

D4.1.2 Mobility data extended collection



Document Control Sheet

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1. Introduction

1.1 Purpose of this document

The purpose of this document is to finalize the work and activities done in the D4.1.1.

The SETP-UP platform (web, APP) is the bond between all areas involved in this project. In fact, each pilot site can autonomously perform its demonstrator deployment (taking into consideration local needs, regulations, etc.) but all information useful for travellers (mobility and territory data) are gathered in a unique and central point of access.

1.2 Mobility data collection

The STEP-UP partners are collecting the mobility data to allow the cross-border trip calculation. As mentioned in the D3.1.1, the only format admitted for the mobility data collection is the General Transit Feed Specification¹. Each pilot has a different level of awareness on this format and field. The Lead Partner is coordinating this activity with support and methodology to apply within Consortium partners. Thus, the table below shows the state of the art about data collection and updates for each partner involved in WP4 (WIP = work in progress) and in the pilot deployment:

PARTNER	GTFS data availability	GTFS creation	GTFS sent	Update GTFS data
Marche Region	Available	OK	OK	OK
Emilia-Romagna Region	Available	OK	OK	OK
Municipality of Lecce	Available	OK	OK	OK
County of Split-Dalmatia	Missing	Missing	Missing	Missing
City of Sibenik	Available	OK	OK	OK
Zadar airport	Missing	OK	OK	OK

1.2.1 Backbone and Urban data

Each partner provided backbones (long-haul lines, ferries, flights, train) and urban data (local public transportation) by a GTFS file, based on its territory and availability of data and means of transport. The tables below show the current situation (e.g. number of stops, who is the operator for those territories) about mobility data collected during these months by each partner.

¹ <https://developers.google.com/transit/gtfs/#overview-of-a-gtfs-feed>

This picture is important to understand how these territories are completely different each other due to geographical or infrastructural reasons (ITS level maturity). Other partners found difficulties to gather these data (availability of authorization permits, no digital infrastructure available, etc.).

Area	Nr of Stops
Zadar	4
Marche Regione	121
Lecce Municipality	3892
City of Sibenik	82
Emilia Romagna Region	15

Hereafter, a table lists the transport operator companies for involved areas:

Area	Transporto Operator
Zadar	jadrolinija
Zadar	SNAV
Marche Region	Adriabus
Marche Region	Atma Soc. Cons. per Azioni
Marche Region	Conerobus S.p.A.
Marche Region	Contram Mobilita s.c.p.a.
Marche Region	SNAV
Marche Region	Start
Marche Region	Trasfer Soc. Cons. a.r.l.
Municipality of Lecce	Trenitalia
Municipality of Lecce	AMAT
Municipality of Lecce	AMTAB
Municipality of Lecce	AVE
Municipality of Lecce	CTP
Municipality of Lecce	Ferrotramviaria
Municipality of Lecce	SGM
Municipality of Lecce	SIB
City of Sibenik	Arriva Autotrans d.d
City of Sibenik	Autobusni prijevoz Varaždin d.o.o
City of Sibenik	Autotransport d.d. Šibenik
City of Sibenik	Brioni d.d. Pula
City of Sibenik	Čazmatrans Dalmacija d.o.o.
City of Sibenik	Črnja Tours d.o.o.
City of Sibenik	HŽ putnički prijevoz d.o.o.
City of Sibenik	Jadrolinija d.d.
Emilia Romagna Region	Linea die Borghi
Emilia Romagna Region	GomoViaggi
Emilia Romagna Region	Tper

1.3 Territory data collection

The STEP-UP platform has been enriched with relevant information on the territories involved in this project. Thus far, the main contribution came from Marche Region and Municipality of Lecce. In fact, the training session about the use of the back-office has not been performed yet. It is foreseen early in July and the handbook is in the Annex 1. However, the back-office system will be available until the end of the project, at least. Each pilot can access and feed the system with points of interest or events that characterized the catching area. Each partner can tell about its city and beauties thanks the main events and points of interest that could attract visitors. The travellers can find in a unique platform all useful information to spend some time or to reach a destination.

Thus, each partner should keep updated the STEP-UP database with relevant local information. To reach this scope, the lead partner will give the possibility to the partners to insert information whenever they want by an authorized access into ad hoc back-office system (it has been described in D3.1.1). The current situation about territory data collection is displayed in the table below (WIP = work in progress):

PARTNER	Events information availability	POIs information availability	Information filled-in	Upload information
Marche Region	Available	Available	OK	OK
Emilia-Romagna Region	Available	Available	OK	Missing
Municipality of Lecce	Available	Available	OK	OK
County of Split-Dalmatia	Missing	Missing	Missing	Missing
City of Sibenik	Available	Available	OK	Missing
Zadar airport	Missing	Available	OK	Missing

The installation of this system is completed and it used the Marche Region infrastructure (MarcheCloud).

Thus far, each information is currently available also in the final and public environment.

Some figures about the current version:

- Number of events in the web platform: 12

Id	Nome	(Sotto) Tipologia	Data inizio	Data fine	Visibile dal	...	Visibile	Vetrin...	In vet...	Rilev...	...	Poi	S...	Indirizzo (ed eventua...	N ...	Comune
47197	Fiera Nazionale del Tartufo Bianco	Enogastronomia	27/10/2019	10/11/2019	11/07/2019		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3				Via Flaminia		Acqualagna
47196	PIF - Premio Internazionale della Fisarmonica	Musica	18/09/2019	22/09/2019	11/07/2019		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3				Piazza della Repubbl...	1	Castellfardo
47195	Salento International Film Festival	Teatro, Danza, Cinema	04/09/2019	08/09/2019	11/07/2019		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3				Corso Roma		Tricase
47194	Paola Turci in concerto	Musica	23/11/2019	23/11/2019	11/07/2019		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3				Via XXV Luglio		Lecce
47193	Festa delle Luna Piena	Intrattenimento	11/07/2019	13/07/2019	02/05/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3			Z...	Obala kneza Trpimira		Zara
47192	Musical Encounters	Musica	06/05/2019	06/05/2019	02/05/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		Chie...	Z...	Trg Svete Stošije		Zara
47191	Calici di Stelle	Enogastronomia	10/08/2019	11/08/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		...	Piazz...	L...	Piazza Sant'Oronzo	Lecce
47190	Cortili Aperti	Mostre e Attività culturali	25/05/2019	25/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		...	L...	Via Francesco Rubichi		Lecce
47189	Fiera delle Campanelle	Sagre, Fiere, Mercati	24/05/2019	27/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		...	Piazz...	L...	Piazza Sant'Oronzo	Lecce
47188	Inforata del Corpus Domini	Folklore e Tradizioni popol...	21/06/2019	23/06/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		...	C...	Corso Italia		Castelraimondo
47187	Sapori e profumi di primavera	Enogastronomia	18/05/2019	19/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		...	Fr...	Via del mare		Frontone
47186	Tipicità in Blu	Enogastronomia	16/05/2019	19/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		...	A...	Largo Fiera della Pe...	4	Ancona

Image 1 – Home page for events

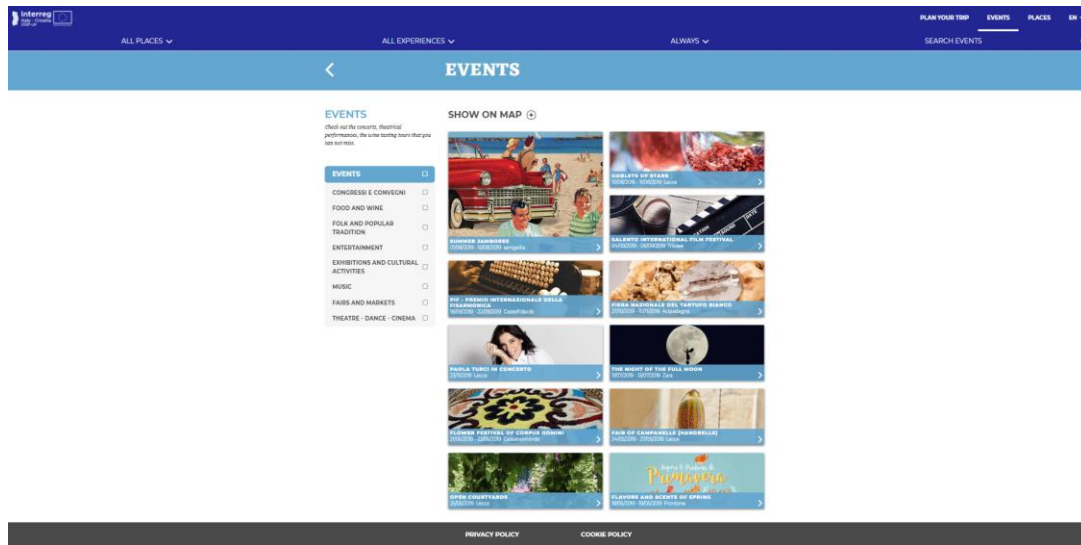



Image 2: Event details

<

Goblets of Stars

On what is considered the most magical and beautiful night of the summer, the night of San Lorenzo, the event "Goblets under the stars" takes place in the heart of the old city. It is one of the most awaited and attended events of the entire summer with one single theme: wine. Wine is the undisputed star of every initiative linked to the event, which attracts enthusiasts, onlookers and tourists...



Goblets of Stars

f t e

GALLERY

MAP

WHERE DOES IT HAPPEN:

[Piazza Sant'Oronzo](#)

Town of [Lecce](#)

NEARBY

PLACES

EVENTS


DETAILS -

Description Information


On what is considered the most magical and beautiful night of the summer, the night of San Lorenzo, the event "Goblets under the stars" takes place in the heart of the old city. It is one of the most awaited and attended events of the entire summer with one single theme: wine. Wine is the undisputed star of every initiative linked to the event, which attracts enthusiasts, onlookers and tourists from all over the province to the streets, courtyards and historic buildings of the city. The event is accompanied by a series of initiatives linked to the theme, including conferences, concerts, journalistic awards and, of course, tastings of the best wine labels in the area.

TAKE ME HERE ↗


Events connected -




FLOWER FESTIVAL OF CORPUS DOMINI
21/05/2019 - 23/05/2019
Castelraimondo




FAIR OF CAMPANELLE (HANDBELLS)
24/05/2019 - 27/05/2019
Lecce



OPEN COURTYARDS
25/05/2019
Lecce



TIPICITÀ IN BLUE
16/05/2019 - 19/05/2019
Ancona



Insieme è Profumo di Primavera
18/19
FLAVORS AND SCENTS OF SPRING

- Number of the POIs in the web platform: 6

POI (punti di interesse)								
Id	Nome	(Sotto) Tipologia	Indirizzo (ed eventuale fr...	N civico	Comune	Soggett...	Mail	Visibile
351545	Cattedrale di Santa Anastasia	Chiese e Basiliche	Trg Svete Stošije		Zara	Zara		<input checked="" type="checkbox"/>
351544	Chiesa di San Donato	Chiese e Basiliche	Trg Svete Stošije		Zara	Zara		<input checked="" type="checkbox"/>
351542	Chiesa Greca	Chiese e Basiliche	Piazzetta Chiesa Greca		Lecce	Lecce		<input checked="" type="checkbox"/>
351541	Piazza Sant'Oronzo	Vie, Piazze, Quartieri cara...	Piazza Sant'Oronzo		Lecce	Lecce		<input checked="" type="checkbox"/>
351107	Teatro dell'Aquila	Cinema, Teatri, Arene	Via Giuseppe Mazzini	8	Fermo	Fermo	co...	<input checked="" type="checkbox"/>
351105	Mole Vanvitelliana	Vie, Piazze, Quartieri cara...	Banchina Giovanni da Chio	28	Ancona	Ancona	co...	<input checked="" type="checkbox"/>

Image 3 – Home page for Points of Interest

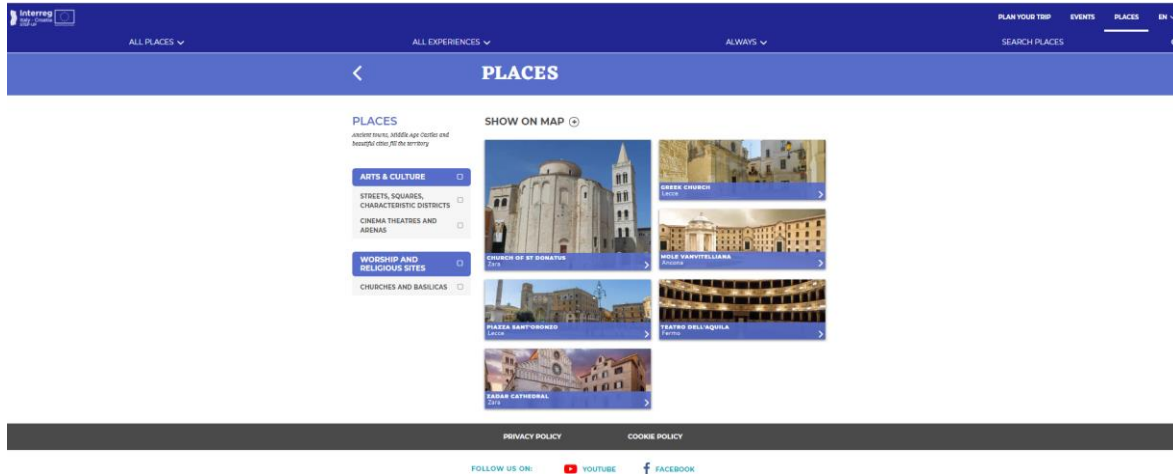
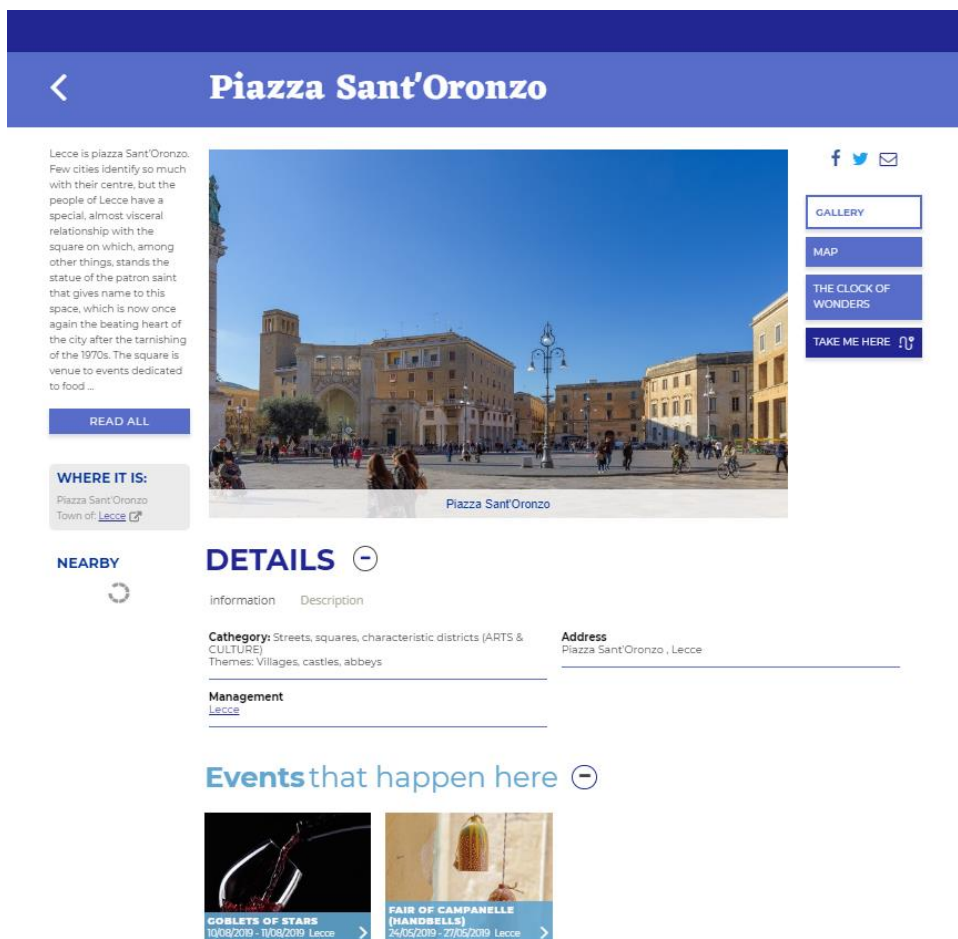


Image 4: Point of Interest details



Every event or POI is linked to the mobility field (see the button „Take me here“). In fact, if a user wants to reach that place or event, he/she can query the STEP-UP multimodal planner to know the available travel solutions.

