Priority criteria

Content

1 Scope

Priority criteria use a method of socio-economic costing for three types of objects which are dealt with in the capacity allocation process: train paths, associations and engineering works.

1.1 Train paths

The train path carries the bulk of the costs that may be associated with rail transport. Some costs are dealt with in the calculation model not as costs for the train path but rather as object-type associations.

1.2 Associations

Associations between train paths are a planning object which will help to maintain control of commercial and technical production "networks". The associations describe time-connections between train paths which can be assigned either to commercial needs or to production/technical needs. An association does not include the time, but specified time differences. The association carries all costs which are affected by how relations between trains change and are maintained. Many costs which intuitively should be able to be tied to empty wagon transports in the flows will instead, in the calculation model, be costs for non-maintained vehicle circulations.

1.3 Engineering works

The cost for engineering works is calculated for alternative production costs connected to different times for access to the track. The socio-economic benefits of completed engineering works are not included in the calculations.

2 Principle construction of priority criteria

2.1 Basic principles

The basic principle of The Swedish Transport Administration's priority criteria is to choose the solution to a conflict between applicants that provides the greatest socio-economic benefit. This assumes that there is a conflict of interests which cannot be resolved without the use of priority criteria as arguments for coordination or as a basis for the determination of the annual timetable.

The priority criteria do not provide a specific priority between trains. No train is prioritised in favour of another. The priority criteria point out the solution that will be recommended with the help of a calculation model. The model is based on a number of simplifications and standards.

2.2 Details in the application

In order for the calculation model to work, a number of details from the applicants must be processed. This, in turn, requires that all requisite information/details are specified in connection with the application, and for this purpose, there is a web-service to apply for capacity allocation on The Swedish Transport Administration's website. This service must be used or transmission of files with format TDET

submitted to The Swedish Transport Administration for a correct processing in the system.

2.3 Categorise objekts

All train paths must be divided up into priority categories. The division takes place with the help of a number of identification terms, see sections 4.2-4.4 in this annex. Associations also have priority categories where the division takes place with the help of identification terms, see section 4.5.

2.4 Pre-defined cost parameters for the categories

Every train path or association which belongs to the same category is dealt with in the priority calculations in the same way and uses the same cost parameters.

2.5 Estimate cost differences between solutions (valid train paths)

The Swedish Transport Administration must often modify train paths that have been applied for in order to create valid train paths for all trains. Each modification leads to planning effects which have an impact on the socio-economic benefits. These planning effects are measured and calculated in terms of costs.

2.6 Prioritise the most efficient solution option

The calculation model provides answers as to which solution delivers the lowest cost and which should therefore be recommended.

3 Information required for priority criteria

The following information affects the use of the priority criteria. The information which directly impacts on the calculation model has been marked with a B. Other information may affect the priority indirectly. The more information specified, the more support The Swedish Transport Administration receives when different interests must be balanced against each other.

3.1 Information for train paths

Information	Mand./ Opt.*	Priority /criteria*	Type of info	Description
Running data	Mand.	B	Specification	The train assignment's running data.
Point of departure	Mand.	B	Specification	

Information	Mand./ Opt.*	Priority /criteria*	Type of info	Description
Destination	Mand.	B	Specification	
Departure time Point of departure	Mand.	X	Preference	Departure time from point of departure as per draft timetable The information is voluntary if the arrival time/destination is specified.
Arrival time destination	Opt.	X	Preference	Arrival at destination as per draft timetable
Priority category	Mand.	B	Declaration	Priority category for train in accordance with the identification terms and per the applicant's assessment.
Train path service	Mand.	X	Specification	
Traffic activity locations/places (TAP)	Mand.	X	Specification	Locations/places where traffic activities take place. Note that locations where only stoppages exist due to problems with regard to the timetable should not be specified in the application. They do not affect the priority.
Traffic activities at traffic activity locations	Mand.	X	Specification	Traffic activities (traffic changes or/and driver service activities) must be specified by type according to the list. Stoppages due to technical problems with regard to the timetable are not traffic activities.
Stoppage times at traffic activity locations	Mand.	X	Specification	Estimated time required (minutes, seconds) for all traffic activities at traffic activity locations. The time should only include traffic activities but not include other time taken such as the time taken for problems that relate to the timetable, time required to synchronise departures and connections etc.
Earliest acceptable departure time	Opt.	X	Conditions	The earliest departure time which is the applicant requests the train path to have. The details can (if so required) be specified for optional locations where traffic activities take place. The information is voluntary, but The Swedish Transport Administration's allocation process is facilitated if the information is specified.

