

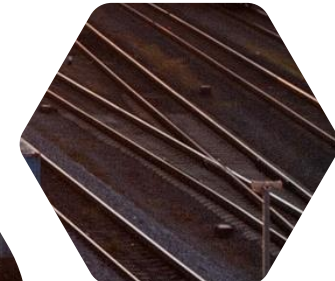
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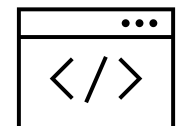


“Feasibility Study for Using Socio-Economic Criteria in Case of Capacity Shortage”

Expert observation summary

supporting document for stakeholders

28.11.2024



More information
[\(FTE website\)](#)

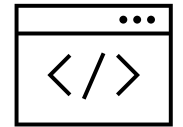
Introduction

> The following slides summarise the expert observations from the results of the “Feasibility Study for Using Socio-Economic Criteria in Case of Capacity Shortage” (RISE/VTI), none of the statements should be considered as positions of RNE/FTE statutory bodies.

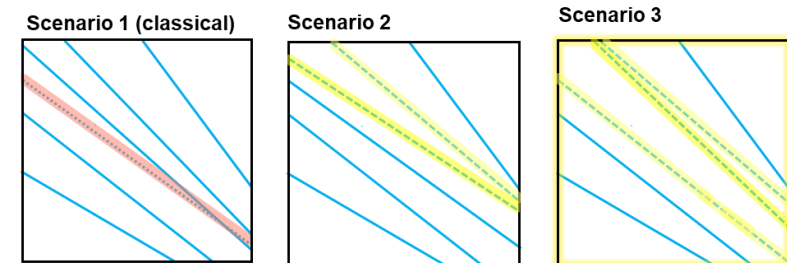
> It is strongly advised to read “[Introduction to Allocation Rules Topic](#)” before reading this document, to be able to understand the content.

> This summary provides overview of:

- Initial situation: study and the Capacity Regulation relation
- Scope of the study
- Study results
- Preconditions and further research suggestions



More information
([FTE website](#))



Path excluded	1	0	0
Value («RU cost»)	- 3.500 EUR	0 EUR	0 EUR
Paths displaced	0	2	3
Value («RU cost»)	0	- 1.350 EUR	- 780 EUR
Total loss	- 3.500 EUR	- 1.350 EUR	- 780 EUR



Initial situation

- > FTE/RNE Allocation Rules Project investigates since 2021 the possibility of using socio-economic scenario evaluation in the capacity shortage situation → based on experience from SE, NO, FI, NL.
- > A similar approach was also proposed by the legislators in the EU Capacity Regulation in 2023, the table below provides overview of the usage of socio-economic evaluation:

	As of today	In FTE/RNE project	Capacity Regulation (anticipated)
Strategic (Advance) Planning	Not applied	Possible application in case of higher demand than available capacity in a) Capacity Models b) Capacity Supply	To be applied in case of higher demand than available capacity in a) Capacity Models b) Capacity Supply
Capacity Allocation	Applied for unresolvable conflict between requests in the annual timetable in some Scandinavian countries based on national socio-economic values	Possible application in case of unresolvable conflicts between annual timetable requests	To be applied in case of unresolvable conflicts between annual timetable requests
Path Alteration (changes after allocation)	Not applied	Possible application for selection of the Temporary Capacity Restriction timing with lowest negative socio-economic impact.	Not defined

Study results: general

> FTE/RNE ordered feasibility study (CEF co-funding) with the tasks described below. Note that since this study was commissioned earlier and independently of the Capacity Regulation, the study contract did not consider some proposals from the Regulation, such as: environmental, public health and safety criteria.

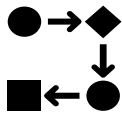
Task to investigate	Results
the possibility of using socio-economic modelling to value different timetable scenarios	<ul style="list-style-type: none"> • <u>Capacity Model</u>: possible, technical solution delivered how to do scenario valuation, but no process on how to determine the scenarios (market input collection and analysis) • <u>Capacity Supply</u>: possible • <u>Annual Timetable</u>: possible, but not for identical traffic path request (due to standardised values) • <u>Path Alteration</u>: possible
the possibility of using standardised values and train categories (available in the timetabling system) instead of (potentially sensitive) data from RUs in each case	Possible , to use commonly accepted standardised values and formula instead of burdening the sector by case-by-case data collection.
available data at national and EU average level (meta-analysis)	Much data available, but still need for further data collection in certain aspects.
the possibility of application for trains crossing borders	Proposals listed but requires harmonised methodology at the international level.

Study results: formula components

- > Study provides **methodology and examples** (Excel sheet) how to technically perform socio-economic valuation for Capacity Model, Capacity Supply, Annual timetable and Path Alteration, **using the pre-defined standardised values**. No case-by-case data collection from RUs is needed.
- > Suggested components of the valuation:
 - Transport distance origin – destination
 - "Value Travel Time Savings" for freight and passenger trains
 - Exclusion, displacement or exceeding maximum running of path/slot
 - Break of train-to-train associations/links: passenger/wagon transfers and rolling stock tourn-around
- > Further analysed components:
 - Can be used as pre-condition in the model: a) Line specification ("bonus" for prime user; e.g., freight traffic on dedicated freight line) and b) existing contractual agreements (Framework Agreements and Rolling Planning)
 - Not supported by the research results: priority bonus for traffic type in a specific period (peak-hour) or for specific traffic type (e.g., international freight traffic).

