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EuroS@P
EUROPEAN ROAD SAFETY PARTNERSHIP

WP5. Development of innovative teaching and certification methodologies

IO.16 - Development of the online didactic materials

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1 ABOUT THE EUROS@P PROJECT

The main objective of the EuroS@P project is to promote the best education solutions in the area of RISM directive, with an increase of awareness and knowledge of road safety, by:

1) Developing an e-learning platform with access to project products,
2) The development of teaching and training materials dedicated to conducting classes at universities and training courses for RISM staff,
3) Raising competencies and skills in RISM, by changing curricula at universities and equipping students and staff with didactic materials based on innovative RISM methods and tools,
4) Creating the foundations for Road Safety Professional Certification (RSP),
5) The development of a lasting relationship and the continuation of active international cooperation between project partners with the possibility of its extension to other institutions.

The EuroS@P project targets the following groups:

1) Students, researchers, and academic teachers at universities.
2) Road authority staff at national, regional and local levels.
3) Experts, specialists, and practitioners involved in RS activities, including staff who conduct training in various RS courses.
4) All users of road infrastructure, as an indirect target group, for whom the risk of road accidents will ultimately be reduced by increasing the effectiveness and efficiency of RISM activities.

The project is also supported by a group of associates who will cooperate with project partners to consult and evaluate the results. They will implement final products and promote the dissemination and accessibility of the project results.

ABOUT OUTPUT IO.15

Didactic material developed under EuroS@P are **summarised inside this document** and include:

- Prepared materials review of tools and methods related to Road safety impact assessment, road safety audits and road safety inspection,
- Prepared materials from practical implementation of PCSI on the selected pedestrian crossings in Poland and Germany,
- Practical implementation of RSI methodology on the selected road sections in Poland, Croatia and Italy,
- Video and audio lectures,
- Power point presentations,
- Manual on how to present prepared didactic materials and teach courses.

2 PUBLICATION AND SUMMARY OF DIDACTIC MATERIALS

IO.16 pertained to the development of online didactic materials and was executed under Working Package 5 (WP5), which focused on the development of innovative teaching and certification methodologies. The task successfully integrated the results from work packages 2-4, IO.1-4, IO.9, and IO.13.

The materials provided a comprehensive review of tools and methods specifically tailored for infrastructure road safety. This encompassed a broad range of topics, from the foundational principles of road design to the latest advancements in safety technologies. The aim was to ensure that all stakeholders, from road designers to safety auditors, had a clear understanding of the best practices in the realm of infrastructure safety. Didactic materials are comprised of following:

Multimedia Content:
The materials featured various video and audio material, offering visual demonstrations and expert insights into the intricacies of road safety inspections, tools, and methodologies.

Presentations:
PowerPoint presentations were incorporated, providing a structured and visual representation of the methodologies, tools, and best practices in infrastructure road safety.

Manual:
A manual for road safety inspections is provided detailing how to present the prepared didactic materials and teach courses. This serves as a guide for trainers and educators, ensuring consistency and clarity in the dissemination of knowledge.

Interactive quizzes:
To ensure comprehension and retention of the material, quizzes are developed and integrated throughout the courses. These quizzes test participants on key concepts, methodologies, and best practices covered in the lectures and presentations.

Group Work Guidelines:
Recognizing the value of collaborative learning, guidelines for group work are provided. These guidelines offer a structured approach to collaborative tasks, fostering teamwork, and promoting the exchange of ideas among participants.
The comprehensive didactic materials developed under EuroS@P, tailored to address infrastructure road safety and its associated methodologies, are hosted on the e-learning platform https://enauczanie.pg.edu.pl/moodle/my/.

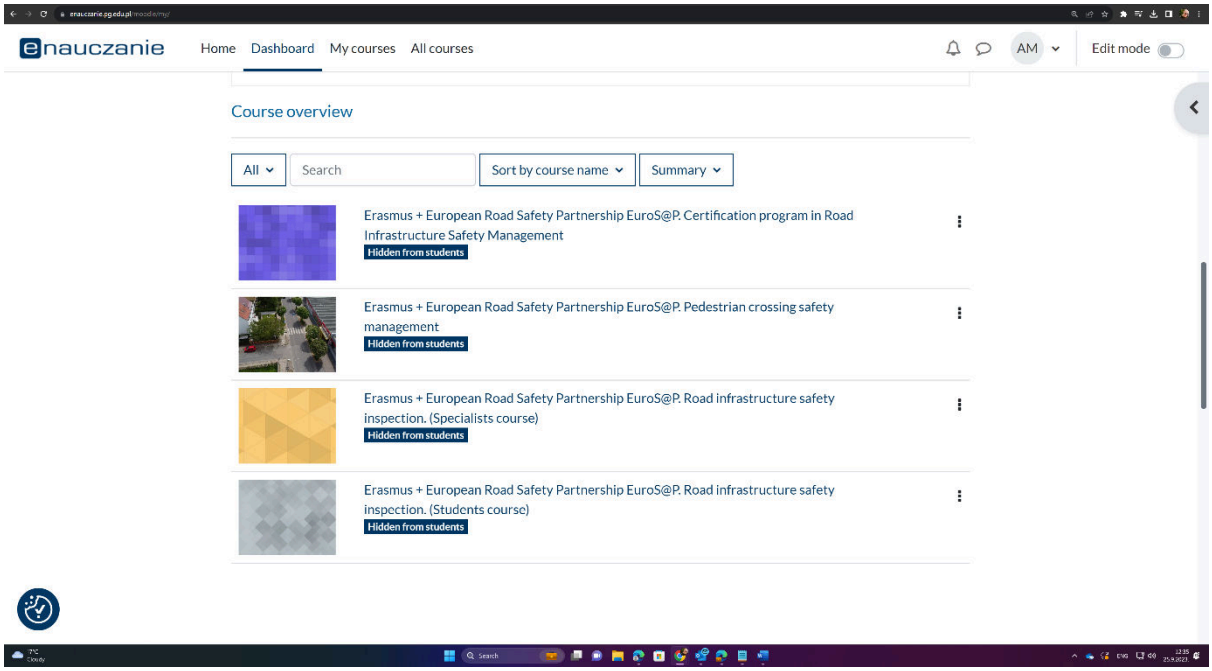


Figure 1 Overview of EuroS@P didactic materials and certification programme available on EuroS@P learning platform - https://enauczanie.pg.edu.pl/moodle/my/

These materials are meticulously organized into separate courses to cater to different audiences and specific areas of road safety. Didactic materials are hosted and separated per 3 distinct learning material groups.

2.1 Erasmus + European Road Safety Partnership EuroS@P. Road Infrastructure Safety Inspection (Specialists and Students Course)

Didactic materials developed for Road Safety Inspection place an emphasis into the practical implementation of road safety inspection, covering aspects like site selection, inspection protocols, data collection, and analysis. Online materials include a RSI implementation manual with practical implementation documents, power point presentations, recordings, groupwork guidelines and examples of PCSI inspection. Developed online materials are available on https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31186 for a student modulecourse and on https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31187 for an expert module course.

