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Table of Contents

Table of Contents	1
1. Executive Summary	1
2. Introduction	2
3. Feedback collection	2
3.1 Method	2
3.1.1. Solicited feedback.....	3
3.2 Results	4
3.2.1 Synthetic view.....	4
3.2.2. Analytic view.....	5
3.2.3. Overview.....	6
4. Conclusions.....	7

1. Executive Summary

The GUTTA-VISIR (GV in short) web application for discovering ferry routes of minimum CO₂ emissions was developed in the frame of the GUTTA project. This report documents the process of collecting external users’ feedback on GV. This information will later be used for enhancing the fitness-for-use of GV, as documented in a subsequent deliverable (D.5.1.4).

2. Introduction

The activity 5.1 of GUTTA project is titled “Validation and demonstration”. It is meant to provide various kinds of assessment on the outcomes of the activities in WP4. The the eco-route DSS which was later called GUTTA-VISIR¹ (GV in short) represents a milestone of WP4 and deserves a dedicated assessment. The present deliverable documents the process of *formal* feedback collection on GV. This refers to structured feedback collected in a digital form through standard questions, asked to project-external stakeholders and users. The report does not cover the much broader field of unstructured, partial, informal, oral feedback received since the first public version was released in October 2021, nor the developers and project-internal feedback on GV. However, thanks to the simplicity of a questionnaire-approach, it is able to sample the user’s experience in a more objective way, collecting valuable suggestions for improving the service. The analysis of the feedback collected, its selection, and use for a more advanced version of GV will instead be the subject of GUTTA deliverable D.5.1.4.

3. Feedback collection

3.1 Method

The project-external feedback was collected in two ways: either from the online Google form, directly available from the <https://www.gutta-visir.eu/other/feedback> page of the GV application (see Fig.1) or via an offline version, consisting in a Word file with the same questions of the online form. For closed questions, the possible answers were available also in the Word file.

¹ <https://www.gutta-visir.eu/>

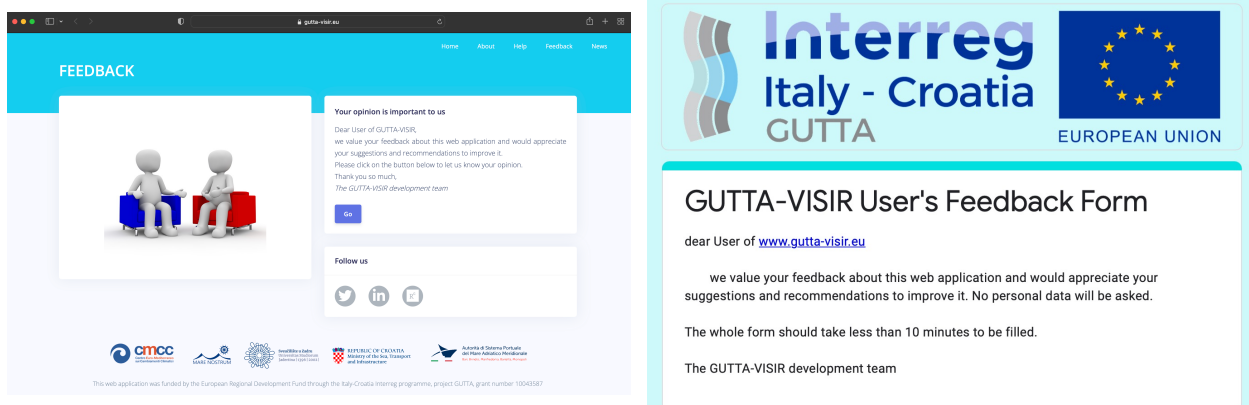


Figura 1 Feedback page and form of GV.

3.1.1. Solicited feedback

The project's external feedback on GV was also provided by eight different stakeholders. To collect this feedback, the questionnaire was sent via e-mail to all members of CSA's Technical Commission.

At that time CSA had eleven members – Alpha Adriatic, Atlantska plovidba, Brodospas, Brodosplit, Croatian Register of Shipping, Jadrolinija, Jadranski pomorski servis, Jadroplov, Golar Viking Management, Raspka plovidba and Tankerska plovidba. Firstly, the members were contacted through phone for better explanation and then they got email with the questionnaire. Even in the email an explanation of the GUTTA project, its goals, and deliverables as well as a brief introduction to GUTTA-VISIR was provided. Six of eleven members gave their feedback. The shipowners that gave their feedback on GV are: Atlantska plovidba, Brodospas, Jadranski pomorski servis, Jadrolinija, Golar Viking Management and Tankerska plovidba.

