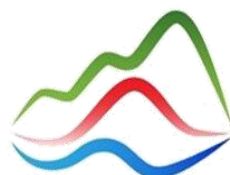




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**MINISTERO
DEL TURISMO**
REPUBBLICA ITALIANA

TDH – Expressions of Public Interest (VAT Refund) – Architecture

CONTRATTO ESECUTIVO PER L'AFFIDAMENTO DI "TOURISM DIGITAL HUB - TDH" MEDIANTE ORDINATIVO
DI FORNITURA NELL'AMBITO DELL'ACCORDO QUADRO PER I SERVIZI APPLICATIVI PER LE PUBBLICHE
AMMINISTRAZIONI STIPULATO DA CONSIP - ID 2212 – LOTTO 1
CIG DERIVATO 8924679E15 – CUP J51B21002940006

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VERSIONS TABLE			
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11/15/2022	1	First Draft	All

No index entries found.

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1. Purpose of the document

The purpose of the document is the sharing architectural information about the implementation of the Interconnection APIs between the TDH and VAT Refund operators who want to enroll in it. In this regard, the following interconnection APIs should be considered:

- Get Customer Data
- Get Refund Status

By means of the APIs just mentioned then, the VAT Refund operator enrolled on the Tourism Digital Hub (TDH) will be able to facilitate the invoice issuance phase by pre-filling the data (Get Customer Data) as well as export, in visualization, the progress of tourists' invoices (Get Refund Status).

1.1 Acronyms and definitions

ACRONYMS	DEFINITIONS
AEM	Adobe Experience Manager
AEP	Adobe Experience Platform
API	Application Programming Interface
CIAM	Customer Identity Access Management (SAP Customer Data Cloud)
CDP	Customer Data Platform
MIDDLEWARE	Orchestra the communication between CIAM and CDP
JWT	JSON Web Token
REST	REpresentational State Transfer API – Programming interface API
SOAP	SOAP – Programming interface API
TIBCO	Platform implemented as middleware
XDM	Experience Data Model

Table 1 - Acronyms and definitions

1.2 Prerequisites

In order to take advantage of API calls towards Middleware, the authentications described below are required:

- Make the call to the {environment}/rest/version/getOAuth passing as input clientID = clientID e clientSecret = clientSecret previously provided
- The service will return a token that must be passed in as the bearer of the Get Customer Data OR Get Refund Status

Client Credentials Flow

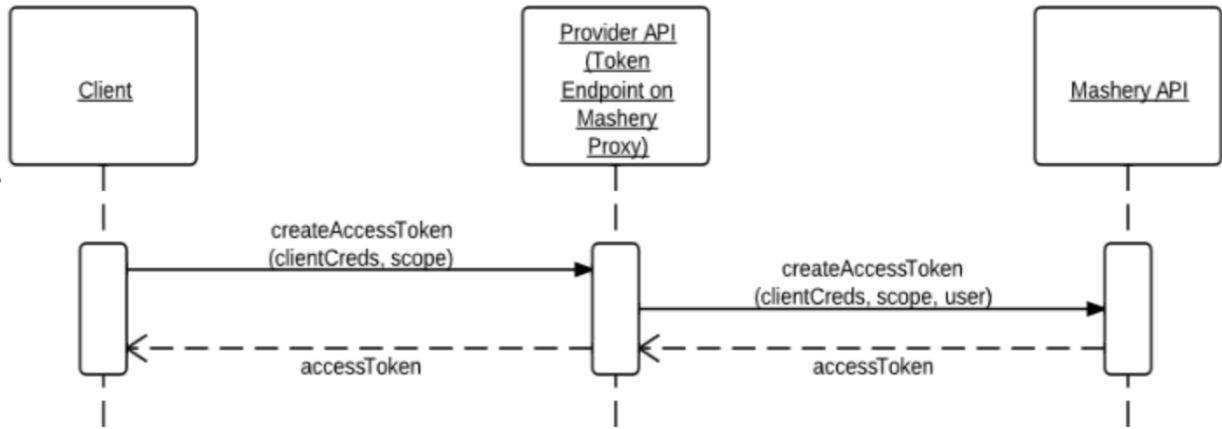


Figure 1 - Sequence Diagram for Token generation

1.3 Platform Architecture

Di seguito lo schema architetturale delle chiamate.

