

(Projects funded under the Call 2014 onwards must use this format)



LIFE Project Number
LIFE19 ENV/DE/000712

Final Report
Covering the project activities from 01/11/2020¹ to 31/10/2024

Reporting Date²
31/10/2024

LIFE PROJECT NAME or Acronym
LIFE FIT

Data Project

Project location:	Germany, Netherlands, Europe
Project start date:	01/11/2020
Project end date:	31/10/2023 Extension date: 31/10/2024
Total budget:	██████████
EU contribution:	██████████
(%) of eligible costs:	55

Data Beneficiary

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¹ Project start date

² Include the reporting date as foreseen in part C2 of Annex II of the Grant Agreement

This table comprises an essential part of the report and should be filled in before submission

Please note that the evaluation of your report may only commence if the package complies with all the elements in this receivability check. The evaluation will be stopped if any obligatory elements are missing.

Package completeness and correctness check	
Obligatory elements	✓ or N/A
Technical report	
The correct latest template for the type of project (e.g. traditional) has been followed and all sections have been filled in, in English <i>In electronic version only</i>	✓
Index of deliverables with short description annexed, in English <i>In electronic version only</i>	✓
<u>Mid-term report</u> : Deliverables due in the reporting period (from project start) annexed <u>Final report</u> : Deliverables not already submitted with the MTR annexed including the Layman's report and after-LIFE plan Deliverables in language(s) other than English include a summary in English <i>In electronic version only</i>	✓
Financial report	
The reporting period in the financial report (consolidated financial statement and financial statement of each Individual Beneficiary) is the same as in the technical report with the exception of any terminated beneficiary for which the end period should be the date of the termination.	✓
Consolidated Financial Statement with all 5 forms duly filled in and signed and dated <i>Electronically Q-signed or if paper submission signed and dated originals* and in electronic version (pdfs of signed sheets + full Excel file)</i>	✓
Financial Statement(s) of the Coordinating Beneficiary, of each Associated Beneficiary and of each affiliate (if involved), with all forms duly filled in (signed and dated). The Financial Statement(s) of Beneficiaries with affiliate(s) include the total cost of each affiliate in 1 line per cost category. <i>In electronic version (pdfs of signed sheets + full Excel files) + in the case of the Final report the overall summary forms of each beneficiary electronically Q-signed or if paper submission, signed and dated originals*</i>	✓
Amounts, names and other data (e.g. bank account) are correct and consistent with the Grant Agreement / across the different forms (e.g. figures from the individual statements are the same as those reported in the consolidated statement)	✓
Mid-term report (for all projects except IPs): the threshold for the second pre-financing payment has been reached	✓
Beneficiary's certificate for Durable Goods included (if required, i.e. beneficiaries claiming 100% cost for durable goods) <i>Electronically Q-signed or if paper submission signed and dated originals* and in electronic version (pdfs of signed sheets)</i>	N/A
Certificate on financial statements (if required, i.e. for beneficiaries with EU contribution ≥750,000 € in the budget) <i>Electronically Q-signed or if paper submission signed original and in electronic version (pdf)</i>	✓
Other checks	
Additional information / clarifications and supporting documents requested in previous letters from the Agency (unless already submitted or not yet due) <i>In electronic version only</i>	✓
This table, page 2 of the Mid-term / Final report, is completed - each tick box is filled in <i>In electronic version only</i>	✓

**signature by a legal or statutory representative of the beneficiary / affiliate concerned*

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2. List of keywords and abbreviations

Key Word / abbreviation	Description
SME	Small and medium sized enterprises
FIT	Facilitation intermodal transports
BGL	Bundesverband Güterkraftverkehr Logistik und Entsorgung
R-F	Rail-Flow GmbH
SD	Simply Deliver B.V.
ICB	Intermodal Capacity Broker
ApS	Allianz pro Schiene
CT	Combined transport
Vegatrans	Vega International Car-Transport and Logistic-Trading Gesellschaft m.b.H
VTG	VTG Rail Europe GmbH
ECL	European Cargo Logistics GmbH
TXL	TX Logistik AG
PTM	Purchase and Tender Management
Carrier	Role in the Intermodal Capacity Broker providing first and/or last mile carriage on road to or from an intermodal terminal

Key Word / abbreviation	Description
Intermodal Operator	Role in the Intermodal Capacity Broker providing the main transport leg on rail
Forwarder	Role in the Intermodal Capacity Broker booking an intermodal transport with or without first and/or last mile
Transport lane	Bookable rail connection between 2 intermodal terminals
Terminal	Intermodal hub where a trailer or container can be shifted from road to rail

3. Executive Summary (maximum 2 pages)

3.1. Project goals and objectives

The project *Facilitation Intermodal Transport (FIT)* targets the reduction of transport-related air pollution in the EU by introducing an integrated solution for facilitating intermodal transports by SMEs for the first time. Aim is to shift freight volumes from road to more sustainable rail transport and to help decouple the environmental impacts of transport from economic growth by

- Integrating an European-wide logistics platform Intermodal Capacity Broker (ICB) with an intermodal operator and carrier network to enable collaboration among transport SME by providing a rail-carriage alternative to road transport.
- Improving SMEs access to the intermodal market by removing their main entry barriers.
- Reducing transport-related pollutant emissions and resource consumption.
 - Saving of at least 17.6 Mio km road transportation; Reducing of main air pollutants as consequence of higher rail share (9.9 t VOC, 14.7 t NO_x, 3.5 t SO₂), Saving > 5 Mio l diesel
- Significantly increase the share of intermodal transport
- Setting a new standard in land freight transport, serving as best practice in the sector.

3.2. Key deliverables and outputs

The major outputs at the project end are

- Creation of a booking platform to allow SME forwarders to book intermodal transports instead of plain road traffic, including the first and last mile carriage.
- Overcoming the entry barriers SME forwarders in intermodal traffics

3.3. Activities

The Rail-Flow project was successfully launched in 2021, and the ICB is now operating smoothly. R-F maintains consistent communication with forwarders, using various media channels and direct phone calls as part of customer success management. In 2022, the project entered its piloting phase, with meticulous documentation provided in the deliverables B3.1 and B3.2. Throughout its journey, the project has enhanced its direct networking activities with forwarder stakeholders and actively promoted the ICB within the SME target group. In 2023, R-F participated in a major industry event, the "Transport and Logistics Fair" in Munich, with its own booth. In collaboration with the BGL, R-F hosted a sustainability award ceremony, and acknowledged the SME forwarder who successfully shifted the most traffic from road to rail via ICB and thus had the biggest impact regarding the reduction of air pollution. In 2024, R-F opened the ICB for shippers as a new role with its own app and added new functions requested by the market during numerous customer discussions. Additionally, R-F has expanded its Purchase & Tender Management (PTM) platform for intermodal to enable long-term requests. In the initial project months, received transport requests did not align with the limited coverage of the piloting network, which only had 12 transport lanes available. Consequently, the project focused on expanding its network, now offering over 9,764 bookable transport lanes across 32 countries. This expansion led to an increase in booking requests, reaching as high as [REDACTED] requests per week. Despite the vast network and a platform designed to facilitate intermodal transport, actual bookings have fallen short of initial targets and projections. This shortfall primarily stems from a challenging market environment and the substantial efforts required to instigate industry-wide change. While Rail-Flow has limited influence over broader market dynamics — such as declining market volumes and external events — R_F has taken proactive measures to counter these challenges and enhance bookings:

- Addressing the missing trust between the transport parties by implementing further Track&Trace functionality and including insurance options for the trailers by the leading German insurance company Kravag free-of-charge for every booked transport.
- Integration of near-shore and barge lanes into the ICB.
- [REDACTED]
- Add functionalities and interfaces to issue and award regular and spot requests for intermodal transports via the PTM, involving a substantial external investment [REDACTED]
- Collaboration with one of the largest road forwarder platforms Transporeon
- Inclusion of shippers into the ICB by building a new app for this customer group

All measures were realized as fast as possible. The PTM development is already impressing the first customers, and door-to-door transports were already offered and booked by shippers. But the conversion rate from booking requests to actual bookings remained. This challenge is compounded by external factors contributing to a "perfect storm" in European intermodal transport. These factors include serious punctuality issues in rail freight, train path capacity shortages, high traction power prices, strikes, slowed economic growth, war, and an oversupply of capacity in long-distance road freight driven by lower fossil fuel prices. Ongoing construction work on railway corridors, coupled with quality problems in the execution of intermodal transport by operators, has led to cancellations of scheduled round trips. Furthermore, intermodal operators encounter significant payment defaults, especially from SME forwarders, which diminishes their willingness to engage with smaller companies as new customers. According to the International Association for Combined Road-Rail Transport (UIRR), the intermodal sector in Europe transported ~11% less in 2023. The transport of full trucks delivered in contrast a 2,7% growth in cross-border relations compared to 2022. R-F plans to build a yield management engine analogous to rail passenger transport or air transport sectors. This will enable intermodal operators to react more flexibly to prices in the future, which is not currently the case, and make rail freight transport more attractive for freight forwarders. Since Rail-Flow has successfully removed all other access barriers, this appears to be one remaining hurdle. ICB providers will benefit from this solution free of charge.

3.4.Sum-up

In summary, the project's technical execution remains on track. Despite significant challenges, the project successfully onboarded 261 freight forwarders and 37 intermodal operators onto the platform, enabling the booking of more than 9,764 individual lanes. This achievement was made possible through the exceptional dedication of the team.

The project continues to implement further enhancements, such as application enrichment to position itself as a comprehensive single-point market portal for SME forwarders and shippers. Additional measures include extending the collaboration with Transporeon, introducing a pre-payment option, and incorporating free-of-charge transport insurance into the platform to build greater trust among users.

Although the logistics market remains complex and uncertain, Rail-Flow has remained committed to its objectives. While the project will fall short of its initial target of [REDACTED] shipments by the end of 2024, it has successfully met all other critical milestones and deliverables. In its most recent mid-term report, Rail-Flow anticipated [REDACTED] bookings by the end of the project; however, the final figure reached [REDACTED] as of October 31, 2024.

[REDACTED]

4. Introduction (maximum 2 pages)

The transport sector is one of the fastest growing EU industries with road transport as most important type (>70% of total EU freight movements), increasing by in average 4.5% over the last years. Increasing freight transport aggravates environmental problems caused by road transportation as it releases several million tons of gases each year into the atmosphere and air pollutant emissions from transport are a main contributor to EU air quality problems. Fuel combustion results in various emission (CO, CO₂, NO_x, VOC - volatile organic compounds, SO₂, PM - particulate matter) leading to air pollution, which is still the most serious environmental health problem in Europe associated with a high mortality rate (~ 500,000 premature deaths attributable to PM_{2.5}, ozone and NO₂ exposure in 2012, EEA 2015) and a significant impact on ecosystems. CO, VOC, NO_x and PM_{2.5} are extremely harmful to human health as they lead to respiratory health problems, cancer, and cardiovascular diseases. Emissions of SO₂ and NO_x lead to acidification of precipitation with adverse impact on forests, soil, freshwater, human and animal health.

