

Border Crossing Dwelling Time Report

Operational Working Group 2019-10-30





1. Description

The Operational Working Group (OPE WG) within ScanMed RFC has done this preliminary study on the border crossing time for the five borders within the Corridor. The border crossings along the Corridor that have been studied are:

- Kornsjø (NO/SE)
- Malmö godsbangård (SE/DK)
- Padborg (DK/DE)
- ✓ Kufstein (DE/AT)
- ✓ Brenner (AT/IT)

The purpose of this study was mainly to look into the process time at the borders and to ensure that all the appropriate actions are taken so that the process time does not exceed 120 minutes at any boarder.

1.1. The study

With the exception of Öresundsbro Konsortiet, each Infrastructure Manager (Bane NOR, Trafikverket, Banedanmark, DB Netz, ÖBB Infra and RFI chose one Railway Undertaker (RU) as a representative for each border, the choice was to contact, preferably, the RU which operate the higher number of trains at the cross border station. The process times was then split up into more detailed activity time-frames: change locomotives, change of drivers, wagon shunting, technical check, brake test, administration and train ready message. The selected RUs were then asked to fill in a template (Annex 2) providing with the maximum time needed to arrange the boarder procedures of their trains. From this template an expected duration for the planned process time could be read, this is not the same as the schedule time.

To do a follow up on average scheduled and real time trains of the selected RUs, one specific week was chosen (this aspect is relevant because the general findings from the internal study are affected by the specific week choice). For this phase of the study the OPE WG agreed on week 38 2019, that is from the 16 of September to 22 of September 2019.

1.2. Conditions framework and key parameters

Different sources were used to receive real times. In some cases times from TIS (DB Netz) were used and in others times from national control systems (Bane NOR, Trafikverket, Banedanmark, ÖBB Infra and RFI).

To evaluate the schedule and real times, only trains with the same train number on both sides of the border or linked train numbers were considered.

Only one RU per border was considered;

- Hector Rail (Kornsjø)
- DB Cargo (Malmö godsbangård)



- DB Cargo (Padborg)
- Locomotion (Kufstein, DE)
- Rail Cargo Austria (Kufstein, AT)
- Mercitalia Rail (Brenner)

Different RUs will have different process time.

2. Progression and Success

The result of this preliminary study shows that the process time at all borders within the ScanMed RFC copes the threshold of 120 minutes with large margins.

It should be noted that the adopted reference week was in a period with few interruptions and disturbances. Also the weather conditions during this period were favourable for train traffic. These facts contribute to the positive result.

3. Findings

The following circumstances at each individual border crossing along the Corridor are of relevance when considering the results presented in the table of Annex 1.

At the border between Norway and Sweden all trains run through without any delays due to border crossing. Drivers undertake a dedicated training to drive across the border. Most freight trains passing the border are not ordered within the freight corridor.

At the Sweden - Denmark border there are no train stops, all trains need to have the same train number on both sides of the border. Only customized locomotives can pass the border.

At the Denmark - Germany border there is sometimes a change of drivers but it varies between the different railway companies. Some have to change power system and others have to change braking system.

At the border between Germany and Austria most trains run through, however some change drivers, very much depending on which RU it is. For this border the two largest traffic flows were examined, both the main RUs and data for locomotives.

Between Austria and Italy trains always stop to change drivers, documents and sometimes locomotives. The power systems are different between both countries. Change of the safety system on the locomotives takes about 5 to 10 minutes when they are crossing the border. For these reasons, not present in other border crossing station as explained above, the study shows that this border has the longest process time across the ScanMed RFC.

Summing up, most borders within RFC 3 have a system where trains can pass through without complications.

The border between Austria and Italy has the highest number of trains that cross border within RFC 3.



4. Recommendations

The Operational working group suggests that this study is seen as a brief overview of the process time at the borders within ScanMed RFC, according to the above mentioned conditions framework.

To make a more thorough study it is suggested the adoption of the same source of data.

Intricate use of the TIS system among all Infrastructure Managers would grant access to valuable statistics from a unique system, for further studies and for deeper knowledge of the flow within the whole corridor.

The preliminary study will be shared with the RUs to get comments and to check if further joint steps can be possibly taken.