Information	Mand./ Opt.*	Priority /criteria*	Type of info	Description
Latest acceptable arrival time	Opt.	X	Conditions	The latest arrival time which is the applicant requests the train path to have. The details can (if so required) be specified for optional locations where traffic activities take place. The information is voluntary, but The Swedish Transport Administration's allocation process is facilitated if the information is specified.
Time limit for departure of freight train	Opt.	B	Declaration	For the specification of a business-critical time window for freight traffic for departures from one or several locations (traffic activity locations). If the train path cannot be accommodated within the window, this is valued the same as if all the information related to the train is lost and no allocation of train path takes place.
Time limit for arrival time of freight train	Opt.	B	Declaration	For the specification of a business-critical time window for freight traffic for arrivals to one or several locations (traffic activity locations). If the train path cannot be accommodated within the window, this is valued the same as if all the information related to the train is lost and no allocation of train path takes place.
Preference period	Opt.	B	Specification	The applicant specifies the time in the proposed timetable that is considered to be the most business critical. The information is specified via one (1) place (TAP) plus either arrival or departure (without a time designation) which will refer to a (in accordance with the above) desired arrival or departure time at the location specified. If more than one location is specified or if a location is specified without a time designation the information provided is not taken into consideration.
Max total time	Opt.	X	Conditions	The greatest acceptable total time (between start location and destination). The information is voluntary, but The Swedish Transport Administration's allocation process is facilitated if the information is specified.

Information	Mand./ Opt.*	Priority /criteria*	Type of info	Description
Included in train system	Opt.	X	Conditions	The train path is included in the train system with regular intervals (fixed timetable)
Desired route	Opt.	X	Preference	If it is required that the train should be taken on a specific route which cannot be specified as a traffic change, this can be indicated.

*) Mand. = Mandatory information. Opt.= Optional information.
B = The information is used in the priority's calculation model. X = The information is used for priority.

3.2 Information regarding associations between train paths

Information	Mand./ Opt.*	Priority /criteria *	Type of info	Description
Valid days and periods	Mand.	B	Specification	Calendar information which describes the association's scope in the form of the date it relates to. The information is to be specified in exactly the same way as running data for train paths.
Priority category	Mand.	B	Declaration	Priority category for Association in accordance with the identification terms in annex 4 B and per the applicant's assessment. Use code according to the list further down in this annex.
Minimum acceptable association time	Mand.	B	Conditions	The shortest acceptable association time (the time between arrival time of arriving train and departure time of departing train). If the time falls below, the association is broken which leads to a cost (from a societal/public economy point of view) which is included in the calculation model.
Maximum acceptable association time	Opt.	X	Conditions	The longest acceptable association time (the time between arrival from the train and departure to the train). The information is voluntary, but The Swedish Transport Administration's allocation process is facilitated if the information is specified.
Type of association	-	X	-	The information does not have to be specified at present because it can be derived from the priority category for association's.

*) Mand. = Mandatory information. Opt.= Optional information.
B = The information is used in the priority's calculation model. X = The information is used for priority

3.3 Information for engineering works

Type of data		Priority*	Description
Start date	Mandatory	B	Applied start date for access to track.
End date	Mandatory	B	Applied end date for access to track.
Week days	Mandatory	B	Specifies which combination of weekdays that are included in applied access to track.
Shared	Mandatory	B	Specifies whether weekdays relate to full or partial shift.
Start time	Mandatory	B	Applied start time for access to track.
End time	Mandatory	B	Applied end time for access to track.
Earliest start date	Voluntary	X	For time window. Start date for acceptable access to track.
Latest end date	Voluntary	X	For time window. End date for acceptable access to track.
Acceptable week days	Voluntary	X	For time window. Specifies which combination of weekdays that are included in acceptable access to track.
Shared (time window)	Voluntary	X	For time window. Specifies whether acceptable weekdays relate to full or partial shift.
Earliest start time	Voluntary	X	For time window. Start time for acceptable access to track.
Latest end time	Voluntary	X	For time window. End time for acceptable access to track.
Production cost	Mandatory	B	Production cost (SEK) per part activity.
MM-share	Mandatory	B	Share of man and machine cost of total cost. Code (%)
Total production time	Mandatory	B	Total production time.
Set-up time per shift	Mandatory	B	Unproductive set-up time.
Minimum production time per shift	Voluntary	B	Minimum allowed production time per shift.
Compression limit	Voluntary	B	Limit for permitted compression of production time per part activity. Compression arises if engineering works must be carried out in a shorter time period resulting from an increase in the production pace.
Work schedule	Voluntary	B	Code according to pre-defined templates.
Reset margin	Voluntary	B	Time margin for recovery for delay.

