

WESTBELT

TECHNICAL ASSISTANCE FOR COLLECTING ROAD SAFETY KPIS ON SEAT BELT
AND CHILD RESTRAINT SYSTEMS IN THE WESTERN BALKANS REGION
(PS/SRV/KPI/006/2023)

Western Balkans Transport Community
15th Technical Committee on Road Safety
(Warsaw, 29th of September 2023)

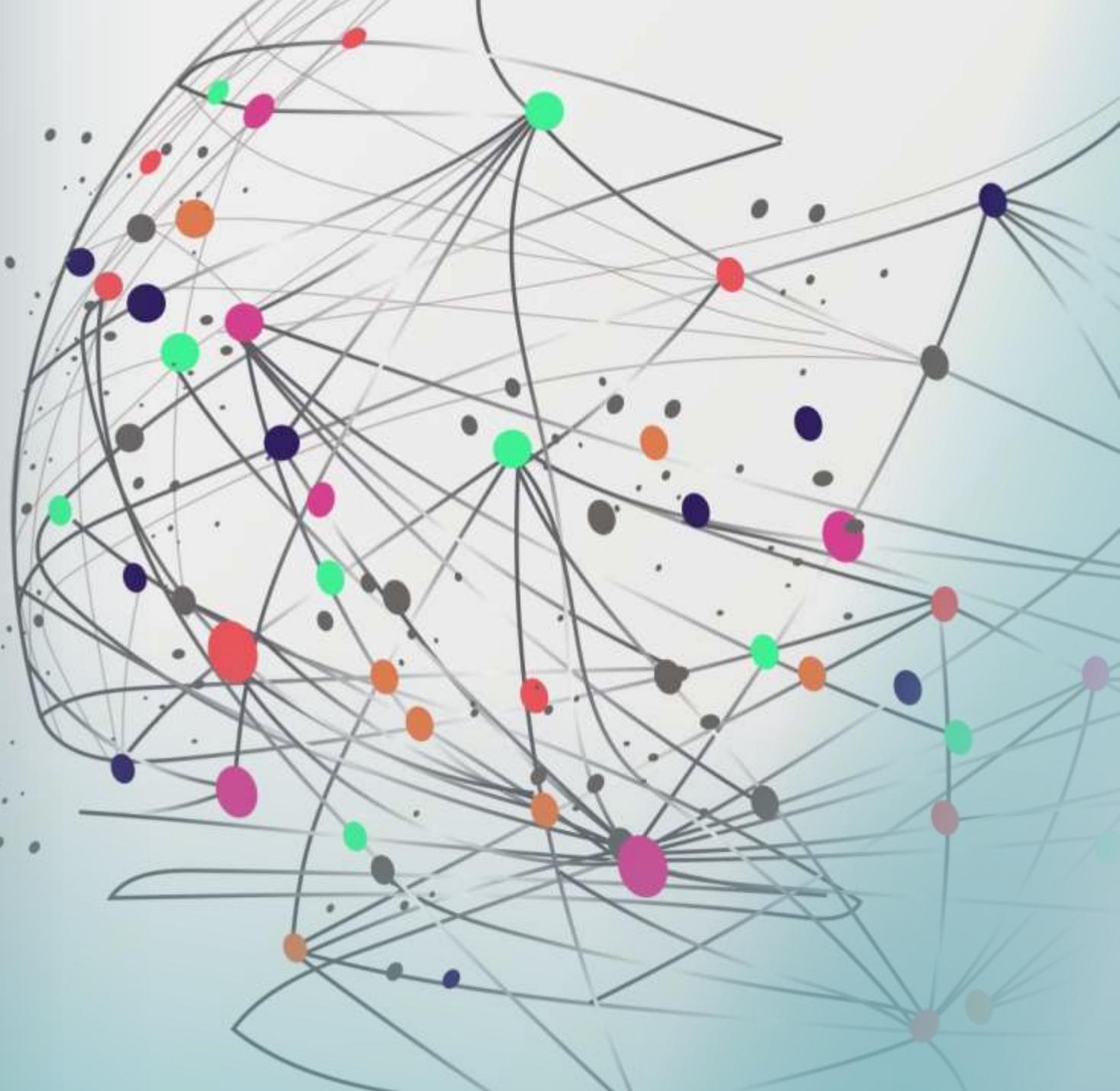
Dr. Wouter Van den Berghe, Project manager

Points covered in the information session

- Context and objectives
- Project team
- Project approach
- Method used
- Deliverables



Context and objectives



Context

- The **Road Safety Action Plan** committed to by the regional partners in the Western Balkans
- The **requirement for a pilot project** on collecting **at least one KPI** in the Western Balkans based on a harmonised (EU) Methodology
- The need for improvement and **harmonisation of road safety data collection** and dissemination in the region
- The need for strengthening the **Western Balkans Road Safety Observatory (WBRSO)**.



