Package 'geofi'

July 22, 2025

Type Package

Title Access Finnish Geospatial Data

Version 1.1.0

Date 2025-04-28

Maintainer Markus Kainu <markus.kainu@kapsi.fi>

Description Designed to simplify geospatial data access from the Statistics Finland Web Feature Service API <https://geo.stat.fi/geoserver/index.html>, the geofi package offers researchers and analysts a set of tools to obtain and harmonize administrative spatial data for a wide range of applications, from urban planning to environmental research. The package contains annually updated time series of municipality key datasets that can be used for data aggregation and language translations.

License BSD_2_clause + file LICENSE

URL https://ropengov.github.io/geofi/, https://github.com/rOpenGov/geofi

BugReports https://github.com/rOpenGov/geofi/issues

Depends R (>= 4.1.0)

Imports dplyr, httpcache, httr, httr2, jsonlite, methods, purrr, rlang, sf, xml2 (>= 1.2.0), yaml

Suggests covr, ggplot2, ggrepel, geofacet, htmltools, httptest (>= 4.0.0), janitor, knitr, leaflet, patchwork, readr, rmarkdown, sotkanet, testthat, tidyr

VignetteBuilder knitr

Encoding UTF-8

LazyData true

RoxygenNote 7.3.2

X-schema.org-isPartOf http://ropengov.org/

X-schema.org-keywords ropengov

NeedsCompilation no

Author Markus Kainu [aut, cre] (ORCID:
<https://orcid.org/0000-0003-1376-503X>),
Joona Lehtomaki [aut] (ORCID: <https://orcid.org/0000-0002-7891-0843>),
Juuso Parkkinen [ctb] (ORCID: <https://orcid.org/0000-0002-7818-5901>),
Jani Miettinen [ctb],
Pyry Kantanen [ctb],
Sampo Vesanen [ctb],
Leo Lahti [aut] (ORCID: <https://orcid.org/0000-0001-5537-637X>)

Repository CRAN

Date/Publication 2025-04-29 06:40:06 UTC

Contents

`check_api_access` *Check Access to Statistics Finland Geoserver APIs*

Description

Tests whether R can access resources at Statistics Finland's geoserver APIs, specifically the WFS (Web Feature Service) or OGC API. This internal function is used to verify connectivity before making API requests.

Usage

```
check_api_access(which_api = "statfi_wfs")
```

Arguments

`which_api`	Character. The API to check. Must be one of: `"statfi_wfs"` (checks WFS at `http://geo.stat.fi/geoserver/wfs`) or `"statfi_ogc"` (checks OGC API at `https://geo.stat.fi/inspire/ogc/api/su/`). Defaults to `"statfi_wfs"`.

Details

This function sends a lightweight HTTP request to the specified API endpoint to check for accessibility. It uses `httr2` for robust HTTP handling and retries transient network failures up to 3 times. The function is intended for internal use within the package to ensure API connectivity before executing data retrieval operations.

Value

Logical. Returns `TRUE` if the API is accessible (HTTP status 200), `FALSE` otherwise. Issues a warning if the request fails due to network issues or non-200 status codes.

Author(s)

Markus Kainu <markus.kainu@kapsi.fi>

Examples

```
## Not run:
  check_api_access()  # Check WFS API
  check_api_access("statfi_ogc")  # Check OGC API

## End(Not run)
```

---

convert_municipality_key_codes

Convert regional codes in on-board municipality key data sets into variable length characters

---

Description

Statistics Finland provides numerical codes of regions as two or three digit characters. By default, those are converted to integers by geofi for convenience, but can be converted back using this function.

Usage

```
convert_municipality_key_codes(muni_key = geofi::municipality_key)
```

Arguments

`muni_key`	a municipality key from geofi-package

Value

tibble with codes converted to variable length characters as provided by Statistics Finland

Author(s)

Markus Kainu markus.kainu@kapsi.fi, Pyry Kantanen

Examples

```
 ## Not run:
 convert_municipality_key_codes(muni_key = geofi::municipality_key)

## End(Not run)
```

---

geocode *Geocode Finnish Place Names or Street Addresses*

Description

Geocodes Finnish place names or street addresses using the National Land Survey of Finland (NLS) geocoding REST API. This function converts textual location descriptions into spatial coordinates.

Usage

```
geocode(
  search_string,
  source = "interpolated-road-addresses",
  crs = 3067,
  lang = "fi",
  size = NULL,
  options = NULL,
  api_key = getOption("geofi_mml_api_key")
)
```

Arguments

search_string	Character. The place name or street address to geocode (e.g., "Suomenlinna" or "Mannerheimintie 100, Helsinki").
source	Character. The data source to search in. Must be one of: "interpolated-road-addresses" (default), "geographic-names", "addresses", "mapsheets-tm35", or "cadastral-units".
crs	Character. The coordinate reference system (CRS) for the output data, specified as an EPSG code. Must be one of "EPSG:3067" (ETRS-TM35FIN, default) or "EPSG:4326" (WGS84).
lang	Character. The language for the API response labels. Must be one of "fi" (Finnish, default), "sv" (Swedish), or "en" (English).
size	Numeric or NULL. The maximum number of results to return. Must be a positive integer. If NULL (default), the API's default size is used.
options	Character or NULL. Additional options to pass to the API, specified as a single string (e.g., "focus.point.lat=60.1699&focus.point.lon=24.9384"). If NULL (default), no additional options are included. See the NLS geocoding API documentation for valid options.

api_key Character. API key for authenticating with the NLS geocoding API. Defaults to the value stored in `options(geofi_mml_api_key)`. You can obtain an API key from the National Land Survey of Finland website (see https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje).

Details

This function uses the NLS geocoding REST API to convert place names or street addresses into spatial coordinates. It supports multiple data sources, including interpolated road addresses, geographic names, and cadastral units. The function includes robust error handling:

- Retries failed requests up to 3 times for transient network issues.
- Handles HTTP errors and rate limits (HTTP 429).
- Validates inputs to prevent common errors.

Value

An `sf` object containing the geocoded locations as points in the specified `crs`. If no results are found, a warning is issued, and an empty `sf` object is returned.

Author(s)

Markus Kainu <markus.kainu@kapsi.fi>

See Also

geocode_reverse for reverse geocoding. https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje for instructions on obtaining an API key. https://www.maanmittauslaitos.fi/kartat-ja-paikkatieto/aineistot-ja-rajapinnat/paikkatietojen-rajapintapalvelut/geokoodauspalvelu for more information on the NLS geocoding API.

Examples

```
## Not run:
# Set your API key
options(geofi_mml_api_key = "your_api_key_here")

# Geocode a place name
locations <- geocode(search_string = "Suomenlinna", source = "geographic-names")
print(locations)

# Geocode a street address with a custom size and output CRS
addresses <- geocode(
  search_string = "Mannerheimintie 100, Helsinki",
  source = "addresses",
  crs = "EPSG:4326",
  size = 5
)
print(addresses)

## End(Not run)
```

geocode_reverse *Reverse Geocode Geographic Locations into Finnish Place Names or Addresses*

Description

Reverse geocodes geographic coordinates into Finnish place names or street addresses using the National Land Survey of Finland (NLS) geocoding REST API. This function converts spatial points into textual location descriptions.