Annex 1

Table

	Process Time															Average Schedule time week 38 2019	Week 38 Average Real Time week 38 2019		
RU	North/South	Maximum tim	ne that	t trai	ns ne	ed t	o arra	nge	their	bord	er pr	oced	ures	-		_			
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	4	
		Change Loco Wagon Shunting (e.g. huffer wagon)			-	-	-		<u> </u>			<u> </u>	<u> </u>						
Hector Rail	Kamaia	Technical check (with or without ATTI)																0 minutes drive	0 minutes drive
	Kornsjo	Brake test																unougn	unougn
		Administration (paper train orders)																	
		Train ready message/route control	Durati	ion of I	proced	lure: 0													
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	Process Time RU North/South Maximum time that trains need to arrange their border procedures																Average Schedule time week 38 2019	Week 38 Average Real Time week 38 2019	
RU	North/South	Maximum tim	e that	t trai	ns ne	ed t	o arra	nge	their	bord	er pr	oced	ures						
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		
		Change Loco										_						23/22 minutes	All trains left
DB Cargo		Technical check (with or without ATTI)				-												schelduled time,	ahead the
	Malmö	Brake test																arrived/departure	(30'earlier)
		Administration (paper train orders)																Shunting time,	(oo oumor)
	l	Train ready message/route control	D	L				L	L	I	I	1	I	I	L			1	
			Durati	ION OT	JUCED	ure: 2	o minut	es										1	
																			Week 38
		P	Proce	ess	Time	e												Average Schedule time week 38 2019	Average Real Time week 38 2019
RU	North/South	Maximum tim	e that	t trai	ns ne	ed t	o arra	nge	their	bord	er pr	oced	ures					only DB Cargo	Gained*
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	trains with one	only DB Cargo
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DB Cargo		Technical check (with or without ATTI)																	trainnumber are
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		Administration (paper train orders)																	are not
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			Durati	ion of j	proced	lure 2	min											trains running	there isen t many
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RU Rail Cargo Austria RU RU Lokomotion RU RU RU	North/South Process time Kufstein North/South Process time Kufstein North/South Process time Brenner	P Maximum tim from arriaval to (can be parallel) in minutes Change Loco Wagon Shurting (e.g. buffer wagon) Technical check (with or without ATTI) Brake test Administration (paper train orders) Train ready message/route control Maximum tim from arriaval to (can be parallel) in minutes Change Loco Driver Wagon Shurting (e.g. buffer wagon) Technical check (with or without ATTI) Brake test Administration (paper train orders) Train ready message/route control P Maximum tim from arriaval to (can be parallel) in minutes Change Loco Driver Maximum tim from arriaval to (can be parallel) in minutes Change Loco Driver Maximum tim from arriaval to (can be parallel) in minutes Change Loco Driver Maximum tim from arriaval to (can be parallel) in minutes Change Loco Brake test Administration (paper train orders) Technical check (with or without ATTI) Brake test Administration (paper train orders) Technical check (with or without ATTI) Brake test Administration (paper train orders) Technical check (with or without ATTI) France test Change Loco Maximum tim from arriaval to (can be parallel) in minutes Change Loco Technical check (with or without ATTI) Brake test Administration (paper train orders) Technical check (with or without ATTI) Brake test Administration (paper train orders)	Proce Proce Proce Proce Proce Proce Proce Proce Proce	255 t trai 10 000 of 1 000 of 1	Time 20 20 20 20 20 20 20 20 20 20 20 20 20	e eed t 30 uure: 6 eed t 30 uure: 3	o arra	nge 50 es 50 50 s s	their 60 50 50 50 50 50 50 50 50 50 50 50 50 50	borde	er pr 80 er pr 80 er pr 80 er pr	oced	ures 100 100 100 100 100 100	110	120	130	140	Average Schedule time week 38 2019 17 Minutes Source OBB ARAMS (only trains with one trainnumber are counted - train number changes are not considered) Average Schedule time week 38 2019 34 Minutes Source: RNE TIS (Point Oriented Report) Average Schedule time week 38 2019 65 Minutes RFIE TIS (Point Oriented Report) 65 Minutes RFIP IC Web/M42 (only trains with one trainnumber are counted - train number changes	Week 38 Average Real Time week 38 2019 13 Minutes Source ÖBB ARAMS (only trains with one trainnumber are counted - train number changes are not considered) Week 38 Average Real Time week 38 2019 27 Minutes Source: RNE TIS (Point Oriented Report) Week 38 Average Real Time week 38 2019 20 Minutes Source: RNE TIS (Point Oriented Report) Week 38 Average Real Time week 38 2019

