

RODRIGUE – Questionnaire

Part 2: End-user requirements and stakeholders needs & requirements

FEHRL Workshop on Intelligent Highways

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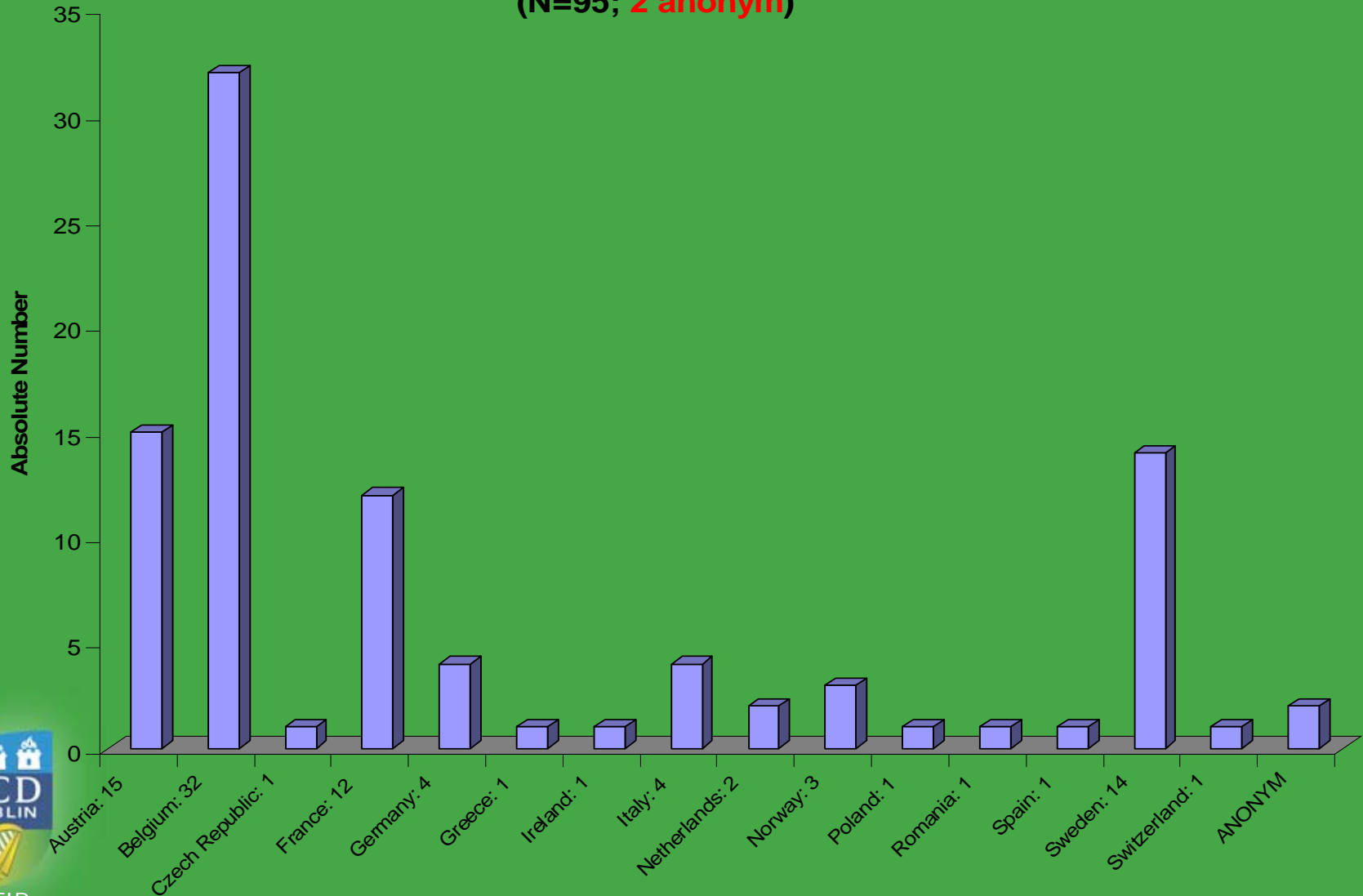


