



Interreg



Danube Transnational Programme RADAR

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Your Road Safety is on our RADAR.

O T.3.2. c Databases on Pilot Actions

TA2 VRUS - SLOVENIA



RADAR – Risk Assessment on Danube Area Roads



<https://www.interreg-danube.eu/radar>

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1.1	02.06.2021	Final version	Klemen Filipič, AMZS

Abbreviation list

AADT	Annual Average Daily Traffic
AMZS	Automobile and Motorcycle Association of Slovenia
iRAP	International Road Assessment Programme
KTI	KTI Institute for Transport Sciences Non-profit Ltd.
PA	Pilot Action
PP	Project Partner
RADAR	Risk Assessment on Danube Area Roads
TA	Thematic Area
VRU	Vulnerable Road User

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1. Introduction

The RADAR (*Risk Assessment on Danube Area Roads*) project implements learning and transnational cooperation activities at different levels to help the responsible road safety organizations in the Danube area identify risk on their road networks. The project also helps them reduce risk systematically, by improving infrastructure and road layout. RADAR addresses all road users but pays particular attention to vulnerable road users as well as to safety on major roads near schools. It also holistically approaches the issue of safety and tackles speed as a major risk on roads.

The fifth Work Package of the project aims to give the project partners practical experience in using techniques, information and countermeasures to reduce road casualties. With the help of Pilot Actions (PA), testing of best practice and methodologies become possible. PP AMZS is a responsible project partner for the second thematic area (TA2) – Vulnerable road users (VRU) in Slovenia. The pilot action on TA2 involved the assessment of locations where pedestrian or cyclist activity is relatively high but where the provision of pedestrian and/or cyclist facilities is poor – or poorly maintained – and where accidents have occurred or are likely to occur. The aim was to show how and where risk reduction measures can be implemented. Accordingly, Pilot Actions have been carried out by AMZS to provide implementation ready road layout plan on three selected locations in Slovenia. These three locations are as follows:

- Location 1: Rodica (Underpass for VRU)
- Location 2: Domžale city centre (Pedestrian oriented design)
- Location 3: Gabrovka (Safe VRU environment in the vicinity of school and kindergarten)

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The aim of this document is to present the databases created during the making of the Pilot action report and implementation ready road layout plans.

As a basis for the Pilot action work, multiple site visits were conducted where extensive amount of photo material was collected.

During the creation of the Pilot action report and implementation ready road layout plans, the iRAP star rating process was conducted on the base of photo material in order to obtain an independent insight on the effect of proposed solutions for enhancing the safety of VRUs. Moreover, these ratings were done using proven and widely comparable methodology which makes the Pilot actions and its results easily transferrable and applicable also in other countries of the Danube area and beyond.

2. Process of data collection

2.1. Photo material collection

Site visits were performed between March and July 2020. Some visits were aimed at certain times of day in order to acquire the most relevant issues on specific locations (arrival of children to school etc.). The following site visits were performed:

	Location	Date	No. of photos
Site visit 1	Rodica	5.3.2020	44
Site visit 2	Gabrovka	21.5.2020	6
Site visit 3	Gabrovka	9.6.2020	46
Site visit 4	Rodica	9.7.2020	17
Site visit 5	Domžale	9.7.2020	21
Total			134

2.2. iRAP Star rating scores

iRAP Star rating for vulnerable road users (pedestrians and cyclists) was calculated using iRAP Demonstrator online tool for two locations (Rodica and Gabrovka). At both locations, situations before and after were assessed so that improvement in road safety score could be seen after implementation of the proposed solutions/infrastructural upgrades.

	Location	Type	No. of worksheets
SRS calculation 1	Rodica	Before	1
SRS calculation 2	Rodica	After	1
SRS calculation 3	Gabrovka	Before	1
SRS calculation 4	Gabrovka	After	1
Total			4

3. Database on Pilot Action on TA2 in Slovenia

3.1. Databases of site visit photos

Photos, obtained during site visits have been uploaded to the following folders on Seafile:

- 04 RAD_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/03_AMZS_Additional_photos/Foto Rodica/2020_03_05
- 04 RAD_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/03_AMZS_Additional_photos/Foto Gabrovka/2020_05_21
- 04 RAD_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/03_AMZS_Additional_photos/Foto Gabrovka/2020_06_09
- 04 RAD_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/03_AMZS_Additional_photos/Foto Rodica/2020_07_09
- 04 RAD_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/03_AMZS_Additional_photos/Foto Domzale

Each folder contains all the photos, taken during corresponding site visit.

