

# Can signs for traffic control cameras be harmonized?



Presentation to  
Group of Experts on Road Signs and Signals, WP.1, UNECE  
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*The goal:* Create a sign for fixed speed camera  
and a sign for average speed cameras

*The method:*

- ✧ Examine the design of speed cameras
- ✧ Compare existing road signs for speed cameras and for all related types of traffic control
- ✧ Determine if similar signs are used for other purposes
- ✧ Create several symbols and signs
- ✧ Test the signs for comprehension and legibility

# Fixed speed cameras



Can one symbol reflect all speed camera designs?

No. There are too many differences.

How do the cameras differ?

Shape

Color

Size

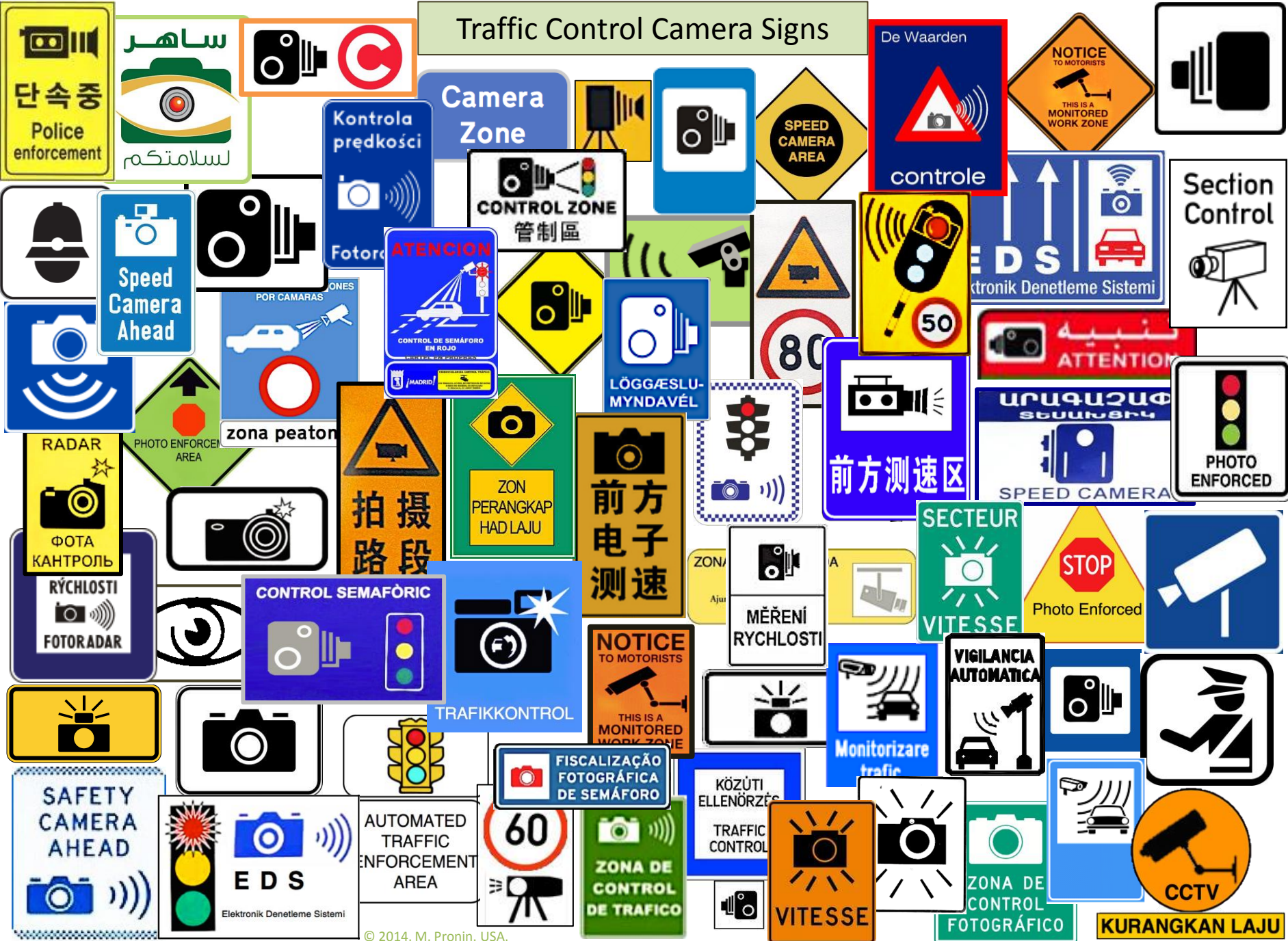
Configuration

Installation

(on the roadside or overhead)

Height level

# Traffic Control Camera Signs



In which VC sign sections are the signs found?

