



WP3. Teaching materials development related to the road infrastructure safety inspection

IO.8 - Practical implementation of RSI methodology on the selected road sections in Italy

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List of authors:

Gdansk University of Technology

Wojciech Kustra, Marcin Budzynski, Joanna Wachnicka, Tomasz Mackun

Bauhaus-Universität Weimar

Julius Uhlmann, Johannes Vogel

European Institute of Road Assessment

Olivera Rozi, Marko Ševrović

University of Catania

Salvatore Damiano Cafiso, Giuseppina Pappalardo

University of Zagreb

Leonid Ljubotina, Sanja Leš, Anđelo Marunica

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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.6

- **Objective:** Practical implementation of RSI methodology on the selected road sections in Poland
- **Work package:** The task falls under WP3 Teaching materials development related to the road infrastructure safety inspection.
- **Target Groups:**
 - Research and teaching staff from institutions involved in the project.
 - Students of civil engineering and transportation engineering taking part in pilot research in Poland.

2 INTRODUCTION

The assessment of roads in Italy, including the selection process and subsequent analysis, was conducted in accordance with the IASP methodology. This methodology was utilised to identify critical road segments suitable for implementing the EuroS@P road safety inspection. To evaluate the safety of these chosen roads, the inspection team employed the IASP checklist during the on-site assessments, and the outcomes were subsequently discussed during the office review, following the protocol outlined in IO.5. In order to gauge the effectiveness of this assessment procedure, an online survey was administered to the inspectors involved in the process.

Timeline. The task was carried out during the period II2021 – VIII2023:

February 2021	Internal Workshop to talk about the procedure
July 2021	Presentation of the methodology to the other partner
March 2022	Meeting in Rovinj talking about the methodology
October 2022	Discussion about the methodology
January 2023	Discussion about the methodology
April 2023	Practical application of the methodology in Italy during the didactic workshop
June 2023	Discussion about the results of the application of the methodology
July 2023	Meeting in Zagreb to discuss the implementation of the web-based platform
August 2023	Presentation of the methodology during the summer school in Zagreb

3 PROJECT SCOPE

In summary, the IASP methodology was used to conduct the road safety inspection of a two-lane rural road.

3.1 Area of observation

The chosen road was the SS 284 from km 29 to km 23, as reported in Figure 1, Figure 2, and Figure 3.

