



European
Commission

Study on the Scandinavian- Mediterranean TEN-T Core Network Corridor

4th Phase

*Project Implementation Report I/2022
due in April 2022*

Final 13 May 2022

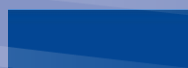


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Abbreviations

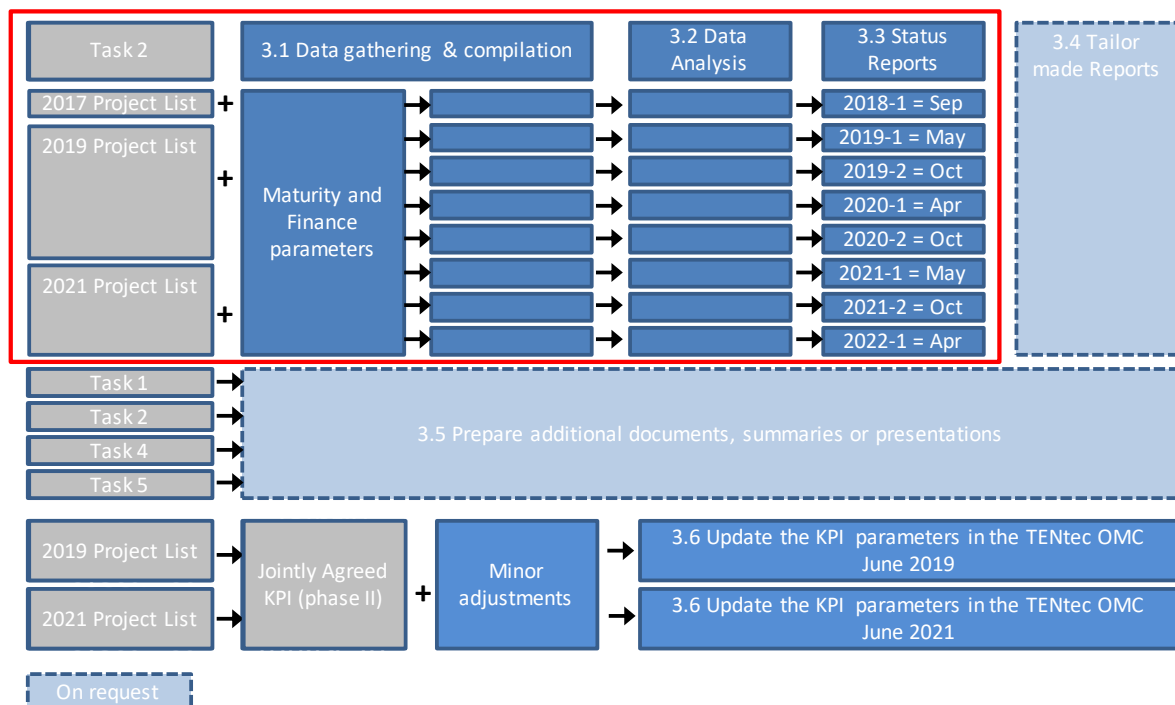
CNC	Core Network Corridor according to Regulation (EU) 2021/1153
DG MOVE	European Commission – Directorate General for Mobility and Transport
EC	European Commission
EIA	Environmental Impact Assessment
ERTMS	European Rail Traffic Management System
EU	European Union
GDP	Gross Domestic Product
IFI	International Financial Institutions
IWW	Inland waterway
km	kilometre
m	metre
mIn	Million
MMTMS	Multimodal Transport Market Study
MoS	Motorway(s) of the Sea
MS	Member States of the European Union
n.a.	not available / not applicable
p.a.	per year / annual
RFC	Rail Freight Corridor
ScanMed	Scandinavian-Mediterranean CNC
SEA	Strategic Environmental Assessment
TEN-T	Trans-European Transport Network
TENtec OMC	European Commission's Information System to coordinate and support the TEN-T Policy (Open Method of Coordination)

1 Introduction & Scope

Task 3 builds on the requirement that biennial updating the entire project list and the Work Plan of the European Coordinators should be accompanied by a more frequent status analysis of the projects, which will allow the Commission and the Coordinator to counteract in case of inconsistencies and delays. Therefore, the implementing stages of projects and their financing shall be **monitored twice a year** throughout the study phases III and IV (June 2018 – May 2022).

The monitoring process will be a matter of Task 3.1, while Task 3.2 will analyse the progress of the projects with respect to the updated data, Task 3.3 finally will compile the results (reporting). Task 3.4 provides input to the Coordinator's missions and Task 3.5 prepares further documents including results from other tasks. Both Task 3.4 and 3.5 are subject to specific request. Additionally, Task 3.6 is foreseen by the Commission to derive the KPIs update based on TENtec OMC and to up-date the TENtec OMC with data from completed projects. The relation of the specific sub-tasks to Task 2, the updating of the entire project list (within Task 2) and the monitoring of progress on maturity and finance within Task 3.1, 3.2 and 3.3 as well as the other three sub-tasks of this Task 3 are visualized in the diagram below.

Figure 1-1: Task 3 - Detailed work programme and interrelations



Source: Consultant's presentation at Kick-off meeting, updated 10/2021

The present report, however, focuses on the **methodology** and presentation of results of the **eighth analysis** on the monitoring of implementation of corridor projects in the framework of Task 3.1, 3.2 and 3.3. It is one of the formal deliverables and due in April 2022. The first report (September 2018) included also considerations and agreement on the methodology, while the second and further reports (every 6 month) are being prepared on the basis of the agreed methodology (chapter 2) and include only the presentation of updated results (chapters 3 to 5). In order to present comparable results across the nine Core Network Corridors, the first Report was used as a template for all.

Starting with the Project Implementation Report 2019-1 DG MOVE has requested to report also on the “**commercial delivery time**” as the outcome of Task 3.5. The respective report is provided in chapter 6.

Since PIR 2021-2, reporting is based on the fully updated project list of 2021 which includes, for the first time, the projects on the “new alignment” of the Core Network Corridors. The “new alignment” is based on the Regulation (EU) 2021/1153 of the European Parliament and of the Council of 7 July 2021 establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014. The implications for the ScanMed corridor are far reaching and have led to the addition of certain new lines and nodes in Denmark and Sweden as well as – to a lesser extent – in Norway, Finland, Germany and Italy. Ongoing or planned projects on those lines were included.

2 Methodology

While Task 2 covers the update of the entire project list (adding/deleting projects and improving the quality of all types of data per project) biennially (by mid 2019 and mid 2021), Task 3.1 focuses on monitoring the implementation of the projects included in the agreed project list (by status of 2017, 2019 and 2021) in the subsequent periods every six months. Monitoring focuses on two sets of criteria:

- project maturity and
- project financing.

The following sections describe how to achieve the monitoring and to present the results in the Implementation Reports respectively.

This chapter was therefore identical in each Corridor specific project implementation report since the 1st Report (1/2018) and will not be updated in the 2nd and following reports.

Since the reports are numbered by each year, to be provided in a certain calendar month and refer to data available at that time we propose the following wording in order to minimize the confusion among ourselves, with the stakeholders and the Commission services:

Project List: The name of the entire Corridor Project list where the following delivery dates for the final project list are foreseen: 2017 (as the result of the 2nd phase), mid 2019 (as the result of the 3rd phase) and mid 2021 (as the result of the 4th phase).

Project Implementation Status Date: The dates to which the data in the respective list refers to: Stakeholders will be asked to report the status for the date before the Reporting Date; Ideally it is the same date that is indicated in the "reference time" column; If the dates are different, we assume that the data refers to the Project Implementation Status Date in order to e.g. distinguish completed from ongoing/planned projects;

Reporting Date: The calendar month at the end of which the respective report is due to be delivered according to the new time plan of June 2018;

Implementation Report Number: The number of the Report according to the Terms of Reference.

Figure 2-1: Overview of Reporting Dates and Reporting Numbers

Task 2	Task 3		
Project List	Project Implementation Status by	Reporting date end of	Report Number PIR ...
2017 provided in mid-2017	30.06.2017	09/2018	2018-1
2019 provided in mid-2019	31.12.2018	05/2019	2019-1
	30.06.2019	10/2019	2019-2
	31.12.2019	04/2020	2020-1

Task 2	Task 3		
Project List	Project Implementation Status by	Reporting date end of	Report Number PIR ...
	30.06.2020	10/2020	2020-2
2021 provided in May 2021	31.12.2020	05/2021	2021-1
	30.06.2021	10/2021	2021-2
	31.12.2021	04/2022	2022-1

Source: *KombiConsult/HaCon proposal for the Implementation Report 01/2018, updated 04/2022*

3 Monitoring of Project Maturity

The following chapter presents the results of the monitoring of the project maturity where two kinds of parameters are relevant:

- The number of projects by completion time cluster, and
- Other project maturity parameters

These results are always based on

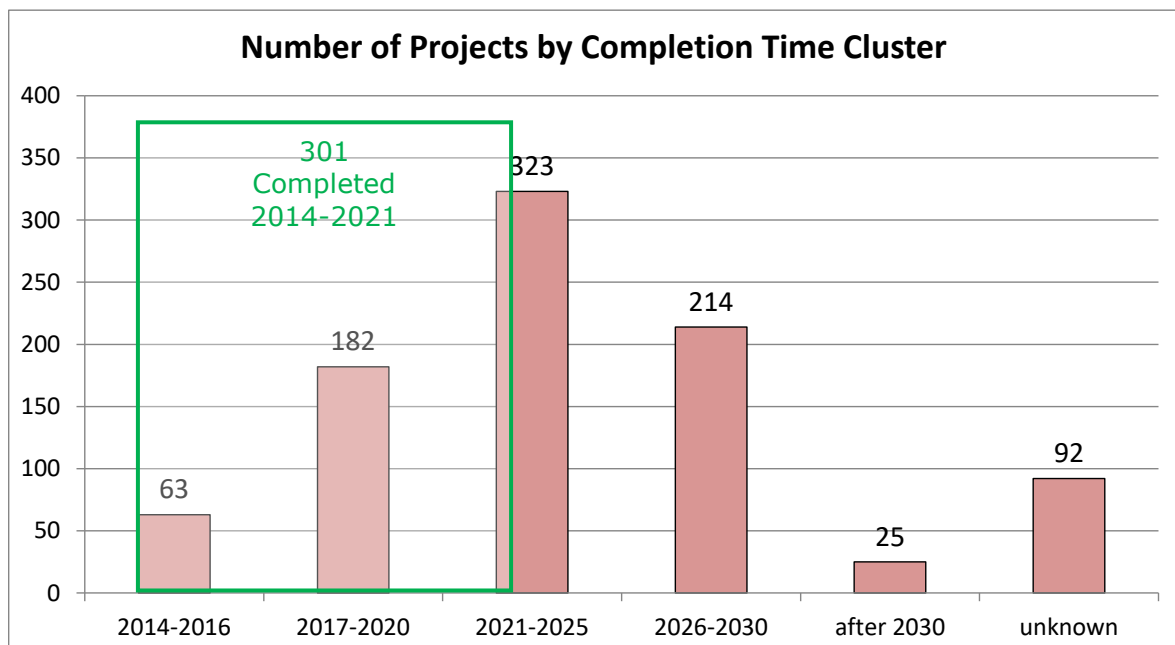
- preceding project list data, which are fixed after the respective reporting has been done, and
- latest project list data, in this case making use of the Project List of April 2022.

