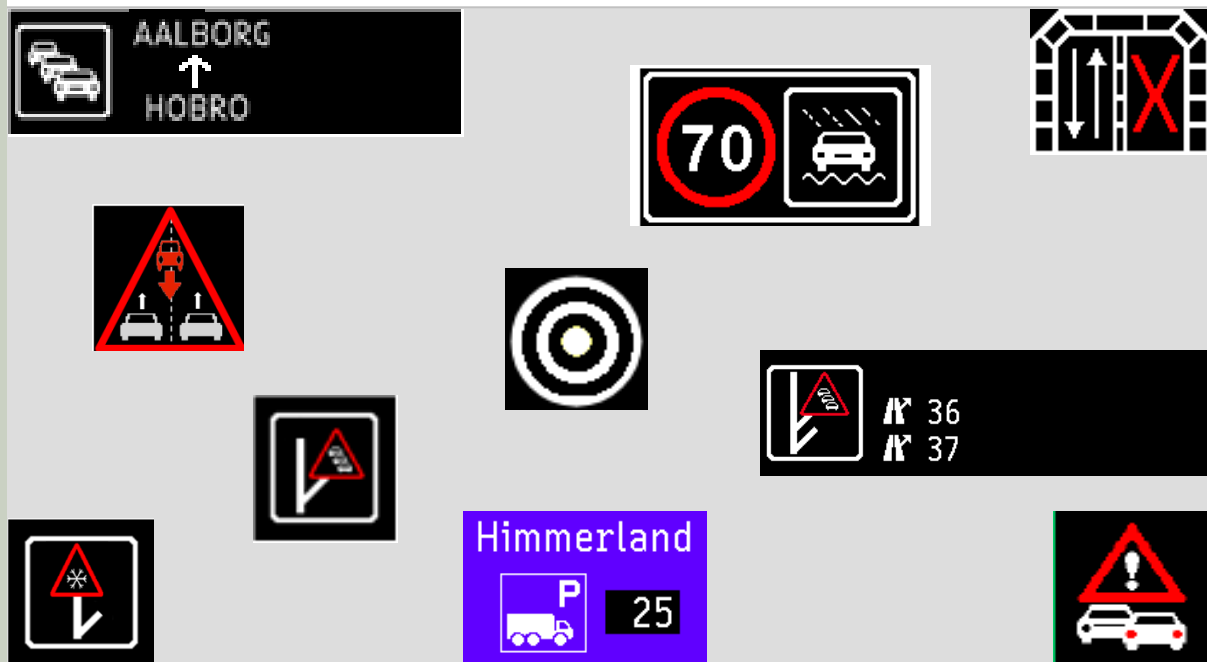


# Road User understanding of traffic information on VMS signs Internet Survey 2011

EU – Easy Way ESG4: Mare Nostrum  
Danish Results



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# 1. Introduction

Mare Nostrum is a European project under EU- EasyWay ESG4 Expert Study Group. The main purpose is to create the knowledge base for VMS harmonization in the European countries.

The test 2011 includes 48 different VMS messages for road users driving on motorways in Europe. The test 2011 has been carried out in 12 different EU countries as internet surveys: CZ, DE, DK, ES, FR, GR, IT, NL, PT, SL, SE, UK.

The test includes 6 series each including 8 VMS messages presentations.

This report includes a presentation of the Danish results.

The English version of the main questions presented to the Danish respondents:  
*You are driving on E45 from Aarhus to Aalborg via Randers and Hobro.  
Before Hobro you see this traffic sign.*

- *What does it mean?*
- *What does this message mean and what do you intend to do when you see it?*

The main question in Danish:

*Du kører på motorvejen fra Aarhus til Aalborg via Randers og Hobro.  
Før Hobro ser du dette skilt på motorvejen.*

- *Hvad tror du at dette budskab betyder?*
- *Skriv hvad budskabet betyder og hvad vil du gøre når du ser budskabet?*

## 2 VMS messages overview

The test includes 6 series each including 8 VMS message presentations.

The single VMS messages presented are numbered:

S1.1, S1.2, S1.3,---, S1.8 (serie 1)

S2.1, S2.2, ----- -, S2.8 (serie 2)

Etc.

