



Part III APIs The Future of TourMIS

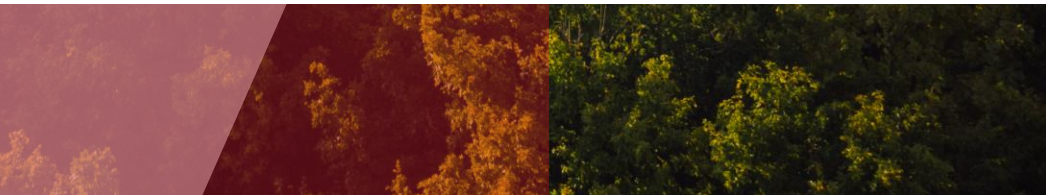
 Austrian National
Tourist Office
www.tourmis.info



18th TourMIS Workshop

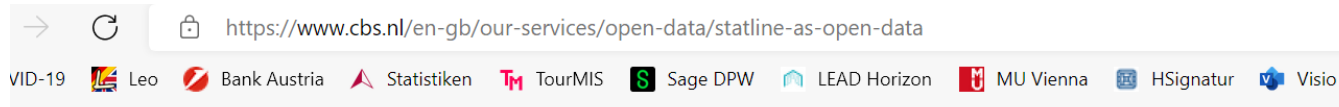
September 7, 2023

TOURMIS
WORKSHOP



Application Programming Interfaces (APIs) used and offered by TourMIS

API used by TourMIS: e.g. CBS (Statistics NL)



StatLine as open data

All datasets in StatLine are available as open data. By using a web service (API) the most recent versions of datasets available in StatLine can be retrieved. The machine-readable format of open data ensures that users can process data from Statistics Netherlands automatically.

Share this page



CBS data portal

Datasets from StatLine can be found in the [data portal](#). This portal lists all available datasets by theme and also makes it possible for users to search by keywords. Each dataset includes a brief description as well as links to web services where the data can be retrieved. The portal also links to the corresponding dataset in StatLine.

Web services

The web services offer all statistical data from StatLine in a machine-readable format. Statistics Netherlands offers three types of web services.

- The [Catalog service](#) provides overviews of datasets, for example to generate a list with information about [all available datasets](#).
- The [standard API](#) is intended for direct use, e.g. when placing a chart on a website. The service is intended for quick retrieval of a limited amount of data. Retrieval of data is restricted to a maximum of 10,000 cells at one time.
- The [Feed](#) is intended for indirect use, e.g. for downloading large quantities of data for



CBS API Syntax

[https://opendata.cbs.nl/ODataFeed/odata/82061NED/TypedDataSet?\\$filter=substringof\('2022',Perioden\) and RegioS eq 'GM0363'](https://opendata.cbs.nl/ODataFeed/odata/82061NED/TypedDataSet?$filter=substringof('2022',Perioden) and RegioS eq 'GM0363')

82061 = Arrivals and overnights in hotels and similar establishments

82059 = Arrivals and overnights in all forms of paid accommodation

RegioS: GM0394 = Haarlemmermeer; GM0518 = The Hague; GM0935 = Maastricht; GM0599 = Rotterdam; GM0344 = Utrecht; GM0363 = Amsterdam; NL01 = Netherlands

CBS API Result

T001047 => Total Foreign and Domestic

B000069 => Total Foreign

L008592 => Germany

L008552 => Belgium

L008605 => France

```

-<content type="application/xml">
  ...
  -<m:properties>
    <d:ID m:type="Edm.Int32">4287</d:ID>
    <d:WoonlandVanGasten>T001047</d:WoonlandVanGasten>
    <d:RegioS>GM0363</d:RegioS>
    <d:Perioden>2022MM01</d:Perioden>
    <d:Gasten_1 m:type="Edm.Int32">124</d:Gasten_1>
    <d:Overnachtingen_2 m:type="Edm.Int32">236</d:Overnachtingen_2>
  </m:properties>
</content>