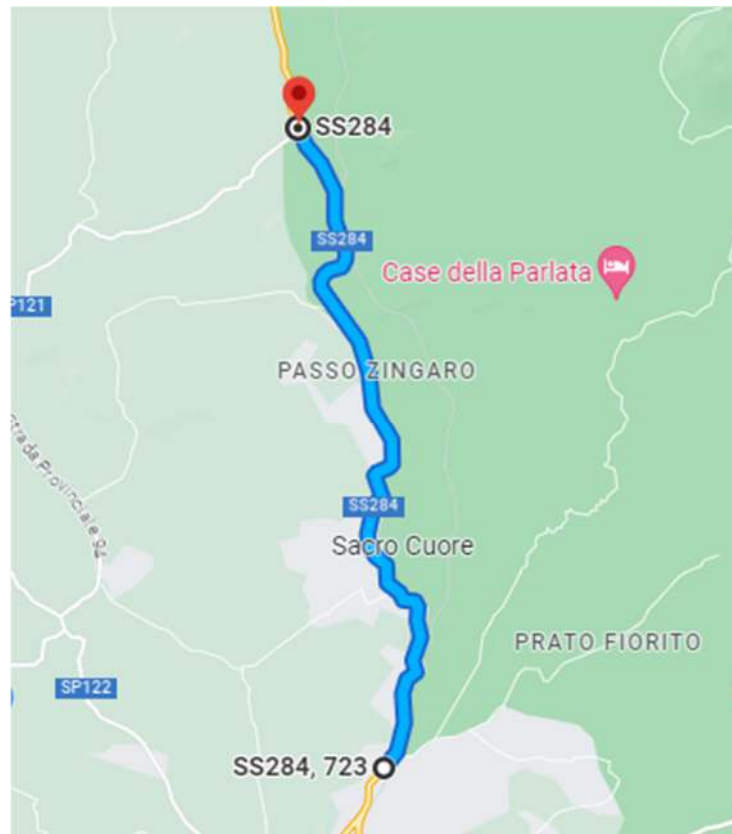


Figure 1 – SS284



Figure 2 – SS284 km 29



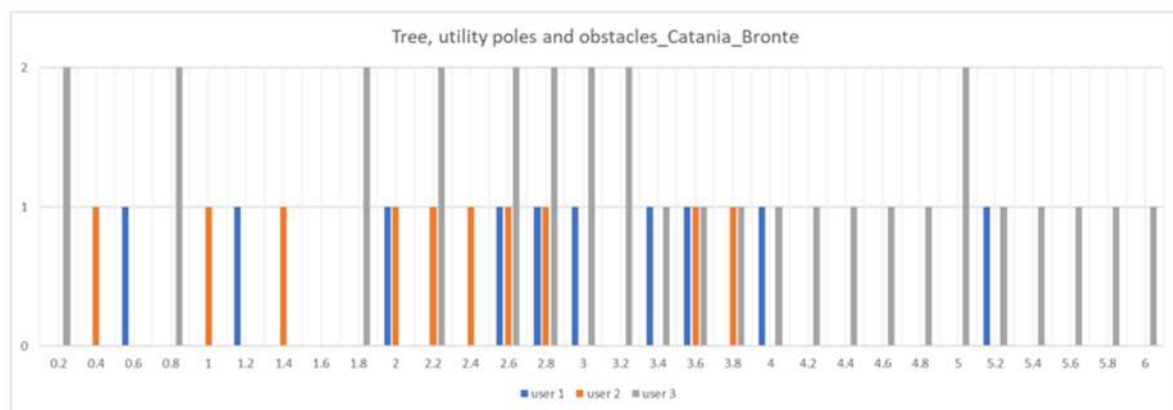
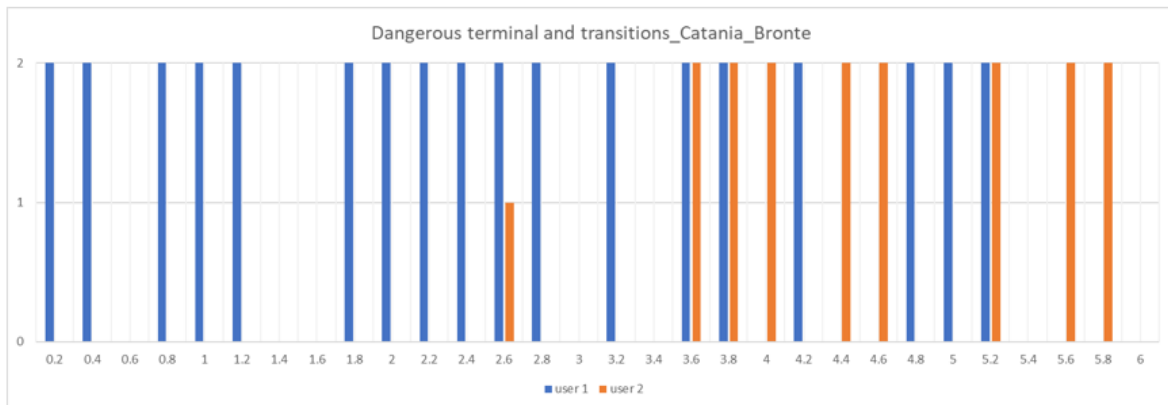
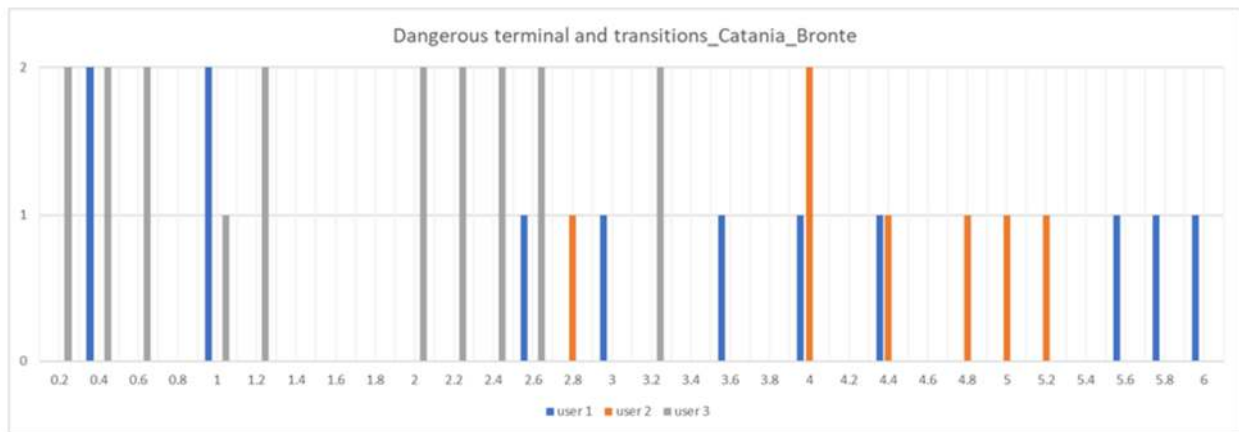
Figure 3 – SS284 km 23

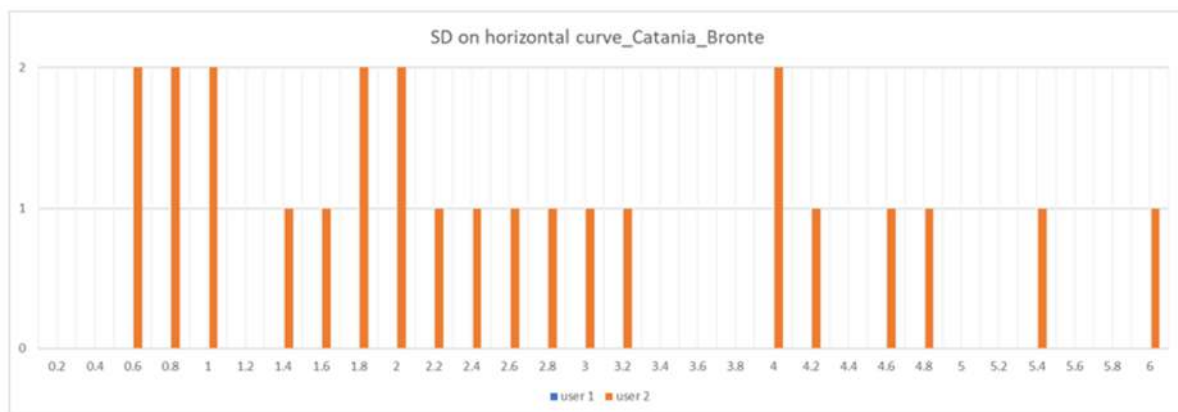
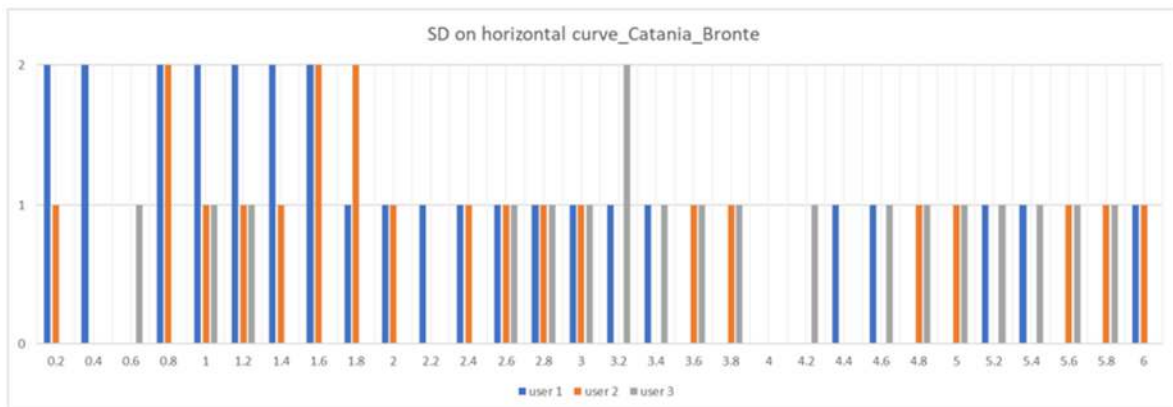
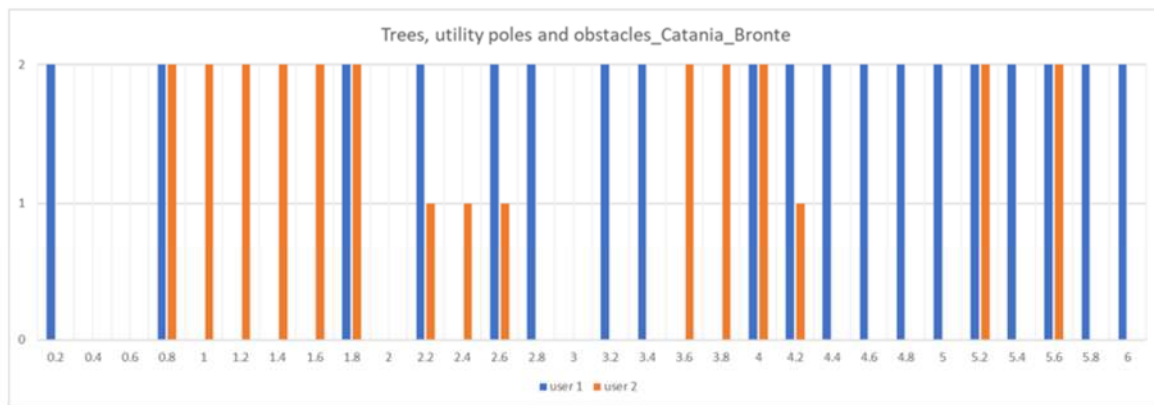
3.2 Results of the inspection