2. Validation of mobility data

Pluservice, as technological support partner, suggested to all partners how to organize the internal testing before sending GTFS files, using the Google Validator. Its feedback reveals a lot about the GTFS file was built: well format or not? This tool cannot tell about the reliability/quality of the data included but can highlight some errors (e.g. mandatory file missing) or warning (e.g. no different type of timetable according to the day of the week, workday or not) about the GTFS.zip.

Hereafter a list of check-points to validate and verify before upload the GTFS files. Each partner is responsible of this activity related to his local mobility data. The internal testing phase is organized in different steps:

1. Data collection based on GTFS well format
2. Use Google Validator to check data
 - ✓ If the result of Google Validator is “Successful” it is possible to send to the LP the GTFS file

GTFS validation results for feed:
 C:\GTFS\STEPUP_20190322.zip
 FeedValidator extension used: None

Agencies: [jadrolinija](#), [SNAV](#)
 Routes: 4
 Stops: 4
 Trips: 67
 Shapes: 8
 Effective: January 02, 2019 to December 30, 2019

During the upcoming service dates Thu Jul 04 to Sun Sep 01:
 Average trips per date: 3
 Most trips on a date: 6, on 2 service dates (Sat Aug 03, Sat Aug 10)
 Least trips on a date: 2, on 11 service dates (Fri Jul 05, Sun Jul 07, Mon Jul 08, ...)

feed validated successfully

Generated by [FeedValidator](#) version 1.2.15 on July 04, 2019 at 10:21 AM ora legale Europa occidentale.

- ✓ If the result of Google Validator is “Error” or “Warning” it is necessary to check feedback.

Found these problems:

36 errors

872 warnings

- 12 [Invalid Values](#)
- 24 [Missing Values](#)
- 1 [Expiration Date](#)
- 182 [Stops Too Closes](#)
- 677 [Too Fast Travels](#)
- 12 [Too Many Consecutive Stop Times With Same Times](#)

Errors:

Invalid Value

- Invalid value 430001 in field `agency_id`
Route uses an unknown `agency_id`.
in line 36 of `routes.txt`

route_id	agency_id	route_short_name	route_long_name	route_type	route_color	route_text_color
109035	430001	109035	SANREMO-IMPERIA-TORINO	3	FFFFFF	000000

- Invalid value 430001 in field `agency_id`
Route uses an unknown `agency_id`.
in line 37 of `routes.txt`

route_id	agency_id	route_short_name	route_long_name	route_type	route_color	route_text_color
109086	430001	109086	BIKE SAN ROMOLO	3	FFFFFF	000000

- Invalid value 109035 in field `route_id`
in line 279 of `trips.txt`

route_id	service_id	trip_id	trip_headsign	trip_short_name	direction_id	block_id	shape_id
109035	590008	590008	Sanremo (Autostazione)		1	590008	10903560012

When the internal testing is finished, the partner can send to LP the GTFS files.

The last step is for the assessing travel planner solutions using the E-planner web platform. LP has not the responsibility about mobility data and their reliability.

The verification of the system is related to a quantity valuation and not at quality level. The quality of mobility data involved in the journeys planning operation is related to every partner and his possibility to have relevant data from transport operators.

Note: for more details about the creation of GTFS file referring to Annex 2.

2.1.1 Scenarios for Testing → web portal

The platform includes GTFS data about all partners involved in the STEP-UP project. Each partner is in charge to provide the updating version of this data and the LP is not responsible for the quality and their reliability.

Each partner is responsible for the provided data, system and services at local level.

Hereafter some use cases managed by STEP-UP web portal. These scenarios can explain better the scope of the project and its potentialities.

a. Scenario 1 – from hub A to hub B

Travel solutions between backbones, from hub A to hub B.

Example: the user queries the STEP-UP portal and requests a trip solution from Ancona port (hub A) to Zadar airport (hub B).

User and operations	STEP-UP WEB PORTAL
Enter Origin as Port of Ancona	STEP-UP web portal identifies the location (Google API will be used for this scope).
	The location becomes departure point
Enter Destination as Zadar airport	STEP-UP web portal identifies the location (Google API will be used for this scope).
	The location becomes arrival point
Click on “Search”	The portal displays a list of available backbones to connect the origin and destination. The solutions are also displayed on a map. The user selects the favorite trip solution and he/she can visualize some details (e.g. departure time, meters by foot, etc.).

b. Scenario 2 – from address A to HUB B

Travel solutions from address A to hub B.

Example: the user queries the STEP-UP portal for a trip from Corso Carlo Alberto, 2 Ancona (address A) to Zadar airport (hub B).

The same scenario is applicable if the departure point is set as hub and the arrival point as full address. In this case, the local transport data will be used to calculate the last mile (from HUB B to destination address).

User and operations	STEP-UP WEB PORTAL
Enter full Departure address (e.g. Corso Carlo Alberto, 2 Ancona)	STEP-UP web portal identifies the location (Google API will be used for this scope).
	The location becomes departure point
Enter Destination as Zadar airport	STEP-UP web portal identifies the location (Google API will be used for this scope).
	The location becomes arrival point
Click on “Search”	The portal displays a list of available multimodal solutions (backbones + urban lines) to connect the origin and destination. The solutions are also displayed on a map. The user selects the favorite trip solution and he/she can visualize some details (e.g. departure time, meters by foot, etc.).

c. Scenario 3 – from location A to location B (same region/area)

Travel solutions in the same region/area, from address A to address B.

Example: the user queries the STEP-UP portal for a journey from via Urbino, Pesaro (address A located in Marche Region) to via Verdi, Ancona (address B located in Marche Region).

User and operations	STEP-UP WEB PORTAL
Enter Origin “via Urbino, Pesaro”	STEP-UP web portal identifies the location (Google API will be used for this scope).
	The location becomes a departure point
Enter destination “via Verdi, Ancona”	STEP-UP web portal identifies the location (Google API will be used for this scope).
	The location becomes arrival point
Click on “Search”	<p>The departure and arrival points are in the same area and the STEP-UP engine identifies the best travel solutions considering the local transport data that feed the whole system. This allows to display only the relevant travel solutions for the interested area.</p> <p>A list of local solutions will be displayed both in a table and on a map. The user can select one solution and visualize some details of it.</p>

d. Scenario 4 – from full address to full address

Travel solutions from address A to address B.

Example: the user queries the STEP-UP web portal for a trip from Largo Paolo Ascia, Rimini (address A located in Emilia Romagna Region) to Ul. Hrvatskog Sabora, Zadar (address B).

The user selects the solution from a list and visualizes some useful details.

SCENARIO 4 is similar to SCENARIO 2. The flow described for Scenario 2 can be applied both at departure and arrival point.

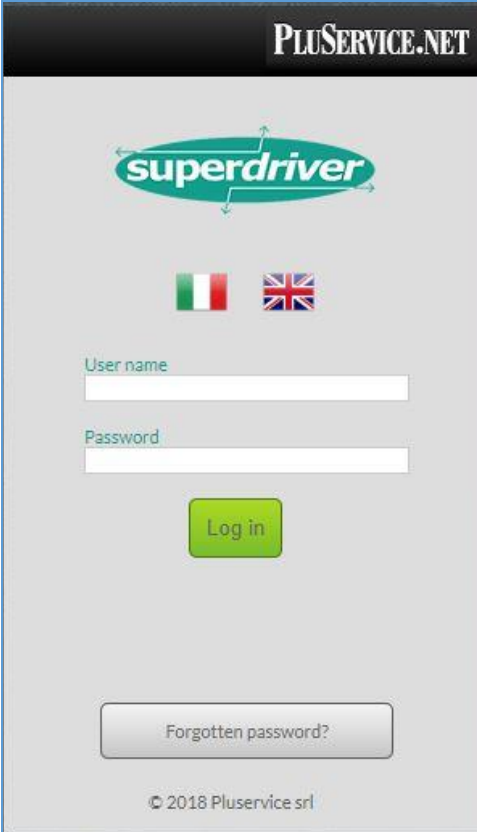
The same use cases will be performed by the use of smartphone. In fact Marche Region decided to develop another channel: the mobile application. This app will be available in the market place.

3. Annex 1 – Handbook: Back-office for tourism information collection

3.1 Introduction

In this document will be presented the structure of the back office system and the hierarchical tree of the components. The back office is the tool that defines structure, flows and links between the resources that are stored in the database and displayed in the front end.

The back office is web-based and the access to the system works through authentication credentials (Username and Password).



The screenshot shows the login interface for the Pluservice.net system. At the top, the text "PLUSERVICE.NET" is displayed in white on a black background. Below this is the "superdriver" logo, which consists of the word "superdriver" in a green, italicized font inside a green oval with four arrows pointing outwards. Underneath the logo are two small flags: the Italian flag on the left and the British flag on the right. The login form includes two input fields: "User name" and "Password", both with white text on a light gray background. Below these fields is a green "Log in" button. At the bottom of the form is a "Forgotten password?" link. The footer of the page contains the copyright notice "© 2018 Pluservice srl".

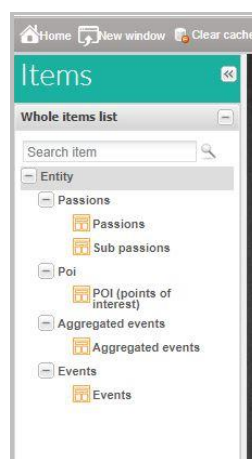
3.2 BACK OFFICE STRUCTURE

3.2.1 Home page

After logging in, the user will access the home page (HP) and will be able to see the entire back office structure.



On the left, there is the list of the menu items that is organized in a vertical structure. By this structure the user is facilitated to manage the flow of the links between the various contents loaded and linked together. By clicking on each individual menu item, the user will access to the individual masks of the expected contents.



In the center of the HP there is a section used for the general presentation of the back office. It includes two main areas:

- **Favorites:** section that contains the user's favourite menu items. To add a menu item to the favorites, the user must press right mouse button on the item of interest and select "Add to favorites" from the left section

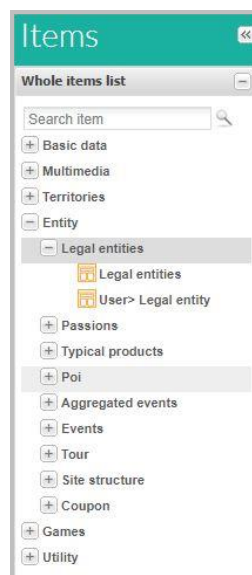
- **Most used:** section that contains the menu items that received more clicks. This menu item is therefore the most used by the operator

The "Entity" section is the most noteworthy for the editorial staff and it is divided into other sub-sections which characterize data that will be uploaded and displayed in the front end. The different section will be presented individually following the vertical structure of the menu (on the left).

3.2.2 Legal entities

The legal entity is the owner / manager of a POI or Event.

To load a legal entity, the user must click on the related item "Legal entities" in the list of items:

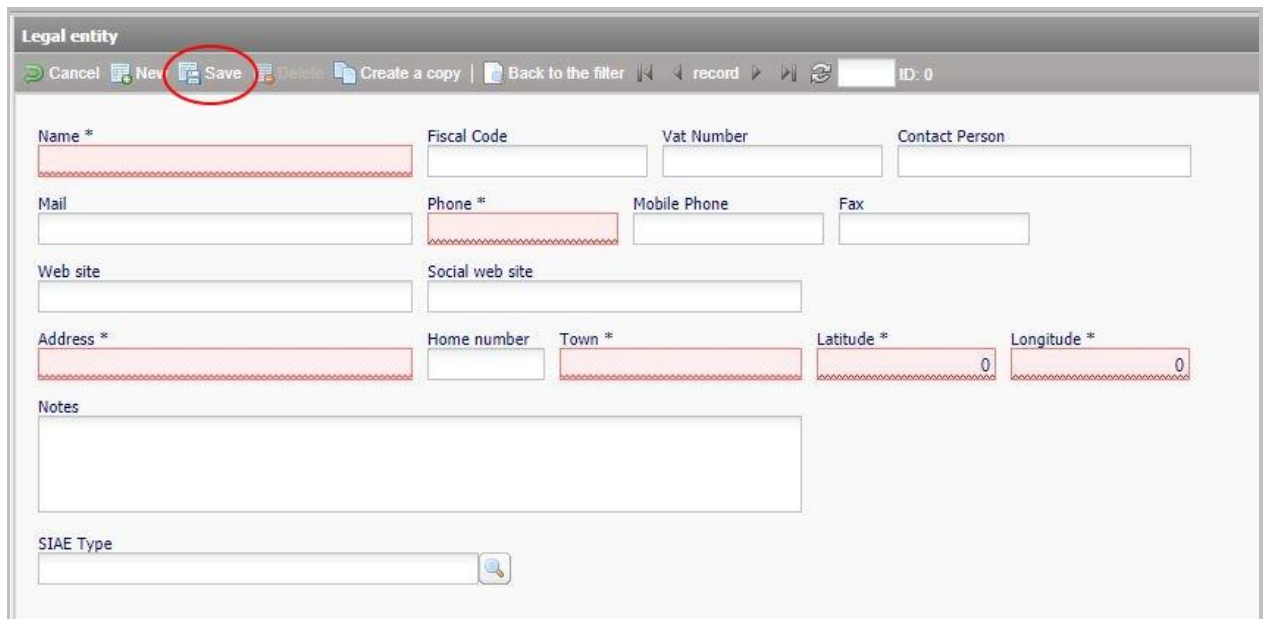


By clicking on Legal Entity section, the user will find the list of all legal entities already in the system (e.g. all the Municipalities of Italy). If the user want to create a new legal entity, it needs to click on the "New" button at the top right of the screen.



id	Name	Fiscal Code	Vat Number	Contact Person	Mail	Phone	Mobile Phone	Web site
-1								
1	Montelongo	cf	pi		info@pluservice.net	071799961	443432209	http://www.plus...
2	Montorio nei Frentani				070047	070047	070047	
3	Montecifone							
4	Morrone del Sannio							
5	Casalciprano							
6	Chiauci							
7	Castel San Vincenzo							
8	Filignano							
9	Rionero Sannitico							
10	Bagnoli del Trigno							
11	Capracotta							
12	Monteroduni							
13	Castel del Giudice							
14	Pietrabbondante							
15	Pizzone							
16	Vastogirardi							
17	Montaquila							
18	Frosolone							
19	Fornelli							

The detail form, with all fields to be completed, will open. Red fields are mandatory. Once the user has entered requested information, clicks on the "Save" button at the top bar to save the POI details.