Objectives of the project

- To **collect and analyse data** for calculating **KPIs**
 - of the use of **seatbelts** and **child restraint systems (CRS)**
 - for each of the **six regional partners**
- To draft a series of **detailed reports** and contribute to the **dissemination** of the results
- To contribute to **capacity building** and **exchange of experience** in the region



The project team

Who am I?

Positions (former and actual)

- Former coordinator of the **Baseline** project
- Former Project Director of the **ESRA** initiative
- Project Coordinator of the **Trendline** project (at SWOV)
- Director of **Tilkon** Research & Consulting

Author of publications in relation to KPIs/SPIs in road safety

- Several reports for **Baseline**
- **ERSO** Thematic Report on road safety performance indicators
- **UNRSC** Guidelines on the UN global targets and associated indicators on road safety
- A **book** on KPIs (in Dutch)



Key project researchers and consultants



Wouter Van
den Berghe,
Project
Manager



Veronika
Valentová,
Deputy
Project
Manager



Jiří Ambros,
Data Expert



Eva Kšicová,
Methodology
Expert



Martin Šípek,
Trainer and
Data analyst



Ketino
Popiashvili,
Project
administration

Field researchers

| Country | Name | Role | Affiliation |
|------------------------|--------------------|-------------|--|
| Albania | Brikena Tare | Team leader | Transport Expert at Transport Planning Department-Albanian Institute of Transport |
| | Bujar Kotri | Team member | Chief of Transport Planning Sector-Albanian Institute of Transport |
| Bosnia and Herzegovina | Marko Subotić | Team leader | University of East Sarajevo, Faculty of Transport and Traffic Engineering, Vojvode Mišića 52, Doboj, BiH |
| | Milenko Mičić | Team member | Traffic Engineering, BiH |
| Kosovo* | Mevlan Bixhaku | Team leader | Tempulli Academy, Institute for Road Safety and Transportation Research, XK |
| | Ramadan Duraku | Team member | Tempulli Academy, Institute for Road Safety and Transportation Research, XK |
| | Gezim Hoxha | Team member | Tempulli Academy, Institute for Road Safety and Transportation Research, XK |
| Montenegro | Boško Matović | Team leader | University of Montenegro, Faculty of Mechanical Engineering, Cetinjska 2, Podgorica, MNE |
| | Milenko Damjanović | Team member | University of Montenegro, Faculty of Mechanical Engineering, Cetinjska 2, Podgorica, MNE |
| North Macedonia | Verica Dančevska | Team leader | University St. Kliment Ohridski, Faculty of Technical Sciences, Department of Traffic and Transport |
| | Dejan Dančevski | Team member | University St. Kliment Ohridski, Faculty of Technical Sciences, Department of Traffic and Transport |
| Serbia | Lazar Savković | Team leader | S-Project LLC, Serbia |
| | Vesna Meštrović | Team member | Master Student, Faculty for Transport and Traffic Engineering, Serbia |
| | Kristina Radulović | Team member | Master Student, Faculty for Transport and Traffic Engineering, Serbia |
| | Jovana Trbojević | Team member | Master Student, Faculty for Civil Engineering, Serbia |

KPIs



What's in a name...

Terminology

KPIs = "Key Performance Indicators"
(used by European Commission)

Other terms

- "Road Safety Performance Indicators" (RSPIs)
- "Safety performance indicators" (SPIs)

Meaning

A KPI is a number that provides information about a particular process or situation.

In road safety, KPIs in general refer to the contributory factors of road safety.

Why use road safety KPIs?

Set targets to be achieved in the medium and long term
(e.g., increase of the percentage of drivers wearing a seatbelt to 95%)

Monitor progress towards targets
(e.g., how far are we away from reaching the targets?)

