



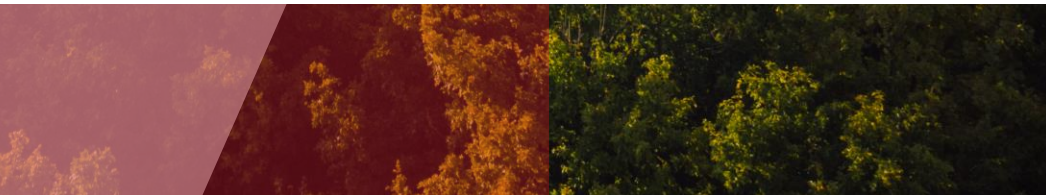
# Part III APIs The Future of TourMIS

 Austrian National  
Tourist Office  
[www.tourmis.info](http://www.tourmis.info)



19<sup>th</sup> TourMIS Workshop  
September 12-13, 2024

**T**OURMIS  
**W**ORKSHOP

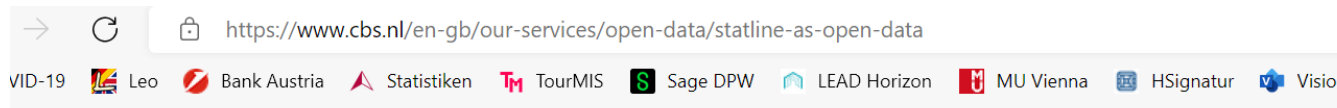


# Application Programming Interfaces (APIs) used and offered by TourMIS

# API used by TourMIS

1. Netherlands - <https://opendata.cbs.nl>
  2. Norway - <https://data.ssb.no>
  3. Estonia - <https://andmed.stat.ee>
  4. Finland - <https://visitfinland.stat.fi>
  5. Denmark - <https://api.statbank.dk> (soon)
  6. Italy (planned)
  7. Sweden (planned)
  8. Slovenia (planned)
  9. Switzerland (planned)
  10. Austria (planned)
  11. Portugal (eventually)
- Updates two times a week
  - 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).

# 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



## **New:** Regional Tourism Statistics

<b>Austria</b>	<b>9</b>
<b>Belgium</b>	<b>13</b>
<b>Denmark</b>	<b>16</b>
<b>Estonia</b>	<b>21</b>
<b>Finland</b>	<b>19</b>
<b>Norway</b>	<b>81</b>
	<b>159</b>

# Regions

## Denmark

1. Copenhagen City
2. Copenhagen Region
3. Province  
Nordsjælland
4. Province Bornholm
5. Province Østsjælland
6. Province Vest- og  
Sydsjælland
7. Province Fyn
8. Province Sydjylland
9. Province Østjylland
10. Province Vestjylland
11. Province Nordjylland
12. Nordjylland
13. Midtjylland
14. Syddanmark
15. Hovedstaden
16. Sjælland

## Estonia

1. Harju county
2. Harju county, excl.  
Tallinn
3. Hiiu county
4. Ida-Viru county
5. Järva county
6. Jõgeva county
7. Lääne county
8. Lääne-Viru county
9. Pärnu city as a  
settlement unit
10. Pärnu county
11. Pärnu county, excl.  
Pärnu city
12. Põlva county
13. Rapla county
14. Saare county
15. Tartu city as a  
settlement unit
16. Tartu county
17. Tartu county, excl.  
Tartu city
18. Valga county
19. Viljandi county
20. Võru county
21. Tallinn