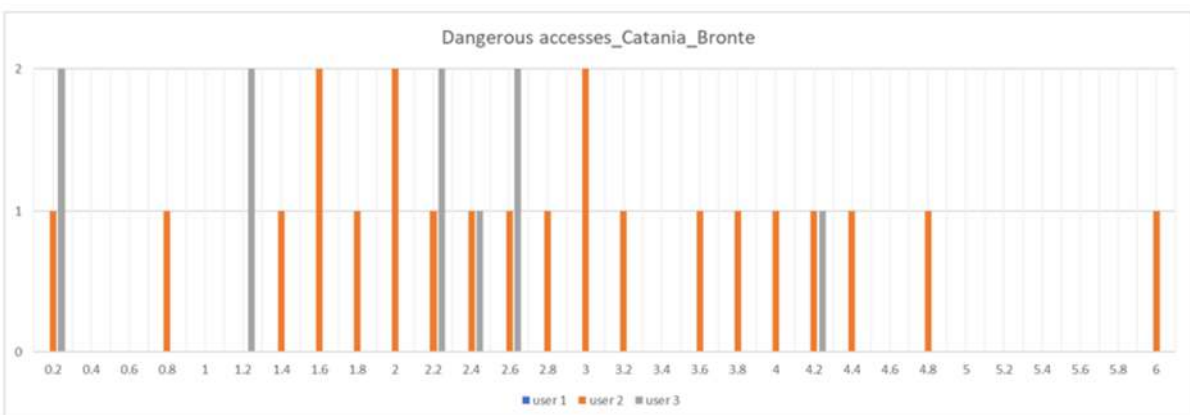
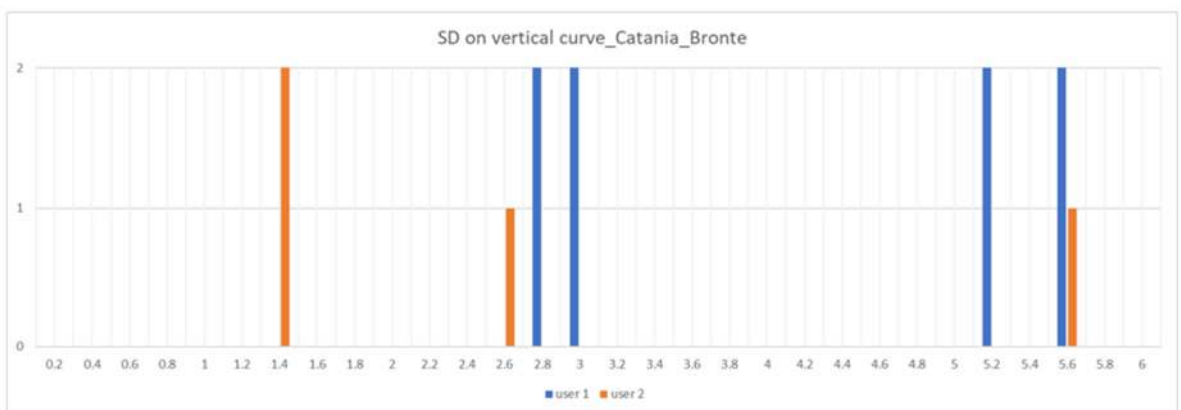
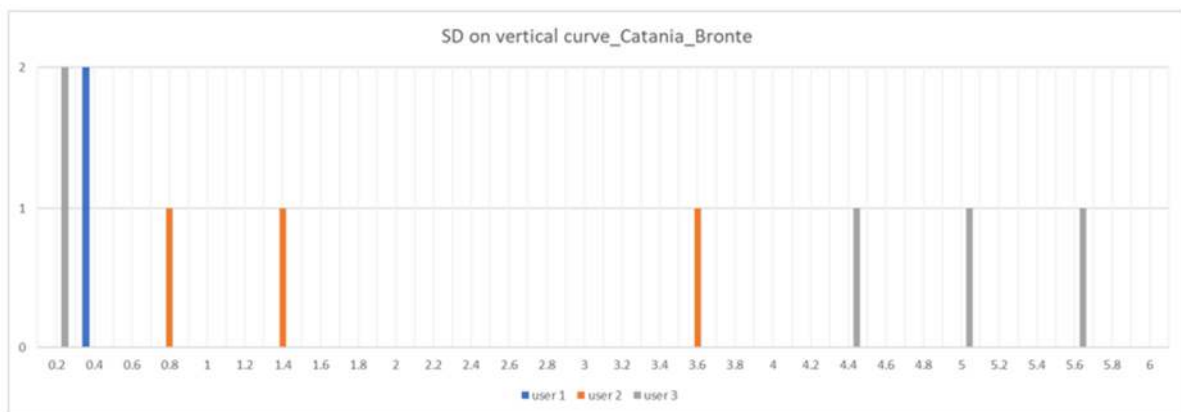
In order to obtain more meaningful results, we opted to conduct the road analysis using two distinct vehicles and inspectors hailing from different countries.