Legal entity

Cancel New **Save** Delete Create a copy Back to the filter record ID: 0

Name * Fiscal Code Vat Number Contact Person

Mail Phone * Mobile Phone Fax

Web site Social web site

Address * Home number Town * Latitude * Longitude *

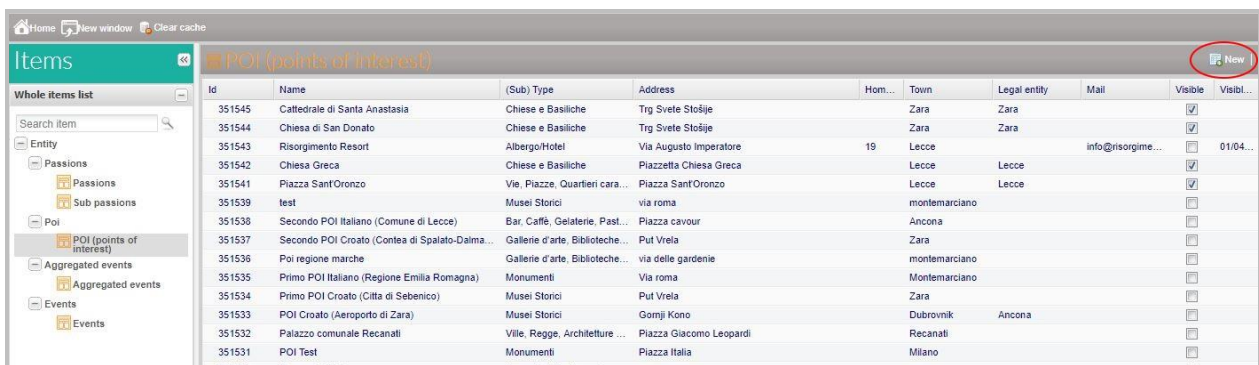
Notes

SIAE Type

3.2.3 POI (Points of Interest)

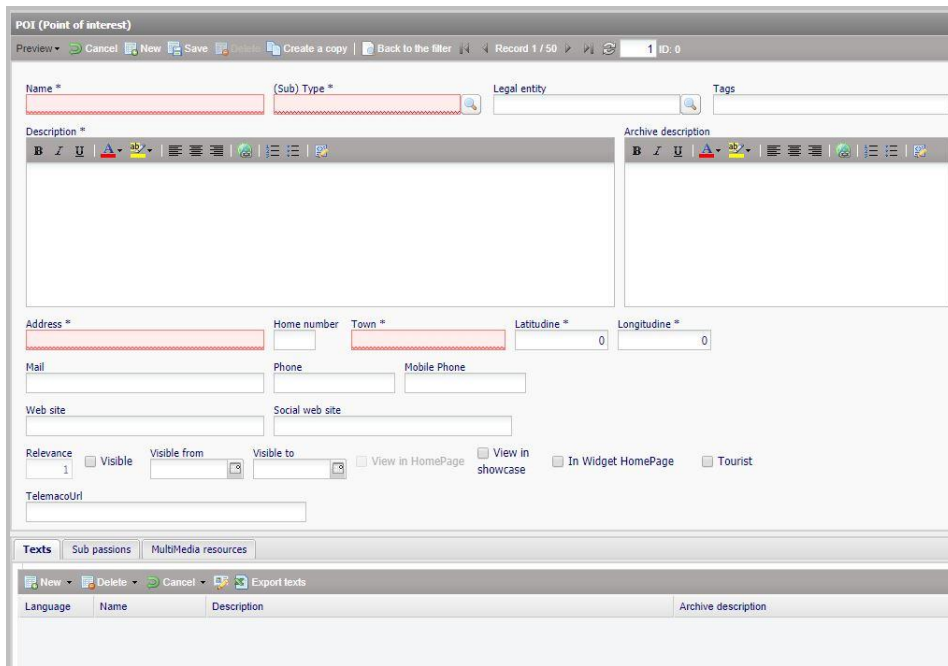
A POI (Point of Interest) is an attractive place and it can be also defined as POTI (Point of Tourist Interest), if it is considered as a place for tourist interest.

To load a POI, the user selects the related item in the menu (on the left), enters the dedicated page and clicks the "New" button at the top right of the screen.



Id	Name	(Sub) Type	Address	Hom...	Town	Legal entity	Mail	Visible	Visib...
351545	Cattedrale di Santa Anastasia	Chiese e Basiliche	Trg Svete Stojije		Zara	Zara		<input checked="" type="checkbox"/>	
351544	Chiesa di San Donato	Chiese e Basiliche	Trg Svete Stojije		Zara	Zara		<input checked="" type="checkbox"/>	
351543	Risorgimento Resort	Albergo/Hotel	Via Augusto Imperatore	19	Lecce		info@risorgime...	<input type="checkbox"/>	01/04...
351542	Chiesa Greca	Chiese e Basiliche	Piazzetta Chiesa Greca		Lecce	Lecce		<input checked="" type="checkbox"/>	
351541	Piazza Sant'Oronzo	Vie, Piazze, Quarrieri cara...	Piazza Sant'Oronzo		Lecce	Lecce		<input checked="" type="checkbox"/>	
351539	test	Musei Storici	via roma		montemarciano			<input type="checkbox"/>	
351538	Secondo POI Italiano (Comune di Lecce)	Bar, Caffè, Gelaterie, Past...	Piazza cavour		Ancona			<input type="checkbox"/>	
351537	Secondo POI Croato (Contea di Spalato-Dalma...)	Gallerie d'arte, Biblioteche...	Put Vrela		Zara			<input type="checkbox"/>	
351536	Poi regione marche	Gallerie d'arte, Biblioteche...	via delle gardenie		montemarciano			<input type="checkbox"/>	
351535	Primo POI Italiano (Regione Emilia Romagna)	Monumenti	Via roma		Montemarciano			<input type="checkbox"/>	
351534	Primo POI Croato (Citta di Sebenico)	Musei Storici	Put Vrela		Zara			<input type="checkbox"/>	
351533	POI Croato (Aeroporto di Zara)	Musei Storici	Gomji Kono		Dubrovnik	Ancona		<input type="checkbox"/>	
351532	Palazzo comunale Recanati	Ville, Regge, Architetture ...	Piazza Giacomo Leopardi		Recanati			<input type="checkbox"/>	
351531	POI Test	Monumenti	Piazza Italia		Milano			<input type="checkbox"/>	

The detail form, with all fields to be completed, will open. Red fields are mandatory.



The window is divided into two parts, one upper and one lower.

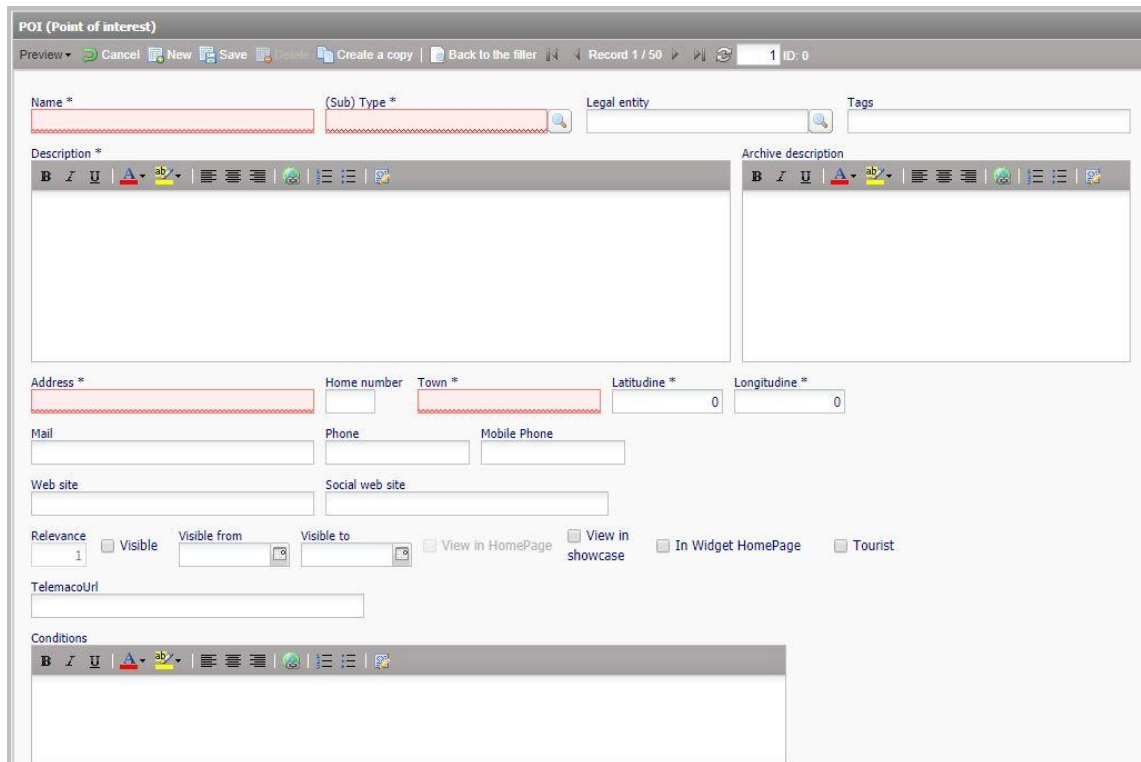
In the first one, following information will be loaded:

- **Name**: the name of a POI
- **Description**: the description of a POI
- **Sub-type**: is the category of a POI it belongs to. The category is directly connected to the typology father of that category (e.g.: a castle or a fortress will have the "Castles" sub-type and the "Art and Culture" typology; a hotel will have the "Hotel" sub-type and "Accommodation" typology). By pressing on the lens, next to the current field, the user will open a drop-down menu from which he can choose the sub-type. It is also possible to write the sub-type in the proper field, taking advantage of the auto complete text function.
- **Legal entity** (previously loaded): the user can write its name in the dedicated field and a drop-down menu shows the different options. Alternately, the user can use the small lens near the field to search for the juridical subject.
- **Tags**: in this field the user inserts all the significant keywords, separated by a comma, that can be associated with the entity. These keywords will allow the user to search textually the entities of interest.
- **Address**: it characterizes the street, the street number and the municipality of the POI. By pressing on the tab key, the latitude and longitude fields will automatically loaded with the correct coordinates.
- **Contacts**: Email, Telephone, Website, Website social are not mandatory fields for the purpose of saving a POI. Obviously, they are very useful information to complete the POI data structure.

In the upper part of the detail form, the user will also have to indicate, with the appropriate flags, if he wants the entity to be Visible (on the website). It is also possible indicate a specific period of

visibility with the respective fields "Visible from" and "Visible to". The Tourist flag will be activated by default if the POI belongs to the Type "Art and Culture", while it can be flagged manually for the other Types. If the POI is placed "View in showcase", the "Tourist" flag will also be automatically activated.

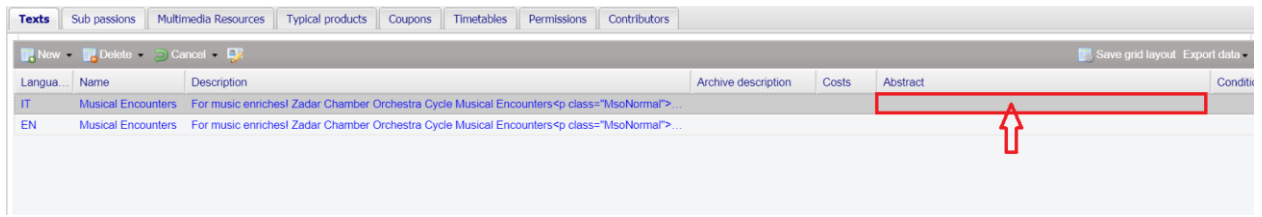
Furthermore, it is possible to add other information about the POI, using the Archive description field. This field will enable the end-users to "Download" specific documents uploaded by the backoffice (.pdf/.doc/.xls).



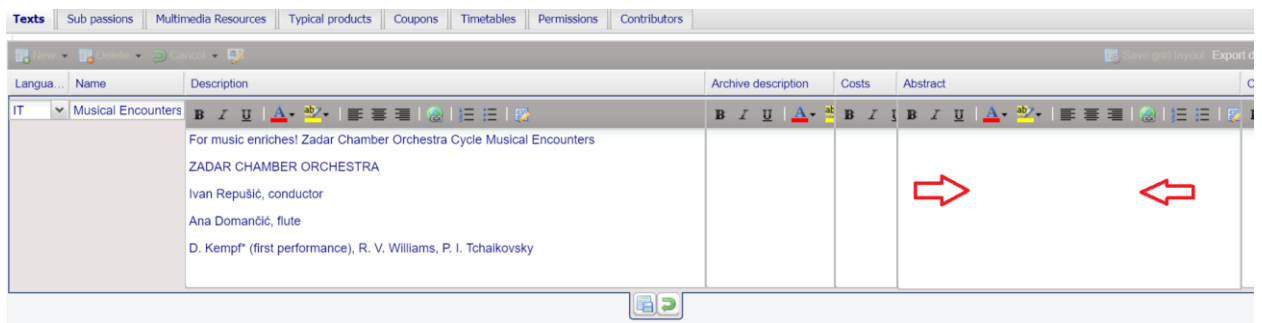
The lower part of the POI detail form is formed by the following tabs:

Texts		
Language	Name	Description
IT	Cattedrale di Santa ...	La cattedrale, fondata nel secolo IX, è un pregevole esempio del romanico italiar
EN	Zadar Cathedral	The church's origins date back to a Christian basilica built in the 4th and 5th cent During the siege of Zadar by the Venetians and Crusaders in 1202, the cathedral

- **Texts:** this tab is automatically filled in when, in the upper part of the tab, the fields Name, Description, Description archive are populated. The user can fill in the Abstract field by double clicking on the gray and empty space (see the red circle in the screenshot below).