A: Warning

E: Special regulation

F: Information

H: Additional panel

Do the symbols resemble the actual cameras?

No.

# Besides speed control, how are cameras used?

Red lights

Speed and red lights

Stop signs

Level crossings

No overtaking

Tolls

Turns

Bus lanes / HOV lanes

Seatbelts

Congestion zones

Pedestrian zones

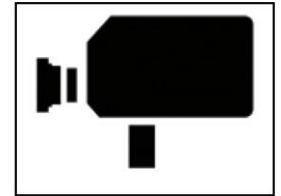
Parking

Noise pollution

Video surveillance

License plate  
recognition

# Video surveillance signs

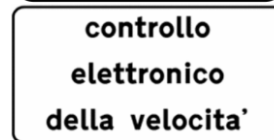
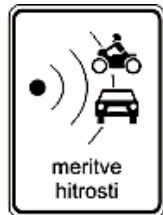


# Mobile camera signs





# Radar signs



# Electronic toll signs



# Symbol similarity

Amphitheater

Radar

Electronic toll

Shooting noise

Radar

Wifi



Scenic area

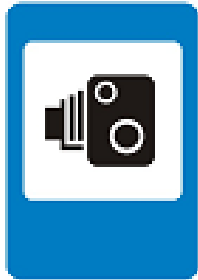
Speed camera

Scenic area

Speed camera

Scenic area

Speed camera



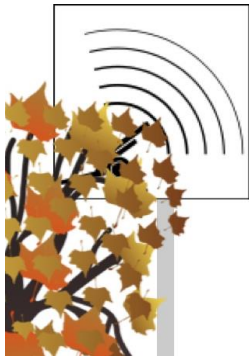
# Symbol similarity

?????

?????

?????

?????



# End of camera monitoring signs



# PROPOSED SIGNS FOR SPEED CONTROL AND CAMERAS

Right-hand side of the road

	SPEED					RED LIGHT		
	Radar Only		Radar and Camera			Camera		
	1	2	3	4	5	6	7	8
Symbol or Sign								
Sign C, 14 A, 17a								
Sign C, 14 A 17c								
	VMS Radar Only					Red Light and Speed Camera		
		9		10			11 / 12	
Sign C, 14 A, 17a/c								

# PROPOSED SIGNS FOR SPEED CONTROL AND CAMERAS

Left-hand side of the road

	SPEED					RED LIGHT CAMERA		
	Radar Only		Radar and Camera			Camera		
	1	2	3	4	5	6	7	8
Symbol or Sign								
Sign C, 14 A, 17a								
Sign C, 14 A, 17b								
	VMS Radar Only					Red Light and Speed Camera		
		9		10		11/12		
Sign C, 14 A, 17a/b								

# *Sign test: radar*



# Sign test: Speed camera





# *Sign test: Speed camera*



# *Sign test:* Speed camera



# *Sign test:* Red light camera

Non-urban, ahead of light



# *Sign test:* Red light camera

Urban, ahead of light, both sides of the road



# *Sign test:* Red light camera

Urban, at the light



# *Sign test:* Red light camera

Urban, at the light, both sides of the road

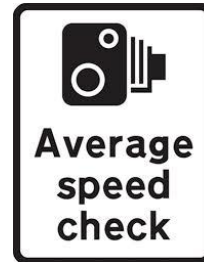
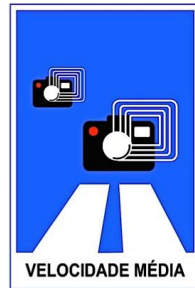