Process Time															Average Schedule time week 38 2019	Week 38 Average <mark>Real Time</mark> week 38 2019			
RU	North/South	Maximum tim	e tha	t trai	ns ne	ed to	o arra	nge	their	bord	er pr	oced	ures						
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		
		Change Loco																	
		Wagon Shunting (e.g. buffer wagon)																0 minutes drive	0 minutes drive
Hector Rail	Kornsjo	Technical check (with or without ATTI)																through	through
	_	Administration (paper train orders)			-	-	-												
		Train ready message/route control																	
			Durati	ion of	proced	lure: 0										•			
	Process Time RU North/South Maximum time that trains need to arrange their border procedures																Average Schedule time week 38 2019	Week 38 Average Real Time week 38 2019	
RU	North/South	Maximum tim	e tha	t trai	ns ne	ed to	o arra	nge	their	bord	er pr	oced	ures				-		
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		
		Change Loco																23/22 minutes	All trains left
DR Cargo		Wagon Shunting (e.g. buffer wagon)					-											DB Cargo, schelduled time	ahead the
DB Cargo	Malmö	Riske test																arrived/departure	schedule
		Administration (paper train orders)																Shunting time,	(30 earlier)
		Train ready message/route control																	
			Durati	ion of	proced	lure: 23	3 minut	es									_		
		P	roce	ess	Time	e												Average Schedule time week 38 2019	Week 38 Average Real Time week 38 2019
RU	North/South	Maximum tim	e tha	t trai	ns ne	ed to	o arra	nge	their	bord	er pr	oced	ures				-	20 min.	Gained*
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	trains with one	only DB Cargo
		Change Loco																trainnumber are	trains with one
DB Cargo		Technical check (with or without ATT)																counted - train	trainnumber are
55 ou.go	Padborg	Brake test																are not considered and	counted - train
		Administration (paper train orders)																	are not
		Train ready message/route control																there isen't many	considered and
			Durati	ion of p	proced	lure 28	min											trains running	there isen't many
		Р	roce	ess	Time	e												Average Schedule time week 38 2019	Average Real Time week 38 2019
RU	North/South	Maximum tim	e tha	t trai	ns ne	ed to	arra	nge	heir	bord	er pr	oced	ures						
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	17 Minutes	13 Minutes
		Change Loco																ARAMIS (only	ARAMS (only
Rail Cargo		Wagon Shunting (e.g. buffer wagon)																trains with one	trains with one
Austria	Kufstein	Technical check (with or without ATTI)																trainnumber are	trainnumber are
		Brake test																counted - train	counted - train
		Administration (paper train orders)																number changes	number changes
		Trainfeady message/route control	Durati	ion of I	proced	lure: 60	minut	es			I	L	L			I		considered)	considered)
			Jardu		u														
										1									
		Р	roce	ess	Time	e				-								Average Schedule time week 38 2019	Week 38 Average Real Time week 38 2019
RU	North/South	Maximum tim	e tha	t trai	ns ne	ed to	o arra	nge	their	bord	er pr	oced	ures						
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		
		Change Loco Driver																34 Minutes Source: RNE TIS (Point Oriented Report)	27 Minutes
Lakerster	Kufstein	Wagon Shunting (e.g. buffer wagon)			-	<u> </u>					I	 							Source:
Lokomotion		Lechnical check (with or without ATTI) Brake test					1	-	-										(Point Oriented
		Administration (paper train orders)			1	1	1				1								Report)
		Train ready message/route control			1	1	1				1							1	
			Durati	ion of J	proced	lure: 3	minute	s										1	
		Р	roce	ess	Time	e												Average Schedule time week 38 2019	Week 38 Average Real Time week 38 2019
RU	North/South	Maximum tim	e tha	t trai	ns ne	ed tr	arra	nge	heir	bord	er nr	oced	ures						00 2010
	Process time	from arriaval to (can be parallel) in minutes	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	65 Minutes	40 Minutes
		Change Loco	Ű			- 30	~	30			- 30				.20		. +0	RFIPIC	Source RFI PIC
		Wagon Shunting (e.g. buffer wagon)																trains with one	trains with one
MIR	Brenner	Technical check (with or without ATTI)																trainnumber are	trainnumber are
	Bretiller	Brake test																counted - train	counted - train
		Administration (paper train orders)	 							<u> </u>	<u> </u>							number changes	number changes
·		LIAU LEADY THESSAGE/FOULE CONTROL		1	1				1	1	1	1	1					are not	are not
			Durati	ion of	nroced	ure: u	n to ma	x 40 .	ninutes	s: the la	ast thre		ations	take n	lace in	naralle	2	considered)	considered)

Border Crossing Dwelling Time Report



Annex 2

Template