3.1 Completion Time Cluster

The most important “maturity” parameter is project completion.

The following figure visualizes the number of projects by envisaged completion time cluster.

Figure 3-1: Number of Projects by Completion Time Cluster (Reporting Date 04/2022)



Source: KombiConsult analysis based on Project List 04/2022 of CNC ScanMed

The April 2022 project list includes 899 projects that are currently relevant for the ScanMed corridor. These are four projects less than the 903 projects contained in the last Report. Taking into account that ScanMed relevant projects were added to the project list, this means that more than four projects may have been deactivated, either as the projects are not relevant anymore, the projects were not realised, or other reasons. 301 projects of the 899 projects have already been completed since the adoption of the TEN-T Guidelines in 2013 (cut-off date end of December 2021). These are 45 projects more than in the last report with cut-off date end of June 2021. The 301

completed projects are composed of 63 projects completed in the 2014-2016 time cluster, 182 projects completed in the 2017-2020 time cluster, and 56 projects in the 2021-2025 time cluster. Further 267 projects are to be completed by 2025 and 214 by 2030, the target date of the Regulation. However, 25 projects are said to be completed only after that target year and for 92 projects the completion end date is even “unknown”. This missing information is partially due to the current uncertainty about the completion time, e.g. projects that are in the planning stage, and partially due to not existing data. Nevertheless, with 782 projects (about 87%), the majority of the projects is expected to be completed by 2030, and it is assumed that the vast majority of projects with “unknown” status will also be completed by 2030.

Figure 3-2: Evolution of Maturity criteria “expected completion time” since the first Implementation Report

Report N°	1/2018	1/2019	2/2019	1/2020	2/2020	1/2021	2/2021	1/2022
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022
Project Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021
2014-2016	74	68	67	67	66	63	63	63
2017-2020	233	249	247	232	225	187	183	182
2021-2025	109	185	192	210	211	327	327	323
2026-2030	88	147	150	154	165	210	210	214
after 2030	11	17	22	23	24	20	22	25
unknown	151	156	139	135	115	107	98	92
Total	666	822	817	821	806	914	903	899
Thereof completed*	74	143	166	199	205	250	256	301

n1 = additional/obsolete projects according to project list updates

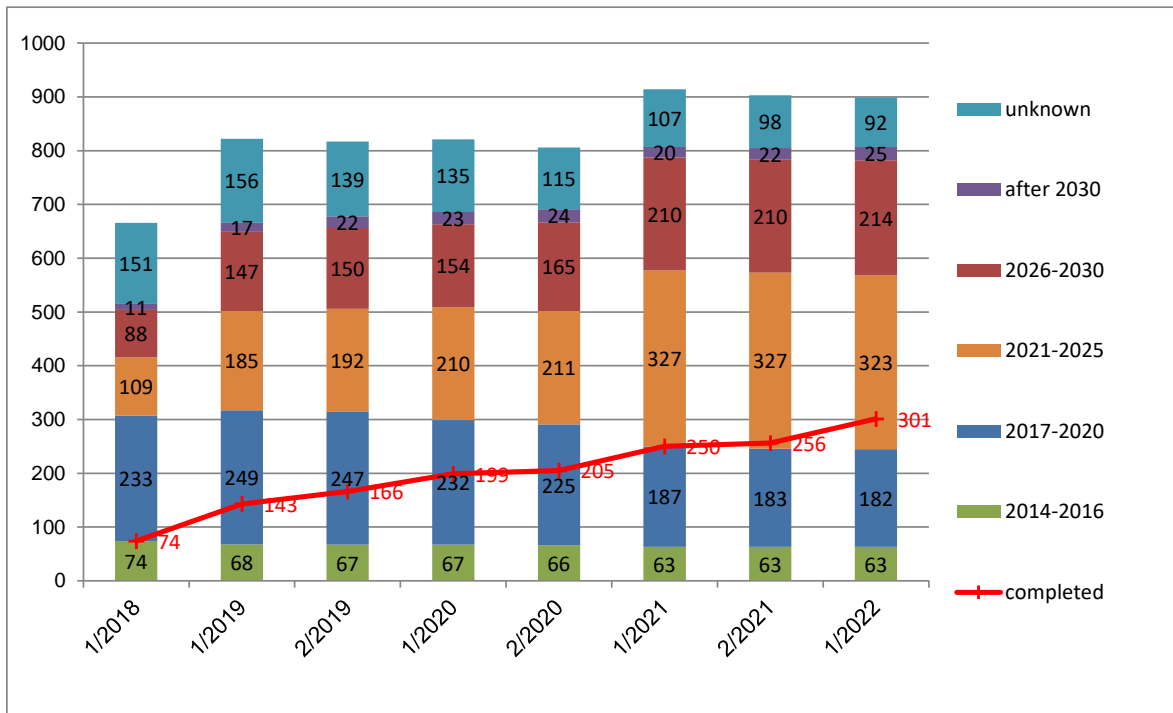
nx = completed projects according to respective project status

** = completed projects until “Project Status”, presently 12/2021*

Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

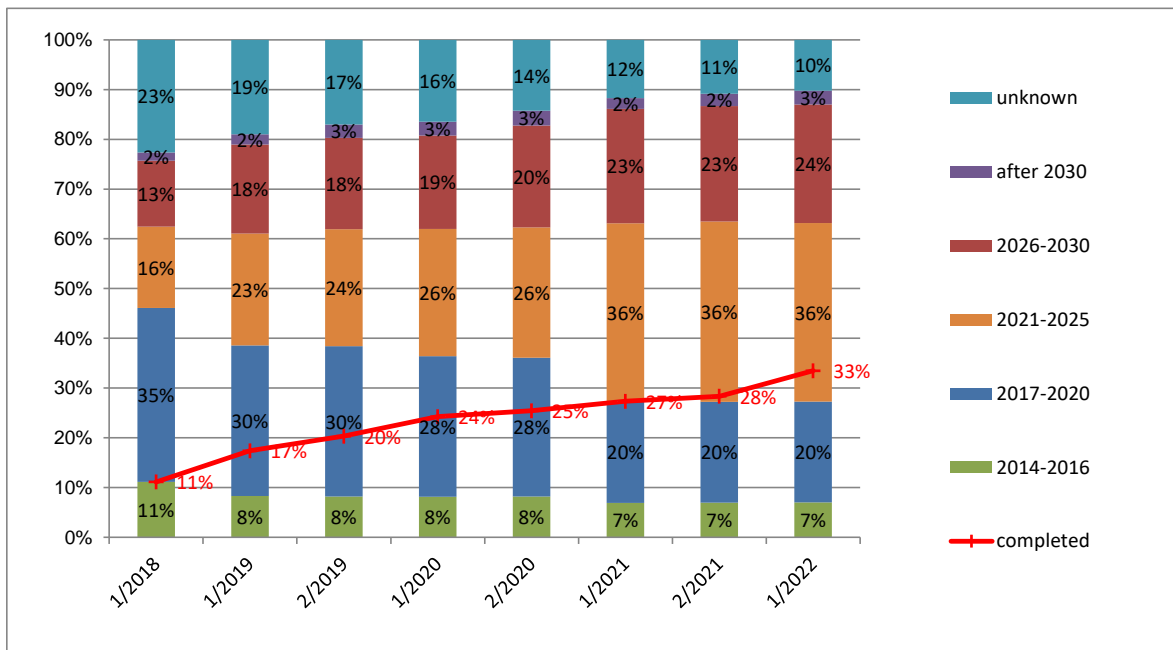
Actually, only the update of the Project List shall lead to a modification of the number of projects and their allocation to the completion time clusters. As mentioned before, it showed that even when “only” an updating of the maturity criteria was requested, this led to a modification in the number of projects and their allocation to the time-clusters. Also, projects that were marked “completed” in a previous list were re-assessed by the stakeholders and marked ongoing so that also the number of projects completed in the “past” period 2014-2016 was changed. For a better understanding and graphical visualisation, two graphical outputs are needed: the absolute figures showing the quantity of projects, and the standardized figure (showing the relative share cumulating to 100%). Figure 3-3 and Figure 3-4 provide for such graphical presentation, filled with the current data available from the respective project lists.