Implementation pre-conditions

Certain pre-conditions still to be met for any potential European implementation:



> The study does not tackle the problematic of how to collect and use the market input (e.g. Capacity Needs Announcements by RUs). Thus, despite the study gives methodology how to technically do valuation of Capacity Model scenarios, the study does not give a process how to determine these scenarios. Such a process will have to be defined.

→ This problem is relevant only for Capacity Model phase application, further phases define the scenarios already based on the capacity partitioning, contracted capacity rights and path requests.



> Need for agreement on the harmonised methodology for cross-border traffic in European Framework for Capacity Management, for instance the national values changes at the border? (study highlights no remarkable results difference if national or EU average values used)*



> Implementation in IT tools: connect data available in the timetable construction tool with the formula based on standardised values. By this allow prompt calculation of the scenario values.

Further research

- > Certain research still needed for potential European implementation.
- > Meta-analysis of the study suggests:
 - Needed data research in the area of standardised passenger train operation costs
 - Lack of national data for freight in EU-15 (available for EU15 as a package)
 - Reflection on the freight values (considered rather low)

- > Certain aspects are not tackled, and might be analysed:
 - Timetable robustness
 - Environmental/safety criteria
(these can be tackled also within the values for train categories, but other study and expertise might be needed)
 - Is there a need to customise Capacity Supply to every specific freight need? Part of freight market is dynamic, moreover, the real operation timetable often does not follow the allocated path, thus maybe precise early tailor-made freight capacity planning might not be necessary.
 - Path Alteration: in the study, the Temporary Capacity Restrictions times are given - but evaluation can be used for investigation if another TCR timing has lower negative socio-economic impact.



More information

- > Study results published in November 2024:
 - Feasibility Study with methodology and data sources
 - Excel spreadsheet with examples
- > Introduction to the topic, frequently asked questions, change management recommendation and further information about the project are available at: <https://www.forumtraineurope.eu/services/capacity-activities/allocation-principles>

EXPLANATION OF EXAMPLES

	Example Calculation	LDPT	Basic case	Train	Calculation
Priority category	Country	EU+UK+CH+I	EU+UK+CH+NO		15,28 €
	VOT €/passenger	15,28 €	15,28 €		15,28 €
Country (chosen in sheet 'PT calc')	Occupancy rate	75%	75%	75%	75%
	Capacity	L	L	L	500,00
	Distance, km	475	475	475	475
Occupancy rate	Speed, nominal, km/h	160	160	160	160
	Basic Duration, hours	02:58:07	02:58:07	02:58:07	02:58:07
Capacity of train	VOT	17 006 €	17 006 €	17 006 €	17 006 €
	Operational cost duration	535,14 €	1 589 €	1 589 €	1 589 €
	Variable cost duration	1,67 €	1 855 €	1 855 €	1 855 €
Distance travelled (is given by the basic route)	Operational cost distance	2,86 €	1 358 €	1 358 €	1 358 €
	Variable cost distance	0,01 €	1 855 €	1 855 €	1 855 €
Speed	Basic cost	23 662 €	23 662 €	23 662 €	23 662 €
Used to compute running time in this demonstration examples	Number of days	220	220	220	220
	BASIC COST YEAR	5 205 646 €	5 205 646 €	5 205 646 €	5 205 646 €
	Displacement cost, duration	11,46 €			
	Prolongation, prognosis			00:10:00	1 044 €
	Displacement, duration			00:05:00	477 €
	Prolongation operational cost				193 €
Number of days in plan period	Total value/day				25 377 €
	TOTAL COST YEAR	5 205 646 €	5 205 646 €		5 582 862 €
	Margin cost				377 215,60 €


Basic properties and valuation without timetable compromises

Valuation after timetable compromises

Prolongation of runtime in example

Displacement of departure time (anchor point)

Marginal cost



Final report – Feasibility study on using Socio-Economic Cost Criteria in Case of Capacity Shortages

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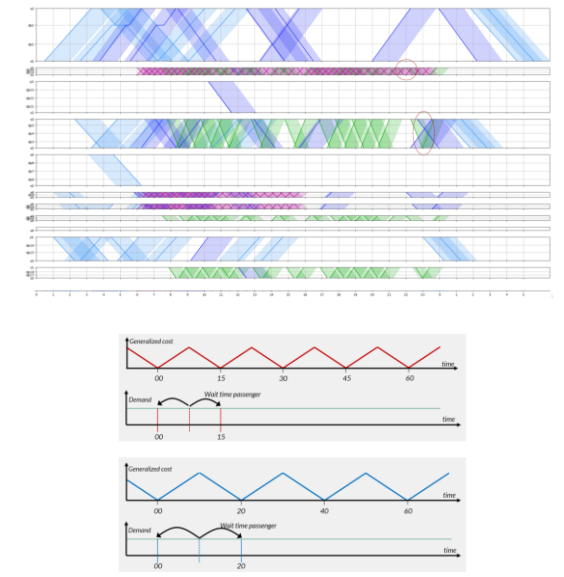



Figure 19. Waiting time for planned arrival at station.





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