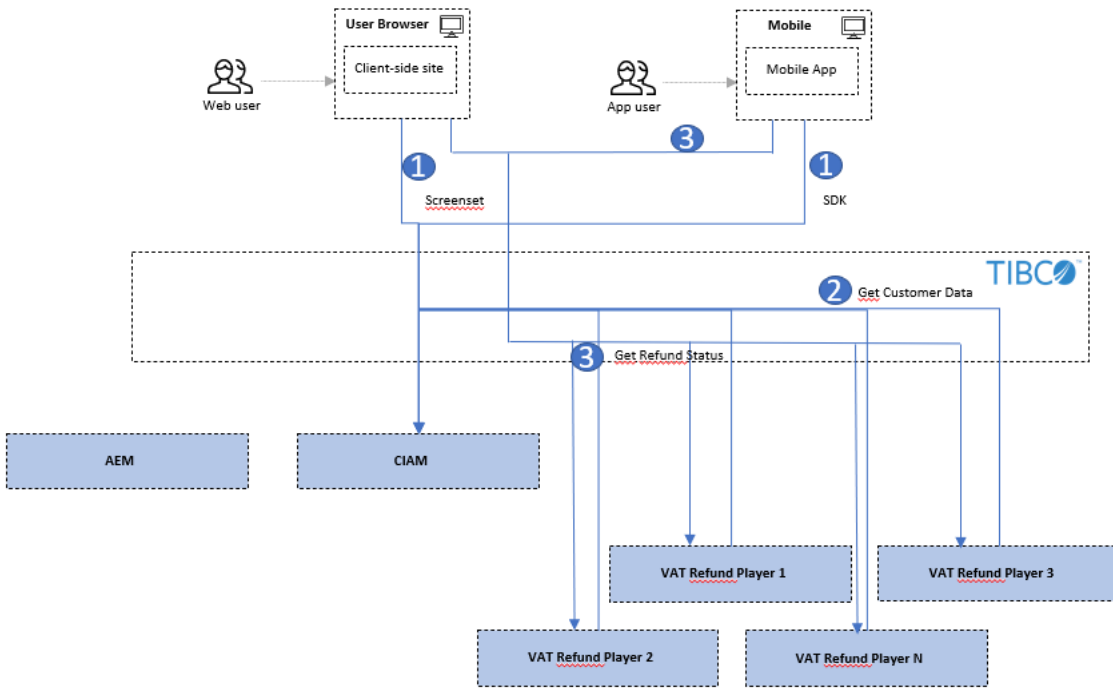


Figure 2 - Platform Architecture

2 Get Customer Data

The Get Customer Data API is necessary to provide VAT Refund Players with data on users who use the QR Code for in-store data pre-filling.

2.1 Assumptions

This section defines the assumptions behind the solution.

- o Communication between the VAT Refund Player and CIAM is done through Middleware that will:
 - Retrieve the necessary information from CIAM
 - Send the necessary information to the VAT Refund Player
- o Communication between CIAM and Middleware is done through:
 - API
- o Communication between Middleware and VAT Refund Player is done through:
 - API

2.2 Use Case

This section describes the use case of the data pre-filling solution:

In the use case, the user navigates to Italia.it, logs in with the credentials defined during registration, and enters his private area.

The user continues browsing by accessing the "VAT Refund Wallet" section of the site, clicks "complete profile" and enters the passport data required to be able to activate the Tax Free Shopping service.

Once the service has been activated, in the "VAT Refund Wallet" section of the site, the user will be able to generate the QR Code, via the Generate QR Code button, to be scanned by the store when making a purchase.

Finally, once the tourist has made his or her purchases, the scanning of the QR Code by the merchant will allow the VAT Refund Players to retrieve the information needed to query the TDH allowing the pre-filling of invoices with the data the user has previously entered in his or her personal area.