Usage

```
geocode_reverse(
  point,
  boundary_circle_radius = NULL,
  size = NULL,
  layers = NULL,
  sources = NULL,
  return = "sf",
  api_key = getOption("geofi_mml_api_key")
)
```

Arguments

point	An sf object with POINT geometries, representing the locations to reverse geocode. The input must be in EPSG:4326 (WGS84) CRS.
boundary_circle_radius	Numeric or NULL. The radius (in meters) of a circular boundary around each point to limit the search area. Must be a positive number. If NULL (default), no boundary radius is applied.
size	Numeric or NULL. The maximum number of results to return per point. Must be a positive integer. If NULL (default), the API's default size is used.
layers	Character or NULL. The layers to include in the search, specified as a comma-separated string (e.g., "address,poi"). If NULL (default), the API's default layers are used. See the NLS geocoding API documentation for valid layers.
sources	Character or NULL. The data sources to search in, specified as a comma-separated string (e.g., "geographic-names,addresses"). Must be one or more of "interpolated-road-address "geographic-names", "addresses", "mapsheets-tm35", or "cadastral-units". If NULL (default), the API's default sources are used.
return	Character. The format of the returned data. Must be one of "sf" (default, returns an sf object) or "json" (returns a list of raw JSON responses).
api_key	Character. API key for authenticating with the NLS geocoding API. Defaults to the value stored in options(geofi_mml_api_key). You can obtain an API key from the National Land Survey of Finland website (see https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje).

Details

This function uses the NLS geocoding REST API to convert geographic coordinates into place names or street addresses. It supports multiple points in a single call and allows filtering by search radius, layers, sources, and country. The function includes robust error handling:

- Retries failed requests up to 3 times for transient network issues.
- Handles HTTP errors and rate limits (HTTP 429).
- Validates inputs to prevent common errors.

Value

If `return="sf"`, an `sf` object containing the reverse geocoded locations as points in EPSG:4326 (WGS84) CRS. If `return="json"`, a list of raw JSON responses from the API. If no results are found for a point, a warning is issued, and that point may be omitted from the results.

Author(s)

Markus Kainu <markus.kainu@kapsi.fi>

See Also

geocode for forward geocoding. https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje for instructions on obtaining an API key. https://www.maanmittauslaitos.fi/kartat-ja-paikkatieto/aineistot-ja-rajapinnat/paikkatietojen-rajapintapalvelut/geokoodauspalvelu for more information on the NLS geocoding API.

Examples

```
## Not run:
# Set your API key
options(geofi_mml_api_key = "your_api_key_here")

# Create a point for Suomenlinna (in EPSG:4326)

# Reverse geocode to get place names
print(places)

# Reverse geocode with a search radius and return raw JSON
places_json <- geocode_reverse(
  point = suomenlinna,
  boundary_circle_radius = 1000,
  return = "json"
)
print(places_json)

## End(Not run)
```

`get_municipalities` *Get Finnish municipality (multi)polygons for different years and/or scales.*

Description

Thin wrapper around Finnish zip code areas provided by Statistics Finland.

Usage

```
get_municipalities(year = 2025, scale = 4500, codes_as_character = FALSE)
```

Arguments

`year`	A numeric for year of the administrative borders. Available are 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024 and 2025.
`scale`	A scale or resolution of the shape. Two options: `1000` equals 1:1 000 000 and `4500` equals 1:4 500 000.
`codes_as_character`	A logical determining if the region codes should be returned as strings of equal width as originally provided by Statistics Finland instead of integers.

Value

sf object

Author(s)

Markus Kainu markus.kainu@kela.fi, Joona Lehtomäki joona.lehtomaki@iki.fi

Examples

```
## Not run:
f <- get_municipalities(year=2016, scale = 4500)
plot(f)

## End(Not run)
```

`get_municipality_pop` *Get Number of population by Finnish municipality (multi)polygons for different years.*

Description

Thin wrapper around Finnish zip code areas provided by Statistics Finland.

Usage

```
get_municipality_pop(year = 2022, codes_as_character = FALSE)
```

Arguments

`year`	A numeric for year of the administrative borders. Available are 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022.
`codes_as_character`	A logical determining if the region codes should be returned as strings of equal width as originally provided by Statistics Finland instead of integers.

Details

The number of population on the last day of the reference year combined with municipality borders from year after. Calling the function with year = 2019 returns population data from 2019-12-31 with spatial data from 2020.

The statistical variables in the data are: total population (vaesto), share of the total population (vaesto_p), number of men (miehet), men's share of the population in an area (miehet_p) and women (naiset), women's share (naiset_p), those aged under 15: number (ika_0_14), share (ika_0_14p), those aged 15 to 64: number (ika_15_64), share (ika_15_64p), and aged 65 or over: number (ika_65_), share (ika_65_p).

Value

sf object

Author(s)

Markus Kainu markus.kainu@kela.fi, Joona Lehtomäki joona.lehtomaki@iki.fi

Examples

```
## Not run:
f <- get_municipality_pop(year=2020)
plot(f)

## End(Not run)
```

get_population_grid	*Get Finnish Population grid in two different resolutions for years 2010-2022 Thin wrapper around Finnish population grid data provided by* R*hrefhttps://stat.fi/org/avoindata/paikkatietoaineistot/vaestoruutuaineisto_1km_en.htmlStatistics Finland.*

Description

Get Finnish Population grid in two different resolutions for years 2010-2022 Thin wrapper around Finnish population grid data provided by Statistics Finland.

Usage

```
get_population_grid(year = 2022, resolution = 5)
```

Arguments

year	A numeric for year of the population grid. Years available 2005 and 2010-2022.
resolution	1 (1km x 1km) or 5 (5km x 5km)

Details

More information about the dataset from Paikkatietohakemisto

Value

sf object

Author(s)

Markus Kainu markus.kainu@kela.fi, Joona Lehtomäki joona.lehtomaki@iki.fi

Examples

```
## Not run:
f <- get_population_grid(year=2017)
plot(f)

## End(Not run)
```

get_statistical_grid *Get Statistical grid data polygons at two different resolution*

Description

Thin wrapper around Finnish statistical grid data provided by Statistics Finland.

Usage

```
get_statistical_grid(resolution = 5, auxiliary_data = FALSE)
```

Arguments

resolution	integer 1 (1km x 1km) or 5 (5km x 5km)
auxiliary_data	logical Whether to include auxiliary data containing municipality membership data. Default FALSE

Value

sf object

Author(s)

Markus Kainu markus.kainu@kela.fi, Joona Lehtomäki joona.lehtomaki@iki.fi

Examples

```
## Not run:
f <- get_statistical_grid(resolution = 5, auxiliary_data = FALSE)
plot(f)

## End(Not run)
```

get_zipcodes *Get Finnish zip code (multi)polygons for different years.*

Description

Thin wrapper around Finnish zip code areas provided by Statistics Finland.