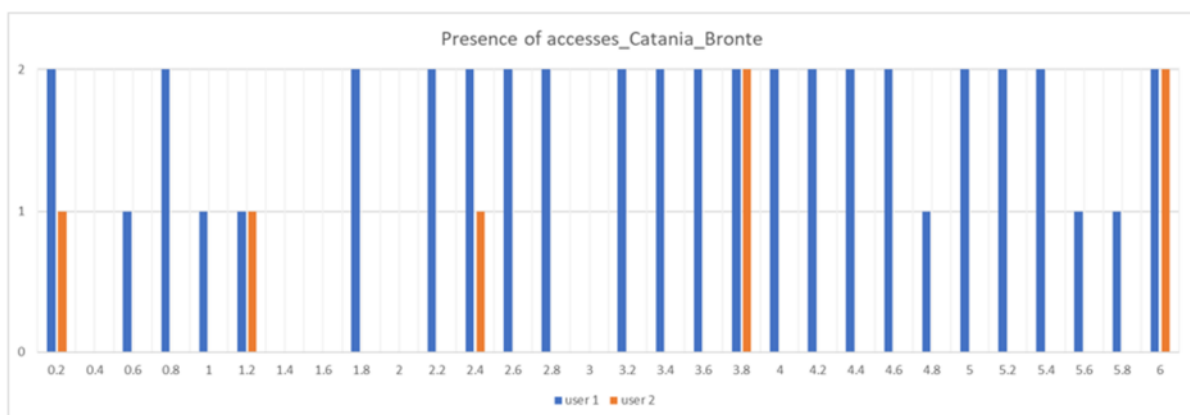
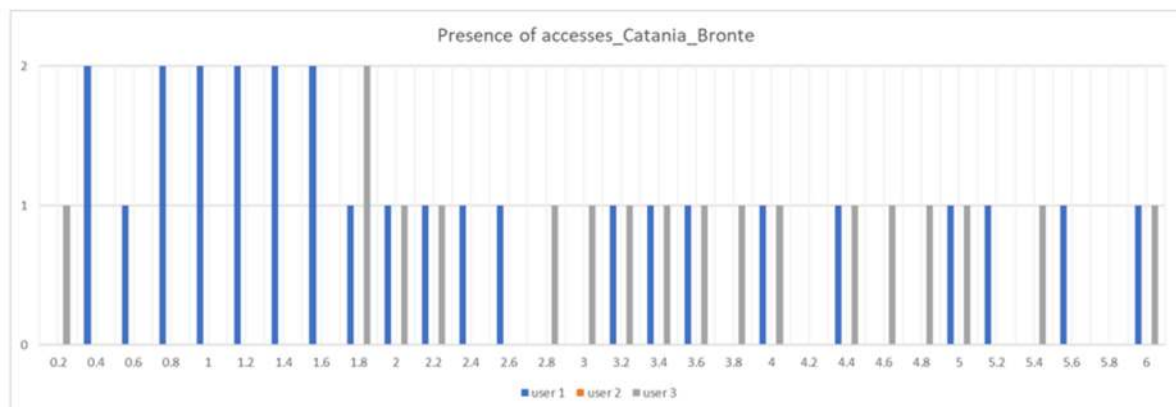
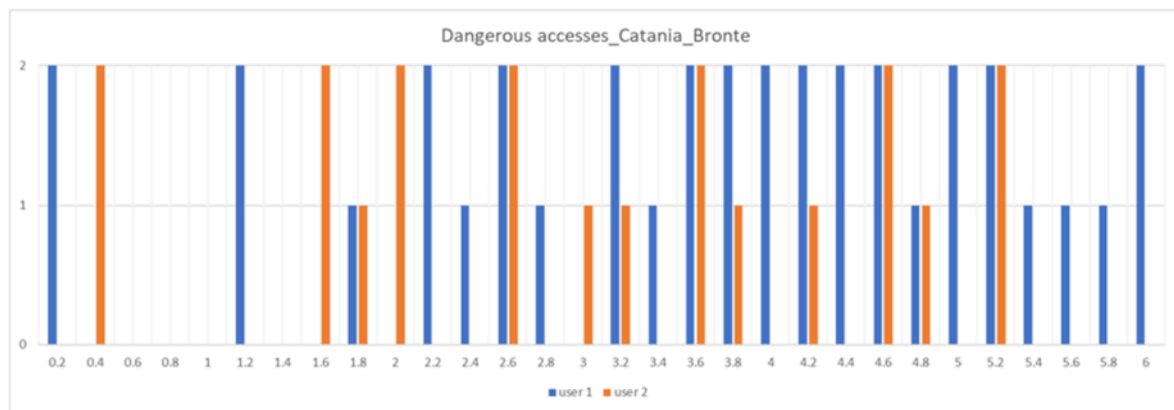
Following the inspection, no responses or findings were documented for embankments and bridges.

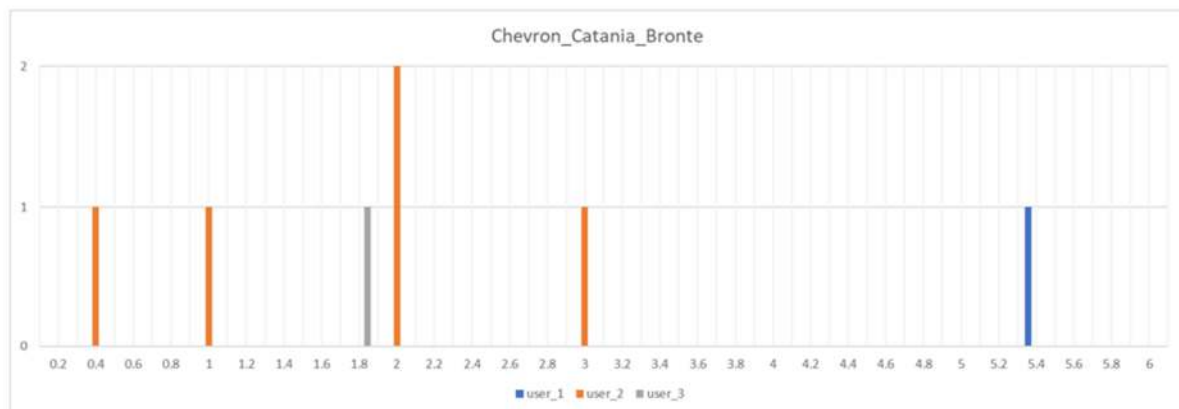
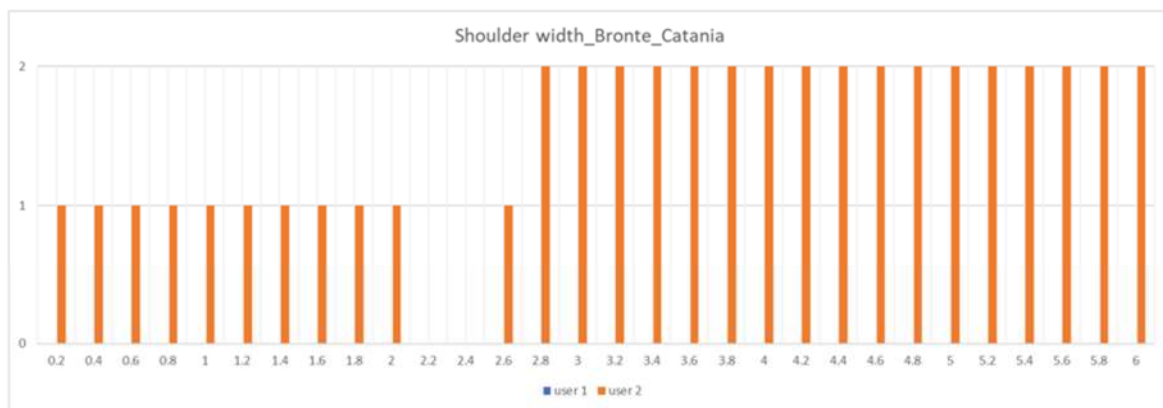
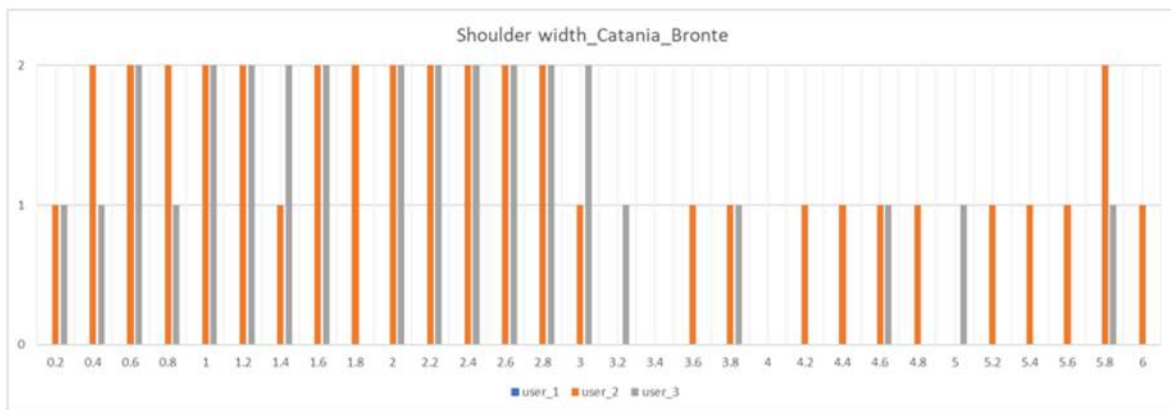
In the following figures, the inspection results have been presented for some representative sections of the checklist and across various directions.