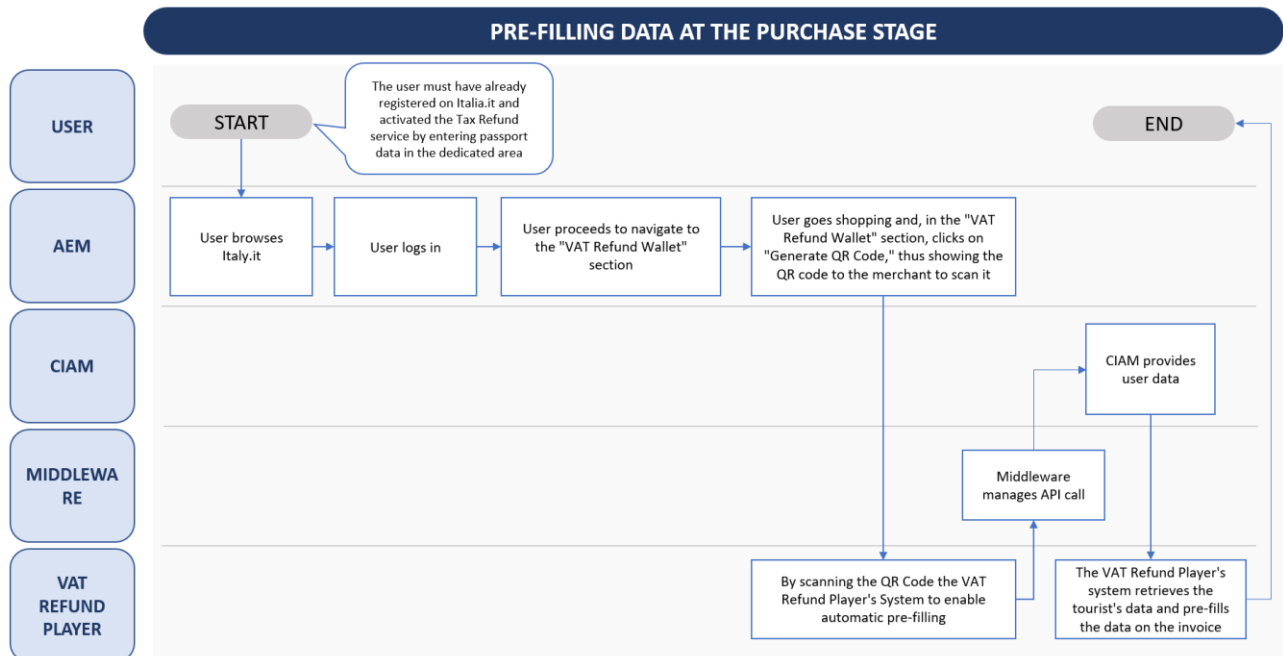


Figure 3 - Pre-filling process flowchart

2.3 Caller – VAT Refund Player

2.3.1 Request

RESPONSE BODY – application/JSON

FIRST LEVEL	DESCRIPTION	TYPE	NOTE	MANDATORY
ciam_id	Unique alphanumeric code generated by CIAM to identify each tourist registered in the TDH platform	String		no
doc_number	Identification number of the passport or ID card (in case of SEE/EFTA non-EU countries) inserted during the activation of the "VAT Refund" service on the TDH platform	String		no
doc_iso	Passport or ID card issuing country (in case of SEE/EFTA non-EU countries) inserted when activating the "VAT Refund" service on the TDH platform	String	ISO ALPHA 2	no

Table 2 - Request Get Customer Data VAT Refund Player

2.3.2 Response

RESPONSE BODY – application/JSON

FIRST LEVEL	DESCRIPTION	TYPE	NOTE	MANDATORY
ciam_id	Unique alphanumeric code generated by CIAM to identify each tourist registered in the TDH platform	String		yes
tourist_name	Name under which the tourist registered on the TDH platform	String		yes
tourist_surname	Surname under which the tourist registered on the TDH platform	String		yes
tourist_email	E-mail address of the tourist was inserted during registration on the TDH platform	String		yes
tourist_doc_number	Identification number of the passport or ID card (in case of non-EU SEE/EFTA countries) inserted during activation of the "VAT Refund" service on the TDH platform	String		yes



tourist_doc_type	Type of document	Enum	CI: Identity Card PA: Passport	yes
tourist_doc_exp	Expiration date of the passport or ID card (in case of non-EU SEE/EFTA countries) inserted when activating the "VAT Refund" service on the TDH platform	Date	yyyy-mm-dd	yes
tourist_doc_iso	Passport or ID card issuing country (in case of non-EU SEE/EFTA countries) inserted when activating the "VAT Refund" service on the TDH platform	String	ISO ALPHA 2	yes
tourist_birth	Date of birth of the tourist was inserted when activating the "VAT Refund" service on the TDH platform	Date	yyyy-mm-dd	yes
tourist_country	Country of residence inserted when activating the "VAT Refund" service on the TDH platform	String	ISO ALPHA 2	yes
tourist_birth_country	Country of birth listed in the passport or ID card (in case of non-EU SEE/EFTA countries) inserted during the activation of the "VAT Refund" service on the TDH platform	String	ISO ALPHA 2	yes

Table 3 - Response Get Customer data CIAM

2.4 Middleware

This interface will be provided to the VAT Refund Player in order to retrieve client data from the TDH system.