Figure 3-3: Evolution of Maturity criteria “expected completion time” since the first Implementation Report (N° of projects)



Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

Figure 3-4: Evolution of Maturity criteria “expected completion time” since the first Implementation Report (Share of projects)



Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

All three ways of presentation (see Figure 3-2, Figure 3-3, Figure 3-4) allow for monitoring and tracing the maturity criterion bi-annually. In terms of numbers and starting with the first Project Implementation Report 1/2018, the main results of the current status of evaluation can be pointed out, as follows:

- Since the first Project Implementation Report, 233 ScanMed relevant projects have been added to the Project List. Considering that projects were deactivated meanwhile, this number might be higher. The number of projects relevant for the ScanMed corridor thus increased from 666 projects in the first Project Implementation Report up to 899 projects in the current Project Implementation Report;
- Since the first Project Implementation Report (project status 11/2017), further 227 projects were completed (project status 12/2021). The number of completed projects thus increased from 74 (11% share) to 301 projects (33% share), meaning about one third of the envisaged projects;
- The number of projects for which the completion time is unknown, decreased by 59 projects from 151 to 92, despite the fact that at least 233 projects were added to the project list meanwhile;
- The number of projects, for which the completion time is beyond 2030, increased from 11 to 25 projects;
- Projects with late (2026-2030, after 2030) finalisation particularly refer to transport mode Rail + Rail ERTMS with 99 projects in these time clusters, followed by Road (59) and Maritime (44);
- Most projects where the finalisation is unknown are of the same categories with 21 Rail + Rail ERTMS projects, followed by 18 Maritime projects and 15 Road projects;
- Of the 301 projects that are completed so far, most projects refer to project category Road (67), followed by Rail + Rail ERTMS (58), Maritime (56), MoS and Airport (40 each) and Multimodal (25).

3.2 Detailed Project Maturity Parameters

A more detailed analysis of the maturity parameters of the present Project List structure required a harmonisation of the values and their application in a stricter sense than before.

The following tables therefore present the current filling of the ScanMed Project List of 04/2022, based on the (re-)harmonisation process of the entries, which was done in the course of the first Implementation Report 09/2018. The harmonized values are the following:

Figure 3-5: Maturity Parameters' original explanation, and harmonized values

Parameter (PL columns BP-BT)	Original Explanation	Values harmonized
Reference time for information	MM/YYYY	
Planning stage / pre-feasibility studies / Strategic Environmental Assessment (SEA)	Not started In Progress Concluded	Not necessary Not started In Progress Concluded
Preliminary project analysis/ Feasibility studies	Not started In Progress Concluded	Not necessary Not started In Progress Concluded
Environmental Impact Assessment (EIA) / Detailed Design / Detailed Implementation Plan / Administrative Permits and Licences	Not started In Progress Concluded	Not necessary Not started In Progress Concluded
Construction/ implementation (% of completion)*	Calculated	

Source: *KombiConsult analysis based on 04/2022 project list structure and filling of ScanMed corridor*

*) The parameter "Construction/implementation (% of completion)" is a calculated value of the status between "planned start" and "end date", and does not help to determine the implementing status level so that it is not used for the Project Implementing Report(s).

Figure 3-6: Administrative implementation Parameters' original explanation, existing values and proposal for harmonization of values

Parameter PL columns BU-CB	Original Explanation	Values harmonized
Project start date	MM/YYYY	MM/YYYY
Project end date	MM/YYYY	MM/YYYY
Implementation strategy	Free text	Free text
Land acquisition	Completed Not Completed	Not necessary Not Completed Completed
Environmental Impact Assessment (EIA)	EIA under preparation or updating EIA completed EIA approved	EIA not necessary EIA not started EIA under preparation or updating EIA completed EIA approved
Final project approval by relevant governmental & administrative authorities	not submitted yet submitted, decision pending approved	Not necessary not submitted yet submitted, decision pending approved
CBA	Performed Not performed	Not necessary In Progress Performed
State existing bilateral or multilateral agreements and any other administrative implementation issue.	Free text	Free text

Source: *KombiConsult analysis based on 04/2022 project list structure and filling of ScanMed corridor*

After the **harmonisation** of respective values has been done and further entries are made with certain "discipline", "Pivot"-analyses" can be applied to the respective columns so that the columns of the table below corresponding to the respective reporting periods can be completed. The figures of the current reporting will be "frozen" for each subsequent Implementation Report where only the most recent analysis is added by new "Pivot"-analyses applied on the updated project list parameters.

The analysis on the seven Maturity Parameters is done in such a way that by each reporting time

- A. the total number of projects is provided (as a reference for orientation);
- B. the number of ongoing or planned projects is provided (clear marking of MM/YYYY which distinguished "completed" projects);
- C. for each parameter the number of projects for which that parameter is „not necessary“, "not clear" or has not been filled is counted;
- D. and consequently the number of "relevant" ongoing or planned projects can be deduced ($B - C = D$);
- E. for the relevant projects only the „highest" value class, e.g. "completed", "concluded", "approved" is counted;
- F. and finally the Ratio $E / D * 100$ can be calculated to demonstrate the maturity status per parameter.

Figure 3-7: Status for Maturity Parameters of CNC ScanMed (N° of Projects)

Report N°		1/2018	1/2019	2/2019	1/2020	2/2020	1/2021	2/2021	1/2022
Reporting Date		09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022
Parameter \ List Status	Highest value #	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021
Total number of projects		666	822	817	821	806	914	903	899
...thereof completed*		74	143	166	199	205	250	256	1196
...thereof ongoing or planned		592	679	651	622	601	664	647	-297
Planning Stage	Relevant	270	322	319	303	305	368	369	347
	Concluded	189	199	197	190	191	235	243	226
Feasibility Stage	Relevant	292	358	351	340	341	421	420	391
	Concluded	172	232	227	226	228	276	283	270
Detailed Design, ...	Relevant	270	312	316	303	307	359	372	353
	Concluded	111	108	109	100	101	108	108	97
Land Acquisition	Relevant	147	194	199	195	193	228	226	217
	Completed	79	79	81	78	81	80	76	67
EIA	Relevant	207	262	267	256	253	284	290	281
	Approved	92	98	101	93	97	102	101	95
CBA	Relevant	254	270	275	271	266	298	306	278
	Performed	176	194	191	191	187	220	223	202
Final Approval	Relevant	242	311	317	309	306	374	376	351
	Performed	127	163	167	168	174	213	205	183

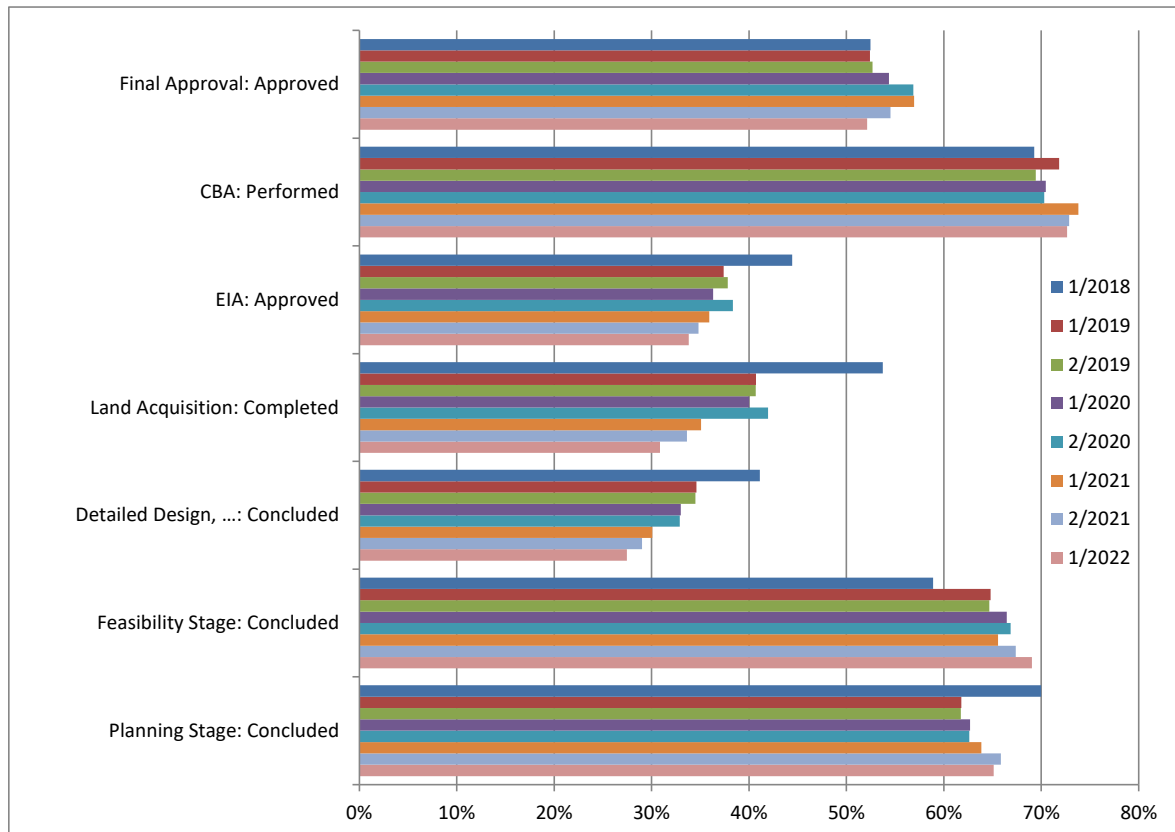
n1 = additional/obsolete projects according to project list updates

** = completed projects until "Project Status", presently 12/2021*

Source: KombiConsult analysis based on 04/2022 project list structure

As mentioned above, from the 899 projects included in the 2022 list, 301 (~33%) were already completed by end of December 2021. Thus, 598 are still ongoing or planned. Furthermore, the list presents the number of projects that are relevant for certain parameters and the number of those relevant projects for which the “highest” maturity category is reached by the reporting time.