In Europe, more than 200 million citizens (~30%) are regularly exposed to traffic noise. Noise pollution is linked to 50,000 fatal heart attacks and 5% of strokes in Europe every year.

Intermodal traffic combines the advantages of road and rail and reduces air pollution by 2/3 compared to the plain road transport. Road freight transport characterized today by large number of smaller companies (SME). SMEs do not use intermodal transportation systems; they lack intermodal knowledge and experience. One of the main barriers are high upfront investments regarding purchase of craneable equipment. Furthermore, freight coordination and management by different partners as well as follow-up transports is complicated and obscure leading to lack of cost transparency for the entire transport chain. Missing network opportunities are another barrier: For the last part of its journey, the freight must be picked up at the rail terminal and transported to its destination via truck again. However, this second end of the supply-chain is missing for SMEs.

With project LIFE FIT Rail-Flow will demonstrate that those barriers can be overcome by providing a state-of-the-art Intermodal Capacity Broker (ICB) as a platform including the booking of the first and last transport mile combined with the usage of intermodal loading technologies as facilitator. The project objective is the operation of [REDACTED] shipments via LIFE FIT until October 2024 along demonstration routes. By doing so

- at least 17.6 Mio km road transport can be saved
- main air pollutants as consequence of higher rail share (9.9 t VOC, 14.7 t NO_x, 3.5 t SO₂) can be reduced
- Reducing the carcinogenic substance PM by 112.4 kg
- 351,768,720 MJ energy and > 5 Mio l diesel saved

FIT contributes to the implementation and updating of the EU air quality strategy for the period up to 2030 and the Ambient Air Quality Directive (2008/50/EC) by reducing air pollutant emissions from road transport based on increased usage of intermodal transport. Specifically, FIT will help to reduce NO_x (59% by 2023), VOC (95%), SO₂ (28%), and PM (92%) emission by trucks to protect human health, which will contribute to implementation and update of the National Emission Ceilings Directive (EU 2016/2284) setting national reduction commitments until 2030 for the five pollutants (SO₂ [-79%], NO_x [-63%], VOC [-40%], NH₃ [-19%], PM_{2.5} [-49%]).

Replications of the LIFE FIT solution start already during project duration with inclusion of additional transport lanes into the Intermodal Capacity Broker and enlarging the available transport network that can be booked by the SMEs.

Furthermore, it will be verified to which degree the solution for intermodal transports on road/rail can be replicated to barges. A feasibility study is part of the project.

Rail-Flow participated in the C2M programme of CINEA and filled out the C2M checklist (see technical issue 1 of amendment letter of 26.05.2021). In the 2022, Rail-Flow and EY had already two follow-up meetings and conducted a design thinking workshop in Q1/2022 developing additional ideas in addressing the potentials of the LIFE FIT solution for SME forwarders in the logistic market.

5. Administrative part (maximum 1 page)

The project LIFE FIT is executed by two beneficiaries: Rail-Flow GmbH (R-F) as coordinating beneficiary and Simply Deliver B.V. (SD) as associated beneficiary with focus on the creation of the IT of the broker platform, the Intermodal Capacity Broker (ICB).

The project is managed by full-time project manager and closely guided by the project supervisor, Dominik Fürste, managing director of R-F. A strong project team consisting of sales managers, product owner, business analysts, marketing experts as well as technical analysts and customer success managers was ramped-up successfully. On side of Rail-Flow, 7 new jobs were already created since project start and successfully staffed.

As both beneficiaries are agile organisations the project management of LIFE FIT follows the sprint cycles of the companies and is based on the widely accepted management tools of Atlassian Jira and Confluence. All project tasks, independently of their type, are planned in sprints, monitored, documented, and approved in Jira. Confluence is used for the project documentation like meeting notes or feature descriptions. Both tools can interact with each other.

Apart from Jira and Confluence, all required project management standards like an overall project plan, a forecast on cash outflow as well as budget monitoring / controlling were implemented. A risk log including countermeasures, being updated on a regular basis, and aligned between the beneficiaries and is used to track the project challenges.

Rail-Flow gained in the first project months strong project partners, here to name especially Bundesverband Güterkraftverkehr Logistik und Entsorgung (BGL) and the Allianz pro Schiene (ApS). Both partners are major key to success of the project as they represent both sides of intermodal traffic, the road, and the railway companies.

The initial grant agreement had foreseen the use of only one loading technology NiKRASA, owned by TX Logistik AG (TXL), which consequently limited the available transport lanes to those operated by TXL only. R-F aligned with TXL as part of the Deliverable B.4 and concluded that, due the impacts of the COVID-19 pandemic and the Brexit, the targeted number of [REDACTED] shifted shipments from road to rail can only be reached in the project if R-FL does not solely rely on the NiKRASA technology. The amendment for opening the project for additional operators and their loading technologies as well as creating European wide transport lanes instead of specific demonstration lanes was submitted by R-F in the amendment request No1 and got approved by CINEA on May 26th, 2021.

The communication with the project monitor Mr. Stefan Niederhafner is very trustful. His support and feedback helps especially the project management team to focus on the right topics and to avoid double work. His third project visit was conducted in Frankfurt in the R-F office on October 5th, 2023. Since May 2023 the monitoring helpdesk of LIFE is used by the project as communication channel with the programme.

The fourth and final project visit took place in the R-F office in Frankfurt on September 23rd and 24th, 2024. This time the CINEA project manager Mr. Mario Lionetti was on site in person accompanied by the external project monitor Stefan Niederhafner.

6. Technical part (maximum 25 pages)

6.1. Technical progress, per Action

6.1.1. ACTION A.1: SME recruitment strategy and operator agreements

Foreseen start date: 01.11.2020

Actual start date: 01.11.2020

Foreseen end date: 30.06.2021

Actual (or anticipated) end date: 30.09.2021

The action is divided into 2 sub tasks:

- A1.1 Set-up and testing of SME recruitment strategy
- A1.2 Operator and equipment agreements

Task A1.1. Rail-Flow won with BGL a strong project partner for the recruiting of SME forwarders. The Bundesverband Güterkraftverkehr Logistik und Entsorgung (BGL) is the professional and umbrella association of the transport logistics industry in Germany. The BGL serves around 7,000 member companies through its state associations. Most of the BGL members are SME freight forwarders. BGL on its own already defined a strategy to make intermodal transportation more attractive for its members. Rail-Flow is got a strong support in acquiring of SMEs from the pool of BGL members. Rail-Flow and BGL conduct regular monthly meetings together with the Allianz pro Schiene to address the barriers of SME Forwarders in participation in intermodal traffics. The Allianz pro Schiene e. V. is a non-profit transport alliance that works to increase the market share of rail transport in freight and passenger traffic in Germany. Their goal is to strengthen rail in the competition between modes of transport.

A recruiting strategy was defined by the end of February 2021 and is attached was submitted with the first midterm report as deliverable A1.1. Rail-Flow follows that recruiting strategy and used the channels of the BGL to win SME forwarders as customers of the Intermodal Capacity Broker.

The serious disruptions in the transport market as caused by Brexit and missing semiconductors in central industries as well as the Covid-19 restrictions in 2021 and in 2022 for personal meetings limited the opportunities of the project team to interact with SME forwarders in onsite meetings directly.

The meetings were held as virtual meetings and the required activities of Rail-Flow needed to be executed using more internal and external resources. The willingness of the SME forwarders to participate in virtual meetings needed to be gained by the project team. This was possible by always pointing out the business advantages of solution.

Advantages for small forwarders are:

- Full transparency on the intermodal market
- Efficient booking of the whole transport chain
- Increasing competitiveness
- Improve company's ecological footprint

The project partners see the ongoing challenges regarding truck driver shortage as an additional uptake for motivation of SMEs to participate in FIT. Combined transport (CT) offers an opportunity to increase the attractiveness of the driving profession, as it means that the longest part of the transport route is covered by rail, while the first and last mile on the road is carried by truck. This allows the driving personnel to spend the end of the working day at home. On the other hand, the project faces the challenge that the ongoing construction work on railway corridors, coupled with quality problems in the execution of intermodal transportations by operators, has led to cancellations of scheduled round trips. This poor execution quality impedes forwarders' transition from road to rail.

Rail-Flow extended its partnering with the different stakeholder associations like Elvis, the European Cargo Association of International Freight Forwarders (<https://www.elvis-ag.com/en>) in the past project months to directly communicate and promote its solution in the already existing networks of the forwarders.

Task A1.2: As the project needs to be opened to other loading technologies apart from NiKRASA of TXL (see amendment No1), agreements with additional operators were needed to be reached in 2021.

Rail-Flow spend great efforts on this crucial task to recruit intermodal operators to produce a large, offered network of transport lanes throughout Europe as backbone of the project and the platform. The current network covers 32 European countries and consists of 247 terminals. It offers 334 transport roundtrip lanes (668 single lanes). Due to the hub effect of the connected terminals the bookable gateway network is extended to 9,764 bookable transport lanes offered by 37 different intermodal rail operators.

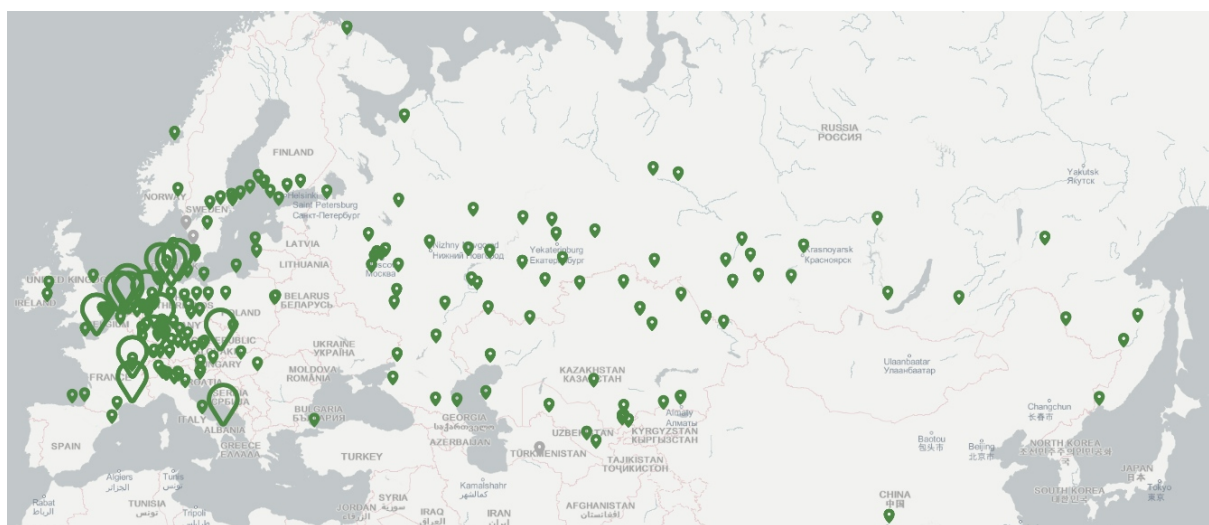


Figure 1: ICB network overview

To cope with the requirements of the huge number of intermodal operators Rail-Flow enlarged its sales team and installed well-known market-experts as senior sales manager. [REDACTED]

In addition to the recruiting of SME forwarders and the aligning with the intermodal operators the action A1.2 included the task to create a green procurement instruction and to plan the overall stakeholder involvement A1.3 as input for all following actions. The deliverables were attached to the first midterm report in October 2021.