```

Amsterdam

Jan 2022

= Arrivals

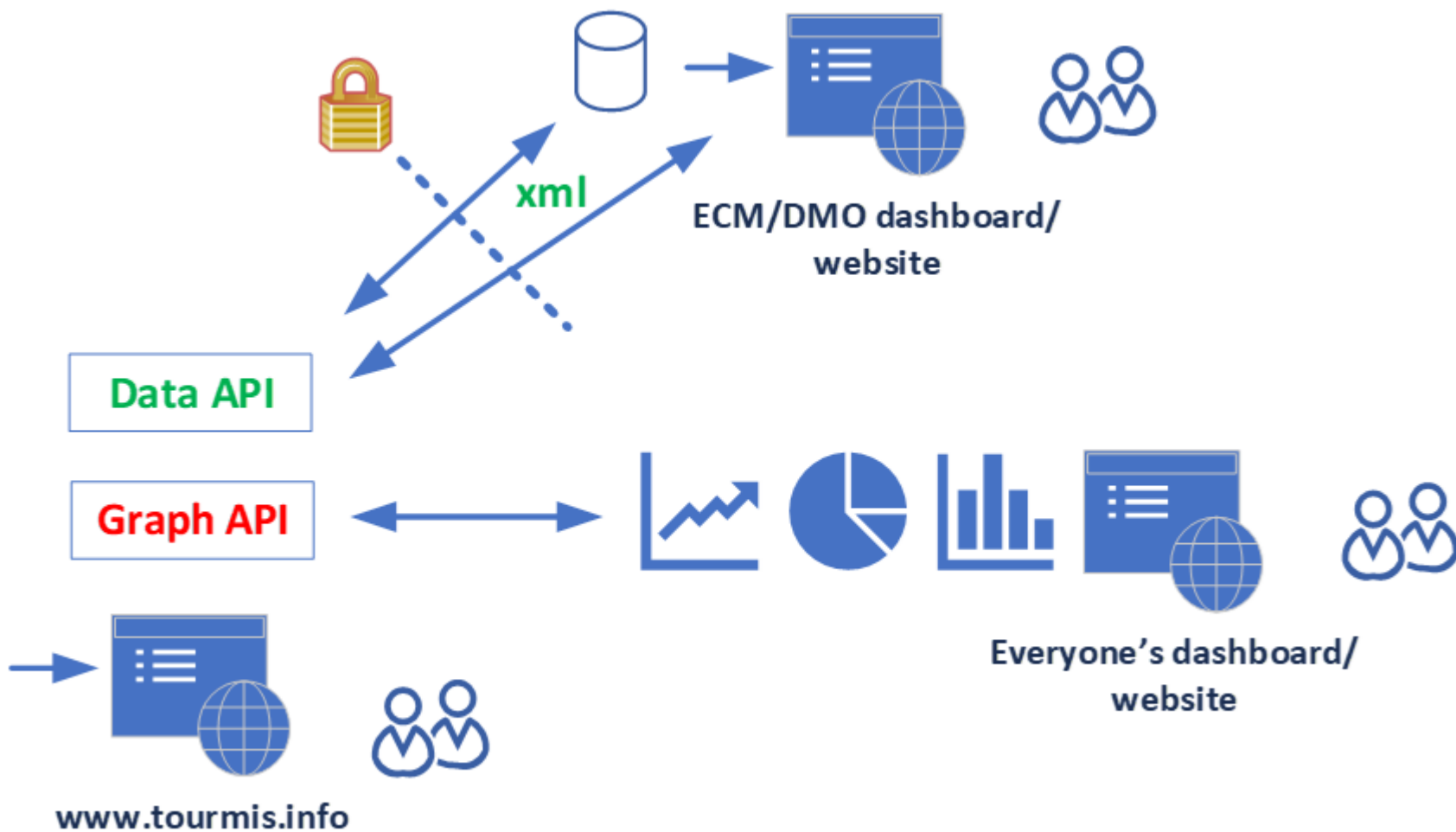
= Bednights



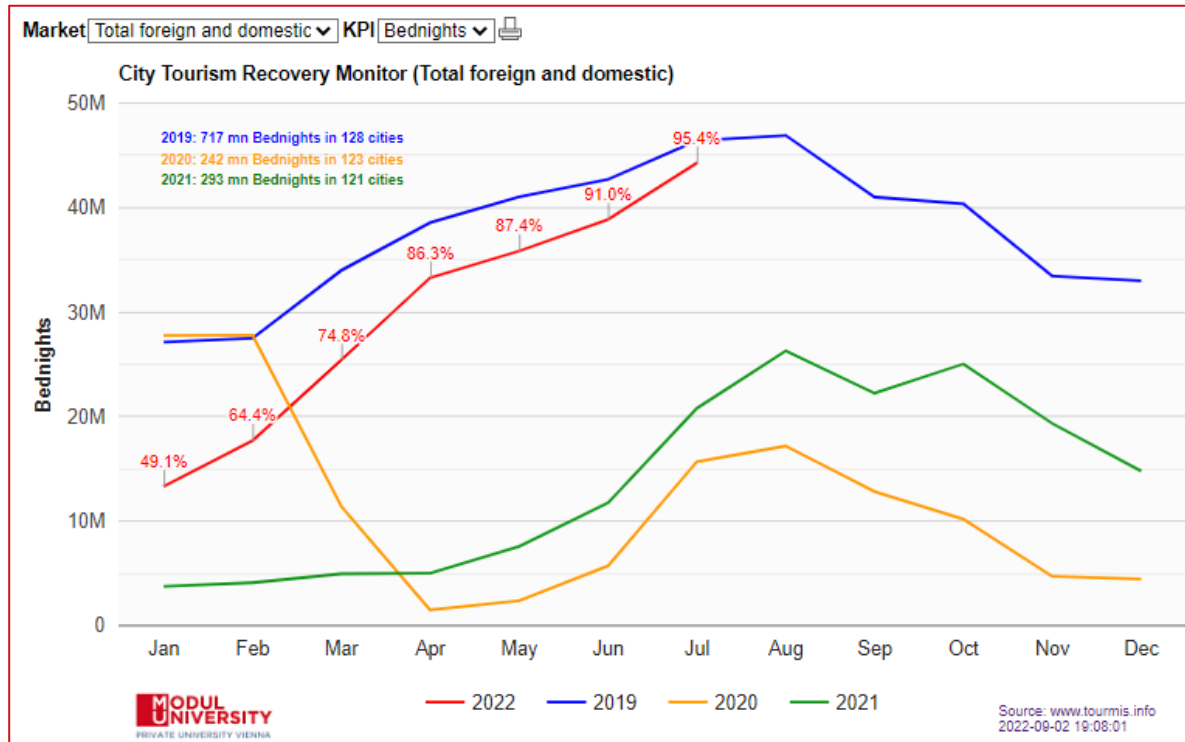
API used by TourMIS

1. Netherlands - <https://opendata.cbs.nl>
 2. Norway - <https://data.ssb.no>
 3. Estonia - <https://andmed.stat.ee>
 4. Denmark (upcoming soon) - <https://api.statbank.dk>
 5. Finland (planned until the end of 2023)
 6. Slovenia (planned until the end of 2023)
 7. Portugal (eventually)
- Weekly updates
 - Adjustments during the updating process are possible (e.g. Estimation of monthly data based on quarterly data; calculation of the larger urban area by adding data from different municipalities).


APIs offered by TourMIS



Graph API: Embedded graphs (iframe)



Example: City Destinations Alliance [Website](#)