# ESTIMATED NUMBER OF SAFETY CAMERAS ACCORDING TO DETECTOR DATABASES

NATION	FIXED												MOBILE	
	Speed	Red Light	Red Light & Speed	Tunnel	Section	Variable Speed	Average Speed	Toll	Traffic	No Overtaking	Following Distance	Bus Lane		TOTAL
Armenia	15												15	
Austria	1269	88			58			16			59		1490	671
Belgium	509	9	700	4	35	2						1	1430	700
Bosnia/Herz	39	3											44	
Bulgaria	81	30	20										121	20
Croatia	221		273										494	273
Czech Rep	101	44	1211										1356	1211
Denmark	120	6						1		127		1	255	71
Finland	1018	25											1043	
France	1612	47	95	24		37							1815	933
Germany	2642	609		31		44		298	734				4358	
Greece	396												396	
Hungary	178	22	506		4							2	215	506
Italy	984	1423					1626						4033	10,636
Latvia	4												4	
Lithuania	75		2						5			2	84	
Luxembourg	20-35												20-35	
Malta	14			4									18	
Moldova	76												76	
Netherlands	1182	149	921	3	61							16	2332	918
Norway	495	6						71					572	4
Poland	1240												1240	2178
Portugal	59												59	554
Romania	396	205	205										806	515
Russia	3000+												3000+	
S Africa	528												528	
Serbia	116	4											106	
Slovakia	13	37											50	103
Slovenia	24							63					87	129
Spain	781	67											848	3447
Sweden	1030		923										1030	923
Switzerland	377	28	339	24				3					820	339
Turkey	5	4											9	
UK	1035	3316	941				563	12					5867	9605

Data is for numbers as of August 2014    Luxembourg's 20-35 cameras to be operational in 2015  
 Latvia will add 20 speed cameras at end of 2014    Armenia will add 170 speed cameras by 2020  
 Most numbers shown here are far below actual numbers; data is incomplete and not reported with uniform definitions

# Average speed camera signs

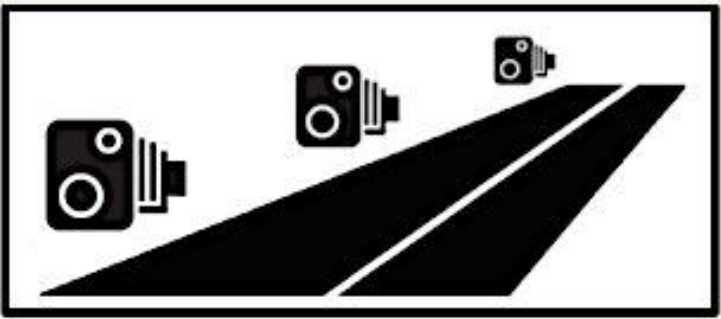
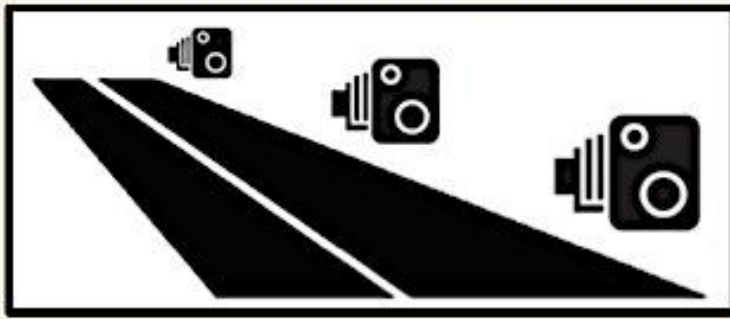


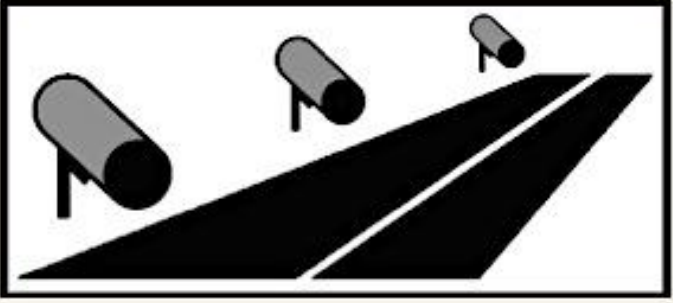
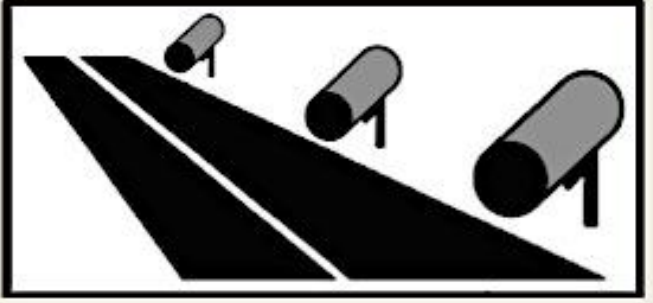


What do these signs have in common? They all have inscriptions.