*) B = The information is used in the priority's calculation model. X = The information is used for priority

4 Grouping into and identification of Priority Categories

4.1 Categorisation of train paths and associations

Trains and associations have been divided into predetermined categories, in order to facilitate a practical handling of the calculation of socio-economic costs for alternative solutions to conflicts. Each of these categories - Priority categories - is intended to represent all train individuals classified in the same category. For each category, cost parameters are connected which are used for cost calculations. Priority categories are available for train paths and associations but not for engineering works.

4.2 Identification terms for priority categories

In order to determine which priority category each train path belongs to, the applicant must declare his evaluation himself. The evaluation must be objective and truthful and be based on the identification terms described in sections 4.3-4.6 in this annex and matched against the properties of the train path that are to be based on experience of previously established traffic.

The evaluation means that the applicant checks whether the train path (or the association) fulfils all identification terms as specified for the priority category which is assumed to be correct. Unless all terms are fulfilled, another priority category must be chosen.

In many cases there is more than one set of terms which lead to the same priority category. Each set has an unique identification key shown on a separate line. Every key includes one possible set of requirements that must be met for validation. All conditions on the same line (identification key) must be fulfilled, but it is sufficient that one of the lines (one identification key) is fulfilled in order for the category to apply. In the application, the identification keys are not specified, only the priority category which it points to. For the applicant, it may however be appropriate to save the details regarding the evaluations made, as this may facilitate any scrutiny of the information.

The priority category must be chosen on an individual basis for each specific train path.. It is not allowed to specify the same prioritisation category for an entire traffic system based on the valuation of only one of the constituent trains. By in this way taking information on one individual train and using it as some kind of collective priority category for an entire group of trains together is not allowed. Each individual train path must fulfil the terms in order for the priority category to apply. There may however be variations throughout the year, on some stretches of the line etc. This requires some consideration, see below.

The Swedish Transport Administration can re-examine priority categories in the application.

The applicant must follow the identification terms specified, and may not at own discretion, declare a priority category for own trains. The Swedish Transport Administration will analyse the information presented, and if there are any doubts, The Swedish Transport Administration will re-examine the information. In such cases, The Swedish Transport Administration may request verification of the information, to ensure that the correct priority category is set for a train path. If the applicant does not comply with such a request, The Swedish Transport Administration will enforce the right of interpretation of the priority category.

Variations and uncertainties in the identification terms

For all trains, variations can arise in the identification terms (number of travellers, share of time-sensitive travellers etc.). These variations may relate to time (certain days or periods) or space (certain stretches of line). Normally, a train may only have one unique train path product if it is to be managed rationally in the capacity allocation process. This means that the train must be represented by some kind of mean value, even if variations occur over time and along its journey. The general rule is that, if the identification terms for the chosen priority category are met (or exceeded) by at least 40 percent of the train's journey and by at least 40 percent of the train's running days, the priority category is applied over the train's entire journey and all periods/days.

Identification of priority categories on the commencement of new traffic

When a train path that has been applied for concerns new traffic that does not correspond with already established traffic, special rules apply for the identification of priority categories during the first years such traffic is operated. Normally, the identification conditions shall be matched against properties in the train path that are to be based on experience from previously established traffic. In this case, the properties of the train path shall also be based on the anticipated future traffic that is judged possible to achieve after a certain time.

Definitions

1. ***New traffic*** (basically the opposite of established traffic).
   Train paths where there is basically a lack of experience from established traffic and there are thereby no properties to match against the identification conditions can be regarded as ***New traffic***.