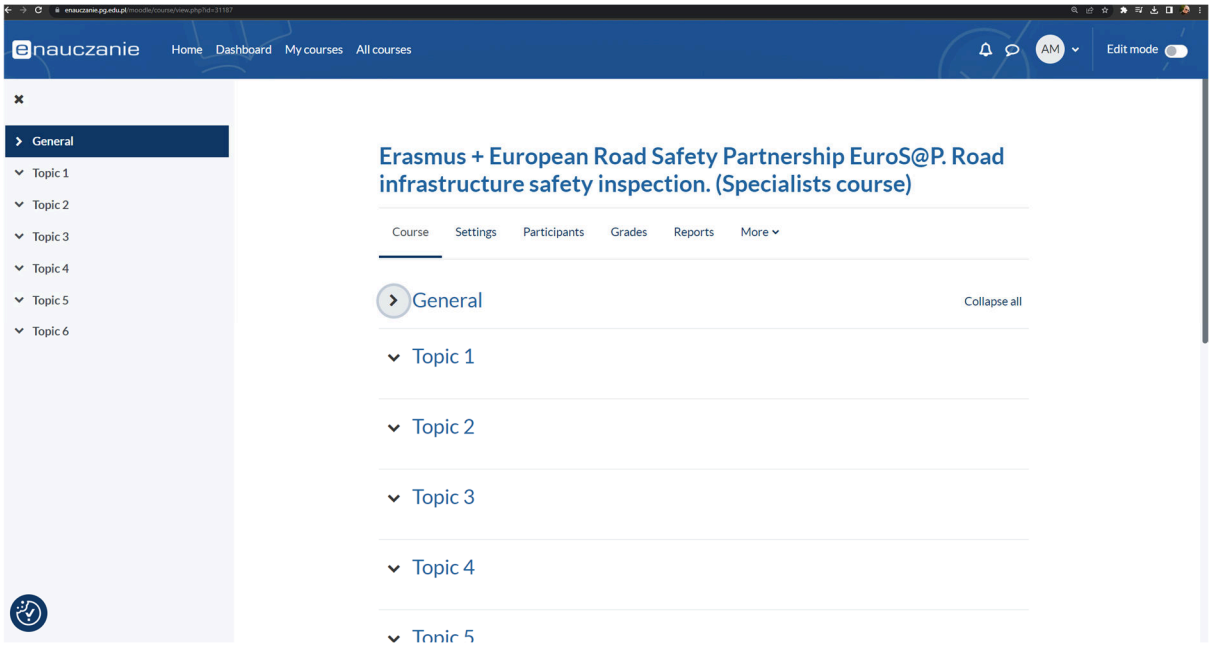


Figure 2. Format of delivery of online didactic materials for Road infrastructure safety inspection (Specialist course) - E-learning moodle platform

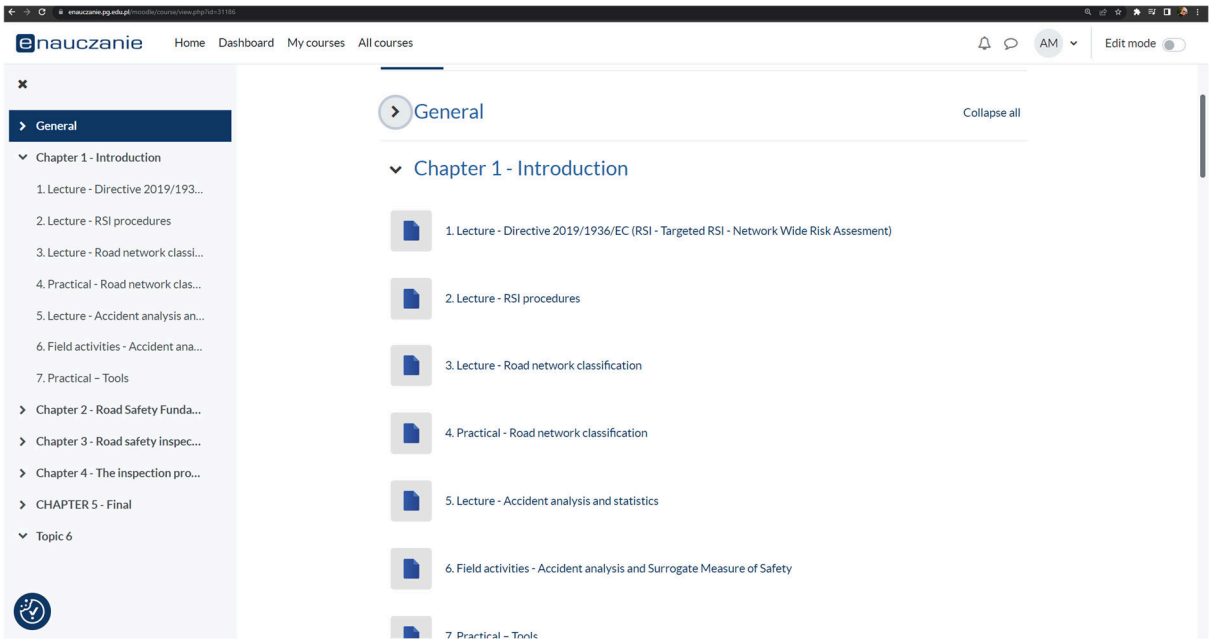


Figure 3. Format of delivery of online didactic materials for Road infrastructure safety inspection (Student course) - E-learning moodle platform

Additionally, for the purposes of conducting a field work within the classroom, a RSI WebGIS platform was developed separately (available on https://eurosap-iasp.eu/campaign/8KNCgikWnfqpWta2ofNcBR?bbox=1567700,7065456,2531969,7351402).