# PROPOSED SIGNS FOR AVERAGE SPEED CONTROL

Both sides of the road

Left-Hand Side of the Road		Right-Hand Side of the Road
	1	
	2	
	3	





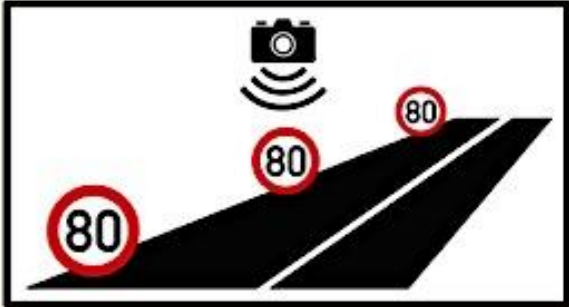
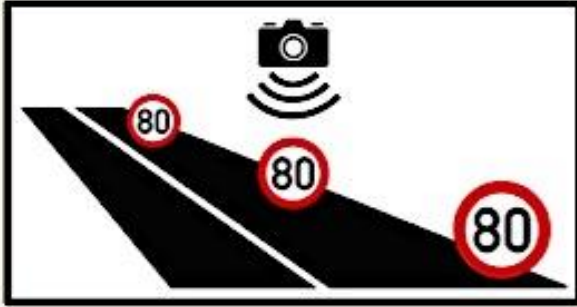
# PROPOSED SIGNS FOR AVERAGE SPEED CONTROL

Shape adjustment

Sign Shape		Right-Hand Side of the Road
Wider	2	 A diagram showing a road with a white center line that tapers from left to right, indicating a wider road on the left. Three speed camera icons are positioned on the right-hand side of the road, with their fields of view indicated by curved lines.
Narrower		 A diagram showing a road with a white center line that tapers from left to right, indicating a narrower road on the left. Three speed camera icons are positioned on the right-hand side of the road, with their fields of view indicated by curved lines.

# PROPOSED SIGNS FOR AVERAGE SPEED CONTROL

Other signs, both sides of the road

Left-Hand Side of the Road		Right-Hand Side of the Road
	4	
	5	
	6	

# REMINDER PANELS ALONG AVERAGE SPEED CONTROL ROUTES

Both sides of the road

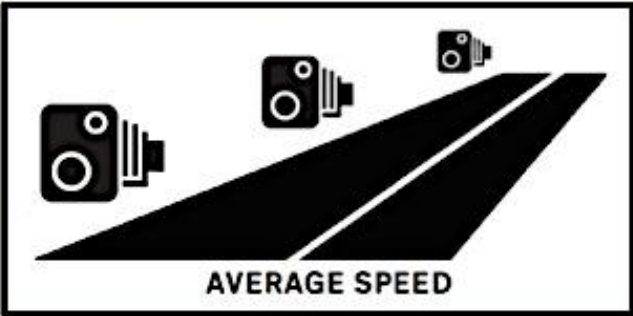
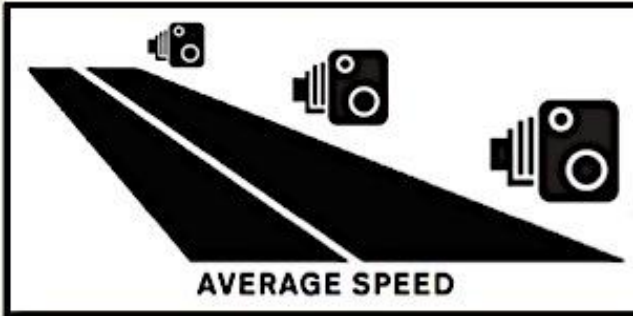
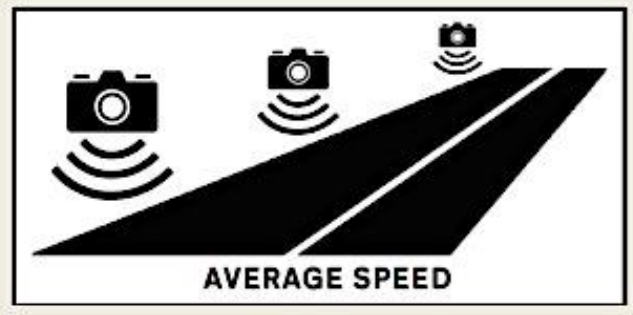