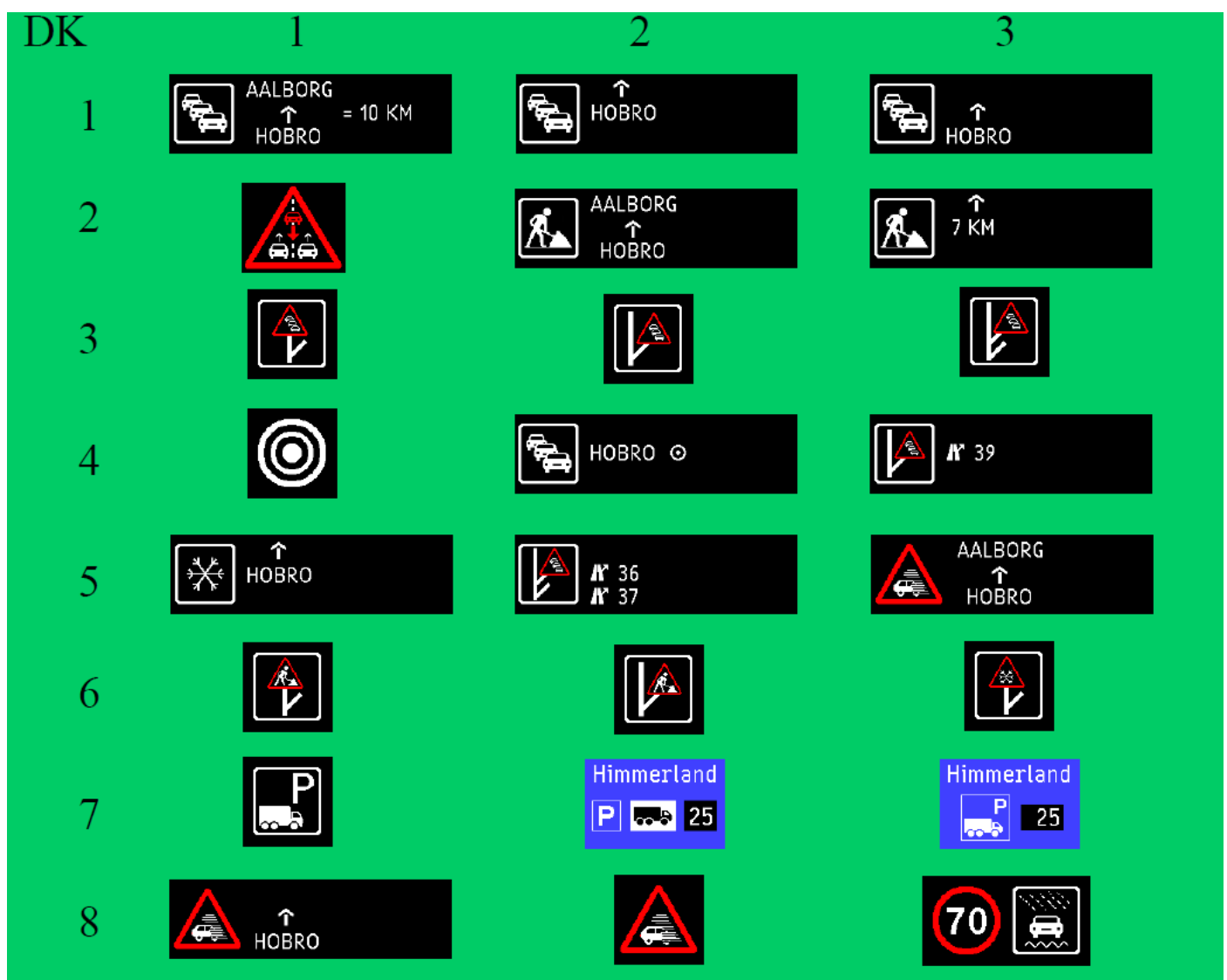


Figure 2.1: The single VMS messages presented in series S1, S2 and S3. Each serie (each column) includes 8 VMS messages.

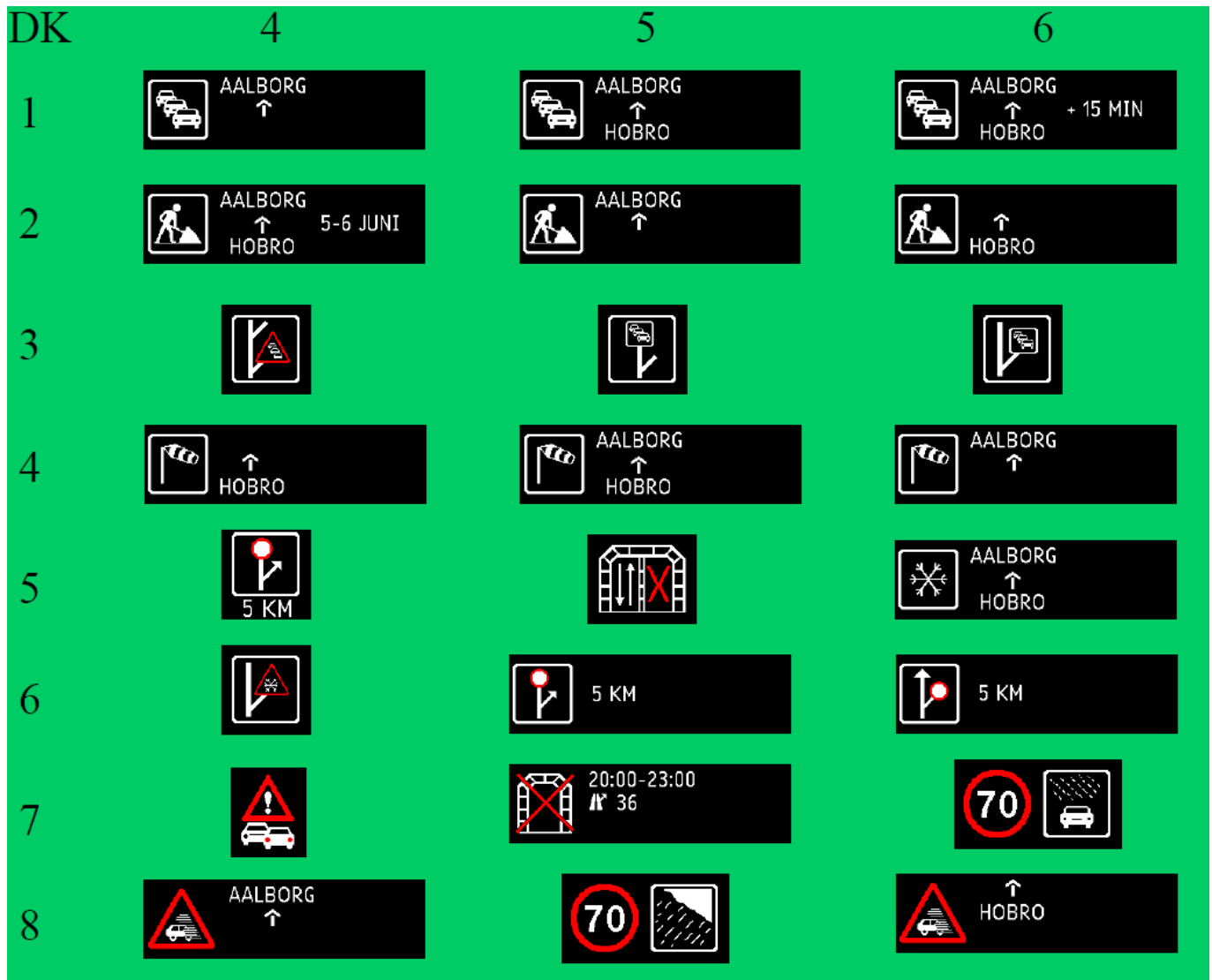


Figure 2.2: The single VMS messages presented in series S4, S5 and S6. Each serie (each column) includes 8 VMS messages.

### 3. Internet Respondents

The analyze is based on 1097 completed responds.

The analyze includes questions related to 6 different series of symbols and each series includes 8 symbols.

The series of questions presented is determined by the month of birth of the respondent.

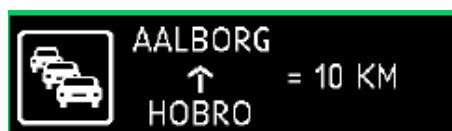
The number of completed answers within each series is listed in the table below.

Month of birth	Series of question	Number of answers
January-February	S1	180
March-April	S2	219
May-June	S3	168
July-August	S4	182
September- October	S5	183
November-December	S6	165
Total		1097

*Table 3.1: Number of completed answers*

## 4. Results

S1.1:



S1.1 What does it mean?	Answers	%
Queue/Queue risk next 10 km between Hobro and Aalborg	75	42
Queue/Queue risk next 10 km	53	29
Queue/Queue risk between Hobro and Aalborg	6	3
Queue/Queue risk on motorway	16	9
Queue 10 km ahead	11	6
Wrong answers	17	10
Don't know	2	1
Total number	180	100 %

Most of the responders understand the message about queue/queue risk.