Usage

```
get_zipcodes(year = 2025, extend_to_sea_areas = FALSE)
```

Arguments

year	A numeric for year of the zipcodes. Years available 2015-2025.
extend_to_sea_areas	A logical. Extend the data to show also the sea areas.

Value

sf object

Author(s)

Markus Kainu markus.kainu@kela.fi, Joona Lehtomäki joona.lehtomaki@iki.fi

Examples

```
## Not run:
f <- get_zipcodes(year=2022)
plot(f)

## End(Not run)
```

---

grid_ahvenanmaa *custom geofacet grid for Ahvenanmaa region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_ahvenanmaa
```

Format

A data frame with 16 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_etela_karjala *custom geofacet grid for Etelä-Karjala region as in 2020*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_etela_karjala
```

Format

A data frame with 9 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_etela_pohjanmaa *custom geofacet grid for Etelä-Pohjanmaa*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_etela_pohjanmaa
```

Format

A data frame with 18 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_etela_savo *custom geofacet grid for Etelä-Savo*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_etela_savo
```

Format

A data frame with 11 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_hyvinvointialue *custom geofacet grid for Wellbeing services counties*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_hyvinvointialue
```

Format

A data frame with 23 rows and 4 variables:

name Wellbeing services county name (hyvinvointialue) in Finnish

code Wellbeing services counties code

row Vertical location in grid

col Horizontal location in grid

grid_kainuu *custom geofacet grid for Kainuu region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_kainuu
```

Format

A data frame with 8 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_kanta_hame *custom geofacet grid for Kanta-Häme region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_kanta_hame
```

Format

A data frame with 11 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_keski_pohjanmaa *custom geofacet grid for Keski-Pohjanmaa region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_keski_pohjanmaa
```

Format

A data frame with 8 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_keski_suomi *custom geofacet grid for Keski-Suomi region as in 2020*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_keski_suomi
```

Format

A data frame with 22 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_kymenlaakso *custom geofacet grid for Kymenlaakso region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_kymenlaakso
```

Format

A data frame with 6 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_lappi *custom geofacet grid for Lappi region as in 2020*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_lappi
```

Format

A data frame with 21 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_maakunta *custom geofacet grid for regions*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_maakunta
```

Format

A data frame with 19 rows and 4 variables:

name Region name (maakunta) in Finnish

code Region code

row Vertical location in grid

col Horizontal location in grid

grid_paijat_hame *custom geofacet grid for Päijät-Häme region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_paijat_hame
```

Format

A data frame with 10 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_pirkanmaa *custom geofacet grid for Pirkanmaa region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_pirkanmaa
```

Format

A data frame with 23 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_pohjanmaa *custom geofacet grid for Pohjanmaa region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_pohjanmaa
```

Format

A data frame with 14 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_pohjois_karjala *custom geofacet grid for Pohjois-Karjala region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_pohjois_karjala
```

Format

A data frame with 13 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_pohjois_pohjanmaa *custom geofacet grid for Pohjois-Pohjanmaa region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_pohjois_pohjanmaa
```

Format

A data frame with 30 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_pohjois_savo *custom geofacet grid for Pohjois-Savo region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_pohjois_savo
```

Format

A data frame with 19 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_sairaanhoitop *custom geofacet grid for health care districts*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_sairaanhoitop
```

Format

A data frame with 21 rows and 4 variables:

name District name (Sairaanhoitopiiri) in Finnish

code District code

row Vertical location in grid

col Horizontal location in grid

grid_satakunta *custom geofacet grid for Satakunta region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_satakunta
```

Format

A data frame with 16 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_uusimaa *custom geofacet grid for Uusimaa region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_uusimaa
```

Format

A data frame with 26 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

grid_varsinais_suomi *custom geofacet grid for Varsinais-Suomi region*

Description

Grid table to be used with ggplot2 and geofacet

Usage

```
grid_varsinais_suomi
```

Format

A data frame with 27 rows and 4 variables:

name Municipality name (kunta) in Finnish

code Municipality code

row Vertical location in grid

col Horizontal location in grid

municipality_central_localities *Get up-to-date municipality central locations*

Description

Convert municipality central locations from on-board data frame into a sf point data

Usage

```
municipality_central_localities()
```

Value

sf object

Author(s)

Markus Kainu markus.kainu@kela.fi

Examples

```
## Not run:
f <- municipality_central_localities()
plot(f)

## End(Not run)
```

`municipality_central_localities_df`
A data frame containing locations of municipalities central localities

Description

Data is extracted from latest version (April 2025) of Topographic Database (Maastotietokanta) by National Land Survey of Finland (Maanmittauslaitos)

Usage

```
municipality_central_localities_df
```

Format

A data.frame with 309 rows and 19 variables:

mtk_id mtk_id

sijaintitarkkuus location precision

aineistolahde data source

alkupvm start date

teksti Municipality name

suunta direction

dx dx

dy dy

kohderyhmä kohderyhmä

kohdeluokka kohdeluokka

ladontatunnus ladontatunnus

kirjasintyyppikoodi kirjasintyyppikoodi

kirjasinkoko kirjasinkoko

kirjasinvarikoodi kirjasinvarikoodi

kirjasinkallistuskulma kirjasinkallistuskulma

kirjasinvalyskerroin kirjasinvalyskerroin

kuntatunnus municipality code

X longitude

Y latitude

`municipality_key` *Aggregated municipality key table for years 2013-2025*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key
```

Format

A data frame with 4057 rows and 81 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

ely_code ely_code

ely_name_fi ely_name_fi

ely_name_sv ely_name_sv

ely_name_en ely_name_en

kielisuhde_code kielisuhde_code

kielisuhde_name_fi kielisuhde_name_fi

kielisuhde_name_sv kielisuhde_name_sv

kielisuhde_name_en kielisuhde_name_en

tyossakayntial_code tyossakayntial_code

tyossakayntial_name_fi tyossakayntial_name_fi

maakunta_code maakunta_code

maakunta_name_fi maakunta_name_fi

maakunta_name_sv maakunta_name_sv

maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
sairaanhoitop_code sairaanhoitop_code
sairaanhoitop_name_fi sairaanhoitop_name_fi
sairaanhoitop_name_sv sairaanhoitop_name_sv
sairaanhoitop_name_en sairaanhoitop_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi
nuts1_name_sv nuts1_name_sv
nuts1_name_en nuts1_name_en
nuts2_code nuts2_code
nuts2_name_fi nuts2_name_fi
nuts2_name_sv nuts2_name_sv
nuts2_name_en nuts2_name_en
nuts3_code nuts3_code
nuts3_name_fi nuts3_name_fi
nuts3_name_sv nuts3_name_sv
nuts3_name_en nuts3_name_en
vaalipiiri_code vaalipiiri_code
vaalipiiri_name_fi vaalipiiri_name_fi
vaalipiiri_name_sv vaalipiiri_name_sv
vaalipiiri_name_en vaalipiiri_name_en
hyvinvointialue_code hyvinvointialue_code
hyvinvointialue_name_fi hyvinvointialue_name_fi
hyvinvointialue_name_sv hyvinvointialue_name_sv
hyvinvointialue_name_en hyvinvointialue_name_en
tyossakayntial_name_sv tyossakayntial_name_sv
tyossakayntial_name_en tyossakayntial_name_en
yhteistyoalue_code yhteistyoalue_code