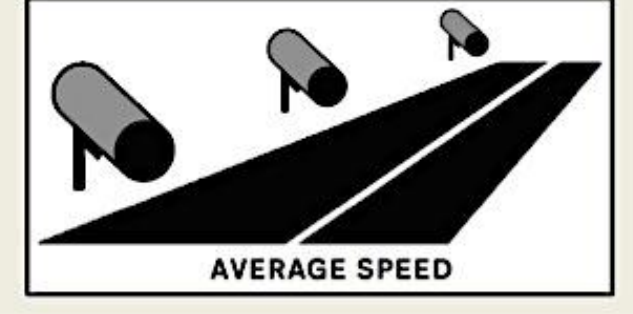



Left-Hand Side of the Road		Right-Hand Side of the Road
	1	
	2	
	3	
	4	
	5	





# PROPOSED SIGNS FOR AVERAGE SPEED CONTROL

With inscriptions

Left-Hand Side of the Road		Right-Hand Side of the Road
 <p>Average Speed</p>	1	 <p>Average Speed</p>
 <p>Average Speed</p>	2	 <p>VELOCIDAD MEDIA</p>
 <p>Average Speed</p>	3	 <p>VELOCIDADE MÉDIA</p>

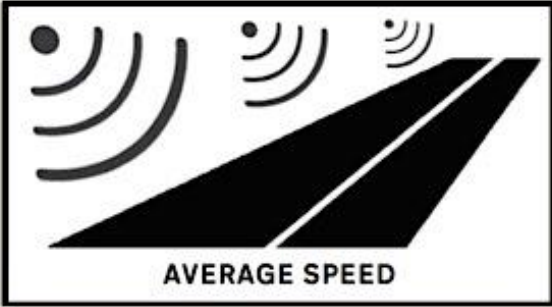



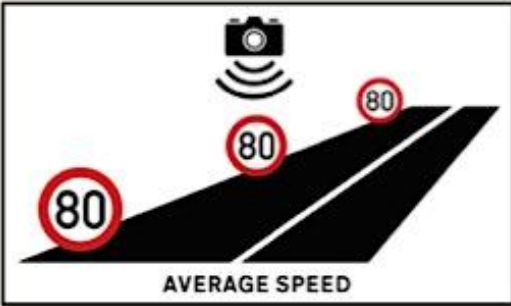
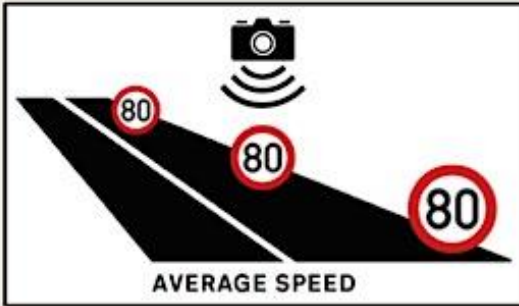
# PROPOSED SIGNS FOR AVERAGE SPEED CONTROL

Shape adjustment, with inscriptions

Left-Hand Side of the Road		Sign Shape
 <p>A rectangular sign with a black border. It features a black silhouette of a road with a white center line, receding into the distance. Three camera icons with signal waves are positioned above the road. The text "AVERAGE SPEED" is printed in black at the bottom.</p>	2	Wider
 <p>A rectangular sign with a black border. It features a black silhouette of a road with a white center line, receding into the distance. Three camera icons with signal waves are positioned above the road. The text "AVERAGE SPEED" is printed in black at the bottom.</p>		Narrower

