ERDF and Cohesion Fund : Result indicators in the field of transport post-2020

Indicator RCR58 :
Annual users of newly built, upgraded, reconstructed or modernised railways

Brussels, 24 January 2020.
Paul Riley

Definition of the Indicator RCR58

o **Indicator RCR58**

  - Annual users of newly built, upgraded, reconstructed or modernised railways (passenger-km)

o **What does it Measure ?**

  - Intensity of use of a railway investment (intervention) at a given point in time

  - Yearly number of passengers (users) times distance that they travel in km

  - Normally measured through aggregation of individual values for each section of railway in the Project intervention

o **Scalable to programme level (sum over all Project interventions)**

Data Required for the Indicator RCR58

- **Passenger Volumes per section**
  - Intervention is broken down into homogenous sections with very similar levels of traffic
  - This will usually be sections between railway stations/stops or segments of a station
  - Passenger volume measured for each section / train type / hour for a certain period (at least a day)
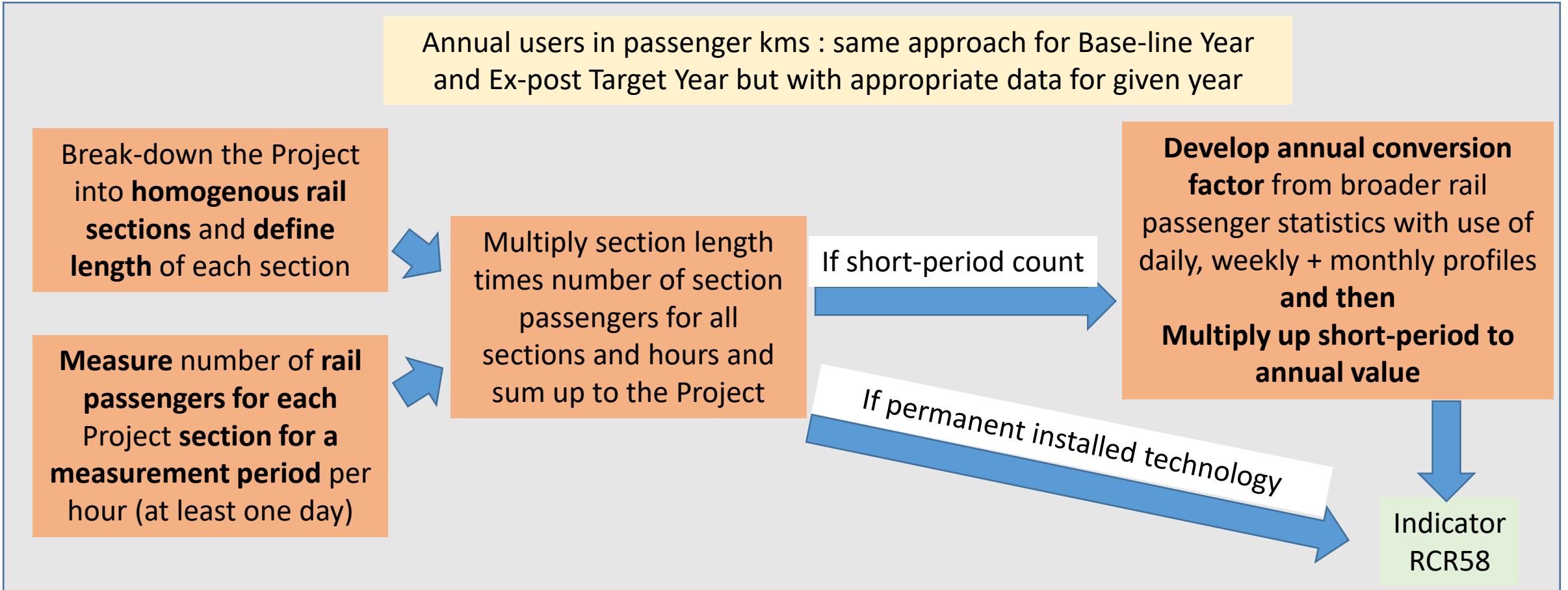
- **Section lengths in kms**
  - Length of each section is determined precisely using official technical data

- **Data for factoring up counts to annual value (if short-period count)**
  - If measured passenger data available only for a shorter period, profiles are needed
  - Profiles may be needed for daily, weekly and monthly variation in traffic f'····