2. ***Priority category established***
   Priority categories in which the identification conditions have been matched against properties that are based on experience of established traffic.
   If priority category established shall be used despite the fact that established traffic is lacking, priority category established shall either be unspecified passenger trains or unspecified freight trains.

3. ***Priority categories new start***
   Priority categories in which the identification conditions have been matched against properties that are based on estimates of anticipated future values that are judged to be achieved once the newly started traffic has been fully established.

Identification of right category

In the identification of priority categories, the value of a train path applied for * (e.g. transport volumes) or other properties* shall be matched against identification conditions that are presented in the Tables in Section 4.3 - 4.6.

*) It is the content of these values and properties that distinguish between "established" and "new start".

4. If the applicant wishes to use priority category new start, he/she shall specify which train paths are thereby considered to constitute ***New traffic.***

   The Swedish Transport Administration will check whether the train paths, specified as ***New traffic***, fulfils the definition in Item 1 and can reject the applicant's information.

5. In order to evaluate the reasonableness of the estimates made in Item 3 , the Swedish Transport Administration may appeal against the priority category new start that are specified in the application. The Swedish Transport Administration may then require a presentation of those assumptions that the estimates, as per the previous paragraph, are based on.

Extent of the priority category new start

The table shows the extent, i.e. the period during which and with what share, the priority category new start may be quoted in the application for train path that constitutes new traffic

Notice Year 1, Year 2 etc.refers to the first, the second etc. traffic year with newly started traffic

	Running time from starting date for new traffic			
Type of priority category	Year 1	Year 2	Year 3	Year 4 and following.
Priority category established (share)	0%	0%	100%	100%
Priority category new start (share)	100%	100%	0%	0%
Days and years are calculated from the start of train path traffic and are not linked to the timetable changeover Year 1 concerns the period from Day 1 (start of train path traffic) until Day 365 Year 2 concerns the period from Day 366 until Day 730 Year 3, etc.				

Figure 4.1 Extent of priority category new start

Impact on the cost parameters during calculation

6. Within one individual year, for each train path a calculation is made of the total output cost by the total output cost for the priority categories established and new start, respectively, being weighted on the basis of the shares as a % that are specified in Figure 4.1
   This means that the calculation is in practice performed as though it was two different train paths each with its own priority category and different

arrangements for cost parameters, in which the different results are then weighted together.

To refer to New traffic/Priority category new start

7. To refer to the possibility of using Priority category new start instead of Priority category established is entirely voluntary and an applicant can always refrain from it

8. To refer to the use of Priority category new start can at most be done during the period shown in the table in Figure 4.1. Once this period has expired, these conditions cannot be referred to. The Swedish Transport Administration may, however, grant an exception at the request of the applicant if such circumstances exist whereby the applicant has still not been able to fully evaluate the outcome. One condition is that the discrepancy is due to factors beyond the applicant's control and are not of an economic nature

4.3 Priority categories for train - freight transports

Priority categories must comply with identification terms in one of the rows which relate to each category. Each term is linked to a specific identification key.

Priority categories		Identification key	Type of traffic, description *Note: The text in these columns are aimed to give an estimation of the signification for each category. The exactly definition is shown in the eight conditions of identification related to each key.*	Examples of trains	Identification terms							
Name	Code				Concept: fast travel*	Time-sensitivity logistics	Customer agreement fast consignment	Delivery precision require-ments	Need for flexibility	Trans-port volume	Value added	Train confi-gura-tion
Gods–snabb (fast freight)	GS	GS1	Very time-sensitive consignments of industrial products with just-in-time freight, where a very short transport time is required.	Just-in-time freight train	❹	❺	-	❺	-	❸	❺	-
		GS2	Very time-sensitive consignments of post, parcels and single products where a very short transport time is required.	Mail train	❹	-	❺	❺	-	❸		-
		GS3	Very time-sensitive intermodal consignments, where a very short transport time is required.	Intermodal train with high-priority	❹	-	❺	❹	-	❸	-	Intermo-dal train
Gods–övernatt (freight overnight)	GT	GT1	Time-sensitive consignments of industrial products with tight logistics chains, where a short transport time is required.	Single-commodity train with high priority	❷	❺	-	❹	-	❸	High	Single-commo-dity train
		GT2	Time-sensitive consignments of high-value goods where a short transport time is required.	Single-commodity train with high priority	❷	❹	❹	❹	-	❸	High	Single-commo-dity train
		GT3	Intermodal consignments where a short transport time is required.	Intermodal train, standard priority	❷	-	❹	-	-	❸	-	Intermo-dal train

