



European
Commission

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

4th Phase

Project Implementation Report I/2023

Final 09 June 2023

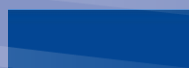


Table of content

Table of content	2
Disclaimer	3
Abbreviations.....	4
1 Introduction & Scope.....	5
2 Methodology	7
3 Monitoring of Project Maturity	9
3.1 Completion Time Cluster	9
3.2 Detailed Project Maturity Parameters.....	12
4 Monitoring of Project Finance.....	17
4.1 Completion Time Cluster	17
4.2 Other Project Finance Parameters.....	21
5 Monitoring of Difficulties	27
6 Additional Indicator “commercial delivery time”.....	38

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Abbreviations

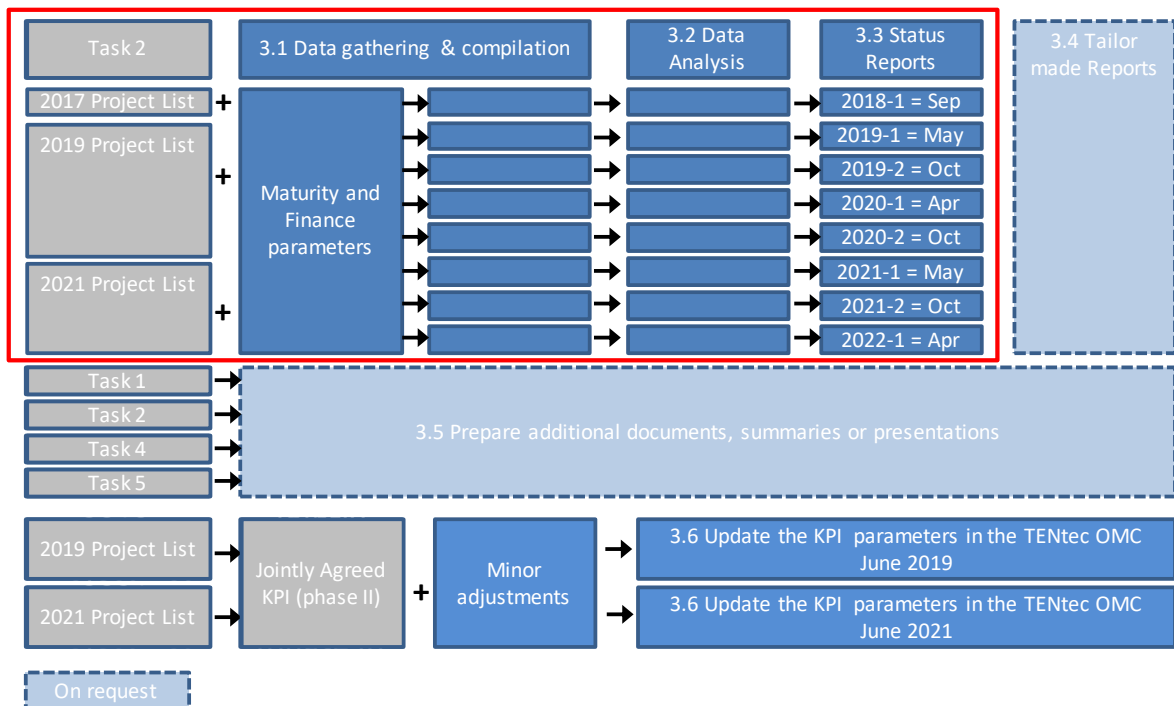
CNC	Core Network Corridor according to Regulation (EU) 2021/1153
DG MOVE	European Commission – Directorate General for Mobility and Transport
EC	European Commission
EIA	Environmental Impact Assessment
ERTMS	European Rail Traffic Management System
EU	European Union
GDP	Gross Domestic Product
IFI	International Financial Institutions
IWW	Inland waterway
km	kilometre
m	metre
mln	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), and one additional time in May 2023 in the framework of prolongation of phase IV.

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 **ninth 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 of the prolongation and due in May 2023. 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, and now 2022) 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
	31.12.2022	05/2023	2023-1

Source: *KombiConsult/HaCon proposal for the Implementation Report 01/2018, updated 05/2023*

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

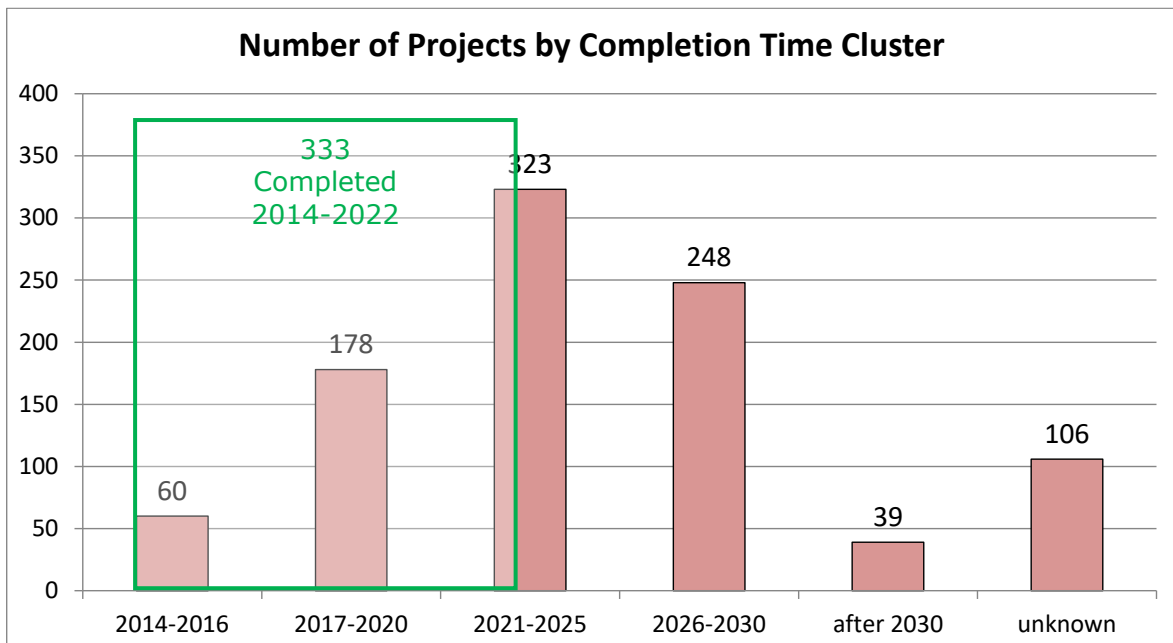
- preceding project list data, which are fixed after the respective reporting has been done, and
- latest project list data, in this case making use of the Project List of April 2023.

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 05/2023)



Source: KombiConsult analysis based on Project List 04/2023 of CNC ScanMed

The April 2023 project list includes 954 projects that are currently relevant for the ScanMed corridor. These are 55 projects more than the 899 projects contained in the last Report. Taking into account that 65 ScanMed relevant projects were added to the project list, this means that ten projects were deactivated, either as the projects are not relevant anymore, the projects were not realised, or other reasons. 333 projects of the 954 projects have already been completed since the adoption of the TEN-T Guidelines in 2013 (cut-off date end of December 2022). These are 32 projects more than in the last report with cut-off date end of December 2021. The 333 completed

projects are composed of 60 projects completed in the 2014-2016 time cluster, 178 projects completed in the 2017-2020 time cluster, and 95 projects in the 2021-2025 time cluster. Further 228 projects are to be completed by 2025 and 248 by 2030, the target date of the Regulation. However, 39 projects are said to be completed only after that target year and for 106 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 809 projects (about 85%), 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	1/2023
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022	04/2023
Project Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021	12/2022
2014-2016	74	68	67	67	66	63	63	63	60
2017-2020	233	249	247	232	225	187	183	182	178
2021-2025	109	185	192	210	211	327	327	323	323
2026-2030	88	147	150	154	165	210	210	214	248
after 2030	11	17	22	23	24	20	22	25	39
unknown	151	156	139	135	115	107	98	92	106
Total	666	822	817	821	806	914	903	899	954
Thereof completed*	74	143	166	199	205	250	256	301	333

