



# Interreg



## Danube Transnational Programme RADAR

Project co-funded by European Union funds (ERDF, IPA, ENI)



**Your Road Safety is on our  
RADAR.**

## **O.T. 3.2. d Databases on Pilot Actions**

TA2 VRUS – CZECH REPUBLIC

 **RADAR – Risk Assessment on Danube Area Roads**

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

<b>Internal Report Hierarchy Level</b>			
<b>Activity Number</b>	5.3	<b>Activity Title</b>	Pilot Action on Vulnerable road users
<b>Work Package Number</b>		<b>Work Package Title</b>	Road Safety Pilot Actions
<b>Authors (per company, if more than one company provide it together)</b>	Roman Turza (UAMK)		
<b>Status (F: final, D: draft, RD: revised draft):</b>	F		
<b>Version Number</b>	1.0		
<b>File Name</b>	d. O.T.3.2.Databases_VRUs_CZ.docx		
<b>Issue Date</b>	02. 08. 2021		
<b>Project start date and duration</b>	June 1, 2018 – 36 months		

## Revision log

Version	Date	Reason	Name and Company
1.0	02.08.2021	final draft	Roman Turza, UAMK

## Abbreviation list

AADT	Annual Average Daily Traffic
iRAP	International Road Assessment Programme
RADAR	Risk Assessment on Danube Area Roads
SRS	Star Rating Score
UAMK	General Automotoclub of the Czech Republic
VRUs	Vulnerable Road Users

## Table of Contents

1. Introduction .....	6
2. Process of data collection .....	7
2.1. Photo material collection .....	7
2.2. iRAP Star rating scores .....	7
3. Database on Pilot Action on TA2 in Czech Republic.....	8
3.1. Databases of site visit photos.....	8
3.2. Databases on iRAP Star rating scores .....	9

## Table of figures

Figure 1 Overview of photo documentation.....	7
Figure 2 Overview of photo documentation.....	7
Figure 3 Example of Seafire subfolders of “conditions for VRU in municipalities”, Usti and Labem .....	8
Figure 4 Example of the coded attributes for the iRAP Star Rating process.....	10

## 1. Introduction

The following report presents input data that have been collected and processed within the elaboration of the RADAR project pilot study on Vulnerable Road Users (VRUs) in the Czech Republic under the project work package WP 5. The pilot study consisted of a sub-contracted part produced by AFRY CZ s.r.o. and an in-house part conducted by the experts of UAMK.

The sub-contracted part of the study was dedicated to the legislative and technical analysis of conditions for VRUs in the Czech Republic, and the practical survey of real conditions in selected Czech municipalities of different size categories (population), including:

- Usti and Labem (more than 50,000)
- Kutna Hora (20,000 – 50,000)
- Beroun (10,000 – 20,000)
- Cesky Brod (5,000 – 10,000)
- Libeznice (2,000 – 5,000)
- Babice (1,000 – 2,000)
- Tocnik (less than 1,000)

In-house part of the study consisted of a drive-through inspection of conditions for VRUs along busy transit road links Prague – CZ/A borders, formed by class I roads no. 1/3 and 1/4, with a particular focus on the problematic case of Olbramovice, a municipality heavily affected by through-traffic, with insufficient conditions for safe movement of VRUs. The core of the pilot study analysis was thus dedicated to assessing the existing situation with the use of iRAP Star Rating protocol and proposing infrastructure measures to increase safety of VRUs in 2 specific locations:

- Location 1: rural section with a junction and a bus stop
- Location 2: urban through-section

For both locations, star ratings of both present situation and proposed upgraded situation were carried out.

## 2. Process of data collection

### 2.1. Photo material collection

During the pilot, three individual exercises were taken in order to collect necessary photo inputs, complying with respective analytical parts of the pilot study. Majority of photos were taken during numerous site visits carried out within the RADAR pilot, while certain part of photos used for the analysis of conditions for VRU in selected municipalities were collected in previous assignments of the study's subcontractor.

Besides the photo documentation from selected municipalities, additional material was collected during the drive-through inspection of roads I/3 and I/4, including interconnecting roads. Since the whole route was video-recorded the number of photos taken during the drive is rather small. As far as the iRAP assessment exercise is concerned, the video record together with Google Maps images were used to assess the existing layout, while the upgraded layouts were star-rated from the technical drawings designed within the study. Therefore, photo documentation from Olbramovice only contains 8 separate pictures.

Location	Date	No. of photos
Babice	10/09/20	19
Beroun	27/08/19	43
Cesky Brod	10/09/20	51
Kutna Hora	10/09/20	91
Libeznice	15/09/20	18
Tocnik	27/08/19	25
Usti and Labem	15/09/20	35
Obramovice	17/07/20	8
inspection I/3 + I/4	17/07/20	78 + video record

Figure 1 Overview of photo documentation

### 2.2. iRAP Star rating scores

As noted earlier, the pilot study on VRU in Czech Republic concluded with a demonstration of iRAP Star Rating assessment on selected location in Olbramovice. The exercise was performed for 2 locations (1 rural and 1 urban), both for present and upgraded layouts.

