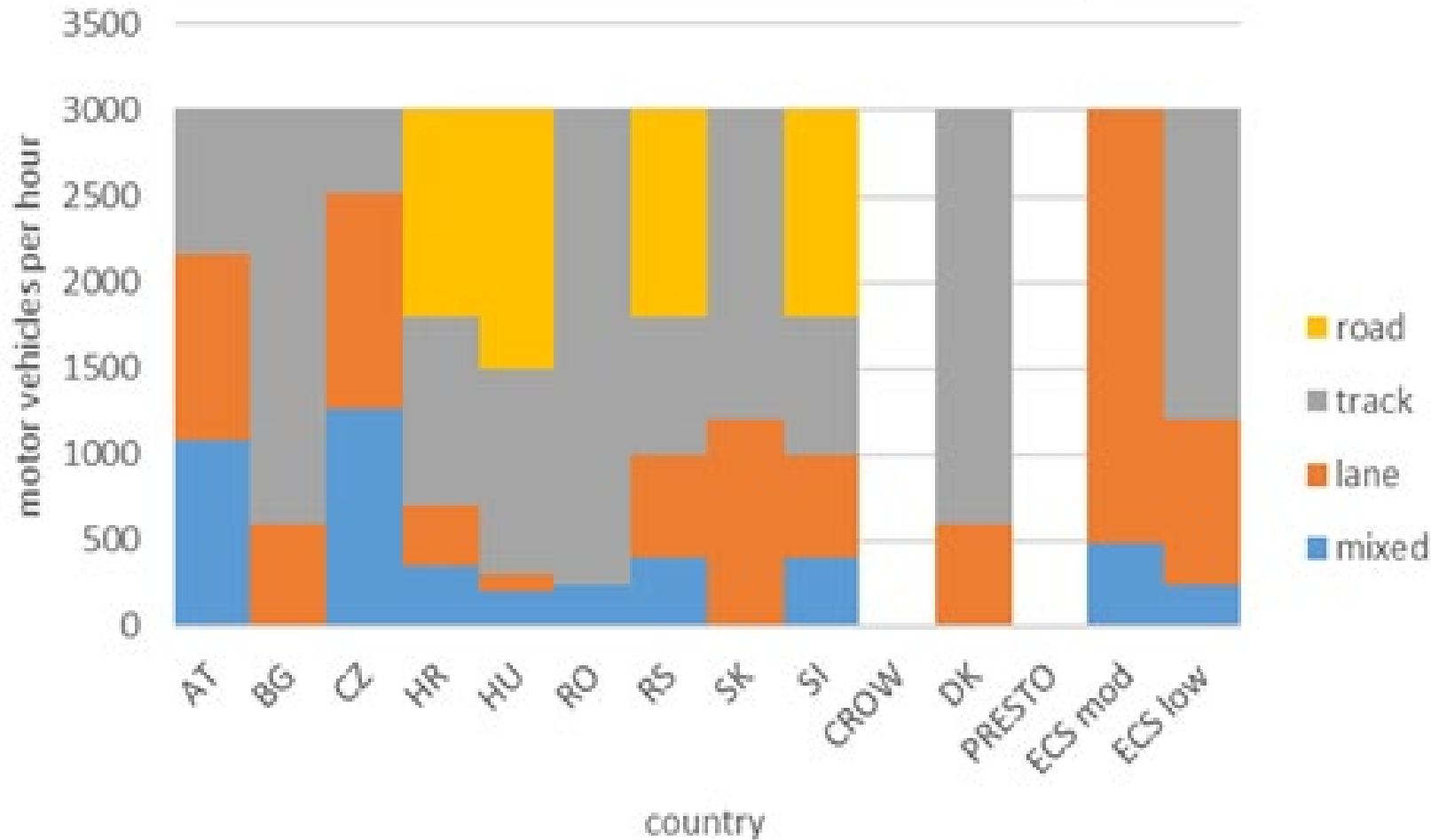
Comparison of all standards 30 km/h

bike infrastructure for 30 km/h



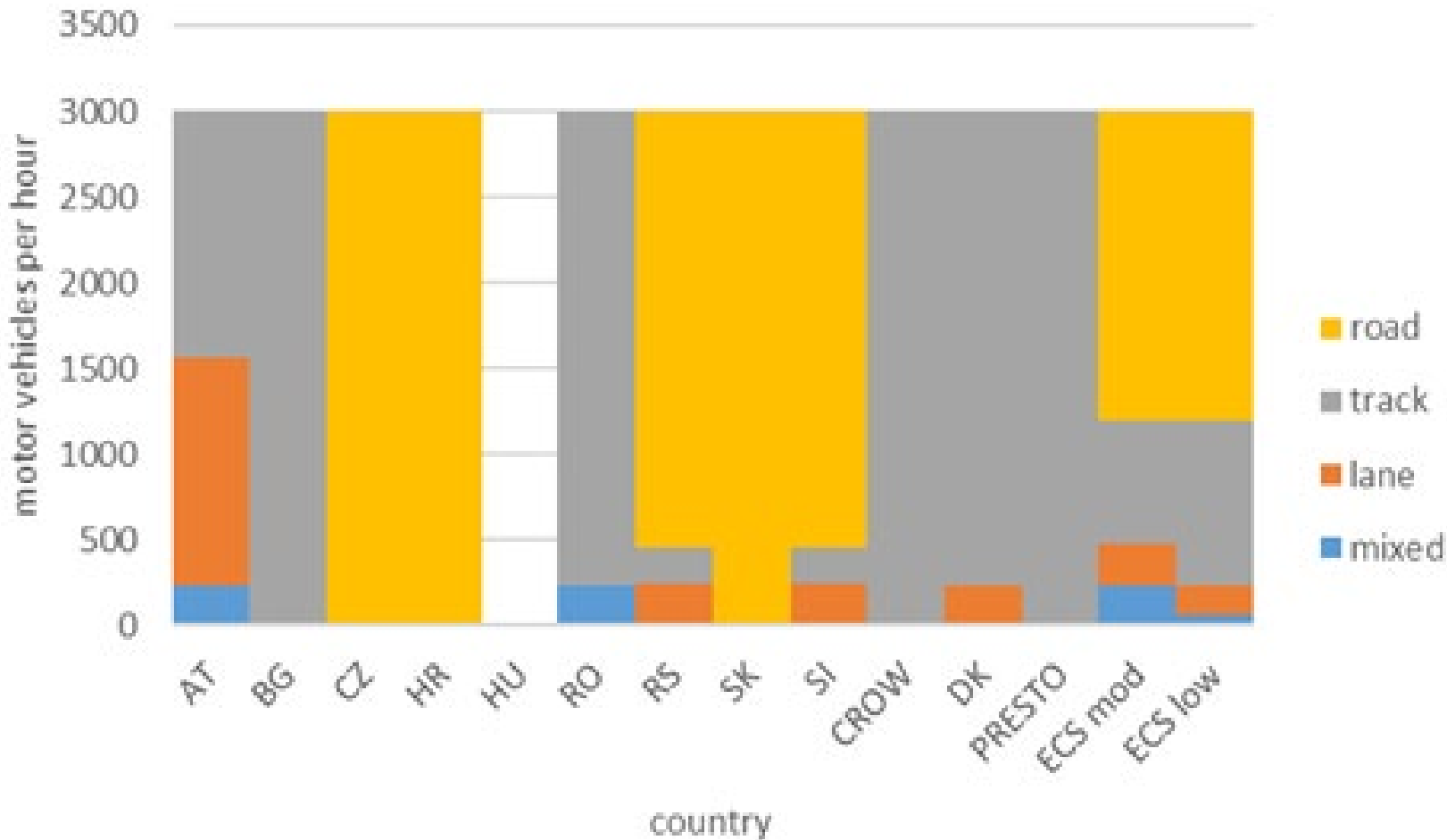
Comparison of all standards 50 km/h

bike infrastructure for 50 km/h



Comparison of all standards 80 km/h

bike infrastructure for 80 km/h



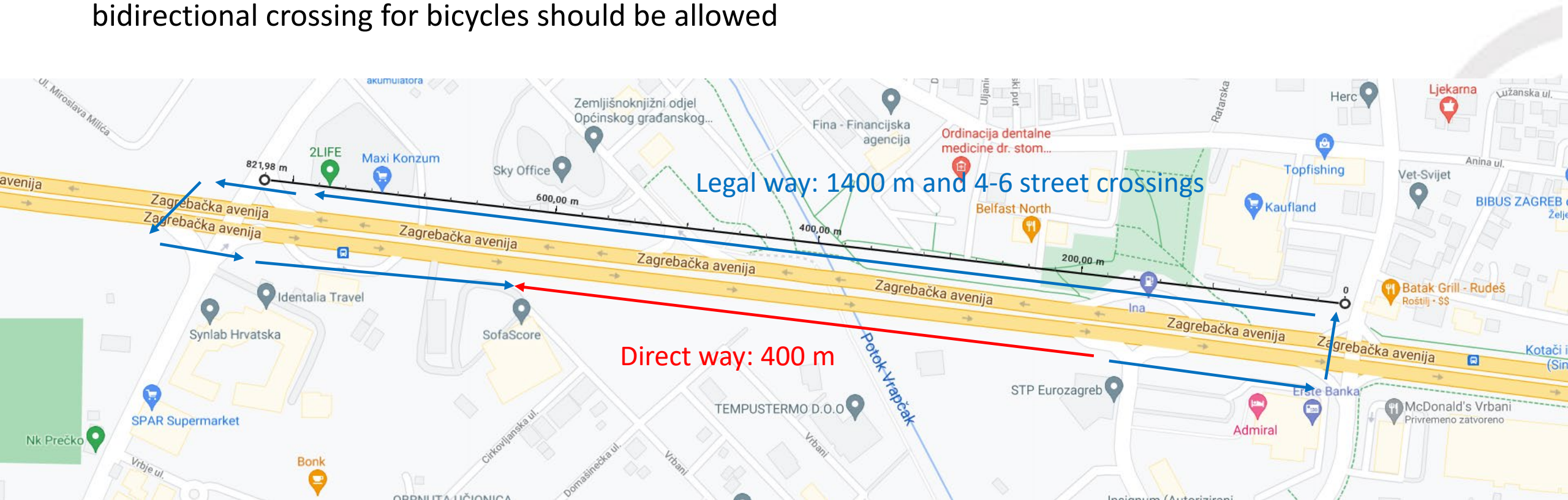
Proposal for a common standard

	speed km/h	30	40	50	60	70	80	90
v/h	v/d							
50	417	Blue	Blue	Blue	Blue	Blue	Blue	Blue
250	2083	Blue	Blue	Blue	Blue	Blue	Orange	Orange
500	4167	Blue	Blue	Orange	Orange	Orange	Grey	Grey