The questionnaire was also sent to the members of the Technical Commission of the CSA which mostly consists of employees of Technical Department – ship superintendent, technical director, mechanical engineer, and others. From one CSA's member, the questionnaire was filled by the director and vessel manager who is also a former seaman.

Five of six shipowner respondents are operating in the international shipping trade and Jadrolinija is operating in national and cross-national routes between Italy and Croatia. Also, CSA asked its external partner, Intermodal Transport Cluster to give its own feedback since it has experience in promoting and developing short-line shipping in the Republic of Croatia.

3.2 Results

The outcome of the activity for the collection of external feedback is reported via a dashboard of summary statistics in 3.2.1 Synthetic view and the list of responses in 3.2.2. Analytic view. The results are then summarized in 3.2.3. Overview.

3.2.1 Synthetic view

The dashboard of Fig.2 reports the statistics automatically computed by Google Docs on the answers provided online to the feedback form. Thus, it does not include the data collected via the 8 offline forms reported in Fig.4.

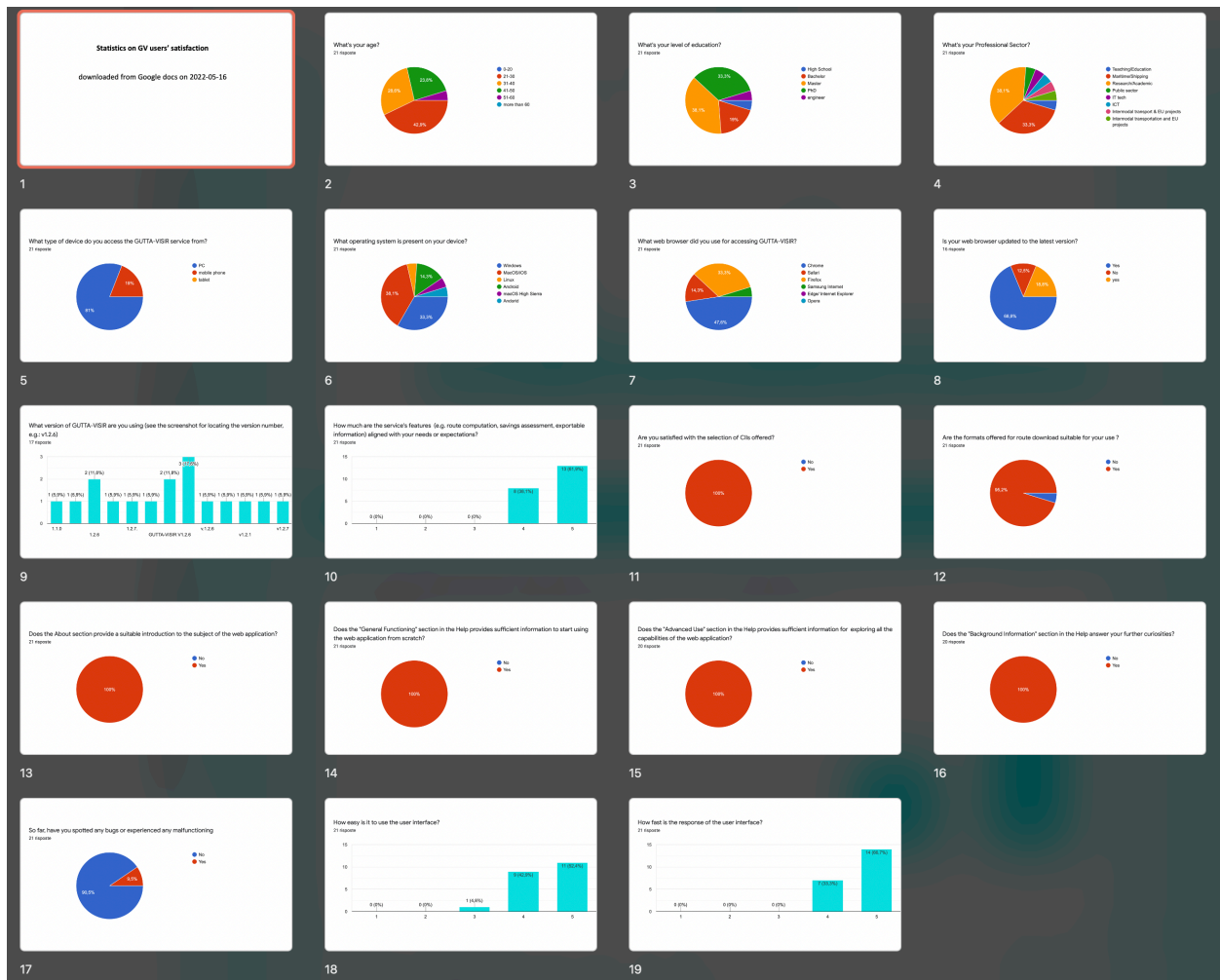


Figura 2 Overview statistics on the feedback collected from the online form.

The responding population consists of young adults, with high- to very high level of formal education, roughly split into maritime professionals and researchers/technologists. They mainly accessed GV via a PC, with either Windows or Mac operating system. The most used web browser was Chrome, followed by Firefox, and this software was generally kept up-to-date. Interestingly, the feedbacks span several versions of the GV web app, from v. 1.1.0 to 1.2.7, sampling the various stages of its development since October 2021 to March 2022. The user's satisfaction with respect to the expectations appears to be quite high, the web service works well and is properly documented. A minority of users experienced bugs or malfunctioning, while the interface is user friendly and fast.