Priority categories		Identification key	Type of traffic, description *Note: The text in these columns are aimed to give an estimation of the signification for each category. The exactly definition is shown in the eight conditions of identification related to each key.*	Examples of trains	Identification terms							
Name	Code				Concept: fast travel*	Time-sensitivity logistics	Customer agreement fast consignment	Delivery precision require-ments	Need for flexibility	Trans-port volume	Value added	Train confi-gura-tion
		GT4	Wagonload trains where tight connections must be maintained in view of promises to customers, requiring a short transport time	Wagonload train with high priority	-	-	❺	-	-	❸	-	Wagon-load train
Gods regularitet (freight– regularity	GR	GR1	Consignments of industrial products with logistics chains where transport with high delivery precision is required	Certain single-commodity trains with a demand for regularity	-	❹	-	❹	-	❸	❹	Single-commo-dity train
		GR2	Consignments of products where this is integrated with the industrial process, where transport with high delivery precision is required.	Certain single-commodity trains with a demand for regularity	-	❹	-	❹	-	❹	-	Single-commo-dity train
Gods– nätverk (freight networks	GN	GN1	Wagonload trains where tight connections must be maintained in view of promises to customers.	Wagonload train, standard priority	-	-	❹	-	-	❸	-	Wagon-load train
Gods– flexibilitet (freight flexibility)	GF	GF1	Single-commodity consignments where flexibility is more important than short transport time	Single-commodity train needing flexibility	-	-	-	-	❹	❸	-	Single-commo-dity train
		GF2	Single-commodity consignments and wagonloads where demands for short transport time cannot be justified or verified	Other freight trains	-	-	-	-		❸	-	Single-commo-dity train -

Priority categories		Identification key	Type of traffic, description *Note: The text in these columns are aimed to give an estimation of the signification for each category. The exactly definition is shown in the eight conditions of identification related to each key.*	Examples of trains	Identification terms							
Name	Code				Concept: fast travel*	Time-sensitivity logistics	Customer agreement fast consignment	Delivery precision require-ments	Need for flexibility	Trans-port volume	Value added	Train confi-gura-tion
		GF3	Single-commodity consignments and wagonloads where demands for short transport time cannot be justified or verified.	Other freight trains	-	-	-	-	-	❸	-	Wagon-load train
		GF4	Wagonload trains where tight connections cannot be motivated to maintain in view of promises to customers.	Wagonload train with low priority	-	-	-	-	-	❸	-	Wagon-load train
Ospecificerat (unspecified)	GO	GO1	Unspecified freight train	No specification	-	-	-	-	-	-	-	-

*) High = Vehicles and stop configuration must facilitate short running time - = No specific requirements

Explanations of the use of numerical values in Tabel 4.3

❺	Very high
❹	High
❸	Medium
❷	Low
❶	Very low
❼	Non

4.4 Priority categories for train -passenger transports

Priority categories must comply with identification terms in one of the rows which relate to each category. Each term is linked to a specific identification key.

Priority categories		Identification key	Type of traffic, description *Note: The text in these columns are aimed to give an estimation of the signification for each category. The exactly definition is shown in the four conditions of identification related to each key.*	Examples of trains	Identification terms			
Name	Code				Number of passengers	Proportion of time-sensitive passengers	Proportion of regional passengers	Need for fast travel*
Storpendel (major commuter train)	SP	SP1	High proportion of time-sensitive regional passengers, highest possible load factor	Stockholm commuter train, peak periods	≥ 700	≥ 75 %	≥ 75 %	-
Regio-Pendel (region commuter train)	RP	RP 1	High proportion of time-sensitive regional passengers, very high load factor	Big cities commuter train, peak periods	≥ 300	≥ 75 %	≥ 75 %	-
		RP 2	High proportion of time-sensitive regional passengers, very high load factor	Very heavy regional relations, peak periods	≥ 300	≥ 75 %	≥ 75 %	-
Regio–max	RX	RX1	High proportion of time-sensitive regional passengers, high load factor	Heavy regional relations	≥ 200	≥ 75 %	≥ 75 %	-
		RX2	High proportion of time-sensitive passengers, high/medium high load factor, rapid travel	Regional express traffic, not off-peak periods however	≥75	≥75 %	-	High
Regio–standard	RS	RS1	High proportion of time-sensitive regional passengers, medium-high load factor	Medium-importance regional trains, peak periods	≥75	≥75 %	≥75 %	-
		RS2	Frequent regional traffic, medium-high proportion of time-sensitive regional passengers, low load factor, rapid travel	Regional express traffic, off-peak periods	≥25	≥25 %	-	High
Regio–låg	RL	RL1	High proportion of time-sensitive regional passengers, low load	Light regional trains, peak periods	≥25	≥75 %	≥75 %	-