yhteistyoalue_name_fi yhteistyoalue_name_fi

yhteistyoalue_name_sv yhteistyoalue_name_sv

yhteistyoalue_name_en yhteistyoalue_name_en

tyollisyysalue_code tyollisyysalue_code

tyollisyysalue_name_fi tyollisyysalue_name_fi

tyollisyysalue_name_sv tyollisyysalue_name_sv

tyollisyysalue_name_en tyollisyysalue_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

kela_palvelualue_name_fi kela_palvelualue_name_fi

kela_palvelualue_code kela_palvelualue_code

kela_palvelualue_name_sv kela_palvelualue_name_sv

kela_palvelualue_name_en kela_palvelualue_name_en

kela_asumistukialue_name_fi kela_asumistukialue_name_fi

kela_asumistukialue_code kela_asumistukialue_code

kela_asumistukialue_name_sv kela_asumistukialue_name_sv

kela_asumistukialue_name_en kela_asumistukialue_name_en

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2013` *municipality_key_2013*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2013
```

Format

A data frame with 320 rows and 35 variables:

kunta kunta
municipality_name_fi municipality_name_fi
municipality_name_sv municipality_name_sv
municipality_name_en municipality_name_en
avi_code avi_code
avi_name_fi avi_name_fi
avi_name_sv avi_name_sv
avi_name_en avi_name_en
kuntaryhmitys_code kuntaryhmitys_code
kuntaryhmitys_name_fi kuntaryhmitys_name_fi
kuntaryhmitys_name_sv kuntaryhmitys_name_sv
kuntaryhmitys_name_en kuntaryhmitys_name_en
tyossakayntial_code tyossakayntial_code
tyossakayntial_name_fi tyossakayntial_name_fi
ely_code ely_code
ely_name_fi ely_name_fi
ely_name_sv ely_name_sv
ely_name_en ely_name_en
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
year year
municipality_code municipality_code
kunta_name kunta_name
name_fi name_fi
name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2014` *municipality_key_2014*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2014
```

Format

A data frame with 320 rows and 39 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

tyossakayntial_code tyossakayntial_code

tyossakayntial_name_fi tyossakayntial_name_fi

ely_code ely_code

ely_name_fi ely_name_fi

ely_name_sv ely_name_sv

ely_name_en ely_name_en

maakunta_code maakunta_code

maakunta_name_fi maakunta_name_fi

maakunta_name_sv maakunta_name_sv

maakunta_name_en maakunta_name_en

seutukunta_code seutukunta_code

seutukunta_name_fi seutukunta_name_fi

seutukunta_name_sv seutukunta_name_sv

seutukunta_name_en seutukunta_name_en

kielisuhde_code kielisuhde_code

kielisuhde_name_fi kielisuhde_name_fi

kielisuhde_name_sv kielisuhde_name_sv

kielisuhde_name_en kielisuhde_name_en

year year

suuralue_code suuralue_code

suuralue_name_fi suuralue_name_fi

suuralue_name_sv suuralue_name_sv

suuralue_name_en suuralue_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2015` *municipality_key_2015*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2015
```

Format

A data frame with 317 rows and 39 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

tyossakayntial_code tyossakayntial_code

tyossakayntial_name_fi tyossakayntial_name_fi

ely_code ely_code

ely_name_fi ely_name_fi

ely_name_sv ely_name_sv

ely_name_en ely_name_en

maakunta_code maakunta_code

maakunta_name_fi maakunta_name_fi

maakunta_name_sv maakunta_name_sv

maakunta_name_en maakunta_name_en

seutukunta_code seutukunta_code

seutukunta_name_fi seutukunta_name_fi

seutukunta_name_sv seutukunta_name_sv

seutukunta_name_en seutukunta_name_en

kielisuhde_code kielisuhde_code

kielisuhde_name_fi kielisuhde_name_fi

kielisuhde_name_sv kielisuhde_name_sv

kielisuhde_name_en kielisuhde_name_en

year year

suuralue_code suuralue_code

suuralue_name_fi suuralue_name_fi

suuralue_name_sv suuralue_name_sv

suuralue_name_en suuralue_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2016` *municipality_key_2016*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2016
```

Format

A data frame with 313 rows and 39 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

tyossakayntial_code tyossakayntial_code

tyossakayntial_name_fi tyossakayntial_name_fi

ely_code ely_code

ely_name_fi ely_name_fi

ely_name_sv ely_name_sv

ely_name_en ely_name_en

maakunta_code maakunta_code

maakunta_name_fi maakunta_name_fi

maakunta_name_sv maakunta_name_sv

maakunta_name_en maakunta_name_en

seutukunta_code seutukunta_code

seutukunta_name_fi seutukunta_name_fi

seutukunta_name_sv seutukunta_name_sv

seutukunta_name_en seutukunta_name_en

kielisuhde_code kielisuhde_code

kielisuhde_name_fi kielisuhde_name_fi

kielisuhde_name_sv kielisuhde_name_sv

kielisuhde_name_en kielisuhde_name_en

year year

suuralue_code suuralue_code

suuralue_name_fi suuralue_name_fi

suuralue_name_sv suuralue_name_sv

suuralue_name_en suuralue_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2017` *municipality_key_2017*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2017
```

Format

A data frame with 311 rows and 55 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

kuntaryhmitys_code kuntaryhmitys_code
kuntaryhmitys_name_fi kuntaryhmitys_name_fi
kuntaryhmitys_name_sv kuntaryhmitys_name_sv
kuntaryhmitys_name_en kuntaryhmitys_name_en
tyossakayntial_code tyossakayntial_code
tyossakayntial_name_fi tyossakayntial_name_fi
ely_code ely_code
ely_name_fi ely_name_fi
ely_name_sv ely_name_sv
ely_name_en ely_name_en
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
sairaanhoitop_code sairaanhoitop_code
sairaanhoitop_name_fi sairaanhoitop_name_fi
sairaanhoitop_name_sv sairaanhoitop_name_sv
sairaanhoitop_name_en sairaanhoitop_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi
nuts1_name_sv nuts1_name_sv
nuts1_name_en nuts1_name_en
nuts2_code nuts2_code
nuts2_name_fi nuts2_name_fi

nuts2_name_sv nuts2_name_sv

nuts2_name_en nuts2_name_en

nuts3_code nuts3_code

nuts3_name_fi nuts3_name_fi

nuts3_name_sv nuts3_name_sv

nuts3_name_en nuts3_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2018` *Municipality key table for 2018*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2018
```