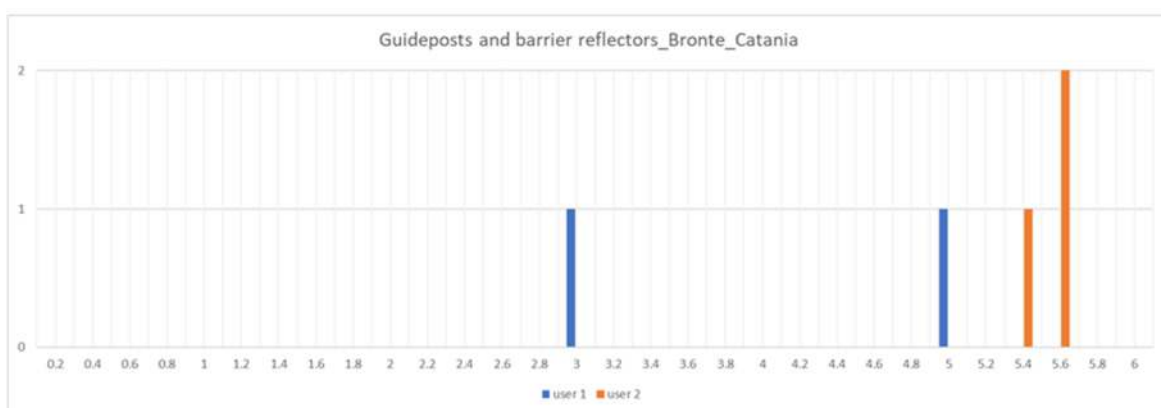
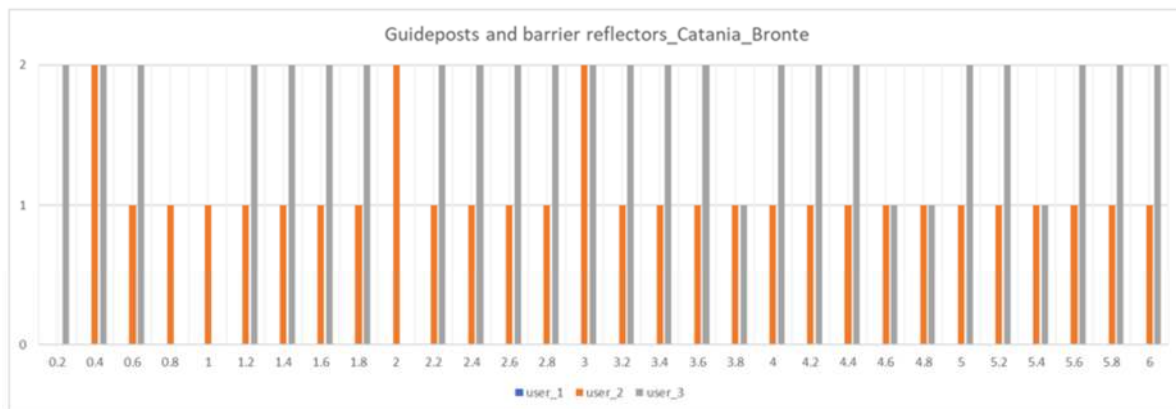
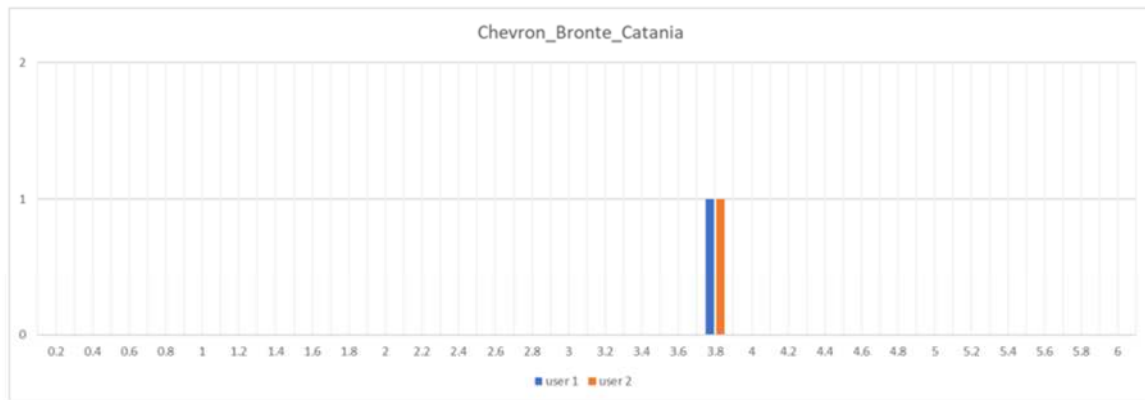