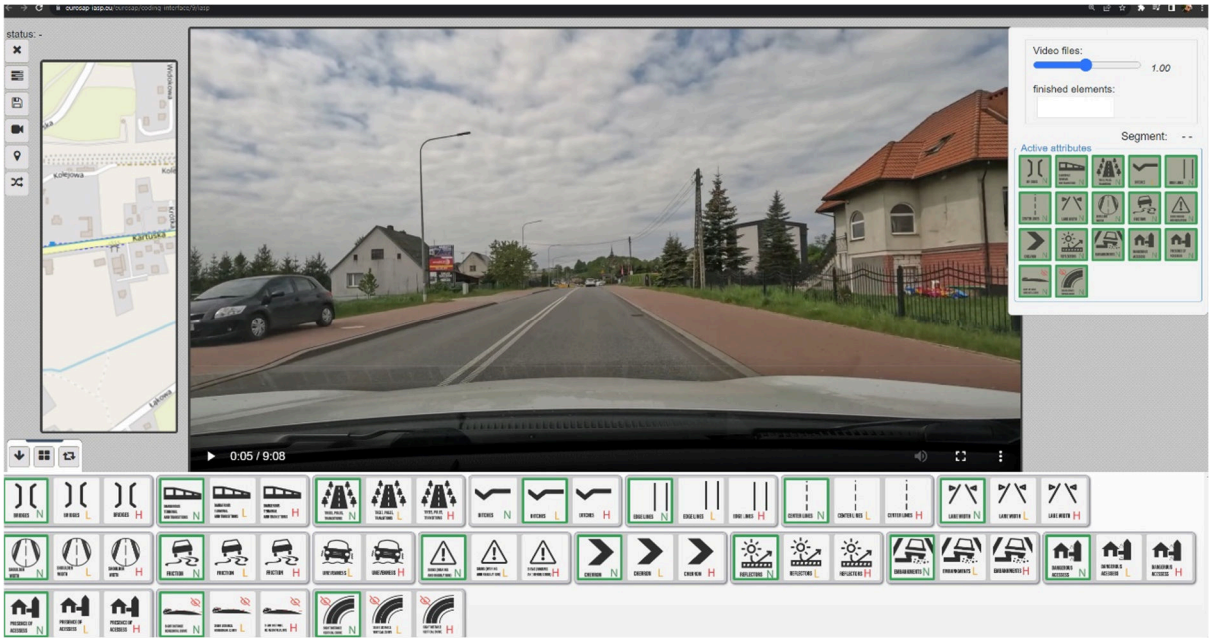


Figure 4. Developed EuroS@P RSI WebGIS inspection interface

WebGIS platform enables the teacher to effectively demonstrate the EuroS@P RSI procedures towards students in an office-enviroment with ready-made videos and digitalised tools. Special EuroS@P RSI WebGIS manual was also prepared for teacher usage, available on e-learning platform with the rest of the material.

Figure 5 developed EuroS@P RSI WebGIS manual front page

Regarding the EuroS@P RSI courses for students and professionals, developed didactic materials are presented within the following table, all of which are digitalised and available on e-learning platform:

No.	Types of classes	Hour	Short Name	Student	Targetet inspector	Periodical inspector
CHAPTER 1 - Preliminary part						
1	Lecture	2	Directive 2019/1936/EC (RSI - Targeted RSI - Network Wide Risk Assessment)	1	1	1
2	Lecture	3	RSI procedures	1	1	1
3	Lecture	1	Road network classification	1	1	1
4	Practical	3	Road network classification	1	0	0
5	Lecture	3	Accident analysis and statistics	1	0	0
6	Field	4	Accident Analysis and Surrogate Measure of Safety	1	0.5	0.5
7	Practical	4	Tools used for RSI	1	0.5	0.5
CHAPTER 2 - Road Safety Fundamentals						
1	Lecture	1	Characteristics and requirements of different road users. VRUs. Standards vs Performance	1	1	1
2	Lecture	1	Road Alignment and Cross Section	1	0	0
3	Lecture	1	Intersections and Interchanges	1		
4	Lecture	1	Roadside hazards	1	1	1
5	Lecture	1	Signs, Markings, Pavement, Lighting	1	0	0
CHAPTER 3 - Road safety inspection						
1A	Lecture	3	Two lane rural/single carriageways (A)	1	1	0
1B	Lecture	1	Two lane rural/single carriageways (B)	1	1	1
2A	Lecture	2	Motorways/dual carriageways (A)	1	1	0
2B	Lecture	1	Motorways/dual carriageways (B)	1	1	1
3A	Lecture	2	Interchanges (A)	1	1	0
3B	Lecture	1	Interchanges (B)	1	1	1
4A	Lecture	2	Intersections/Roundabouts (A)	1	1	0
4B	Lecture	1	Intersections/Roundabouts (B)	1	1	1
CHAPTER 4 - The inspection process						
1A	Field activities	3	Two lane rural/single carriageway (A)	1	1	0
1B	Field activities	2	Two lane rural/single carriageways (B)	1	1	1
2A	Practical	2	Two lane rural/single carriageways (A)	1	1	0

No.	Types of classes	Hour	Short Name	Student	Targetet inspector	Periodical inspector
2B	Practical	1	Two lane rural/single carriageway (B)	1	1	1
3A	Field activities	3	Motorways/dual carriageways (A)	0	1	0
3B	Field activities	2	Motorways/dual carriageways (B)	0	1	1
4A	Practical	2	Motorways/dual carriageways (A)	0	1	0
4B	Practical	1	Motorways/ dual carriageways (B)	0	1	1
5A	Field activities	2	Interchanges (A)	1	1	0
5B	Field activities	2	Interchanges (B)	0	1	1
6A	Practical	2	Interchanges (A)	1	1	0
6B	Practical	1	Interchanges (B)	0	1	1
7A	Field activities	3	Intersections/Roundabouts (A)	1	1	0
7B	Field activities	2	Intersections/Roundabouts (B)	1	1	1
8A	Practical	2	Intersections/Roundabouts (A)	1	1	0
8B	Practical	1	Intersections/Roundabouts (B)	1	1	1
9	Lecture	4	Discussion of Practical activities	1	1	1
CHAPTER 5 - Final discussion						
1	Lecture	2	Final discussion and evaluation	1	1	

2.2 Erasmus + European Road Safety Partnership EuroS@P. Pedestrian Crossing Safety Management:

Didactic materials developed for PCSM place an emphasis into the practical implementation of Pedestrian Crossing Safety Inspections (PCSI), covering aspects like site selection, inspection protocols, data collection, analysis, and actionable recommendations to enhance pedestrian safety. Online materials include a PCSI implementation manual, power point presentations, recordings (day and night), groupwork guidelines and examples of PCSI inspection. Developed online materials are available on https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31185.