Priority categories		Identification key	Type of traffic, description *Note: The text in these columns are aimed to give an estimation of the signification for each category. The exactly definition is shown in the four conditions of identification related to each key.*	Examples of trains	Identification terms			
Name	Code				Number of passengers	Proportion of time-sensitive passengers	Proportion of regional passengers	Need for fast travel*
(Regio–low)			factor					
		RL2	Medium-high proportion of time-sensitive regional passengers, medium-high load factor	Medium-heavy regional trains	≥75	-	≥25 %	-
		RL3	Medium-high proportion of regional passengers, low load factor	Medium-importance regional trains, off-peak periods	≥25	-	≥25 %	-
Regio–mini (Regio-mini)	RI	RI1	Medium-high proportion of regional passengers, very low load factor	Medium-importance regional trains, off-peak periods	≥0	-	≥25 %	-
Fjärr–express (long–distance express)	FX	FX1	High proportion of time-sensitive passengers, high load factor, rapid travel	Business trains, peak periods	≥200	≥75 %	-	High
Fjärr–standard (long–distance–standard)	FS	FS1	Medium-high proportion of time-sensitive passengers, medium-high load factor	Inter-regional trains with heavy traffic, peak periods	≥75	≥25 %	-	-
Fjärr–låg (long–distance – low)	FL	FL1	Medium-high proportion of time-sensitive passengers, low load factor	Light traffic, interregional trains, not off-peak however	≥25	≥25 %	-	-
		FL2	Low proportion of time-sensitive passengers, medium-high load factor	Night trains	≥75	-	-	-
Fjärr–mini	FI	FI1	Very low load factor	Light traffic, interregional trains	≥0	-	-	-

Priority categories		Identification key	Type of traffic, description *Note: The text in these columns are aimed to give an estimation of the signification for each category. The exactly definition is shown in the four conditions of identification related to each key.*	Examples of trains	Identification terms			
Name	Code				Number of passengers	Proportion of time-sensitive passengers	Proportion of regional passengers	Need for fast travel*
(Long-distance mini)		FI2	Journey by train where the journey itself is the objective	Excursion train, no transport assignment	≥0	-	-	-
Ospecificerat (unspecified)	PO	PO1	Passenger train without specification (long-distance or regional)	-	-	-	-	-

*) High = = Requirements that vehicles and stop configuration must facilitate short running time. The stop configuration must include significantly fewer stops compared to other traffic along the same stretch. - = No specific requirements

4.5 Priority categories for trains – empty transports

Priority categories	Code priority category	Identification key	Identification terms Type of movement	Type of traffic, description	Examples of trains
Empty transport	TT	TT1	Locomotive with carriages	Movement of carriages/locomotives	No freight/passengers transported
		TT2	Railcars	Movement of railcars	No freight/passengers transported
Lone locomotive	EL	EL1	Freight train locomotive	Movement of locomotive	No freight/passengers transported
		EL2	Passenger train locomotive	Movement of locomotive	No freight/passengers transported

4.6 Priority categories for associations - connection

Priority categories must comply with identification terms in one of the rows which relate to each category.