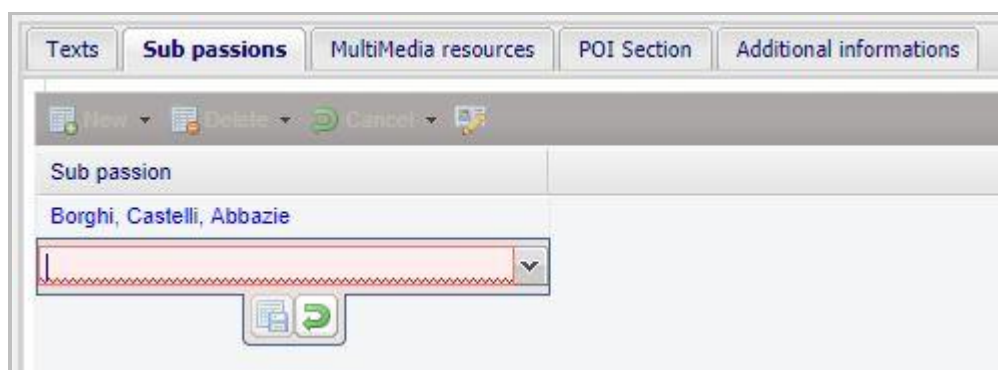


This field content will appear in the portal only if it has been populated. It is used for a very brief description / presentation of the event, approximately one or two lines.



The record related to the Italian language is the only one that is filled in automatically. To add lines for other languages, the user must click on the "New" button (the first button above the label "Language"), fill in the required fields and click on the icon below to save data.

- **Sub passions:** for each POI it is necessary to insert at least one sub passion. Sub passions can be configured based on your own needs. To associate a sub passion to a specific entity, click on the "New" button and choose one from the drop-down. Then click on the save icon.

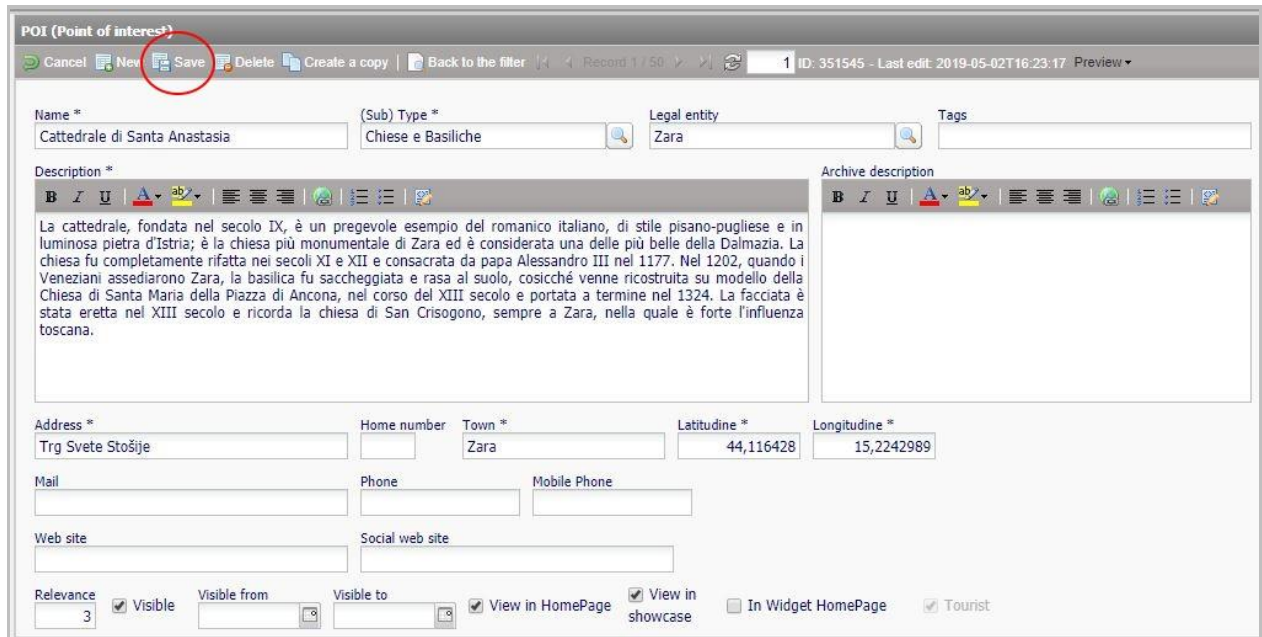


- **Multimedia resources:** this tab allows the user to upload POI's multimedia resources which will then appear in the web portal and app pages. The main multimedia resources have to be inserted in the Back-Office are:
 - o Image of gallery → galpoi
 - o Square showcase (used by the web portal) → vetquapoi

- Rectangular display case (used by the app) → vetretpoi

A new multimedia resource can be inserted by clicking on "Insert multimedia resource" (for the correct procedure to insert an images see the special section in chapter 1.7)

Once all these fields have been filled in, it will be possible to save the entire POI file by clicking on the "Save" button located in the top bar, above the POI Name field.



POI (Point of interest)

Cancel New **Save** Delete Create a copy Back to the filler Record 1 / 50 ID: 351545 - Last edit: 2019-05-02T16:23:17 Preview

Name * Cattedrale di Santa Anastasia (Sub) Type * Chiese e Basiliche Legal entity Zara Tags

Description *
 La cattedrale, fondata nel secolo IX, è un pregevole esempio del romanico italiano, di stile pisano-pugliese e in luminosa pietra d'Istria; è la chiesa più monumentale di Zara ed è considerata una delle più belle della Dalmazia. La chiesa fu completamente rifatta nei secoli XI e XII e consacrata da papa Alessandro III nel 1177. Nel 1202, quando i Veneziani assediaron Zara, la basilica fu saccheggiata e rasa al suolo, cosicché venne ricostruita su modello della Chiesa di Santa Maria della Piazza di Ancona, nel corso del XIII secolo e portata a termine nel 1324. La facciata è stata eretta nel XIII secolo e ricorda la chiesa di San Crisogono, sempre a Zara, nella quale è forte l'influenza toscana.

Archive description

Address * Trg Svete Stošije Home number Town * Zara Latitudine * 44,116428 Longitudine * 15,2242989

Mail Phone Mobile Phone

Web site Social web site

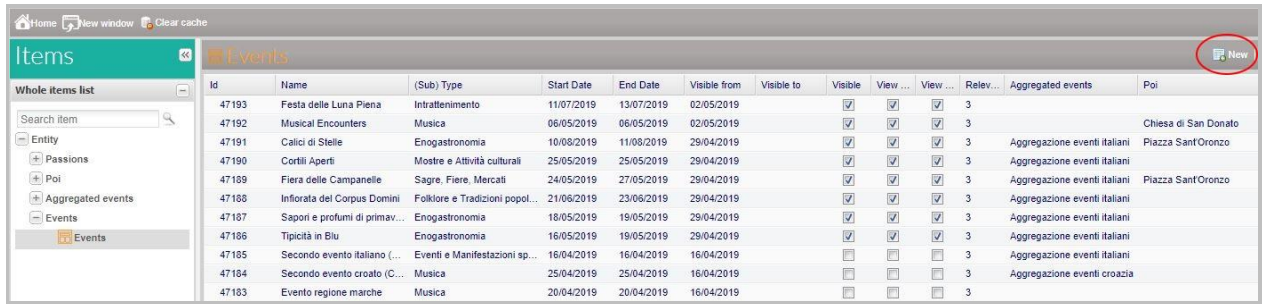
Relevance 3 Visible Visible from Visible to View in HomePage View in showcase In Widget HomePage Tourist

After saving, a new tab called "Additional Information" will appear between the tabs below in the second half of the POI tab. Here, based on the sub-type of a POI, will appear the fields to be populated with information on opening times and days, any nearby parking etc.. Once the user have filled in the fields, he will have to save information by clicking on the "Save" button at the top right (above the "Access for disabled" field) and then save the entire POI file again.

3.2.4 Events

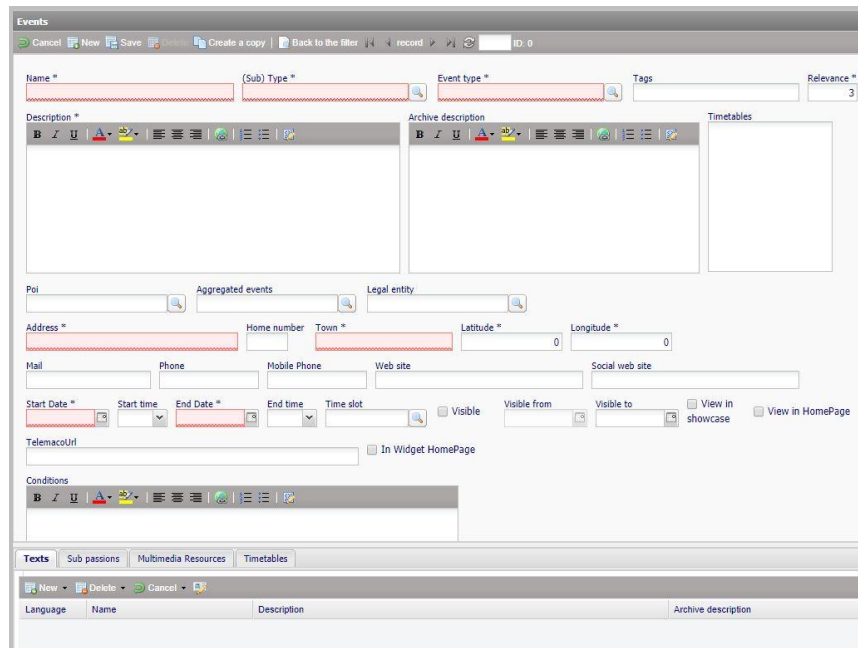
An event can take place in a POI, already in the system or not, or in a generic place that does not have the characteristics to be a POI. In this second case it is sufficient to specify the address where the event will be organized.

To load an event, the user selects the related item in the menu (on the left), enters into dedicated page and clicks on the "New" button at the top right of the screen.



Id	Name	(Sub) Type	Start Date	End Date	Visible from	Visible to	Visible	View ...	View ...	Relev...	Aggregated events	Poi
47193	Festa delle Luna Piena	Intrattenimento	11/07/2019	13/07/2019	02/05/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		
47192	Musical Encounters	Musica	06/05/2019	06/05/2019	02/05/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3		Chiesa di San Donato
47191	Calici di Stelle	Enogastronomia	10/08/2019	11/08/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Aggregazione eventi italiani	Piazza Sant'Oronzo
47190	Cortili Aperti	Mostre e Attività culturali	25/05/2019	25/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Aggregazione eventi italiani	
47189	Fiera delle Campanelle	Sagre, Fiere, Mercati	24/05/2019	27/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Aggregazione eventi italiani	Piazza Sant'Oronzo
47188	Inforata del Corpus Domini	Folklore e Tradizioni popol...	21/06/2019	23/06/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Aggregazione eventi italiani	
47187	Sapori e profumi di primav...	Enogastronomia	18/05/2019	19/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Aggregazione eventi italiani	
47186	Tipicità in Blu	Enogastronomia	16/05/2019	19/05/2019	29/04/2019		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Aggregazione eventi italiani	
47185	Secondo evento italiano (...)	Eventi e Manifestazioni sp...	16/04/2019	16/04/2019	16/04/2019		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	Aggregazione eventi italiani	
47184	Secondo evento croato (C...	Musica	25/04/2019	25/04/2019	16/04/2019		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	Aggregazione eventi croazia	
47183	Evento regione marche	Musica	20/04/2019	20/04/2019	16/04/2019		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3		

The detail form, with all fields to be completed, will open. Red fields are mandatory.



The form is divided into two parts, one upper and one lower.

In the first one, information will be loaded as:

- Name
- Description
- (Sub) Type: the sub-type of an Event indicates the type of event we are loading (e.g. Music, Theater-Dance-Cinema, Food and Wine, etc.). Pressing on the lens, close to the field, the user will open a drop-down menu where he can choose the sub-type. It is also possible to write the sub-type in the appropriate field, taking advantage of the auto complete text function.
- Legal entity (previously loaded): the user can write its name in the dedicated field and a drop-down menu shows the different options. Alternately the user can use the small lens near the field to search for the juridical subject.
- Event type: with this field the user has to specify details about the type of event.

- **Tags:** in this field the user inserts all the significant keywords, separated by a comma, that can be associated to the entity. This keywords will allow the user to search textually the entities of interest.
- **POI:** it is possibile to associate a POI to an event in order to indicate that event will take place in that specific venue. Just writing the name of the POI in the related field or use the lens to search for it. If the event does not take place in a place that can be defined as a POI, just enter the address.
- **Address:** fill in the fields with the street, the street number and the municipality of the POI where event will take place. By scrolling with the Tab key, the Latitude and Longitude fields will automatically loaded with the right coordinates.
- **Contacts:** Email, Telephone, Website, Website social are not mandatory fields for the purpose of saving the event, obviously, they are very useful information to complete the event data structure.
- **Dates:** it is mandatory to indicate the start date and the end date of the event, then choosing a day by clicking on the calendar icon next to the "start date" and "end date" fields. It is also possible to add the start and end time of an event (using the arrows in the related fields) and, more generally, the time frame (using the lens).

In the upper part of the detail form the user must indicate, with the appropriate flags, if he wants the entity to be Visible (in the portal), Visible from / Visible to (in order to decide the time frame in which the entity will have to be visible, then to decide the start and expire date of visibility), Visible from the App, visible in the Showcase (and therefore in the landing page of the portal dedicated to Events).

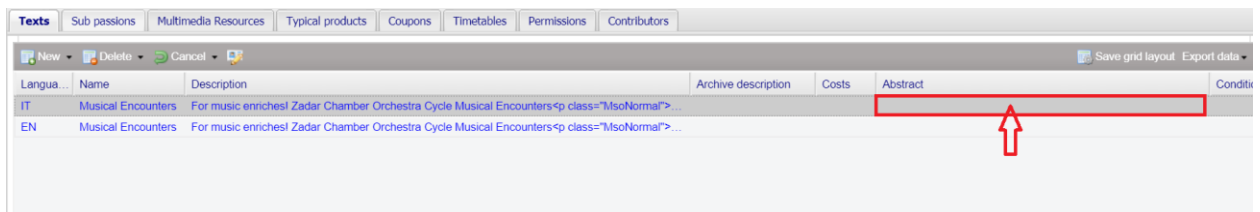
It is also possible to add other information to the event in the Archive description field. This field will be returned in the portal with a button called "Download" where the user can also upload a downloadable pdf, as well as textual information.

The lower part of the event details form is formed by the following tabs:

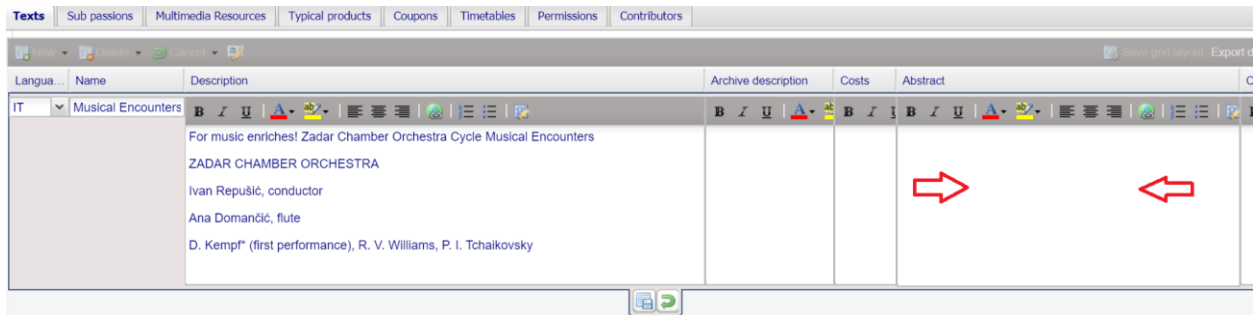


Language	Name	Description
IT	Musical Encounters	For music enriches! Zadar Chamber Orchestra Cycle Musical Encounters
EN	Musical Encounters	For music enriches! Zadar Chamber Orchestra Cycle Musical Encounters

- **Texts:** this tab is automatically filled in when, in the upper part of the tab, the fields Name, Description, Description archive are populated. The user can fill in the Abstract field by double clicking on the gray and empty space (see the red circle in the screenshot below).