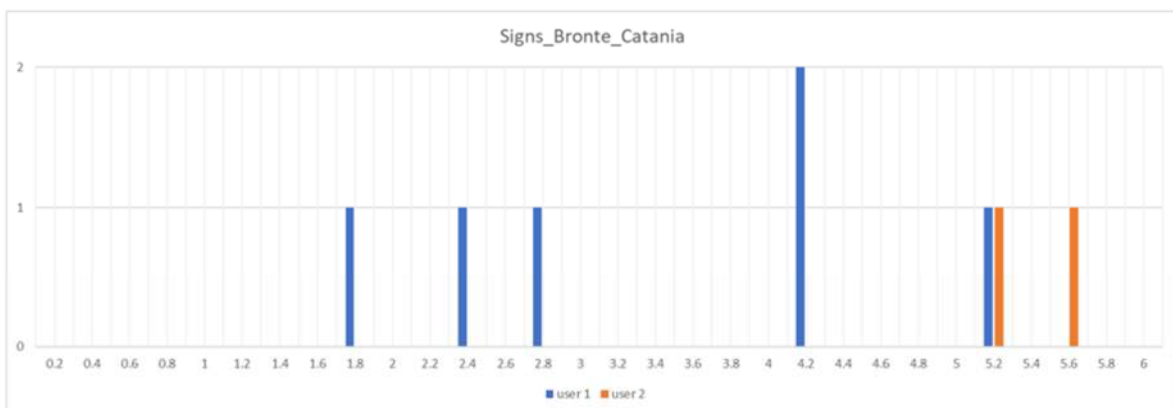
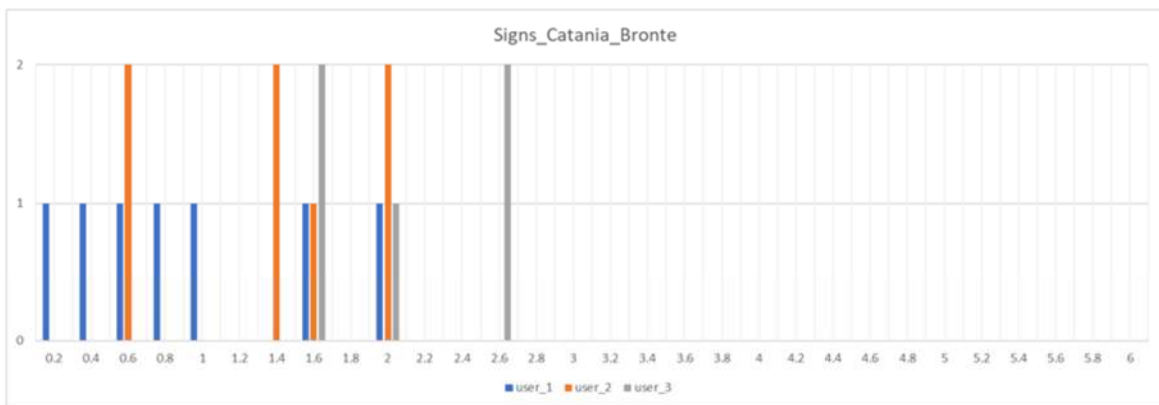
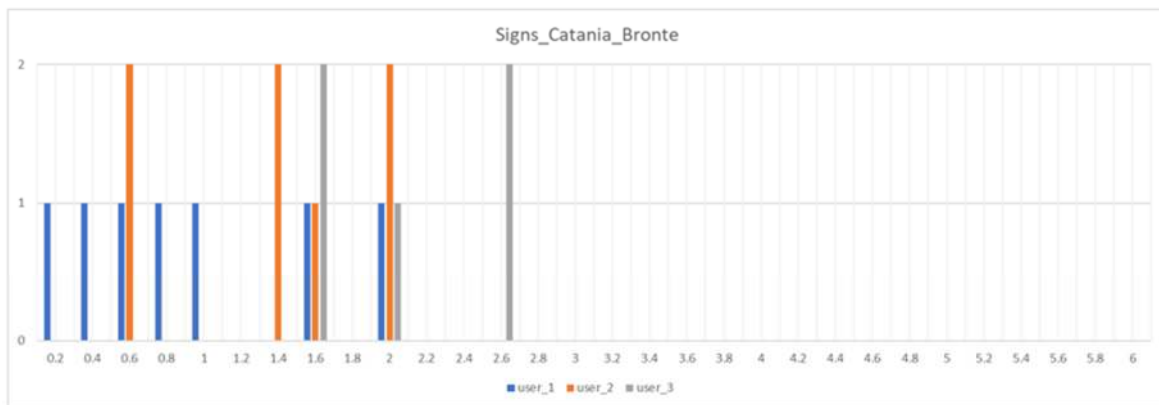


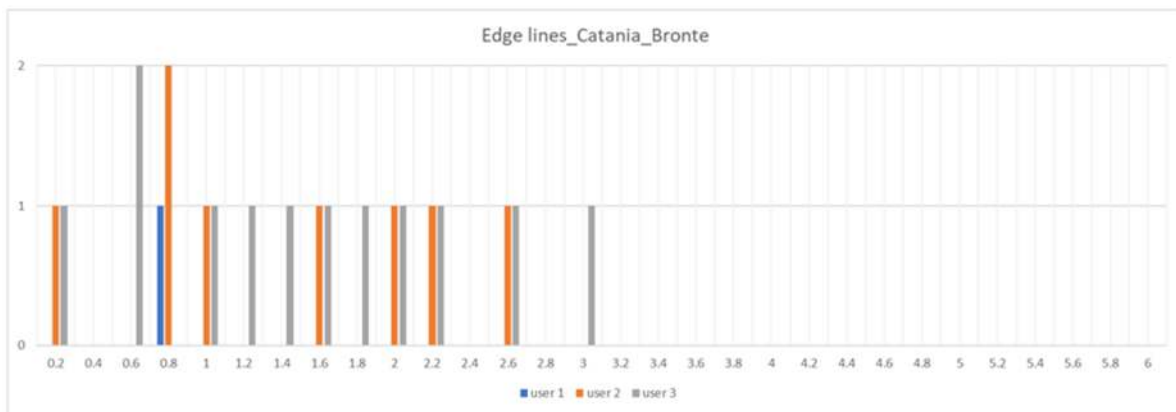












4 SURVEY RESULTS

Due to the variability in checklist judgments, it was decided to administer a questionnaire to assess the procedure's reliability. We used a Google form at <https://forms.gle/U2HXomLm778PoXEs6>.

For the question “How would you rate the understandability of the procedure?”, 55.6% of the inspectors rate the procedure somewhat understandable (Figure 4).