# Regions Norway

- |                          |                         |                             |   |
|--------------------------|-------------------------|-----------------------------|---|
| 1. Rogaland              | 25. Østfold             | 49. Risør/Tvedestrand       | 73. Sør-Troms/Senja-region              |
| 2. Stavangerregion       | 26. Akershus            | 50. Arendal/Grimstad        | 74. Nord-Troms-region                   |
| 3. Haugesund/Haugeland   | 27. Romerike/Hadeland   | 51. Kristiansandregion      | 75. Vest-/Indre-Finnmark                |
| 4. Ryfylke               | 28. Buskerud            | 52. Lindesnes/Lyngdal       | 76. Øst-Finnmark                        |
| 5. Møre og Romsdal       | 29. Norefjell/Ringerike | 53. Vestre-Agder            | 77. Troms - Romsa - Tromssa             |
| 6. Nordmøre/Romsdal      | 30. Innlandet           | 54. Setesdal                | 78. Finnmark -Finnmárku -<br>Finnmarkku |
| 7. Ålesund/Sunnmøre      | 31. Hedmark-region      | 55. Vestland                | 79. Oslo                                |
| 8. Nordland - Nordlånnda | 32. Lillehammer-region  | 56. Bergensregion           | 80. Trondheim                           |
| 9. Bodø                  | 33. Gjøvikregion        | 57. Fjordkysten             | 81. Tromsø                              |
| 10. Vesterålen/Narvik    | 34. Ringsaker           | 58. Sunnhordland            |   |
| 11. Helgeland            | 35. Trysil              | 59. Hardangerfjord          |   |
| 12. Salten-region        | 36. Østerdalen          | 60. Voss                    |   |
| 13. Lofoten              | 37. Nord-Gudbrandsdal   | 61. Sognefjord              |   |
| 14. Svalbard             | 38. Valdres             | 62. Sunnfjord               |   |
| 15. Svalbard             | 39. Hortenregion        | 63. Nordfjord               |   |
| 16. Haldenkanalen        | 40. Tønsbergregion      | 64. Trøndelag - Trööndelage |   |
| 17. Mosseregion          | 41. Sandefjord/Larvik   | 65. Innherred               |   |
| 18. Sarpsborg            | 42. Grenland            | 66. Namdalen                |   |
| 19. Fredrikstad/Hvaler   | 43. Øst-Telemark        | 67. Hitra/Frøya             |   |
| 20. Drammensregion       | 44. Midt-Telemark       | 68. Fosenregion             |   |
| 21. Kongsbergregion      | 45. Vest-Telemark       | 69. Oppdal                  |   |
| 22. Follo                | 46. Vestfold            | 70. Rørosregion             |   |
| 23. Asker/Bærum          | 47. Telemark            | 71. Orkdalsområdet          |   |
| 24. Hallingdal           | 48. Agder               | 72. Værnesregion            |   |

# Finland

1. Uusimaa
2. Southwest Finland
3. Satakunta
4. Kanta-Häme
5. Pirkanmaa
6. Päijät-Häme
7. Kymenlaakso
8. South Karelia
9. South Savo
10. North Savo
11. North Karelia
12. Central Finland
13. South Ostrobothnia
14. Ostrobothnia
15. Central Ostrobothnia
16. North Ostrobothnia
17. Kainuu
18. Lapland
19. Åland