In 2024 a further deliverable was delivered and uploaded to Bulter. The deliverable “A1.4: Stakeholder participation” is part of the action “SME recruitment strategy and rental agreement”. The purpose of the deliverable is to evaluate the engagement of the stakeholder groups identified in deliverable A1.3 Stakeholder involvement.

Noteworthy events, such as the successful fifth container transport by road carrier Kroop & Co. Transport + Logistik GmbH via the ICB, underscore the practical achievements of the project.



Figure 2: Final event of the truck2train project with BGL and ApS Source Allianz-pro Schiene

The document illustrates the success of the LIFE FIT project in engaging a diverse range of stakeholders. The strategic identification of key stakeholders, coupled with effective communication and collaboration strategies, has resulted in meaningful partnerships, academic contributions, policy engagement, and media visibility. The demonstrated success in these areas not only important for the project's success but also indicates its long-term impact on intermodal transportation and SME involvement.

Deliverables

No	Description	Date	Status	Document name
A.1.1	SME recruitment strategy	28.02.2021	Done	Deliverable A1.1 SME recruiting strategy – attached to 1 st midterm report
A.1.2	Green procurement instructions	28.02.2021	Done	Deliverable A1.2 Green Procurement Policy – attached to 1 st midterm report
A 1.3	Stakeholder involvement planned	28.02.2021	Done	Deliverable A1.3 Stakeholder involvement – attached to 1 st midterm report
A 1.4	Stakeholder participation	31.05.2024	Done	Upload to Butler on 29.05.2024

Milestones

- None

Project action is on track, deliverables created as planned.

6.1.2. ACTION B.1: Linking of the logistic platform module to established freight services

Foreseen start date: 01.01.2021

Actual start date: 01.01.2021

Foreseen end date: 30.06.2022

Actual (or anticipated) end date: 30.06.2022

The action is divided into 5 sub tasks:

- B1.1 Adjustment of the logistic platform module
- B1.2 Developing the algorithm to find the multi-modal possibilities
- B1.3 Preparing the platform user interface and the electronic data interchange (EDI) interface
- B1.4 Integration of existing freight exchange platforms
- B1.5 Integration of environmental impact calculator

Task B1.1. R-F and SD have installed a strong development and product owner team to define and implement the market requirements for the Intermodal Capacity Broker (ICB).

The requirements are divided into features and user stories and are developed in an agile 3-week sprint rhythm. Before implementation, the features are aligned on the product roadmap with the sales and customer success management of Rail-Flow who always consider the requests of the market participants and ICB user. With each sprint the regression tests of the application are automated to minimize the manual efforts in testing.

Task B1.2: The heart of the application is the algorithm to match the booking request of the forwarder with the different capacity offers by the intermodal operators and carriers calculating a multi-leg transport chain including first and last mile carriage. The following figure shows the updated UI in 2024.

The screenshot displays the 'Intermodal Capacity Broker Requester App' interface. At the top, there's a navigation bar with a hamburger menu, the app name, and user information (Guided Tour, test@forwarder.com). Below the navigation bar, a progress indicator shows four steps: 'Transport options', 'Booking details', 'Review booking', and 'Booking sent'. The main section is titled 'Search Transports' and contains a form with the following fields: 'Origin Address' (Steindamm 14, 20099 Hamburg, Deutschland), 'Destination Address' (Marienplatz, 80331 München, Deutschland), 'Unit Type' (Trailer Standard), 'Required Departure Date' (30-08-2024), and 'Required Arrival Date' (08-09-2024). There's an 'Additional search criteria' section and a 'Search' button. Below the search bar, the 'Transport Options' section shows a map of Europe with a red line indicating a route from Hamburg to Munich. To the right of the map, there's a list of transport options: 'Steindamm 14, 20099 Hamburg, Deutschland' (11km), 'Hamburg Billwerder DUS' (793km), and 'München Riem DUS'. A 'Check Price' button is visible. On the right side, there's a 'Your Selection' box with a 'Complete Booking' button. At the bottom, there's an 'Advanced Emissions Calculator' section showing emission savings compared to a road-only transport.

Figure 3: ICB booking screen

Rail-Flow initially planned to use a PTV software solution to find the best routes for the transport in terms of retrieving the matching start and destination point of the rail leg of the transport. But during the implementation of the software solution the project partners identified that using Oracle internal database functionality to calculate the distances works a lot better. Therefore, the PTV licenses were not purchased as originally planned, but Oracle licenses. The sub-task was completed by mid Q3/2021.

Task B1.3: As the number of shipments executed in the project will increase over time, the broker needs to provide EDI interfaces to submit booking requests to the suppliers and to receive updates from them. As there is no standard for those communication interfaces, the project needs to align the interface specifications with the intermodal operators individually. The first interface was successfully implemented with the piloting partner CargoBeamer AG and has been available since the piloting phase. The integrations of operator systems into the ICB were extended i.e. to ECL, transped and Drivemybox.

Task B1.4: The integration with existing freight platforms was started in the 2022. As a first integration the interface to <https://railway.tools/#/de> - a multimodal freight platform was completed in Q2/2022. The integration with further carrier platforms, here especially Transporeon, the biggest road transport platform in Europe is currently in the evaluation and will most likely follow in the next project year after successful pilot. This will allow to better match first and last mile capacities to the transport requests.

Task B1.5: The integration of the EcoTransIT calculator with the ICB to calculate the environmental impact of the transport compared to a road-only transport was implemented successfully. Rail-Flow signed a partner agreement with EcoTransIT and will have internal dashboards to monitor the environmental impact.

In total, action B1 includes the development of the required IT activities to build the ICB. All tasks were executed as planned. The enhancements of the application are tracked in action B3. The application can be reached on the following website: <https://www.rail-flow.com/en/> by using the log-in button. The following image provides an example of the website.

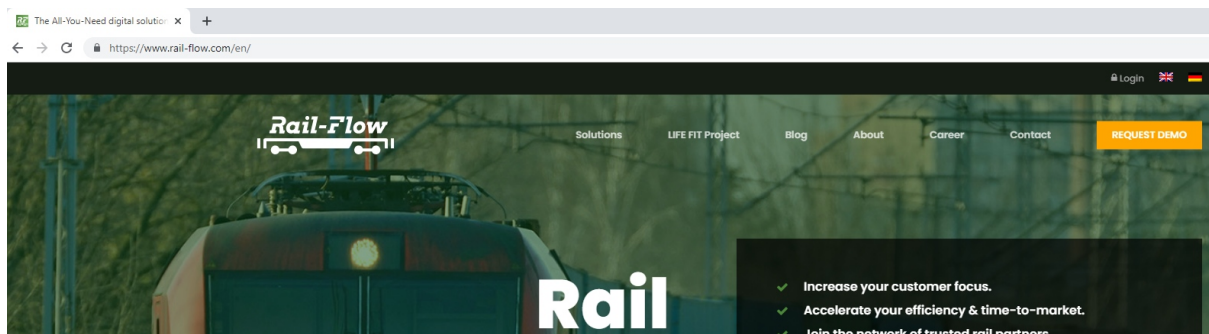


Figure 4: Log-In ICB

Deliverables

No	Description	Date	Status	Document
B1.1	Logistic platform module set-up protocol	30.11.2021	Done	Deliverable B1.1 Logistic platform – attached to 1 st midterm report

Milestones

No	Description	Date	Status
B1.1	Preparation of the FIT logistic platform module concluded	30.11.2021	Done

6.1.3. ACTION B.2: SME recruiting and training; SME forwarder helpdesk

Foreseen start date: 01.04.2021

Actual start date: 01.04.2021

Foreseen end date: 31.10.2024

Actual (or anticipated) end date: 31.10.2024

The action is divided into 3 sub tasks:

- B2.1 Technical and organizational onboarding of operators
- B2.2 SME recruiting
- B2. Implementing of a SME forwarder helpdesk

Task B2.1: As described in action A1, Rail-Flow onboarded already 37 intermodal rail freight operators to the ICB. In this action, Rail-Flow aligned the requirements, processes, and IT interfaces with those operators. This was especially important at the beginning of the project to better understand the requirements and streamline the onboarding process so that it fits all operators. As an example, just with CargoBeamer three major workshops were conducted in 2021 to agree on all operational details and required interfaces.

The sales managers and customer success managers of R-F are in continuous contact with the intermodal operators participating in the project and always assisting them in case of questions. The onboarding of an intermodal operator can be summarized in 2 major steps: (1) Providing of timetables, capacities, and prices by the intermodal operator, (2) initial set-up in the system by R-F customer success managers. Compared to the initial efforts in the first project phase the onboarding is now very lightweight and can be done within a couple of days for new operators as the general procedures are well established.

Action B.2.2: R-F followed the recruiting strategy defined in action A1.1 and presented the application to several forwarders. A group of early adaptors gave feedback already since the beginning of the software development. Workshops were contacted together with the BGL, Allianz pro Schiene and forwarders in April and June 2021, ensuring that the market requirements were met. The recruiting of forwarders and collecting of their feedback is a continuous project task and is performed by sales and customer success managers. Currently, the forwarder network of the ICB has of 261 forwarders coming from all over Europe.

Due to disruptions in the logistic market resulting from the Ukrainian war the recruiting of forwarders is still very time-consuming as the target group of the project the SME forwarders faces existence-threatening business challenges on a daily basis. R-F aligned in 2 workshops with the C2M team of the LIFE program on mitigation measures to better address the needs of the target group and incorporate their ideas into the processes.

The purpose of the “Deliverable B2.2: Training protocol for SME participants” is to give an overview of the training/help material provided and its usage by the transport companies of the ICB. This approach and modification of the deliverable was confirmed by CINEA in the letter from 22.06.2022 after the second project visit in the technical issue no. 3.

Rail-Flow closely monitors the usage of the single training and helping elements and collects feedback through the customer success managers to improve the material and learn which elements help their customers most. In the following table, the average usage of each element per month is listed.

Element	Average Calls/Month (English)	Average Calls/Month (German)	Remarks
Guided tours	9	16	Mainly in the forwarder module

Manuals	5	Not available	Mainly in the forwarder module
Video tutorials	6	Not available	
FAQs	2	3	
Need help?	1	4	
Rail-Flow help desk	Daily		See Deliverable B2.1 SME helpdesk evaluation report

Task B2.3: In order to cope with the requirements of the SME forwarders, R-F added the implementation of a SME forwarder helpdesk/customer success management to the project. The helpdesk was already established from the start of the piloting phase in December and is set-up by 2 customer success managers. The lead is with Mr. Oliver Bittern, who worked over 15 years at the intermodal terminal KTL Kombi-Terminal Ludwigshafen, and was handed over to Margarita Trofimenko in 2024. The customer success managers are face and ear to the SME forwarders and they support them during onboarding to the application and transport execution. The forwarder feedback to the customer success management is very positive and was evaluated in the project deliverable “B2.1 SME helpdesk evaluation report”.