It seems to be uncertain if the message means: *the queue starts 10 km ahead* or *the queue length is 10 km* or *queue risk during the next 10 km*

S2.1:



S2.1 What does it mean?	Answers	%
Queue/Queue risk AFTER Hobro	10	5
Queue/Queue risk TOWARDS Hobro	104	47
Queue/Queue risk near/from/around/at Exit towards Hobro	24	11
Queue/Queue risk on motorway	46	21
Queue on motorway and Hobro straight ahead	6	3
Hobro straight ahead	8	4
Doubtful/Wrong answers	12	5
Don't know	9	4
Total	219	100 %

87% of the respondents understand the message about queue. But the answers show that the message is somehow unclear. Only 5% indicate that the queue starts AFTER Hobro while 47% indicates that there is a queue TOWARDS Hobro. Furthermore 7% indicates that the arrow means Hobro straight ahead.

S2.1 What do you do?	Answers	%
Reduce speed	12	5
Reduce speed AND consider alternative route/switch on hazard warning	4	2
Pay attention AND keep distance/switch on hazard warning	4	2
Keep distance/pay attention/adapt driving to condition	10	5
Considering leaving the motorway	36	16
Continue	12	6
Unanswered	141	64
Total	219	100 %



S3.1:



S3.1 What does it mean?	Answers	%
Queue/Queue risk AFTER Hobro	16	10
Queue/Queue risk TOWARDS Hobro	76	45
Queue/Queue risk near/from/around/at Exit towards Hobro	21	13
Queue/Queue risk/Queue on motorway	30	18
Queue on motorway and Hobro straight ahead	5	3
Hobro straight ahead	9	5
Wrong answers/unanswered	11	6
Total	168	100 %

89% understand the message about queue. 10% of the respondents answer that the queue starts AFTER Hobro, while 45% answer that the queue is TOWARDS Hobro. In addition 34% understands that there is a queue on the motorway somewhere ahead.

The answers suggest that the arrow together with "Hobro" doesn't give a clearly information about where to expect the queue. 8% suggest that the arrow means Hobro straight ahead; in addition 18% choose not to answer this part of the total information

S3.1 What do you do?	Answers	%
Reduce/Adapt speed	7	4
Considering leaving the motorway/alternative route	23	14
Continue	11	7
Reduce speed AND pay attention/find alternative route	8	5
Unanswered	119	71
Total	168	100

S4.1:



S4.1 What does it mean?	Answers	%
Queue/Queue risk TOWARDS Aalborg	119	65
Queue/Queue risk NEAR/AFTER Aalborg	5	3
Queue/Queue risk	27	15
Queue on motorway and Aalborg straight ahead	10	5
Aalborg straight ahead	9	5
Other wrong answers	9	5
Don't know	3	2
<b>Total</b>	<b>182</b>	<b>100 %</b>

65% answered the question correctly. In addition 23% understood that there is a queue on the motorway somewhere ahead. The answers indicate that the arrow together with "Aalborg" doesn't give unambiguous information. 10% answered that the message means that they must continue straight ahead to get to Aalborg. In addition 15% chose not to comment on this part of the total information.

S4.1 What do you do?	Answers	%
Reduce speed and/or pay attention	23	13
Considering leaving the motorway and find an alternative route	30	16
Continue	7	4
Unanswered	122	67
<b>Total</b>	<b>182</b>	<b>100</b>

16% would consider finding an alternative route.

S5.1:



S5.1 What does it mean?	Answers	%
Queue/Queue risk BETWEEN Hobro and Aalborg/Queue between the two cities	125	68
Queue/Queue risk on the motorway	41	22
Queue near/between the two exits	5	3
Wrong answers	8	4
Unanswered/Don't know	4	2
<b>Total</b>	<b>183</b>	<b>100 %</b>

93% of the respondents understand that there is a queue notice. 71% of respondents indicate that there is a queue between the two cities, or between the two exits. 22% indicates that there is a risk of queuing on the motorway but nothing about where on the section the queue might be expected.

Wrong answers include among others: Aalborg straight ahead, pass Hobro to get to Aalborg.

S5.1 What do you do	Answers	%
Considering alternative route	47	26
Continue straight ahead	8	4
Pay attention (to queues)	4	2
Reduce/adapt speed/drive carefully	9	5
Pay attention AND reduce speed/adapt speed/drive carefully	4	2
Unanswered/Don't know	111	61
<b>Total</b>	<b>183</b>	<b>100 %</b>

S6.1:



S6.1 What does it mean?	Answers	%
Extended travel time of 15 min. because of queue between Hobro and Aalborg	28	17
Queue / Queue risk on the motorway + extended travel time of 15 min / extended travel time	43	26
Queue between Hobro and Aalborg /queue/queue between the two exits	13	8
Extended travel time (15 min)	36	22
Travel time 15 min (between the two cities / between the two exits)	23	14
15 min. queue	11	7
Other	6	4
Don't know/unanswered	5	3
Total	165	100 %

17% answered the question correctly. 65% understood the message of the *extended journey time of 15 min.* Some of the responses indicate some confusion about whether the 15 minutes must be related to an extended journey time between the two cities or the current travel time.

Only 39% of respondents clarifies that they expect a queue between the two cities Hobro and Aalborg.

S6.1 What do you do?	Answers	%
Considering alternative route	14	8
Reduce speed/Be aware of queuing/ switch to the left lane	10	6
Continue straight ahead/continue unchanged	8	5
Unanswered	133	81
Total	165	100 %

S2.2:



S2.2 What does it mean?	Answers	%
Road work between Hobro and Aalborg (between the two cities)	189	86
Road work	27	12
Unanswered/Don't know	3	2
<b>Total</b>	<b>219</b>	<b>100 %</b>

98% of respondents understand the message road work, and 86% specify that there is road work between the two cities of Hobro and Aalborg.

S2.2 What do you do?	Answers	%
Drive carefully/adapt driving to conditions/pay attention	21	10
Reduce speed/adapt speed	9	4
Considering alternative route	15	7
Continue	7	3
Pay attention AND adapt speed/continue/considering alternative route	24	11
Unanswered	143	65
<b>Total</b>	<b>219</b>	<b>100</b>



S3.2 What does it mean?	Answers	%
Road work 7 km ahead	97	58
Road work the next 7 km	48	29
Road work/road work ahead	10	6
7 km long road work	11	7
Unanswered	2	1
<b>Total</b>	<b>168</b>	<b>100 %</b>

The responses indicate that virtually all respondents understand the message about road work, while there are doubts about where the road works start. 58% responded that there is road work 7 km ahead, while 29% responded that there are road work the next 7 km and 7% that there is a 7 km long road work.