n1 = additional/obsolete projects according to project list updates

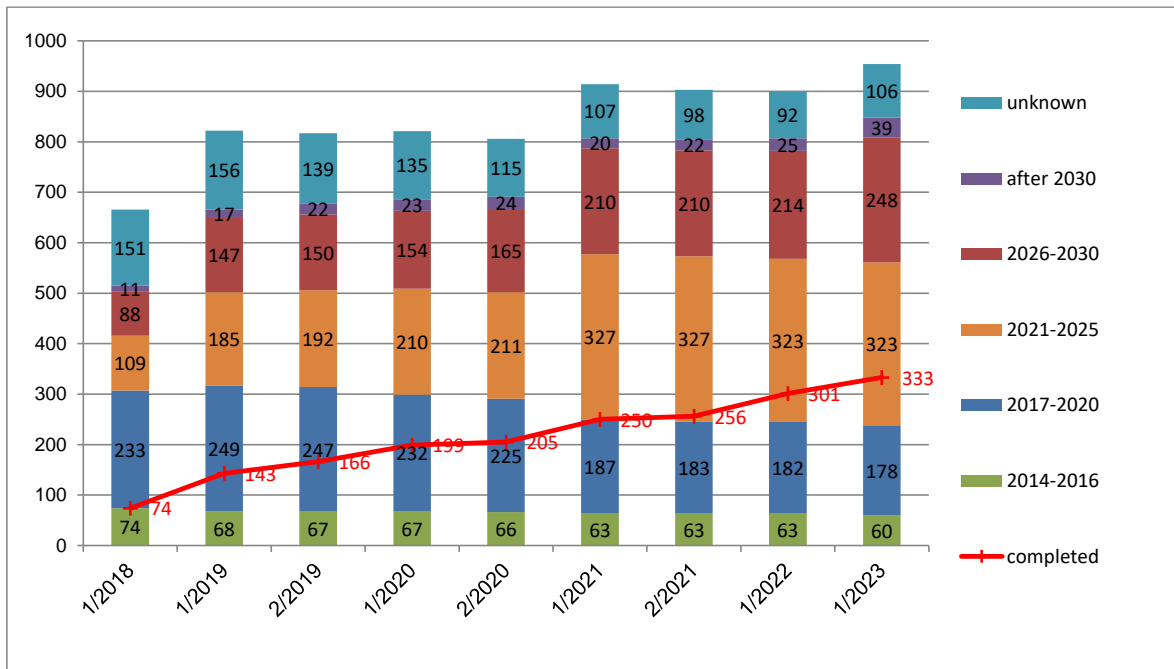
nx = completed projects according to respective project status

** = completed projects until “Project Status”, presently 12/2022*

Source: KombiConsult analysis based on 04/2023 Project List of CNC ScanMed

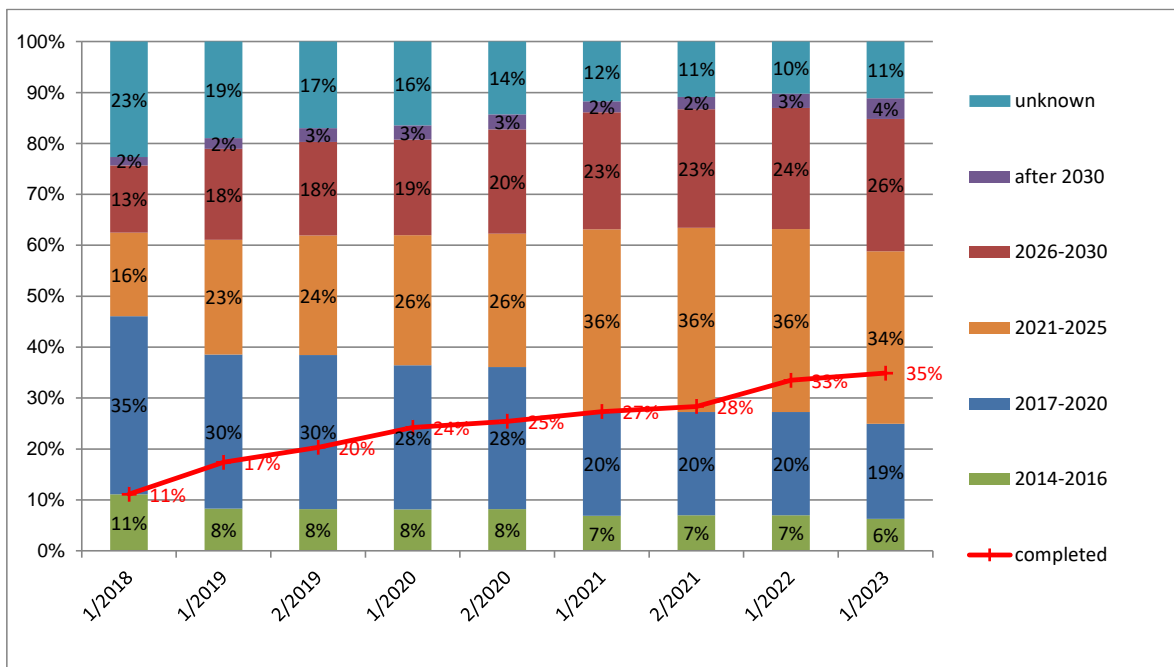
Actually, only the update of the Project List shall lead to a modification of the number of projects and their allocation to the completion time clusters. As mentioned before, it showed that even when “only” an updating of the maturity criteria was requested, this led to a modification in the number 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” periods 2014-2016 and 2017-2020 were 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 04/2023 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 04/2023 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 (between 2028 and 2022), and only annually (between 2022 and 2023). 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, 288 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 954 projects in the current Project Implementation Report;
- Since the first Project Implementation Report (project status 11/2017), further 259 projects were completed (project status 12/2022). The number of completed projects thus increased from 74 (11% share) to 333 projects (35% share), meaning about one third of the envisaged projects are completed now;
- The number of projects for which the completion time is unknown, decreased by 45 projects from 151 to 106, despite the fact that at least 288 projects were added to the project list meanwhile;
- The number of projects, for which the completion time is beyond 2030, increased from 11 to 39 projects;
- Projects with late (2026-2030, after 2030) finalisation particularly refer to transport mode Rail + Rail ERTMS with 143 projects in these time clusters, followed by Maritime (59) and Road (47);
- Most projects where the finalisation is unknown are of the same categories with 29 Rail + Rail ERTMS projects, followed by 22 Road projects and 18 Maritime projects;
- Of the 333 projects that are completed so far, most projects refer to project category Road (82), followed by Maritime (63), Rail + Rail ERTMS (61), Airport (41), MoS (40), and Multimodal (29).

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 04/2023, 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 04/2023 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 04/2023 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	1/2023
Reporting Date		09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022	04/2023
Parameter \ List Status	Highest value #	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021	12/2022
Total number of projects		666	822	817	821	806	914	903	899	954
...thereof completed*		74	143	166	199	205	250	256	301	333
...thereof ongoing or planned		592	679	651	622	601	664	647	598	621
Planning Stage	Relevant	270	322	319	303	305	368	369	347	399
	Concluded	189	199	197	190	191	235	243	226	235
Feasibility Stage	Relevant	292	358	351	340	341	421	420	391	454
	Concluded	172	232	227	226	228	276	283	270	284
Detailed Design, ...	Relevant	270	312	316	303	307	359	372	353	407
	Concluded	111	108	109	100	101	108	108	97	104
Land Acquisition	Relevant	147	194	199	195	193	228	226	217	211
	Completed	79	79	81	78	81	80	76	67	74
EIA	Relevant	207	262	267	256	253	284	290	281	281
	Approved	92	98	101	93	97	102	101	95	104
CBA	Relevant	254	270	275	271	266	298	306	278	286
	Performed	176	194	191	191	187	220	223	202	219
Final Approval	Relevant	242	311	317	309	306	374	376	351	399
	Performed	127	163	167	168	174	213	205	183	238