Deliverables

No	Description	Date	Status	Document
B2.1	SME helpdesk evaluation report	30.04.2023	Done	Deliverable B2.1 SME helpdesk evaluation report attached to this report
B2.2	Training protocol for SME participants	30.04.2023	Done	Deliverable B2.2 Training protocol for SME participants attached to this report
B.2.3	SME recruitment evaluation protocol	30.11.2023	Done	Deliverable B2.3 SME recruitment evaluation protocol uploaded to Butler on 28.11.2023
B.2.4	List of interested transport companies	30.11.2021	Done	Deliverable B2.4 List of interested transport companies – attached to 1 st midterm report

Milestones

No	Description	Date	Status
B2.1	Operators for pilot phase successfully onboarded	30.11.2021	Done

6.1.4. ACTION B.3: Test run, optimization and demonstration in real live

Foreseen start date: 01.04.2021

Actual start date: 01.04.2021

Foreseen end date: 30.09.2024

Actual (or anticipated) end date: 30.09.2024

The action is divided into 3 sub-tasks:

- B.3.1 First pilot test
- B.3.2 Optimisation
- B.3.3 Demonstration test

Having the first technical version of the ICB ready with the launch of the application on December 1st 2021 (see action B1), the application was piloted by the SME forwarders and intermodal operators.

The piloting phase of ICB included the following transport lanes for demonstration.

No.	Transport lane
1	Calais-Perpignan
2	Ashford-Perpignan
3	Calais-Domodossola
4	Ashford-Domodossola
5	Duisburg – Poznan
6	Duisburg – Gliwice
7	Rheine – Suzzara
8	Ferneti – Wörth
9	Lübeck – Ludwigshafen
10	Lübeck – Duisburg
11	Lübeck – Verona
12	Lübeck – Melzo

Based on the feedback during the piloting phase the ICB was further enhanced, improved, and the supporting processes like onboarding and helpdesk were optimized. A report summarizing the results of the piloting phase can be found in the deliverable “B3.1 First pilot test analysis report”.

The details on the optimization and implemented improvements in the network coverage, partnering and processes can be found in the deliverable “B.3.2 Optimisation protocol”.

The deliverable “B3.3: Demonstration Test Analysis Report” plays a pivotal role in the overarching action of “Test run, optimization, and demonstration in real life.” Its primary objective is to meticulously evaluate the implementation and testing approach adopted by the project, honing in on the Product Verification Process within systems, specifically IT platforms like the ICB. This analysis endeavours to gauge the efficacy of the verification process in ensuring that the end product aligns seamlessly with its requirements. Notably, it is essential to clarify that this report intentionally excludes an exploration of the evolution of transport lanes, as this aspect falls within the purview of deliverables in action C1: Technological Evaluation.

Deliverables

No	Description	Date	Status	Document
B3.1	First pilot test analysis report	31.12.2022	Done	Deliverable B3.1 First pilot test analysis report attached to this report
B3.2	Optimisation protocol	31.08.2023	Done	Deliverable B3.2 Optimisation protocol attached to this report
B3.3	Demonstration test analysis report	30.09.2024	Done	Upload to Butler in September 2024
B3.4	Report on indicative average number of shipments on selected routes	31.01.2021	Done	Deliverable B3.4 Indicative number of shipments - attached to 1 st midterm report

Milestones

No	Description	Date	Status
B3.1	Successful FIT demonstration	30.09.2023	Done
B3.2	Successful first pilot test	30.04.2022	Done

6.1.5. ACTION B.4: Business plan and replication & transfer strategy

Foreseen start date: 01.07.2022

Actual start date: 01.10.2021

Foreseen end date: 30.09.2024

Actual (or anticipated) end date: 30.09.2024

The action is divided into 2 sub tasks

- B.4.1 Development of a business plan
- B.4.2 Development if a replication/ transfer strategy

Task B4.1. Development of a business plan

Rail-Flow started based on the feedback of operators and forwarders during the recruiting for the piloting phase to document the first assumptions of the future business plan of ICB. These assumptions were further detailed and verified during the first 2 project years and a business plan as deliverable B4.1 was developed.

The assumption is that the usage of the ICB for the booking forwarders is free of charge to avoid further barriers in the usage of the application. There will be a commission fee in future for the intermodal operators and carriers if a transport request can be converted into a booking. The price for the transport of an intermodal unit through Europe can easily be one thousand Euros. The first and last mile transport for one leg can easily cost around two hundred Euros. If these transport capacities remain unused; intermodal operators and truck carriers have high remanence costs. That's why they are willing to pay a booking fee if the ICB successfully acts as a digital sales channel for them.

The business plan assumes for each year after the project a defined number of booked transports and average booking fees resulting in revenues. The running costs include all costs to maintain and market the ICB. These costs are higher than the revenues in the early years but will only grow slowly over time as not many additional resources are needed to scale an IT platform. As revenues will grow over the years this will result into a profitable business model with positive EBITDA (Earnings before interests, tax, depreciation, amortization).

The business plan was revised based on the feedback of CINEA (see Technical issue no. 5: Deliverable B4.1 "Business Plan in letter from 06. December 2022) and was attached to the last midterm report.

Task B4.1. Development of a replication/ transfer strategy

As the ICB is as a platform not limited to one operator or one transport lane the replication of the project already started directly with the piloting phase. One of the requests by SME forwarders is a broad network offering transport lanes by operators on all corridors throughout Europe for craneable and non-craneable transport options in one platform solution. The forwarders are looking for a one-shop solution to procure and book their transports.

The replication of the ICB solution to additional rail freight operators is documented in the deliverable B4.2. The feasibility and transfer study of the ICB technology to barges and its lanes can be found in deliverable “B4.5 Feasibility study on transfer to barges”.

Deliverables

No	Description	Date	Status	Document
B4.1	Business plan	31.10.2022	Done	Deliverable B4.1 Business plan attached to Midterm report No2. And attached in revised version to last mid-term report
B4.2	Replication and transfer strategy	31.12.2022	Done	Deliverable B4.2 Replication and Transfer Strategy attached to last mid-term report
B4.3	Market study on corridor North-South.Europe	28.02.2023	Done	Deliverable B4.3 Market study on corridor North-South Europe attached to last mid-term report
B4.4	Market study on corridor Central Europe – Turkey	31.10.2023	Done	Deliverable B4.4 Market study on corridor Central Europe – Turkey attached to last mid-term report
B4.5	Feasibility study on transfer to barges	31.07.2023	Done	Deliverable B4.5 Feasibility study on transfer to barges attached to last mid-term report

Milestones

No	Description	Date	Status
B4.1	Follow-up projects started	31.05.2024	Done

6.1.6. ACTION C.1: Technological evaluation

Foreseen start date: 01.07.2022

Actual start date: 01.07.2022

Foreseen end date: 30.09.2024

Actual (or anticipated) end date: 30.09.2024

The action is divided into 2 sub-tasks

- C.1.1 Analysis of measurements results
- C.1.2 Evaluation report generation

Task C1.1. Analysis of measurement results

The piloting phase of the ICB started on 1st of December 2021. Its first analysis report was conducted in 2023 see deliverable “B3.2 Optimisation protocol”.

The application is technically capable of measuring and monitoring the requests, bookings, and KPI in internal dashboards. Those dashboards are part of the daily work of the customer success managers. The overall impact analysis will take place in task C1.2 and will be reported as part of the LCA and in the KPI database of the LIFE programme.

Task C1.2. Evaluation report generation

R-F combine the results of the analysis in several evaluation reports “Deliverable C1.3 Technical evaluation report for each demonstration routes”, “Deliverable C1.4 Technical evaluation report for replication routes to from Italy”, and “Deliverable C1.5 Entire network evaluation report”. Evaluation reports are made for the different target routes for the demonstration phase, routes from and to Italy, and across the entire FIT network. These reports can be used to gain insights into how the network needs to be further expanded in the future to align it even more closely with the needs of small and medium-sized forwarders.

Deliverables

CINEA clarified in the letter of 22.06.2022 on the 2nd monitoring visit CINEA the question of the project regarding the deliverable C1.3. As there are no "demonstration routes" anymore in the project after amendment no. 1, the deliverable will now conduct a technical evaluation of the 12 lanes that were available at the beginning of the ICB pilot phase.

For deliverable C1.5, an addendum was agreed during the final project visit on 23 and 24 September 2024. The name was changed from ‘Entire network evaluation report’ to ‘Entire network evaluation report and outlook’. Rail-Flow has developed an extensive network for intermodal transport, covering 32 countries and 247 terminals, with 9,764 transport routes available for booking. The analysis of deliverable C1.5 focused on key performance indicators including emission savings, coverage across countries, booking statistics, and craneable connections.

Despite the vast network and a platform designed to facilitate intermodal transport, actual bookings have fallen short of initial targets and projections. This shortfall primarily stems from a challenging market environment and the substantial efforts required to instigate industry-wide change. While Rail-Flow has limited influence over broader market dynamics—such as declining market volumes and external events — R-F has taken proactive measures, detailed in this document, to counter these challenges and enhance bookings.

Significantly, R-F has invested ████████ EUR from its own funds, outside the project budget, to support the intermodal shift by adapting its Purchase & Tender Management Platform (PTM) also for intermodal transport. This investment is not aimed at streamlining the booking process for spot transactions, but rather at enabling the identification and securement of suitable intermodal capacity at the purchasing level, enhancing our strategic positioning within the market.

Looking forward, R-F is committed to further investments, including applying for funding to develop a yield management engine for more dynamic pricing and expanding the capabilities of the ICB to better support intermodal transport needs.

However, it must be noted that without favorable shifts in market conditions, the intermodal transport sector, along with the ICB platform, will likely continue to face significant challenges. Rail-Flow remains dedicated to adapting our strategies to effectively navigate these complexities and continue our push towards optimizing intermodal transport.

No	Description	Date	Status	Document
C1.3	Technical evaluation report for each demonstration pilot routes	31.10.2024	Done	Upload to Butler in October 2024
C1.4	Technical evaluation report for replication routes to/from Italy	31.10.2024	Done	Upload to Butler in October 2024
C.1.5	Entire network evaluation report and outlook	31.10.2024	Done	Upload to Butler in November 2024 (due to additional requirements after final project visit)

Milestones

- None

6.1.7. ACTION C.2: Environmental impact assessment and LCA

Foreseen start date: 01.07.2022

Actual start date: 01.07.2022

Foreseen end date: 30.09.2024

Actual (or anticipated) end date: 30.09.2024

The action is divided into 2 sub tasks

- C.2.1 Monitoring and measuring of the LIFE performance indicators
- C.2.2 S-LCA Analysis for implementation

Task C2.1. Monitoring and measuring of the LIFE performance indicators

The environmental impact calculator of EcoTransIT is successfully integrated into the ICB see task B1.5, enabling the calculation of all required KPIs on air pollution, emission of toxic substances, and GHG. The first results were reported as part of the 2nd midterm report in October 2022 and can be found in chapter 7.