Figure 3-8: Status and evolution of Maturity Parameters (Share of Projects with Highest Maturity by Parameter)



Source: KombiConsult analysis based on 04/2022 project list structure

Of the ongoing / planned projects, as can be seen in Figure 3-8, the maturity of each parameter from the 2022 project list differs from ~27% (Detailed Design: 97 of 353 concluded) to ~73% (CBA: 202 of 280 performed). 69% of projects conclude the feasibility stage (270 of 391 concluded) and 65% of projects (226 of 347) concluded the “planning stage”, this means that about two third of the relevant projects where this analysis could be made has already reached these phases. The “final approval” with 52% was acquired for almost half of the relevant projects (183 of 351). The other parameters are fulfilled with 34% (EIA: 95 of 281 approved) and 31% (Land Acquisition: 67 of 217 completed).

We assume that with every update of the project list the quality most likely improves substantially, as the stakeholders have to check the pre-filled maturity levels instead of leaving fields empty.

4 Monitoring of Project Finance

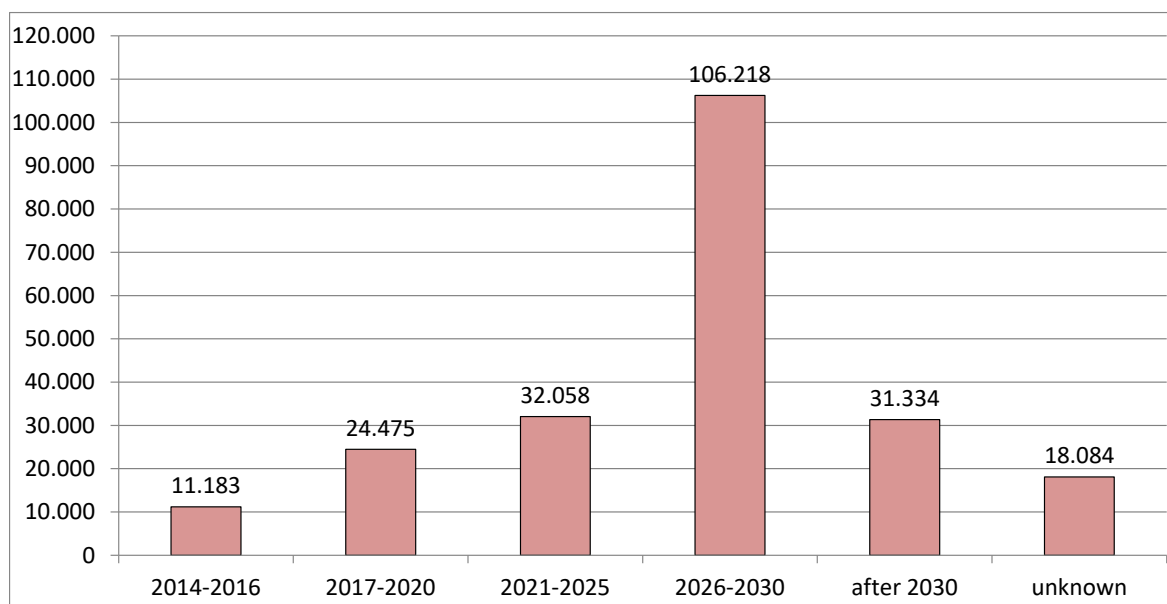
The following chapter presents the results of the monitoring of the project financial status, based on the April 2022 project list, where two groups of parameters are relevant:

- The total costs by completion time cluster and
- Other project finance parameters

4.1 Completion Time Cluster

The most important “financing” parameter is the total project costs. Figure 4-1 visualizes the allocation of total costs by the envisaged completion time cluster.

Figure 4-1: Total Cost (in Million €) by Completion Time Cluster



Source: KombiConsult analysis based on Project List 04/2022 for CNC ScanMed

Based on the April 2022 project list, for 753 out of the 899 ScanMed relevant projects the project costs are officially known. These 753 projects sum up to a total of about €223,4bn envisaged project costs, with an average of ~€297m per project. As can be seen in Figure 4-1, most of the project costs are foreseen for projects to be finalised in the timeframe between 2026-2030. The costs of all projects completed and envisaged to be finalised until 2030, the target date of the Regulation, cumulate to a total of €173,9bn. Nevertheless, a relatively high amount of about €31,3bn (~14% of all project costs) are foreseen for a small number of projects, in fact 15, to be finalised only after 2030. For 61 projects with completion date “unknown” the cumulated costs are ~€18,1bn.

However, project specific costs show a large variety, reaching from about €50.000 (category “Maritime”) up to €11,2bn (category “Rail”: New HS/HC line Battipaglia-Reggio Calabria) per project. As concerns the cost allocation per category, the biggest share by far with about 61% of all project costs are allocated to the category Rail + Rail ERMTS, followed by Road with about 19%, Maritime with about 7% and Airport with

about 6%. The other categories Innovation, Multimodal and Motorway of the Seas projects have a much lower share with about 7% of the total costs altogether.

Figure 4-2: Evolution of Total Cost (in Million €) by completion time cluster since the first Implementation Report

Report N°	1/2018	1/2019	2/2019	1/2020	2/2020	1/2021	2/2021	1/2022
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022
List Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021
2014 - 2016	13.962	12.559	13.873	13.872	13.829	13.743	13.743	11.183
2017 - 2020	32.003	25.817	25.480	23.492	23.281	20.997	20.985	24.475
2021 - 2025	36.398	27.461	29.053	34.902	35.290	38.872	37.028	32.058
2026 - 2030	57.415	85.014	80.720	88.838	88.676	94.534	100.805	106.218
after 2030	41.238	42.680	42.890	47.183	51.066	20.004	26.030	31.334
unknown	21.420	26.510	27.991	23.637	19.628	18.995	18.694	18.084
Total	202.436	220.041	220.007	231.924	231.771	207.145	217.286	223.351
thereof completed*	13.962	28.579	31.734	33.046	33.112	34.725	34.852	39.736

n1 = additional/obsolete projects according to project list updates

nx = completed projects according to respective project status

** = completed projects until "Project Status", presently 12/2021*

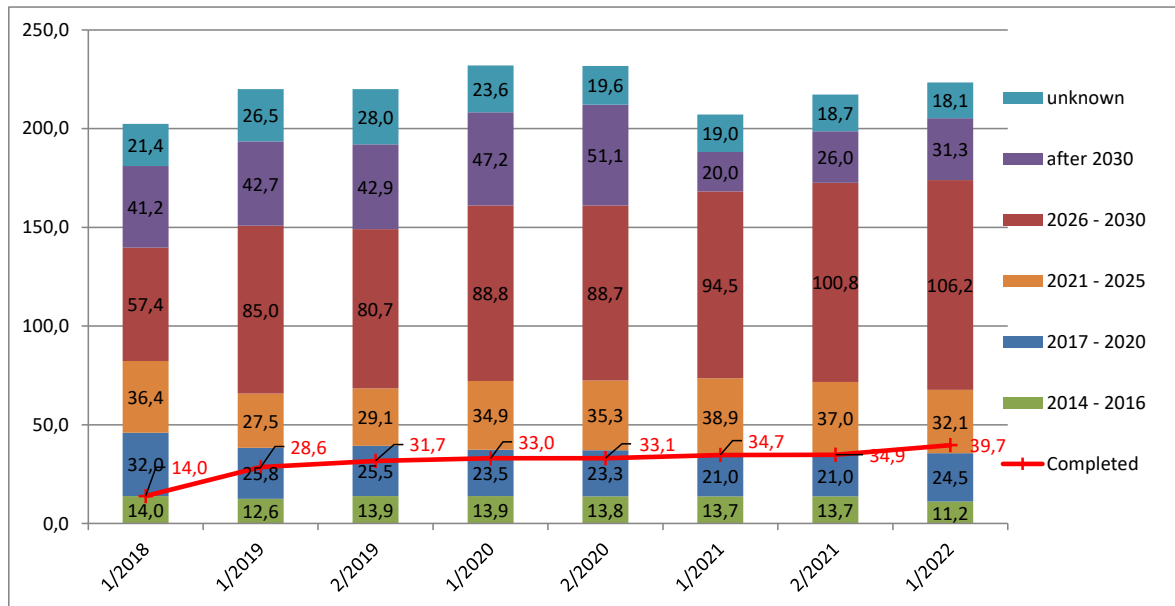
Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

As it was done for the number of projects (see chapter 3), the overview for the project cost allocation by completion time clusters has changed after updating the project list (see Figure 4-2 for reference). For this reason, the graphical visualisation for the absolute costs (see Figure 4-3) and share of costs (see Figure 4-4) is based on the different project list data so far.

Compared with the last project list, which showed a total cost of about €207bn, the recent list includes projects worth €217bn. A deeper analysis of the project list before and after the last narrow project list update in terms of official costs showed the following main differences:

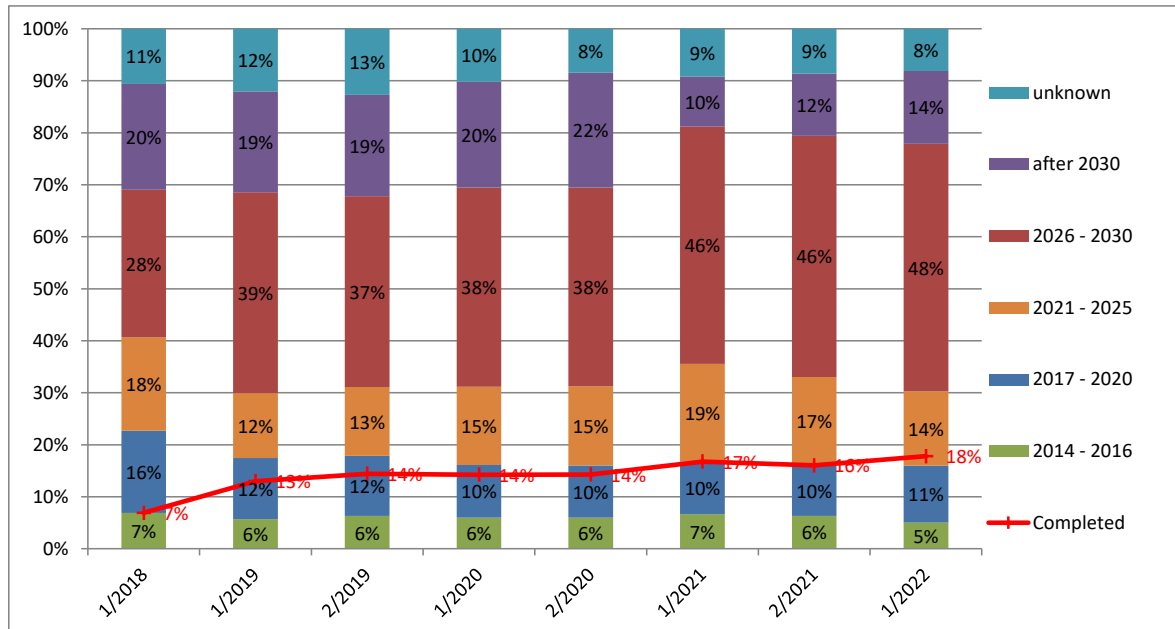
- Two new projects have been added with a total of €0,04bn official costs
- Six projects were deactivated with a total of €0,7bn official costs
- For 35 projects, official costs have been reduced by €1,3bn
- For 46 projects, official costs have been increased by €6,7bn
- For five projects, official costs have been added with €1,8bn (before "unknown")
- For four projects, official costs have been removed with €0,5bn (now "unknown")