n1 = additional/obsolete projects according to project list updates

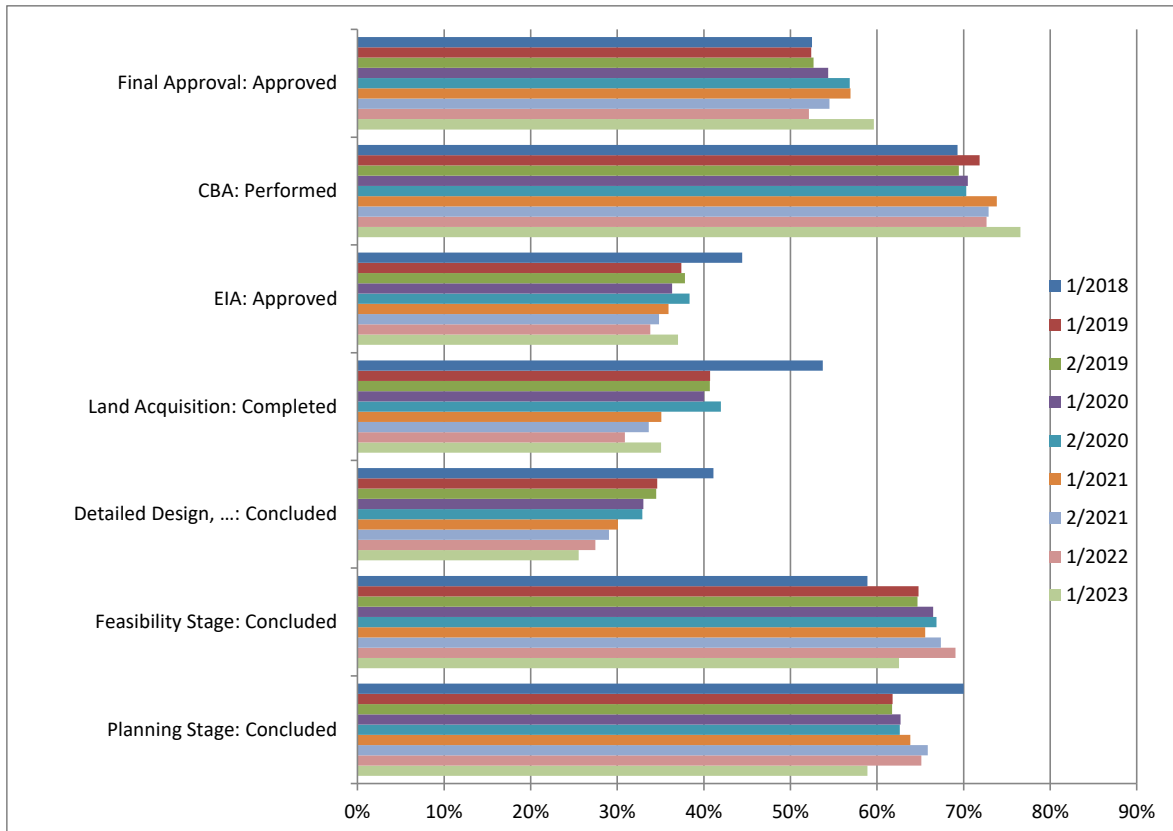
** = completed projects until "Project Status", presently 12/2022*

Source: KombiConsult analysis based on 04/2023 project list structure

As mentioned above, from the 954 projects included in the 2023 list, 333 (~35%) were already completed by end of December 2022. Thus, 621 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 04/2023 project list structure

Of the ongoing / planned projects, as can be seen in Figure 3-8, the maturity of each parameter from the 2023 project list differs from ~26% (Detailed Design: 104 of 407 concluded) to ~77% (CBA: 219 of 286 performed). 63% of projects conclude the feasibility stage (284 of 454 concluded) and 59% of projects (235 of 399) concluded the “planning stage”, this means that a little less than two third of the relevant projects where this analysis could be made has already reached these phases. The “final approval” with 60% was acquired for also a little less than two third of the relevant projects (238 of 399). The other parameters are fulfilled with 37% (EIA: 104 of 281 approved) and 35% (Land Acquisition: 74 of 211 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

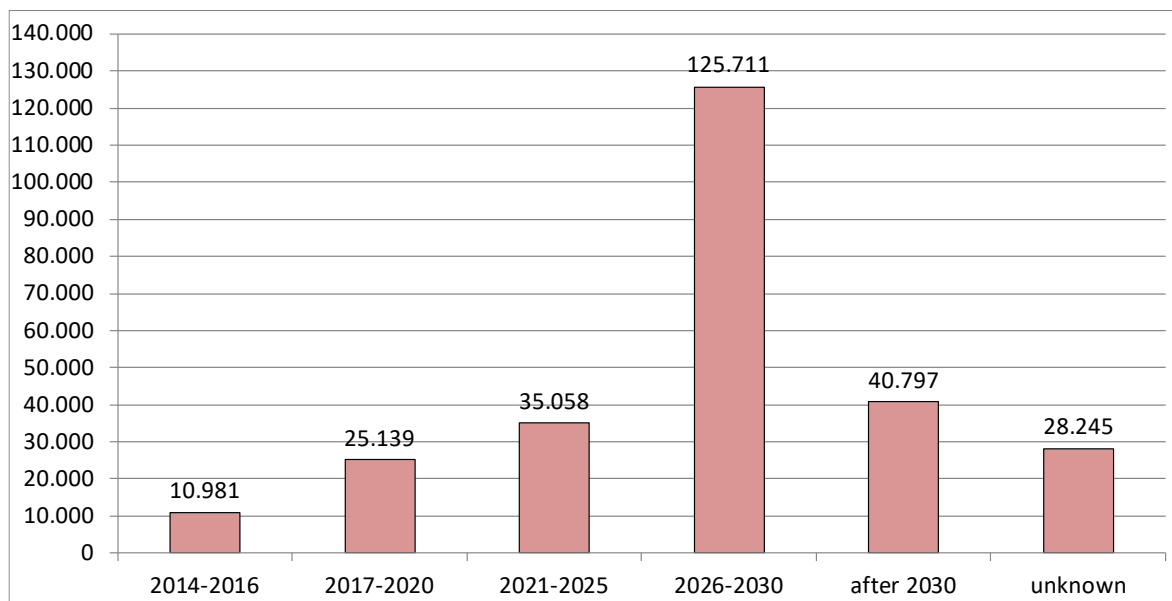
The following chapter presents the results of the monitoring of the project financial status, based on the April 2023 project list, where two groups of parameters are relevant:

- 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 04/2023 for CNC ScanMed

Based on the April 2023 project list, for 808 out of the 954 ScanMed relevant projects the project costs are officially known. These 808 projects sum up to a total of about €265,9bn envisaged project costs, with an average of ~€329m 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 €196,9bn. Nevertheless, a relatively high amount of about €40,8bn (~15% of all project costs) are foreseen for a smaller number of projects, in fact 28, to be finalised only after 2030. For 74 projects with completion date “unknown” the cumulated costs are ~€28,3bn.