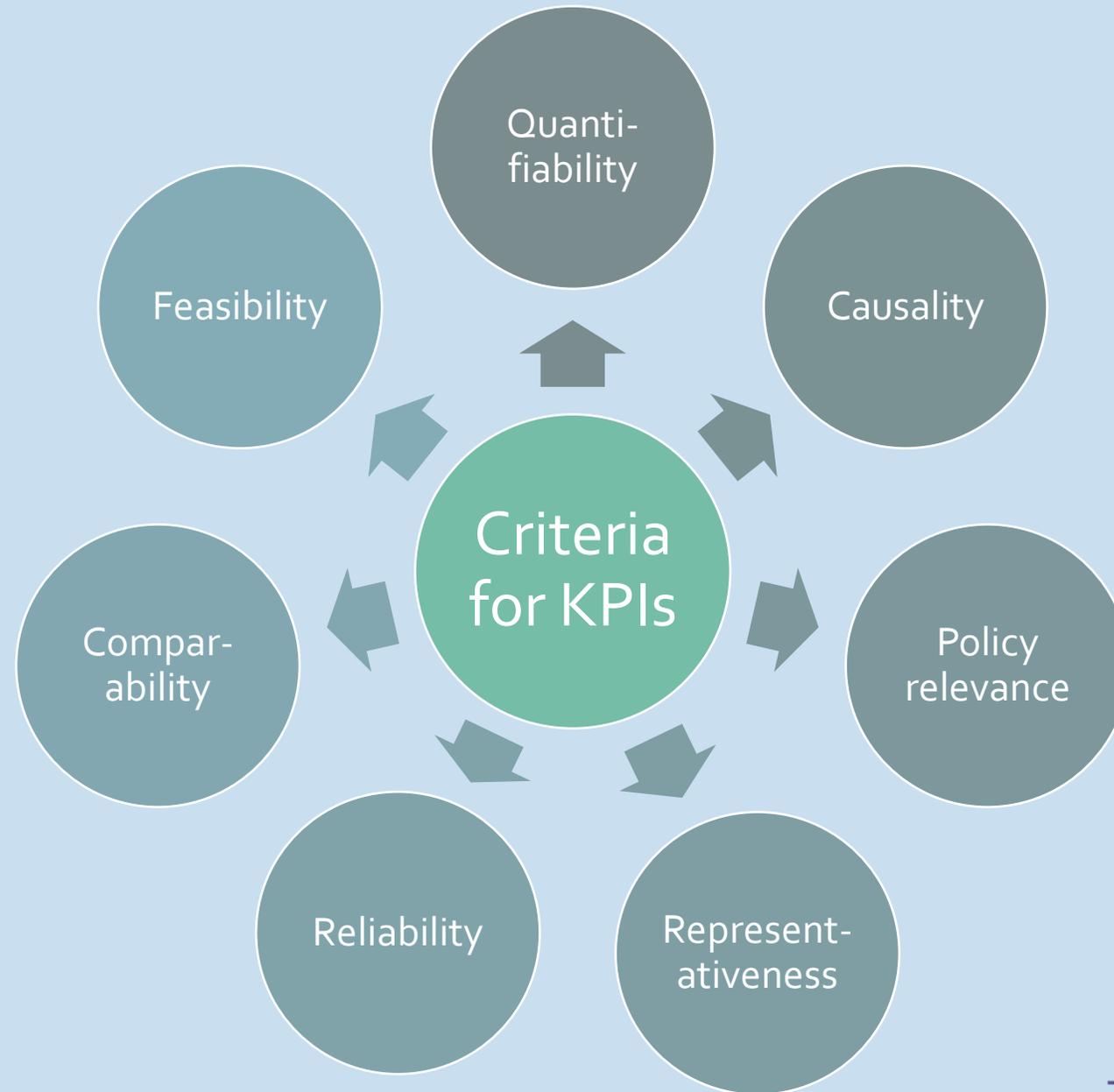
Identify policy measures that need to be taken
(e.g., increase enforcement by the police)