Figure 4-3: Evolution of Total Cost (in Billion €) by completion time cluster since the first Implementation Report



Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

Figure 4-4: Evolution of Share of Total Cost (in percentage) by completion time cluster since the first Implementation Report



Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

All three ways of presentation (see Figure 4-2, Figure 4-3, Figure 4-4) allow for monitoring and tracing the project financial status criterion bi-annually. Starting with the Project Implementation Report 1/2018, the main results of the current status of evaluation are pointed out, as follows:

- Since the first Project Implementation Report, costs of completed projects more than doubled from about €14,0bn to currently €39,7bn, increasing its share from 7% to 18%;
- The project costs for timeframes 2014–2016, 2017–2020, 2021–2025 and “after 2030” decreased and only the project costs for “2026 – 2030” increased, which indicates a general delay in project completion;
- The project costs allocated to projects of which the completion time is not known further decreased from €21,4bn to €18,1bn since the first Project Implementation Report. Though the amount decreased considerably from an all-time high of about €28,0bn in the report 2019-2, it is still a high amount for projects where it is not known when they will be finished;
- As most projects with late (2026-2030, after 2030) finalisation particularly refer to transport mode Rail + Rail ERTMS (99 projects), they also represent by far the biggest cost share with €89,2bn, followed by Road (€23,1bn), Maritime (€8,7bn), Airport (7,7bn), and Multimodal (€7,3bn);
- Most costs allocated to projects where the project finalisation is unknown are also Rail + Rail ERTMS (€11,1bn), followed by Road (€2,1bn) and Maritime (€1,1bn)
- Of the 301 projects that are completed so far, most project costs refer to project category Rail + Rail ERTMS with €20,1bn, followed by Road (€11,0bn), Airport (€2,6bn), Maritime (€2,4bn) and MoS (€1,5bn).

4.2 Other Project Finance Parameters

A more detailed analysis of the finance parameters of the present Project List structure required also a harmonisation of the values and their application in a stricter sense than before the first Implementation Report in 2018.

The following tables therefore present the filling of the ScanMed Project List of April 2022, based on the (re-)harmonisation process of the entries which was done during the first Implementation Report 09/2018 and following lists. The harmonized values are of following:

Figure 4-5: Finance Parameters' original explanation and harmonized of values

	Source of costs / financing information	Original Explanation	Values Harmonized
	Total costs in Million Euro	Million Euro	Million Euro
	Explanation of project costs	Free Text	Free text
	Project with potential revenues	x	Yes No Unknown
	Explanation on potential revenues	Free text	Free text
	Expenditures until reference time of information	Million Euro	Million Euro
Funding source "State"	Amount in Million Euro	Million Euro	Million Euro
	Funding programme name	Free text	Free text
	Indicate potential or approved funding	Potential Approved	Potential Approved
Funding source "Regional /Local"	Amount in Million Euro	Million Euro	Million Euro
	Funding programme name	Free text	Free text
	Indicate potential or approved funding	Potential Approved	Potential Approved
Funding source "EU"	Amount in Million Euro	Million Euro	Million Euro
	Funding programme name e.g. TEN-T funding, ERDF, CEF,...	TEN-T CEF	CEF / TEN-T ESIF (ERDF, CF,...) Other Unknown
	Indicate potential or approved funding	Potential Approved	<u>Potential</u> Approved
Funding source "IFI"	Amount in Million Euro	Million Euro	Million Euro
	Funding programme name	Free Text	Free Text
	Indicate potential or approved funding	Potential Approved	Potential Approved
Funding source "Private"	Amount in Million Euro	Million Euro	Million Euro
	Funding programme name	Free Text	Free Text
	Indicate potential or approved funding	Potential Approved	Potential Approved
Funding source "Other"	Amount in Million Euro	Million Euro	Million Euro
	Funding programme name	Free Text	Free Text
	Indicate potential or approved funding	Potential Approved	Potential Approved

Source: KombiConsult analysis based on 04/2022 Project List structure and filling of ScanMed corridor

Another important financial information is the **source of finance** with the clear aim to demonstrate progress by reduction of the number of projects where the financing source is “open” (i.e. without or unknown financing). The figures aggregated in Figure 4-6 do not differentiate the status of the financing whether it is approved, potential or open.

Further progress can be demonstrated by presenting the evolution of the value (in monetary terms) of completed projects.

Figure 4-6: Status for Project Financing Source in Million €

Report N°	1/2018	1/2019	2/2019	1/2020	2/2020	1/2021	2/2021	1/2022
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022
List Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021
State	91.124	115.731	122.558	129.917	129.708	140.030	147.374	152.411
Regional/Local	3.271	7.529	9.006	8.060	8.236	8.538	8.450	8.500
EU	6.599	10.526	10.696	11.001	10.994	11.458	13.707	14.556
IFI	9	446	431	774	774	774	429	429
Private	1.551	9.544	9.702	9.862	9.358	12.108	13.009	13.264
Other	8.574	10.045	9.847	9.847	9.866	10.788	13.665	13.673
Open	91.308	66.219	57.768	62.464	62.836	23.449	20.652	20.517
Total Cost	202.435	220.041	220.007	231.924	231.771	207.145	217.286	223.351
thereof completed*	13.962	28.579	29.851	33.046	33.112	34.725	34.852	39.736

n1 = additional/obsolete projects according to project list updates

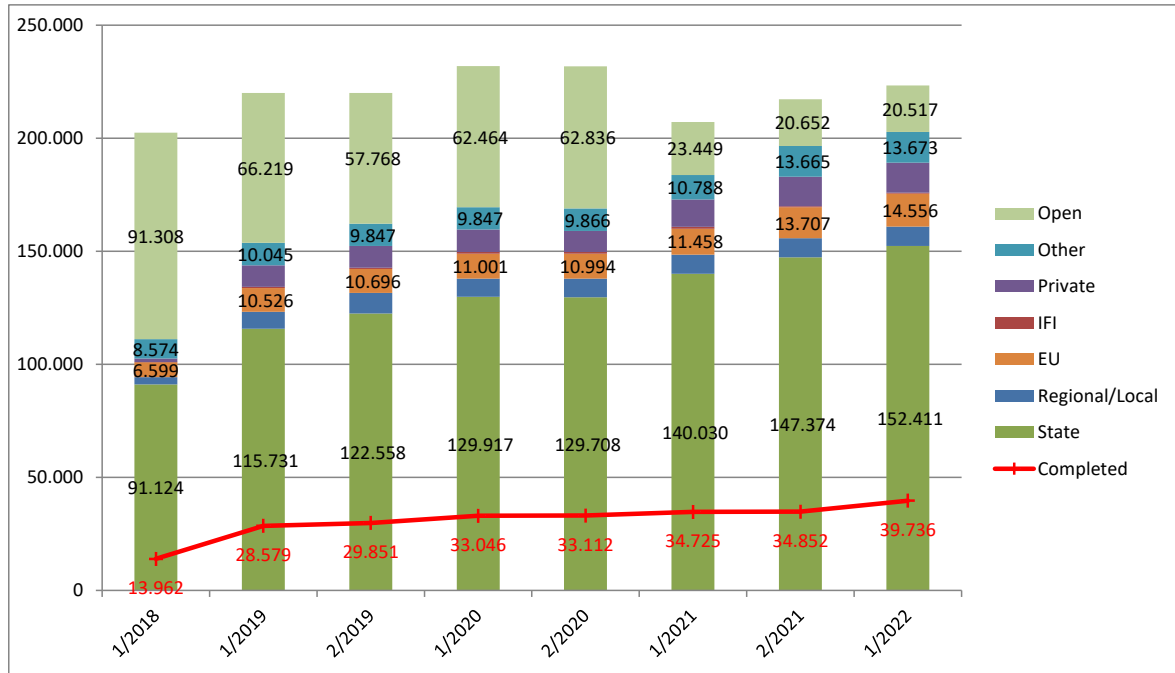
nx = completed projects according to respective project status