Task C2.2. S-LCA Analysis for implementation

A simplified life cycle assessment (LCA) has been performed to prove the environmental footprint improvements of the FIT technology. It showed that, despite initial greenhouse gas emissions totalling 81.3 tonnes of CO_{2e}, the ICB enabled significant savings to be made over the course of the project. In the first year of operation, around 80 tonnes of CO_{2e} were saved per month, meaning that the ecological ‘break-even’ was achieved within a year. The study recommends the development of similar platforms in other areas of rail freight transport.

Deliverables

No	Description	Date	Status	Document
C2.1	Life Performance Indicator table at Mid-term report	31.10.2022	Done	See chapter 7 and Deliverable C2.1 attached to 2 nd midterm report
C2.2	Life Performance Indicator table at final report	31.10.2024	Open	See chapter 7
C.2.3	Simplified LCA	31.10.2024	Open	Upload to Butler in October 2024

Milestones

- None

6.1.8. ACTION C.3: Socio-economic impact assessment

Foreseen start date: 01.10.2023

Actual start date: 01.10.2023

Foreseen end date: 30.09.2024

Actual (or anticipated) end date: 30.09.2024

The action has 1 task

- C3.1 Socio-economic impact assessment

The socio-economic study in task C3.1 evaluates the impact of a transnational intermodal transport system in road freight, considering economic, social, and environmental aspects. It analyzes potential job growth, SME competitiveness, and the economic benefits of sustainable freight solutions.

Despite challenges such as limited data availability and low survey participation, the study provided valuable insights, partly through cooperation with Allianz pro Schiene. The use of intermodal transport shows potential for job creation and cost savings of up to 20% on long routes. Improved planning enables shorter and more predictable working hours, benefiting part-time workers. Additionally, intermodal transport enhances work-life balance, social integration, and reduces cargo theft.

The results highlight the advantages of intermodal systems and offer important impulses for the industry.

Deliverables

No	Description	Date	Status	Document
C3.1	Study on the socio-economic impacts	31.10.2024	Done	Upload to Butler in October 2024

Milestones

- None

6.1.9. ACTION D.1: Communication and dissemination

Foreseen start date: 01.11.2020

Actual start date: 01.11.2020

Foreseen end date: 31.10.2024

Actual (or anticipated) end date: 31.10.2024

The action is divided into 2 sub tasks

- D.1.1 Networking with other projects
- D.1.2 Dissemination planning and development of the dissemination pack

Task D1.1. Networking with other projects

As one of its initial networking endeavours, R-F became a member of the Alice organization, fostering collaboration and knowledge exchange with other European logistics projects. Among the ongoing projects within Alice, <https://www.etp-logistics.eu/projects/>.

In 2021, Rail-Flow actively participated in the "International Conference on Air Pollution – Moving Towards Clean Air for Europe" conference, an event organized by the "hungairy" project, where various LIFE projects focusing on air quality presented their initiatives and bolstered their collaborative efforts. More details about this conference can be found on the website <http://www.hungairy.hu/en/events>.

On the 12th and 13th of October 2022, R-F showcased its project at the LIFE Platform Meeting on 'Green Mobility.' Additionally, R-F seized the opportunity to present the project at ECOMONDO in November 2022 in Rimini. This conference served as an excellent platform

for networking and project promotion. R-F not only presented the project during the pitch session but also had a presence at the CINEA booth.

On the 19th and 20th of September 2023, R-F participated as bronze partner at the Transporeon Summit. Transporeon is a long-established platform with a large number of forwarders. Currently, Transporeon is hardly in a position to broker transport by rail; the partnership will provide Transporeon customers with easy access to sustainable rail freight transport. In 2024, R-F were even participate as a silver partner at the summit in Vienna and had valuable contact with a lot of new prospects, but also existing customers.

For Task D1.2, which focuses on dissemination planning and the development of a dissemination pack, R-F entrusted Natascha Koch, the marketing manager, with coordinating these activities. The entire project team provided strong support. R-F established a dedicated website <https://www.rail-flow.com/en/facilitating-intermodal-transport/>, designed a project logo, crafted project flyers, and developed notice boards in 2021 as well as 2024. These materials are effectively utilized during project workshops with partners and at various trade fairs and exhibitions attended by R-F to promote both the project and the ICB. All materials are updated regularly.

Fairs and more



Figure 5: Extract of fairs and presentations of the ICB

Among the pivotal trade fairs for the project, the "Transport and Logistics" fair in May 2022 in Munich stands out. R-F secured its presence with its own booth at this event, which attracted approximately 2,300 exhibitors from 67 countries, showcasing products and solutions in logistics, mobility, IT, and supply chain management. The opening of the fair was graced by Federal Minister Dr. Volker Wissing. During the fair, Rail-Flow's sales and customer success management team established over 80 contacts related to the ICB, encompassing partner solutions, carriers, forwarders, and intermodal operators. A notable highlight was Rail-Flow's joint initiative with the BGL, where they presented a sustainability award to a forwarder who pioneered intermodal rail transport by shifting the most shipments from road to rail via the ICB.



Figure 6: Sustainability award on fair transport and logistics 2023

Next to the transport and logistics fair the most important fairs for the ICB were the Transporeon Summit in Barcelona and Vienna <https://www.transporeon.com/tpsummit>. Another pivotal event was the co-hosting of the RailXchange event in Cologne alongside RailWatch and kasasi in 2023 and RailCube and kasasi in 2024. This gathering brought together approximately 80 market participants, including operators, forwarders, carriers, shippers, and research institutes. It served as a platform for discussing current market developments and challenges.

Both events allowed R-F to market the project to the target group of the ICB. Only the Transporeon summit was attended by over 500 forwarders and shippers who are already using platform solutions for road transports and are potential users of the ICB as most of those forwarders seek a solution of intermodal transport options. One of key feedback of the participants during the fair is that the currently started piloting of use cases between Transporeon and the ICB might be one of the most promising integrations for the market between road transport and intermodal rail freight solutions.

In 2023, two standout events were the 2 company events "Betriebsfest VTG in Bitterfeld" and the "Betriebsfest Hellmann in Osnabrück". Both companies were rewarded as part of the ICB shuffle, receiving a party hosted by Rail-Flow and JITpay for one operator and one forwarder.



Figure 7: Betriebsfest Hellmann in Osnabrück

Also 2024 was full of valuable events. It started with the yearly New Year event VPI Neujahresempfang + VPI-Symposium 2024, where the industry comes together in Hamburg. With the Hamburg harbor, many intermodal parties visit the event to connect and network. At the SITL in Paris in March, R-F had a fair booth in the multimodal village, where the industry came together. It was a great event, especially to inform the French market, as we were not that visible to them yet. Many requests and interests came from that event. Rail-Flow has also attended many other events in Germany and abroad, e.g. the IBS Congress in Helsinki and Istanbul, the Rail Freight Summit in Poland, and the DSLV/VDV marketplace event in Germany. Other highlights include the company's own railXchange event, now in its third year, the InnoTrans fair, and the Transporeon Summit in Vienna.



Figure 8: Impressions of the SITL fair in Paris and Transporeon Summit in Vienna.

After all the Covid-19 restrictions the logistic market sought for the personal exchange on fairs and exhibitions. Rail-Flow increased their visibility and attended all relevant market events to promote the ICB. The complete list of attended conferences and fairs where Rail-Flow presented the ICB since project start can be found in deliverable D1.4.

The primary focus of marketing activities revolved around enhancing the visibility of the ICB in the market. R-F employed Google Ads to spotlight the ICB for SMEs. During the first half of 2022, this strategy yielded over 150 prospects signing up via the website. Subsequently, Rail-Flow analyzed these prospects throughout the year, considering factors such as cost, relevance, and booking frequency. As a result, they opted to reduce the reliance on Google Ads and instead concentrated on presenting the ICB at trade fairs, exhibitions, and direct marketing within target groups. These events significantly boosted the public awareness of R-F and ICB. To reach a diverse range of forwarders, Rail-Flow adopted a cross-media approach, targeting potential customer groups through various channels with tailored information. They also sought to expand the intermodal network by encouraging existing operators to add more connections and attracting new operators, thereby reaching a broader audience of forwarders. To bolster their efforts, Rail-Flow enlisted the expertise of the marketing agency "Getting The Market," which specializes in the intermodal business and represents numerous customers in the field. Their omnichannel marketing approach included weekly organic LinkedIn posts, sponsored LinkedIn ads, email campaigns, monthly newsletters, blog posts featuring testimonials from satisfied customers, and the creation and distribution of flyers at events or during on-site appointments.

LinkedIn remained a key element of Rail-Flow's communication strategy. The number of Rail-Flow followers on LinkedIn grew from 2,660 in October 2022 to over 3,700 by August 2023, and over 6,000 by January 2025.

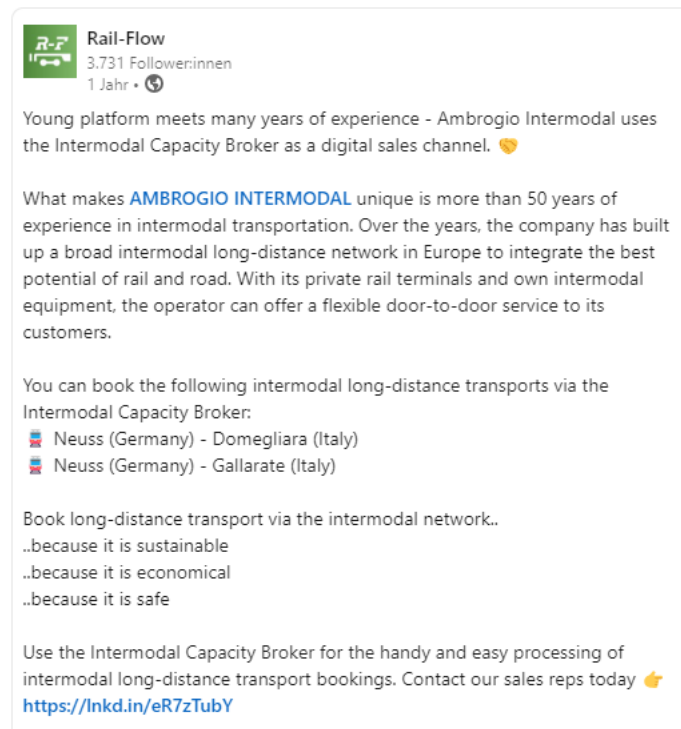


Figure 9: LinkedIn Post

During the same period, the website saw a substantial increase in visitors, reaching nearly 33,249. To accommodate this surge in traffic and enhance customer tracking, R-F extended the website and added a landing page. Additionally, the marketing agency, "Getting The Market B.V.," conducted monthly maintenance to ensure the website's stability, an unplanned but essential task covered within the existing budget.

In addition to LinkedIn, R-F issued a monthly newsletter, reaching more than 6,000 followers. The newsletter provided general information on intermodal rail freight transports and highlighted new functionalities and transport lanes.

To promote the project further, Rail-Flow produced an explanatory video, well-received by the public and market participants, which simplified the understanding of the project's solution.

