ACTIVITY 3.2 Pilot actions implementation

PILOT ACTION FINAL REPORT

Draft Version
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1. BACKGROUND

Introduction

Technical Work Package 3 includes pilot actions and trainings for cooperation in multimodal transport chains and business activation. Within this WP, activity 3.2 involves the implementation of the pilot actions.

Each partner shall carry out its pilot (as it is specified in the application form) and prepare its pilot report. In all cases other partners are involved, too (assessment, capitalization etc).

Purpose of this document

In order to have a same quality level of pilot report, PP8 Freeport of Budapest as WP leader provides a series of reporting templates, including:

- the pilot action inception report,
- the pilot action mid-term report,
- and the pilot action final report.

This document – the template of the pilot action final report - is the third and last element of this series. The aim of this document is to provide methodological support to be used to summarise the implementation of each pilot action.

Which project partners are involved?

Each project partner who has a pilot is involved. The following table summarises the pilot actions and the responsible PPs.

Topic	Pilot action - Deliverable	Partner responsible
Last mile connections of multimodal nodes	D 3.2.1. PA for last mile connectivity of multimodal nodes: Feasibility Study for a new rail terminal	PP4 - ZAILOG
Multimodal terminals efficiency and optimisation	D 3.2.2. PA for multimodal nodes/terminals efficiency and optimization: innovative control shunting system	LP - NASPA

Topic	Pilot action - Deliverable	Partner responsible
Multimodal terminals efficiency and optimisation	D 3.2.3. PA for multimodal nodes/terminals efficiency and optimization: ICT/ITS tools for rail traffic	LP - NASPA
Multimodal terminals efficiency and optimisation	D 3.2.4. PA for multimodal nodes/terminals efficiency and optimization: ICT/ITS tools for rail traffic	PP6 – Port of Rijeka
Multimodal terminals efficiency and optimisation	D 3.2.5. PA for multimodal nodes/terminals efficiency and optimization: new WMS (warehouse management system) model	PP16 - CODOGNOTTO POLAND
Assessment of market opportunities to reinforce or activate new multimodal services	D 3.2.6. PA for activation/optimization of multimodal services: new services port gateway/freight village	PP4 – ZAILOG AND LP - NASPA
Assessment of market opportunities to reinforce or activate new multimodal services	D 3.2.7. PA for activation/optimization of multimodal services: modal shift form road to rail	PP16 - CODOGNOTTO POLAND AND LP - NASPA
Alternative fuels deployment	D 3.2.8. PA for ECO-innovations on alternative fuels deployment: development of new e-mobility	PP8 – FREEPORT OF BUDAPEST (WITH PP9 – PUBLIC PORTS JSC INVOLVEMENT)
Alternative fuels deployment	D 3.2.9. PA for ECO-innovations on LNG deployment as alternative fuels: logistic model for LNG	PP16- CODOGNOTTO POLAND
Energy efficiency solutions	D 3.2.10.	PP5 – LUKA KOPER

Topic	Pilot action - Deliverable	Partner responsible
	PA for ECO-innovations on energy efficiency deployment: test of energy efficiency in cargo handling	
Energy efficiency solutions	D 3.2.11. PA for ECO-innovations on energy efficiency deployment: tests on transport operations	PP14- LOKOMOTION (assessment by PP7 – RCH)
Trainings	D 3.2.12. Testing of training pathways for energy efficiency deployment in the rail sector – RCH (report is not needed)	PP7 – RAIL CARGO HUNGARY
Trainings	D 3.2.13. Testing of training pathways for energy efficiency deployment in the rail sector – Lokomotion (report is not needed)	PP14- LOKOMOTION

Why do you have to do it?

The main important findings of the pilot actions are recorded and organized in specific documents in order to support the transferability process. It means that we have to prepare a summary assessment report of all pilot actions – which is the responsibility of WP responsible partner (Freeport of Budapest – PP8). The summary report will be based on the inputs you provide in your inception, mid-term and final reports about your pilot actions. Inputs from you are provided for the final report in the format specified by this document.

2. PILOT ACTION IMPLEMENTATION

PROJECT PARTNER	PP4 – Zailog scarl
PILOT PROJECT NAME:	TalkNET Thematic work package 3 – Pilot Action for last mile connectivity of multimodal nodes: Feasibility Study for a new rail terminal
PILOT PROJECT ID:	O.T3.1

3. DESCRIPTION OF THE PILOT ACTION

NEEDS AND CHALLENGES ADDRESSED BY THE PILOT ACTION (max. 2000 characters)

The main reason behind the implementation of the 4th railway module lies in a few deficiencies or issues currently affecting the Verona inland terminal; more in detail, the main needs which the present project will address are outlined below:

1) The first issue concerns the infrastructural capacity of the terminal itself. In fact, despite being equipped with three railway modules, in view of specific future events the current infrastructure reveals a limited capacity of managing the estimated increase in traffic. This circumstance is particularly exacerbated by the prospect of the BBT opening in 2027 which will result in a consistent increase in the number of trains daily covering the Brenner route. This means that, while the overall Brenner capacity will be enhanced as a result of the BBT opening, the current three modules in Verona terminal will not be capable of taking full advantage of these improvements.
2) A second point regards the need to reduce the frequent congestions in – and outside – the inland terminal. In fact, in the current situation the terminal's entrance and exit gates coincide, resulting in a frequent congestion of external traffic as well as in internal traffic jams. More specifically, both external and internal congestions are mainly concentrated early in the morning (due to the pick-up of loading units) and in the evening (due to the drop-off of loading units).
3) The third need is to provide the terminal with technologically advanced equipment. Innovative technologies will surely increase flexibility in the management of the railway transport, while reducing useless handling operations. This will result in an overall greater terminal efficiency, capable of properly managing all new potentialities deriving from future network improvements.
4) The fourth and final point takes into due account the environmental aspect of the carriage of goods. As is well known, the transport industry – like any other production sector – presents external costs (so called externalities) which are borne by the community as a whole, including those people who do not make use of transport facilities; in this regard, CO2 emissions represent the most significant adverse impacts deriving from the logistics industry. Thus, as of today it is even more necessary to achieve an equal balance between forwarding the transport sector and promoting environmental-friendly solutions.

BEST PRACTICES AND ACTION PLANS SUPPORTING THE PILOT ACTION (max. 2000 characters)

It was clear – since the beginning of the project – that the best solution to meet our needs was the construction of a 4th module within our terminal. However, as on a first moment (during the preparation of the action plan) we had not figured out how to concretely proceed with the plan, we decided to focus more on organizational improvements, rather than on infrastructural ones.
Therefore, we first considered and studied the management of the Hupac terminal in Busto Arsizio, where all activities are regulated by a sole and impartial subject. This example has been taken as a model of ideal efficiency, as it permits to arrange (or re-arrange) in advance the duties of the partners involved in the chain, thus increasing the terminal overall performance.

Nonetheless, when we entered the phase of infrastructural planning (that coincides with the pilot action), we finally have had the chance to focus directly on physical works necessary to improve our terminal efficiency, as is the case of the construction of the 4th module.
In this regard, when deciding which best practice to follow, the choice fell on the Eifeltor terminal in Koln, with specific reference to the construction of the new module within the existing railway terminal, similarly to our case. More specifically, the project in Koln has generated the following improvements, which could certainly help overcoming most of our needs as well:

a) First, with the renewed railway tracks, the terminal is now capable of managing trains up to 700 meters of length. It follows that each train can be directly handled, thus permitting to avoid delays and to optimize the terminal time scheduling. In turn, it follows a saving in costs and a reduction of environmental impact;
b) Second, the expansion of the new module has led to the operation of four distinct railway tracks. Therefore, more trains arrive in Colonia and then departure from the terminal. This fact certainly contributes to the economically growth of the Colonia area, which is thus becoming increasingly important within the European logistics context;
c) Third, by extending the overall railway module, the buffer zone has also been expanded; more space clearly means more possibilities to optimize the organization of the stocking process, as well as more capacity to temporarily stock loading units, such as trailers, swap bodies and containers;
d) The fourth and final point concerns the benefits deriving from the use of technologically advanced equipment, such as the two gantry cranes now operating in the third railway module, which permit an increased mobility and operational efficiency.

PURPOSE OF THE PILOT ACTION (max. 1000 characters)

After the Brenner Basis Tunnel (BBT) opening in 2027, there will be a significant increase in goods being carried along the Scan-Med route. Therefore, it is necessary to strengthen the network to support the target established by the European Community that is to shift the 30% of goods from road to rail within the 2030. Furthermore, this scenario foresees to extend the High Speed/High

Capacity rail line from Brescia to Verona and to stretch it up to Padua, as well as the duplication of the railway capacity on the Verona-Fortezza line. According to the latter studies, as a result of the mentioned implementations, the Verona freight village will potentially manage a volume equal to 175 trains per day. However, despite the 2027 deadline is now approaching, there still remain consistent constraints along the Verona-Brenner route, thus limiting the overall capacity to only 120 trains per day. Given these circumstances, Consorzio ZAI reached an agreement with RFI to implement new projects with the purpose of strengthening the node of Verona, so as to satisfy the traffic forecast.

CONTENT AND OUTPUT OF THE PILOT ACTION – DESCRIPTION OF THE DELIVERABLE (max. 15000 characters)

The pilot realized is a feasibility study of the terminal upgrade that will be realized in the Verona freight village within 2026. It describes in detail the investment about the implementation of the 4th railway module combined to an organizational model capable to increase its efficiency with the aim to improve the current railway terminal in Verona. More specifically, the new infrastructure will be capable of managing trains up to 750m (instead of 600m) and weighting up to 2,000 tons (rather than 1,400 tons), according to EU standards laid out in the recent Directives, which require trains to be longer and more loaded. More of the freight village potentialities will thus be unleashed, resulting in an estimated growth of 50 per cent. Moreover, the new railway module will facilitate and support the intermodal transport along the Brenner route, which will in turn result in lower carbon emissions – thus reducing the carriage of goods' environmental impacts – and diminish the road congestion.