# PROPOSED SIGNS FOR AVERAGE SPEED CONTROL

Other signs, with inscriptions

Left-Hand Side of the Road		Right-Hand Side of the Road
 <p>AVERAGE SPEED</p>	4	 <p>RADARS FRÉQUENTS</p>
 <p>AVERAGE SPEED</p>	5	 <p>RADARS FRÉQUENTS</p>
 <p>AVERAGE SPEED</p>	6	 <p>AVERAGE SPEED</p>

# REMINDER PANELS ALONG AVERAGE SPEED CONTROL ROUTES

Both sides of the road, with inscriptions

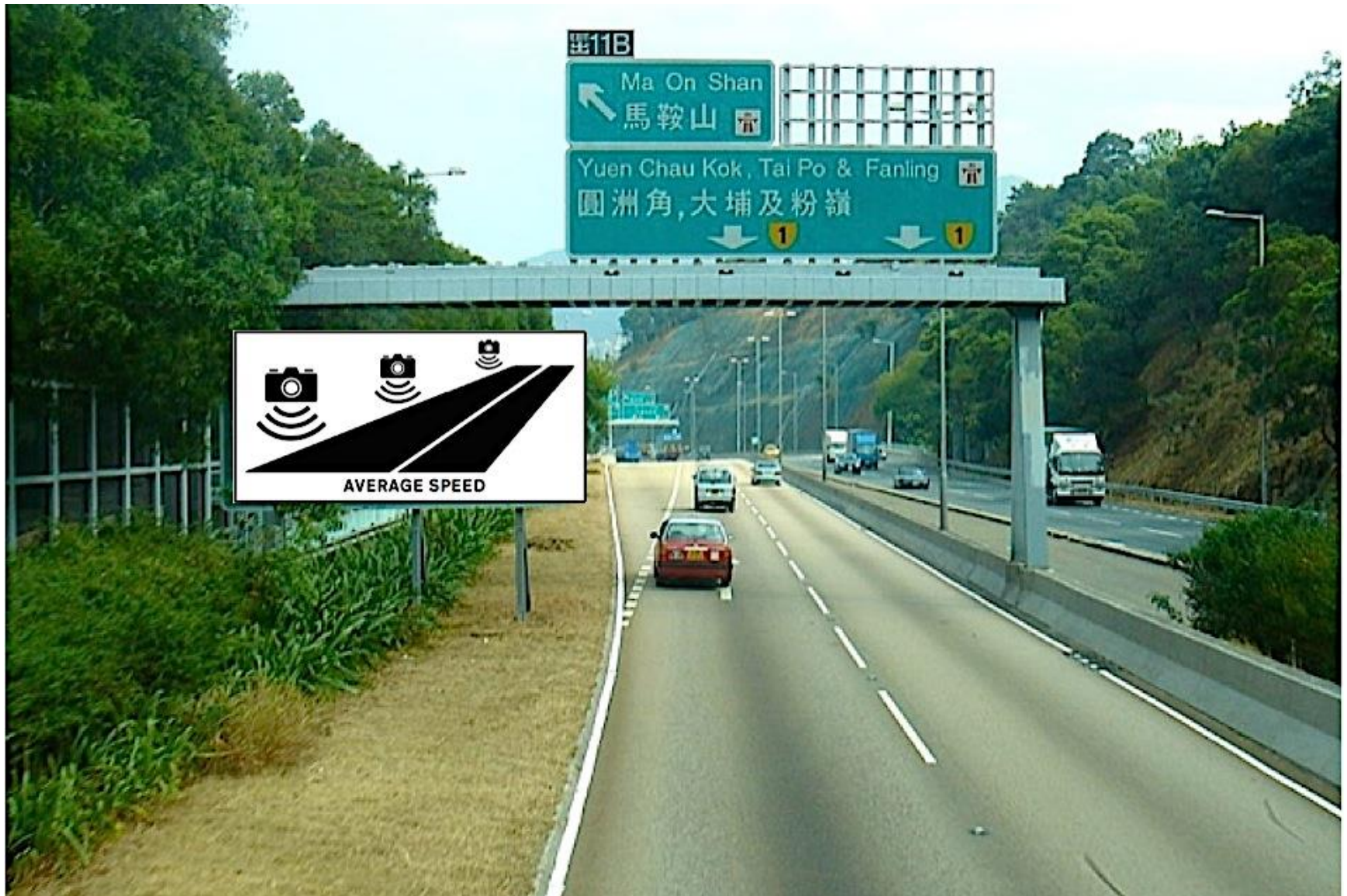