S3.2 What do you do?	Answers	%
Drive carefully/adapt driving to conditions/pay attention among others towards road workers/keep an eye on road signs	23	14
Reduce speed/or adapt speed	18	11
Considering alternative route	9	5
Continue	10	6
Pay attention AND adapt speed/continues/considering alternative routes	7	4
Unanswered	101	60
<b>Total</b>	<b>168</b>	<b>100</b>

S4.2:



S4.2 What does it mean?	Answers	%
Road work on the stretch from Hobro to Aalborg on 5 - 6. June	111	61
Road work on the stretch from Hobro to Aalborg	25	14
Road work on 5 – 6. June	25	14
Road work	18	10
Unanswered	3	1
<b>Total</b>	<b>182</b>	<b>100 %</b>

There is 61% who corresponds exactly right. Virtually all respondents have understood the messages about road work, but 28% of the respondents are lacking either an indication of time-space or place. This and the transcription e.g. "The specified time," "the days mentioned," "the specified route", "between the two cities" and the like might indicate that the total information is so long that some respondents may not be able to perceive the entire message in detail.

S4.2 What do you do?	Answers	%
Drive carefully/Adapt driving to conditions /Pay attention	20	11
Reduce speed/comply with speed limits	15	8
Considering alternative route	15	8
Continue unchanged	9	5
Other	2	1
Unanswered	121	67
<b>Total</b>	<b>182</b>	<b>100</b>

S5.2:



S5.2 What does it mean?	Answers	%
Road work towards Aalborg	130	71
Road work	30	16
Road work near/in Aalborg/north of Aalborg	19	10
Other (expect queue, Aalborg straight ahead)	4	2
Total	183	100 %

Virtually all respondents understand the warning of road work, but the meaning of the arrow under the name Aalborg is more ambiguous. 71% answered that there is a road work in direction TOWARDS Aalborg, while 10% responded that there is a road work near/in /north of Aalborg. 16% indicated that there is a road work but nothing about where on the route.

S5.2 What do you do?	Answers	%
Reduce speed/adapt speed	21	11
Considering alternative route	16	9
Pay attention (road signs, speed limits, traffic)	15	8
Drive carefully/Adapt driving to conditions	3	2
Continue	7	4
Reduce/adapt speed AND pay attention/drive carefully/adapt driving to conditions	6	3
Unanswered	115	63
Total	183	100



S6.2:



S6.2 What does it mean?	Answers	%
Road work from Hobro	55	33
Road work	34	21
Road work towards/near/in/around Hobro	74	45
Wrong answers (Hobro straight ahead)	2	1
Total	165	100%

Virtually all respondents understand the message of road work, while there is some doubt about where on the section it's situated.

S6.2 What do you do?	Answers	%
Drive carefully/adapt driving to conditions/pay attention towards e.g. road workers/keep an eye on road signing	19	12
Reduce or adapt speed	5	3
Considering alternative route	8	5
Continue/continue unchanged	10	6
Pay attention AND adapt speed/continue/considering alternative route	9	5
Unanswered	114	69
Total	165	100%

## S1.3:



S1.3 What does it mean?	Answers	%
Queue ahead	26	14
Queue straight ahead but with the <i>possibility</i> to exit before reaching the queue/it is recommended to exit to avoid queuing/queue after next exit	118	66
Queue, use next exit/exit!	26	14
Unanswered/other	10	6
<b>Total</b>	<b>180</b>	<b>100 %</b>

66% of the respondents answer the question fully, while a further 28% understand there is a queue ahead. The responses indicate a fairly good understanding of the message.

S1.3 What do you do	Answers	%
Exit/take the next exit	26	14
May be I leave the motorway	13	7
Reduce speed/pay attention	3	2
Unanswered	138	77
<b>Total</b>	<b>180</b>	<b>100</b>

S2.3:



S2.3 What does it mean?	Answers	%
Queue near/on the exit	204	93
Queue on the road at the end of the exit	2	1
Other (queue)	2	1
Wrong answers	6	3
Don't know	5	2
<b>Total</b>	<b>219</b>	<b>100 %</b>

Virtually all respondents understand the message queue on exit.

S2.3 What do you do?	Answers	%
Continue straight ahead	10	5
Exit the motorway( if my route is in that direction)	3	1
Considering alternative route/another exit	38	17
Reduce speed/pay attention	23	11
Reduce speed AND exit/consider another exit	11	5
Unanswered	134	61
<b>Total</b>	<b>219</b>	<b>100</b>

S3.3:



S3.3 What does it mean?	Answers	%
Queue near/on the second exit	98	58
Queue near/on exit	40	24
Queue	6	4
Wrong answers	13	8
Don't know/Unanswered	11	7
<b>Total</b>	<b>168</b>	<b>100 %</b>

82% of the respondents understand the message that there is a queue on the exit. 58% answered correctly that there is a queue near/on the second exit, while 24% simply writes that there is a queue near or on the exit. Overall, it appears that there is a pretty good understanding of the message.

Wrong answers include: exit is closed because of the queue, road work, queue – use exit.

S3.3 What do you do?	Answers	%
Take the first exit/Considering alternative route	49	29
Reduce speed/pay attention/change to left lane	15	9
Continues	4	2
Unanswered	100	60
<b>Total</b>	<b>168</b>	<b>100%</b>

S4.3:



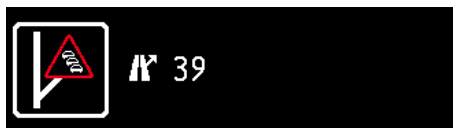
S4.3 What does it mean?	Answers	%
Queue on/near first exit	137	75
Queue near/on exit	24	13
Queue	6	3
Wrong answer	8	4
Don't know	7	4
Total	182	100 %

88% of the respondents understood the message queue at the exit, but 13% missed to clarify that the queue is on the first exit.

The wrong answers includes: Road works, exit closed and queues at the exits

S4.3 What do you do?	Answers	%
Considering alternative route	12	7
Reduce speed/pay attention to queues/change to left lane	18	10
Use/Considering using the second exit	40	22
Continues	7	4
Unanswered	105	58
Total	182	100

S3.4:



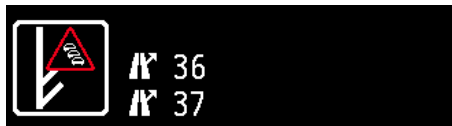
S3.4 What does it mean?	Answers	%
Queue on/near exit 39	117	70
Queue near/on exit	10	6
Queue on exit, use exit no. 39 instead	11	7
Other (Queue)	4	2
Wrong answers	16	10
Don't know/unanswered	10	6
Total	168	100 %

The majority of respondents understand the message queue on/near the exit. However, 7% responded that one in order to avoid queues should/can use exit no. 39.

Wrong answers include, among others: Queuing - next exit about 39 km ahead, next exit is blocked use instead exit 39, road works etc.