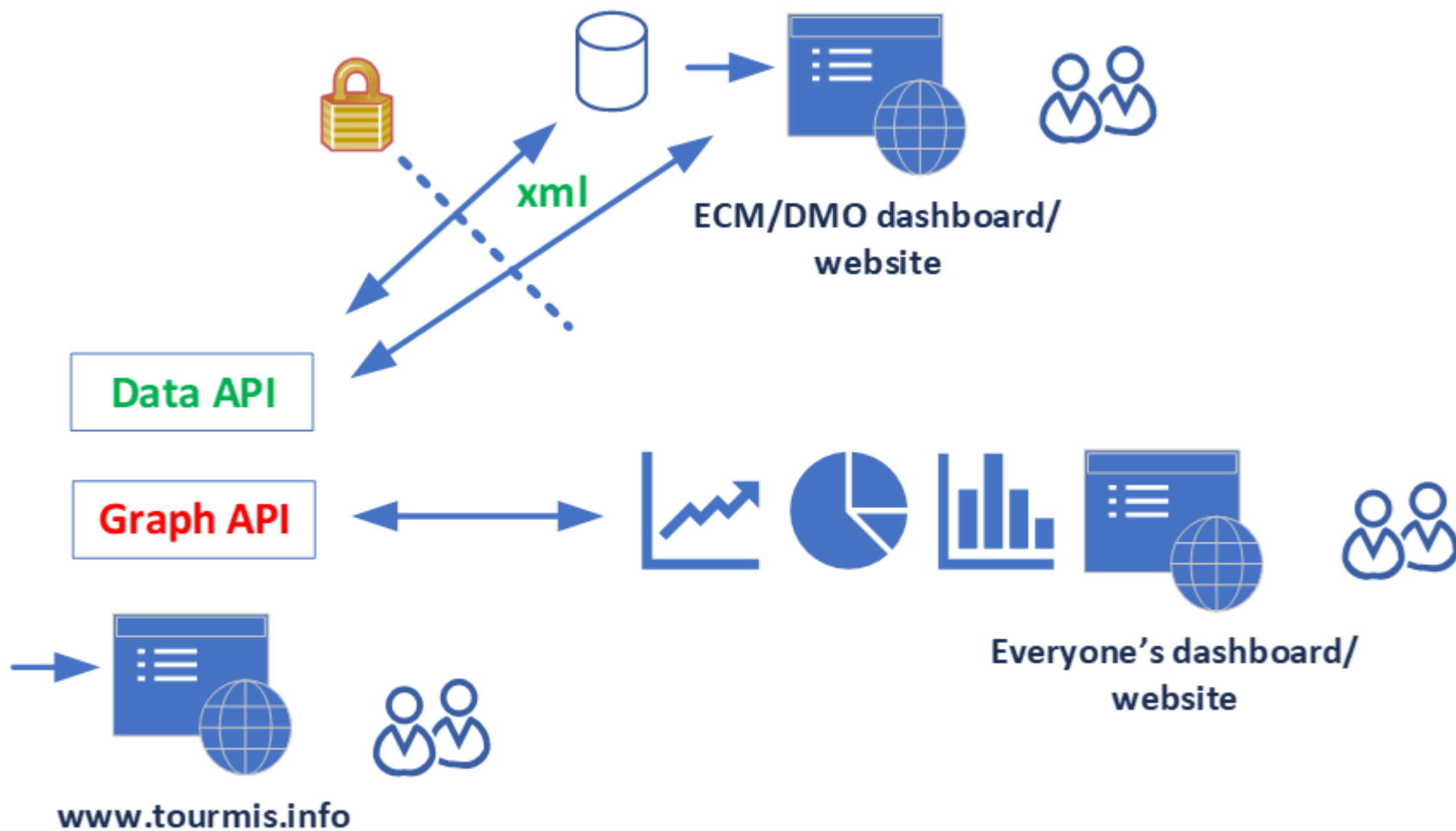
# Regions Belgium

1. Province of Antwerp
2. Province of Eastern-Flanders
3. Province of Flemish-Brabant
4. Flemish Region
5. Province of Hainaut
6. Province of Liege
7. Province of Limburg
8. Province of Luxemburg
9. Province of Namur
10. Walloon Region
11. Province of Brabant-Wallon
12. Province of West-Flanders
13. Brussels