1200	10000	Orange	Orange	Orange	Grey	Grey	Grey	Grey
2000	16667	Orange	Orange	Grey	Grey	Yellow	Yellow	Yellow
2500	20833	Grey	Grey	Grey	Yellow	Yellow	Yellow	Yellow

- „Better median value” – almost the same as „ECS Low”
- No continuous lines – speed limits are discrete
- No overlapping – clear definition of minimal standard, you can always make even better

5 - two ways cycle tracks

- 1) On the city avenues with 2 or more motorized traffic lanes or distances between avenue crossing possibilities (intersections) longer than 400 m, a bidirectional cycling track should be allowed on both sides of the avenue.
- 2) On all intersections including at least one road with 2 or more motorized traffic lanes, bidirectional crossing for bicycles should be allowed



6 Minimal width

Cycle Track		AT	BG	CZ	HR	HU	SK	RS	SI	RO	CROW	PRESTO
Min. width (m)	One way	1,00	1,50		1,00	1,50	1,00	1,50	1,00	1,00	1,70 m	2,00
	Two way	2,00	2,50		2,00	2,25	2,00	2,00	2,00	2,00	not specified	2,50

- Recommendation: follow PRESTO: 2/ 2,5 m
- Maybe even more (future proof for cargo bikes, tandems, trailers, ...) ?