However, project specific costs show a large variety, reaching from about €50.000 (category “Maritime”) up to €13,0bn (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 65% of all project costs are allocated to the category Rail + Rail

ERMTS, followed by Road with about 18%, Maritime with about 6% and Airport with about 5%. The other categories Innovation, Multimodal and Motorway of the Seas projects have a much lower share with about 6% 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	1/2023
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022	04/2023
List Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021	12/2022
2014 - 2016	13.962	12.559	13.873	13.872	13.829	13.743	13.743	11.183	10.981
2017 - 2020	32.003	25.817	25.480	23.492	23.281	20.997	20.985	24.475	25.139
2021 - 2025	36.398	27.461	29.053	34.902	35.290	38.872	37.028	32.058	35.058
2026 - 2030	57.415	85.014	80.720	88.838	88.676	94.534	100.805	106.218	125.711
after 2030	41.238	42.680	42.890	47.183	51.066	20.004	26.030	31.334	40.797
unknown	21.420	26.510	27.991	23.637	19.628	18.995	18.694	18.084	28.245
Total	202.436	220.041	220.007	231.924	231.771	207.145	217.286	223.351	265.931
thereof completed*	13.962	28.579	31.734	33.046	33.112	34.725	34.852	39.736	47.311

n1 = additional/obsolete projects according to project list updates

nx = completed projects according to respective project status

** = completed projects until "Project Status", presently 12/2022*

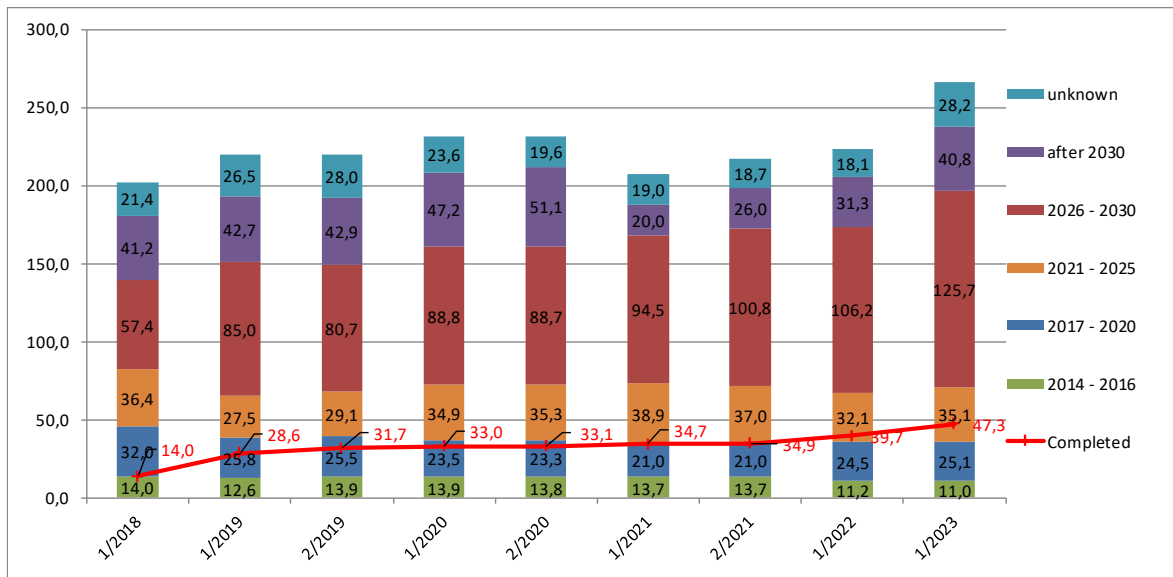
Source: KombiConsult analysis based on 04/2023 Project List of CNC ScanMed

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 €223,4bn, the recent list includes projects worth €265,9bn. 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:

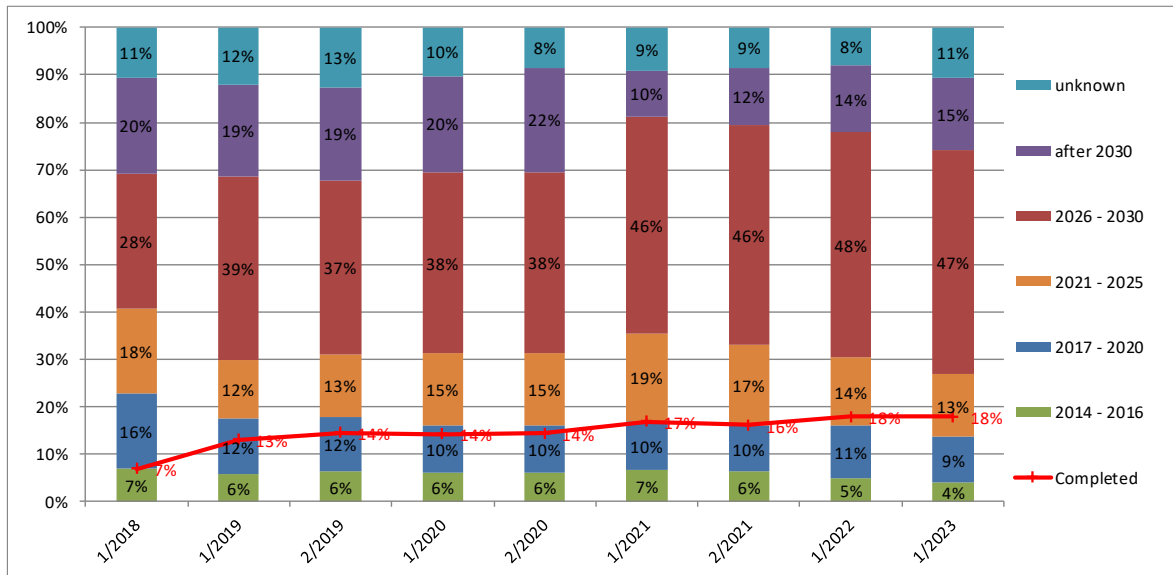
- 58 new projects have been added with a total of €21,5bn official costs
- Seven projects were deactivated with a total of €0,4bn official costs
- For 26 projects, official costs have been reduced by €1,2bn
- For 82 projects, official costs have been increased by €16,8bn
- For nine projects, official costs have been added with €4,9bn (before "unknown")
- For two projects, official costs have been removed with €1,0bn (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 04/2023 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 04/2023 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 tripled from about €14,0bn to currently €47,3bn, 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, but also a considerable increase of projects in this timeframe. Nevertheless in terms of share this cluster is actually more or less stable since 2021;
- The project costs allocated to projects of which the completion time is not known increased from €21,4bn to €28,3bn since the first Project Implementation Report, after it decreased considerably from an all-time high of about €28,0bn in the report 2019-2 until the last report. 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 (143 projects), they also represent by far the biggest cost share with €116,5bn, followed by Road (€22,4bn), Maritime (€11,0bn), Airport (7,7bn), and Multimodal (€7,3bn);
- Most costs allocated to projects where the project finalisation is unknown are also Rail + Rail ERTMS (€20,4bn), followed by Road (€2,8bn) and Maritime (€1,3bn)
- Of the 333 projects that are completed so far, most project costs refer to project category Rail + Rail ERTMS with €24,1bn, followed by Road (€14,1bn), Airport (€3,1bn), Maritime (€2,3bn) 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 2023, 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 04/2023 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	1/2023
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022	04/2023
List Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021	12/2022
State	91.124	115.731	122.558	129.917	129.708	140.030	147.374	152.411	188.638
Regional/Local	3.271	7.529	9.006	8.060	8.236	8.538	8.450	8.500	9.472
EU	6.599	10.526	10.696	11.001	10.994	11.458	13.707	14.556	15.026
IFI	9	446	431	774	774	774	429	429	458
Private	1.551	9.544	9.702	9.862	9.358	12.108	13.009	13.264	13.677
Other	8.574	10.045	9.847	9.847	9.866	10.788	13.665	13.673	19.342
Open	91.308	66.219	57.768	62.464	62.836	23.449	20.652	20.517	19.318
Total Cost	202.435	220.041	220.007	231.924	231.771	207.145	217.286	223.351	265.931
thereof completed*	13.962	28.579	29.851	33.046	33.112	34.725	34.852	39.736	47.311