Graphical diagram of the Indicator RCR58 structure

Annual users in passenger kms : same approach for Base-line Year and Ex-post Target Year but with appropriate data for given year

Break-down the Project into **homogenous rail sections** and **define length** of each section

Measure number of **rail passengers for each** Project **section for a measurement period** per hour (at least one day)

Multiply section length times number of section passengers for all sections and hours and sum up to the Project

If short-period count

Develop annual conversion factor from broader rail passenger statistics with use of daily, weekly + monthly profiles **and then Multiply up short-period to annual value**

If permanent installed technology

Indicator RCR58

European Investment Bank *The EU bank*

Jaspers
Joint Assistance to Support Projects in European Regions

Data sources for the Indicator RCR58 (1)

| Source	Relevance to the Indicator	Typical availability / suitability
Field surveys	Main source of short-period count data • Manual counting most likely with 1-2 day **AND/OR** • Hand-held technologies might be used to support manual counting • Temporary installed technology possible	**Most common approach, most feasible** • Site access issues • Counting can be inaccurate in peaks : possible use of video + subsequent manual counting OR AI based video-analytics • Manual tally counters
Permanent Installed Technologies	Can be used if installed on trains or platforms and data is available : • typically infrared counters or video • as complete source of data for indicator OR • from other trains services for factoring up to the number of yearly users	**Rare + access issues** • Increasingly common in new rolling stock, but still rare • Can be inaccurate in strong peaks (video analytics can help) • Willingness to provide data may be issue • Not often used on temporary basis

Data sources for the Indicator RCR58 (2)

Source	Relevance to the Indicator	Typical availability / suitability
Published data sets	Official publications with daily/weekly/monthly rail traffic profiles can be used to factor-up short period counts to a year value Unlikely that detailed passenger counts are published	**Often available at some level of aggregation** • Applicability to given project • In some cases other country data might be needed
Passenger Service Operator	• Passenger counts on trains • Ticket data • May also have time-profile data for factoring-up to number of yearly users	• **Rare + access issues** • **Often incomplete + access issues** • **Rare + access issues**
Infrastructure manager	Information on lengths of sections for count measurement in km	**Always**
Other on-line tools	Traffic counts / statistics, network GIS	**Counts unlikely**

Technologies for Indicator RCR58

Infra-red people counters

Tally Counter

Video analytics

European Investment Bank
The EU bank

Jaspers
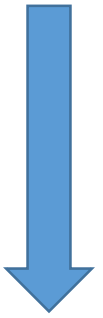
Further considerations on field surveys for the Indicator RCR58

o **Market/beneficiary experience with the methods**

- Many consultants experienced with manual public transport counts, which are done as a basis for plans and studies

- Railway infrastructure managers may have limited experience of counts but should be able to procure it, if necessary with some external advice

o **Costs of manual field surveys**

- Depends on the complexity of the Project (number of sections and train services)

- Several temporary employees (through agency) with limited skill requirements will be needed for a day **AND** one/two experts to plan, train, organise, supervise, evaluate

- Small cost compared to other project studies, design or investment

Measurement of Indicator RCR58 in different circumstances (1)
Linear railway section including simple stations

- Each section between stations is counted per hour in all trains for at least a whole day

OR

- Combination of counts of boarding/alighting at main stops on line + counting in trains per hour