** = completed projects until “Project Status”, presently 12/2021*

Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

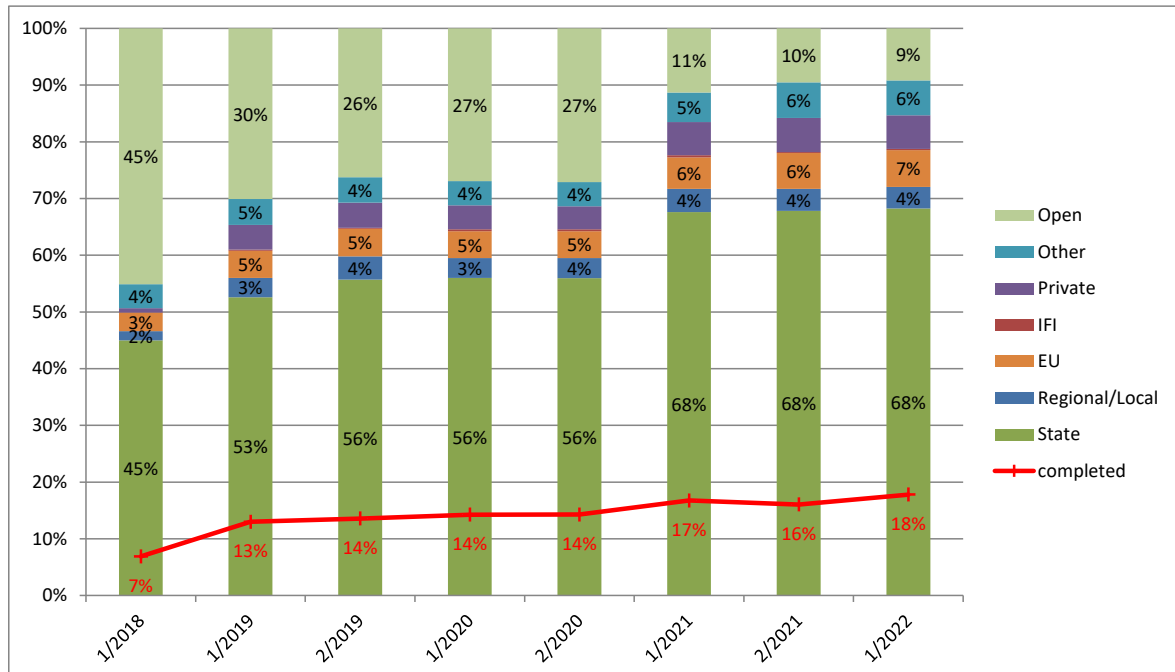
As can be seen, with the increase in the number of projects, the total amount also increased from about €202,4bn in the first Project Implementation Report to about €223,4bn in the current Report. As mentioned above, figures for total costs were given for 752 out of 899 ScanMed projects. By far most of the project cost financing is envisaged to be covered by the States with about 68% of all project costs. The rest of the financing contribution that is allocated of only about 23% is shared between all other sources, such as EU or regional financing, that thus play a smaller role. Though the amount of total project costs increased, the costs where financing is “open” could be reduced significantly from 45% (PIR 1/2018) to 10% currently. Figure 4-7 and Figure 4-8 show these shares in absolute and relative figures for the April 2022 project list status.

Figure 4-7: Evolution of Project Financing Source in Million €



Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

Figure 4-8: Evolution of Project Financing Source (Share of Source) and value of completed projects in Million €



Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

It has to be considered that these compilations aggregate "approved" and "potential" financing. The following analysis will therefore distinguish between these two levels of commitment.

Like in the analysis of the maturity parameters, this is done in such a way that by each reporting time

- A. the total cost of projects is provided (as a reference for orientation);
- B. the total costs of ongoing or planned projects is provided (clear marking of MM/YYYY which distinguished "completed" projects) = "relevant costs";
- C. for each financing source the total value of finance figure provided for that parameter is provided as a reference;
- D. for each financing source the total value of "approved" finance is cumulated;
- E. and finally the Ratio $D / C * 100$ can be calculated to demonstrate the financial status per financial source.

The application of this procedure to the ScanMed corridor projects reveals approval rates as displayed in Figure 4-9 and Figure 4-10.

For the April 2022 project list, there are 598 ScanMed relevant ongoing and planned projects. For 477 of these 598 projects, the official project costs are known, showing total costs of ~€183,6bn. Out of these costs, about €168,5bn have an indicated financing source and about €141,0bn of these "relevant" costs are covered by "approved" funding, as stated by the Member States or other stakeholders presenting the respective category. This means that at least 77% of the costs that are officially known are currently covered by reliable funding commitments. In turn, 23% of the envisaged projects costs are either not financed yet, their financing has not been approved yet, or information about financing has not been provided at all.

Figure 4-9: Status of approved finance by source of CNC ScanMed in Million €

Report N°	1/2018	1/2019	2/2019	1/2020	2/2020	1/2021	2/2021	1/2022
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022
List Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021
Total project costs	202.435	220.041	220.007	231.924	231.771	207.145	217.286	223.351
...thereof completed*	13.962	28.579	31.734	33.046	33.112	34.725	34.852	39.736
...thereof ongoing or planned	188.473	191.463	188.273	198.878	198.659	172.420	182.433	183.615
State relevant costs	92.496	98.218	102.245	106.849	107.541	117.384	124.640	127.459
thereof financing approved	92%	87%	86%	83%	67%	87%	87%	87%
"Regional/Local" provided costs	4.624	5.928	7.379	5.796	5.988	6.625	6.540	6.168
thereof financing approved	62%	53%	41%	46%	40%	53%	53%	51%
"EU" provided costs	7.241	9.162	9.133	9.208	9.036	9.241	11.465	11.953
thereof financing approved	84%	72%	71%	71%	54%	69%	75%	72%
"IFI" provided costs	515	443	428	771	771	726	383	362
thereof financing approved	2%	1%	5%	47%	47%	50%	5%	0%
"Private" provided costs	2.644	9.058	9.145	9.186	8.587	10.176	11.157	9.640
thereof financing approved	52%	74%	77%	76%	79%	81%	74%	72%
"Other" relevant costs	9.932	9.645	9.435	9.390	9.396	10.285	13.085	12.883
thereof financing approved	86%	86%	88%	88%	88%	86%	88%	89%
"Open" relevant costs	71.019	59.008	50.509	57.679	57.340	17.983	15.163	15.150
thereof financing approved	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

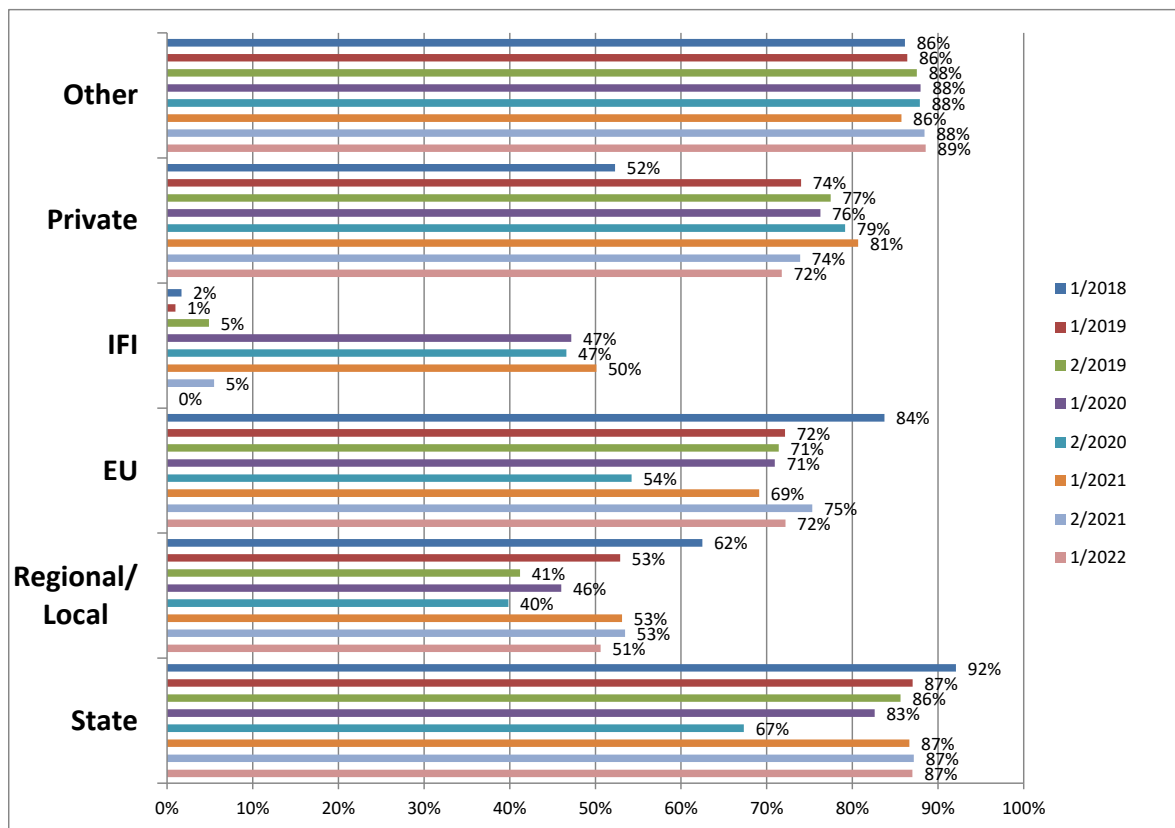
n1/n2 = additional/obsolete projects according to project list updates

** = completed projects until "Project Status", presently 12/2021*

Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

The table above presents the costs of all ongoing and planned projects where the costs were provided per financing source and for which the “highest” category “approved” of the financing is reached by the reporting time. “Other” (89%) and “State” (87%) financing sources already show very high approval rates, followed by “EU” and “Private” (72% each). “Regional/local” (51%) financing sources are approved with about half of the envisaged costs, and “IFI” with no financing at all this time. Aside from this, the approval rates for the other sources remained more or less the same compared with the last report.

Figure 4-10: Status and Evolution of Approved Finance by Source in %



Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

In comparison with the first Implementation Report, the evolution shows the following:

- In particular for “Other” financing sources the approval rates do not show a big change, it shows a very consistent development only varying between 86% and 89%;
- Also, for the “Private” sector the approval rate, after it increased significantly from 52% to over 74% in the second Implementation Report, stayed more or less at this level with now 72% in the current Report.
- While for “IFI” the approval rate stayed very low with under 5% for the first three Implementation Reports, it could be increased up to about 47% in the fourth Report and stayed at this level until it fell again down to 5% in the last report. The increase of “IFI” finance was due to the explicit request to include also those type of project finance but the high share of approval should not be

misinterpreted since the absolute "IFI" finance recorded in the list was small. For the current report it even fell to 0%, as no costs were stated to be financed this way.