Format

A data frame with 311 rows and 59 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

ely_code ely_code
ely_name_fi ely_name_fi
ely_name_sv ely_name_sv
ely_name_en ely_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
tyossakayntial_code tyossakayntial_code
tyossakayntial_name_fi tyossakayntial_name_fi
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
sairaanhoitop_code sairaanhoitop_code
sairaanhoitop_name_fi sairaanhoitop_name_fi
sairaanhoitop_name_sv sairaanhoitop_name_sv
sairaanhoitop_name_en sairaanhoitop_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi
nuts1_name_sv nuts1_name_sv
nuts1_name_en nuts1_name_en
nuts2_code nuts2_code
nuts2_name_fi nuts2_name_fi
nuts2_name_sv nuts2_name_sv
nuts2_name_en nuts2_name_en
nuts3_code nuts3_code
nuts3_name_fi nuts3_name_fi

nuts3_name_sv nuts3_name_sv

nuts3_name_en nuts3_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

hyvinvointialue_code hyvinvointialue_code

hyvinvointialue_name_fi hyvinvointialue_name_fi

hyvinvointialue_name_sv hyvinvointialue_name_sv

hyvinvointialue_name_en hyvinvointialue_name_en

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2019` *Municipality key table for 2019*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2019
```

Format

A data frame with 311 rows and 63 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

ely_code ely_code
ely_name_fi ely_name_fi
ely_name_sv ely_name_sv
ely_name_en ely_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
tyossakayntial_code tyossakayntial_code
tyossakayntial_name_fi tyossakayntial_name_fi
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
sairaanhoitop_code sairaanhoitop_code
sairaanhoitop_name_fi sairaanhoitop_name_fi
sairaanhoitop_name_sv sairaanhoitop_name_sv
sairaanhoitop_name_en sairaanhoitop_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi
nuts1_name_sv nuts1_name_sv
nuts1_name_en nuts1_name_en
nuts2_code nuts2_code
nuts2_name_fi nuts2_name_fi
nuts2_name_sv nuts2_name_sv
nuts2_name_en nuts2_name_en
nuts3_code nuts3_code
nuts3_name_fi nuts3_name_fi

nuts3_name_sv nuts3_name_sv

nuts3_name_en nuts3_name_en

vaalipiiri_code vaalipiiri_code

vaalipiiri_name_fi vaalipiiri_name_fi

vaalipiiri_name_sv vaalipiiri_name_sv

vaalipiiri_name_en vaalipiiri_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

hyvinvointialue_code hyvinvointialue_code

hyvinvointialue_name_fi hyvinvointialue_name_fi

hyvinvointialue_name_sv hyvinvointialue_name_sv

hyvinvointialue_name_en hyvinvointialue_name_en

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2020` *Municipality key table for 2020*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2020
```

Format

A data frame with 310 rows and 63 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

avi_code avi_code
avi_name_fi avi_name_fi
avi_name_sv avi_name_sv
avi_name_en avi_name_en
ely_code ely_code
ely_name_fi ely_name_fi
ely_name_sv ely_name_sv
ely_name_en ely_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
tyossakayntial_code tyossakayntial_code
tyossakayntial_name_fi tyossakayntial_name_fi
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
sairaanhoitop_code sairaanhoitop_code
sairaanhoitop_name_fi sairaanhoitop_name_fi
sairaanhoitop_name_sv sairaanhoitop_name_sv
sairaanhoitop_name_en sairaanhoitop_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi
nuts1_name_sv nuts1_name_sv
nuts1_name_en nuts1_name_en
nuts2_code nuts2_code
nuts2_name_fi nuts2_name_fi

nuts2_name_sv nuts2_name_sv

nuts2_name_en nuts2_name_en

nuts3_code nuts3_code

nuts3_name_fi nuts3_name_fi

nuts3_name_sv nuts3_name_sv

nuts3_name_en nuts3_name_en

vaalipiiri_code vaalipiiri_code

vaalipiiri_name_fi vaalipiiri_name_fi

vaalipiiri_name_sv vaalipiiri_name_sv

vaalipiiri_name_en vaalipiiri_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

hyvinvointialue_code hyvinvointialue_code

hyvinvointialue_name_fi hyvinvointialue_name_fi

hyvinvointialue_name_sv hyvinvointialue_name_sv

hyvinvointialue_name_en hyvinvointialue_name_en

Source

https://data.stat.fi/api/classifications/v2/classifications

---

municipality_key_2021 *Municipality key table for 2021*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2021
```

Format

A data frame with 309 rows and 63 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

kuntaryhmitys_code kuntaryhmitys_code
kuntaryhmitys_name_fi kuntaryhmitys_name_fi
kuntaryhmitys_name_sv kuntaryhmitys_name_sv
kuntaryhmitys_name_en kuntaryhmitys_name_en
avi_code avi_code
avi_name_fi avi_name_fi
avi_name_sv avi_name_sv
avi_name_en avi_name_en
ely_code ely_code
ely_name_fi ely_name_fi
ely_name_sv ely_name_sv
ely_name_en ely_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
tyossakayntial_code tyossakayntial_code
tyossakayntial_name_fi tyossakayntial_name_fi
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
sairaanhoitop_code sairaanhoitop_code
sairaanhoitop_name_fi sairaanhoitop_name_fi
sairaanhoitop_name_sv sairaanhoitop_name_sv
sairaanhoitop_name_en sairaanhoitop_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi

nuts1_name_sv nuts1_name_sv

nuts1_name_en nuts1_name_en

nuts2_code nuts2_code

nuts2_name_fi nuts2_name_fi

nuts2_name_sv nuts2_name_sv

nuts2_name_en nuts2_name_en

nuts3_code nuts3_code

nuts3_name_fi nuts3_name_fi

nuts3_name_sv nuts3_name_sv

nuts3_name_en nuts3_name_en

vaalipiiri_code vaalipiiri_code

vaalipiiri_name_fi vaalipiiri_name_fi

vaalipiiri_name_sv vaalipiiri_name_sv

vaalipiiri_name_en vaalipiiri_name_en

hyvinvointialue_code hyvinvointialue_code

hyvinvointialue_name_fi hyvinvointialue_name_fi

hyvinvointialue_name_sv hyvinvointialue_name_sv

hyvinvointialue_name_en hyvinvointialue_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2022` *Municipality key table for 2022*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2022
```