UCD School of Architecture,
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Scoil na hAiltireachta, na
Tidhreacha agus na
hInnealtoireachta Sibhialta
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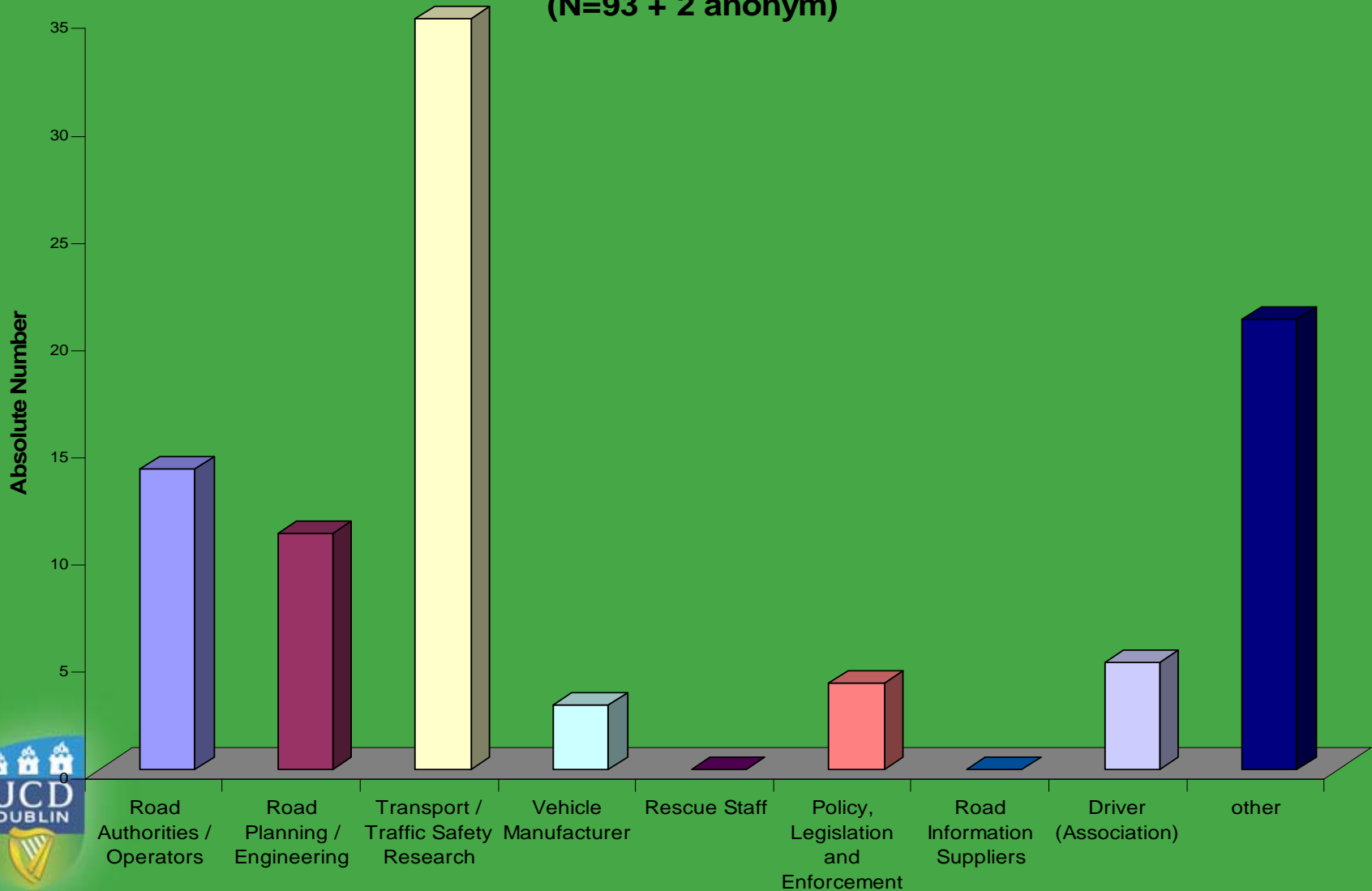
Basic Information on the feedback (95 answered questionnaires)

**Countries of Members who answered
(N=95; 2 anonym)**



Basic Information on the feedback (95 answered questionnaires)

**Activities of Members who answered
(N=93 + 2 anonym)**



Main Results – User Groups and their specific interest on safety relevant parameters

Question 2.1: USER GROUPS - interests of following parameters; helpful for road safety and traffic management and safety?										
	Road Authorities	Road Planning	Transport Safety	Vehicle Manufacturer	Rescue Staff	Policy, Legislation	Road Information Suppliers	Driver	Nobody	
INFRASTRUCTURE:										
Road geometry	68	87	64	24	10	19	35	31	2	340
Road surface	71	69	73	29	9	18	40	42	1	352
Road equipment	75	69	69	25	27	44	49	50	1	409
Road environment	64	58	64	21	35	31	50	42	0	365
DRIVER BEHAVIOUR										
Vehicle speeding, spacing	49	35	72	43	18	66	41	62	0	386
Driver behaviour, fatigue, alcohol	33	17	69	36	44	77	18	60	1	355
Road perception, understanding	48	54	70	40	12	36	42	56	1	359
Traffic density, speed, events	60	48	72	23	35	51	59	51	1	400
Presence of other vehicles	53	54	65	21	28	45	48	49	1	364
VEHICLE										
Engines, gears failure	8	7	44	80	12	30	10	44	2	237
Breaking system, ABS	8	8	52	79	7	31	10	51	1	247
Tyre state, pressure	9	7	50	71	7	38	13	54	1	250
Suspension, dampers	8	6	47	78	6	25	10	47	2	229
Lights, glasses, visibility	15	11	50	74	6	37	14	57	1	265
Vehicle load, overload	23	11	50	58	16	59	17	57	2	293
	592	541	911	702	272	607	456	753	17	4851

ABSOLUTE WERTE

2.1 For which user groups will information about the following parameters be helpful for road & traffic management and safety?