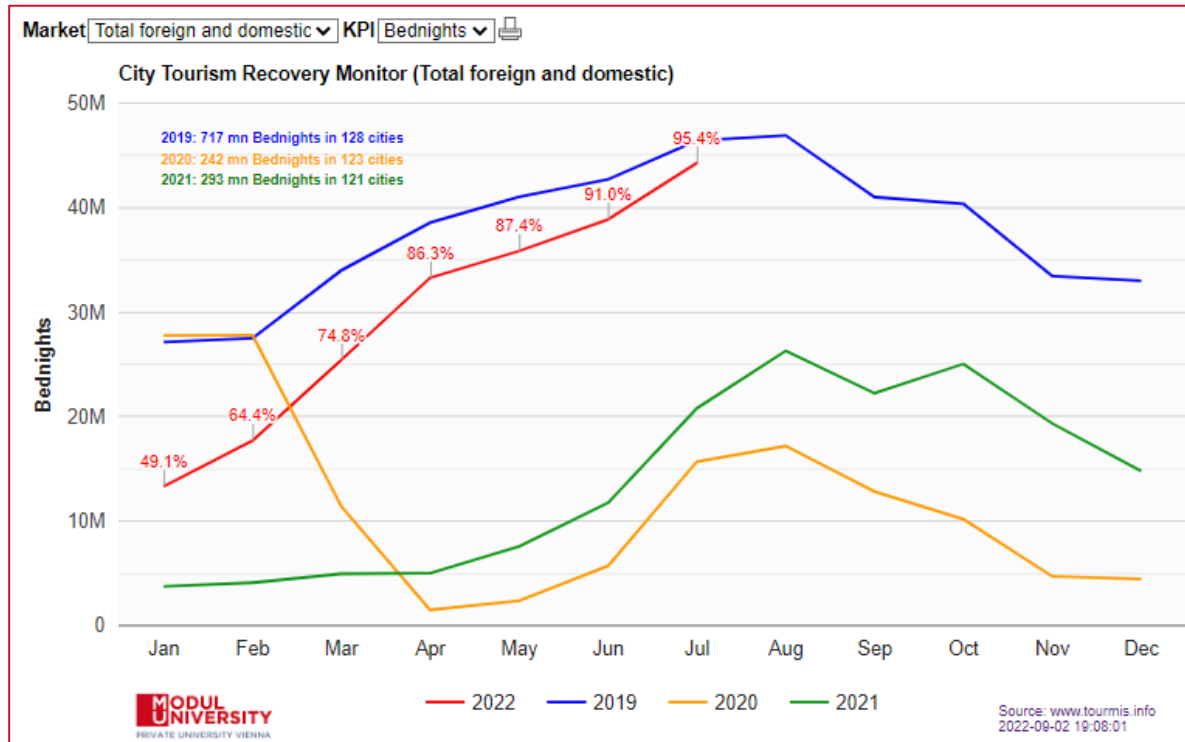
# Austria

1. Burgenland
2. Carinthia
3. Lower Austria
4. Upper Austria
5. Salzburg
6. Styria
7. Tirol
8. Vorarlberg
9. Vienna

# APIs offered by TourMIS



# Graph API: Embedded graphs (iframe)



Example: City Destinations Alliance [Website](#)

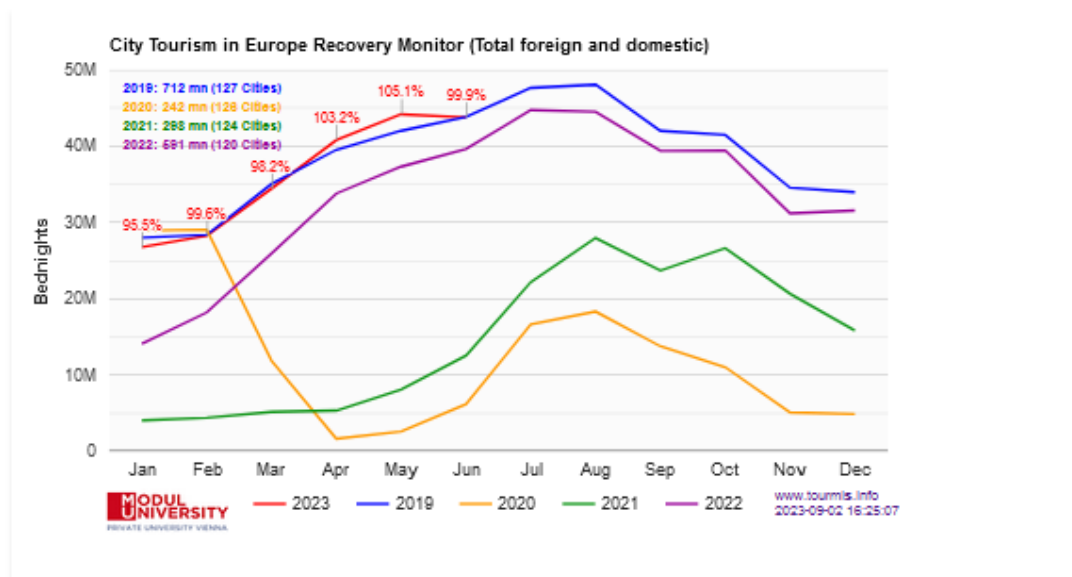
# Research

<https://citydestinationsalliance.eu/research/>

Insights, research, analysis and benchmarking form a critical part of the capability and the potential of the City Destinations Alliance.

By providing data, cities can benchmark themselves in terms of their economic, environmental, and social performance in tourism. In CityDNA's Research & Insights Knowledge Group, we collect information on important key performance indicators which we analyze and share in forms of regular reports and electronically via the tourism management information system TourMIS.

For the 50% of our members who do not have their own research departments, City Destinations Alliance can provide a unique and essential source of information.



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](mailto: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>

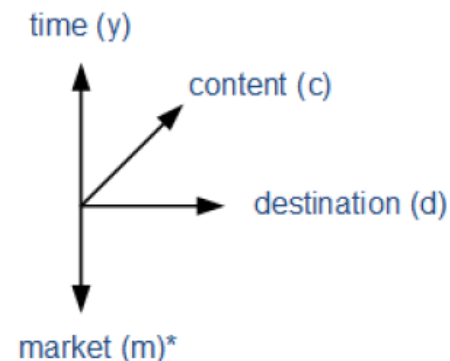
- Each API query consists of the basic URL, parameters, and the token:
  - Basic URL: <https://www.tourmis.info/api.pl?>
  - Parameters: [d=CPH&c=NG&m=AT&y=2019](#)
  - Token = special parameter: [token=BE1AD8C4-AFF5-404F-ABD4-16172E186819](#)
- A valid token must be included in each query, otherwise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