S3.4 What do you do?	Answers	%
Considering alternative route	22	13
Use exit no. 39	16	10
Pay attention/keep distance	6	3
Adapt/Reduce speed	8	5
Continue straight ahead	6	3
Reduce speed AND pay attention/continues straight ahead	6	3
Unanswered	104	62
Total	168	100

S2.5:



S2.5 What does it mean?	Answers	%
Queue/Queue risk near exit 36/on the second exit	155	71
Queue near exit 37/queue near exit 36 AND 37/Queue between exit 36 and 37	32	15
Queue risk around exit	8	4
Unclear answers/nonsense answers	5	2
Wrong answers	10	5
Don't know/Unanswered	9	4
Total	219	100 %

71% of respondents answer the question fully. 15% indicates that there is a queue on either both exits, between the two exits or around exit 37.

S2.5 What do you do?	Answers	%
Considering to use exit 37 instead	60	27
Considering alternative route	24	11
Continues	3	1
Reduce speed/pay attention	15	7
Unanswered	117	53
Total	219	100

S5.3:



S5.3 What does it mean?	Answers	%
Queue ahead	43	23
Queue straight ahead with possibility to exit before queue/it is recommended to leave the motorway to avoid queue/Queue after next exit	125	68
Queue, find alternative route	5	3
Wrong answers	4	2
Don't know	6	3
Total	183	100 %

Virtually all respondents (95%) understand the message about queue ahead on the motorway.

68% of respondents indicate it is possible to avoid the queue by using the exit, while 23% only answer that there is a queue ahead without mentioning the possibility of using the exit.

S5.3 What do you do?	Answers	%
Leave the motorway/use next exit	36	20
May be I leave the motorway	19	10
Reduce speed/pay attention	4	2
Continue	4	2
Unanswered	120	66
Total	183	100%



S6.3:



S6.3 What does it mean?	Answers	%
Queue on/near the exit	143	87
Queue	6	4
Wrong answers (merging, queue on motorway-use exit, everyone should leave the motorway at next exit)	7	4
Don't know	7	4
Unanswered	2	1
Total	165	100%

The majority of respondents understand the message queue on exit

S6.3 What do you do?	Answers	%
Considering alternative route	26	16
Continuer/continue and change to left lane	12	7
Reduce/Adapt speed	9	5
Pay attention	12	7
Unanswered	106	64
Total	165	100%

S1.4:



S1.4 What does it mean?	Answers	%
Center/City center	4	2
Wrong answers	37	21
Don't know	139	77
	180	100 %

Only 2% answers this question correctly. In 3 out of 4 correct answers, the respondents have added a question mark, which indicates they have their doubts.

There are 77% who clearly reports that they don't know what the symbol means. In addition, 21% gives wrong guesses. The wrong answers include: camera, low sun, target, noise, roundabout, tunnel ahead.

S2.4:



S2.4 What does it mean?	Answers	%
Queue in Hobro Center	22	10
Queue TOWARDS Hobro Center	18	8
Queue in/around/Hobro (Hobro City)	88	40
Queue	30	14
Wrong answers/unclear answers	24	11
Don't know	35	16
Unanswered	2	1
Total	219	100 %

The response shows that the meaning of this information is somewhat unclear. Only 18% responded that the message means something related to queue in or TOWARDS Hobro Center, while 40% replied that it means queue in or around Hobro. 16% correspond directly that they do not know or are unsure of what "the dot with a circle around" means.

The 11% wrong answers includes: target, traffic radio, auto show in Hobro, road work, accidents etc.

S2.4 What do you do?	Answers	%
Continue	10	5
Pay attention/adapt driving to conditions/keep distance	10	5
Find an alternative route	15	7
Other (listen to traffic radio, turn on hazard warning.)	5	2
Unanswered	179	82
Total	219	100

S4.4:



S4.4 What does it mean?	Answers	%
Crosswind/Risk of wind gusts	46	25
Crosswind FROM/AFTER Hobro	47	26
Crosswind near/towards/direction Hobro	88	48
Crosswind near/on exit Hobro	1	1
Total	182	100%

Virtually all respondents understand that there is a risk of crosswind, while there is uncertainty about where on the section the crosswind applies.

S4.4 What do you do?	Answers	%
Reduce/Adjust speed/Adapt driving to conditions	26	14
Pay attention/pay attention to wind sensitive vehicles/holding tight to the steering wheel	27	15
Reduce speed AND pay attention	8	4
Other (continue unchanged, considering alternative route)	8	4
Unanswered	113	62
Total	182	100%

S5.4:



S5.4 What does it mean?	Answers	%
Crosswind/Risk of wind gusts	63	34
Crosswind – BETWEEN Hobro and Aalborg/ TOWARDS Aalborg	117	64
Crosswind Near Hobro/Aalborg	1	1
Wrong answers/Don't know	2	1
Total	183	100 %

64% answered correctly that there is a risk of crosswind BETWEEN Hobro and Aalborg, while 34% only answered Crosswind/Risk of wind gusts.

S5.4 What do you do?	Answers	%
Reduce/Adapt speed/Adjust	38	21
Pay attention/pay attention to wind sensitive vehicles/ holding tight to the steering wheel	33	18
Reduce speed AND pay attention	8	4
Other (continue unchanged)	1	1
Unanswered	103	56
Total	183	100 %

S6.4:



S6.4 What does it mean?	Answers	%
Crosswind/Risk of wind gusts	54	33
Crosswind near/around/in Aalborg	17	10
Crosswind TOWARDS Aalborg	87	53
Crosswind near/on the exit to Aalborg	2	1
Wrong answers/other/unanswered	5	3
Total	165	100 %

97% of respondents understand the message of Crosswinds. But there seems to be some uncertainty about where on the section the crosswind may be expected. 53% of respondents answers correctly that there is crosswind in direction TOWARDS Aalborg, while 10% indicate that there is a crosswind near/around/in Aalborg. In addition, 33% only respond that there is crosswind.

S6.4 What do you do?	Answers	%
Reduce/Adapt speed/adapt driving to conditions	27	16
Pay attention/pay attention to wind sensitive vehicles/ holding tight to the steering wheel	18	11
Reduce speed AND pay attention	4	2
Other (continue unchanged, consider the trip if you drive in a wind sensitive vehicle)	8	5
Unanswered	108	65
Total	165	100 %

S1.5:



S1.5 What does it mean?	Answers	%
Icy /slippery with snow AFTER Hobro and forward	36	20
Icy/slippery with snow road towards Hobro	88	49
Icy/slippery with snow road near Hobro	14	8
Icy/slippery with snow road	29	16
Snow	7	4
Don't know/wrong	6	3
Total	180	100 %

The responses indicate that the message is a little unclear where on the section it is icy (if it's AFTER, Towards or near Hobro). One respondent writes directly that the message is unclear.

S1.5 What do you do?	Answers	%
Reduce speed/reduce speed and drive carefully	48	27
Drive carefully	20	11
Other	3	2
Unanswered	109	60
Total	180	100

S6.5:



S6.5 What does it mean?	Answers	%
Icy/slippy with snow between Hobro og Aalborg (between the two cities)	117	71
Frost at Aalborg	1	1
Bad driving conditions (snow/rain/glaze/slippy road)	44	27
Don't know	3	2
Total	165	100 %

71% of respondents answer the question fully, while 27% fail to mention anything about where on the section to expect icy or slippy roads with snow.