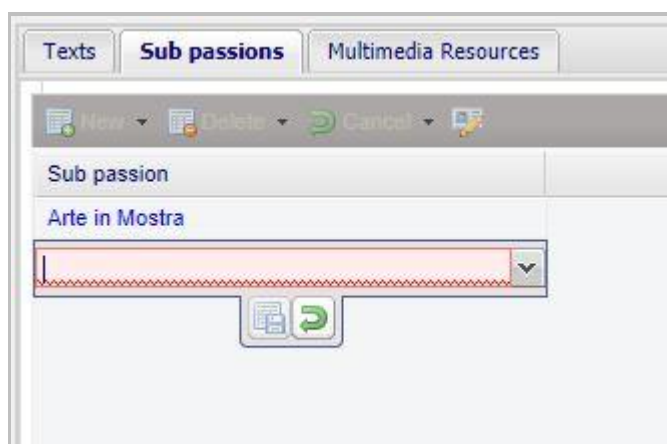


This field content will appear in the portal only if it has been populated. It is used for a very brief description / presentation of the event, approximately one or two lines.



In the same way, it is possible to populate the Cost field with the eventual event price. The record related to the Italian language is the only one that is filled in automatically. To add lines for other languages, click on the "New" button (the first button above the label "Language"), fill in the required fields and click on the icon below to save data.

- **Sub passions:** for each event it is necessary to insert at least one sub passion. Sub passions can be configured based on your own needs. A sub passion can be associated to a specific entity, by clicking on the "New" button and choose one of them from the drop-down menu. Then, click on the save icon.



- **Multimedia resources:** this tab allows the user to upload multimedia resources related to an event that will appear in the web portal and app pages. These main multimedia resources have to be included:
 - o Image of gallery → galeve

- Square showcase (used by the web portal) → vetquaeve
- Rectangular showcase (used by the app) → vetreteve

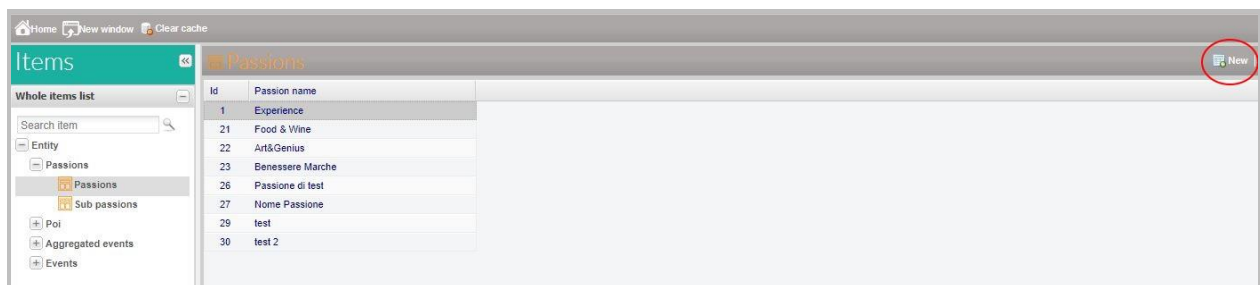
A new multimedia resource can be added by clicking on "Insert multimedia resource" (for the wizard procedure to insert the images see the special section in chapter 1.7)

3.2.5 Passions and Sub passions

A passion is a topic about a specific interest through the various loaded contents in the back office must be linked to each other. For the user it will represent a filter through searching for the contents of his interest. Passions, and the associated sub-passions, can be configured from the back office according to the needs.

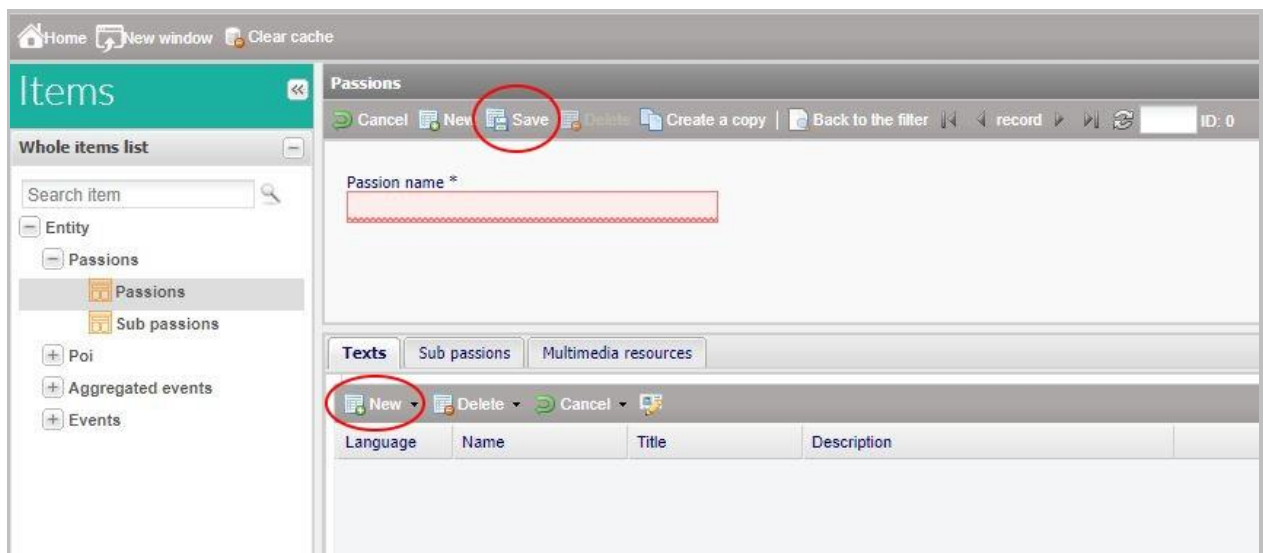
For every passion it is possible to define what is its name, those who are its sub-passions daughters and multimedia resources that characterize that passion.

To load a passion, the user will have to select the related item in the menu (on the left), enter into the dedicated page and click on the "New" button at the top right of the screen.



The detail form, with all fields to be completed, will open.

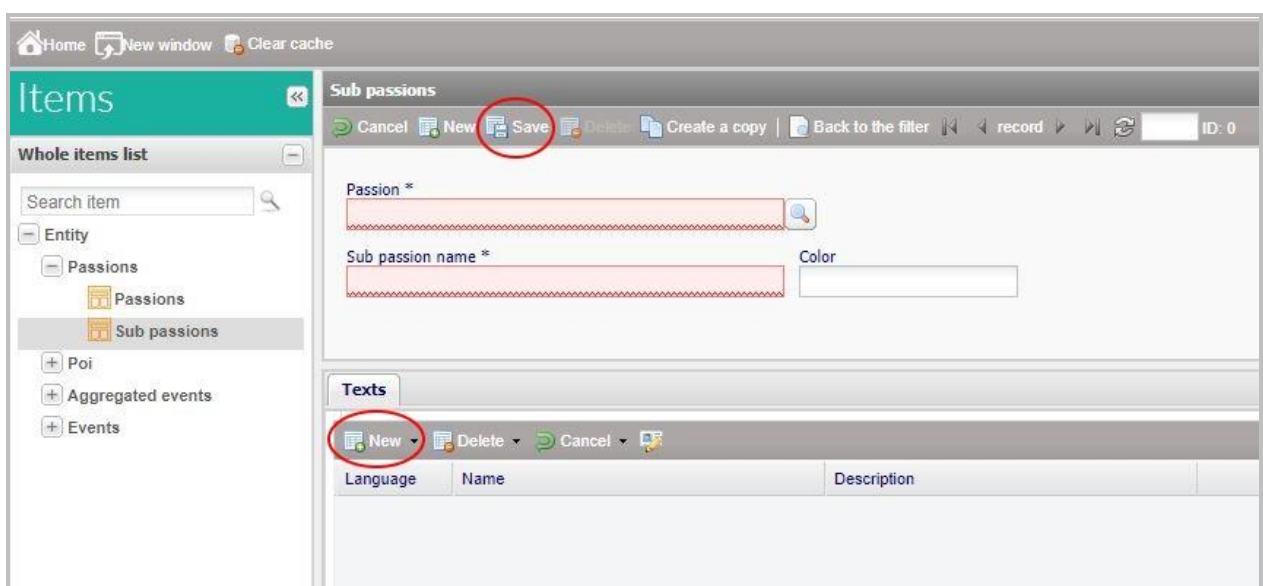
Once the required information has been entered, the user must click on the "Save" button at the top bar.



As for the other masks, to add lines for other languages in the "texts" tab, the user needs to click on the "New" button (the first button positioned above the label "Language"), fills in the required fields and clicks on the icon below to save data.

The "Multimedia resources" tab allows the user to upload the image related to a passion. The media format to upload is "headpas" that characterize the header image of the passion page (for the wizard procedure to insert the images see the special section in chapter 1.7).

Once the passions are loaded, it will be possible to create the sub passions. The user selects the corresponding item in the menu (on the left), enters the dedicated page and click the "New" button at the top right of the screen. The detail form of the sub-passion will open.



In the "Passion" field, the user will choose one of the passions previously loaded by clicking in the lens icon. In this way the user associates a Sub-passion daughter with a specific passion father. In the field "Name sub passion" the user will indicate the name chosen for the Sub passion.

Like the other masks, in the "texts" tab, to add lines for other languages, the user needs to click on the "New" button (the first button positioned above the label "Language"), fills in the required fields and clicks on the icon below to save data.

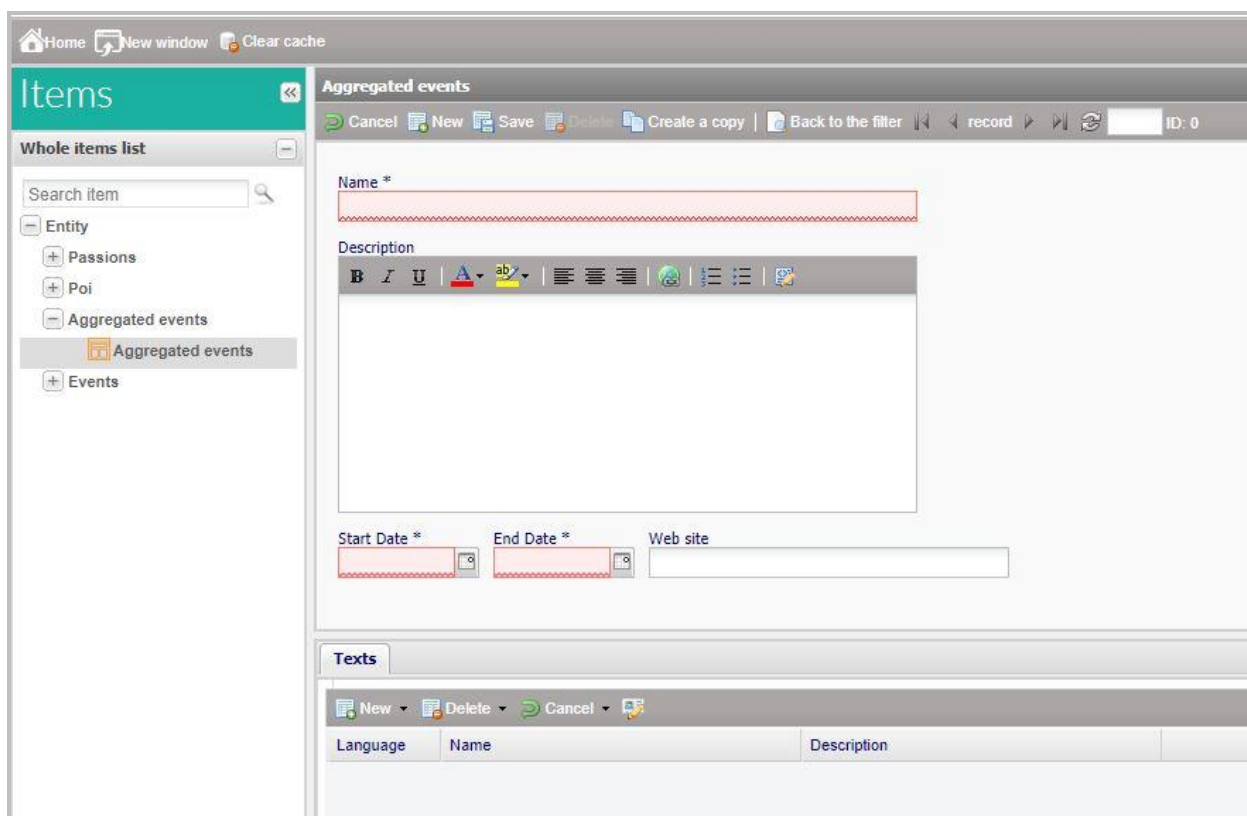
The Sub passion does not need multimedia resources.

3.2.6 Events aggregation

Through this entity, the user can group several events according to his interests or specifications. An example could be a festival, which contains different events that start in different period of time.

To create an aggregated event, the user selects the related item in the menu (on the left), enters the dedicated page and clicks on the "New" button, at the top right of the screen.