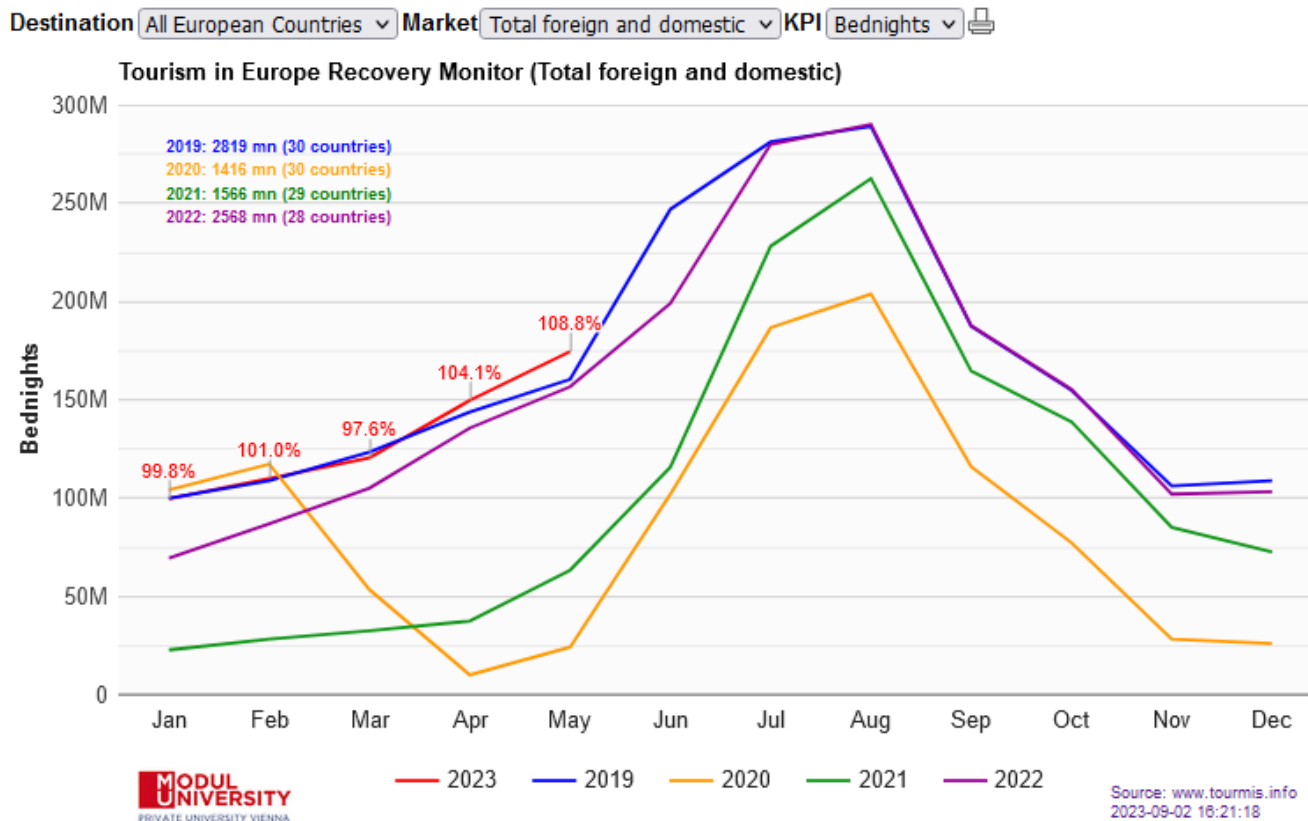
**I amsterdam.**



# Do we still need the Recovery Charts?

## Recovery Monitors for **European countries, cities, and Austria**

They show the current development of tourism compared to the year before the Covid pandemic (2019). The Recovery Monitors are located in respective TourMIS sections and can also be embedded as an interactive graphic (via iframe) on any website.



# The Future Development of TourMIS

- APIs for data import from statistical offices
- Further expansion of the regions database
- 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](mailto:tourmis@modul.ac.at) or [karl.woeber@modul.ac.at](mailto: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. Estimate missing values using data from visitor surveys in similar destinations
4. Developing an econometric model which allows to estimate the direct economic contribution of tourism

Thank you very much!