7 Continuity request

	AT	BG	CZ	HR	HU	RO	RS	SK	SI
Interruption of a cycling track	a)	b)	b)	b)	a)	b)	c)	a)	d)

Legal

Not legal but quite common

Only exceptional

Not existing

- Cycle track disappearing without proper transition to the mixed traffic (or other side of the street) should not be allowed



8 Curbs and slope

	AT	BG	CZ	HR	HU	SK	RO	RS	SI	PRESTO
Sharp curb at intersections and crossings	In some places, up to 3 cm	Common, up to 4 cm	In some places, up to 3 cm	Common, 3 cm or more	No sharp curbs	In some places, up to 3 cm	In some places, up to 10 cm	In some places, up to 12 cm	No sharp curbs	No sharp curbs
Slopes at the transition	not specified	Max 7%	Max. 1:12 (8%)	Differences in slope	Max 8%	Max. 1:12 (8%)	Differences in slope	not specified	Max 8%	1:20 (5%)

- Curb must not be legal (Croatia!)
- Max slope 8% is more than OK – short distance

9 Traffic lights

- No pushbutton for cyclists
- Separate light and phase duration for cyclists
- Fair waiting time compared to the motorized traffic
– e.g. for any direction average total waiting time no more than 50% longer
- Early starting green light
- Turn right on red

10 Signalization

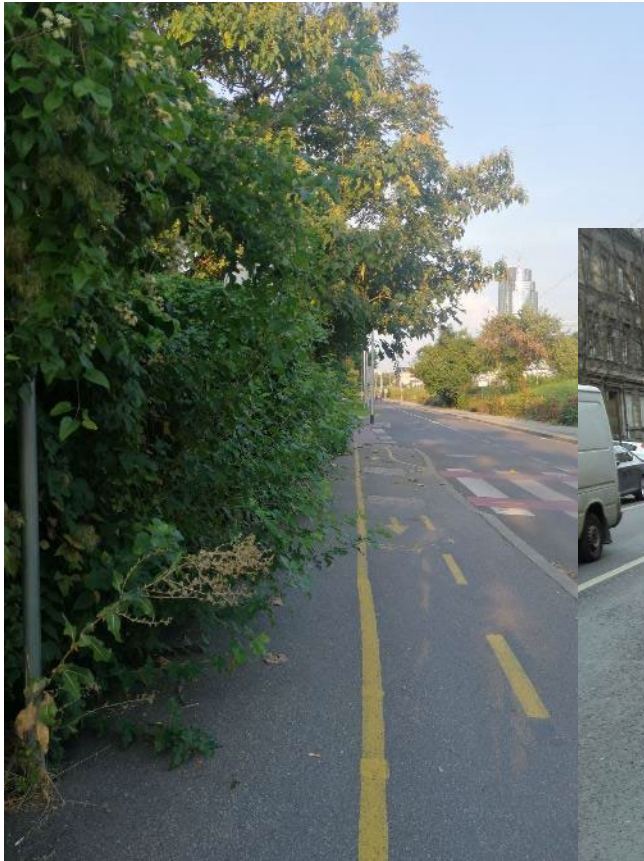
- Complete harmonization is not realistic objective, but signs are overall intuitive and clear, despite its difference
- Realistic recommendations
 - Introduce missing signs in the DCP countries to support introduction of appropriate new infrastructure to be introduced
 - Encourage using of additional panels that are already existing in legislation (arrows, bike pictograms etc.) by giving examples in the national signage legislation to provide additional information for safety and comfort
 - Promote equality of cycling traffic by integrating cycling signage in the common signs – e.g. combine a bike route logo with the road logos in the signposting boards

11 Not in the scope of infrastructure standard but important – 30 km/h zones

	AT	BG	CZ	HR	HU	RO	RS	SI	SK
not defined		X		X					
few cases								X	X
sporadically			X				X		
consistently	X				X	X			

- Recent example – new traffic safety law in Croatia – proposal to make 30 km/h zones common and easy to implement is declined
- How to influence organizing 30 km/h zones?

11 Not in the scope of infrastructure standard but important - maintenance



How to influence better maintenance ?

The way from agreement about regional standard to the improvement in national legislation?

- Brainstorming
 - How you would (try to) do?
 - Which problems you expect
 - How can we support each other?
 - Best practice sharing

Next steps?

- What we agreed so far?
- What is open?
- How to proceed with it?