2.4.1 Sequence diagram

Below is shown the sequence diagram of the flow that is the subject of this document

Tax Refund - Get Customer Data

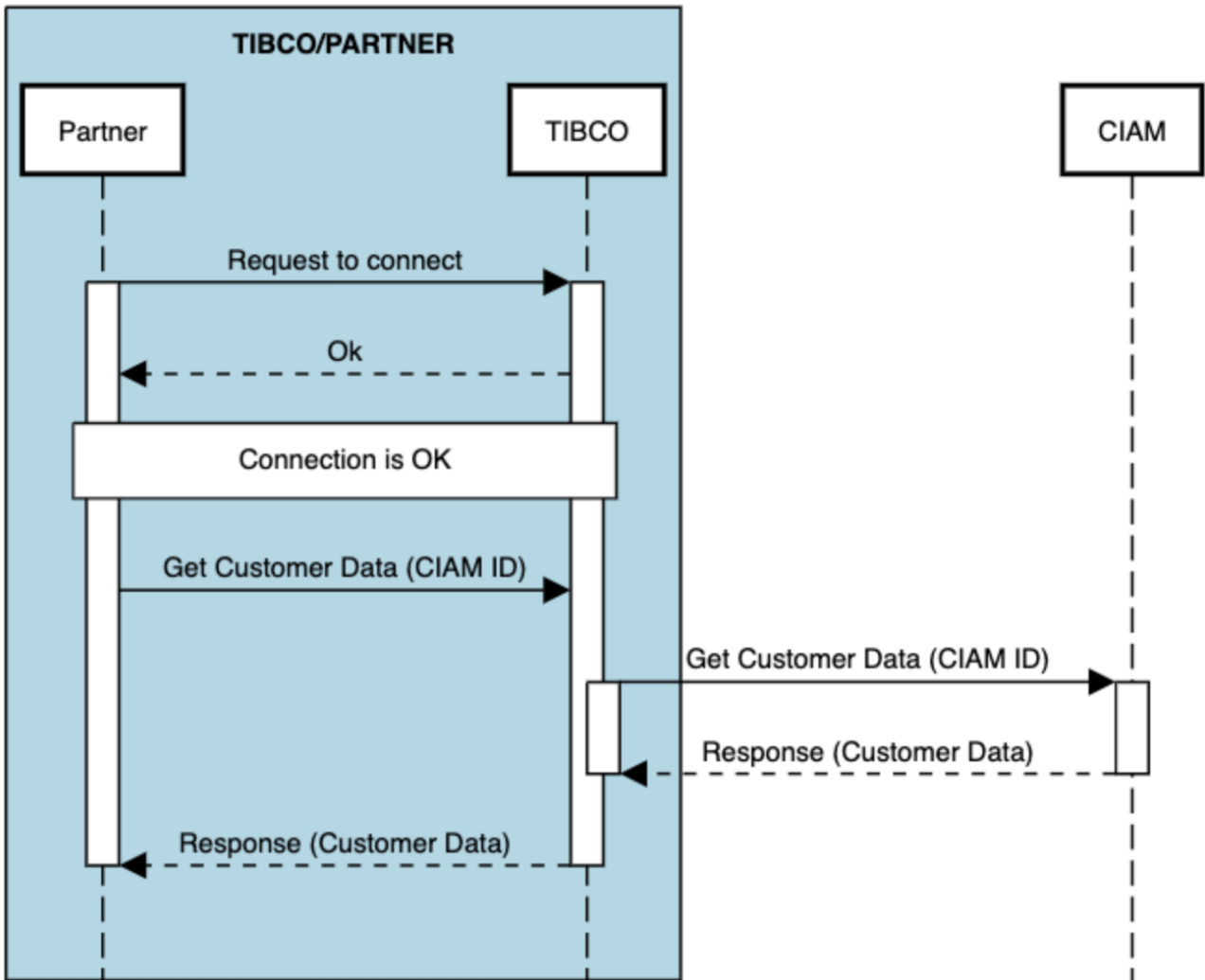


Figure 4 - Sequence Diagram Tax Refund Get Customer Data (int_090)