3.2.2. Analytic view

A total of 21 feedback forms were filled online, while 9 were provided starting from an offline version of the same form.

Online forms

In Fig.3 and 4, for the database of answers provided online, the fields with open questions are reported.

Informazioni cronologiche	What's your level?	What's your Professional Sector?	How many new features would you like to recommend?	Are the formats offered for route download suitable for your use?	If NO, what format would you recommend to add?	Do you have any other general comment or recommendations?	So far, have you spotted any bugs or experienced any malfunctioning?	If yes, please concisely describe where and when they occur and in what they consist. E.g.: "Linechart not displaying the right data if the ALL option is selected from the left menu, see screenshot attached."
2021/10/10 11:00:45 AM EET	41-50	High School	IT tech	5		better left bar menu hiding and app for mobile phone	No	
2021/10/12 4:59:30 PM EET	31-40	PhD	Research/Academic	5			No	
2021/10/12 5:00:31 PM EET	31-40	PhD	Research/Academic	5			No	
2021/10/12 5:01:29 PM EET	51-60	PhD	Research/Academic	5	GUI is fantastic!!!		No	
2021/10/12 5:03:32 PM EET	31-40	PhD	Research/Academic	5			No	
2021/11/09 3:50:30 PM EET	41-50	PhD	Research/Academic	4			No	
2021/12/06 10:32:47 AM EET	31-40	Master	Maritime/Shipping	5	no for now		No	
2021/12/08 10:58:54 AM EET	21-30	Master	Public sector	5		You could provide explanation for abbreviations (example: CG DIST [g/ton-mile], EEOI [g/pax-mile], etc.)	No	
2021/12/08 12:42:30 PM EET	41-50	PhD	Teaching/Education	5	Calculation of voyage with exact time of arrival		Yes	routes were not available
2021/12/13 6:20:37 PM EET	41-50	Bachelor	Maritime/Shipping	4	See under General comments		Yes	See under General Comments

Figura 3 Feedback collected from the online form - part1.