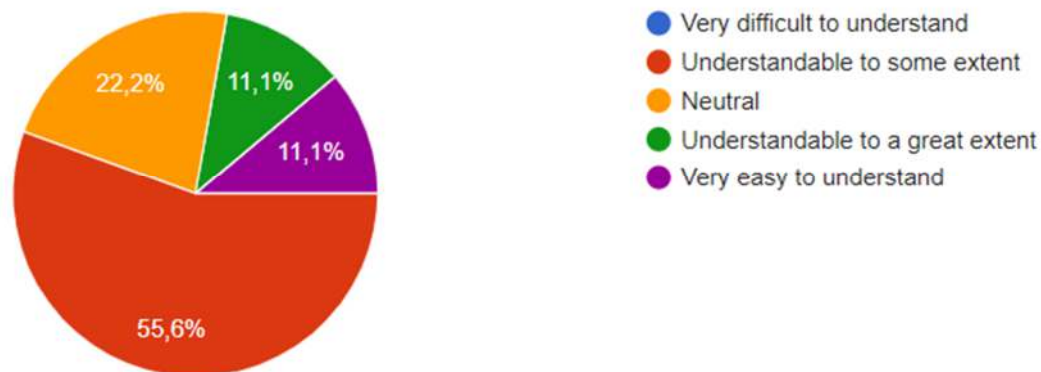


Figure 4 – Question 1

They gave some remarks, as reported in Figure 5.

For **unexperienced personnel** it is a bit difficult to get used to the checklist and to quickly judging the items on the road.

For the unambiguous use of the inspection, the **practical training** should be **longer**. In addition, the **catalog** with examples should be **more extensive**.

It takes some **time** to wrap one's **head** around it, but then it is clear.

Young inspector needs time to be keen on inspection and understand the rules.

Some of the tasks were difficult for me. After a few rides and gaining some practice, they would not be a problem. It seems to me that **the biggest problem for me was entering the data in the correct road kilometre** (hektometere).

Figure 5 – Comments about Question 1

For the question “How would you judge the time needed for completing the evaluation sheets?”, 44.4% of the inspectors rate the time as moderate (Figure 6).

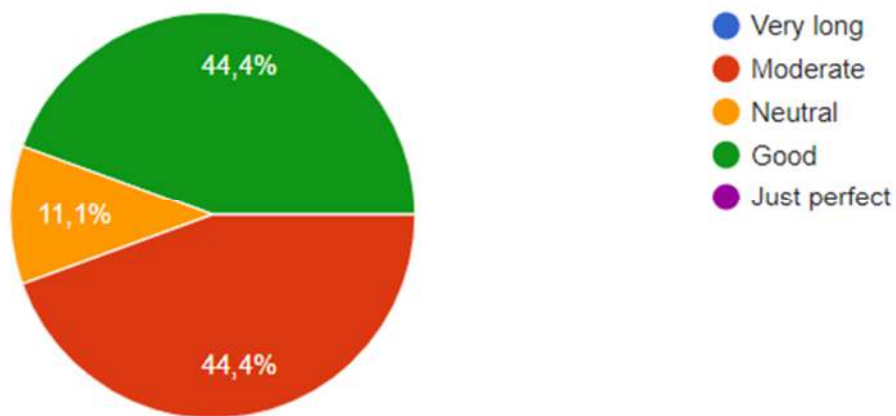


Figure 6 –Question 2

They gave some remarks, as reported in Figure 7.

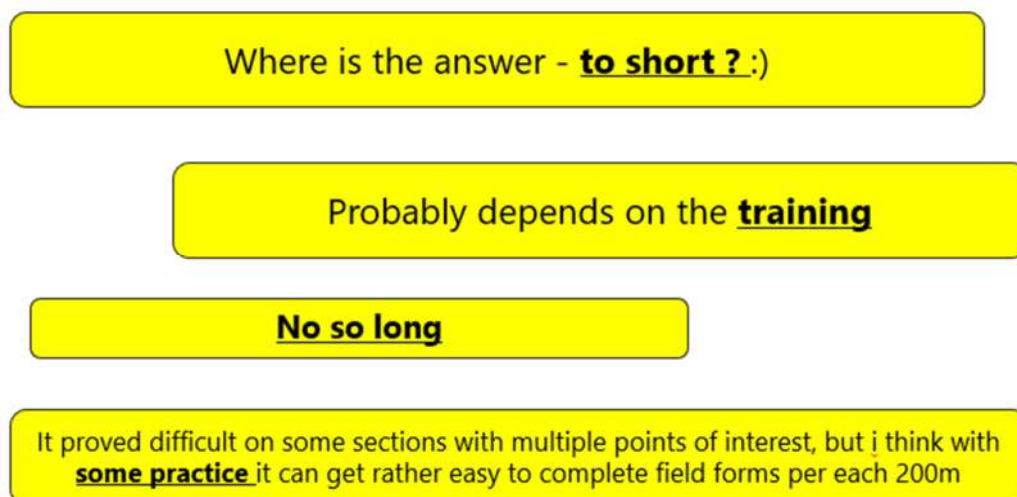


Figure 7 –Comment about Question 2

For the question, “How would you rate the usefulness of videos provided after the inspections?” 88.9% of the inspectors rate the procedure as very useful (Figure 8).

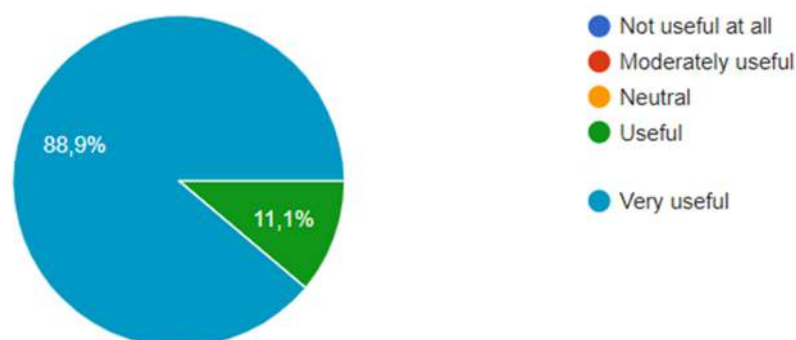


Figure 8 –Question 3

Camera quality is very important

Very useful, since some difficulties or insecurities missed on the field can be reviewed with the team back in the office

Especially if you are a **novice inspector** and do not know the answer sheet well, you can check your answers.

Very helpful. Improves road performance

Figure 9 –Comment about Question 3

For the question “How would you rate the completeness of the procedure (parameters used)?”, 77.8% of the inspectors rate the procedure as perfect regarding the parameters used (Figure 10).