2.5 Swagger

2.5.1 Request

Name	Type	Description
ciamid (*)	string	
country	string	
docNumber	string	

Table 4 - Request Get Customer Data (int_090)

2.5.2 Response

Status Code	Name	Type
200	ciamId	string
	touristName	string
	touristSurname	string

	touristEmail	string
	touristDocNumber	string
	touristDocType	string
	touristDocExp	string
	touristDocIso	string
	touristBirth	string
	touristCountry	string
	touristBirthCountry	string
400	codiceEsito	string
500	codiceEsito	string

Table 5 - Response Get Customer Data (int_090)

3 Get Refund Status

The Get Refund Status API is needed to show on Italia.it the summary of invoices, with their progress status for VAT refund, from the VAT Refund Player systems.

3.1 Assumptions

This section defines the assumptions behind the solution.

- o Communication between the VAT Refund Player and CIAM is done through the Middleware that will:
 - Retrieve the necessary information from CIAM
 - Send the necessary information to the VAT Refund Player
- o Communication between the CIAM and the Middleware is done through:
 - API
- o Communication between Middleware and VAT Refund Player is done through:
 - API

3.2 Use Case

This section describes the use case of the solution for viewing the invoice summary:

In the use case, the user browses Italia.it, logs in with the credentials defined during registration, and enters his reserved area.

The user continues browsing by accessing the "VAT Refund Wallet" section, within which he has already entered his passport data and thus activated the Tax Free Shopping service.

In the "VAT Refund Wallet" section, every time the tourist accesses the section a call will be sent to the VAT Refund Player, to receive a summary of the invoices:

- In case no invoices are present an informational message will be shown in which it is recommended to wait

- In case there are invoices present there will be a summary table containing the name of the invoice, date of invoice issuance, value of the amount, store at which it was issued, city of the store, address of the store, name of the VAT Refund Player, link to the invoice on the Player's digital channel, and status of the invoice refund.