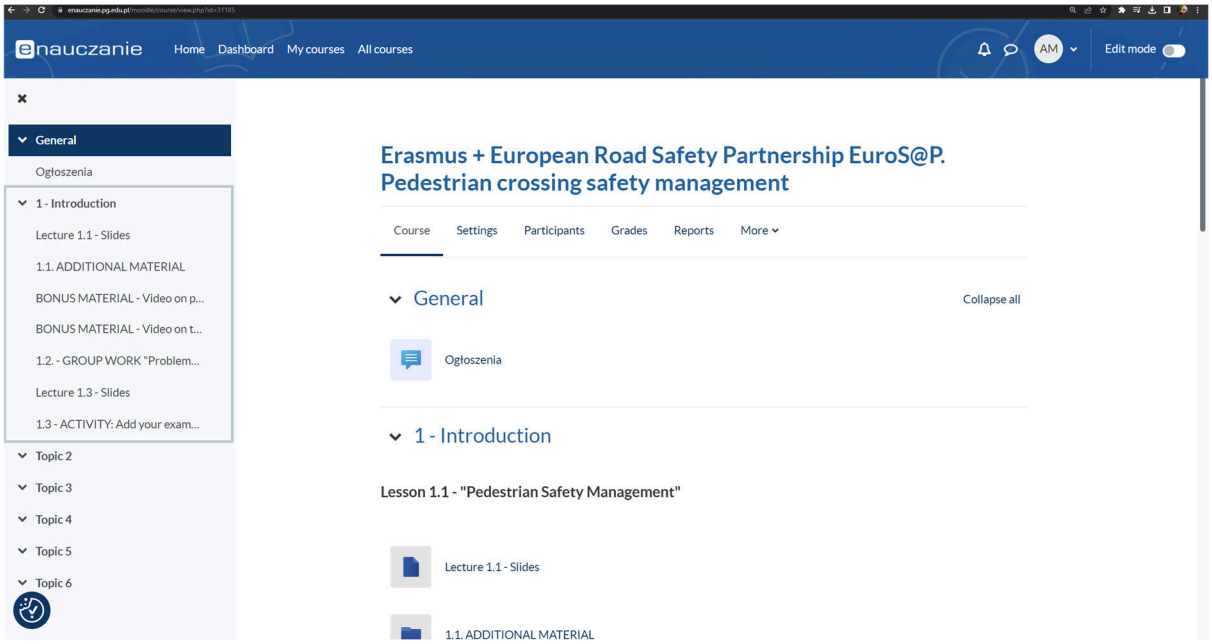


Figure 6 Format of delivery of online didactic materials for Pedestrian Crossing Safety management - E-learning moodle platform

No.	Types of classes	Hour	Short Name
CHAPTER 1 - Introduction			
1	Lecture	1	Pedestrian safety management
2	Practical	1	Problems of pedestrian crosssings
3	Lecture	1	Pedestrian safety management
CHAPTER 2 - Pedestrian crossing road safety inspection (Daily)			
1	Lecture	2	PC - Road safety inspection methodology
2	Lecture	5	PCSI - Predefined types of hazard
3	Practical	2	Analysis of Pedestrian crossing inspections - examples with scoring
4	Practical	3	Analysis of Pedestrian crossing inspections - examples without scoring
5	Field activities	2	Pedestrian crossing safety inspections, checklist (with the teacher)
6	Field activities	7	Pedestrian crossing safety inspections, checklist (without the teacher)
7	Practical	2	Analysis of Pedestrian crossing inspections carried out
CHAPTER 3 - Introduction of pedestrian crossing road safety inspection (Nightly)			
1	Lecture	2	PC - Road safety methodology
CHAPTER 4 - Final			
1	Lecture	2	Final discussion and evaluation

2.3 Erasmus + European Road Safety Partnership EuroS@P. Certification program in Road Infrastructure Safety Management:

This course provides a Road Safety certification methodology for Road Safety Professionals in Road Infrastructure Safety Management field. Course holders are introduced to EuroS@P developed didactic materials ranging from implementation manual, exam forms, certification templates, and teaching material requirements. Developed online materials are available on https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31189

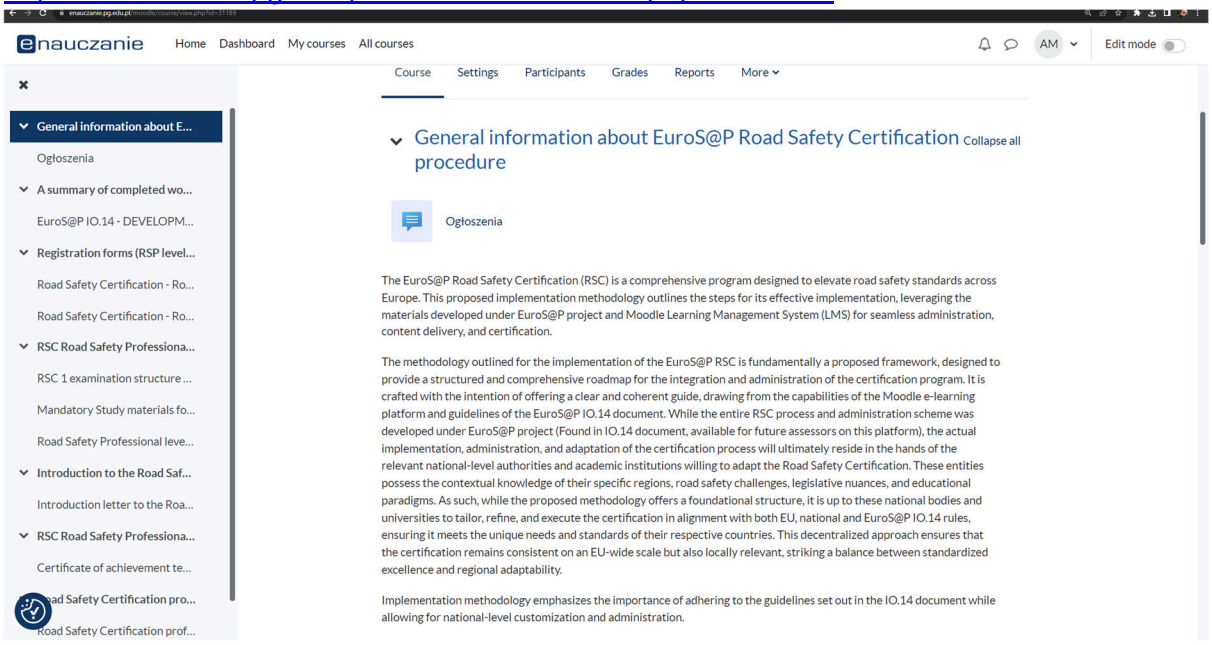


Figure 7. Format of delivery of RSP certification programme – E-learning moodle platform

3 SURVEYS ON DEVELOPED MATERIALS

3.1 Academic teachers and trainers

Didactic Materials Feedback Survey was disseminated among academic teachers of consortium member institutions, as well as with RSI/RSA trainers with expertise in the field of road safety and infrastructure. The primary objective of sharing this survey was to gather comprehensive feedback on the quality, relevance, and applicability of the IO.16 materials. This feedback was instrumental in ensuring that the content aligns with the evolving needs of the academic and professional community, and that it remains at the forefront of road safety education. The results of the survey highlight key strengths of the materials, areas for potential improvement, and insights into how the content is perceived by its primary audience – road safety professionals within the educational fields. Following link was used to distribute the survey: https://forms.gle/RAbpXFuCyn3Vhp9YA

The IO.16 Didactic Materials Feedback Survey is structured into distinct sections, starting with optional personal information fields that capture the respondent's name, affiliated institution or organization, and their specific role or position. The content evaluation segment comprises a series of Likert-scale questions addressing specific attributes of the IO.16 materials: relevance to road safety and infrastructure, comprehensiveness of topics covered, clarity of presentation, practicality of methodologies and tools, quality of multimedia content, and the effectiveness of quizzes and group work guidelines. Following these quantitative queries, the survey incorporates open-ended questions designed to elicit detailed feedback on the strengths of the materials, potential areas for improvement, and any additional comments or suggestions. The survey culminates with an overall rating question, where respondents are asked to rate the materials on a scale of 1 to 10, and a recommendation metric to gauge the likelihood of endorsing the IO.16 materials to peers.