S6.5 What do you do?	Answers	%
Reduce speed	27	16
Adapt speed/adapt driving to conditions	9	5
Other (continue, keep distance, pay attention)	8	5
Reduce speed AND adapt driving to conditions/pay attention/keep distance	16	10
Unanswered/don't know	105	64
Total	165	100 %



S1.6:



S1.6 What does it mean?	Answers	%
Road work after next exit – exit possible before	139	77
Road work ahead	27	15
Road work – use Exit!	12	7
Wrong answers/don't know	2	1
Total	180	100 %

The majority of respondents understand the message. However, there are 7% of respondents who formulate the answer in a way that can be interpreted as if they believe that they MUST leave the motorway before reaching the road work.

S1.6 What do you do?	Answers	%
I leave the motorway/take the next exit	17	9
Consider taking the next exit/Reduce speed and consider leaving the motorway	26	14
Reduce speed	10	6
Continue with care	10	6
Unanswered/don't know	117	65
Total	180	100 %

S2.6:



S2.6 What does it mean?	Answers	%
Road work on/near exit/ramp	199	91
Road work	11	5
Unclear answers/wrong answers	5	2
Don't know/Unanswered	4	2
Total	219	100 %

91% of respondents answer the question adequately while 5% simply answer road work.

S2.6 What do you do?	Answers	%
Considering alternative route	21	10
Reduce/adapt speed	30	14
Pay attention/adapt driving to conditions/show consideration	22	10
Pay attention AND reduce speed	6	3
Continue	11	5
Unanswered	129	59
Total	219	100 %

S3.6:



S3.6 What does it mean?	Answers	%
Risk for icy road/slippery road ahead	142	85
Risk of icy road after next exit	10	6
Risk for snowy weather/snow/lower temperatures ahead	11	7
Don't know/Unanswered	5	3
Total	168	100 %

Virtually all respondents understand the message of the risk of icy roads/slippery roads, but only 6% clarifies that it is on the section after the next exit

S3.6 What do you do?	Answers	%
Reduce or adapt speed	41	24
Drive carefully/adapt driving to conditions/pay attention/keep distance	10	6
Take the next exit/take an alternative route	13	8
Continue	4	2
Reduce/adapt speed AND does one of the following things: leave the motorway/keep safety distance/Adapt driving to conditions/pay attention	12	7
Unanswered	88	52
Total	168	100 %

S4.6:



S4.6 What does it mean?	Answers	%
Icy/slippery with snow at exit	168	92
Slippery conditions/slippery road	4	2
Other (snowy weather/snowfall/frost/snow)	4	2
Don't know	6	3
Total	182	100 %

92 % of respondents answer the question correctly.

S4.6 What do you do?	Answers	%
Reduce speed/adapt speed/adapt driving to conditions	24	13
Pay attention/drive carefully	21	12
Continue/may be use another exit/alternative route	10	5
Leave the motorway AND does at least one of the following things: reduce speed/pay attention/drive carefully/keep distance	16	9
Reduce speed AND does a least one of the following things: Keep distance/adapt driving to conditions/drive carefully	11	6
Unanswered/don't know	100	55
Total	182	100 %

S1.7:



S1.7 What does it mean?	Answers	%
Parking for trucks (and heavy vehicles)	148	82
Parking for trucks only (and heavy vehicles)	19	11
Long term parking for trucks	5	3
Other doubtful answers	4	2
Don't know/unanswered	4	2
Total	180	100 %

More than 90% of the respondents understand that the message here is about parking for trucks.



S2.7 What does it mean?	Answers	%
25 vacant parking spaces for trucks (heavy vehicles)	25	11
25 parking spaces for trucks (heavy vehicles)	34	16
Parking for trucks	49	22
Parking area/Rest area	6	3
Parking area for trucks with false indication of what the number 25 refers to	65	30
Wrong answers	8	4
Don't know/unanswered	32	14
Total	219	100 %

79% of the respondents clarify that that message means parking for trucks. What the figure of 25 means, is somewhat unclear. 11% answered that it means 25 *vacant* parking spaces for trucks, while 16% replied that it means 25 parking spaces for trucks.

30% of respondents said the number 25 refers to, respectively.: 25 km to the parking area, parking area for trucks over 25 m; parking space for vehicles weighing 25 tons, exit 25 and time limited parking 25 min.

S3.7:



S3.7 What does it mean?	Answers	%
25 vacant parking spaces for trucks (heavy vehicles)	46	27
25 parking spaces for trucks/heavy vehicles/long and heavy vehicles 25 m	22	13
Parking space for trucks/long and heavy vehicles 25 m	30	18
Parking area/Rest area	12	7
25 vacant parking spaces	3	2
Wrong answers (Parking area for trucks with false indication of what the number 25 refers to)	30	18
Don't know	21	13
Unanswered	4	2
<b>Total</b>	<b>168</b>	<b>100 %</b>

76% of the respondents states that there is parking for trucks, while there seems to be some uncertainty about what the number 25 refers to.

27% answered that it means 25 vacant parking spaces for trucks, while 13% replied that it means 25 parking spaces for trucks. This suggests that the understanding of this board is slightly better than the alternative shown in S2.7.

18% of respondents believe that the number 25 refers to: distance to parking area, exit number, weight or length of heavy vehicles, and time limited parking

S2.8:



S2.8 What does it mean?	Answers	%
Fog/reduced visibility	172	79
Strong winds/wind/crosswind/headwind	16	7
Other (heavy rain, water on the road)	3	1
Wrong answers	3	1
Don't know/unanswered	25	11
Total	219	100 %

79% of the respondents understands the message of fog/restricted visibility, 7% think it means something about wind. The wrong answer includes car wash and parking.

One respondent find the sign so unclear and detailed that it takes attention, while another respondent writes that one would think that there was something wrong with the billboard lights.

