AVATAR Decision Tree

Owner of the vessel

Find out, if zero-emission urban waterway transport is an option for you!

Interreg North Sea Region AVATAR
European Regional Development Fund
Sustainable urban freight transport with autonomous zero-emission vessels
EUROPEAN UNION

1 - Identification of potential use cases	Do you have a use case in one of the following fields: building logistics, parcel logistics, retail logistics, horeca logistics, waste logistics, mix of previous cases?	NO → **Result**: **You are not prepared to continue at the moment.** You should start with identifying a use case. YES
2 - Identification of transport flows and decision takers of transport	(1) Is it possible to quantify potential flows? (2) Is it possible to convince the decision takers of transport?	*How many of these questions can you answer with yes?* x YES
3 - Identification of infrastructural issues	(1) Is it possible to identify the necessary (un)loading points? (2) Can the (un)loading point be accessed without any special (un)loading equipment? (3) Is a fleet of vessel(s) available than can use the city's channels? (4) Is a fleet of vessel(s) available that can pass under bridges in the channels? (5) Are the channels being properly maintained and dredged to ensure there are no potential obstructions for ships? (6) Are the (un)loading installations available? (7) Is it safe to assume that tides and currents will provide no problems for loading/unloading/sailing? (8) Is there infrastructure to charge the batteries of the vessel during loading/unloading/waiting time of the cargo?	*How many of these questions can you answer with yes?* x YES **Result: 28+ x YES** **You were able to answer at least 28 questions with a YES?** Congratulations! You seem to have a use case with high potential: go ahead!
4 - Identification of operational issues (logistics feasibility)	(1) Can we identify routes? (2) Can the loading units be transported on the full trajectory? (3) Can we charge the vessel? (4) Can we offer a reliable service? (5) Can we offer a frequent service? (6) Can we offer a reasonable transport time? (7) Can we offer a safe transport system? (8) Can we load/unload the goods? (9) Is there a low risk of collisions? (10) Can the vessel be loaded in a reasonable timeframe? (11) Can the batteries of the vessel be charged in a reasonable timeframe?	*How many of these questions can you answer with yes?* x YES **Result: 17-28 x YES** **You were able to answer 17-28 of the questions with a YES?** Good! You seem to have a use case with potential, but extra steps needed! Make sure to focus on the issues you could not yet answer with a yes.
5 - Identification of operational issues (logistics feasibility)	(1) Can we identify the needed permits? (2) Does the city have a mobility plan that supports waterway distribution? (3) Are there benefits associated with the use of channels for shipping? (4) Can the vessel be insured? (5) Is the owner striving for CO2 reduction?	*How many of these questions can you answer with yes?* x YES **Result: < 17 x YES** **You answered less than 17 of the questions with a YES?** Your use case seems to be quite uncertain yet. We would suggest to improve the basic conditions first, before continuing.
6 - Identification of economical feasibility	(1) Can we calculate the cost per transport unit? (2) Are the clients willing to pay for the service? (3) Are there enough potential customers in the area to make the shipping business economically feasible? (4) Can the owner anticipate a profitable return on investment within a reasonable timeframe? (5) Is the cost for transport competitive with road transport (truck)? (6) Is transport via (highly) autonomous vessels more efficient than road transport (truck)? (7) Is the cost of an electric vessel competitive with that of a traditional engine powered vessel?	*How many of these questions can you answer with yes?* x YES *How many of these questions can you answer with yes?* x YES
7 - Validation of the selected use case	(1) Do we have succesful test sailings?	*How many of these questions can you answer with yes?* x YES
Almost done! Now:	**Count the number of YES answers you collected. Then check the results boxes in the right column.**	***SUM of YES answers*** x YES

This document has been elaborated within the framework of the Interreg NSR project AVATAR, Work Package 4, activity 2. June 2023

AVATAR Decision Tree

Decision taker

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Interreg North Sea Region AVATAR
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1 - Identification of potential use cases	Do you have a use case in one of the following fields: building logistics, parcel logistics, retail logistics, horeca logistics, waste logistics, mix of previous cases?	NO → **Result**: **You are not prepared to continue at the moment.** You should start with identifying a use case. YES ↓
2 - Identification of transport flows and decision takers of transport	(1) Is it possible to quantify potential flows?	*How many of these questions can you answer with yes?* x YES ↓
3 - Identification of infrastructural issues	(1) Is it possible to identify the necessary (un)loading points? (2) Is the transportation of cargo from the dock to the final destination within the city a seamless process without any big challenges? (3) Is the delivery by ship able to proceed smoothly without any delays caused by congestion and traffic in the channels? (4) Is the electric charging infrastructure in place in your area? (5) Is a fleet of vessel(s) available that can use the city's channels? (6) Is a fleet of vessel(s) available that can pass under bridges in the channels?	*How many of these questions can you answer with yes?* x YES ↓
4 - Identification of operational issues (logistics feasibility)	(1) Can we integrate the transport flows into the system of the owner of the vessel? (2) Is the service offered by the owner of the vessel reliable? (3) Is the service offered by the owner of the vessel frequent enough? (4) Can the owner of the vessel guarantee availability for using the vessel as a transportation source? (5) Can the owner of the vessel deliver the needed goods to the required destination? (6) Can the owner of the vessel guarantee a reasonable transport time? (7) Can the owner of the vessel guarantee a safe transport system?	*How many of these questions can you answer with yes?* x YES ↓
5 - Identification of operational issues (logistics feasibility)	(1) If we're involved in the delivery process, can we identify the legal requirements if any? (2) Can we identify the needed permits or licenses to deliver goods by ship in the city's channels, if any? (3) There are no restrictions on the types of goods that can be delivered by ship in the city's channels? (4) Are there any examples where delivery of goods by ship in the city's channels has been completed without accidents or damages, making it a liability-free case? (5) Can costs of damaged goods be recovered from the owner of the ship?	*How many of these questions can you answer with yes?* x YES ↓
6 - Identification of economical feasibility	(1) Is the decision taker willing to pay for the service? (2) Would shipping via (highly) autonomous vessels result in cost savings for stakeholders, such as reduced transportation costs? (3) Would shipping via (highly) autonomous vessels lead to increased efficiency in supply chain operations? (4) If decision takers invested in shipping in the city's canals, would there be a significant return on investment? (5) Will the shipping delivery system on the canals reduce transportation cost for stakeholders compared to other modes of transportation?	*How many of these questions can you answer with yes?* x YES ↓
7 - Validation of the selected use case	(1) Do we have succesful test sailings?	*How many of these questions can you answer with yes?* x YES ↓
Almost done! Now:	**Count the number of YES answers you collected. Then check the results boxes in the right column.**	***SUM of YES answers*** x YES ↓