n1 = additional/obsolete projects according to project list updates

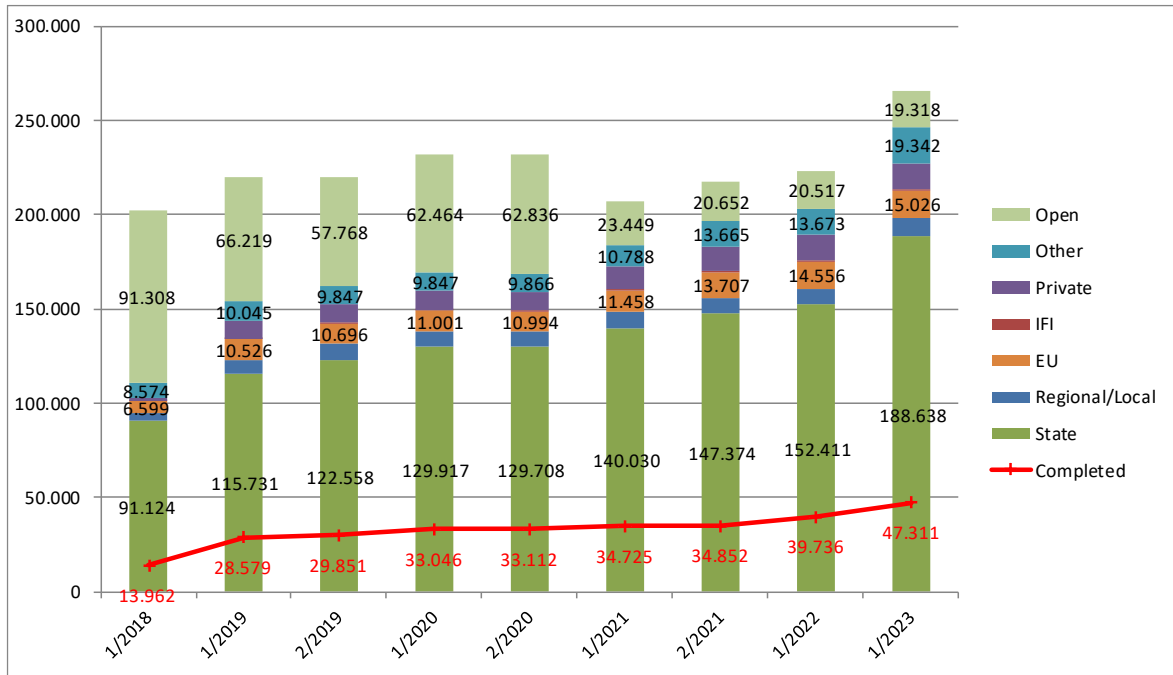
nx = completed projects according to respective project status

** = completed projects until “Project Status”, presently 12/2022*

Source: KombiConsult analysis based on 04/2023 Project List of CNC ScanMed

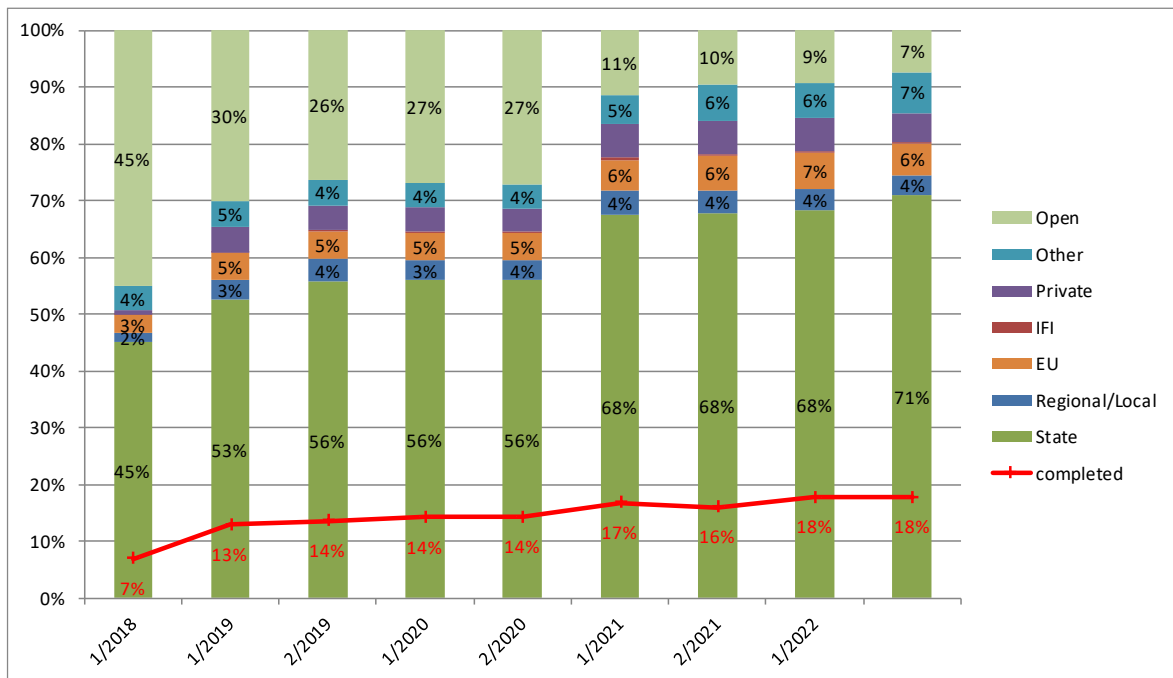
As can be seen, with the increase in the number of projects, the total amount also increased from about €202,4bn in the first Project Implementation Report to about €265,9bn in the current Report. As mentioned above, figures for total costs were given for 808 out of 954 ScanMed projects. By far most of the project cost financing is envisaged to be covered by the States with about 71% of all project costs. The rest of the financing contribution that is allocated of only about 22% 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 7% currently. Figure 4-7 and Figure 4-8 show these shares in absolute and relative figures for the April 2023 project list status.

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



Source: KombiConsult analysis based on 04/2023 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 04/2023 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 2023 project list, there are 621 ScanMed relevant ongoing and planned projects. For 499 of these 621 projects, the official project costs are known, showing total costs of ~€218,6bn. Out of these costs, about €205,0bn have an indicated financing source and about €173,6bn 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 79% of the costs that are officially known are currently covered by reliable funding commitments. In turn, 21% 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	1/2023
Reporting Date	09/2018	05/2019	10/2019	04/2020	10/2020	05/2021	10/2021	04/2022	04/2023
List Status	11/2017	12/2018	06/2019	12/2019	06/2020	12/2020	06/2021	12/2021	12/2022
Total project costs	202.435	220.041	220.007	231.924	231.771	207.145	217.286	223.351	265.931
...thereof completed*	13.962	28.579	31.734	33.046	33.112	34.725	34.852	39.736	47.311
...thereof ongoing or planned	188.473	191.463	188.273	198.878	198.659	172.420	182.433	183.615	218.620
State relevant costs thereof financing approved	92.496 92%	98.218 87%	102.245 86%	106.849 83%	107.541 67%	117.384 87%	124.640 87%	127.459 87%	158.367 90%
"Regional/Local" provided costs thereof financing approved	4.624 62%	5.928 53%	7.379 41%	5.796 46%	5.988 40%	6.625 53%	6.540 53%	6.168 51%	7.279 46%
"EU" provided costs thereof financing approved	7.241 84%	9.162 72%	9.133 71%	9.208 71%	9.036 54%	9.241 69%	11.465 75%	11.953 72%	12.259 72%
"IFI" provided costs thereof financing approved	515 2%	443 1%	428 5%	771 47%	771 47%	726 50%	383 5%	362 0%	396 1%
"Private" provided costs thereof financing approved	2.644 52%	9.058 74%	9.145 77%	9.186 76%	8.587 79%	10.176 81%	11.157 74%	9.640 72%	8.177 56%
"Other" relevant costs thereof financing approved	9.932 86%	9.645 86%	9.435 88%	9.390 88%	9.396 88%	10.285 86%	13.085 88%	12.883 89%	18.530 81%
"Open" relevant costs thereof financing approved	71.019 n.a.	59.008 n.a.	50.509 n.a.	57.679 n.a.	57.340 n.a.	17.983 n.a.	15.163 n.a.	15.150 n.a.	13.610 n.a.