<https://www.youtube.com/watch?v=WQrsOBQNjXI>

Rail-Flow's ICB landing page features three videos explaining the solution in three straightforward steps, emphasizing the ease of using the solution and transitioning from road to rail. <https://www.rail-flow.com/en/icb/>

Furthermore, Rail-Flow created an emotive video to underscore the importance of combined transport, targeting market participants who may be resistant to adopting more sustainable transportation methods. <https://youtu.be/-hF1oSiLhio>

The project's dissemination activities will continue with the same high level of intensity as before, remaining a crucial success factor in the project's upcoming phases.

Deliverables

No	Description	Date	Status	Document
D1.1	Website	31.01.2021	Done	Deliverable D1.1 Website - attached to 1 st midterm report
D1.2	Notice Board 1	31.01.2021	Done	Deliverable D1.2 Notice board -attached to 1 st midterm report
D1.3	Dissemination pack	31.03.2021	Done	Deliverable D1.3 Dissemination pack -attached to 1 st midterm report
D1.4	Notice Board 2	31.10.2024	Done	Upload to Butler in October 2024
D1.5	Layman report	31.10.2024	Done	Upload to Butler in October 2024

Milestones

No	Description	Date	Status
D1.1	Mid-Term Event	31.10.2022	scheduled as 1 year anniversary for December 2022, 1 st
D1.2	Final event	31.10.2024	scheduled as 3 year anniversary for December 2024, 4 th

6.1.10. ACTION E.1: Project Management

Foreseen start date: 01.11.2020

Actual start date: 01.11.2020

Foreseen end date: 30.09.2024

Actual (or anticipated) end date: 30.09.2024

As both beneficiaries Rail-Flow and Simply Deliver B.V. are agile organisations the project management of LIFE FIT follows the sprint cycles of the companies and is based on the widely accepted management tools of Atlassian Jira and Confluence. All project tasks independent of their type are planned sprints of 3 weeks, monitored, documented in Jira. The product owner of the application and the project management align on daily basis their tasks. The marketing and sales activities are aligned on a weekly basis in a regular Jour Fixe.

The communication between R-F and SD is done in a weekly management meeting. The working mode internally and between the beneficiaries is very trustful and result focussed. The administrative part of the project is managed by the Finance department of Rail-Flow using the standard tools of Rail-Flow like easybill and getmyinvoice.

Deliverables

No	Description	Date	Status	Document
E1.1	Project management plan	31.12.2021	Done	Deliverable E1.1 projectplan_ (per 31012021 with gantt) – attached to 1 st midterm report

Milestones

- None

6.1.11. ACTION E.2: Project monitoring

Foreseen start date: 01.11.2020

Actual start date: 01.11.2020

Foreseen end date: 31.10.2024

Actual (or anticipated) end date: 31.10.2024

The action is divided into 2 sub tasks

- E.2.1 Monitoring of project activities according to plan
- E.2.2 Monitoring of costs

Both tasks are executed by the project management of LIFE FIT. The internal project reporting on progress and cost monitoring is in line with the reporting requirements of the LIFE programme and based on Excel spreadsheets provided by CINEA. Due to Covid-19 travel restrictions additional resources were required to implement the actions A, B and D without affecting the overall budget line. The current project snapshot of the project finances is found in the consolidated financial statement and financial statement of each beneficiary.

Deliverables

No	Description	Date	Status	Document
E2.1	Monitoring protocol mid-term report	31.10.2022	Done	Mid-term Report
E2.2	Monitoring protocol final report	31.01.2025	Done	This report
E2.3	Audit Report	31.01.2025	Done	This report

Milestones

- None

6.1.12. ACTION E.3: After-LIFE plan

Foreseen start date: 01.04.2024

Actual start date:

Foreseen end date: 31.10.2024

Actual (or anticipated) end date: 31.10.2024

The action is scheduled for 2024.

Action E3 aims at developing an After-LIFE Plan that will ensure the continuation of the FIT activities after the finalization of the funded project. The After-LIFE Plan consists of a Dissemination, Communication and Exploitation Part.

Deliverables

No	Description	Date	Status	Document
E3.1	After LIFE plan	31.10.2024	Done	Upload to Butler in October 2024

Milestones

- None

6.2. Main deviations, problems and corrective actions implemented

████████████████████ Rail-Flow has expanded its scope to incorporate other operators/providers and their loading technologies, particularly for non-craneable trailers, apart from TXL's "NiKRASA." It's important to note that NiKRASA technology remains a part of the Intermodal Cooperation Body (ICB) and continues to be utilized on Intermodal lanes of ECL (where TXL serves as a supplier, providing train traction, wagons, and NiKRASA plates to ECL). These lanes are bookable through the ICB.

This expansion in technology options allowed Rail-Flow to offer a significantly broader and bookable transport network, encompassing more than 9,764 bookable transport lanes for SME forwarders. Despite the vast network and a platform designed to facilitate intermodal transport, actual bookings have fallen short of initial targets and projections. This shortfall primarily stems from a challenging market environment and the substantial efforts required to instigate industry-wide change. Rail-Flow had to adjust its project efforts in response to ongoing market disruptions in the logistics sector, stemming from travel and meeting restrictions related to the Covid-19 pandemic in the initial two project years, semiconductor shortages in key industries, the ramifications of Brexit, and the Ukrainian conflict since 2022. In 2023, combined transport in Europe saw a significant decline, with a 10.57% decrease in the number of consignments transported and a 9.39% drop in ton-kilometer performance. Also, in 2024 the intermodal market was primarily focused on day-to-day operational challenges and troubleshooting. While Rail-Flow has limited influence over broader market dynamics—such as declining market volumes and external events — Rail-Flow has taken proactive measures, detailed in this document, to counter these challenges and enhance bookings.

Notably, Rail-Flow had to carefully strategize its marketing approach for LIFE FIT to maximize awareness among forwarders, as outlined in action D.1: Communication and dissemination. Various external marketing experts, including Tobias Hoenemann, Lucas Feustel, and Christian Tembrink, supported the internal marketing manager at different stages of the project. While the overall marketing and dissemination costs for fairs and exhibitions exceeded the original budget, these deviations can be offset within the project budget, as certain costs for creating feasibility or market studies were managed internally. Additionally, savings were realized in travel costs as a significant number of conferences and meetings were conducted online during the all project years.

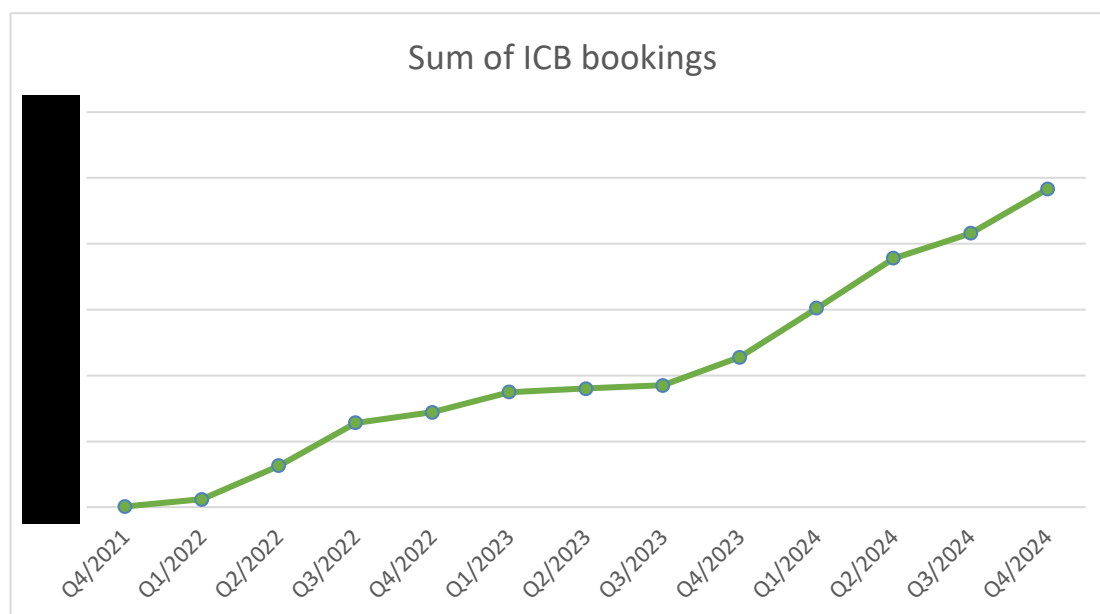
Some of the budget savings will be allocated to cover higher software license costs for the IT services, including expenses for additional test servers with Orange/Basefarm to ensure the required software quality of the platform and unforeseen expenses related to the creditability checks conducted by Schufa during the onboarding process of SME forwarders. Schufa, short for "Schutzgemeinschaft für allgemeine Kreditsicherung" (General Credit Protection Agency), is the largest private credit tracking agency in Germany, responsible for monitoring and rating the payment behavior and credibility of customers. These creditability checks are essential to address trust issues in the payment process between transport parties who have not previously conducted business with one another. Parties with a negative credibility score are not permitted to book transports via the ICB.

Within the IT part of the project (Action B1 and B3), a software penetration test was also carried out to ensure compliance with security standards. This was deemed necessary due to the presence of sensitive financial data and personal user information stored within the system as part of the booking information. Rail-Flow engaged the services of Penetra (<https://www.penetra.nl/>) as part of actions B1 and B.3 to execute the required security and penetration tests, which will be repeated annually throughout the project.

The overall project budget remains unchanged by this activity and further details on cost deviations can be found in Chapter 8 of the projects final report.

Challenges, risks and outlook on project objectives

The diagram below illustrates the impact of a lower transport volume on the overall intermodal freight market on the project. [REDACTED]



The project encountered further significant challenges in the dynamic logistics market, exacerbated by external factors such as the COVID-19 pandemic, Brexit, and the Ukrainian war. These disruptive events and their consequences for transport and energy costs diverted the focus of forwarders to their core businesses and increased their unwillingness to adapt to new solutions. Furthermore, the intermodal logistics industry experienced a notable decline of approximately 11% in 2023 due to UIRR, leading to a scarcity of transport volume in the market. At the same time, the transport of full trucks by rolling motorway services performed better in 2023, delivering a 2.7% growth on cross-border relations compared to a year earlier. <https://www.uirr.com/de/media-centre/annual-reports/annual-reports/mediacentre/2922-uirr-annual-report-2023-24.html>

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introduction of pre-payment options. These efforts aimed to bridge the gap between intermodal operators and the forwarders that had never engaged in business together.

Furthermore, the project faced challenges in adapting to changing market demands. Forwarders no longer sought merely spot traffic but demanded guaranteed capacity for recurring volumes of 1-10 trailers on a regular basis. This necessitated the creation of intermodal load unit capabilities and an integration between platforms ICB and the PTM to meet these new requirements.

Additionally, the broader logistic market demanded the opening of platforms to all logistics parties, including shippers. To address this, the project had to implement shipper functionality, allowing these parties to search and book transports independently.

Amidst these challenges, Rail-Flow displayed resilience by investing 10% of its budget beyond the reimbursed project costs. This strategic investment supported the development of integration solutions to the PTM to purchase recurring transports through the ICB, external call centre assistance to gain additional SME as ICB users, and intensified marketing efforts, underscoring the project's commitment to overcoming these obstacles.