Market **Total foreign and domestic** KPI **Bednights** 
 Period by **2023** **January** for max **12** months

City Tourism in Europe			
	Total foreign and domestic	Bednights	Recovery 2019
1	Utrecht	Jan-Jun 23	159.7%
2	The Hague	Jan-Jun 23	142.1%
3	San Sebastian	Jan-May 23	128.9%
4	Malaga	Jan-Jun 23	121.0%
5	Klagenfurt	Jan-Jun 23	120.6%
6	Copenhagen	Jan-Apr 23	119.0%
7	Bilbao	Jan-Jul 23	117.4%
8	Warsaw	Jan-May 23	116.4%
9	Turku	Jan-Jun 23	115.8%
10	Rotterdam	Jan-Jun 23	114.5%
11	Lloret de Mar	Jan-Jul 23	114.2%
12	Split	Jan-May 23	114.1%
13	Linz	Jan-Jun 23	114.0%
14	Maribor	Jan-Jun 23	112.7%
15	Maastricht	Jan-Jun 23	112.4%
16	Lisbon	Jan-May 23	111.8%
17	Seville	Jan-Jul 23	110.4%
18	Haarlemmermeer	Jan-Jun 23	107.9%
19	Trondheim	Jan-Jun 23	107.5%
20	Barcelona	Jan-May 23	107.1%