3.2 Survey feedback

The feedback session saw participation from a varied group of professionals representing academic institutions, industry organizations, and companies in the field of road safety and infrastructure. These participants spanned a range of roles, from leadership and administrative capacities to specialized and hands-on positions. This diverse attendee profile underscores the broad relevance and appeal of the IO.16 materials across different sectors and levels of expertise.

Key areas from the survey which were covered include:

1) **Demographic Information:**
   - Institution/Organization
   - Email address
   - Name and surname
   - Position/role
2) **Feedback Scores:**
   - Relevance of IO.16 to road safety and infrastructure
   - Depth of topic coverage in IO.16

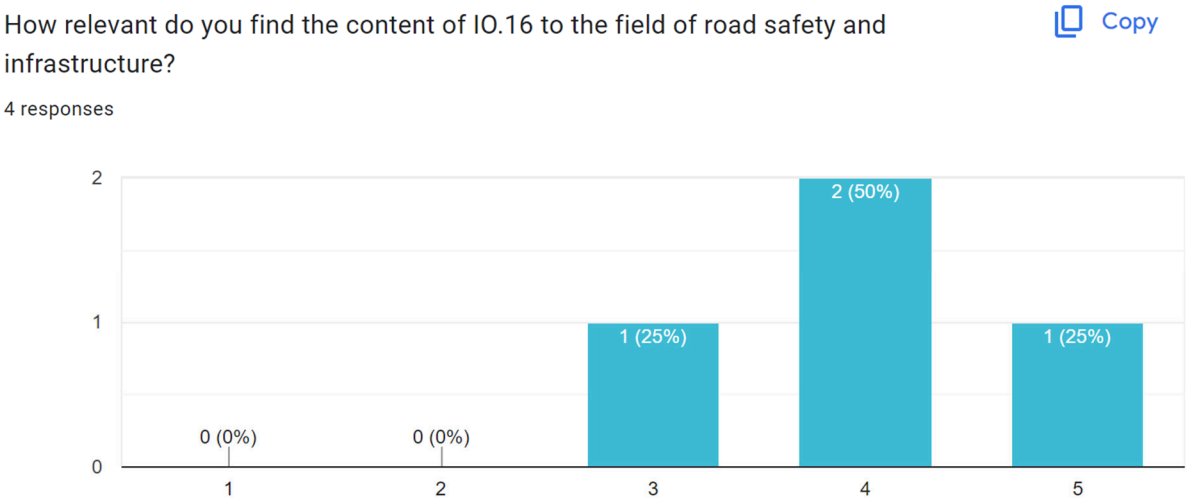
- Clarity of IO.16 content
- Practicality and applicability of methodologies/tools
- Quality/effectiveness of multimedia content
- Effectiveness of quizzes/group work for learning

3) **Open-ended Feedback:**
- Strongest aspects of IO.16
- Areas/topics for improvement in IO.16
- Other feedback/suggestions for IO.16

4) **Overall Rating and Recommendation:**
- Overall quality rating of IO.16 (scale 1-10)
- Recommendation of IO.16 to peers

Analysis of the answers per question is as follows:

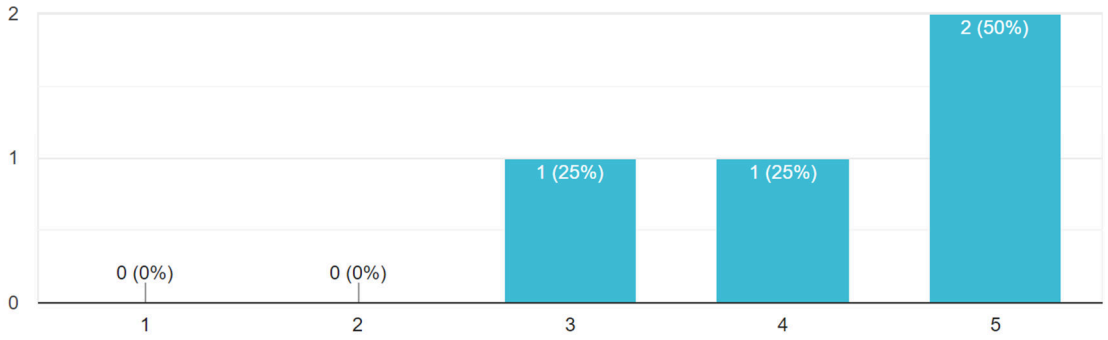
1. **Relevance of IO.16 to Road Safety and Infrastructure**: The average score is 4. This indicates that respondents generally find the content of IO.16 relevant to the field of road safety and infrastructure.



2. **Depth of Topic Coverage in IO.16**: The average score is 4.2 Respondents believe that IO.16 materials cover most necessary topics in adequate depth.

Do you believe the IO.16 materials cover all necessary topics in adequate depth? Copy

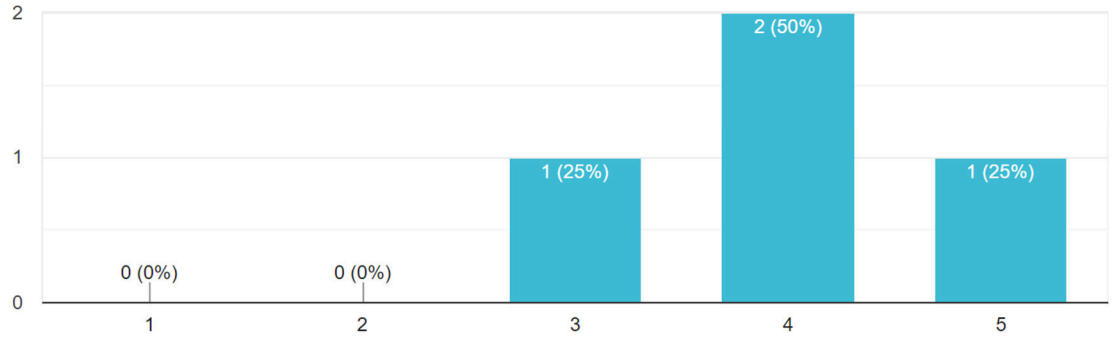
4 responses



3. **Clarity of IO.16 Content**: The average score is 4. The content presented in IO.16 is clear and understandable for the majority of respondents.

How clear and understandable is the content presented in IO.16? Copy

4 responses



4. **Practicality and Applicability of Methodologies/Tools**: The average score is 4. Respondents find the methodologies and tools in the materials to be practical and applicable.

How practical and applicable are the methodologies and tools presented in the materials?