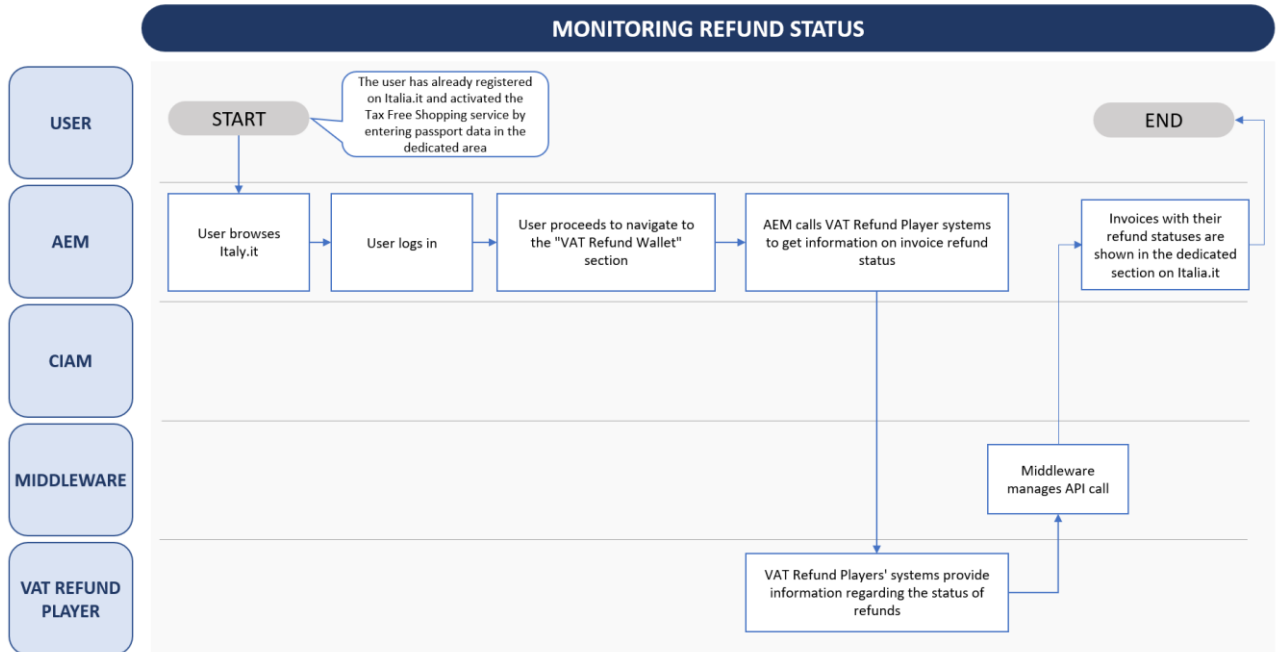


Figure 5 - Flowchart of the refund status monitoring process

3.3 Caller – VAT Refund Player

3.6.1 Request

RESPONSE BODY – application/JSON

FIRST LEVEL	DESCRIPTION	TYPE	NOTE	MANDATORY
ciam_id	Unique alphanumeric code generated by CIAM to identify each tourist registered in the TDH platform	String		no
doc_number	Identification number of the passport or ID card (in case of non-EU SEE/EFTA countries) inserted during activation of the "VAT Refund" service on the TDH platform	String		no
doc_iso	Passport or ID card issuing country (in case of non-EU SEE/EFTA countries)	String	ISO ALPHA 2	no

	inserted when activating the "VAT Refund" service on the TDH platform			
--	---	--	--	--

Table 6 - Request Get Refund Status AEM

RESPONSE BODY – application/JSON

1st LEVEL	2nd LEVEL	3rd LEVEL	DESCRIPTION	TYPE	NOTE	MANDATORY
ciam_id { }	ciam_id		Unique alphanumeric code generated by CIAM to identify each tourist registered in the TDH platform	String		yes
ciam_id { }	doc_number		Identification number of the passport or ID card (in case of non-EU SEE/EFTA countries) inserted during activation of the "VAT Refund" service on the TDH platform	String		yes
ciam_id { }	doc_iso		Passport or ID card issuing country (in case of non-EU SEE/EFTA countries) inserted during activation of the "VAT Refund" service on the TDH platform	String	ISO ALPHA 2	yes
ciam_id { }	vat_player		Name of the VAT Refund Player who is handling the case	String		yes
ciam_id { }	link		Link with cross-reference to VAT Refund Player's digital channel	String		yes
ciam_id { }	invoices { }	inv_date	Date on which the invoice was issued	Date	yyyy-mm-dd	yes
ciam_id { }	invoices { }	inv_number	Invoice identification number	String		yes
ciam_id { }	invoices { }	inv_total	Invoice amount value	Float	#####.##	yes
ciam_id { }	invoices { }	inv_shop	Store where the invoice was issued	String		yes

ciam_id { }	invoices { }	inv_shop_city	City of the store in which the invoice was issued	String		yes
ciam_id { }	invoices { }	inv_shop_address	Address of the store in which the invoice was issued	String		yes
ciam_id { }	invoices { }	inv_status	Status of the invoice reimbursement process	String		yes

Table 7 - Response Get Refund Status VAT Refund Player

3.6.2 Exemple of Response

```
{
  "12345678":{
    "ciam_id":"12345678",
    "doc_number":"AZ789254",
    "doc_iso":"UK",
    "vat_player":"Tax Refund",
    "link":"https://www.taxrefund.it",
    "invoice":[
      {
        "inv_date":"2022-08-28",
        "inv_number":"TR/26/2022",
        "inv_total":"1936.27",
        "inv_shop":"NEGOZIO DI PROVA",
        "inv_shop_city":"ROMA",
        "inv_shop_address":"Via del Corso, 32",
        "inv_status":"0"
      },
      {
        "inv_date":"2022-07-26",
        "inv_number":"36",
        "inv_total":"4000.00",
        "inv_shop":"NEGOZIO DI PROVA 2",
        "inv_shop_city":"MILANO",
        "inv_shop_address":"Via della Spiga, 1",
        "inv_status":"1"
      }
    ]
  }
}
```

}

3.4 Middleware

This interface will be provided to invoke the partner and obtain the list of invoices from it, with their attributes, associated with the client that is using the TDH.