Main Results – User Groups and their specific interest on safety relevant parameters

	Road Authorities	Road Planning	Transport Safety	Vehicle Manufacturer	Rescue Staff	Policy, Legislation	Road Information Suppliers	Driver	Nobody		
INFRASTRUCTURE:											
Road geometry	20,0%	25,6%	18,8%	7,1%	2,9%	5,6%	10,3%	9,1%	0,6%	100,0%	
Road surface	20,2%	19,6%	20,7%	8,2%	2,6%	5,1%	11,4%	11,9%	0,3%	100,0%	
Road equipment	18,3%	16,9%	16,9%	6,1%	6,6%	10,8%	12,0%	12,2%	0,2%	100,0%	
Road environment	17,5%	15,9%	17,5%	5,8%	9,6%	8,5%	13,7%	11,5%	0,0%	100,0%	
DRIVER BEHAVIOUR											
Vehicle speeding, spacing	12,7%	9,1%	18,7%	11,1%	4,7%	17,1%	10,6%	16,1%	0,0%	100,0%	
Driver behaviour, fatigue, alcohol	9,3%	4,8%	19,4%	10,1%	12,4%	21,7%	5,1%	16,9%	0,3%	100,0%	
Road perception, understanding	13,4%	15,0%	19,5%	11,1%	3,3%	10,0%	11,7%	15,6%	0,3%	100,0%	
Traffic density, speed, events	15,0%	12,0%	18,0%	5,8%	8,8%	12,8%	14,8%	12,8%	0,3%	100,0%	
Presence of other vehicles	14,6%	14,8%	17,9%	5,8%	7,7%	12,4%	13,2%	13,5%	0,3%	100,0%	
VEHICLE											
Engines, gears failure	3,4%	3,0%	18,6%	33,8%	5,1%	12,7%	4,2%	18,6%	0,8%	100,0%	
Breaking system, ABS	3,2%	3,2%	21,1%	32,0%	2,8%	12,6%	4,0%	20,6%	0,4%	100,0%	
Tyre state, pressure	3,6%	2,8%	20,0%	28,4%	2,8%	15,2%	5,2%	21,6%	0,4%	100,0%	
Suspension, dampers	3,5%	2,6%	20,5%	34,1%	2,6%	10,9%	4,4%	20,5%	0,9%	100,0%	
Lights, glasses, visibility	5,7%	4,2%	18,9%	27,9%	2,3%	14,0%	5,3%	21,5%	0,4%	100,0%	
Vehicle load, overload	7,8%	3,8%	17,1%	19,8%	5,5%	20,1%	5,8%	19,5%	0,7%	100,0%	

BASIS: PARAMETER



2.1 For which user groups will information about the following parameters be helpful for road & traffic management and safety?

Main Results – User Groups and their specific interest on safety relevant parameters

	Road Information								
INFRASTRUCTURE:	Road Authorities	Road Planning	Transport Safety	Vehicle Manufacturer	Rescue Staff	Policy, Legislation	Suppliers	Driver	Nobody
Road geometry	11,5%	16,1%	7,0%	3,4%	3,7%	3,1%	7,7%	4,1%	11,8%
Road surface	12,0%	12,8%	8,0%	4,1%	3,3%	3,0%	8,8%	5,6%	5,9%
Road equipment	12,7%	12,8%	7,6%	3,6%	9,9%	7,2%	10,7%	6,6%	5,9%
Road environment	10,8%	10,7%	7,0%	3,0%	12,9%	5,1%	11,0%	5,6%	0,0%
DRIVER BEHAVIOUR									
Vehicle speeding, spacing	8,3%	6,5%	7,9%	6,1%	6,6%	10,9%	9,0%	8,2%	0,0%
Driver behaviour, fatigue, alcohol	5,6%	3,1%	7,6%	5,1%	16,2%	12,7%	3,9%	8,0%	5,9%
Road perception, understanding	8,1%	10,0%	7,7%	5,7%	4,4%	5,9%	9,2%	7,4%	5,9%
Traffic density, speed, events	10,1%	8,9%	7,9%	3,3%	12,9%	8,4%	12,9%	6,8%	5,9%
Presence of other vehicles	9,0%	10,0%	7,1%	3,0%	10,3%	7,4%	10,5%	6,5%	5,9%
VEHICLE									
Engines, gears failure	1,4%	1,3%	4,8%	11,4%	4,4%	4,9%	2,2%	5,8%	11,8%
Breaking system, ABS	1,4%	1,5%	5,7%	11,3%	2,6%	5,1%	2,2%	6,8%	5,9%
Tyre state, pressure	1,5%	1,3%	5,5%	10,1%	2,6%	6,3%	2,9%	7,2%	5,9%
Suspension, dampers	1,4%	1,1%	5,2%	11,1%	2,2%	4,1%	2,2%	6,2%	11,8%
Lights, glasses, visibility	2,5%	2,0%	5,5%	10,5%	2,2%	6,1%	3,1%	7,6%	5,9%
Vehicle load, overload	3,9%	2,0%	5,5%	8,3%	5,9%	9,7%	3,7%	7,6%	11,8%
	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