2021/12/21 12:16:40 PM EET	21-30	Master	Research/Academic	5		Yes				No
2021/12/22 10:20:33 AM EET	31-40	PhD	Research/Academic	5		Yes			the plots of CII are displaying all the points regarding the three engine load values not the selected value (70% or 85% or 100%)	No
2021/12/22 6:36:52 PM EET	21-30	engineer	ICT	4	- The ship weight parameter (input) maybe? because it may differ the case when a container surfs lightweight or fully loaded.. so for the ship weight was it chosen like a standard one or doesn't it have an important influence on the results, and thus neglected? -- Another feature that might be helpful is giving the user the ability to choose their current position (from inside the sea) and a destination port, then let the simulator pick the closest "calculated point" and closest "time of the day" to suggest them a best route to follow..	Yes		When choosing from WEST to EAST (or the opposite), it becomes not possible to select a feature from the legend to visualise, it only shows CO2. Is it overlapping? I think overlapping issue can be fixed by using a transparency value (for example 0.8 instead of 1) for the features on the map, which can help distinguish better the routes of each parameter.	No	Just a slight latency when choosing EAST <-> WEST, but I suppose it's because of the heavy amount of data that's being communicated for the display
2022/01/04 1:37:46 PM EET	41-50	Master	Research/Academic	4		No	CSV or Excel			No
2022/03/16 1:41:03 PM EET	21-30	Bachelor	Maritime/Shipping	5		Yes				No
2022/03/17 11:12:26 AM EET	21-30	Bachelor	Maritime/Shipping	5		Yes				No
2022/03/18 1:59:50 AM EET	21-30	Master	Maritime/Shipping	4		Yes				No
2022/03/18 1:02:07 PM EET	21-30	Master	Maritime/Shipping	5		Yes		everything is working good and user interface is friendly		No
2022/03/22 12:59:42 PM EET	21-30	Master	Intermodal transport and EU projects	4		Yes				No
2022/03/22 12:59:44 PM EET	21-30	Master	Intermodal transport & EU projects	4		Yes				No
2022/03/23 4:23:54 PM EET	31-40	Bachelor	Maritime/Shipping	4		Yes				No

Figura 4 Feedback collected from the online form - part2.

Offline/printed forms

In Fig.5, for the database of answers provided offline, the fields with open questions are reported.

Informazioni cronologiche	What's your age?	What's your level of education?	What's your Professional Sector?	How much are the service's features (e.g. route computation, savings assessment, exportable information) aligned with your needs or expectations?	Is there any new feature you would like to recommend for the next version of the gutta-visir service?	Are the formats offered for route download suitable for your use?	If NO, what format would you recommend to add?	Do you have any other general comment or recommendations?	So far, have you spotted any bugs or experienced any malfunctioning	If yes, please concisely describe where and when they occur and in what they consist. E.g.: "Linechart not displaying the right data if the ALL option is selected from the left menu, see screenshot attached."
2022/3/17	51-60	Master	Maritime/Shipping	4	No	Yes		No	No	
GUTTA answers 1	21-30	Master	Maritime/Shipping	4	Weather forecast window.	Yes		No	No	
GUTTA answers 2	41-50	Master	Maritime	4		Yes		No	No	"Linechart not displaying the right data if the ALL option is selected from the left menu, see screenshot attached."
GUTTA answers 3	21-30	Master	other - Intermodal Transport & EU projects	4		Yes			No	
GUTTA answers 4	51-60	Master	Maritime/Shipping	4	No	Yes		No	No	
GUTTA answers 5	21-30	Master	other - Intermodal Transport & EU projects	4		Yes			No	
GUTTA answers 6	41-50	Bachelor	Maritime/Shipping			Yes			No	
GUTTA answers 7	51-60	Bachelor	Maritime/Shipping	3		Yes		Unusually route selection regardless of the actual weather condition. E.g Zadar - Ancona selected route. (possibility to navigate with shortest route considering the actual weather condition prevailing in the navigation area). Generally, application is user friendly with easy accessible to all relevant parameters for optimal route calculating	No	

Figura 5 Feedback collected from the offline forms.

3.2.3. Overview

The overall feedback from the 29 forms collected represents a feeling of general satisfaction with GV. The project-external users seem to appreciate its simplicity, responsivity, and self-documentation. There is some indication that some information already provided in the Help page could be added to the Home, for facilitating understanding of the various functions provided. Also, some users made request

about increasing usability from mobile phones, as well as the number of export formats for the routes. A few users made request of additional features, which are out of the scope of GV though.

However, it should be noted that the number of feedbacks received so far is not too large. This reflects the general difficulty to engage anonymous and volunteer users in time-consuming online activities.

4. Conclusions

The GV web app has been tested extensively during the first months of operation. During this period, the GUTTA partners CSA and the LP solicited feedback from various stakeholders, both from the maritime sector and the research/technology community. A total of 29 project-external users provided feedback through a dedicated feedback collection form. This document reviews the data collected and provides an overview. Despite the difficulty to collect a larger number of structured feedbacks, the impressions on GV seems to be quite positive, the evidence of malfunctioning is very limited, and there are some suggestions for improvements which could be considered for an updated version of the service. It will be documented in GUTTA deliverable D.5.1.4.