3.7.1 Sequence Diagram

Below is shown the sequence diagram of the flow that is the subject of this document.

Tax Refund - Customer Bill Info

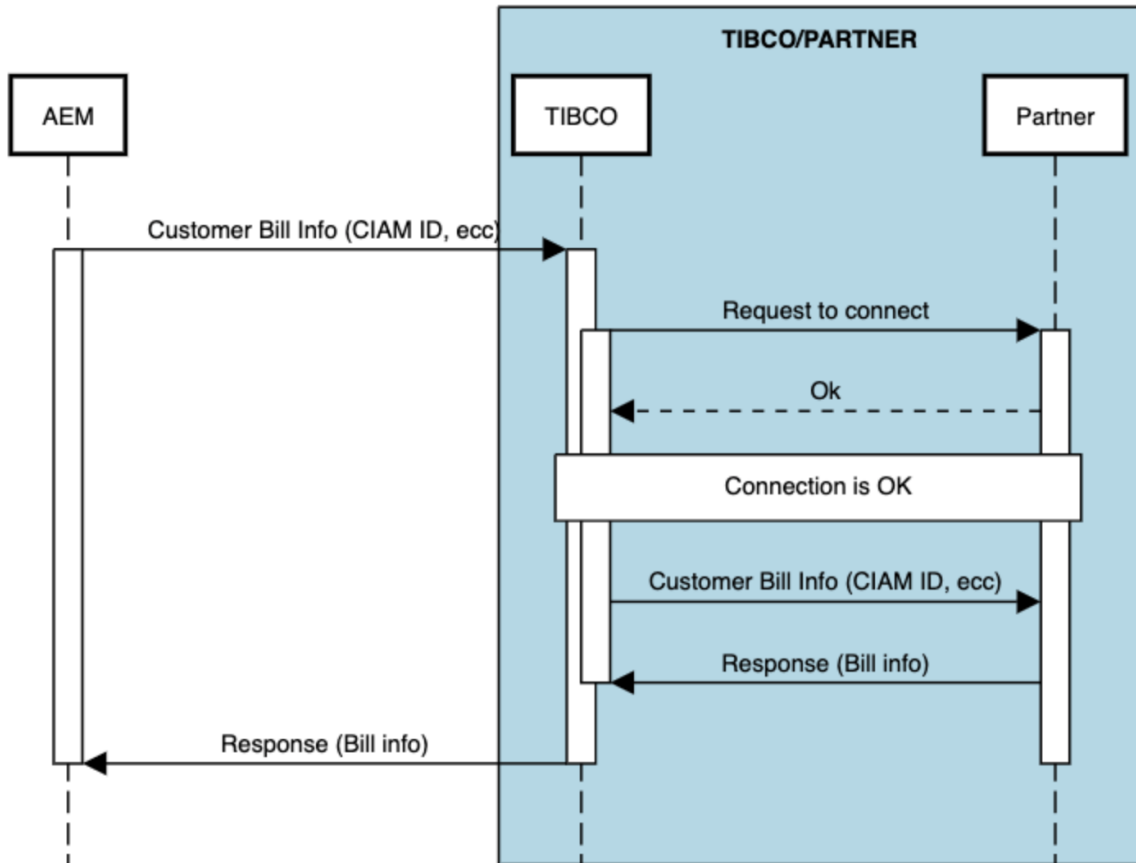


Figure 6 - Sequence Diagram - Customer Bill Info (Int_091)

3.5 Swagger

3.5.1 Request

Name	Type	Description
ciamId (*)	string	
docNumber (*)	string	
docIso (*)	string	

Table 8 - Request Customer Bill InfoResponse

3.5.2 Response

Code	Name	Type	
200	docIso	string	
	invoices	invNumber	string
		invShopCity	string
		invStatus	string
		invTotal	string
		invDate	string
		invShop	string
		invShopAddress	string
	docNumber	string	
	ciamId	string	
link	string		
vatPlayer	string		
400	codiceEsito	string	
500	codiceEsito	string	

Table 9 - Customer Bill InfoResponse

4 Constraints and recruitment

#	Type	Descriptions
1	Technical Drawing	Some in-depth work on the technical drawing is still in progress, which may result in the modification of one or more sections of the document.