- As concerns the public financing, for "EU", "Regional / Local" and "State", the approval rates fell almost constantly until the fifth report and then increased again in the sixth report. The main reason of the increase may be the latest updates which included new CEF financed projects and new and updated projects as feedback from the Member States and Regions. Since then, they all stayed at their higher level.

5 Monitoring of Difficulties

This chapter provides results on the monitoring of difficulties jeopardizing completion of the Corridor and requesting EU Coordinator's action.

Based on the methodology provided in chapter 2, Corridor Forum Members were asked to state any difficulty in the implementation of a specific project by answering the following question:

"Does this project show any difficulties, which jeopardize the completion of the Corridor by 2030? Please describe the nature of the difficulties and explain why they jeopardize the completion of the Corridor. Please indicate, if and what kind of support you may need from the European Coordinator".

The individual texts received from the stakeholders were analysed and presented. Since the nature of "difficulties" may be manifold and project specific we will not be able to cluster them ex-ante but only after their receipt (ex-post), if at all.

As an outcome of the analysis of the "comments" column in the May 2021 Project list, it was reported that four projects show difficulties which may jeopardize the completion of the Corridor by 2030, as follows:

Figure 5-1: Projects with stated implementation difficulties

TEN-T Project ID	Project promoter: Project name	Project category	KPI(s) achieved	Project end date	Total costs (official) m€	Total project financing approved (yes/no)
5182	Jernbanedirektoratet (Norwegian Railway Directorate): Construction of 57km of double-track railway along with capacity improvements in 4 railway stations.	Rail	<ul style="list-style-type: none"> - ERTMS implementation - Line speed \geq 100 km/h - KPI: Axle load \geq 22.5 tonnes - Train length \geq 740m - Elimination of current or potential future capacity bottleneck - Removal of single-track section 	unknown	unknown	no
5386	Galleria di Base del Brennero: Brenner Basistunnel BBT SE: Brenner base tunnel (BBT)	Rail	<ul style="list-style-type: none"> - Electrification - Track gauge 1435 mm - Structure gauge - Intermodal gauge - ERTMS implementation - Line speed \geq 100 km/h (Core freight lines) - Axle load \geq 22.5 tonnes (Core freight lines) - Train length \geq 740m (Core freight lines) - Elimination of current or potential 	03/2032	7.715	Yes

TEN-T Project ID	Project promoter: Project name	Project category	KPI(s) achieved	Project end date	Total costs (official) m€	Total project financing approved (yes/no)
			future capacity bottleneck - Elimination of strong incline			
5650	Jernbanedirektoratet (Norwegian Railway Directorate): Implementation of ERTMS system	Rail ERTMS	ERTMS implementation	12/2034	1.146	Yes
5786	Rostock LNG GmbH: Construction and operation of a medium-scale multimodal LNG terminal in the seaport of Rostock	Maritime	Availability of Clean Fuels	07/2024	96,8	Yes

Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

Project ID 5182: Construction of 57km of double-track railway along with capacity improvements in 4 railway stations

The aim of the project is the planning and construction of 57km of double-track railway along with capacity improvements in 4 railway stations in Norway. Construction works should be finished for Råde - Fredrikstad by 2029, Fredrikstad - Sarpsborg by 2032 and Sarpsborg - Halden by 2034.

During planning of section Haug – Seut – Sarpsborg, significantly increased costs have been revealed for further development of the Østfold line. Taking the increased cost estimates into account, it is not realistic to build continuous double tracks throughout the entire InterCity connection over the next 12 years. The government wants to continue investing in an optimized InterCity concept seeking the best possible improvements within the economic frame of the National Transport Plan 2022-2033. However, an intervention from the Coordinator was not requested.

Project ID 5386: Galleria di Base del Brennero - Brenner Basistunnel BBT SE

Cross-border railway tunnel between Innsbruck (Austria) and Fortezza (Italy). The Brenner Base Tunnel is the centrepiece of the railway upgrade from Munich to Verona on the Scandinavian-Mediterranean Corridor. It will enable heavier and longer trains to operate on the line. The 55 km cross-border Alpine tunnel (64 km including the Innsbruck bypass) will remove a major bottleneck for both freight and passenger transit between Austria and Italy.

Late project end (after 2030): According to the current work programme, approved in April 2021, the date of entry into service is March 2032. The European Commission and the European Coordinator of the ScanMed Corridor are informed. Thus, further intervention from the Coordinator was not requested.

Project ID 5650: Jernbanedirektoratet (Norwegian Railway Directorate): Implementation of ERTMS system

National Signal Plan 2020: Oslo S-Halden-Swedish border will be equipped with ERTMS in phases from 2025 to 2034. Some parts will be realized as part of infrastructure projects under construction or reconstruction of railway lines. However, an intervention from the Coordinator was not requested.

Project ID 5786: Rostock LNG GmbH: Construction and operation of a medium-scale multimodal LNG terminal in the seaport of Rostock

The applicant Rostock LNG GmbH is going to construct and operate a medium-scale multimodal LNG terminal in the seaport of Rostock. The LNG import and multimodal supply concept is unique in Europe and very well located in the Southern Baltic Sea region, yet a peer region for LNG ship operation. By functionality, the LNG terminal focusses on LNG supply of the transport industry, on customers of the innovative and environmentally sound tanker fleets, on ferry lines and on LNG cruise operations. In size, the Rostock terminal project tops existing bunker stations by far, which facilitates reliable and long-term viable operations as well as LNG supply of the German hinterland. Difficulties arose due to outstanding agreement between ROSTOCK LNG GmbH and other stakeholders in close vicinity of the planned terminal. However, an intervention from the Coordinator was not requested.

Figure 5-2: Projects with end date "unknown" or "after 2030" and at least one "KPI achieved"

TEN-T Project ID	Project promoter: Project name	Project category	KPI(s) achieved	Project end date	Total costs (official) M€	Total project financing approved (yes/no)
Norway						
5182	Jernbanedirektoratet (Norwegian Railway Directorate): Construction of 57km of double-track railway along with capacity improvements in 4 railway stations.	Rail	-ERTMS implementation -Line speed \geq 100km/h -Axle load \geq 22.5t -Train length \geq 740m - Elimination of current or potential future capacity bottleneck -Removal of single track section	unknown	un-known	n.a.
5650	Jernbanedirektoratet (Norwegian Railway Directorate): Implementation of ERTMS system	Rail ERTMS	-ERTMS implementation	12/2034	1.146	yes
Finland						
5438	Additional (2nd) track Luumäki-Vainikkala	Rail	- Electrification - Line speed \geq 100 km/h (Core freight lines) - Axle load \geq 22.5 tonnes (Core freight lines)	unknown	un-known	n.a.

TEN-T Project ID	Project promoter: Project name	Project category	KPI(s) achieved	Project end date	Total costs (official) M€	Total project financing approved (yes/no)
			- Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck			
5439	Finnish Transport Agency: Improvement of the section Espoo - Karjaa	Rail	-Axle load \geq 22.5t -Train length \geq 740m - Elimination of current or potential future capacity bottleneck	unknown	un-known	n.a.
Sweden						
5174	Swedish Transport Administration: Göteborg-Landvetter-Borås Airport connection	Rail	-Track gauge -Structure gauge -Intermodal gauge -Connection to rail - Elimination of current or potential future capacity bottleneck	unknown	3.486	no
5407	Swedish Transport Administration: Hallsberg - Åsbro (Etap/Phase 3)	Rail	-Line speed \geq 100km/h -Train length \geq 740m - Elimination of current or potential future capacity bottleneck -Removal of single track section	unknown	344	no
50033	Swedish Transport Administration: Norrbotniabanan Däva-Skellefteå, new railway	Rail	-ERTMS implementation -Line speed \geq 100 km/h -Axle load \geq 22.5 tonnes -Train length \geq 740m - Elimination of current or potential future capacity bottleneck	12/2032	1.178	yes
50096	Swedish Transport Administration: Ostkustbanan, Gävle-Kringlan, capacity enhancement, new double track	Rail	-ERTMS implementation -Line speed \geq 100 km/h -Axle load \geq 22.5 tonnes -Train length \geq 740m - Elimination of current or potential future capacity bottleneck -Removal of single track section	unknown	522	yes
Germany						
5044	DB Netz, DUSS: Upgrade of terminal Hamburg-Billwerder - Construction of 4th module	Multimodal	- Capability of handling intermodal units - 740m train terminal accessibility - Electrified train terminal accessibility	12/2034	un-known	no

TEN-T Project ID	Project promoter: Project name	Project category	KPI(s) achieved	Project end date	Total costs (official) M€	Total project financing approved (yes/no)
5058	DB Netz, DUSS: Upgrade of terminal München-Riem - Planning of 2 modules at a new location and construction 1st module	Multimodal	- Capability of handling intermodal units - 740m train terminal accessibility - Electrified train terminal accessibility	12/2031	unknown	no
5061	DB Netz, DUSS: Upgrade of terminal München-Riem - Construction 2nd module (new location)	Multimodal	- Capability of handling intermodal units - 740m train terminal accessibility - Electrified train terminal accessibility	unknown	unknown	no
5757	BMVI (DB Netz): NBS/ABS Hamburg-Hannover, ABS Langwedel - Uelzen, Rotenburg - Verden - Minden / Wunstorf, Bremerhaven - Bremen - Langwedel (Optimised Alpha E)	Rail	-Electrification -Track gauge -ERTMS implementation -Line speed >= 100km/h -Axle load >= 22,5t -Train length >= 740m - Elimination of current or potential future capacity bottleneck	> 2030	3.891	yes
Italy						
5968	RFI: Southern access line to Brenner; Lotto/lot 2-4: Bolzano/Bozen; Trento/Trient; Pescantina - Verona	Rail	-Electrification -Track gauge -Structure gauge -Intermodal gauge -ERTMS implementation -Line speed >= 100km/h -Axle load >= 22.5t -Train length >= 740m - Elimination of current or potential future capacity bottleneck	08/2035	3.404	no*
Multiple countries						
5386	Galleria di Base del Brennero - Brenner Basistunnel BBT SE : Brenner base tunnel (BBT)	Rail	-Electrification -Track gauge -Structure gauge -Intermodal gauge -ERTMS implementation -Line speed >= 100km/h -Axle load >= 22,5t -Train length >= 740m - Elimination of current or potential future capacity bottleneck - Elimination of strong incline	03/2032	7.715	yes

Source: KombiConsult analysis based on 04/2022 Project List of CNC ScanMed

* Parts of the Project are included in the Italian Recovery and Resilience Plan 2021

6 Additional Indicator “commercial delivery time”

A new indicator introduced by DG MOVE into the TEN-T corridor analysis is the “commercial delivery time” which basically measures the punctuality of certain rail services along the corridor.