The current pricing system for intermodal transport is inflexible and independent of demand or utilization. Rail-Flow, in collaboration with industry and research partners, plans to develop a dynamic pricing engine. The goal is to optimize capacity utilization, minimize empty runs, and increase revenues for providers. Inspired by the air and sea freight industries, the system will enable real-time price adjustments without additional effort for providers. By introducing attractive pricing structures, intermodal transport will become more competitive with road transport. All ICB users will be able to use the engine free of charge. This is Rail-Flow's last major measure to increase bookings, and the company is therefore applying for funding.

There are also smaller plans, e.g. to offer the platform in languages other than English and German. French and Polish are the most suitable languages, as this is where a large proportion of the intermodal market is handled.

In addition to the platform, Rail-Flow has created a whole new market that allows anyone to book intermodal transport quickly and easily. The ICB emerged as a pivotal tool within Rail-Flow and will continue to be promoted in the market. Rail-Flow believe in the ICB, but in view of the history and the lack of success despite massive efforts, Rail-Flow need to reduce costs and expenses. Recognizing the need for sustained efforts in the post-project phase. In a significant milestone, Rail-Flow executed a successful funding round, securing a substantial investment [REDACTED]

[REDACTED] This financial support not only bolstered the project's existing efforts but also provided a strong foundation for navigating the intricacies of the logistics market in the years to come.

The secured funding not only ensured the project's continuity after LIFE but also paved the way for strategic enhancements and innovations. With this financial backing, R-F has the resources necessary to refine its solutions, expand its reach, and invest in further research and development. In essence, the successful funding round served as a testament to Rail-Flow's credibility and potential, reinforcing the project's position as a trailblazer in the logistics industry.

Regarding project personnel, there have been minor changes. As Rail-Flow focussed on success towards the end of the project, more management attention was temporarily given to the project in the person of Dr. Alexander Below in 2024. Dr. Alexander Below is Rail-Flow's Chief Product Officer and has over 20 years of experience in software and rail freight transport. [REDACTED]

6.3.Evaluation of Project Implementation

The evaluation of the project is conducted continuously and is a direct part of the project implementation. Therefore the project started with a piloting phase and implemented a customer success management (+ helpdesk) as part of action B2 to regularly evaluate the requirements of the involved forwarders and intermodal operators proving the application and its processes. One of the major inputs from this evaluation was the implementation of adding a penetration/security test to the IT project as well as the Schufa credibility check during the onboarding process.

The customer success management evaluates together with the SME which transport lanes are requested but not yet available in the system and verifies with the participating intermodal operators how the network can be extended to cope with the requests of the SME forwarders. This is also part of task area C.1.

On the IT side of the project the evaluation takes place as part of the general SCRUM development cycle scheduled retrospective meetings. In those meetings the business and IT part of the project evaluate together their performance, the countermeasures of obstacles and the enforcement of what went well.

Critical parts of the project will be evaluated in specific project deliverables and will be documented there, see table below.

Name of the deliverable	Action	Deadline	Status
Deliverable B2.1: SME helpdesk evaluation report	B2	30.04.2023	Done
Deliverable B2.3: SME recruitment evaluation protocol	B2	30.11.2023	Done
Deliverable C1.3: Technical evaluation report for each demonstration routes	C1	31.10.2024	Done
Deliverable C1.5: Entire network evaluation report	C1	31.10.2024	Done
Deliverable C1.4: Technical evaluation report for replication routes to/from Italy	C1	31.10.2024	Done

It turns out that the implementation of the SME helpdesk as setup as a team of customer success managers assisting the forwarders and intermodal operators on short term in all matters of the ICB and questions regarding intermodal rail freight transports is one of the key success factors of the project.

6.4. Analysis of benefits

Being in the fourth project year, the project can report good progress on most benefits apart from the in the section deviation already mentioned [REDACTED]

1. Environmental benefits

a. Direct / quantitative environmental benefits:

The initial environmental benefits were calculated based on the number of [REDACTED] bookings until the project end in 2024. Due to the explained challenges and occurred risks (see chapter 6.2) the project stands today at [REDACTED] bookings at the project end. The targeted environmental benefits will be reached [REDACTED] later according to the adjusted ramp-up curve of bookings after project end.

However, every shift from conventional road transport to more sustainable alternatives, like rail freight, represents a crucial step in mitigating the sector's substantial contribution to air pollution. These changes are urgently needed, as the transport sector continues to be a major contributor to environmental degradation.

While this may seem like a modest figure compared to the initial goal, it's essential to grasp the impact these bookings carry. Even in these early stages, the project is projected to result in significant environmental savings. Over the project 1.751 tons of NO_x, 531 kg VOC, 522 kg SO₂, 102 kg PM₁₀, and 115,000 liters of diesel fuel can be saved. These numbers underscore the tangible difference that even a limited number of bookings can reduce the air pollution of the transport sector.

b. Qualitative environmental benefits

The introduction of the ICB marks a significant milestone, reshaping transportation opportunities for SME forwarders and shippers, and empowering them to make environmentally conscious choices in their freight logistics. The innovative platform has already transformed the landscape by integrating 9,764 transport lanes offered by 37 intermodal operators across Europe. What sets this platform apart is its user-friendly interface, allowing forwarders and shippers to compare various transport options based on just a few parameters. Through this streamlined process, they can efficiently evaluate and book intermodal rail freight services, enabling them to assess the environmental benefits in comparison to conventional road transport with just a few clicks on the ICB platform.

This newfound transparency is poised to revolutionize market behavior in the long run. By providing clear insights into the environmental impact of their choices, businesses are encouraged to opt for greener alternatives, thereby contributing to a more sustainable future. The impact of these environmentally conscious decisions goes far beyond individual transactions; it fosters a shift towards greener practices in the broader logistics industry.

However, it's essential to acknowledge the challenges faced during the platform's growth. External factors such as the Covid-19 pandemic, Brexit, and the war in Ukraine have significantly impacted market behaviour. These unforeseen events have compelled SMEs to focus more on their operational core business, diverting attention from platform adoption. While the initial timeline for platform expansion may have been overly optimistic, it's crucial to recognize the resilience of the project in adapting to these challenges. Despite the setbacks, the ICB remains a beacon of change, offering a promising path towards sustainable, environmentally friendly transportation practices for SMEs in the long term.

2. Economic benefits

The project's impact on the intermodal market and its partners, including R-F, is not only substantial but also multifaceted. Since its initiation, R-F has generated eight new employment opportunities, illustrating the project's direct contribution to job creation. Moreover, the project's platform plays a pivotal role in enhancing transparency within the industry.

By providing real-time data on the actual prices of various transport options to forwarders and shippers, the ICB significantly streamlines the decision-making process. In the traditional scenario, manually collecting prices from different intermodal operators and comparing them could consume anywhere from 1 to 2 hours per transport for a forwarder. This time-intensive process places a burden on both the forwarder and their office staff, who are often stretched thin. In the worst-case scenario, a forwarder first have to find out which provider operates on a particular route. The next step was to obtain and compare offers. When booking with new providers, the first step is to create a customer account and often deposit a guarantee. All of this makes the process extremely lengthy.

However, the ICB revolutionizes this process. One single customer account is sufficient to book with all providers on the platform. By utilizing the platform, the cumbersome task of price comparison is condensed to less than 5 minutes. This efficiency not only saves time but also translates into substantial cost savings for businesses. This substantial economic impact is equivalent to creating 10 to 15 full-time equivalent (FTE) positions, underlining the project's role in fostering economic growth and sustainability within the intermodal market.

3. Social benefits

R-F has successfully onboarded 261 forwarders onto the ICB platform, surpassing the initial target of 50 forwarders set in the original grant agreement. This achievement highlights the increasing traction and interest in ICB services. One of the main reasons for this growing enthusiasm is the numerous social benefits that result from using the platform.

In today's context, where the shortage of truck drivers poses a significant challenge and European society is increasingly valuing a better work-life balance, the ICB offers a unique solution. Companies utilizing the ICB platform provide job opportunities to drivers where the long-distance haul is eliminated from road transport. Instead, only the pre-carriage to the terminal needs to be executed. This intermodal approach enables drivers to return home in the evening, fostering precious family time. Such work arrangements not only address the pressing issue of driver scarcity but also contribute positively to the overall well-being of workers, promoting a healthier work-life balance. This social impact serves as a compelling reason for the growing interest in and adoption of the ICB platform by forwarders and businesses alike.

4. Replicability, transferability, cooperation

In the initial grant agreement, a clear distinction was made between the creation of a transfer strategy and its subsequent implementation post-project. Unlike projects constrained by predefined transport lanes, the Intermodal Capacity Broker (ICB) platform operates without such limitations, allowing for seamless and immediate replication.

The beauty of the ICB lies in its versatility. Unlike traditional platforms tethered to a single operator or specific transport lane, the ICB's replication process commenced during the pilot phase. This dynamic platform doesn't confine itself to narrow boundaries but rather spans across diverse operators and transport corridors throughout Europe.

7. Key Project-level Indicators

Key performance indicators are entered initially in the KPI database webtool <https://webgate.ec.europa.eu/eproposalWeb/kpi/module>. and were approved by the agency.

In the table below the current snapshot of the can be found.

Objective	Indicators	Parameter	per 31.10.2024
Improved Environmental and Climate Performance	Reduction of greenhouse gas emissions (GHG)	CO2	1,543,275 kg

Objective	Indicators	Parameter	per 31.10.2024
(including resilience to climate change)	Air quality and emissions	NOx	1,751 kg
		VOC	531 kg
		SO2	522 kg
		PM 10	102 kg
Better use of natural resources	Reduced resource consumption (excluding energy)	Diesel consumption	115,868 l
	Energy	Reduced energy consumption	15,547,622 MJ
Economic Performance, Market Uptake, Replication	Employment	Jobs created	7
	Replication / Transfer	N . of replication / Transfer	9,764 bookable transport lanes incl. barge
	Market uptake	market size in number of customers	261 forwarder 40 intermodal operators
Communication, dissemination, awareness rising	Awareness raising	Number of entities/individuals reached/ made aware	26,000
	Website	no of individuals (deprecated)	33,249
	Behavioural change	Number of entities/individuals changing behaviour	325 transport companies, mainly SME

8. Comments on the financial report

The details of the financial statement are found in the Excel spreadsheets of this final report.

The overall budget is on track and the project costs develop as planned in the project. Nevertheless, changes were necessary. Within action B1 the purchase of PTV licences was planned but during implementation, it was identified that the Oracle Licenses are the better solution for the application to fulfil all requirements (see description of action B1). The server costs for Orange/Basefarm increased as further servers were needed, Schufa fees for the credibility check were added to the project (see chapter 6.2). Further marketing costs for Google Ads and fees for logistic fairs to promote the solution as well as external support costs of marketing experts and professionals were needed.

The travel costs are lower than planned and will even further decrease. External costs for the creation of the market and feasibility studies could be saved as the tasks were created internally

by the project team. These saved costs will be used to compensate the higher costs in marketing and software licences.