BASIS: USER GROUPS



2.1 For which user groups will information about the following parameters be helpful for road & traffic management and safety?

Specific Results (Answers)

Question 2.2: Which diagnosis to gather the data are the most helpful?	
On road (in-situ weather sensors, video detection, in-pavement sensors,...)	72
On board (CAN data, rain sensor, lighting sensor,...)	54
Periodical measurement of the road surface	39

Question 2.4: Should the gathered information be used for developing new applications of active safety systems?				
Question 2.5: Do you think that the achievements of actual risk levels and risk factors can affect future road construction guidelines?				
	YES (2)	NO (1)	No answer (0)	
Question 2.4:	85	8	2	95
	89,5%	8,4%	2,1%	100,0%
Question 2.5:	77	15	3	95
	81,1%	15,8%	3,2%	100,0%

Question 2.7: Risk Compensation Theory - "Intelligent Roads will induce unsafe driving situations?"		
0 NO ANSWER	6	6,3%
1 NO	37	38,9%
2 YES	52	54,7%
	<u>95</u>	<u>100,0%</u>



Stakeholders and their interests...

Question 2.10: Which stakeholders should be involved in the development of...

	Road diagnosis systems		Risk information Systems	
Road Authorities / Operators	82	18,9%	76	14,5%
Road Planning / Engineering	79	18,2%	51	9,8%
Transport / Traffic Safety Research	78	18,0%	78	14,9%
Vehicle Manufacturer	34	7,9%	72	13,8%
Rescue Staff	25	5,8%	48	9,2%
Policy, Legislation and Enforcement	51	11,8%	64	12,2%
Road Information Suppliers	42	9,7%	71	13,6%
Driver (Association)	42	9,7%	63	12,0%
	433	100,0%	523	100,0%

Question 2.11: Which stakeholders should support the cost of the required infrastructure...to be...

	Road diagnosis systems		Risk information Systems	
Road Authorities / Operators	83	30,6%	73	23,5%
Road Planning / Engineering	32	11,8%	24	7,7%
Transport / Traffic Safety Research	30	11,1%	25	8,1%
Vehicle Manufacturer	31	11,4%	56	18,1%
Rescue Staff	5	1,8%	7	2,3%
Policy, Legislation and Enforcemer	37	13,7%	38	12,3%
Road Information Suppliers	28	10,3%	51	16,5%
Driver (Association)	25	9,2%	36	11,6%
	271	100,0%	310	100,0%



Stakeholders and their interests...

Question 2.14: If a road section with an increasing risk level is identified, what is the best thing to do?

On-board individual information for the driver	60	29,3%
Road side information for all road users	74	36,1%
Information for traffic and road managers	56	27,3%
Direct action on the vehicle	15	7,3%
	205	100,0%

Question 2.8: Which kind of tools would you, as a driver, prefer for being informed about a potential accident risk?

In-car system- Driver warning (visual, tactile, auditory)	75	31,0%
In-car system- Automatic and direct active driving assistance systems	41	16,9%
Communication and information devices (mobile phone, navigation system)	50	20,7%
Dynamic road signs (VMS, DMS,...)	74	30,6%
Nothing special, only road authorities should get the information	2	0,8%
	<u>242</u>	<u>100,0%</u>



Conclusions...brief ones!....

- 95 responses (geographical spread could be improved, road authorities/operators/planners & traffic/transport safety researchers well represented)
- Q2.1: All positively disposed towards intelligent roads – we are going in the right direction!
- Q10: Multidisciplinary approach required for development of road safety diagnosis systems & risk identification systems – FEHRL well placed to adopt such an approach in collaboration with partners from automotive industry
- Q11: Cost should be met by Road Authorities/Operators?
- Q2.2, Q2.4, Q2.5: “On Road” systems for gathering data for identifying level of risk associated with a given section of road favored – uses for such data will include development of new applications for active safety systems and improved road construction guidelines
- Q14: When road section of increased risk identified – inform users/road owners & managers. Desire for direct action on vehicle is low – explore this?