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

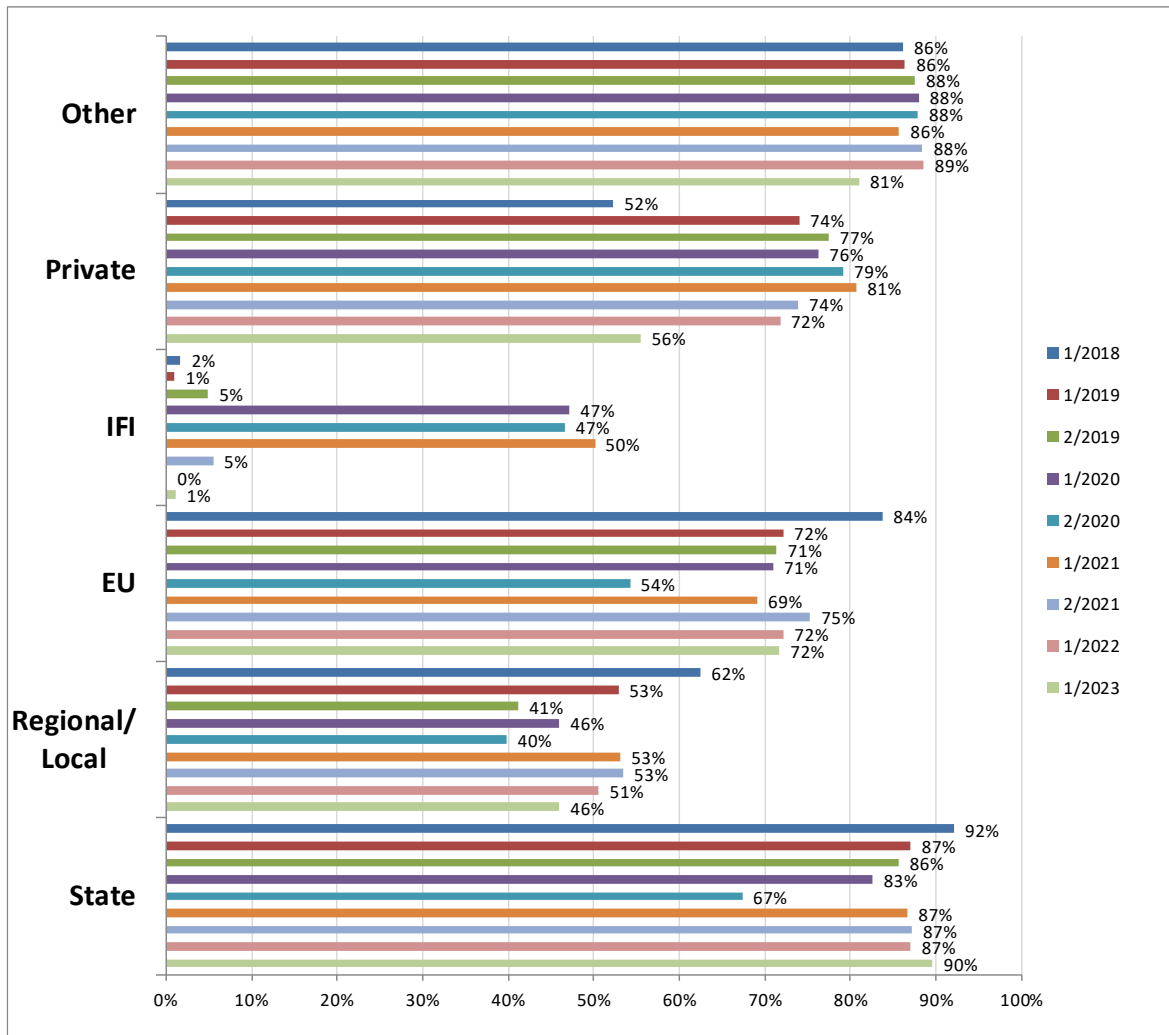
** = completed projects until "Project Status", presently 12/2022*

Source: KombiConsult analysis based on 04/2023 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. "State" (90%) and "Other" (81%) financing sources already show very high approval rates, followed by "EU" (72%). "Private" (56% each) and "Regional/local" (46%) financing sources are approved with about half of the envisaged costs, and "IFI" with 1%. Except of Private, which fell from 72% to 56%, the approval rates for the other sources remained relatively the same compared with the last report.

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



Source: KombiConsult analysis based on 04/2023 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 did not show a big change until the last Report, it shows a very consistent development varying between 86% and 89%, only now falling to 81%;
- Also for the "Private" sector the approval rate, after it increased significantly from 52% to over 74% in the second Implementation Report, stayed between 70% and 80% until the last report, now falling down to 56% 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 last report it even fell to 0%, as no costs were stated to be financed this way. For the current Report there are costs included again, but only with 1% approval rate.
- As concerns the public financing for "EU", "Regional / Local" and "State", the approval rates, though on different levels, 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, in particular for "EU" and "State", they 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 April 2023 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)
2030	BMDV (DB Netz): Capacity expansion in accordance with the rail freight transport forecast, allowing trains to merge with Bremen shunting yard - Maschen destination	Rail	- Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck	12/2030	41,3	Yes
2032	BMDV (DB Netz): Capacity expansion Nienburg – Minden (Leese) according to the rail freight transport forecast	Rail	- Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck	12/2030	14,7	Yes
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 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	Rail	- Electrification - Track gauge 1435 mm	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)
	SE: Brenner base tunnel (BBT)		<ul style="list-style-type: none"> - 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 future capacity bottleneck - Elimination of strong incline 			
5650	Jernbanedirektoratet (Norwegian Railway Directorate): Implementation of ERTMS system	Rail ERTMS	<ul style="list-style-type: none"> - ERTMS implementation 	12/2034	3.282	Yes
6172	BMDV (DB Netz): Capacity expansion München – Landshut – Regensburg in accordance with the rail freight transport forecast and the targeted additional traffic in rail long-distance traffic	Rail	<ul style="list-style-type: none"> - Electrification - 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 future capacity bottleneck 	12/2030	467,3	Yes
8910	Titan Energy Holding B.V.: Bio2Bunker: BLNG as the solution for decarbonizing the maritime industry	Maritime	<ul style="list-style-type: none"> - Availability of clean fuels 	12/2024	55	Yes
9880	BMDV (DB Netz): Capacity expansion and independent routing of rail long-distance traffic trains from Würzburg and Erfurt to Nuremberg main station, journey time reduction for better node integration in Nuremberg	Rail	<ul style="list-style-type: none"> - Electrification - ERTMS implementation - Elimination of current or potential future capacity bottleneck 	12/2030	864,3	Yes (for the respective budget period)

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)
9881	BMDV (DB Netz): Capacity expansion and independent routing of rail long-distance traffic trains from Würzburg and Erfurt to Nuremberg main station, journey time reduction for better node integration in Nuremberg	Rail	<ul style="list-style-type: none"> - Electrification - 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 future capacity bottleneck 	12/2030	5.702,8	Yes (for the respective budget period)
9882	BMDV (DB Netz): Routing of the rail freight transport Würzburg - Nuremberg via the new built line during the day	Rail	<ul style="list-style-type: none"> - Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck 	12/2030	11,2	Yes (for the respective budget period)
9884	BMDV (DB Netz): Capacity expansion Würzburg – Nuremberg in accordance with the rail freight transport forecast and the targeted additional traffic in rail long-distance traffic	Rail	<ul style="list-style-type: none"> - Electrification - 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 future capacity bottleneck 	12/2030	264	Yes (for the respective budget period)
9885	BMDV (DB Netz): Capacity expansion Gemünden – Würzburg (Veitshöchheim – Würzburg shunting yard) according to the rail freight transport forecast	Rail	<ul style="list-style-type: none"> - Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck 	12/2030	63,3	Yes (for the respective budget period)
9886	BMDV (DB Netz): Capacity expansion Gemünden – Würzburg (Gemünden station) according to the rail freight transport forecast	Rail	<ul style="list-style-type: none"> - Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck 	12/2030	11,1	Yes (for the respective budget period)