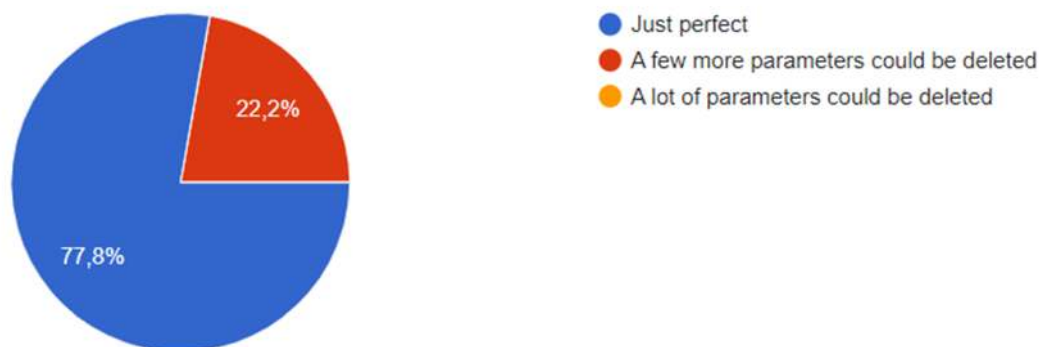


Figure 10 –Question 4

For the question “How would you rate the completeness of the procedure (parameters missed)?”, 55.6% of the inspectors rate that in the procedure, a few parameters are missing (Figure 11) related to intersections and vulnerable road users.

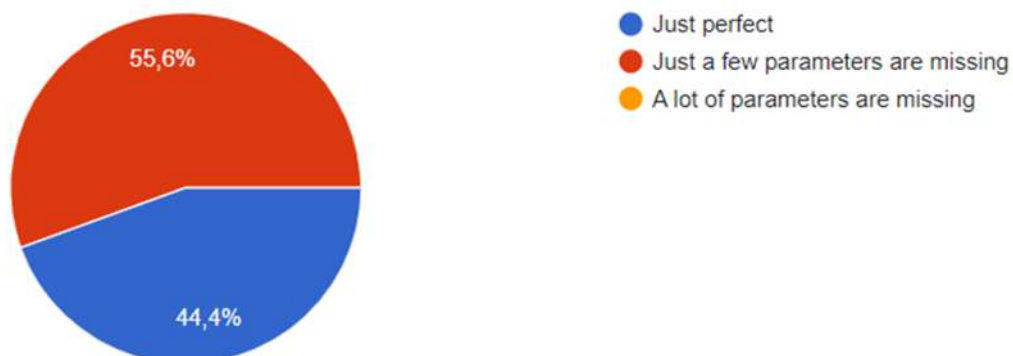


Figure 11 –Question 5

For the question “How do you rate the usefulness of the IASP procedure?”, 55.6% of the inspectors rate the helpful procedure (Figure 12).



Figure 12 –Question 6

For the question, “To what extent do you think the IASP procedure can be adapted in your country?” Given some suggestions, 55.6% of the inspectors rate that the procedure can be very well adapted in each country (Figure 13).

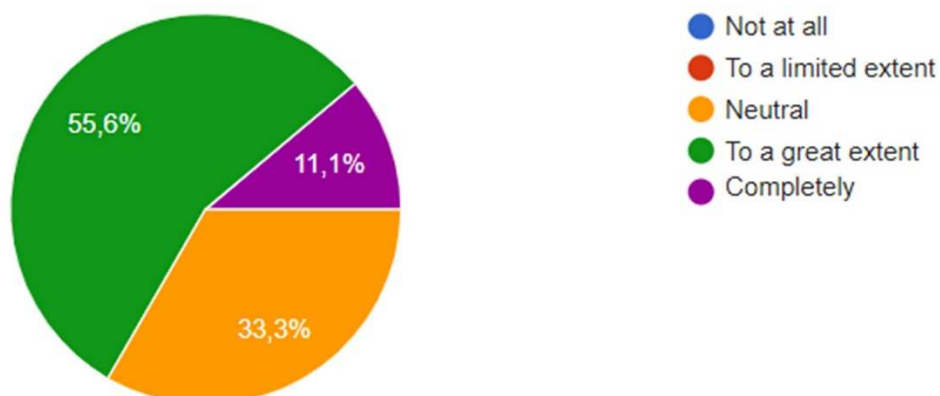


Figure 13 –Question 7

5 NIGHT INSPECTION PROCEDURE

Nighttime road inspections have been a subject of debate in the realm of road safety assessment methodologies, particularly within the context of the EuroS@P RSI system. The primary issue revolves around the challenges posed by low visibility and the subpar quality of video inspection material obtained during nighttime assessments. In low-light conditions, the clarity of footage naturally diminishes, making it more challenging to discern road features, defects, or hazards that would be readily apparent in daylight. This inherent limitation compromises the integrity of the data collected and presents obstacles to accurate evaluation.

Even with the application of advanced technologies, nighttime video inspection material still falls short in quality compared to daytime recordings. This shortfall can lead to potential misinterpretations or oversights in assessing road safety conditions. Consequently, considering these challenges, nighttime inspections have been deemed inappropriate and are not recommended within the frameworks of the aforementioned methodologies. The unreliability of results derived from nighttime inspections undermines the fundamental purpose of these rating systems, which is to provide objective and reliable assessments of road safety.

The core objective of EuroS@P is to deliver comprehensive and trustworthy evaluations that drive safety improvements and interventions. When inspection material cannot ensure accuracy due to the inherent limitations of nighttime conditions, there is a risk of erroneous evaluations, potentially leading to misallocated resources or misguided safety strategies. Therefore, to uphold the robustness and credibility of the EuroS@P RSI rating systems, it is advisable to exclude nighttime road inspections from the scope of the methodology.

6 CONCLUSION

In summary, the practical application of road safety inspections is essential in ensuring safer roadways and mitigating the alarming rates of accidents and fatalities. Throughout this examination, we have underscored the importance of regular and comprehensive inspections encompassing various facets, including infrastructure, signage, vehicle conditions, and human behaviour. Through the diligent assessment of these critical components, road safety inspections play a central role in identifying potential hazards, evaluating risks, and implementing necessary corrective measures.

The advantages of investing in practical road safety inspections extend far and wide, encompassing the preservation of numerous lives, reduced medical and economic burdens, and heightened public confidence in transportation systems. Furthermore, enhanced road safety promotes greater mobility, encourages sustainable transportation alternatives, and fosters broader socio-economic development.

In essence, the practical execution of road safety inspections is an indispensable and non-negotiable element in pursuing a safer, more efficient, and sustainable transportation network. By adopting this approach, we pave the way for a future in which road accidents and fatalities are significantly diminished, allowing individuals to navigate the roads with confidence and peace of mind. Let us persist in our commitment to prioritise and invest in road safety inspections, forging a world in which every journey is secure and every life is safeguarded.