Brussels, 24 January 2020.
Paul Riley
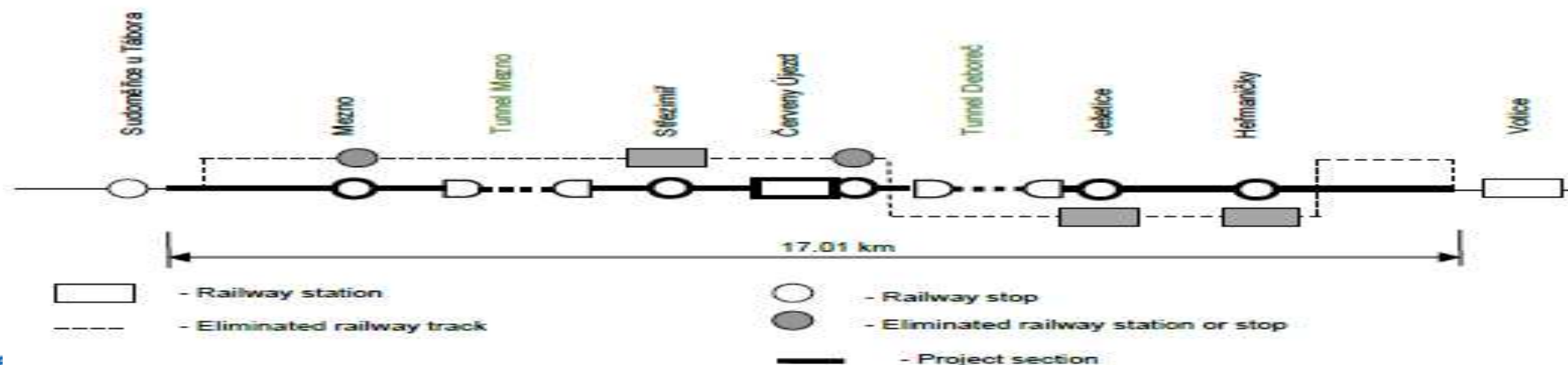
Measurement of Indicator RCR58 in different circumstances (2)
A complex railway station infrastructure investment

Counts at least for whole (typical day)

- Counts of all passengers boarding and alighting all trains using tracks invested in

- Counts in trains transiting the station (with or without stopping)

OR

- Counts in all trains entering / exiting the station

Length of sections

- Measured for each rail service running through station considering perimeter of investment scope
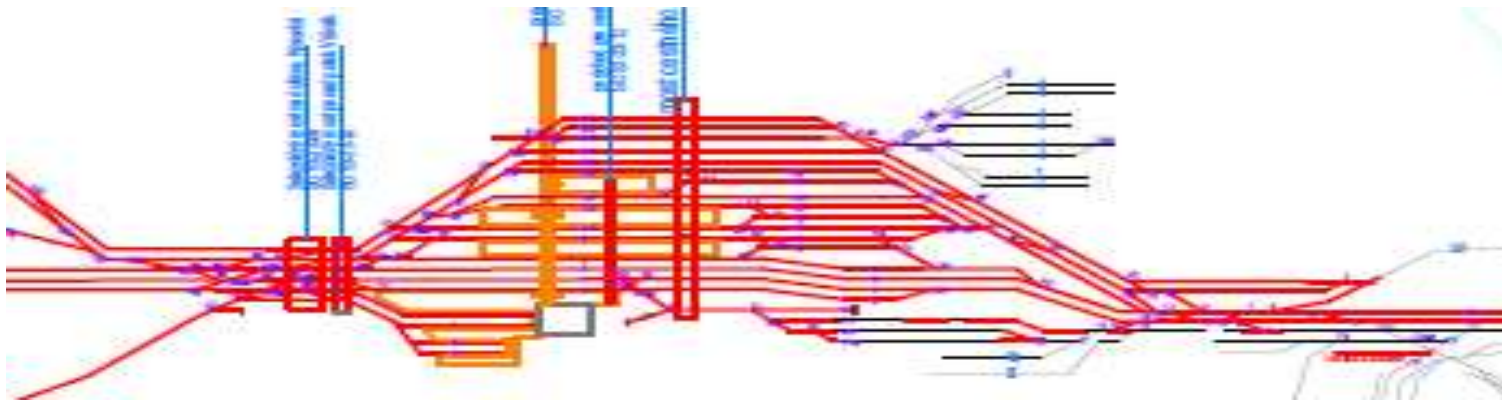
Some published Guidance

Rail passenger numbers and crowding statistics : Notes and definitions - DoT UK

How to conduct a passenger count - Railfuture UK 2014

European Investment Bank — The EU bank

Jaspers — Joint Assistance to Support Projects in European Regions

Conclusions/summary on the Indicator RCR58

o **What is needed ?**

> ➢ Define homogenous rail sections and measure lengths

> ➢ Count Passenger Volumes per section for a measured period

> ➢ Sources/Data for factoring up measured period to annual value (if necessary)

o **Technology / Feasibility**

> ✓ Manual counts generally most feasible / common with support of hand-held technologies

> ✓ Standard task for consultants with plenty of market experience in PT counts

> ✓ Limited cost

> ? Factoring up to annual values may be approximate if poor across year data available (national sample survey may be advisable to derive factors common to Project types ?)

European Investment Bank
The EU bank

Jaspers
Support Projects in European Regions