	Location	Type	No. of worksheets
SRS calculation 1	Olbramovice – rural	Before	1
SRS calculation 2	Olbramovice – rural	After	1
SRS calculation 3	Olbramovice – urban	Before	1
SRS calculation 4	Olbramovice – urban	After	1
Total			4

Figure 2 Overview of photo documentation

### 3. Database on Pilot Action on TA2 in Czech Republic

#### 3.1. Databases of site visit photos

Photo documentation collected during the elaboration of the pilot study has been uploaded to the following folders on Seafire shared space. In addition to the photos, 1 video record sample of the drive-through inspection has been uploaded, as well. Video records of the whole journey have not been uploaded due to space capacity.

- 04 RAD\_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/02\_UAMK\_Pilot\_photos/conditions for VRU in municipalities
- 04 RAD\_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/02\_UAMK\_Pilot\_photos/drive-through inspection
- 04 RAD\_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/Photos/02\_UAMK\_Pilot\_photos/Olbramovice

Each folder contains all the photos, taken during the respective activity.

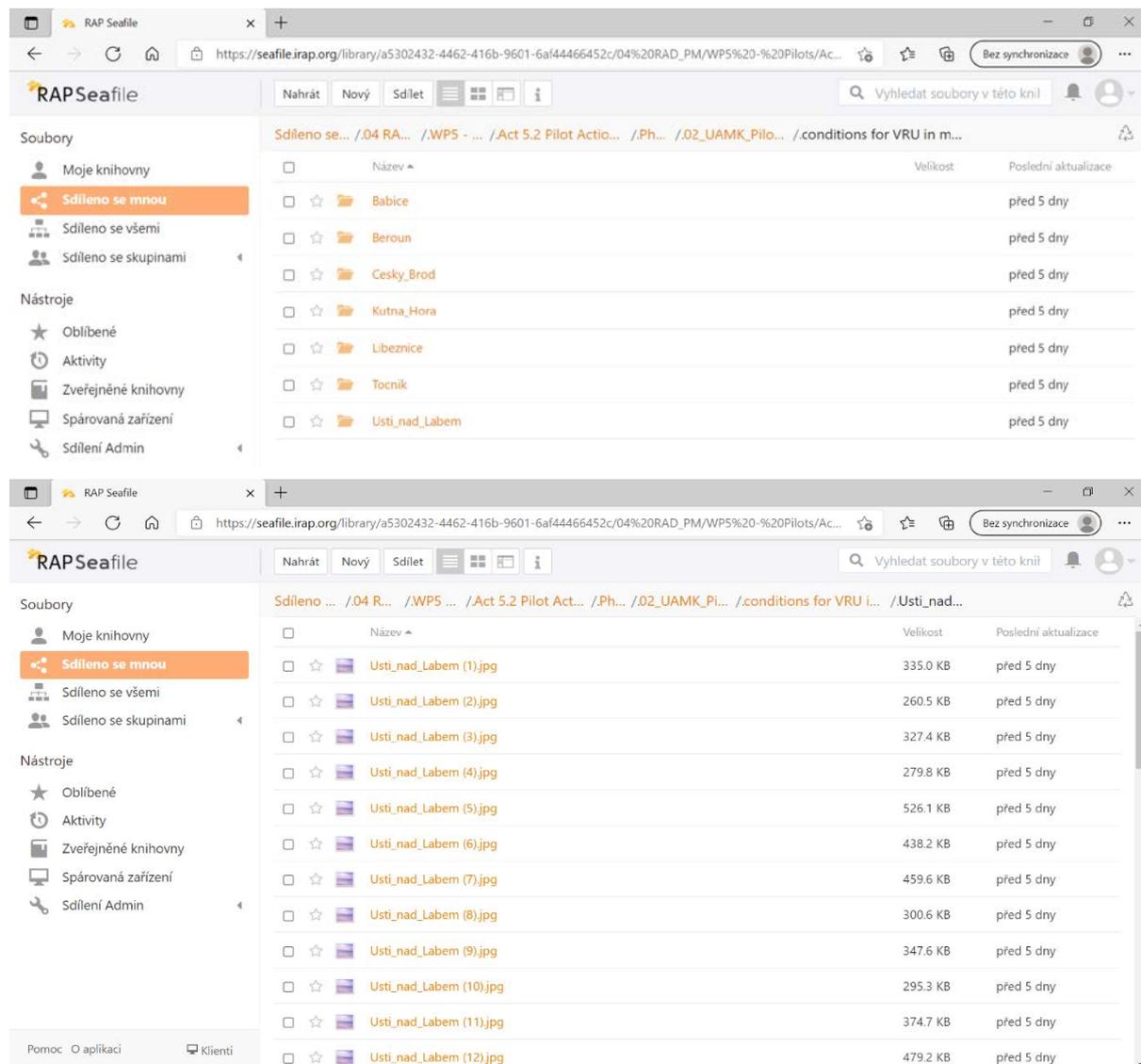


Figure 3 Example of Seafire subfolders of “conditions for VRU in municipalities”, Usti and Labem