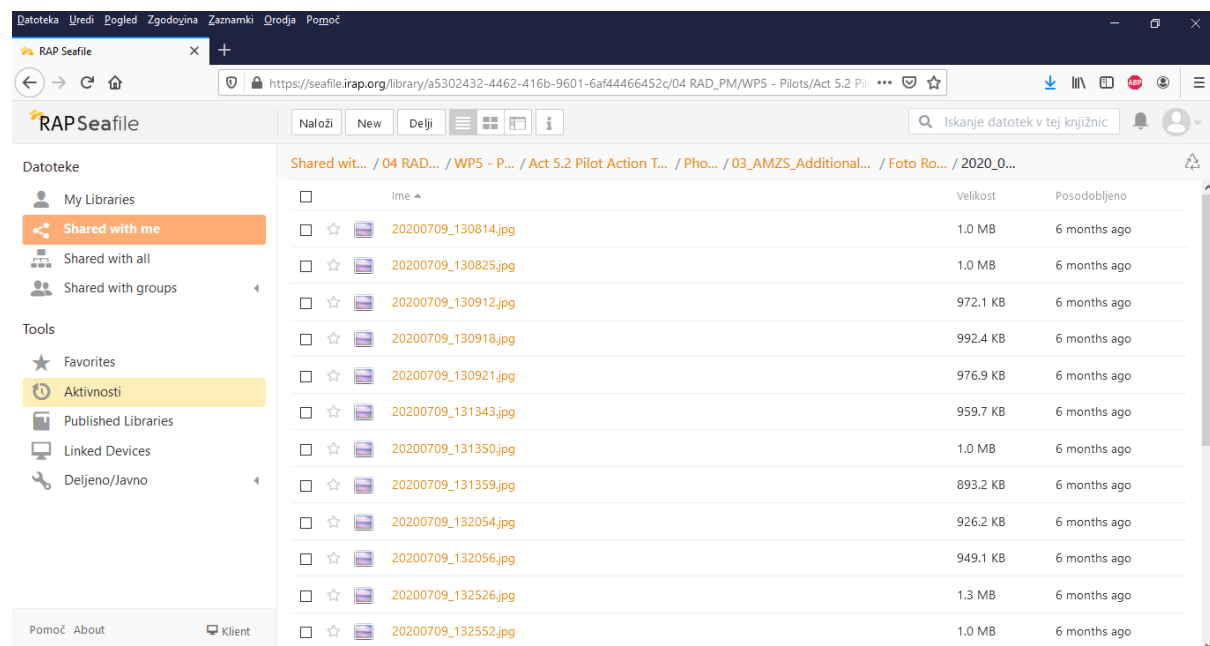


Figure 1 Example of folder with site visit photos on Seafile

3.2. Databases on iRAP Star rating scores

Worksheets with coded attributes for the iRAP Star Rating process have been uploaded to the following folders in Seafire:

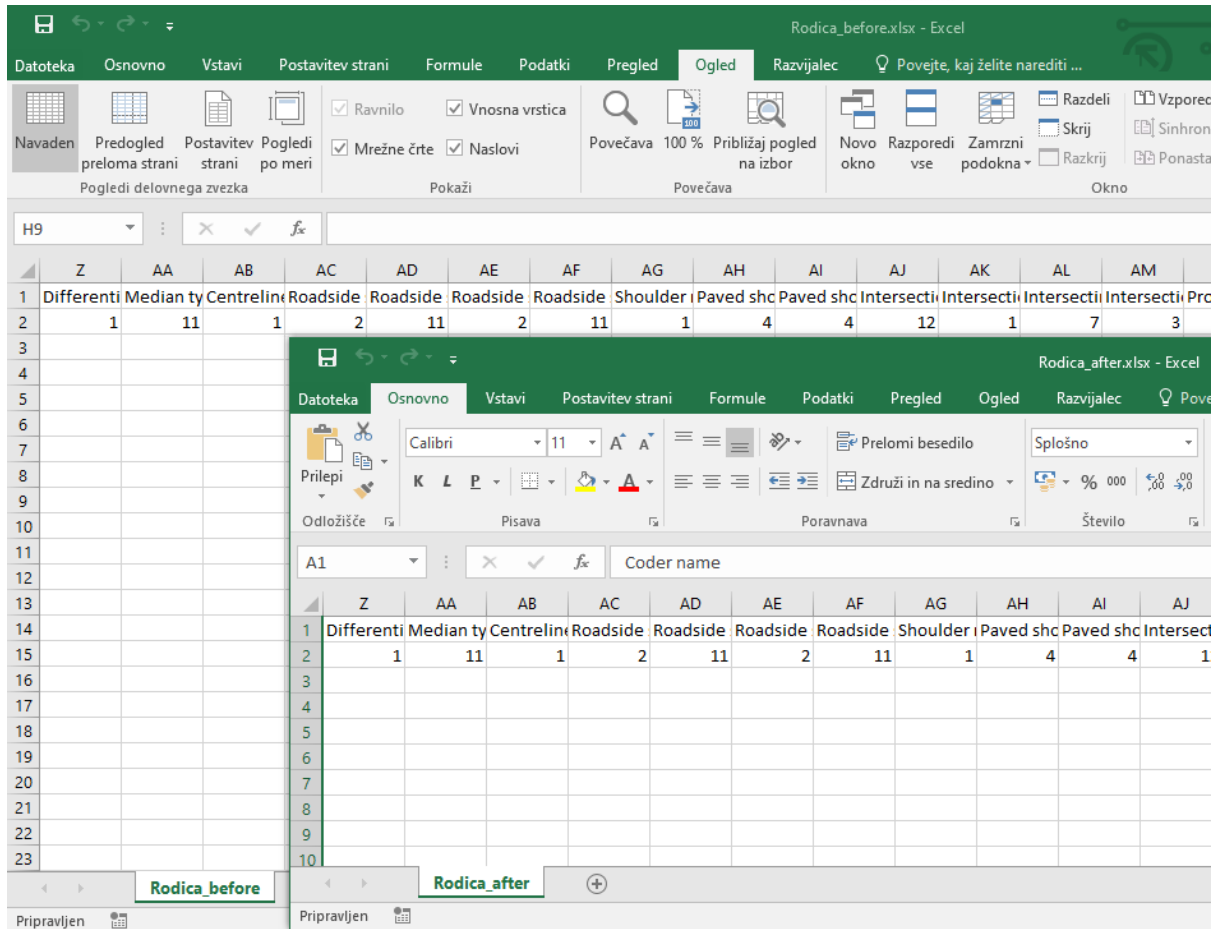
- 04 RAD_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/SLO_database/Coding files Rodica
- 04 RAD_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/SLO_database/Coding files Gabrovka

The worksheets contain the coded attributes from the iRAP Star Rating process. In the iRAP Demonstrator, two ratings for one 100-meter-long road section was done for each location. First one for the existing state and the second one for the upgraded state.

The coded attributes were:

- Carriageway
- Upgrade cost
- Land use - driver-side
- Land use - passenger-side
- Area type
- Speed limit
- Differential speed limits
- Median type
- Centreline rumble strips
- Roadside severity - driver-side distance
- Roadside severity - driver-side object
- Roadside severity - passenger-side distance
- Roadside severity - passenger-side object
- Shoulder rumble strips
- Paved shoulder - driver-side
- Paved shoulder - passenger-side
- Intersection type
- Intersection channelisation
- Intersecting road volume
- Intersection quality
- Property access points
- Number of lanes
- Lane width
- Curvature
- Quality of curve
- Grade
- Road condition
- Skid resistance / grip

- Delineation
- Street lighting
- Pedestrian crossing facilities - inspected road
- Pedestrian crossing quality
- Pedestrian crossing facilities - intersecting road
- Pedestrian fencing
- Speed management / traffic calming
- Vehicle parking
- Sidewalk - driver-side
- Sidewalk - passenger-side
- Service road
- Facilities for motorised two wheelers
- Facilities for bicycles
- Roadworks
- Sight distance
- Vehicle flow (AADT)
- Motorcycle %
- Pedestrian peak hour flow across the road
- Pedestrian peak hour flow along the road driver-side
- Pedestrian peak hour flow along the road passenger-side
- Bicycle peak hour flow
- Operating Speed (85th percentile)
- Annual Fatality Growth Multiplier
- School zone warning
- School zone crossing supervisor



The image shows two overlapping Excel spreadsheets. The background spreadsheet is 'Rodica_before.xlsx' and the foreground is 'Rodica_after.xlsx'.

Rodica_before.xlsx - Excel

	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1	Differenti	Median ty	Centreline	Roadside	Roadside	Roadside	Roadside	Shoulder	Paved shc	Paved shc	Intersecti	Intersecti	Intersecti	Intersecti
2	1	11	1	2	11	2	11	1	4	4	12	1	7	3

Rodica_after.xlsx - Excel

	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
1	Differenti	Median ty	Centreline	Roadside	Roadside	Roadside	Roadside	Shoulder	Paved shc	Paved shc	Intersect
2	1	11	1	2	11	2	11	1	4	4	1

Figure 2 Example of the coded attributes for the iRAP Star Rating process