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)
50138	BMDV (DB Netz): Increasing the capacity of the corridor and reducing the journey time for the rail passenger traffic, achieving the target journey time of 59 minutes (without a stop in Harburg) or 63 minutes (with a stop in Harburg) to increase the capacity of the corridor and to ensure connections	Rail	<ul style="list-style-type: none"> - Electrification - 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 future capacity bottleneck 	12/2030	3.499,5	Yes (for the respective budget period)
50139	BMDV (DB Netz): Capacity expansion on new rail line Hanover – Hamburg according to the rail freight transport forecast (freight passing station I)	Rail	<ul style="list-style-type: none"> - Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck 	12/2030	17,7	Yes (for the respective budget period)
50140	BMDV (DB Netz): Capacity expansion on new built line Hanover – Hamburg according to the rail freight transport forecast (freight passing station II)	Rail	<ul style="list-style-type: none"> - Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck 	12/2030	17,9	Yes (for the respective budget period)
50145	BMDV (DB Netz): Increasing capacity or eliminating bottlenecks for additional rail long-distance traffic while maintaining rail long-distance traffic and rail passenger regional traffic nodal times	Rail	<ul style="list-style-type: none"> - Electrification - 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 future capacity bottleneck 	12/2030	973,1	Yes (for the respective budget period)
50146	BMDV (DB Netz): Capacity expansion Ingolstadt – München according to the rail freight transport forecast	Rail	<ul style="list-style-type: none"> - Train length \geq 740m (Core freight lines) - Elimination of current or potential future capacity bottleneck 	12/2030	42,4	Yes (for the respective budget period)

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)
50150	BMDV (DB Netz): Routing of three overtaking-free, faster rail passenger regional traffic routes between Berlin and Jüterbog with integration into the connection nodes and expansion of the quantity structure in rail long-distance traffic and rail passenger regional traffic on the mixed traffic route Anhalter Bahn; removal of bottlenecks	Rail	<ul style="list-style-type: none"> - Electrification - 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 future capacity bottleneck 	12/2030	687,5	Yes (for the respective budget period)

Source: KombiConsult analysis based on 04/2023 Project List of CNC ScanMed

Difficulties:

Project ID 2030 BMDV (DB Netz): Capacity expansion in accordance with the rail freight transport forecast, allowing trains to merge with Bremen shunting yard - Maschen destination

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 2032 BMDV (DB Netz): Capacity expansion Nienburg – Minden (Leese) according to the rail freight transport forecast

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 5182 Jernbanedirektoratet (Norwegian Railway Directorate): Construction of 57km of double-track railway along with capacity improvements in 4 railway stations.

Difficulties: 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 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 in the National Transport Plan 2022-2033.

Project ID 5386 Galleria di Base del Brennero: Brenner Basistunnel BBT SE: Brenner base tunnel (BBT)

Difficulties: 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.

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

Difficulties: National Signal Plan indicates ERTMS by 2034

Project ID 6172 BMDV (DB Netz): Capacity expansion München – Landshut – Regensburg in accordance with the rail freight transport forecast and the targeted additional traffic in rail long-distance traffic

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 8910 Titan Energy Holding B.V.: Bio2Bunker: BLNG as the solution for decarbonizing the maritime industry

Difficulties: Adverse market developments (gas prices/volatility to record heights, steel prices at high level, continuous unrest in market due to Ukraine invasion. This could be helped by increased support budget, to reflect the increased building costs

Project ID 9880 BMDV (DB Netz): Capacity expansion and independent routing of rail long-distance traffic trains from Würzburg and Erfurt to Nuremberg main station, journey time reduction for better node integration in Nuremberg

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 9881 BMDV (DB Netz): Capacity expansion and independent routing of rail long-distance traffic trains from Würzburg and Erfurt to Nuremberg main station, journey time reduction for better node integration in Nuremberg

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 9882 BMDV (DB Netz): Routing of the rail freight transport Würzburg - Nuremberg via the new built line during the day

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 9884 BMDV (DB Netz): Capacity expansion Würzburg – Nuremberg in accordance with the rail freight transport forecast and the targeted additional traffic in rail long-distance traffic

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 9885 BMDV (DB Netz): Capacity expansion Gemünden – Würzburg (Veitshöchheim – Würzburg shunting yard) according to the rail freight transport forecast

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 9886 BMDV (DB Netz): Capacity expansion Gemünden – Würzburg (Gemünden station) according to the rail freight transport forecast

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 50138 BMDV (DB Netz): Increasing the capacity of the corridor and reducing the journey time for the rail passenger traffic, achieving the target journey time of 59 minutes (without a stop in Harburg) or 63 minutes (with a stop in Harburg) to increase the capacity of the corridor and to ensure connections

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 50139 BMDV (DB Netz): Capacity expansion on new rail line Hanover – Hamburg according to the rail freight transport forecast (freight passing station I)

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 50140 BMDV (DB Netz): Capacity expansion on new built line Hanover – Hamburg according to the rail freight transport forecast (freight passing station II)

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 50145 BMDV (DB Netz): Increasing capacity or eliminating bottlenecks for additional rail long-distance traffic while maintaining rail long-distance traffic and rail passenger regional traffic nodal times

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 50146 BMDV (DB Netz): Capacity expansion Ingolstadt – München according to the rail freight transport forecast

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

Project ID 50150 BMDV (DB Netz): Routing of three overtaking-free, faster rail passenger regional traffic routes between Berlin and Jüterbog with integration into the connection nodes and expansion of the quantity structure in rail long-distance traffic and rail passenger regional traffic on the mixed traffic route Anhalter Bahn; removal of bottlenecks

Difficulties: Implementation of „Deutschland-Takt“ until 2030 currently under discussion

However, an intervention from the Coordinator for the projects 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	unknown	n.a.
5650	Jernbanedirektoratet (Norwegian Railway Directorate): Implementation of ERTMS system	Rail ERTMS	-ERTMS implementation	12/2034	3.282	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	unknown	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	unknown	n.a.
Sweden						
5153	Swedish Transport Administration: ERTMS ScanMed East Etapp 1 inkl. Katrineholm - Åby (Korridor B)	Rail ERTMS	-ERTMS implementation	unknown	unknown	n.a.
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	4.299	no
5568	Swedish Transport Administration: ERTMS, ScanMed West etapp 2 [Trelleborg - Malmö - Göteborg - Kornsjö]	Rail ERTMS	-ERTMS implementation -Specific Investment in Infrastructure	Unknown	unknown	n.a.
5782	Swedish Transport Administration: Luleå-Riksgränsen-(Narvik), ERTMS	Rail ERTMS	-ERTMS implementation -Specific Investment in Infrastructure	12/2033	519	yes
50006	Swedish Transport Administration: E4 Kongberget-Gnarp	Road	-Express road/motorway	unknown	208	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)
50011	Swedish Transport Administration: E10 Kauppinen–Kiruna	Road	-Express road/motorway	unknown	39	Yes
50027	Swedish Transport Administration: E4, Broänge–Daglösten, mötteseparering	Road	-Express road/motorway	unknown	52	Yes
50028	Swedish Transport Administration: E4, Daglösten–Ljusvattnet, mötteseparering	Road	-Express road/motorway	unknown	33	Yes
50033	Swedish Transport Administration: Norrbottenbanan Däva–Skellefteå, new railway	Rail	-ERTMS implementation -Line speed ≥ 100 km/h -Axle load ≥ 22.5 tonnes -Train length ≥ 740 m - Elimination of current or potential future capacity bottleneck	unknown	1.554	Yes
50038	Swedish Transport Administration: Sundsvall–Dingersjö, double track	Rail	-ERTMS implementation -Line speed ≥ 100 km/h -Axle load ≥ 22.5 tonnes -Train length ≥ 740 m - Elimination of current or potential future capacity bottleneck -Removal of single track section - Specific Investment in Infrastructure	unknown	271	yes
50096	Swedish Transport Administration: Ostkustbanan, Gävle–Kringlan, capacity enhancement, new double track	Rail	-ERTMS implementation -Line speed ≥ 100 km/h -Axle load ≥ 22.5 tonnes -Train length ≥ 740 m - Elimination of current or potential future capacity bottleneck	unknown	723	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)
			-Removal of single track section			
50117	Swedish Transport Administration: Norrbottenbanan Skellefteå - Luleå, new railway	Rail	-ERTMS implementation -Line speed ≥ 100 km/h -Axle load ≥ 22.5 tonnes -Train length ≥ 740 m - Elimination of current or potential future capacity bottleneck	unknown	2.296	yes
50118	Swedish Transport Administration: Sävestklingen-Norra Sunderbyn siding and partial double track, study for double track Boden-Luleå	Rail	-Train length ≥ 740 m - Elimination of current or potential future capacity bottleneck -Removal of single track section	unknown	28	Yes
50119	Swedish Transport Administration: Malmbanan, Murjek, Harträsk, Näsberg and Nourtikon, extension of sidings	Rail	-Train length ≥ 740 m - Elimination of current or potential future capacity bottleneck -Removal of single track section	unknown	66	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	unknown	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 ≥ 100 km/h -Axle load $\geq 22,5$ t -Train length ≥ 740 m - Elimination of current or potential future capacity bottleneck	> 2030	3.891	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)
Austria						
50111	ÖBB-Infrastruktur AG : ERTMS deployment Schaftenau - Knoten Radfeld	Rail ERTMS	-ERTMS implementation	12/2032	un- known	n.a.
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	yes
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 04/2023 Project List of CNC ScanMed