Priority category	Code priority category	Identification key	Traffic type	Identification terms r	
				Number of passengers	Weight of concerned freight wagons
Connection freight transport – max	AGX	AGX1	Freight traffic	-	≥750 gross tonnes
Connection freight transport – high	AGH	AGH1		-	≥450 gross tonnes
Connection freight transport – standard	AGS	AGS1		-	≥300 gross tonnes
Connection freight transport – low	AGL	AGL1		-	≥150 gross tonnes
Connection freight transport – mini	AGI	AGI1		-	≥0 gross tonnes
Connection passenger transport – max	APX	APX1	Passenger services	≥125	-
Connection passenger transport – high	APH	APH1		≥75	-
Connection passenger transport – standard	APS	APS1		≥50	-
Connection passenger transport – low	APL	APL1		≥20	-
Connection passenger transport – mini	API	API1		≥0	-

4.7 Priority categories for associations - circulation

Priority categories must comply with identification terms in one of the rows which relate to each category.

Priority category	Code priority category	Identification key	Identification terms	
			Dimensioned* circulation	Train composition
Vehicle circulation – high	FOH	FOH1	X	Loco + passenger carriages
		FOH2	X	Loco + freight wagons
		FOH3	X	Larger locomotives
		FOH4	X	Medium sized railcars
Vehicle circulation – standard	FOS	FOS1	X	Passenger carriages without locomotives
		FOS2	X	Freight wagons without locomotives
Vehicle circulation – low	FOL	FOL1	X	Lone locomotives
		FOL2	X	Smaller railcars

*) Design turnaround is understood only to mean a situation where no other equivalent vehicle is available in the location where the turnaround takes place which could be used as a replacement for the one that is in the turnaround.

5 Cost parameters

The tables below show the cost parameters used for categorised objects (trains and engineering works) when calculating the socio-economic cost in the model.

5.1 Cost parameters for trains

Priority category	Cost parameters for the following effects calculated per train				Parameters for excluding of train path		
	Transport time	Transport distance	Displacement	Excluded train path	Benefit limit for train path	Correction factor basic time	Running-time template
Code	SEK/min	SEK/km	SEK/min	SEK/min	%	%	Kod
A	**B**	**C**	**D**	**I**	**J**	**K**	**L**
GS	265	54	167	-	15	2	GB201211
GT	232	54	143	-	25	2	GR401410
GN	154	58	84	-	35	2	GR401409
GR	198	53	118	-	35	2	GB200710
GF	77	52	27	-	45	2	GR401410
GO	58	39	20	-	50	2	60 km/h
SP	1 150	93	784	-	15	20	PX600616
RP	736	93	474	-	15	15	PX600616
RX	499	76	212	-	15	15	PX410020
RS	240	27	132	-	20	12	PX610016
RL	170	29	96	-	30	12	PX510018
RI	46	22	10	-	40	12	PY310014
FX	753	64	429	-	20	6	PX2-2000
FS	484	41	291	-	25	8	PR600616
FL	253	38	125	-	35	8	PR600416
FI	80	15	31	-	45	8	PX620018
PO	35	11	8	-	50	8	PR600616
TT	63	34	0	-	100	0	PR600616
EL	38	24	0	-	100	0	ellok120

5.2 Cost parameters for associations

	Marginal costs for the following effect	
Priority category	**Duration**	**Broken association**
Code	**SEK/min**	**SEK/association**
K	**L**	**M**
APX	647	55 300
APH	304	26 000
APS	190	16 300
APL	107	9 110
API	30	2 600
AGX	116	88 900
AGH	69	53 300
AGS	43	33 300
AGL	26	20 000
AGI	9	6 670
FOH		37 300
FOS		19 300
FOL		11 800

6 Prerequisites for calculation of socio-economic costs

6.1 Conflict-resolved alternatives

The basis of the priority criteria is that different solutions for conflicts of interest are compared. The solutions should always be possible to implement in accordance with the regulations for resolving conflicts with regard to train paths and engineering works. This means that a comparative solution may not contain unresolved sequential effects of conflicts. For train paths, these forms are referred to as valid train paths. An alternative solution must only consist of valid train paths in order to be included in a comparative alternative.

6.2 Valid train paths

In order for a train path to be approved as valid, and thereby included in a socio-economic analysis where the planning effects are measured and the costs are calculated, the following must be directly applied for the train path's time indications:

1. prerequisites in the form of planned major engineering works, bottleneck plans and other planning conditions published in the Network Statement.

2. time used during the journey (running time)
   The amount of time used is produced with the help of the track and vehicle/technical conditions which affect the running times of the trains. Vehicles running-time performance are represented of as so-called running-time templates. The running time templates number and definition may vary from one annual timetable to another.