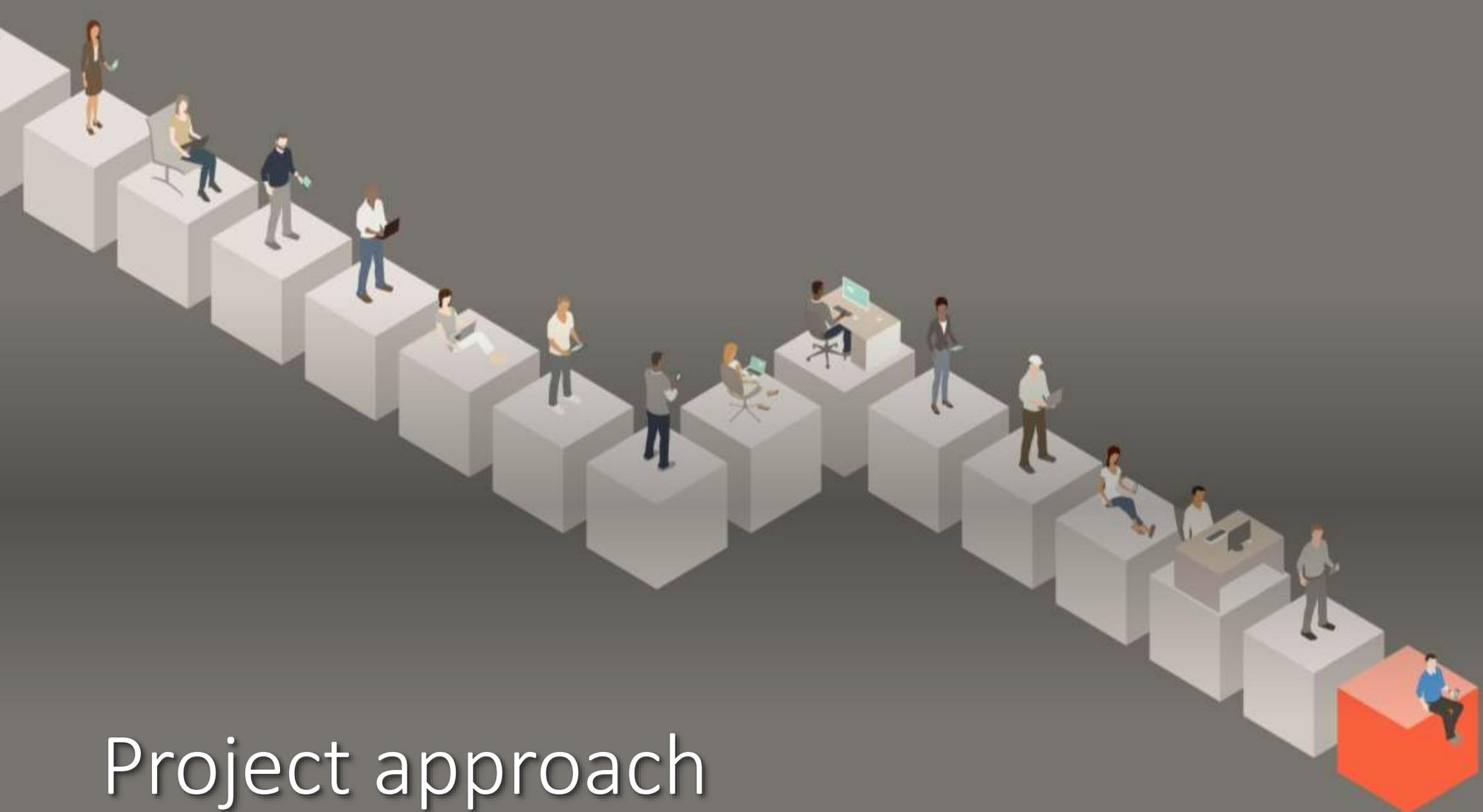
Assess whether the policy measures implemented have led to the desired results
(e.g., increasing the number of vehicle occupants wearing a seatbelt)

Monitor changes in contributing factors
(e.g., are females doing better than males?)

Detect emerging trends at an early stage
(e.g., decrease in use of seatbelts at the rear side)

Criteria for selecting road safety KPIs





Project approach

Key components of the approach

Selection of observation locations

Training of field researchers (regional partners welcome!)

Road-side observations by field researchers

Use of the SPIn application for recording observations

Data analysis and reporting

Important milestones and deadlines

| Deliverable/activity | Milestones / deadlines |
|--|---|
| Start of project | 18 August 2023 |
| Kick-off meeting | 25 August 2023 |
| Selection of field researchers | 15 September 2023 |
| Information sessions | 19 September 2023 (online) 29 September 2023 (Warsaw) |
| Methodology Training plan Inception report for TCT | 27 September 2023 |
| Training sessions for measurements | 3/4/6 October 2023 |
| Data collection Data analysis Progress report | 10 November: Data collection 31 December: Data analysis 18 January: Progress Report |
| Thematic Reports | 16 February |
| Brochure Final report | 1 March 17 March |
| Meetings with regional partners | 6 meetings before 18 March |
| Meeting on final results | <i>(To be decided – mid March)</i> |

GANTT Chart of main activities

| Deliverable/activity | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Kick-off meeting | █ | | | | | | | |
| Recruitment field researchers | █ | █ | | | | | | |
| Methodology | █ | █ | | | | | | |
| Training plan | | █ | █ | | | | | |
| Inception report | | █ | █ | | | | | |
| Information sessions | | | █ | | | | | |
| Training sessions | | | | █ | | | | |
| Data collection | | | | █ | █ | | | |
| Data analysis | | | | | | █ | █ | |
| Progress report | | | | | | | █ | █ |
| Thematic Reports (6 + 1) | | | | | | | █ | █ |
| Brochure | | | | | | | | █ |
| Final report & meeting | | | | | | | | █ |
| Capacity building | | | █ | █ | █ | █ | █ | █ |



Focus on the
road-side
observations



Criteria for selection of observation locations

Good spread across the administrative units of the regional partner (regions, cantons, local self- government, police administration unit, etc.)