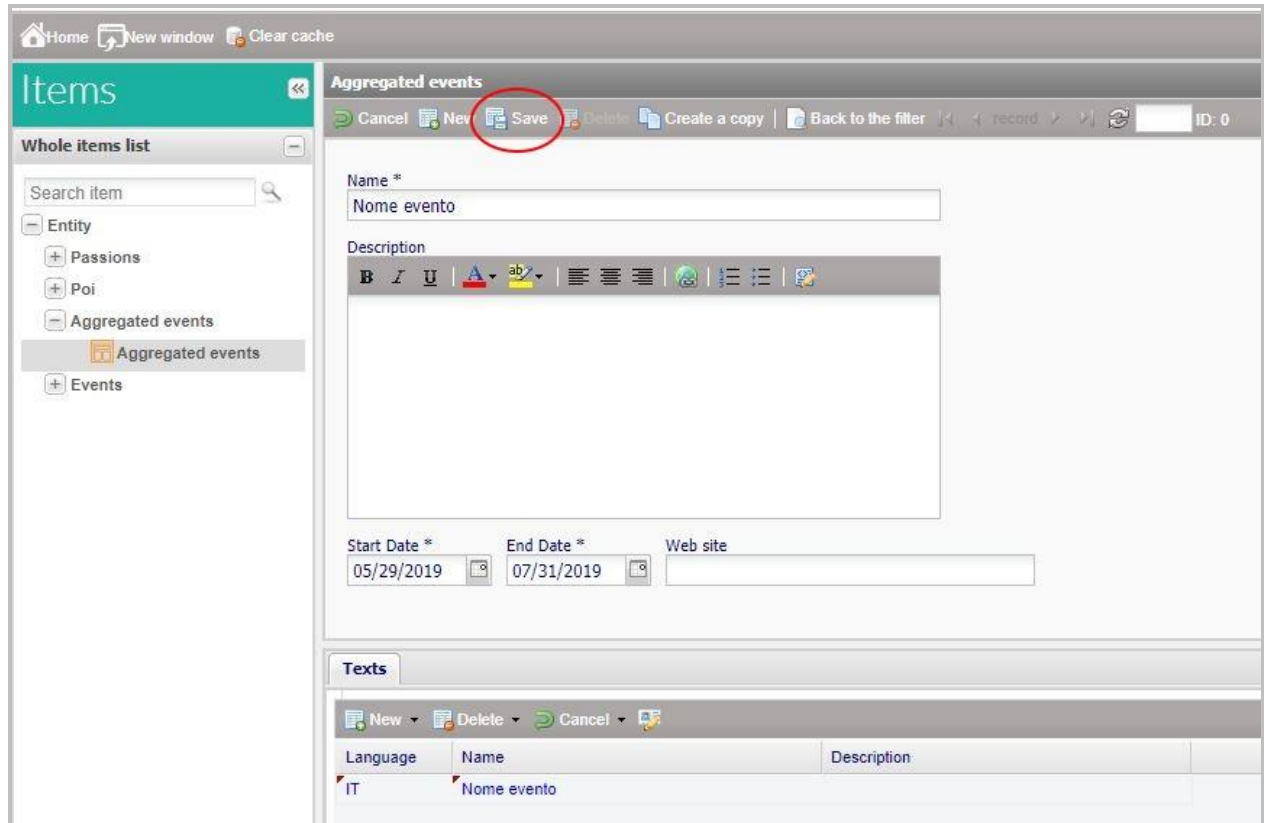
The detail form of an event aggregation will open. Red fields are mandatory.



The screenshot shows a web application interface for creating an aggregated event. On the left is a sidebar with a search bar and a menu containing 'Entity', 'Passions', 'Poi', 'Aggregated events', and 'Events'. The main area is titled 'Aggregated events' and contains a toolbar with 'Cancel', 'New', 'Save', 'Delete', 'Create a copy', and 'Back to the filler'. Below the toolbar are several form fields: 'Name *' (a red-bordered text input), 'Description' (a rich text editor with bold, italic, underline, and color options), 'Start Date *' (a date picker), 'End Date *' (a date picker), and 'Web site' (a text input). At the bottom, there is a 'Texts' section with a toolbar containing 'New', 'Delete', and 'Cancel', and a table with columns for 'Language', 'Name', and 'Description'.

The "Name" field characterizes the name of the events aggregation. "Start Date" and "End Date" are mandatory fields and they derive from the dates of the events included in the aggregation. The start date will be the date of the first event included and the end date will be the date of the last event.

Once the user has filled in all the fields, he saves the entire form by clicking "Save" in the top bar.

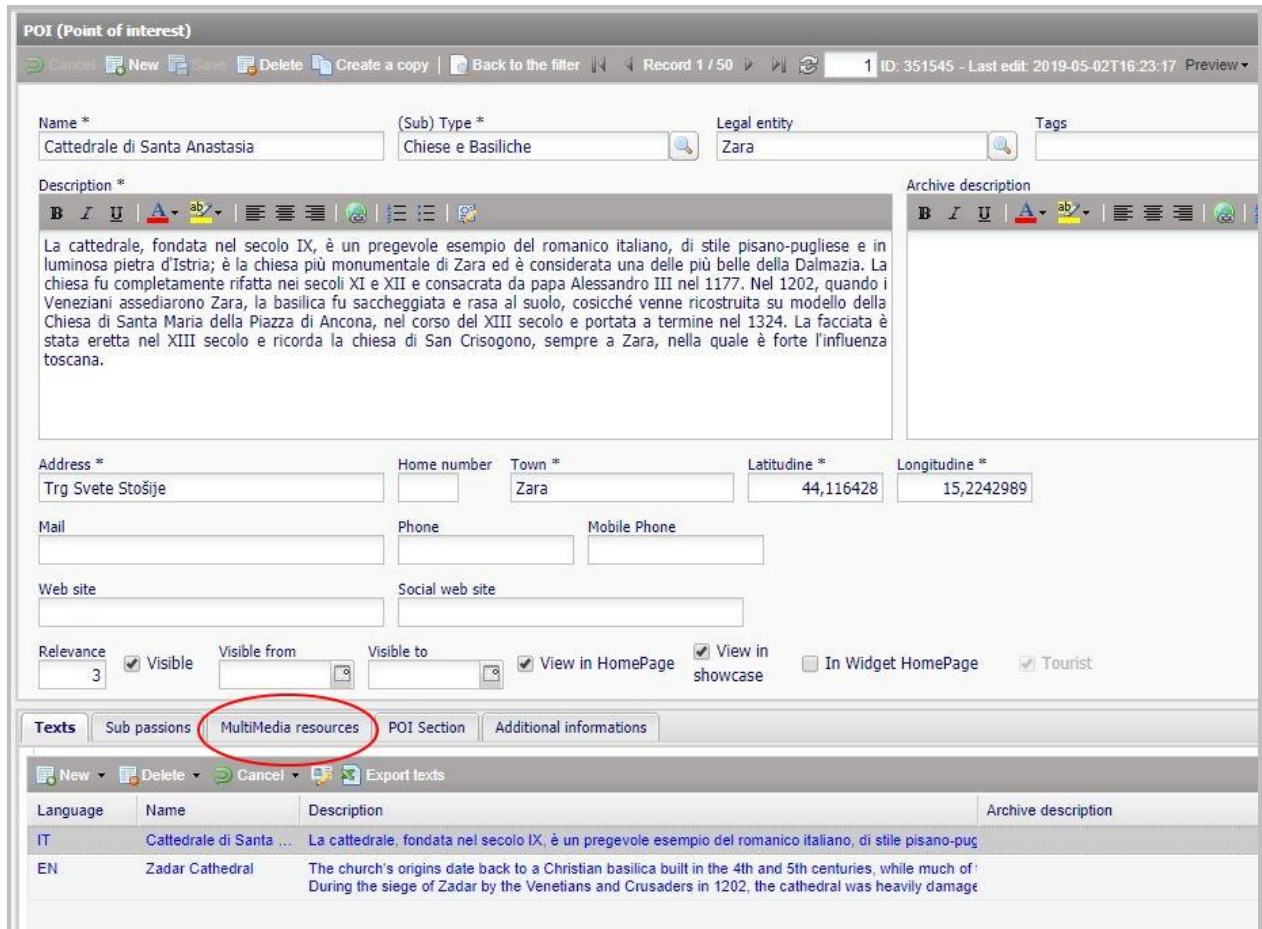


Like the other masks, in the "texts" tab, to add lines for other languages, the user needs to click on the "New" button (the first button positioned above the label "Language"), fills in the required fields and clicks on the icon below to save data.

An "events aggregation" entity does not need multimedia resources.

3.2.7 Uploading images

Inside an entity's form, once the upper part of the form has been filled in, the user proceeds with the completion of the lower tabs including the multimedia resources by clicking on the MultiMedia resources tab.



POI (Point of interest)

Cancel New Save Delete Create a copy Back to the filter Record 1 / 50 ID: 351545 - Last edit: 2019-05-02T16:23:17 Preview

Name * Cattedrale di Santa Anastasia (Sub) Type * Chiese e Basiliche Legal entity Zara Tags

Description *
 La cattedrale, fondata nel secolo IX, è un pregevole esempio del romanico italiano, di stile pisano-pugliese e in luminosa pietra d'Istria; è la chiesa più monumentale di Zara ed è considerata una delle più belle della Dalmazia. La chiesa fu completamente rifatta nei secoli XI e XII e consacrata da papa Alessandro III nel 1177. Nel 1202, quando i Veneziani assediaronero Zara, la basilica fu saccheggiata e rasa al suolo, cosicché venne ricostruita su modello della Chiesa di Santa Maria della Piazza di Ancona, nel corso del XIII secolo e portata a termine nel 1324. La facciata è stata eretta nel XIII secolo e ricorda la chiesa di San Crisogono, sempre a Zara, nella quale è forte l'influenza toscana.

Archive description

Address * Trg Svete Stošije Home number Town * Zara Latitude * 44,116428 Longitude * 15,2242989

Mail Phone Mobile Phone

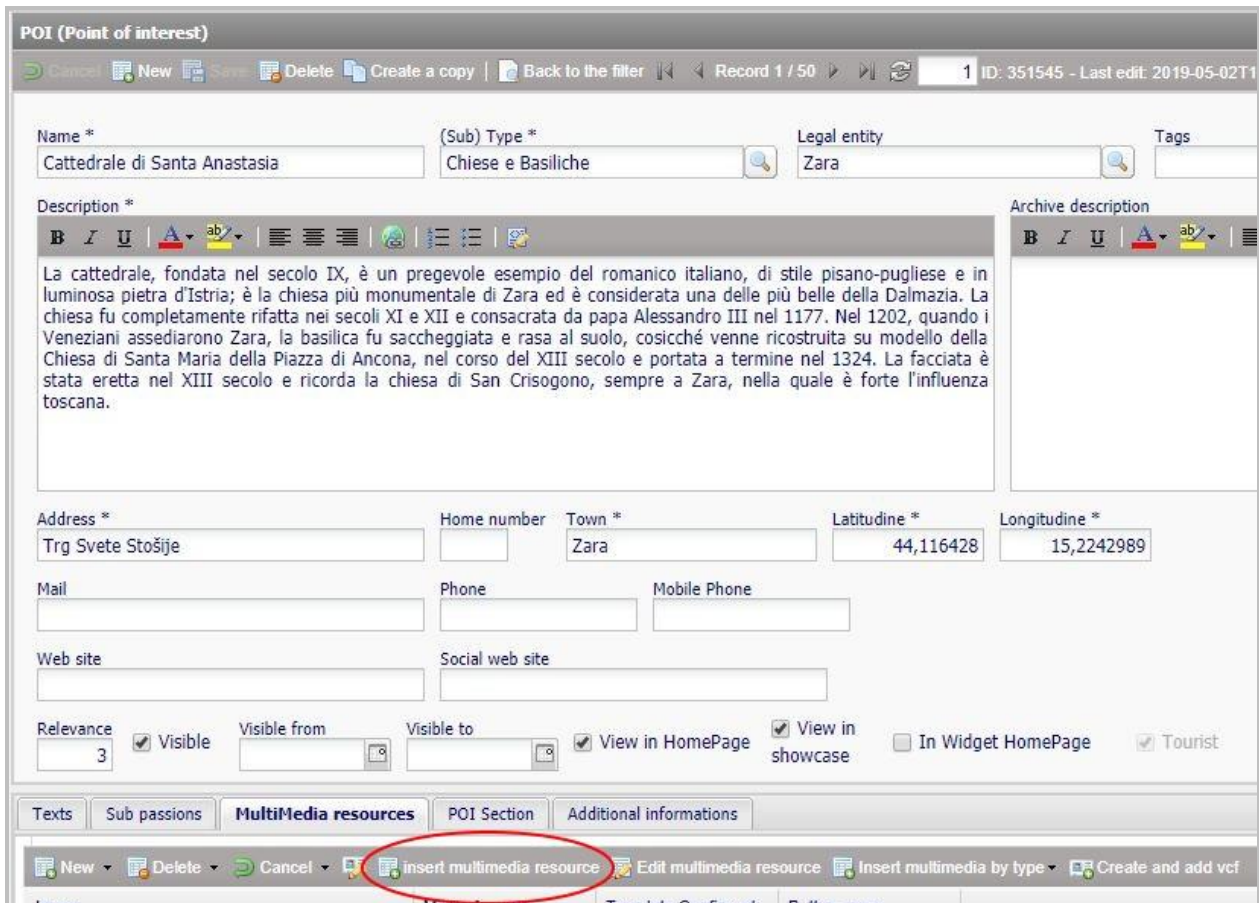
Web site Social web site

Relevance 3 Visible Visible from Visible to View in HomePage View in showcase In Widget HomePage Tourist

Texts Sub passions **MultiMedia resources** POI Section Additional informations

Language	Name	Description	Archive description
IT	Cattedrale di Santa ...	La cattedrale, fondata nel secolo IX, è un pregevole esempio del romanico italiano, di stile pisano-pug	
EN	Zadar Cathedral	The church's origins date back to a Christian basilica built in the 4th and 5th centuries, while much of During the siege of Zadar by the Venetians and Crusaders in 1202, the cathedral was heavily damage	

Then, he clicks on the "Insert multimedia resource" button.



POI (Point of interest)

Cancel New Save Delete Create a copy Back to the filter Record 1 / 50 ID: 351545 - Last edit: 2019-05-02T1

Name * Cattedrale di Santa Anastasia (Sub) Type * Chiese e Basiliche Legal entity Zara Tags

Description *
 La cattedrale, fondata nel secolo IX, è un pregevole esempio del romanico italiano, di stile pisano-pugliese e in luminosa pietra d'Istria; è la chiesa più monumentale di Zara ed è considerata una delle più belle della Dalmazia. La chiesa fu completamente rifatta nei secoli XI e XII e consacrata da papa Alessandro III nel 1177. Nel 1202, quando i Veneziani assediaron Zara, la basilica fu saccheggiata e rasa al suolo, cosicchè venne ricostruita su modello della Chiesa di Santa Maria della Piazza di Ancona, nel corso del XIII secolo e portata a termine nel 1324. La facciata è stata eretta nel XIII secolo e ricorda la chiesa di San Crisogono, sempre a Zara, nella quale è forte l'influenza toscana.