S2.8 What do you do?	Answers	%
Reduce/adapt speed	50	23
Pay attention/adapt driving to conditions	13	6
Keep safety distance/switch on fog lights	4	2
Reduce speed AND switch on fog lights/keep distance/pay attention	43	20
Unanswered	109	50
Total	219	100 %



S4.8:



S4.8 What does it mean?	Answers	%
Fog/reduced visibility TOWARDS Aalborg	102	56
Fog/reduced visibility AFTER Aalborg and forwards	1	1
Fog/reduced visibility near/in/around Aalborg	14	8
Fog/reduced visibility ahead	45	25
Strong wind/head wind/rain/snow	8	4
Don't know	12	7
Total	182	100 %

90% of respondents understand that the information is about fog/reduced visibility, while the understanding of the arrow under the name Aalborg is more ambiguous. About 56% answer that there is fog/reduced visibility TOWARDS Aalborg, while 8% believe that there is fog/reduced visibility AFTER/near /in/ around Aalborg. In addition, 25% failed to comment on this part of the total information

S4.8 What do you do?	Answers	%
Reduce/Adapt speed	25	14
Pay attention/drive carefully/adapt driving to conditions	13	7
Other (continue, increase distance to the vehicle ahead, switch on fog lights)	5	3
Reduce/adapt speed AND does at least one of the following things: Pay attention/drive carefully, adapt driving to conditions to conditions/switch on fog lights	32	18
Switch on fog lights AND does at least one of the following things: pay attention/drive carefully/adapt driving to conditions to conditions	3	2
Unanswered	104	57
Total	182	100 %

S6.8:



S6.8 What does it mean?	Answers	%
Fog AFTER Hobro and forward	57	35
Fog TOWARDS Hobro	46	28
Fog near/in/around Hobro	14	8
Fog ahead	24	15
Strong wind/head wind/rain/snow	10	6
Unanswered/Don't know	14	8
Total	165	100 %

86% of the respondents understand the message of fog. Some of the responses indicate, however, that the meaning of the arrow over the name Hobro is more ambiguous. 35% expects fog AFTER Hobro, while 28% expects fog in direction TOWARDS Hobro and 8% that there is fog near/in/around Hobro.

S6.8 What do you do?	Answers	%
Reduce/Adapt speed	14	8
Pay attention	9	5
Adapt driving to conditions to conditions	8	5
Other (switch on fog lights, turn around)	2	2
Reduce/adapt speed AND does at least one of the following things: Switch on fog lights/pay attention/keep safety distance/returns/adapt driving to conditions to conditions	33	20
Unanswered	99	60
Total	165	100 %

S1.8:



S1.8 What does it mean	Answers	%
Fog AFTER Hobro and forward	30	17
Fog TOWARDS Hobro	61	34
Fog NEAR/AROUND Hobro	15	8
Fog ahead	46	26
Strong wind	14	8
Other	4	2
Don't know	10	5
<b>Total</b>	<b>180</b>	<b>100 %</b>

85% of respondents have understood the message is a warning of fog and reduced visibility. However, there is considerable uncertainty about whether the message applies BEFORE, NEAR or AFTER passing Hobro. The understanding of this board seems to be slightly worse than the alternative S6.8

S1.8 What do you do?	Answers	%
Reduce speed/reduce speed AND pay attention	48	27
Pay attention/drive carefully	19	10
Switch on fog lights reduce speed and pay attention	19	10
Other	3	2
Unanswered	91	51
<b>Total</b>	<b>180</b>	<b>100</b>

S3.5:



S3.5 What does it mean?	Answers	%
Fog/Reduced visibility between Hobro and Aalborg (or between the two cities)	117	70
Fog/reduced visibility on the stretch	23	14
Wrong answers	9	5
Don't know/Unanswered	19	11
Total	168	100 %

84% of respondents understand the message of fog and reduced visibility. 70% clarifies that there is fog/reduced visibility between the two cities.

S3.5 What do you do?	Answers	%
Reduce or adapt speed	24	14
Pay attention/drive carefully/adapt driving to conditions/switch on fog lights	13	8
Other (continue, keep distance)	6	4
Reduce speed AND pay attention/switch on fog lights/keep distance	12	7
Pay attention AND switch on fog lights	2	1
Unanswered	111	66
Total	168	100 %

S3.8:



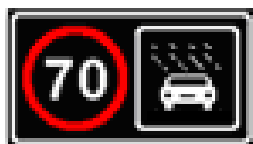
S3.8 What does it mean?	Answers	%
Speed limit (70km/t) due to risk of aquaplaning OR result of heavy precipitation AND bad driving conditions	95	57
Speed limit(70 km/t) due to precipitation (rain/snow)	35	21
Speed limit (70 km/t) due to bad driving conditions (slippery road, wet road, snow, ice)	13	8
Speed limit (70 km/t)	8	5
Wrong answers	13	8
Don't know/Unanswered	4	2
Total	168	100 %

86% of respondents understand the message of a speed restriction due to heavy precipitation AND/OR bad driving conditions. 57% indicates that the speed reduction is due to aquaplaning AND/OR a combination of heavy precipitation and bad driving conditions. 21% of the respondents wrote that the speed reduction is due to precipitation and 8% due to bad driving conditions.

The 8% incorrect responses includes: tunnel driving, uneven/bad road and car wash.

S3.8 What do you do?	Answers	%
Reduce or adapt speed	31	18
Drive carefully	2	1
Adapt driving to conditions to conditions/pay attention	3	2
Other (continue, keep distance)	2	1
Reduce or adapt speed AND adapt driving to conditions to conditions/pay attention OR keep distance	8	5
Unanswered/Don't know	122	73
Total	168	100%

S6.7:



S6.7 What does it mean?	Answers	%
Speed limit 70 km/t due to rain/precipitation	143	87
Speed limit (70 km/t) due to bad driving condition (slippery road, wet road, snow ice)	9	5
Speed limit (70 km/t)	5	3
Other (rain, frost)	5	3
Wrong answers	2	1
Don't know	1	1
<b>Total</b>	<b>165</b>	<b>100 %</b>

The majority of respondents understand the message. 87% indicates that the speed limit is due to rain/precipitation, while 5% stated that it is due to bad driving conditions.

Wrong answers include car wash and wash tunnel.

S6.7 What do you do?	Answers	%
Reduce or adapt speed	46	28
Adapt driving to conditions/Pay attention	5	3
Reduce/adapt speed AND adapt driving to conditions/pay attention/keep distance	7	4
Unanswered/Don't know	107	65
<b>Total</b>	<b>165</b>	<b>100%</b>

S5.8:



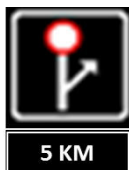
S5.8 What does it mean?	Answers	%
Max. 70 km/h due to heavy rain/aquaplaning/wet roads	47	26
Max 70 km/h in rainy weather/wet conditions	85	46
Reduce speed due to weather conditions	17	9
Max. 70 km/h/reduce speed	10	5
Max. 70 km/h. Speed limits due to mud-slides/landslides/precipitation in the mountains/hills	10	5
Don't know	14	8
Total	183	100 %

The majority of respondents understand that the speed limitation of max. 70 km/h is due to bad weather conditions.

One respondent indicates that it is a bad and confusing sign, another writes that it is difficult to decode whether the symbol means rain or rock side while a third writes that the symbol can be confused with the risk of soil or loose rocks from mountain sides.