Left-Hand Side of the Road		Right-Hand Side of the Road
	1	
	2	
	3	
	4	
	5	





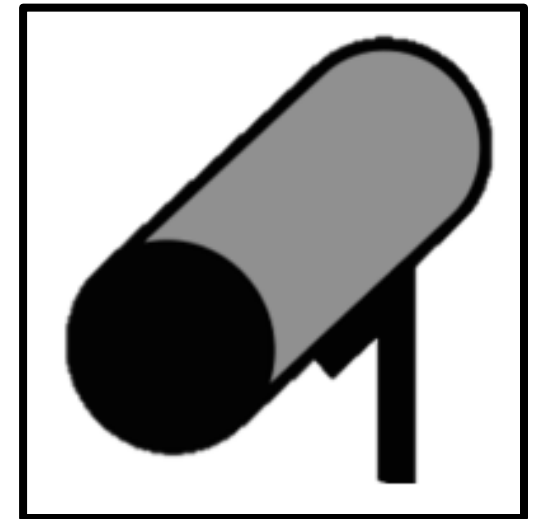
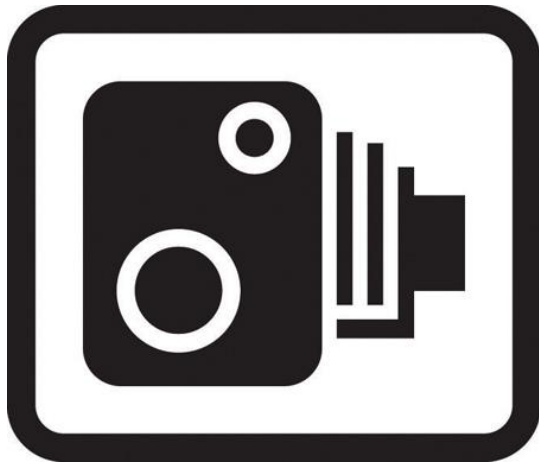
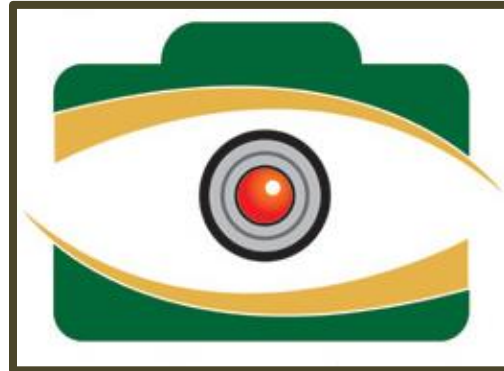
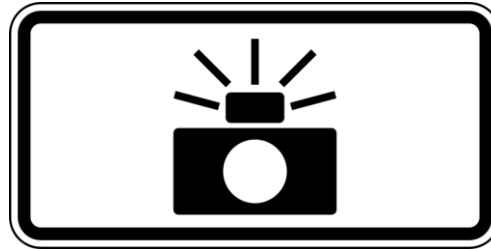
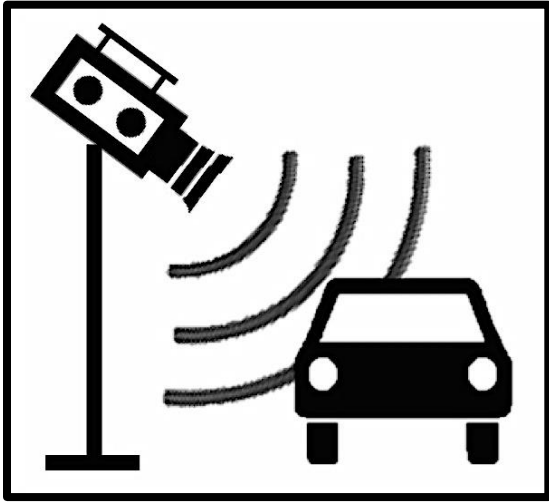
# Sign test: Average Speed



# Sign test: Average Speed



Which type of symbol fits all types of traffic control by camera?



Which type of symbol fits speed control by radar only?