Format

A data frame with 309 rows and 65 variables:

kunta kunta
municipality_name_fi municipality_name_fi
municipality_name_sv municipality_name_sv
municipality_name_en municipality_name_en
kuntaryhmitys_code kuntaryhmitys_code
kuntaryhmitys_name_fi kuntaryhmitys_name_fi
kuntaryhmitys_name_sv kuntaryhmitys_name_sv
kuntaryhmitys_name_en kuntaryhmitys_name_en
avi_code avi_code
avi_name_fi avi_name_fi
avi_name_sv avi_name_sv
avi_name_en avi_name_en
ely_code ely_code
ely_name_fi ely_name_fi
ely_name_sv ely_name_sv
ely_name_en ely_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
tyossakayntial_code tyossakayntial_code
tyossakayntial_name_fi tyossakayntial_name_fi
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en

sairaanhoitop_code sairaanhoitop_code

sairaanhoitop_name_fi sairaanhoitop_name_fi

sairaanhoitop_name_sv sairaanhoitop_name_sv

sairaanhoitop_name_en sairaanhoitop_name_en

nuts1_code nuts1_code

nuts1_name_fi nuts1_name_fi

nuts1_name_sv nuts1_name_sv

nuts1_name_en nuts1_name_en

nuts2_code nuts2_code

nuts2_name_fi nuts2_name_fi

nuts2_name_sv nuts2_name_sv

nuts2_name_en nuts2_name_en

nuts3_code nuts3_code

nuts3_name_fi nuts3_name_fi

nuts3_name_sv nuts3_name_sv

nuts3_name_en nuts3_name_en

vaalipiiri_code vaalipiiri_code

vaalipiiri_name_fi vaalipiiri_name_fi

vaalipiiri_name_sv vaalipiiri_name_sv

vaalipiiri_name_en vaalipiiri_name_en

hyvinvointialue_code hyvinvointialue_code

hyvinvointialue_name_fi hyvinvointialue_name_fi

hyvinvointialue_name_sv hyvinvointialue_name_sv

hyvinvointialue_name_en hyvinvointialue_name_en

tyossakayntial_name_sv tyossakayntial_name_sv

tyossakayntial_name_en tyossakayntial_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

`municipality_key_2023` *Municipality key table for 2023*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2023
```

Format

A data frame with 309 rows and 74 variables:

kunta Municipality code

municipality_name_fi Municipality name in Finnish

municipality_name_sv Municipality name in Swedish

municipality_name_en Municipality name in English

kuntaryhmitys_code Tilastollinen kuntaryhmitys (Statistical grouping) code

kuntaryhmitys_name_fi Tilastollinen kuntaryhmitys (Statistical grouping) name in Finnish

kuntaryhmitys_name_sv Tilastollinen kuntaryhmitys (Statistical grouping) name in Swedish

kuntaryhmitys_name_en Tilastollinen kuntaryhmitys (Statistical grouping) name in English

avi_code Aluehallintovirasto code (Regional State Administrative Agencies)

avi_name_fi Aluehallintovirasto name in Finnish (Regional State Administrative Agencies)

avi_name_sv Aluehallintovirasto name in Finnish (Regional State Administrative Agencies)

avi_name_en Aluehallintovirasto name in Finnish (Regional State Administrative Agencies)

ely_code Elinkeino-, liikenne- ja ympäristökeskuksen code (Centre for Economic Development, Transport and the Environment)

ely_name_fi Elinkeino-, liikenne- ja ympäristökeskuksen name in Finnish (Centre for Economic Development, Transport and the Environment)

ely_name_sv Elinkeino-, liikenne- ja ympäristökeskuksen name in Swedish (Centre for Economic Development, Transport and the Environment)

ely_name_en Elinkeino-, liikenne- ja ympäristökeskuksen name in English (Centre for Economic Development, Transport and the Environment)

maakunta_code Maakunta code (Regions of Finland)

maakunta_name_fi Maakunta name in Finnish (Regions of Finland)

maakunta_name_sv Maakunta name in Swedish (Regions of Finland)

maakunta_name_en Maakunta name in English (Regions of Finland)

kielisuhde_code Kielisuhde code (Language distribution 2020)

kielisuhde_name_fi Kielisuhde name in Finnish (Language distribution 2020)

kielisuhde_name_sv Kielisuhde name in Swedish (Language distribution 2020)

kielisuhde_name_en Kielisuhde name in English (Language distribution 2020)

seutukunta_code Seutukunta code (Sub-regions of Finland)

seutukunta_name_fi Seutukunta name in Finnish (Sub-regions of Finland)

seutukunta_name_sv Seutukunta name in Swedish (Sub-regions of Finland)

seutukunta_name_en Seutukunta name in English (Sub-regions of Finland)

year data year

suuralue_code Suuralue code

suuralue_name_fi Suuralueen nimi in Finnish (Large Areas)

suuralue_name_sv Suuralueen nimi in Swedish (Large Areas)

suuralue_name_en Suuralueen nimi in English (Large Areas)

nuts1_code NUTS 2016 classification code (level 1)

nuts1_name_fi NUTS 2016 classification name in Finnish (level 1)

nuts1_name_sv NUTS 2016 classification name in Swedish (level 1)

nuts1_name_en NUTS 2016 classification name in English (level 1)

nuts2_code NUTS 2016 classification code (level 2)

nuts2_name_fi NUTS 2016 classification name in Finnish (level 2)

nuts2_name_sv NUTS 2016 classification name in Swedish (level 2)

nuts2_name_en nuts2_name_en

nuts3_code NUTS 2016 classification code (level 2)

nuts3_name_fi NUTS 2016 classification name in Finnish (level 3)

nuts3_name_sv NUTS 2016 classification name in Swedish (level 3)

nuts3_name_en NUTS 2016 classification name in English (level 3)

vaalipiiri_code Vaalipiiri code (Constituencies)

vaalipiiri_name_fi Vaalipiiri name in Finnish (Constituencies)

vaalipiiri_name_sv Vaalipiiri name in Swedish (Constituencies)

vaalipiiri_name_en Vaalipiiri name in English (Constituencies)

municipality_code Municipality code

kunta_name Municipality name in Finnish

name_fi Municipality name in Finnish

name_sv Municipality name in Finnish

yhteistyoalue_code Sosiaali- ja terveydenhuollon yhteistyöalueiden koodi (Collaborative areas for healthcare and social welfare codes)

yhteistyoalue_name_fi Sosiaali- ja terveydenhuollon yhteistyöalueet

yhteistyoalue_name_sv Samarbetsområden för social- och hälsovården

yhteistyoalue_name_en Collaborative areas for healthcare and social welfare

tyossakayntial_code Työssäkäyntialue code

tyossakayntial_name_fi Työssäkäyntialue name in Finnish

tyossakayntial_name_sv Työssäkäyntialue name in Swedish

tyossakayntial_name_en Työssäkäyntialue name in English

hyvinvointialue_name_fi Hyvinvointialue name in Finnish (Wellbeing services counties)

hyvinvointialue_name_sv Hyvinvointialue name in Swedish (Wellbeing services counties)

hyvinvointialue_name_en Hyvinvointialue name in English (Wellbeing services counties)

hyvinvointialue_code Hyvinvointialue code (Wellbeing services counties)

Source

https://data.stat.fi/api/classifications/v2/classifications

---

municipality_key_2024 *Municipality key table for 2024*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2024
```