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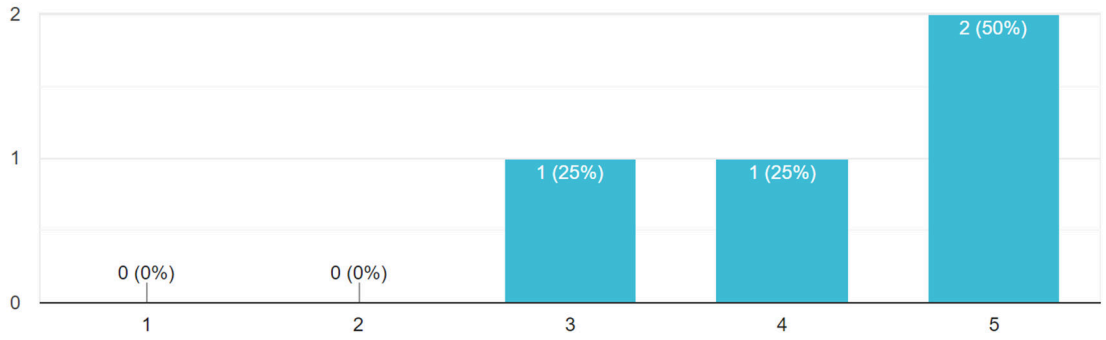
4 responses

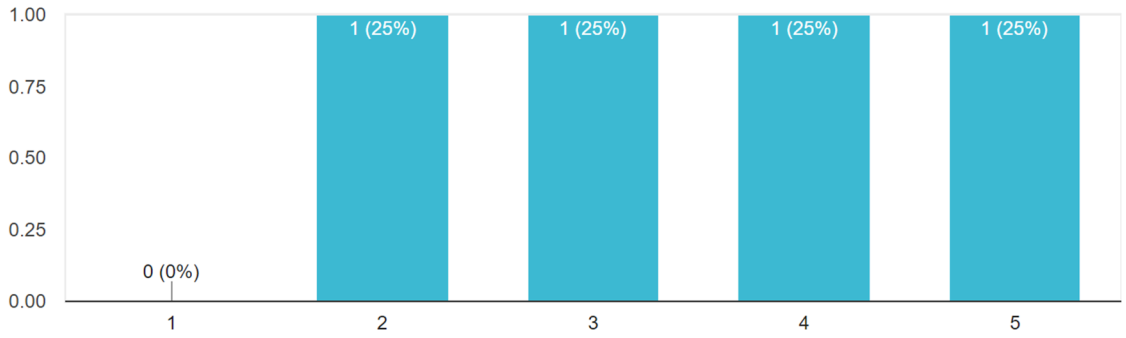


5. **Quality/Effectiveness of Multimedia Content**: The average score is 3. This is slightly lower than other scores, indicating that there may be room for improvement in the multimedia content of IO.16.

How would you rate the quality and effectiveness of the multimedia content?

Copy

4 responses

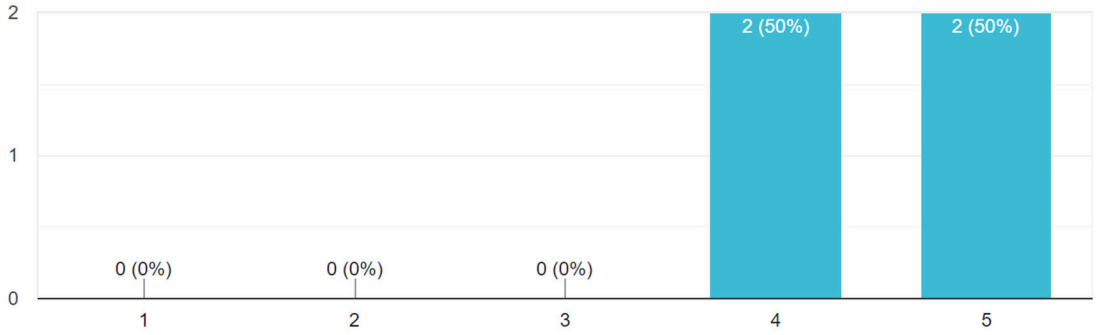


6. **Effectiveness of Quizzes/Group Work for Learning**: The average score is 4.5This suggests that the quizzes and group work guidelines are effective in enhancing the learning experience.

How effective are the quizzes and group work guidelines in enhancing the learning experience?

Copy

4 responses



7. **Overall Quality Rating of IO.16**: The average score is 9.5on a scale of 1 to 10. This is a high score, indicating that respondents rate the overall quality of IO.16 materials very positively.

On a scale of 1 to 10 (with 10 being the highest), how would you rate the overall quality of the IO.16 materials?

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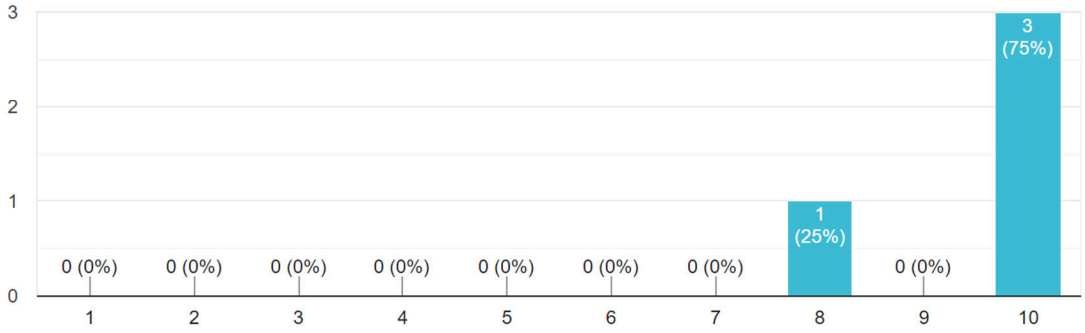
4 responses

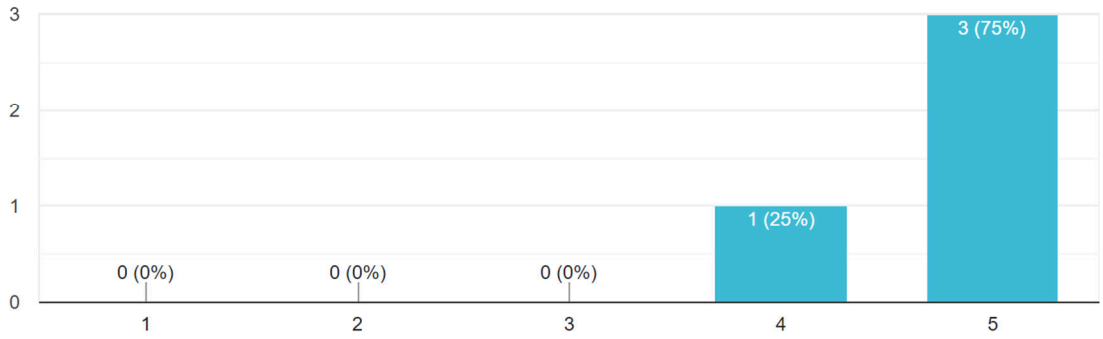


8. **Recommendation of IO.16 to Peers**: The average score is 4.7 This suggests that most respondents would recommend the IO.16 materials to other academic teachers and trainers in the field of road safety and infrastructure.

Would you recommend the IO.16 materials to other academic teachers and trainers in the field of road safety and infrastructure?