The construction of the 4th railway module north of freight village area will consent a northern access to the terminal, while maintaining the southern exit, thus permitting a one-way direction within the infrastructure. Moreover, besides the one-way internal roads, the double lanes will be maintained in order to avoid internal congestions and facilitate the viability of heavy vehicles. As a result, both the internal and external bottlenecks will be reduced at the minimum, with the overall viability ultimately benefitting from the project's implementation.

The new module will be equipped with a number of technological advancements, which are necessary to improve the terminal's efficiency, reduce costs as well as to improve the safety of the infrastructure itself. The main innovation will be the installation of advanced gantry cranes. The main benefits offered by these new machineries include: a considerable capacity strength, as they can lift even the heaviest loads; a greater mobility, when compared with other cranes; a significant versatility, since they have adjustable heights, spans or treads. Others improvements consist in the following ones: a brake test dedicated area, in order to meliorate and accelerate the process before each departure; the OCR (Optical Character Recognition) systems, which thanks to an advanced camera and a sophisticated software allow remote visual inspection of information about incoming loading units, thus speeding up the train checking process; a barcode installation, so as to verify the identity of all wagons departing from the terminal.

The actual implementation process will be articulated in three distinct phases, as pointed out below:

- Phase 0:

Since the new module will be implemented within the North Area, currently occupied by the automotive sector managed by an important operator, the company will be first delocalized in the so-called Marangona Area, south of Verona freight village, connected with the Verona – Mantua railway line. Then, the access roads to the new module will be implemented, so as to ensure the practicability of the external viability and connect the area to the main transportation networks.

- Phase 1:
  It first foresees the enlargement of 6 out of 24 rail tracks managed by Quadrante Europa railway station, currently used like marshalling yard, which are now solely operating as a train buffer zone with a length capacity of 600 meters. Instead, this part of station marshalling yard will be significantly expanded, with the 6 rail tracks being extended to 1,000 meters and being connected with the internal railway system, and thus linked to the Brenner Axis and to the Bologna railway line. Then, the actual module for the loading/unloading process will finally be realized, featuring 5 railway tracks with a capacity of 750 meters, plus gantry cranes and buffer zones, as detailed below.
- Phase 2:
  After the actual module implementation, the project will be finalized with the completion of the external viability.

The described pilot will be implemented thanks to the investments of the players involved. In fact, the new railway module will be realized thanks to the financial resources of Consorzio ZAI, the Municipality of Verona and the Italian railway infrastructure manager (RFI). In addition to its share of money, each partner will provide an in-kind contribution. In particular, Consorzio ZAI will give its owned areas (currently occupied by the automotive sector), RFI will design and realize the entire railway part of the project using the know-how of its engineer department and the Municipality of Verona will use its long-term experience to build a dedicated viability system for the new rail module.

WERE THERE ANY DEVIATIONS IN TERMS OF THE CONTENT OR PURPOSE OR ANY PART OF THE PILOT ACTION – IF YES, PLEASE DESCRIBE THE REASONS (max. 2000 characters)

No, there were not deviations. The pilot action has been followed the contents of the application form.

4. STAKEHOLDER'S INVOLVEMENT

HOW THE STAKEHOLDERS WERE INVOLVED (max 2000 characters)

The key stakeholders (RFI – that is the Italian railway infrastructure manager – and the Municipality of Verona) have been involved thanks to a direct contact since in the past they cooperated with the Verona freight village public authority (that is Consorzio ZAI) in other important projects. In addition, it was signed an agreement between RFI and Consorzio ZAI (that is the infrastructure manager of the Verona freight village, as said above) with the aim to start a strong collaboration necessary to upgrade the terminal before 2026. In fact, that year is the deadline for the completion of works because the objective is to be ready when the Brenner Basis Tunnel will come into operation in 2027. Other strategic partners (like Terminali Italia and Quadrante Servizi) have been engaged with a direct contact but only after the abovementioned agreement among the infrastructure managers with the aim to provide their long-term experience in the management of terminal areas. Lastly, several subjects (like engineering firms and other terminal operators) have given their support, providing a technical point of view that has been useful both in the designing phase and in the realization of the final project.

5. TRANSFEREBILITY OF PILOT ACTION RESULTS

TRANSFERABILITY OF THE PILOT ACTION RESULTS (max. 2000 characters)

This pilot action can be transferred to other European hubs because it is a good practice to follow in order to achieve the target fixed by the European community that is to shift 30% of freight traffic from road to rail within 2030. In particular, this pilot will be a sort of guideline for the inland terminals and maritime ports that are working to equip their node with an upgraded infrastructure, necessary to grab the raising railway freight traffic volume. Moreover, the adoption of a similar infrastructure by the majority of the European nodes will result in an overall enhancement of the rail freight network efficiency, decreasing dwell times and congestions in terminal areas. An optimized network will produce a consumption reduction of resources and a diminish of time waste that can be employed in new railway relations in order to strengthening the role of a sustainable transport like the intermodal one.