Format

A data frame with 309 rows and 61 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

kuntaryhmitys_code kuntaryhmitys_code

kuntaryhmitys_name_fi kuntaryhmitys_name_fi

kuntaryhmitys_name_sv kuntaryhmitys_name_sv

kuntaryhmitys_name_en kuntaryhmitys_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

ely_code ely_code

ely_name_fi ely_name_fi

ely_name_sv ely_name_sv

ely_name_en ely_name_en
kielisuhde_code kielisuhde_code
kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi
nuts1_name_sv nuts1_name_sv
nuts1_name_en nuts1_name_en
nuts2_code nuts2_code
nuts2_name_fi nuts2_name_fi
nuts2_name_sv nuts2_name_sv
nuts2_name_en nuts2_name_en
nuts3_code nuts3_code
nuts3_name_fi nuts3_name_fi
nuts3_name_sv nuts3_name_sv
nuts3_name_en nuts3_name_en
vaalipiiri_code vaalipiiri_code
vaalipiiri_name_fi vaalipiiri_name_fi
vaalipiiri_name_sv vaalipiiri_name_sv
vaalipiiri_name_en vaalipiiri_name_en
hyvinvointialue_code hyvinvointialue_code
hyvinvointialue_name_fi hyvinvointialue_name_fi
hyvinvointialue_name_sv hyvinvointialue_name_sv

hyvinvointialue_name_en hyvinvointialue_name_en

yhteistyoalue_code yhteistyoalue_code

yhteistyoalue_name_fi yhteistyoalue_name_fi

yhteistyoalue_name_sv yhteistyoalue_name_sv

yhteistyoalue_name_en yhteistyoalue_name_en

municipality_code municipality_code

kunta_name kunta_name

name_fi name_fi

name_sv name_sv

Source

https://data.stat.fi/api/classifications/v2/classifications

---

municipality_key_2025 *Municipality key table for 2025*

Description

Table for aggregating municipality level data to various regional groupings

Usage

```
municipality_key_2025
```

Format

A data frame with 308 rows and 69 variables:

kunta kunta

municipality_name_fi municipality_name_fi

municipality_name_sv municipality_name_sv

municipality_name_en municipality_name_en

avi_code avi_code

avi_name_fi avi_name_fi

avi_name_sv avi_name_sv

avi_name_en avi_name_en

ely_code ely_code

ely_name_fi ely_name_fi

ely_name_sv ely_name_sv

ely_name_en ely_name_en

kielisuhde_code kielisuhde_code

kielisuhde_name_fi kielisuhde_name_fi
kielisuhde_name_sv kielisuhde_name_sv
kielisuhde_name_en kielisuhde_name_en
maakunta_code maakunta_code
maakunta_name_fi maakunta_name_fi
maakunta_name_sv maakunta_name_sv
maakunta_name_en maakunta_name_en
seutukunta_code seutukunta_code
seutukunta_name_fi seutukunta_name_fi
seutukunta_name_sv seutukunta_name_sv
seutukunta_name_en seutukunta_name_en
year year
suuralue_code suuralue_code
suuralue_name_fi suuralue_name_fi
suuralue_name_sv suuralue_name_sv
suuralue_name_en suuralue_name_en
nuts1_code nuts1_code
nuts1_name_fi nuts1_name_fi
nuts1_name_sv nuts1_name_sv
nuts1_name_en nuts1_name_en
nuts2_code nuts2_code
nuts2_name_fi nuts2_name_fi
nuts2_name_sv nuts2_name_sv
nuts2_name_en nuts2_name_en
nuts3_code nuts3_code
nuts3_name_fi nuts3_name_fi
nuts3_name_sv nuts3_name_sv
nuts3_name_en nuts3_name_en
vaalipiiri_code vaalipiiri_code
vaalipiiri_name_fi vaalipiiri_name_fi
vaalipiiri_name_sv vaalipiiri_name_sv
vaalipiiri_name_en vaalipiiri_name_en
hyvinvointialue_code hyvinvointialue_code
hyvinvointialue_name_fi hyvinvointialue_name_fi
hyvinvointialue_name_sv hyvinvointialue_name_sv
hyvinvointialue_name_en hyvinvointialue_name_en
yhteistyoalue_code yhteistyoalue_code

yhteistyoalue_name_fi yhteistyoalue_name_fi
yhteistyoalue_name_sv yhteistyoalue_name_sv
yhteistyoalue_name_en yhteistyoalue_name_en
tyollisyysalue_code tyollisyysalue_code
tyollisyysalue_name_fi tyollisyysalue_name_fi
tyollisyysalue_name_sv tyollisyysalue_name_sv
tyollisyysalue_name_en tyollisyysalue_name_en
municipality_code municipality_code
kunta_name kunta_name
name_fi name_fi
name_sv name_sv
kela_palvelualue_name_fi kela_palvelualue_name_fi
kela_palvelualue_code kela_palvelualue_code
kela_palvelualue_name_sv kela_palvelualue_name_sv
kela_palvelualue_name_en kela_palvelualue_name_en
kela_asumistukialue_name_fi kela_asumistukialue_name_fi
kela_asumistukialue_code kela_asumistukialue_code
kela_asumistukialue_name_sv kela_asumistukialue_name_sv
kela_asumistukialue_name_en kela_asumistukialue_name_en

Source

https://data.stat.fi/api/classifications/v2/classifications

---

ogc_get_maastotietokanta

Download a Collection from the Maastotietokanta (Topographic Database)

Description

Downloads a specific collection of spatial data from the Maastotietokanta (Topographic Database) using the OGC API provided by the National Land Survey of Finland (NLS).

Usage

```
ogc_get_maastotietokanta(
  collection = "hautausmaa",
  crs = 3067,
  limit = NULL,
  max_pages = 100,
  bbox = NULL,
  api_key = getOption("geofi_mml_api_key")
)
```

Arguments

collection	Character. The name of the collection to download (e.g., "hautausmaa" for cemeteries). Use ogc_get_maastotietokanta_collections to see available collections.
crs	Numeric or Character. The coordinate reference system (CRS) for the output data, specified as an EPSG code. Supported values are 3067 (ETRS-TM35FIN, default) and 4326 (WGS84). The returned sf object will be transformed to this CRS.
limit	Numeric or NULL. The maximum number of features to retrieve in a single API request. If NULL (default), all available features are fetched, potentially using pagination for large collections.
max_pages	Numeric. The maximum number of pages to fetch during pagination when limit=NULL. Defaults to 100. Increase this value for very large collections (e.g., "suo"), but be cautious of long runtimes.
bbox	Character or NULL. A bounding box to filter the data, specified as a string in the format "minx,miny,maxx,maxy" (e.g., "24.5,60.1,25.5,60.5"). Coordinates must be in the same CRS as the API (EPSG:4326). If NULL (default), no spatial filter is applied.
api_key	Character. API key for authenticating with the Maastotietokanta OGC API. Defaults to the value stored in options(geofi_mml_api_key). You can obtain an API key from the National Land Survey of Finland website (see https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje).