The budget changes in the project are below the flexibility of the 20% limit. In addition, Simply Deliver did not utilise the planned budget.

The following table shows the current allocation of costs per action as for 31st October 2024, based on received and paid invoices and personnel costs.

Action A1 “SME recruitment strategy and operator agreements”

Cost category	Cost allocation	Remarks
Personnel	██████████	Technical analyst spend less hours, second analyst added to task, project administration more hours overall budget of action met and slightly below the planned budget. Including stakeholder participation action above budget.

Action B1 “Linking of logistic platform module to established freight services”

Cost category	Cost allocation	Remarks
Personnel	██████████	Costs are lower than the planned costs of ██████████. In the action only the personnel costs of the year 2021 are listed. All other business product and development personnel costs are part of action B3.
Consumables	██████████	Oracle licences used instead of PTV licenses added see technical section. Hosting costs increased during the project. Original budget was planned with ██████████. Higher Costs will be covered within the budget as other positions can be decreased see i.e. B4.
External assistance	██████████	According to the last issue letter (Financial Issue no. 11), Rail-Flow reallocated credit checks by Schufa and testing to the external assistance category

Action B2 “SME recruiting and training; SME forwarder helpdesk”

Cost category	Cost allocation	Remarks
Personnel	██████████	Service Manager Agents started already in 2021. Due to the low number of bookings further support by sales managers added to this action.
Travel	██████████	Lower due to Covid-19 travel restrictions

Action B3 “Test run, optimisation and demonstration in real live”

Cost category	Cost allocation	Remarks
Personnel	██████████	All business product and development personnel costs are part of this action for the

		project years 2022 and 2023 and demonstration test analysis of 2024.
Travel		Lower due to Covid-19 travel restrictions

Action B4 “Business plan and replication & transfer strategy”

Cost category	Cost allocation	Remarks
Personnel		Costs are lower than planned as no external support was required to create the market and feasibility studies
External assistance	€ 0	No external costs as the market and feasibility studies could be conducted internally. The saved amount will be used to compensate the higher server costs of action B1

Action C1 “Technological evaluation”

Cost category	Cost allocation	Remarks
Personnel		Most activities took place in 2024; R-F hat to update action C1.5 after final project visit to include further information that go beyond the planned scope of the deliverable

Action C2 “Environmental impact assessment”

Cost category	Cost allocation	Remarks
Personnel		Main parts of action took place in 2024; e.g. LCA and KPIs
External assistance		LCA, Legal advice on T&C of platform etc. With the LCA R-F saved compared to budget.
Consumables		Licensing EcoTransIT

Action C3 “Socio-economic impact assessment”

Cost category	Cost allocation	Remarks
Personnel		Partner support has taken up more capacity at Rail-Flow, therefore over budget
External assistance	/	Support from existing partner (BGL, ApS) that R-F do not has to pay

Action D1 “Communication and dissemination”

Cost category	Cost allocation	Remarks
Personnel		Personnel costs will be higher as more resources were added to action to promote the project and to support the project dissemination. The costs can be covered by lower personnel costs in other actions
Travel		Lower due to Covid-19 travel restrictions
External assistance		Costs for website and online/offline marketing are higher but will be covered by lower travel costs.

Cost category	Cost allocation	Remarks
Other		Fairs and conferences according to planning

Action E1“Project management”

Cost category	Cost allocation	Remarks
Personnel		On track
Travel		Lower due to Covid-19 travel restrictions
Other		Audit; R-F- saved more than compared to budget

Action E2“Progress monitoring”

Cost category	Cost allocation	Remarks
Personnel		Higher as plan, due to involvement in audit. Will be covered in other actions

Action E3“After-LIFE plan”

Cost category	Cost allocation	Remarks
Personnel		After LIFE plan and final report

8.1.Summary of Costs Incurred

Complete the following table to show the project costs incurred compared to the approved budget and comment on each of the cost categories focussing particularly on discrepancies compared to the allowed flexibility of the 20% limit (cf. Article II.22 of the General Conditions).

PROJECT COSTS INCURRED			
Cost category	Budget according to the grant agreement in €*	Costs incurred within the reporting period in €	%**
1. Personnel			105
2. Travel and subsistence			19
3. External assistance			81
4. Durables goods: total non-depreciated cost	0	0	
- Infrastructure sub-tot.	0	0	
- Equipment sub-tot.	0	0	
- Prototype sub-tot.	0	0	
5. Consumables			113
6. Other costs			117
7. Overheads			99
TOTAL			101

*) If the Agency has officially approved a budget modification through an amendment, indicate the breakdown of the revised budget. Otherwise this should be the budget in the original grant agreement.

**) Calculate the percentages by budget lines: e.g. the % of the budgeted personnel costs that were actually incurred

The project's overall budget remains on target, ensuring that all ongoing project tasks are well within the approved and anticipated budget. While there have been some discrepancies in cost categories, these variances are below the 20% threshold that would trigger a budget amendment. These variances can be categorized as follows:

1. Travel Costs:

Due to the Covid-19 pandemic and the ensuing travel restrictions, the project adapted swiftly by transitioning to virtual meetings and communication formats. Consequently, travel expenses have been significantly lower than initially projected in the budget. This adjustment reflects the project's ability to adapt to challenging circumstances, thereby reducing costs associated with physical travel.

2. Consumables:

On the flip side, the project has encountered increased expenses in consumables, primarily in software licenses and IT infrastructure. These price hikes, coupled with the necessity to include additional consumables for maintaining the platform, have led to higher consumable costs than initially planned. Additionally, there was the incorporation of an extra test server into the project. These expenditures were essential to maintain the project's integrity and security, albeit at a higher cost than initially envisaged.

In the dynamic landscape of software projects, fluctuations in costs are not uncommon. The adaptability of the project team in response to challenges, such as the pandemic-related travel restrictions, showcases the project's resilience. Similarly, the necessary investments in additional IT security measures reflect the project's commitment to robustness and data protection.

While these deviations exist within specific cost categories, they do not necessitate a budget amendment due to being below the predefined threshold. This ability to manage unforeseen expenses while staying within the overall budget underscores the project team's financial acumen and resourcefulness.

8.2. Accounting system

Rail-Flow uses as accounting system the following systems

- “Datev Unternehmen online” for all bookings and tax records
- getMyInvoices for pre-capture of the tax records and for tagging of LIFE FIT invoices and tax records
- Expensya as digital solution for travel expenses
- EasyBill for outgoing invoices

In getMyInvoices all tax records will be verified, and records related to the LIFE FIT project will receive the Tag “LIFE”. In the system the “LIFE” is used as cost accounting number (see red circle in screen-print below).

Figure 11: GetMyInvoices

Invoices be provided in “Datev Unternehmen online” by the Finance department of Rail-Flow for payment and will be checked or approved for payment by the CEO according to the defined internal procedures. R-F has mandated FALK Group (<https://falk-co.de/en>), one of the top 20 tax consultants and auditors in Germany, to handle its accounting and tax declarations. Datev is provided via this firm.

Simply Deliver B.V. has had no invoices in this reporting period. The only costs that occurred at Simply Deliver B.V. are labour cost of the internal staff, therefore they do not work with a cost accounting number /reference in their bookkeeping systems yet.

The overall tracking of the project costs is done with the Excel spreadsheets for the financial reporting provided by CINEA for the LIFE program.

PROJECT Reference :			LIFE19 ENV/DE/000712 - LIFE FIT			PERIOD (FROM) :			01.11.2020			EXTERNAL ASSISTANCE		
COUNTRY :			Germany			PERIOD (TO) :			14.12.2021			Amount WITH NON-recoverable VAT		
Beneficiary:			Rail-Flow GmbH									17.775,27		
Details on cost item			Info on cost item				Calculation of the EXTERNAL ASSISTANCE costs					Selection procedu		
B1	B2	B3	C1	C2	C3	C4	D1	D2	D3	D4	D5	F		
Date of invoice	Invoice number	Date of payment	Name of sub-contractor	Description of sub-contracted item/service	Period when the service was provided FROM	Period when the service was provided TO	Amount in national currency without VAT	Amount in national currency with non-recoverable VAT	Exchange rate	Amount in EURO without VAT	Amount in EURO with non-recoverable VAT	Applied selection procedure		
15.01.2021	2021013	20.01.2021												
08.04.2021	FB21883	15.04.2021												
02.05.2021	RE0125	05.05.2021												
12.05.2021	RE1049121-015	07.06.2021												

Figure 12: Financial Excel Sheets of CINEA

Rail-Flow and Simply Deliver use for time tracking of project hours the Excel spreadsheets provided by CINEA for the LIFE program. The timesheets are filled in by the employees on a regular basis and are approved by the project management at the end of the month and are stored in a SharePoint project folder. The timesheets for the internal staff are signed by Mr. Dominik Fürste for Rail-Flow and Osman Akdemir for Simply Deliver.

Invoices contain in general the reference to the project LIFE19 ENV/DE/000712. For some online purchasing of marketing material unfortunately the reference couldn't be entered during the purchase and had to be added at Rail-Flow. The verification of invoices and the check on the project label is done at the finance department of Rail-Flow. The factually accurate check is done by the project management.

8.3.Partnership arrangements (if relevant)

Rail-Flow as coordinating beneficiary and accountable for the overall project budget has aligned a payment schedule with Simply Deliver B.V. at project start.

As Simply Deliver expenses are only labour cost and the planning of the project took place jointly, regular payments were scheduled by the beneficiaries. [REDACTED]

[REDACTED]. At the end of every month a balance sheet is aligned between Simply Deliver and Rail-Flow.

Osman Akdemir and [REDACTED] consolidated the reporting of both beneficiaries in a joint virtual session, which Dominik Fürste verified.

8.4.Certificate on the financial statement

See Deliverable E2.3 Audit Report

FINANCIAL STATEMENT of the INDIVIDUAL Beneficiary					
PROJECT reference :		LIFE19 ENV/DE/000712 - LIFE FIT		PERIOD (FROM) :	
COUNTRY CODE :		Germany DE		PERIOD (TO) :	
NAME OF BENEFICIARY :		Rail-Flow GmbH		EUR Euro	
Type of Beneficiary ?		COORDINATING beneficiary		ENVIRONMENT - ENV	
Legal status ?		Private commercial			
Statement of EXPENDITURES Period 01.11.2020-31.10.2024	Grant Agreement Budget (last Annex III or budget after budget transfer after interim/final payment)	Costs claimed by Beneficiary without VAT (In €) reported by PP	RSM Amount tested in €	Amount tested by RSM in %	Eligible costs identified by the Auditor in €
PERSONNEL					
TRAVEL					
EXTERNAL ASSISTANCE					
Durable goods - INFRASTRUCTURE					
Durable goods - EQUIPMENT					
Durable goods - PROTOTYPES					
LAND PURCHASE/LEASE/ONE-OFF COMPENSATION					
CONSUMABLES					
OTHER direct costs					
OVERHEADS 6,80 %					
TOTAL					

RSM Ebner Stolz GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft
Martin Theis, German Public Auditor
30 January 2025



Signature of the Auditor

Simply Deliver is below the limit that requires an audit.