Copy

4 responses



Within the survey, there are three columns that contain open-ended feedback:

- What do you consider to be the strongest aspects of the IO.16 materials?
- Are there any areas or topics you believe should be improved or added to the IO.16 materials?
- Please provide any other feedback or suggestions you might have regarding the IO.16 didactic materials.

The **WebGIS interface** used in the practical part of the Road Safety Inspection is appreciated. There's a positive sentiment towards the material's **focus on pedestrian safety**.

There's a specific concern about the **intersection checklist** in the Road Safety Inspection not being aligned with other checklists. This suggests there might be inconsistencies that need to be addressed.

One respondent believes that the courses cover all essential aspects, which is a positive note but doesn't specify a direct area of improvement.

One respondent finds the material to be satisfactory, as indicated by the comment "Material is adequate."

Another respondent suggests a differentiation in the **pedestrian methodology**, emphasizing that there should be a separation between student approaches and those for practicing experts.

To summarize the open-ended feedback:

- **Positive Aspects**: Appreciation for the WebGIS interface, a general sentiment that the material is good, and a focus on pedestrian safety.
- **Areas of Improvement**: Alignment issues with the intersection checklist and a suggestion for differentiating methodologies based on the audience (students vs. practicing experts).

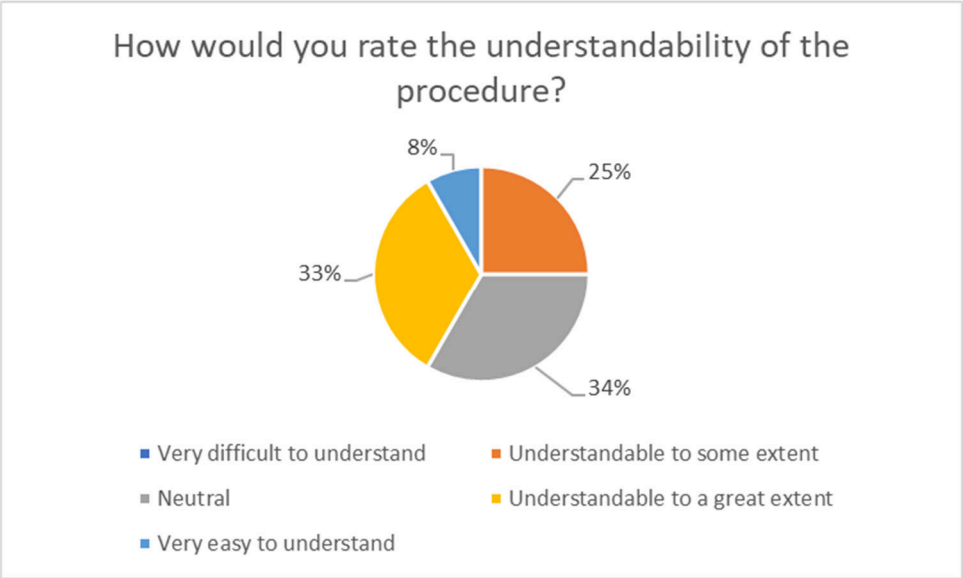
3.3 Feedback from trainees

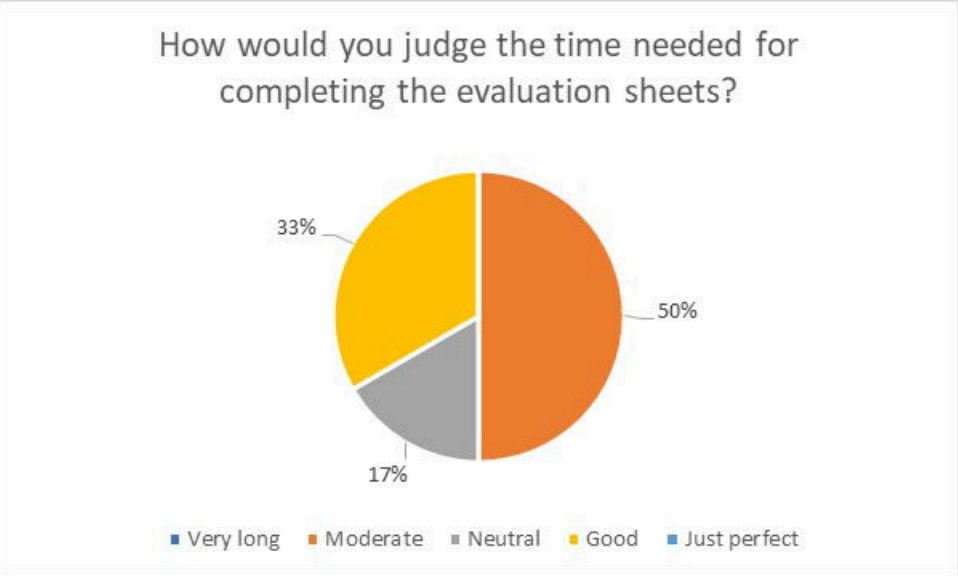
EuroS@P RSI trainee survey
In the O16 “Development of the online didactics materials”, one of the tasks is to collect feedback on the prepared didactic materials from students and road authority staff.

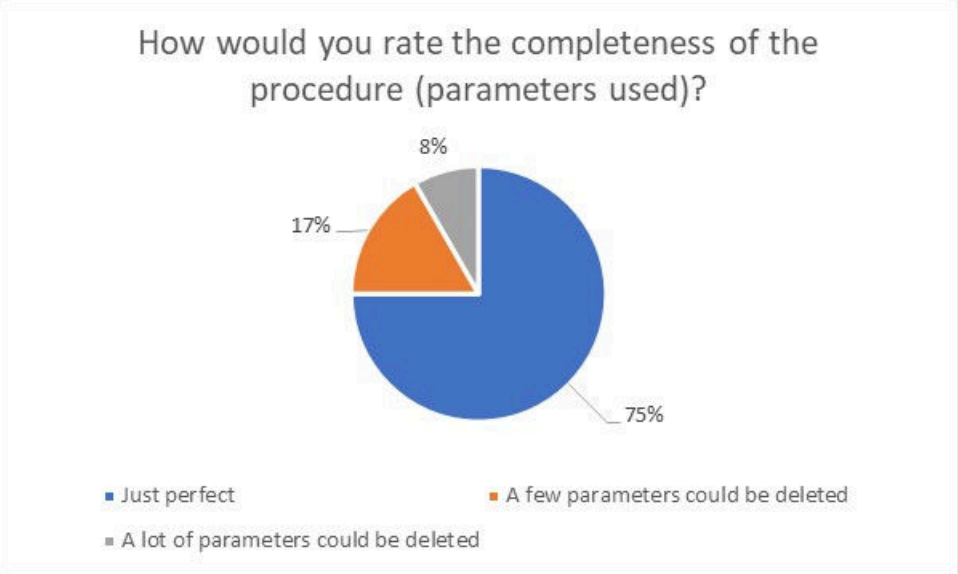
Students were involved in the analysis of didactic materials related to the Road Safety Inspection procedure. For collecting feedback, we used a questionnaire (available at https://forms.gle/VcAW4DQGdMWPh9Xe7). The questionnaire for Trainees was shared with attendees of EuroS@P final conference in Zagreb, after a detailed elaboration and discussion of EuroS@P RSI methodology with participants.