Result: 21+ x YES

You were able to answer at least 21 questions with a YES?

Congratulations! You seem to have a use case with high potential: go ahead!

Result: 13-21 x YES

You were able to answer 13-21 of the questions with a YES?

Good! You seem to have a use case with potential, but extra steps needed! Make sure to focus on the issues you could not yet answer with a yes.

Result: < 13 x YES

You answered less than 13 of the questions with a YES?

Your use case seems to be quite uncertain yet. We would suggest to improve the basic conditions first, before continuing.

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AVATAR Decision Tree

City or municipality perspective

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Interreg North Sea Region AVATAR
European Regional Development Fund
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1 - Identification of potential use cases	Do you have a use case in one of the following fields: building logistics, parcel logistics, retail logistics, horeca logistics, waste logistics, mix of previous cases?	NO / YES
2 - Identification of transport flows and decision takers of transport	(1) Is it possible to quantify potential flows? (2) Is it possible to convince the decision takers of transport? (3) Does the city have a need of transport flows? (4) Is it possible to identify decision takers of transport?	*How many of these questions can you answer with yes?* x YES
3 - Identification of infrastructural issues	(1) Is it possible to identify the necessary (un)loading points? (2) Are the city's canals deep enough to allow ships to navigate safely and deliver goods without any issues? (3) Are there bridges or other structures in the canal high enough for ships to pass under during the trajectory? (4) Are the channels being properly maintained and dredged to ensure there are no potential obstructions for ships? (5) Are there no infrastructure-related issues that could impact the efficiency or safety of ship delivery in the city's canals? (6) Is it possible to (un)load the cargo from and to the vessel? (7) Is a fleet of vessel(s) available that can use the city's channals? (8) Is a fleet of vessel(s) available that can pass under bridges in the channels?	*How many of these questions can you answer with yes?* x YES
4 - Identification of operational issues (logistics feasibility)	(1) Can we identify routes? (2) Can the loading units be transported on the trajectory? (3) Can we charge the vessel? (4) Are there security measures available to safeguard ships and their cargo during delivery through the channels? (5) Are there no environmental concerns or restrictions that could impact shipping and delivery operations in the channels? (6) Can the vessel be loaded in a reasonable timeframe? (7) Is it safe to assume that there is no risk of collision? (8) Is it safe to assume that tides and currents will provide no problems for delivery through the channels?	*How many of these questions can you answer with yes?* x YES
5 - Identification of operational issues (logistics feasibility)	(1) Does the city have a CASE approach? (2) Can the city guarantee the highest safety level for urban waterway distribution? (3) Is waterway urban distribution considered as a first choice if possible? (4) Are politicians committed to support urban waterway distribution? (5) Is the city focusing on eliminating traffic jams? (6) Is the city focusing on building a sustainable city? (7) Is the city supporting smart solutions for urban waterway distribution? (8) Is the city striving to zero CO2 emission centers? (9) Is the city supporting the multi-use of urban distribution vessels? (10) Is the city striving for a sustainable transport modus? (11) Is the city striving for noise reduction of transport? (12) Can the vessel be insured?	*How many of these questions can you answer with yes?* x YES
6 - Identification of economical feasibility	(1) Are there potential partners or investors willing to fund the necessary infrastructure development? (2) Are there subsidies on a higher level? (3) Is the cost for transport competitive with road transport (truck)? (4) Is transport via (highly) autonomous vessels more efficient than road transport (truck)? (5) Is the cost of an electric vessel competitive with a traditional engine powered vessel?	*How many of these questions can you answer with yes?* x YES
7 - Validation of the selected use case	(1) Do we have succesful test sailings?	*How many of these questions can you answer with yes?* x YES
Almost done! Now:	**Count the number of YES answers you collected. Then check the results boxes in the right column.**	***SUM of YES answers*** x YES

Result

You are not prepared to continue at the moment.
You should start with identifying a use case.

Result: 31+ x YES

You were able to answer at least 31 questions with a YES?

Congratulations! You seem to have a use case with high potential: go ahead!

Result: 19-31 x YES

You were able to answer 19-31 of the questions with a YES?

Good! You seem to have a use case with potential, but extra steps needed! Make sure to focus on the issues you could not yet answer with a yes.

Result: < 19 x YES

You answered less than 19 of the questions with a YES?

Your use case seems to be quite uncertain yet. We would suggest to improve the basic conditions first, before continuing.

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