The methodology is described in a separate document and it requires to present the evolution of the indicator over time in the framework of this report.

For the intermodal rail service B between a Baltic Sea Port and a freight hub in Northern Italy which focuses on general cargo the respective times and punctuality figures were obtained in order to be monitored over a period of time.

The number of trains increased from 433 (both directions) in the first half of 2018 to 641 in the first six month of 2021 (+43%) while the number declined to 599 trains in the last period. The Commission’s threshold of 20 services per month could be outreached in every reporting period.

Figure 6-1: ScanMed Service B - Time Table Data 2018 and 2019 as well punctuality for reporting periods

Year	2018				2019			
	North-South		South-North		North-South		South-North	
Month	1-6	7-12	1-6	7-12	1-6	7-12	1-6	7-12
Departure time	09:20	09:20	02:57	02:57	10:52	10:52	02:57	02:57
Pick-up time	12:00	12:00	03:30	03:30	12:00	12:00	03:30	03:30
Journey Time hh:mm	26:40	26:40	24:33	24:33	25:08	25:08	24:33	24:33
Average speed Km/h	≈ 48	≈ 48	≈ 52	≈ 52	≈51	≈51	≈ 52	≈ 52
Punctuality (< 60 Min delay)	48%	44%	65%	62%	50%	64%	64%	81%
N° of services > 20/month	219 Yes	209 Yes	214 Yes	206 yes	229 yes	221 yes	230 yes	222 yes

Source: KombiConsult analysis based on recent service agreement of freight forwarders

Figure 6-2: ScanMed Service B - Time Table Data 2020 and 2021 as well punctuality for reporting periods

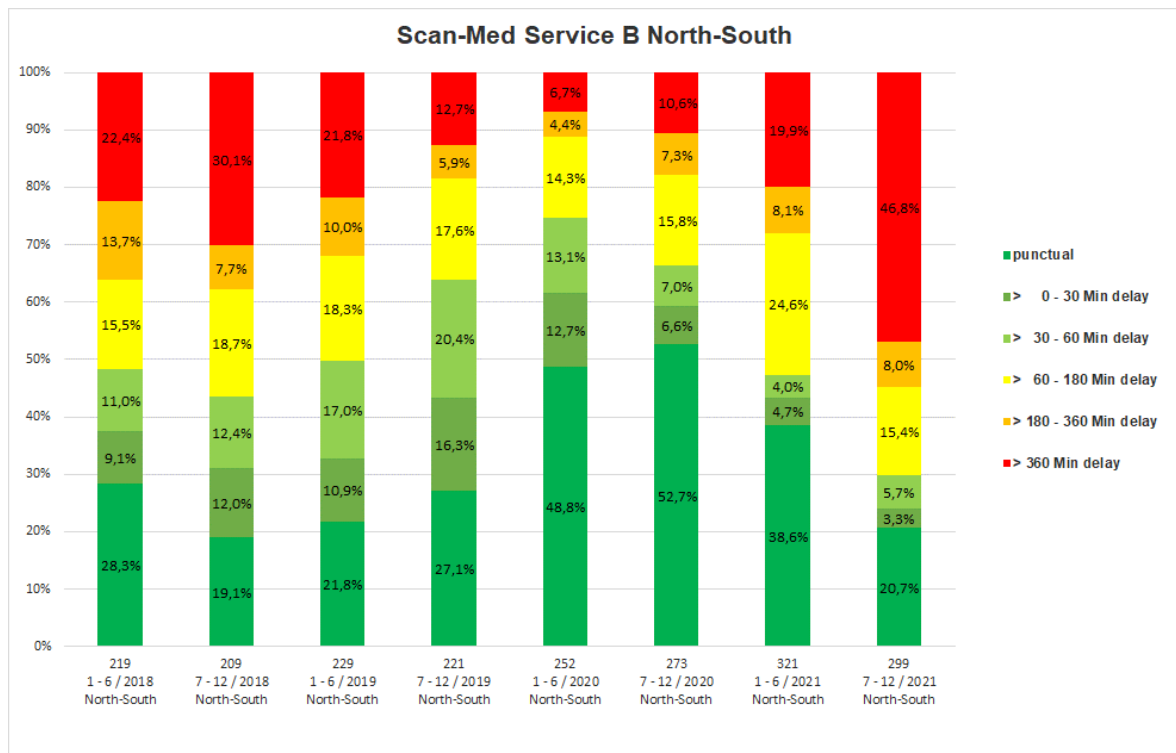
Year	2020				2021			
Direction	North-South		South-North		North-South		South-North	
Month	1-6	7-12	1-6	7-12	1-6	7-12	1-6	7-12
Departure time	09:20	09:20	02:57	02:57	08:05	08:05	20:30	20:00
Pick-up time	12:00	12:00	03:30	03:30	13:30	13:30	02:40	02:00
Journey Time hh:mm	26:40	26:40	24:33	24:33	29:25	29:25	30:10	30:00
Average speed Km/h	≈ 48	≈ 48	≈ 52	≈ 52	≈ 44	≈ 44	≈ 43	≈ 43
Punctuality (< 60 Min delay)	75%	66%	75%	73%	47%	29%	63%	34%
N° of services > 20/month	252 Yes	273 Yes	254 Yes	280 yes	321 yes	299 yes	320 yes	300 yes

Source: KombiConsult analysis based on recent service agreement of freight forwarders

The evolution of punctuality is displayed in the following diagrams.

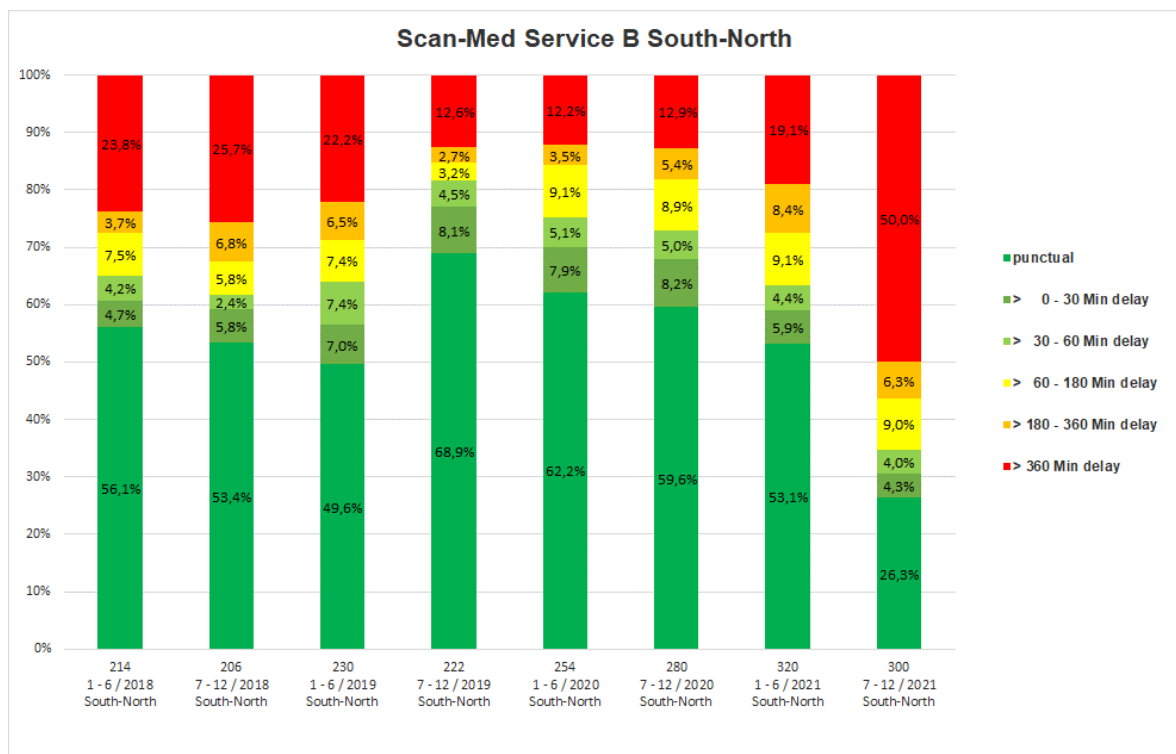
Punctuality of the south-north trains was usually better than the opposite direction despite the last period. Both directions showed a positive development until the 4th reporting period (2020), whereas the quality declined after that. For the north-south trains the punctuality - if a delay of one hour is accepted - decreased from 48% to 30% with a high of 75% in the first half of 2020, and for the opposite direction it decreased from 65% to 35%, despite a high of 81% in the second half of 2019.

Figure 6-3: ScanMed Service B Direction North-South Evolution of Punctuality 1-12/2018 and 1-12/2021



Source: KombiConsult analysis 04/2022

Figure 6-4: ScanMed Service B Direction South-North Evolution of Punctuality 1-12/2018 and 1-12/2021



Source: KombiConsult analysis 04/2022