3. time used during stops
   The time required for traffic changes when the stopping period for a train may vary. Normally there is a minimum possible time in which a traffic change can be carried out, so that the amount of time taken is realistic. Until further notice, the time values the industry used by tradition will be employed, but regulated information on minimum times for traffic changes may be included in the Network Statement.

4. adaptation of train paths for delivery precision
   In order to create train paths which can be delivered with the intended punctuality, often an adaptation is required, primarily because of two reasons:
   a) The train path should be able to be delivered in accordance with the punctuality requirements that
      apply.
   b) The train path should be able to be delivered with respect to all surrounding
      train paths in the annual timetable (the train paths should therefore be mutually valid).

These conditions mean that train paths in different respects must include time margins internally within the train and externally between trains.

Train paths which comply with the above requirements of valid in the sense that The Swedish Transport Administration can undertake the delivery of the train path. They therefore make up a fundamental requirement for train paths which can be included in the comparisons.

The train paths in an application which has been submitted need not comply with the requirements in order to be valid, but rather the requirement only applies for those suggestions for train paths that can make up a part of a possible conflict resolution where priority criteria can be used.

6.3 Calculation model for socio-economic costs

The following cost items are calculated for each object and day:

Effect (calculation item)	Description of calculation (bold letter, see below)
Trains cost for transport distance	= Transport distance {km} x **C** {SEK/km}
Trains transport time cost	= Total transport time {min} x **B** {SEK/min}
Displacement cost	= Displacement time {min} x **D** {SEK/min}
Cost for "Excluded train path"	= (Transport time {exclusion} x **B**) + (Transport distance x **C**) Where Transport time {exclusion} = Basic running time {direct}* x (100+**K**) x (100+**J**)
Cost for "freight train without time limit"	= Cost for "Excluded train path"
Cost for an association's duration	= Duration {min} x **L** {SEK/min}
Cost for a broken association	= **M** {SEK/association}
Production cost for engineering works	= Engineering works' current production cost (only the share of man and machine costs)
Total cost	= Summary of all calculation items above for all detailed plan days:

Bold letter = Letter in column heading in tables 5.1 and 5.2

*) Basic running time {direct} refers to the train path running time calculated with the running time model that is specified in Table 5.1, Column L, conducted without stopping between its starting and finishing point. Generally, basic running time never contains any supplement for quality and congestion.

6.4 Cost for "Excluded train path"

The cost for the days when a train path which has been applied for cannot be allocated (due to congestion) is called the cost of a "Excluded train path". This effect cost also arises when the number of train paths applied for exceeds the capacity of the stretch of line in question. The cost is set at the same value as the maximum delay of the train before it loses its commercial value. The maximum

delay is set at a value equal to a percentage, with regard to cost parameters; it is called a "benefit limit" (%), multiplied by the train's basic time, i.e. the transport time the train has (including the applied-for stop except for the first and last) without encountering any congestion.

In order to harmonise cost in connection with variations in transport time for the same section of line, the basic running time is used without stopping with a predetermined running time model. This time is converted into base time with the aid of a correction factor.

6.5 Manual corrections for limitations of the model

The calculation model which forms the basis of the priority criteria is a substantial simplification of reality. In many cases, deviations between the model and reality may be considerable. It is in the nature of the model to work in this manner and the parties to some degree must be prepared to tolerate such effects in order for the allocation process to be carried out within an acceptable period of time.

In cases when considerable deviations occur, the applicant may submit information to show that the model's substantial standardisation of reality has caused large deviations. The Swedish Transport Administration can then, subsequent to a special review, correct the models values with calculations manually.

Some situations where the model in its present form cannot be regarded as sufficient are already known. In the following cases, the model's calculation should be supplemented by manual information in order to provide the correct priority:

1. Train paths which are replaced by road transport due to engineering works involve two types of costs which must be added manually:
    - the cost of replacement transport by road
    - revenue losses due to a worsening of the product to the end consumer.
2. Train paths which due to considerable customer sensitivity are affected by significant revenue losses which are due to the proposed timetable.

7 Criteria for priority based on calculations

In order to settle a conflict of interests, the solution alternative which according to the described calculation model provides the lowest cost will be chosen rather than the solution which provides a higher cost.