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 489 trains in the last period (6-12/2022). 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			
	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

Figure 6-3: ScanMed Service B - Time Table Data 2022 as well punctuality for reporting periods

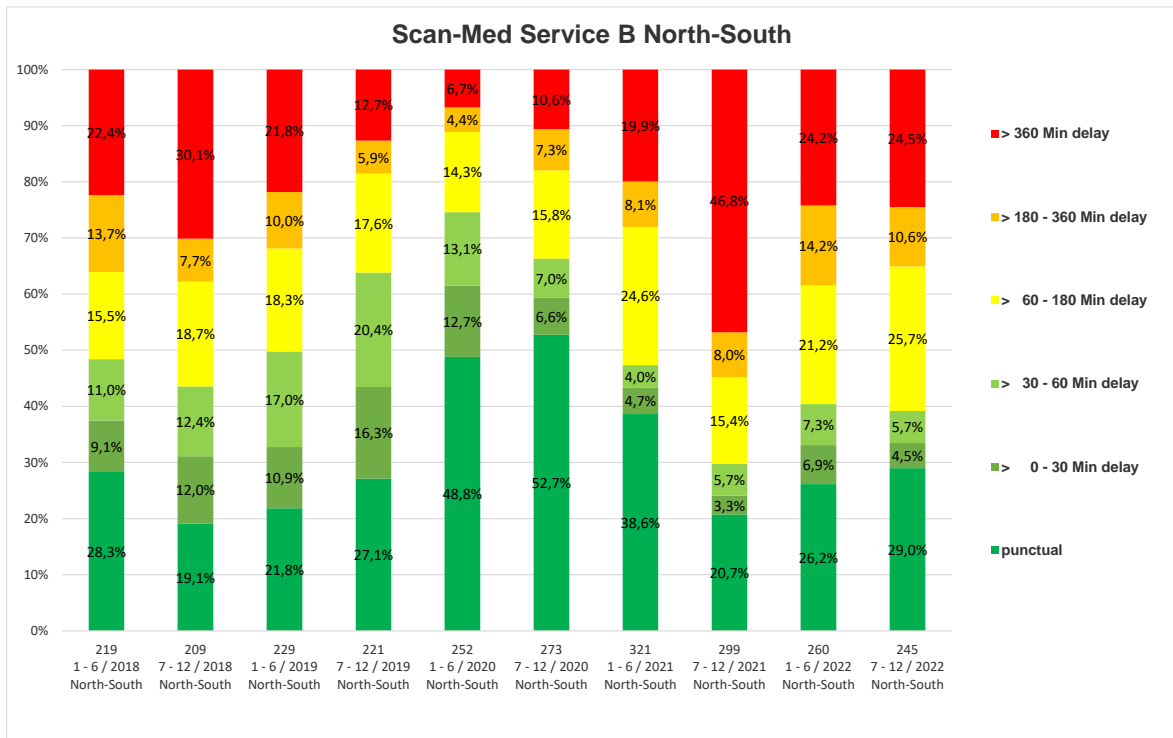
Year	2022				2023			
	North-South		South-North		North-South		South-North	
Month	1-6	7-12	1-6	7-12	1-6	7-12	1-6	7-12
Departure time	09:20	09:20	02:57	02:57	n/a			
Pick-up time	12:00	12:00	03:30	03:30				
Journey Time hh:mm	26:40	26:40	24:33	24:33				
Average speed Km/h	≈ 48	≈ 48	≈ 52	≈ 52				
Punctuality (< 60 Min delay)	40%	39%	31%	33%				
N° of services > 20/month	260 Yes	245 Yes	260 Yes	244 yes				

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

The evolution of punctuality is displayed in the following diagrams.

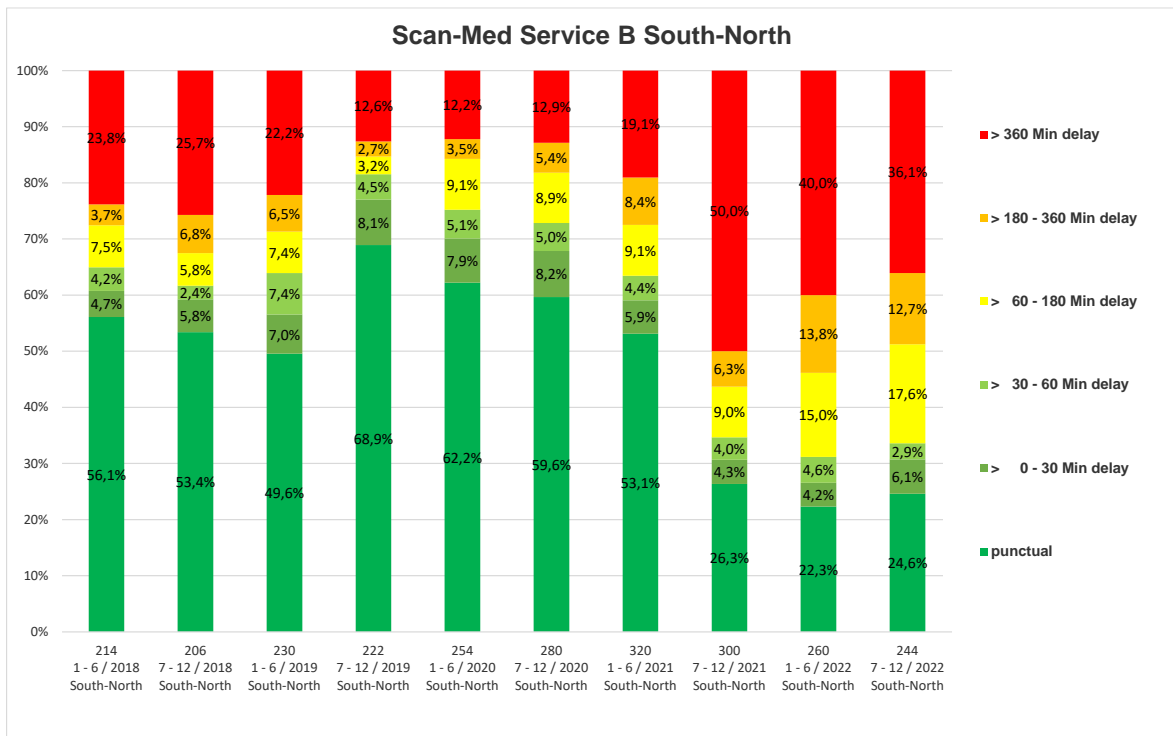
Punctuality of the south-north trains was usually better than the opposite direction despite the last period. Both directions showed a positive development until the 4th reporting period (2020), whereas the quality declined after that. For the north-south trains the punctuality - if a delay of one hour 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. In the last two reporting periods, however, a small increase in overall punctuality and a significant reduction of dramatic delays of more than 6 hours could be observed.

Figure 6-4: ScanMed Service B Direction North-South Evolution of Punctuality 1-12/2018 and 1-12/2022



Source: KombiConsult analysis 04/2023

Figure 6-5: ScanMed Service B Direction South-North Evolution of Punctuality 1-12/2018 and 1-12/2022



Source: KombiConsult analysis 04/2023