Variation in terms of geographical features (plains, coasts, hills or mountains)

Sufficient population density in the neighbourhood of the location and different levels of traffic volume (low, medium and high intensity), but avoiding locations with very low traffic

Several types of road use (connection between city centres, daily commute, heavy commercial traffic, recreational traffic, etc.)

Safety of the observation locations

Adequate visibility and space for making observations.

Selection of observation locations

Observations of seatbelt use on **URBAN** and **RURAL** roads:



Observations of seatbelt use on **MOTORWAYS:**



List of locations (example: Albania)

| Road number/ Street | Road Type | GPSX | GPSY | Google Maps | LSG |
|-----------------------|-----------|-----------|-----------|---|----------|
| A1 | Motorway | 42.049587 | 20.314806 | https://goo.gl/maps/FuNbMCd7mdbjHbgsZ | Kukës |
| SH31 | Rural | 42.057767 | 20.421920 | https://goo.gl/maps/tk1wEczkVdhMYysQ6 | Kukës |
| Rruga Univesiteti | Urban | 42.077455 | 20.422728 | https://goo.gl/maps/Sorhw6KBbcN5iKXf7 | Kukës |
| A1 | Motorway | 41.556216 | 19.673080 | https://goo.gl/maps/3Z5QcC22umwGrNw57 | Tiranë |
| SH56 | Rural | 41.259300 | 19.690312 | https://goo.gl/maps/K4cc5zSzULeSobeE7 | Tiranë |
| Rruga Hoxha Tahsim | Urban | 41.333659 | 19.833704 | https://goo.gl/maps/qauMZ3pry48aBB429 | Tiranë |
| SH5 | Rural | 42.051822 | 19.532417 | https://goo.gl/maps/jxh7FX7gLFETZ2557 | Shkodër |
| Bulevardi Skënderbeu | Urban | 42.066852 | 19.514036 | https://goo.gl/maps/JD5hfQBVo7iXQ6FUA | Shkodër |
| A1 (SH2) | Motorway | 41.317583 | 19.468982 | https://goo.gl/maps/EPwGiAPYVXRnLygz8 | Durrës |
| Rruga Miqesia | Rural | 41.352626 | 19.475084 | https://goo.gl/maps/1vauhe1kk8LvHdSm7 | Durrës |
| Rruga e Dëshmoreve | Urban | 41.318883 | 19.445481 | https://goo.gl/maps/PB2L52GkH4vq8ENh6 | Durrës |
| A3 | Motorway | 41.105963 | 20.025151 | https://goo.gl/maps/xo7wBPDfRdNcxb16 | Elbasan |
| SH3 | Rural | 41.138663 | 20.147106 | https://goo.gl/maps/MozehZFC3mZfLwrR8 | Elbasan |
| Bulevardi Qemal Stafa | Urban | 41.111994 | 20.078867 | https://goo.gl/maps/SaKLXJjtE3nueLn7 | Elbasan |
| A2 | Motorway | 40.673738 | 19.478534 | https://goo.gl/maps/7pC5RvMHaqvMb17Y9 | Fier |
| SH73 | Rural | 40.697992 | 19.595259 | https://goo.gl/maps/pqhqochiYCNMNLSc6 | Fier |
| Rr. Skenderbeu | Urban | 40.734165 | 19.571266 | https://goo.gl/maps/AnnbxoNXNLRyy7no8 | Fier |
| Polican | Rural | 40.653701 | 20.040766 | https://goo.gl/maps/LoJyRYehhsoa66caA | Berat |
| Rruga Petrit Lulo | Urban | 40.705106 | 19.952608 | https://goo.gl/maps/5U226i3dAUPkULiP7 | Berat |
| SH3 | Rural | 40.697385 | 20.865218 | https://goo.gl/maps/M3e3qiSD54GoUsZu5 | Korçë |
| Rruga Edit Durham | Urban | 40.617965 | 20.775882 | https://goo.gl/maps/Fu9K7eg13aEbU3Am7 | Korçë |
| A2 | Motorway | 40.557562 | 19.462611 | https://goo.gl/maps/aupBNnbYcRHdPGKn8 | Vlorë |
| SH76 | Rural | 40.465823 | 19.550543 | https://goo.gl/maps/kLw1anhDAMnk7Aio8 | Vlorë |
| Rruga Riza Salati | Urban | 40.464489 | 19.483290 | https://goo.gl/maps/9HDm9TpMY54WT6RX7 | Vlorë |
| SH4 | Rural | 40.313505 | 20.013832 | https://goo.gl/maps/e4uBenySGxaZwCuN7 | Tepelenë |
| Rruga Shullaz | Urban | 40.297048 | 20.019965 | https://goo.gl/maps/gvxn856nHEKresFR8 | Tepelenë |