Archive description

Address * Trg Svete Stošije Home number Town * Zara Latitudine * 44,116428 Longitudine * 15,2242989

Mail Phone Mobile Phone

Web site Social web site

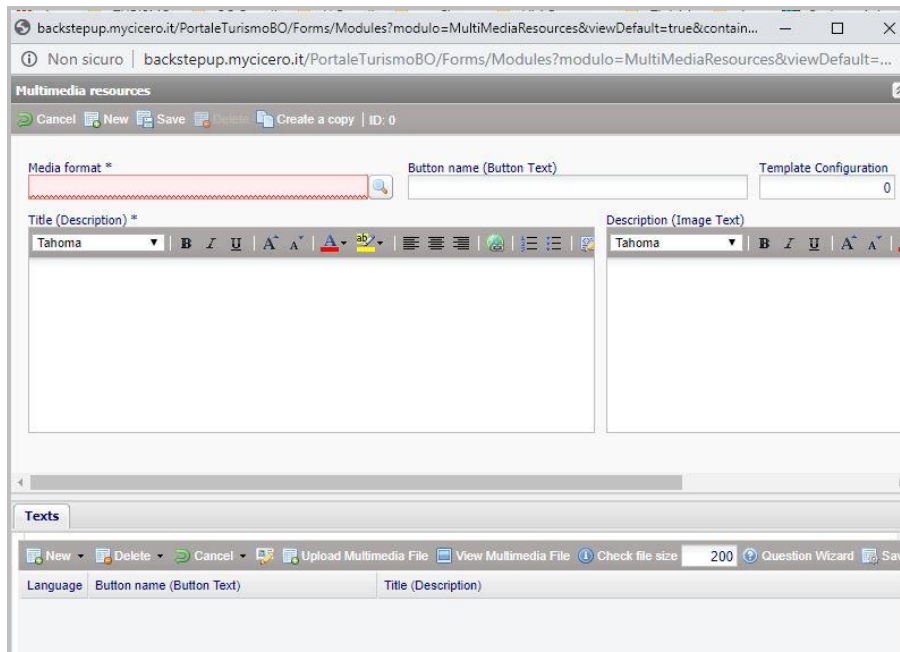
Relevance 3 Visible Visible from Visible to View in HomePage View in showcase In Widget HomePage Tourist

Texts Sub passions **MultiMedia resources** POI Section Additional informations

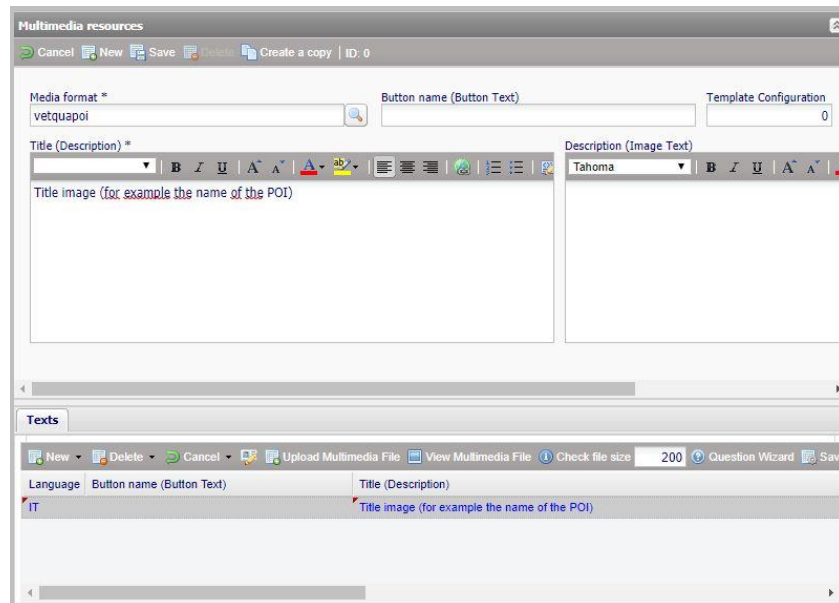
New Delete Cancel insert multimedia resource Edit multimedia resource Insert multimedia by type Create and add vcf

A window, as the one put below, will open.

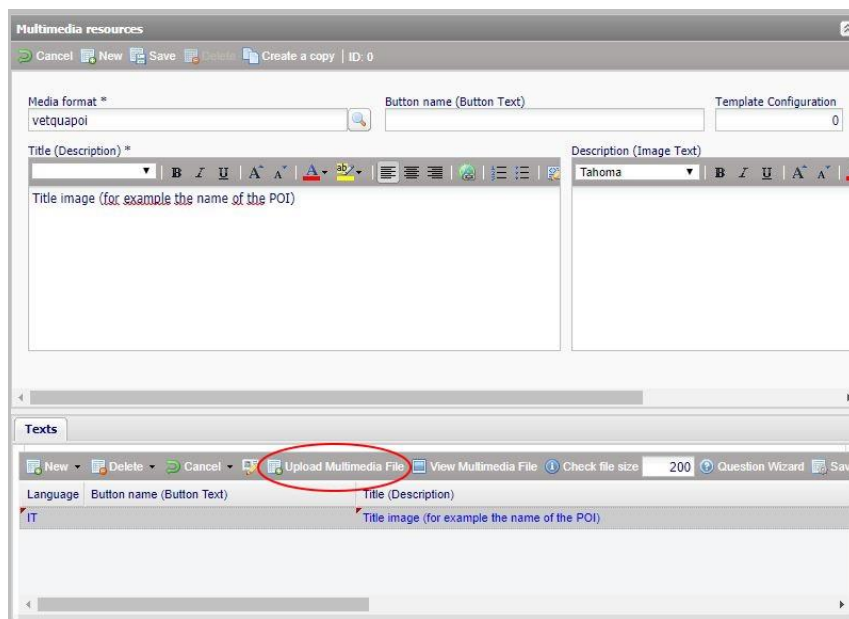
The user will fill in the “Media format” field as indicated by the attached excel. For example: for a POI, the media formats are vetquapoi (square window of the POI), vetretpoi (rectangular window of the POI), galpoi (gallery of the POI). For an event the media formats are vetquaeve, vetreteve, galeve. For a Passion an image with media format headpas is necessary. If the user starts typing these names in the Media format field, the auto complet text function will help him to select the correct choice.



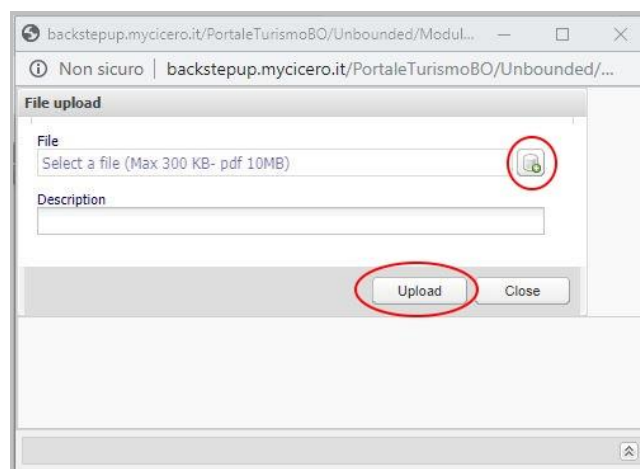
The user also fills in the “Title” field, as in the screenshot below. By clicking at a point outside the “Title” box, a precompiled line appear in the “Texts” tab below. If the user clicks on that line it becomes gray.



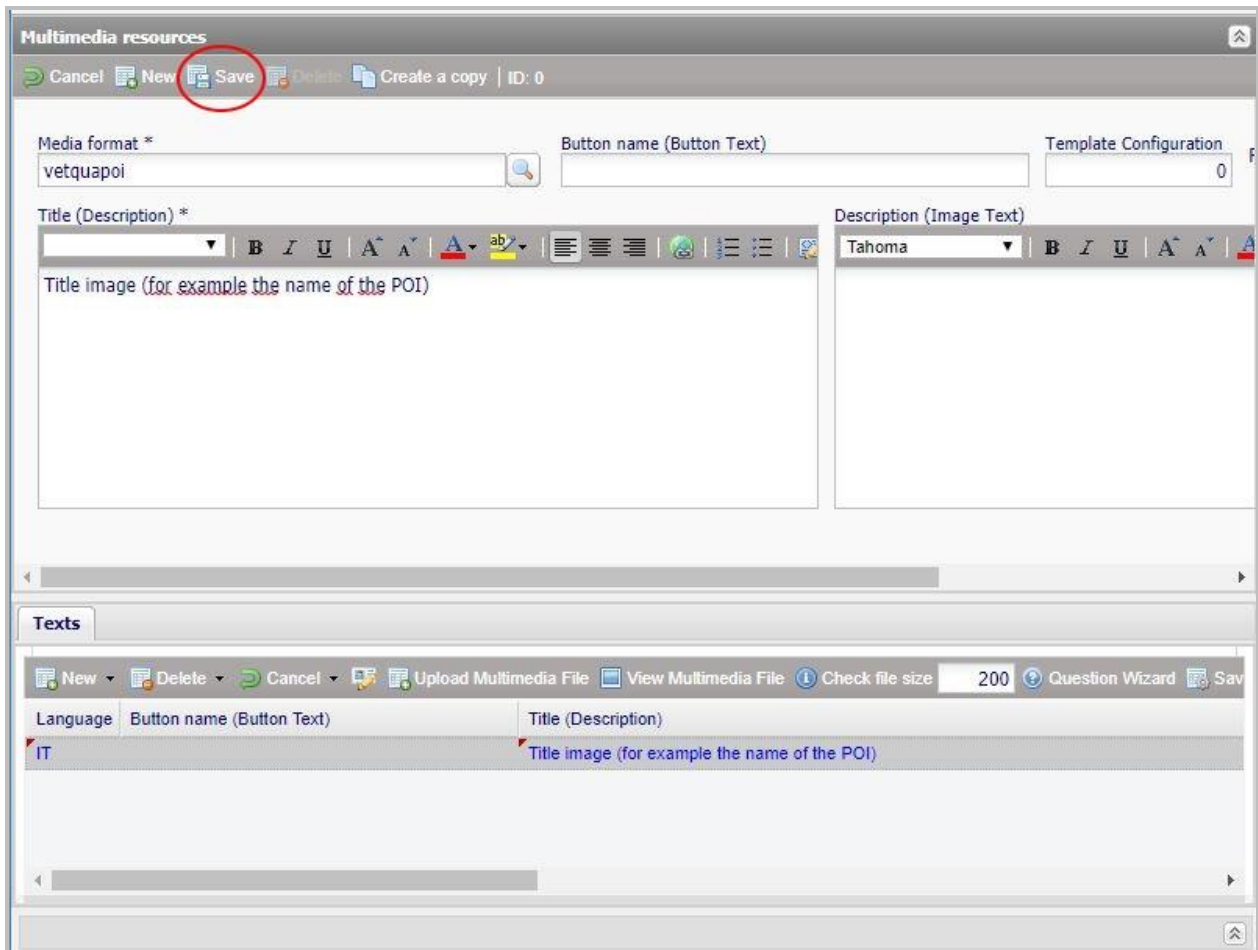
Now the user can click on the button “Upload Multimedia file”.



A window, see the screenshot below, will open. By clicking the button on the right the user can upload the image already cut according to the dimensions indicated in the attached Excel. Once the user has chosen the image to upload, clicks the “Upload” button. Once the upload is completed the user can close the window.



The user will return to the previous window and he will click on the Save button at the top. Once the saving is finished the user can close the window and the image has been loaded.



To confirm the image has been correctly loaded, a line relating to the loaded media format appears in the Multimedia Resources.

POI (Point of interest)

Cancel New Save Delete Create a copy Back to the filter Record 1 / 50 1 ID: 351545

Name * Zadar Cathedral (Sub) Type * Chiesa e Basiliche Legal entity Zara

Description *

The church's origins date back to a Christian basilica built in the 4th and 5th centuries, while much of the currently standing three-nave building was constructed in the Romanesque style during the 12th and 13th centuries. The site has been submitted to UNESCO's Tentative List of World Heritage Sites. The first known bishop in Zadar was Felix. He attended two church councils, the first in Aquileia in 381 and the second in Milan in 390. The basilica's original patron was St. Peter. During the time of bishop Donatus, the diocese received the ashes of Saint Anastasia of Sirmium from Emperor Nikephoros I, whom the cathedral took as patron. Donatus commissioned a sarcophagus for the remains, which are still held in the cathedral. The church was largely remade in the 11th-12th centuries, and reconsecrated by Pope Alexander VII in 1177.

During the siege of Zadar by the Venetians and Crusaders in 1202, the cathedral was heavily damaged. For the entire 13th century the building was under repair. It was reconsecrated on 27 May 1285, although the new

Address * Trg Svete Stošije Home number Town * Zara Latitudine * 44,116428 Longitudi 15

Texts Sub passions **MultiMedia resources** POI Section Additional informations

New Delete Cancel insert multimedia resource Edit multimedia resource Insert multimedia by type

Image	Media format	Template Configurat...	Button name
Cattedrale di Santa Anastasia	vetquapoi	0	

By repeating the operation also for the other two media formats, vetretpoi and galpoi (or vetreteve and galeve in the case of Events), the user will have all three mandatory images loaded in the system and he will have to click on the Save button to save the entire POI file.

POI (Point of interest)

Cancel New **Save** Delete Create a copy Back to the filter Record 1 / 50 1 ID: 351545

Name * Zadar Cathedral (Sub) Type * Chiesa e Basiliche Legal entity Zara

Description *

The church's origins date back to a Christian basilica built in the 4th and 5th centuries, while much of the currently standing three-nave building was constructed in the Romanesque style during the 12th and 13th centuries. The site has been submitted to UNESCO's Tentative List of World Heritage Sites. The first known bishop in Zadar was Felix. He attended two church councils, the first in Aquileia in 381 and the second in Milan in 390. The basilica's original patron was St. Peter. During the time of bishop Donatus, the diocese received the ashes of Saint Anastasia of Sirmium from Emperor Nikephoros I, whom the cathedral took as patron. Donatus commissioned a sarcophagus for the remains, which are still held in the cathedral. The church was largely remade in the 11th-12th centuries, and reconsecrated by Pope Alexander VII in 1177.