### 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, together with additional supporting data needed for the assessment and calculations:

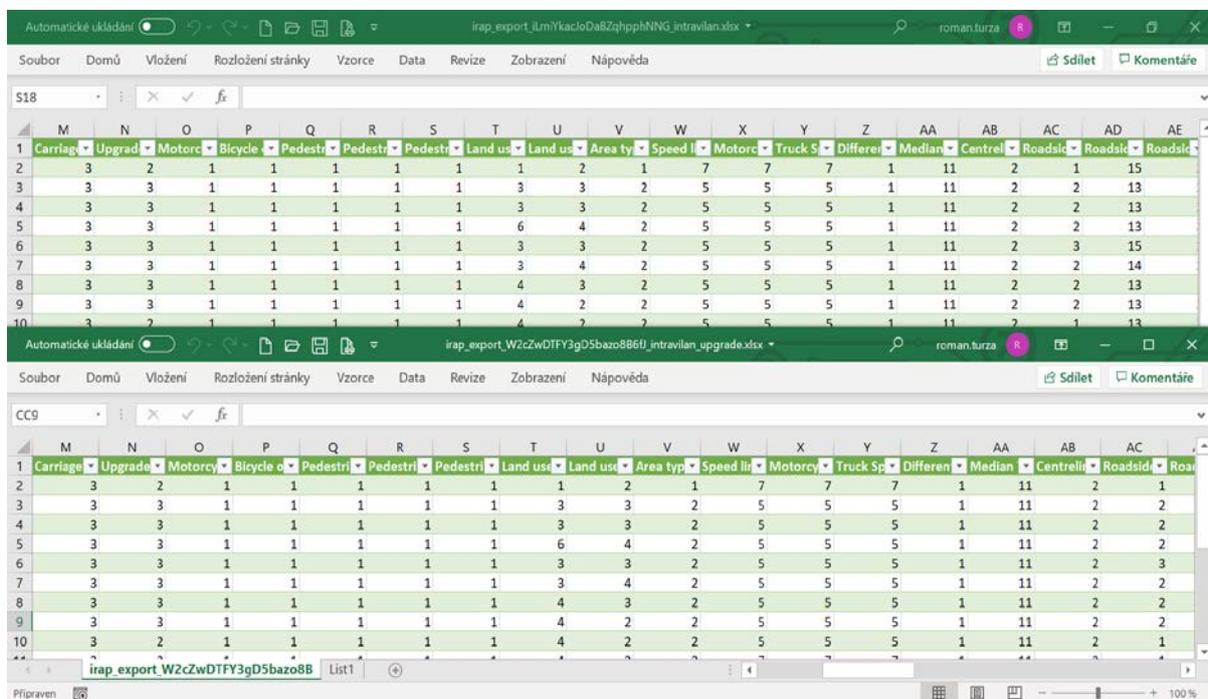
- 04 RAD\_PM/WP5 - Pilots/Act 5.2 Pilot Action TA2 VRU/CZ\_database/

The worksheets contain the coded attributes as per the iRAP Star Rating methodology. Two sets of ratings were produced for each of the 2 selected Olbramovice sites, covering the distance of 700 m (rural) and 900 m (urban). First star rating data set is for the existing layout and the second one for the upgraded layout.

The coded attributes include:

- 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 figure displays two screenshots of Microsoft Excel spreadsheets, likely used for data entry and analysis in the iRAP Star Rating process. Both spreadsheets show a grid of data with columns representing various coded attributes. The top spreadsheet is titled 'irap\_export\_ilm\YkacloDa8ZqhpphNNG\_intravilan.xlsx' and the bottom one is 'irap\_export\_W2cZwDFY3gD5bazo886U\_intravilan\_upgrade.xlsx'. Both have a similar column structure: M (Carriage), N (Upgrade), O (Motorcy), P (Bicycle), Q (Pedestri), R (Pedestri), S (Pedestri), T (Land use), U (Land use), V (Area typ), W (Speed lin), X (Motorcy), Y (Truck Sp), Z (Differen), AA (Median), AB (Centrelin), AC (Roadsid), AD (Roadsid), and AE (Roadsid). The data rows show numerical values for each attribute, such as 3, 2, 1, 1, 1, 1, 1, 1, 1, 2, 1, 7, 7, 7, 1, 11, 2, 1, 15 for the first row in the top spreadsheet.

Figure 4 Example of the coded attributes for the iRAP Star Rating process