Observation of
the vehicles

Minimum number of observed vehicles

- Derived from / based on Baseline/Trendline guidelines
- Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia:
 - a minimum of **2000** observed vehicles overall for seat belt use, with a minimum of 750 observations for rural roads and 750 for urban roads;
 - a minimum of **100** observed vehicles with children among the occupants for roadside observation of CRS use, with a minimum of 40 observations for rural and urban roads.
- Serbia
 - a minimum of **3000** observed vehicles overall for seat belt use, with a minimum of 750 observations per road type;
 - a minimum of **150** observed vehicles with children among the occupants for roadside observation of CRS use, with a minimum of 20 observations per road type.

The SPIn application

- Mobile phone application for collecting Safety Performance Indicators (SPIs), developed by CDV.
- Browser-based mobile application running on Android platforms (for mobiles since 2019).
- Access to desktop version for data post-processing.
- Data are automatically transferred to the server: no need to manually transcribe records.
- Used by several EU countries in Trendline

In summary: using SPIn speeds up the data collection process and provides higher data quality.



Variables recorded

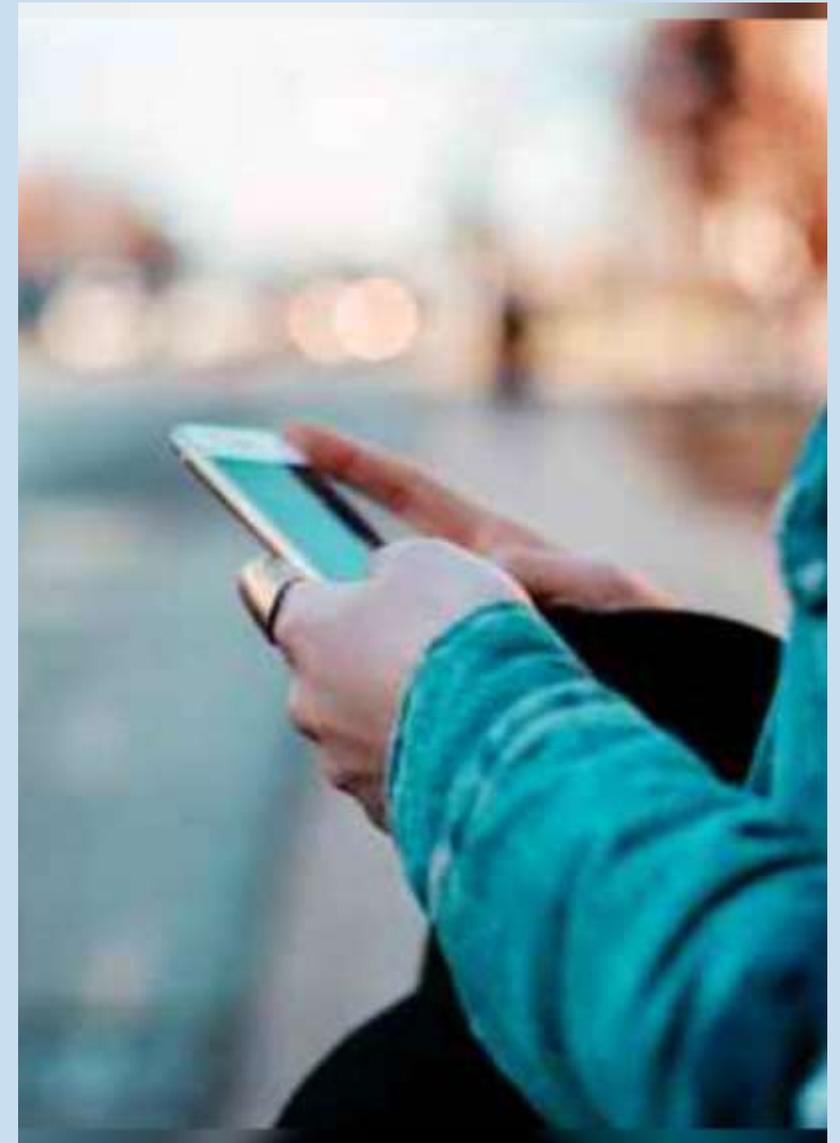
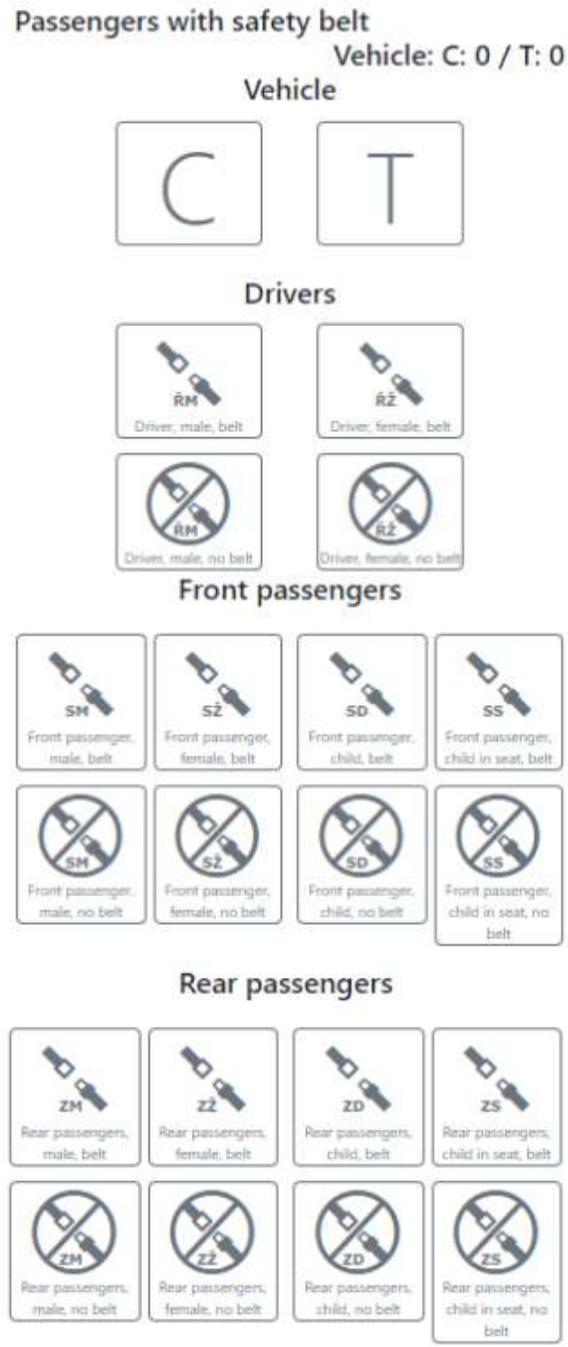
Seatbelt / No seatbelt