TourMIS data API

- Digital bulk download service for TourMIS
- Communicates in Extensible Markup Language (XML)
- Restricted Access: Access to the TourMIS database via the API <https://www.tourmis.info/api.pl> requires a previous login with specific access rights.
- Access for TourMIS data inputters only
- Inform support@tourmis.info about your user-id and request access to the TourMIS API

TourMIS data API

- After you have received a confirmation mail that you have been granted access, you can start using the API. To start the API, use following URL:

<https://www.tourmis.info/api.pl?id=xxxxxxx&pw=xxxxxxx>

- replace the yellow part with your TourMIS ID and password. If the ID and the password is correct AND you have been granted access to the API, you will receive a **token**, random string of characters.

```
▼<TourMIS-API version="1.0" timestamp="2022-01-07 17:06:28 +0200">
  ▼<results>
    <token>820EA3A7-69B1-41CD-A99C-C75033DC17A3</token>
  </results>
</TourMIS-API>
```

- For **three minutes**, the token will allow you to send queries to the TourMIS database

TourMIS data API

- A simple query looks like this:

<https://www.tourmis.info/api.pl?d=CPH&c=NG&m=AT&y=2019&token=xxxx>

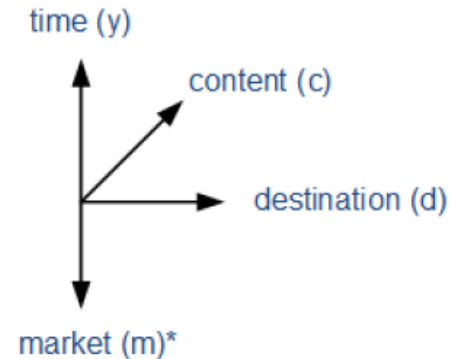
- Each API query consists of the basic URL, parameters, and the token:
 - Basic URL: <https://www.tourmis.info/api.pl?>
 - Parameters: [d=CPH&c=NG&m=AT&y=2019](#)
 - Token = special parameter: [token=BE1AD8C4-AFF5-404F-ABD4-16172E186819](#)
- A valid token must be included in each query, otherwise you receive a message that the token is missing:

```
▼<TourMIS-API version="1.0" timestamp="2022-01-07 17:43:06 +0200">
  ▼<results>
    <error>Token missing</error>
  </results>
</TourMIS-API>
```

- If the token has expired, you will receive the message “Token invalid”:

```
▼<TourMIS-API version="1.0" timestamp="2022-01-07 17:55:57 +0200">
  ▼<results>
    <error>Token invalid</error>
  </results>
</TourMIS-API>
```

TourMIS data API



- Parameters are all separated with the & symbol, for example:

`d=CPH&c=NG&m=AT&y=2019`

- For the above query, the API delivers a result of following structure:

```
▼ <TourMIS-API version="1.0" timestamp="2022-01-08 14:01:54 +0200">
  ▼ <results>
    ▶ <query>
      ...
    </query>
    ▶ <notes>
      ...
    </notes>
    ▶ <alldata>
      ...
    </alldata>
  </results>
</TourMIS-API>
```

Query: Returns all parameters entered by the user, resolves array parameters and removes duplicates, if necessary.

Notes: Returns all notes, meta information entered by users (data inputters) into the TourMIS database, associated with the query.

Data

TourMIS data API

```
▼<TourMIS-API version="1.0" timestamp="2022-01-08 14:01:54 +0200">
  ▼<results>
    ▶<query>
      ...
      </query>
    ▶<notes>
      ...
      </notes>
    ▼<alldata>
      ▼<data>
        <destination>CPH</destination>
        <content>NG</content>
        <market>AT</market>
        <year>2019</year>
        <value>58724</value>
        <value month="1">2514</value>
        <value month="2">3150</value>
        <value month="3">3065</value>
        <value month="4">6252</value>
        <value month="5">5741</value>
        <value month="6">6117</value>
        <value month="7">7598</value>
        <value month="8">8371</value>
        <value month="9">5180</value>
        <value month="10">4009</value>
        <value month="11">3514</value>
        <value month="12">3213</value>
      </data>
    </alldata>
  </results>
</TourMIS-API>
```

- The format of the section <data> depends on the value of the parameter periodicity (p).
- If data does not exist, the field <value> is empty.
- The <destination>, <content>, <market>, and <year> fields defines the time series.