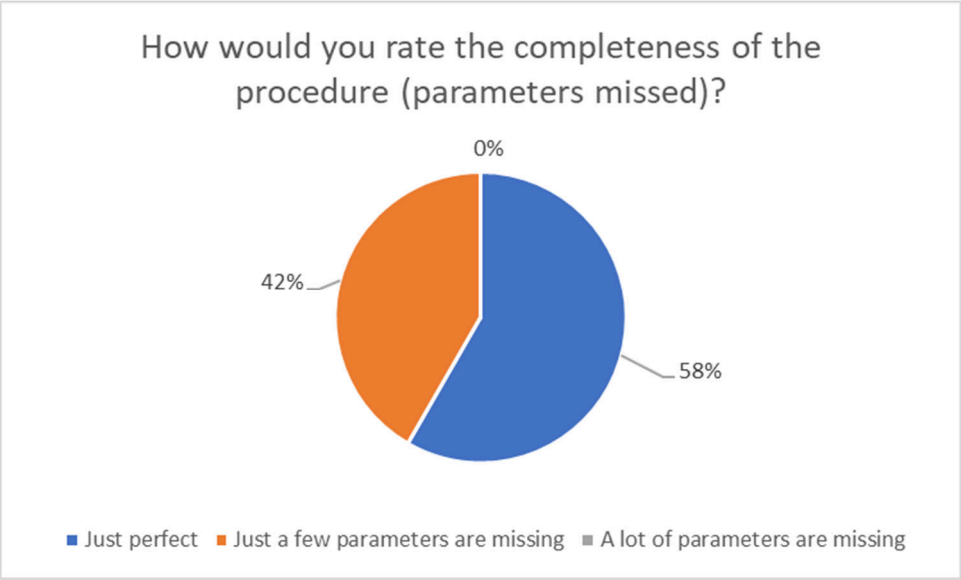
At the first question “How would you rate the understandability of the procedure?”, only 25% of the interviewees found the procedure to be unclear in some parts, while 41% considered the procedure to be fairly clear.

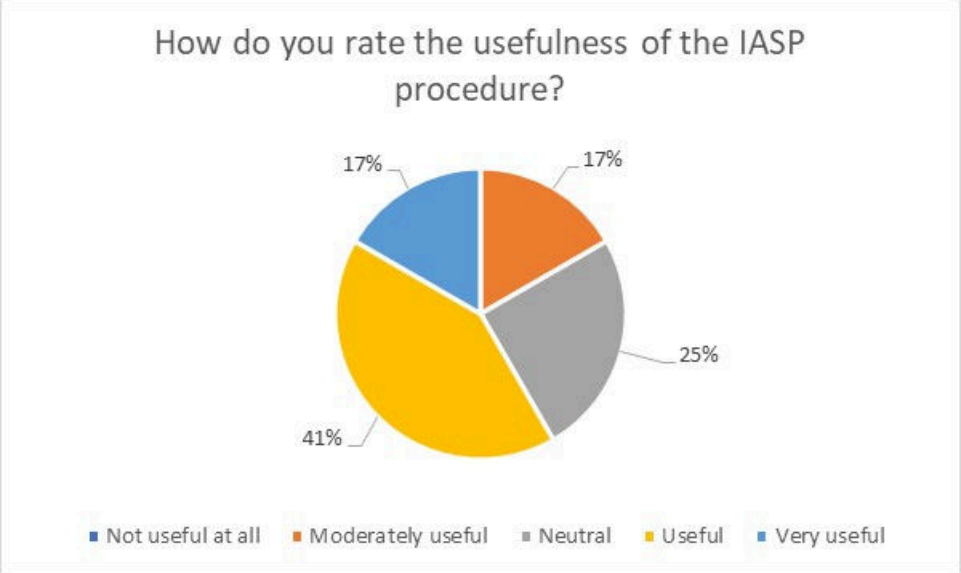
- 50% of the students considered the time required to complete the inspection forms as moderate, while 33% described it as good.
- 75% of the students believe that the procedure is complete in terms of the parameters used, while 48% think that some parameters are missing, such as “quality of network connection for ADAS systems and ITS”.
- 58% of the students believe the procedure is useful for safety inspections, and 67% believe it can be used in their home country.

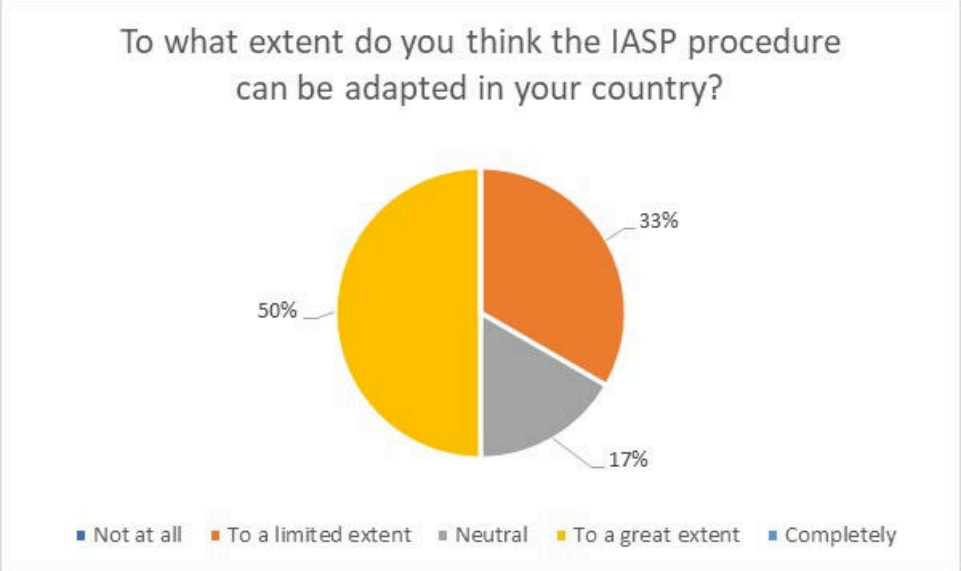



How would you judge the time needed for completing the evaluation sheets?
33%
50%
17%
Very long
Moderate
Neutral
Good
Just perfect


How would you rate the completeness of the procedure (parameters used)?
8%
17%
75%
Just perfect
A few parameters could be deleted
A lot of parameters could be deleted


How would you rate the completeness of the procedure (parameters missed)?
0%
42%
58%
Just perfect
Just a few parameters are missing
A lot of parameters are missing


How do you rate the usefulness of the IASP procedure?
17%
17%
25%
41%
Not useful at all
Moderately useful
Neutral
Useful
Very useful


To what extent do you think the IASP procedure can be adapted in your country?
33%
50%
17%
Not at all
To a limited extent
Neutral
To a great extent
Completely