Place in the vehicle

- drivers
- front passengers
- rear passengers

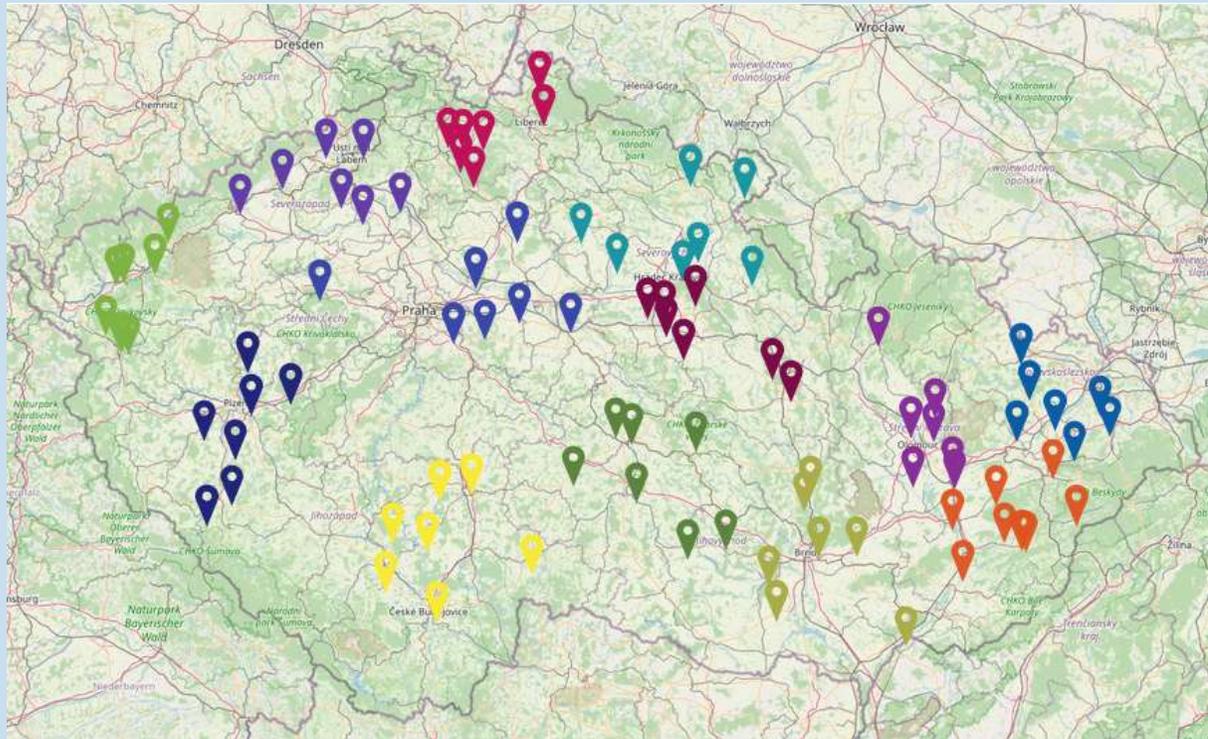
Occupant characteristics

- male
- female
- child
- child in seat



Data analysis (example)

Evaluation of all necessary parameters



Detail of collection for location Veselí nad Lužnicí - směr České Budějovice (C-Ex5-1448) (670), Type Safety belts

| Metadata for this collection | |
|------------------------------|---|
| Parameter | Value |
| Location | Veselí nad Lužnicí - směr České Budějovice (C-Ex5-1448) |
| Location ID | 1448 |
| Name of collector | roman.borak@cov.cz |
| Collection type | Safety belts |
| Collection start time | 02. 07. 2023 10:55:13 |
| Collection end time | 02. 07. 2023 11:26:28 |
| Day of week | Sunday |
| Number of collected values | 348 |
| Duplicate entry | No |
| Test entry | No |



| Sums | | | | | | | |
|---|--|---|--|--|---|--|---|
| Driver, male, with safety belt, car | Driver, male, without safety belt, car | Driver, female, with safety belt, car | Driver, female, without safety belt, car | Driver, male, with safety belt, truck | Driver, male, without safety belt, truck | Driver, female, with safety belt, truck | Driver, female, without safety belt, truck |
| 146 | 1 | 43 | 0 | 2 | 0 | 0 | 0 |
| Front passenger, male, with safety belt | Front passenger, male, without safety belt | Front passenger, female, with safety belt | Front passenger, female, without safety belt | Front passenger, child, with safety belt | Front passenger, child, without safety belt | Front passenger, child in seat, with safety belt | Front passenger, child in seat, without safety belt |
| 31 | 1 | 78 | 0 | 5 | 0 | 0 | 0 |
| Rear passenger, male, with safety belt | Rear passenger, male, without safety belt | Rear passenger, female, with safety belt | Rear passenger, female, without safety belt | Rear passenger, child, with safety belt | Rear passenger, child, without safety belt | Rear passenger, child in seat, with safety belt | Rear passenger, child in seat, without safety belt |
| 3 | 0 | 4 | 0 | 22 | 1 | 11 | 0 |



Project deliverables

Overview of deliverables

Data-based deliverables

Data set of observations

Thematic report
Western Balkans

Thematic report for each
regional partner

Brochure (in cooperation
with TC Secretariat)

Administrative deliverables

Inception report

Progress report

Final report

Minutes of meetings

Other deliverables

Set of observation
locations

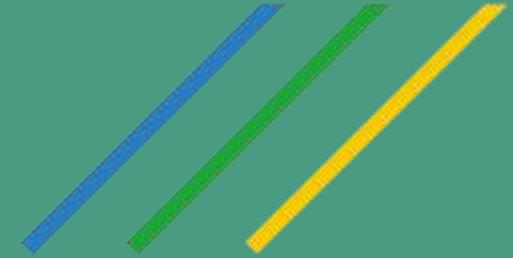
Methodology report

Presentations

Documentation on SPIn

**Technical Assistance for
collecting Road Safety KPIs
on
Seat Belt and Child Restraint
Systems in the Western
Balkans region**

Questions?



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Thank you for
your attention!