TourMIS data API

- The API can handle multiple expressions per parameter, which means that large amounts of data can be processed with one query.
- To retrieve data from several destinations at the same time, you concatenate the codes by means of a colon character, e.g.

d=CPH:VIE:AMS

- This is also possible for content, markets, or years. In the latter case, periods can also be defined in the format start – end year, e.g. 2011-2020, which automatically selects 10 years of data, or 2015:2018-2020, which selects the years 2015, 2018, 2019, and 2020.
- For markets, special codes can be used for retrieving all markets available in the TourMIS database, e.g.

m=*ETC

returns data for all markets and is equivalent to:

m=AFR:AME:AR:ASI:AT:AU:BE:BG:BH:BR:BY:CA:CH:CHINA:CY:CZ:DE:DK:EE:EG:ES:ET
CUAFR:ETCUAME:ETCUASI:ETCUEUR:ETCUOZE:EUR:FI:FR:GE:GR:HR:HU:IE:IL:IN:IS:I
T:JP:KR:LI:LT:LU:LV:MA:MC:ME:MT:MX:NL:NO:NZ:OZE:PL:PT:RO:RS:RU:SAFR:SAR:SE
:SI:SK:SM:TH:TR:TW:UA:UAE:UK:US:ZA:ZI:ZZ

TourMIS data API

A complete list of all codes of parameters, more information and examples for data queries are included in the

TourMIS API Manual

VVV Amsterdam

Wonderful Copenhagen

Visit Portugal

I amsterdam.



The Future Development of TourMIS

- APIs for data import from statistical offices
- Further expansion of the regions database
- Density
- Graph APIs (single destination & benchmarking)
- Trend analysis of seasonality
- Sharing data on tourism expenditures
- Forecasting
- Make use of other APIs (e.g. inflation, exchange rates, weather data)
- Suggestions for additional tables or visualizations are welcome!

Proposing new tables

Drafting a new table

Example: Average length of stay

Suggested label of table: Average length of stay in one ETC destination ¶

Destination = <to be selected> ¶

Type of Accommodation = <to be selected> ¶

Period = mm1/yy1 - mm2/yy2 <to be selected> ¶

¶

¶	Arrivals ¶			Bednights ¶			Avg. Length of Stay ¶		¶
¶	mm1/yy1 ¶ - ¶ mm2/yy2 ¶ (absolute) ¶	mm1/(yy1-1) ¶ - ¶ mm2/(yy2-1) ¶ (absolute) ¶	% p.y. ¶	mm1/yy1 ¶ - ¶ mm2/yy2 ¶ (absolute) ¶	mm1/(yy1-1) ¶ - ¶ mm2/(yy2-1) ¶ (absolute) ¶	% p.y. ¶	mm1/yy1 ¶ - ¶ mm2/yy2 ¶ (days) ¶	mm1/(yy1-1) ¶ - ¶ mm2/(yy2-1) ¶ (days) ¶	¶
Market-A ¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
... ¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
Market-Z ¶	¶	¶	¶	¶	¶	¶	¶	¶	¶

Submit to tourmis@modul.ac.at or karl.woeber@modul.ac.at

Sharing data from visitor surveys

1. For instance: Monitoring and comparing the **daily expenditures** of all and individual markets
2. Focus: Average daily expenditures of tourists (excluding transportation to the destination) broken down by
 - accommodation
 - food and beverages
 - entertainment
 - shopping
 - local transportation
 - other
3. Developing an econometric model which allows to estimate the direct economic contribution of tourism
4. Estimate missing values using data from visitor surveys in similar destinations

Thank you very much!

18:00	Transfer to Motel One Wien-Westbahnhof (for delegates not registered for our dinner event) or to restaurant Luftburg Kolarik Im Prater.
18:30	Dinner at Luftburg Kolarik Im Prater. Transfer back to the hotel at 22:00.