S5.8 What do you do?	Answers	%
Reduce or adapt speed/Reduce speed and adapt driving to conditions/comply with speed limit	59	32
Other (continue, pay attention)	3	2
Unanswered	121	66
Total	183	100 %

S4.5:



S4.5 What does it mean?	Answers	%
Road blocked 5 km ahead/closed/straight ahead driving not possible/road ends	60	33
Road blocked/closed/straight ahead driving not possible/road ends	43	24
Road blocked use exit 5 km ahead	23	13
Leave the motorway/take exit 5 km ahead	9	5
Leave the motorway/Take exit	6	3
Wrong answers (problems/danger ahead/accident/Traffic stands still)	15	8
Don't know/Unanswered	26	14
Total	182	100 %

70% of respondents clarifies that it is not possible to continue on the motorway. In addition, 8%, indicating that one should use the exit - but not why.

There is some uncertainty about whether the board indicates the distance to the road is blocked or distance to the exit (but it has no real importance).

Wrong answers include, among others: danger ahead, accidents, congestion and pay attention the next 5 km

S4.5 What do you do?	Answers	%
Leave the motorway/take next exit	124	68
Other (may be I take the next exit, find alternative route, keep left)	7	4
Unanswered	51	28
Total	182	100 %



S5.6:



S5.6 What does it mean?	Answers	%
Road blocked/closed 5 km ahead - leave the motorway before	62	34
Road blocked/closed – leave motorway 5 km ahead	30	16
Road blocked/closed/ straight ahead driving not possible/road ends – leave the motorway before	31	17
Road blocked/closed/ straight ahead driving not possible/road ends/entry prohibited	11	6
Take exit – something is going on further ahead (other danger, obstruction etc.)	12	7
Wrong answers (problems/danger ahead/accident/Traffic stands still)	12	7
Don't know/Unanswered	25	14
Total	183	100 %

The majority of respondents understand that they can't continue straight ahead on the road, but it is unclear whether the board indicates the distance to the road is blocked or distance to the exit. 34% of respondents indicate that there is 5 km to the road is blocked, while 16% indicate that there is 5 km to next exit.

S5.6 What do you do?	Answers	%
Leave the motorway/take next exit	122	67
Other (may be I take the next exit, find alternative route/ keep left, reduce speed)	7	4
Unanswered	54	30
Total	183	100 %

S6.6:



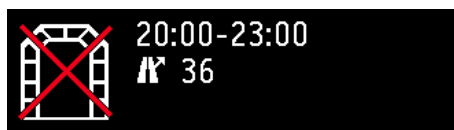
S6.6 What does it mean?	Answers	%
Exit is blocked 5 km ahead/closed	70	42
Entry blocked	36	22
Wrong answers/Unclear answers	29	18
Don't know	22	13
Unanswered	8	5
Total	165	100 %

42% of respondents complete the question, while 22% simply corresponds to the exit is closed.

The wrong/unclear answers include among others: problems/danger ahead/ accident/roundabout/Rest area/Exits are blocked for the next 5 km/ some kind of prohibitions on the ramp, 5 km to stop).

S6.6 What do you do?	Answers	%
Continue straight ahead/avoid exit	18	11
Go on to the next exit/find alternative exit/alternative route	33	20
Other (take the message in to consideration, change to the fast lane	8	5
Unanswered	106	64
Total	165	100 %

S5.7:



S5.7 What does it mean?	Answers	%
Tunnel entry blocked/blocked for the specific time period, take exit 36	106	58
Tunnel entry blocked/blocked in the specific time period	17	9
Tunnel entry closed use exit 36/exit/next exit	20	11
Tunnel blocked, choose another route	10	5
Wrong answers/Unclear answers (bridge closed, take exit, reduced height in the time period)	16	9
Don't know	14	8
Total	183	100 %

In total 83% of respondents understand that the tunnel is closed. 58% of respondents clarifies that the tunnel is closed for the specific time period and that you can leave at exit 36. 11% answered that the tunnel is closed and that you can take exit 36, while 9% writes that the tunnel is closed during the specified time.

S5.What do you do?	Answers	%
Take exit 36/leave the motorway	40	22
Use alternative route/leave the motorway	3	2
Other (continue, is aware of heights etc.)	7	4
Unanswered	133	73
Total	183	100 %

S5.5:



S5.5 What does it mean?	Answers	%
One tunnel tube closed, use the other tunnel tube with traffic in both directions/Own lane closed, use the other lane with traffic in both directions	135	74
One tunnel tube closed/lane closed	21	11
Unclear answers	10	6
Wrong answers/Unanswered	2	1
Don't know	15	8
<b>Total</b>	<b>183</b>	<b>100 %</b>

74% of the respondents understand the message.

S5.5 What do you do?	Answers	%
Reduce/adapt speed	17	9
Follow traffic/pay attention/Drive carefully	8	4
Adapt speed AND pay attention/drive carefully/follow road marking/turn on the radio	9	5
Other (continue, prepare for lane change, turn on radio, be prepared for slow driving, attention towards signs)	17	9
Unanswered	132	72
<b>Total</b>	<b>183</b>	<b>100 %</b>

S4.7:



S4.7 What does it mean?	Answers	%
Queue/Dense traffic	83	46
Pay attention to hard braking	20	11
Oncoming vehicles/ghost driver	17	9
Wrong answers	33	18
Don't know	27	15
Unanswered	2	1
Total	182	100 %

57% of respondents understand the message, while the remaining answers incorrectly or that they don't know what the sign means. 9% believe it means oncoming vehicles/ghost driver. The remaining 18% wrong answers include, among others: narrow road, narrow path, do not switch on fog lights; use fog lights, obstacle ahead, no overtaking, accidents, merging and rear end collision.

S4. What do you do?	Answers	%
Reduce speed/adapt speed/adapt driving to conditions	20	11
Pay attention/drive carefully	15	8
Keep distance/keep braking distance/pay attention to hard braking	12	7
Other	5	3
Reduce speed AND does at least one of the following things: Adapt speed/pay attention/keep distance	21	12
Unanswered	109	60
Total	182	100 %

S1.2:



S1.2 What does it mean?	Answers	%
Ghost driver	97	54
Oncoming vehicle	23	13
Provide space for emergency service	14	8
Wrong answers	27	15
Don't know	19	10
Total	180	100 %

67% understand the message. 33% really don't understand the meaning of the message. 8% think that the message means you have to make room for emergency vehicles.

Several add a question mark after a right answer to show, that they actually have doubts about the meaning of the message. A few of the respondents directly write that the message is somewhat unclear

Wrong answers include: wrecked vehicle, car stands in the middle of the road, center track closed to traffic, road works etc.

S1.2 What do you do?	Answers	%
<b><i>Keep right/Keep right and</i></b> reduce speed/pay attention	53	29
Reduce speed	3	2
Pay attention/keep an eye on	11	6
Leave the motorway/look out for an exit	3	2
Don't know	5	3
Unanswered	105	58
Total	180	100 %