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Mail Phone Mobile Phone

Texts Sub passions **MultiMedia resources** POI Section Additional informations

New Delete Cancel insert multimedia resource Edit multimedia resource Insert multimedia by type

Image	Media format	Template Configurat...	Button name
Cattedrale di Santa Anastasia	vetquapoi	0	
Cattedrale di Santa Anastasia	vetretpoi	0	
Cattedrale di Santa Anastasia	galpoi	0	

4. Annex 2 – How to create GTFS



Interreg
Italy - Croatia
STEP-UP

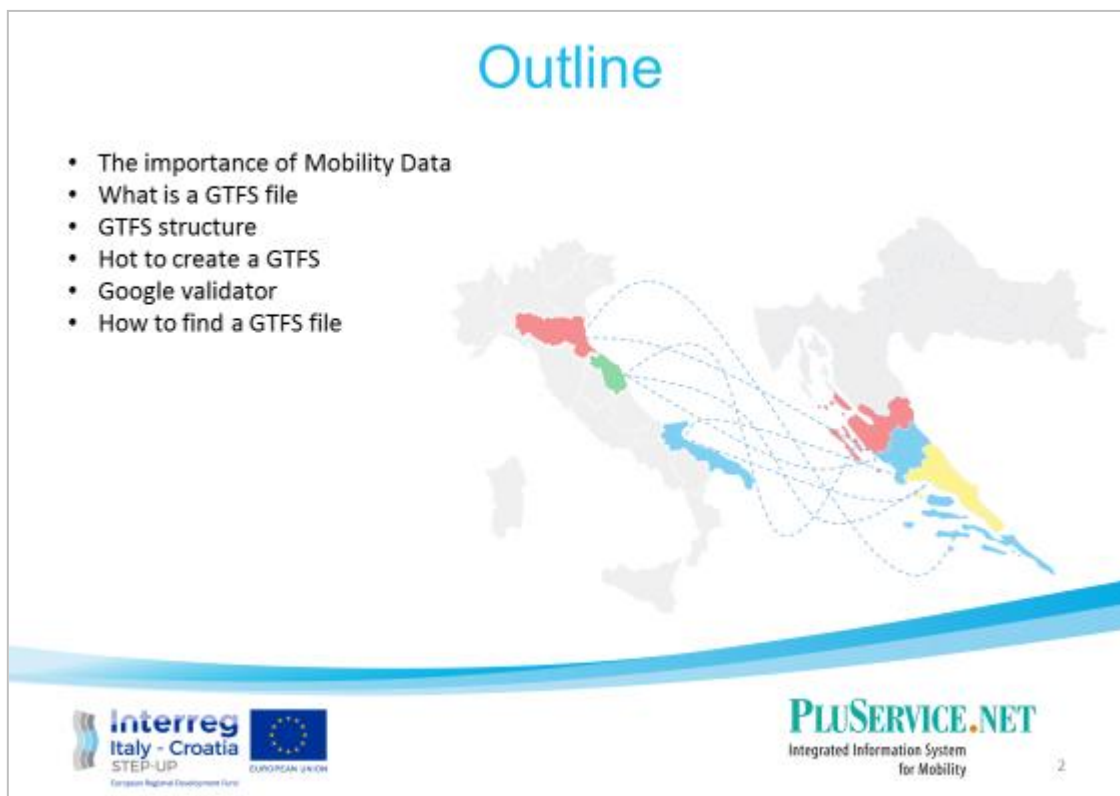


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for Mobility

How to use GTFS


STEP-UP | Marche Region
Second training session

European Regional Development Fund




Outline

- The importance of Mobility Data
- What is a GTFS file
- GTFS structure
- How to create a GTFS
- Google validator
- How to find a GTFS file



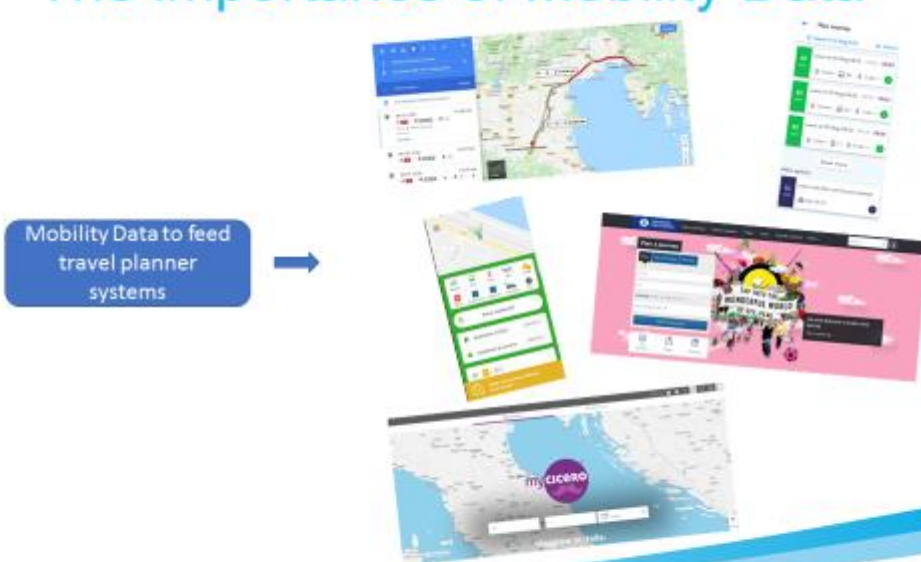
Interreg
Italy - Croatia
STEP-UP





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2

The importance of Mobility Data







 Integrated Information System
 for Mobility


The importance of Mobility Data

[Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003](#)
 The re-use of public sector information

[Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013](#)
 amending Directive 2003/98/EC on the re-use of public sector information Text with EEA relevance. The new European directive amends the previous one (directive PSI – Public Sector Information) in order to facilitate the re-use of European public administrations data.
 In particular, the directive obliges administrations to make their data available, for both commercial and non-commercial purposes, in compliance with the legislation on personal data protection.

[Directive \(EU\) 2019/1024 of the European Parliament and of the Council of 20 June 2019](#)
 on open data and the re-use of public sector information
 After its adoption in 2003 and the significant revision in 2013, the Directive has now been relaunched taking into account the profound technological and social changes that have taken place over the past five years, contemplating, at the same time the reference legislation on data management.




 Integrated Information System
 for Mobility

What is GTFS file

The General Transit Feed Specification (GTFS) defines a common format for public transportation schedules and associated geographic information. GTFS "feeds" allow public transit agencies to publish their transit data in a format that can be consumed by a wide variety of software applications.

<https://developers.google.com/transit/gtfs/reference/>

<https://developers.google.com/transit/gtfs/>

GTFS Structure

Agency: One or more transit agencies that provide the data in this feed.

Stops: Individual locations where vehicles pick up or drop off passengers.

Routes: Transit routes. A route is a group of trips that are displayed to riders as a single service.

Trips: Trips for each route. A trip is a sequence of two or more stops that occurs at specific time.

Stop_times: Times of vehicle arrivals at and departures from individual stops for each trip.

Calendar: Defines service dates when service is available for particular routes. Uses a weekly schedule.

Calendar dates: Defines exceptions for the services defined in the calendar.txt. If calendar_dates.txt includes ALL dates of service, this file may be specified instead of calendar.txt.

Shapes: Rules for drawing lines on a map to represent a transit organization's routes.

GTFS Structure – Agency_id

File Agency.txt

agency_id	agency_name	agency_url	agency_timezone	agency_lang	agency_phone	agency_fare_url
xxx	vettore xxx	https://www.mycicero.it/	Europe/Rome	it	NULL	NULL
yyy	vettore yyy	https://www.mycicero.it/	Europe/Rome	it	NULL	NULL

File Routes.txt

route_id	agency_id	route_short_name	route_long_name	route_type	route_color	route_text_color	route_desc	route_url
S1xxx	xxx		S1Zadar-Ancona	4	F2160B	14DFEC	NULL	NULL
S3xxx	xxx		S3Split-Ancona	4	F2160B	14DFEC	NULL	NULL
S3_1	xxx		S3Stari Grad-Split-Ancona	4	F2160B	14DFEC	NULL	NULL
D001	yyy	SNAV	Ancona-Split	4	F2160B	14DFEC	NULL	NULL

GTFS Structure – Route_id

File Routes.txt

route_id	agency_id	route_short_name	route_long_name	route_type	route_color	route_text_color	route_desc	route_url
S1xxx	xxx		S1Zadar-Ancona	4	F2160B	14DFEC	NULL	NULL
S3xxx	xxx		S3Split-Ancona	4	F2160B	14DFEC	NULL	NULL
S3_1	xxx		S3Stari Grad-Split-Ancona	4	F2160B	14DFEC	NULL	NULL
D001	yyy	SNAV	Ancona-Split	4	F2160B	14DFEC	NULL	NULL

File Trips.txt

route_id	service_id	trip_id	trip_headsign	direction_id	block_id	shape_id	trip_short_name	trip_type	wheelchair_accessible	bikes_allowed
S1	2AI400G	2019010120191231STEPUP	64Zadar - Luka	1	NULL	22225100012	6008	NULL	NULL	NULL
S1	2AI400VE	2019010120191231STEPUP	85Zadar - Luka	1	NULL	22225100012	6008	NULL	NULL	NULL
S1	2AI400SA	2019010120191231STEPUP	66Zadar - Luka	1	NULL	22225100012	6008	NULL	NULL	NULL
S1	2AI400DO	2019010120191231STEPUP	87Zadar - Luka	1	NULL	22225100012	6008	NULL	NULL	NULL
S3	000V000V	2019122820191228STEPUP	7Split - Luka	1	NULL	22225300012	7	NULL	NULL	NULL
S3	000B000O	2019010120191231STEPUP	8Ancona - Porto	0	NULL	22225300011	8	NULL	NULL	NULL
S3_1	000C00LU	2019010120191231STEPUP	19Split - Luka	1	NULL	2253_100022	19	NULL	NULL	NULL
S3_1	000C00ME	2019010120191231STEPUP	20Split - Luka	1	NULL	2253_100022	20	NULL	NULL	NULL
S3_1	000C00SA	2019010120191231STEPUP	21Split - Luka	1	NULL	2253_100022	21	NULL	NULL	NULL
S3_1	000C00VE	2019010120191231STEPUP	22Stari Grad - Luka	1	NULL	2253_100012	22	NULL	NULL	NULL
D001	2NAVLMV	2019010120191231STEPUP	31Split - Luka	0	NULL	22000100011	1003	NULL	NULL	NULL
D001	2NAFMA	2019010120191231STEPUP	32Ancona - Porto	1	NULL	22000100012	1003	NULL	NULL	NULL
D001	2NA1MAG	2019010120191231STEPUP	33Ancona - Porto	1	NULL	22000100012	1003	NULL	NULL	NULL

GTFS Structure – Service_id

File Trips.txt

route_id	service_id	trip_id	trip_headsign	direction_id	block_id	shape_id	trip_short_name	trip_type	wheelchair_accessible	bikes_allowed
S1	ZA400VE2019010120191231STEPUP	64	Zadar - Luka	1	NULL	2225100012	008	NULL	NULL	NULL
S1	ZA400SA2019010120191231STEPUP	66	Zadar - Luka	1	NULL	2225100012	008	NULL	NULL	NULL

File Calendar Dates.txt

service_id	date	exception_type
ZA400VE2019010120191231STEPUP	20190726	0
ZA400VE2019010120191231STEPUP	20190802	0
ZA400VE2019010120191231STEPUP	20190809	0
ZA400VE2019010120191231STEPUP	20190816	0
ZA400VE2019010120191231STEPUP	20190823	0
ZA400SA2019010120191231STEPUP	20190727	1
ZA400SA2019010120191231STEPUP	20190803	1
ZA400SA2019010120191231STEPUP	20190810	1
ZA400SA2019010120191231STEPUP	20190817	1
ZA400SA2019010120191231STEPUP	20190824	1

File Calendar.txt

service_id	Monday	Tuesday	Thursday	Wednesday	Friday	Saturday	Sunday	start_date	end_date	
ZA400VE2019010120191231STEPUP	1	1	1	1	1	1	1	0	20190130	20190630

GTFS Structure – Trip_id

File Trips.txt

route_id	service_id	trip_id	trip_headsign	direction_id	block_id	shape_id	trip_short_name	trip_type	wheelchair_accessible	bikes_allowed
S1	ZA400VE2019010120191231STEPUP	64	Zadar - Luka	1	NULL	2225100012	008	NULL	NULL	NULL
S1	ZA400SA2019010120191231STEPUP	66	Zadar - Luka	1	NULL	2225100012	008	NULL	NULL	NULL

File Stop_times.txt

trip_id	arrival_time	departure_time	stop_id	stop_sequence	stop_headsign	pickup_type	drop_off_type	shape_dist_traveled	timepoint	arrival_time_seconds	departure_time_seconds	stop_headsigns
64	22.00.00	22.00.00P	AN	1	Zadar - Luka	0	0	0	NULL	NULL	NULL	NULL
64	31.00.00	31.00.00Z	ZA	2	Ancona - Porto	0	0	0	NULL	NULL	NULL	NULL
66	16.00.00	16.00.00P	AN	1	Zadar - Luka	0	0	0	NULL	NULL	NULL	NULL
66	22.00.00	22.00.00Z	ZA	2	Ancona - Porto	0	0	0	NULL	NULL	NULL	NULL

GTFS Structure – Shape_id

File Trips.txt

route_id	service_id	trip_id	trip_headsign	direction_id	block_id	shape_id	trip_short_name	trip_type	wheelchair_accessible	bikes_allowed
S12AH40Y/E201901/0120191231STEPUP		54Zadar-Susa			NULL	ZZZ5100012	008	NULL	NULL	NULL

File Shapes.txt

shape_id	shape_pt_lat	shape_pt_lon	shape_pt_sequence	shape_dist_traveled
ZZZ5100012	43.622258	13.508942	1	
ZZZ5100012	43.622380	13.509070	2	
ZZZ5100012	43.622160	13.509190	3	

How to create a GTFS file

To create a GTFS file there are several proprietary and open tools.

Steps to generate a GTFS:

- 1 Creation of **Agency** file
- 2 Definition of lines and creation of **routes** file (the lines is associated to the agency)
- 3 Creation of **stops** file based on the bus stops
- 4 Creation of **trips** file → trips are linked to the routes
- 5 As the routes are created, it is necessary to create the **calendar** (calendar.txt or calendar dates)
- 6 Creation of **Stop_times** file → association routes, timetables and stops
- 7 Creation of **shapes** file (optional) → to sketch the trip, it is important to enter latitude and longitude to each shape

Google validator

Before loading the zip file, GTFS feeds should be validated in order to catch errors.
On internet it is possible to find several validation tools.

GTFS validation results for feed:
C:\G119\STEPUP_20190322.zip
FeedValidator extension used: None

Agencies: [jadrolinija](#), [SNAY](#)

Routes: 4
Stops: 4
Trips: 67
Shapes: 8
Effective: January 02, 2019 to December 30, 2019

During the upcoming service dates Thu Jul 04 to Sun Sep 01:
Average trips per date: 3
Most trips on a date: 6, on 2 service dates (Sat Aug 03, Sat Aug 10)
Least trips on a date: 2, on 11 service dates (Fri Jul 05, Sun Jul 07, Mon Jul 08, ...)

feed validated successfully

Generated by [FeedValidator](#) version 1.2.15 on July 04, 2019 at 10:21 AM ora letpde Europa occidentale.

Found these problems:
36 errors **872 warnings**

- 14 Invalid Values 4 Duplicate Data
- 14 Missing Values 180 Short LineItems
- 477 Too Long Trips
- 12 Too Many Consecutive Stop Times With Same Times

Errors:

Invalid Values

- Invalid value 'agency' in field 'agency_id'
Route uses an unknown agency_id.
in line 36 of routes.txt

route_id	agency_id	route_short_name	route_long_name	route_type	route_color	route_text_color
00001	agency	00001	SARAJEVO ZENICA-SARAJEVO 2	0	FFFFFF	000000

- Invalid value 'agency' in field 'agency_id'
Route uses an unknown agency_id.
in line 37 of routes.txt

route_id	agency_id	route_short_name	route_long_name	route_type	route_color	route_text_color
00002	agency	00002	RIJEK-SARAJEVO 2	0	FFFFFF	000000

- Invalid value 'agency' in field 'agency_id'
Route uses an unknown agency_id.
in line 37 of routes.txt

route_id	agency_id	route_short_name	route_long_name	direction_id	block_id	shape_id
00001	agency	00001	SARAJEVO ZENICA-SARAJEVO 2	1	000000	000000001

How to find a GTFS file

EU Open Data Portal offers a list of Related open data website (including GTFS file)

http://data.europa.eu/euodp/it/open_data_portals



The screenshot shows the EU Open Data Portal interface. At the top, there are navigation tabs: Home, Data, Applications, Linked data, Visualisation, Developers' corner, and About. Below the navigation, there is a section titled "Related open data websites" which is divided into two columns: "EU Member States" and "International". Each column lists various data portals with their respective country or organization logos and names.