Details

This function retrieves spatial data from the Maastotietokanta (Topographic Database) OGC API, provided by the National Land Survey of Finland (NLS). It acts as a wrapper around a lower-level API request function, adding user-friendly features like CRS transformation and spatial filtering.

Key features:

- Supports pagination for large collections when limit=NULL.
- Limits the number of pages fetched during pagination using max_pages.
- Applies spatial filtering using a bounding box (bbox).
- Transforms the output to the specified CRS (crs).
- Validates inputs to prevent common errors.

To see the list of available collections, use ogc_get_maastotietokanta_collections.

For very large collections (e.g., "suo"), the function may fetch data in pages of 10,000 features each. If the number of pages exceeds max_pages, a warning is issued, and only the features from the first max_pages pages are returned. Increase max_pages to retrieve more features, but be aware that this may significantly increase runtime.

Value

An sf object containing the spatial features from the specified collection, transformed to the requested crs.

Author(s)

Markus Kainu <markus.kainu@kapsi.fi>

See Also

ogc_get_maastotietokanta_collections to list available collections. https://www.maanmittauslaitos.fi/en/maps-and-spatial-data/datasets-and-interfaces/product-descriptions/topographic-database for more information on the Maastotietokanta. https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje for instructions on obtaining an API key.

Examples

```
## Not run:
# Set your API key
options(geofi_mml_api_key = "your_api_key_here")

# Download the "hautausmaa" (cemeteries) collection in EPSG:3067
cemeteries <- ogc_get_maastotietokanta(collection = "hautausmaa")
print(cemeteries)

# Download the "suo" (bogs/marshes) collection with a higher page limit
bogs <- ogc_get_maastotietokanta(
  collection = "suo",
  max_pages = 500
)
print(bogs)

# Download with a bounding box (in EPSG:4326) and transform to EPSG:4326
cemeteries_bbox <- ogc_get_maastotietokanta(
  collection = "hautausmaa",
  bbox = "24.5,60.1,25.5,60.5",
  crs = 4326
)
print(cemeteries_bbox)


## End(Not run)
```

---

ogc_get_maastotietokanta_collections

Fetch Maastotietokanta Collections

Description

Retrieves a list of available collections from the Maastotietokanta (Topographic Database) OGC API, including their titles and descriptions.

Usage

```
ogc_get_maastotietokanta_collections(api_key = getOption("geofi_mml_api_key"))
```

Arguments

api_key	Character. API key for authenticating with the Maastotietokanta OGC API. Defaults to the value stored in `options(geofi_mml_api_key)`. You can obtain an API key from the Maanmittauslaitos (National Land Survey of Finland) website.

Details

This function queries the Maastotietokanta OGC API to retrieve metadata about available collections of spatial data. The API is provided by the National Land Survey of Finland (Maanmittauslaitos). The function requires a valid API key, which can be provided directly or set via `options(geofi_mml_api_key)`.

The function includes error handling:

- It retries failed requests up to 3 times for transient network issues or server errors (HTTP 500–599) with exponential backoff.
- It handles rate limits (HTTP 429) by respecting the `Retry-After` header.
- It validates the API response to ensure the expected data is present.

Value

A data frame with two columns:

- `id`: The title of each collection.
- `description`: A brief description of each collection.

See Also

https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje for more information on the Maastotietokanta OGC API and how to obtain an API key.

Examples

```
## Not run:
# Set your API key
options(geofi_mml_api_key = "your_api_key_here")

# Fetch the list of collections
collections <- ogc_get_maastotietokanta_collections()
print(collections)

# Alternatively, provide the API key directly
collections <- ogc_get_maastotietokanta_collections(api_key = "your_api_key_here")
print(collections)

## End(Not run)
```

`ogc_get_nimisto` *Query Geographic Names (Nimistö) from the National Land Survey of Finland*

Description

Queries the Geographic Names (Nimistö) OGC API to retrieve spatial data on place names provided by the National Land Survey of Finland (NLS).

Usage

```
ogc_get_nimisto(
  search_string = NULL,
  collection = "placenames",
  crs = 3067,
  limit = NULL,
  bbox = NULL,
  custom_params = NULL,
  api_key = getOption("geofi_mml_api_key")
)
```

Arguments

`search_string`	Character or NULL. A search string to filter place names (e.g., `"kainu"`). The search is case-insensitive. If `NULL` (default), no search filter is applied, and all place names are retrieved (subject to the `limit` parameter).
`collection`	Character or NULL. The name of collection for places, place names and map names of the Geographic Names Register provided by the National Land Survey of Finland where the search if performed from. Supported values are `placenames`, `mapnames`, and `placenames_simple`
`crs`	Numeric or Character. The coordinate reference system (CRS) for the output data, specified as an EPSG code. Supported values are `3067` (ETRS-TM35FIN, default) and `4326` (WGS84). The returned `sf` object will be transformed to this CRS.
`limit`	Numeric. The maximum number of features to retrieve in a single API request. Defaults to 10. Set to `NULL` to fetch all available features (potentially using pagination for large datasets).
`bbox`	Character or NULL. A bounding box to filter the data, specified as a string in the format `"minx,miny,maxx,maxy"` (e.g., `"24.5,60.1,25.5,60.5"`). Coordinates must be in the same CRS as the API (EPSG:4326). If `NULL` (default), no spatial filter is applied.
`custom_params`	Character or NULL. Additional query parameters to append to the API URL, specified as a single string (e.g., `"attribute='value'"`). If `NULL` (default), no additional parameters are included.

`api_key` Character. API key for authenticating with the Geographic Names OGC API. Defaults to the value stored in `options(geofi_mml_api_key)`. You can obtain an API key from the National Land Survey of Finland website (see https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje).

Details

This function retrieves spatial data on place names from the Geographic Names (Nimistö) OGC API, provided by the National Land Survey of Finland (NLS). It supports filtering by a search string (case-insensitive), spatial filtering using a bounding box, and limiting the number of returned features.

Key features:

- Supports pagination for large datasets when `limit=NULL`.
- Applies spatial filtering using a bounding box (`bbox`).
- Transforms the output to the specified CRS (`crs`).
- Validates inputs to prevent common errors.

Value

An `sf` object containing the spatial features (place names) from the Geographic Names dataset, transformed to the requested `crs`. If no features are found, a warning is issued, and an empty `sf` object may be returned.

Author(s)

Markus Kainu <markus.kainu@kapsi.fi>

See Also

https://www.maanmittauslaitos.fi/nimiston-kyselypalvelu-ogc-api/tekninen-kuvaus for more information on the Geographic Names dataset. https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje for instructions on obtaining an API key.

Examples

```
## Not run:
# Set your API key
options(geofi_mml_api_key = "your_api_key_here")

# Search for place names containing "kainu" in EPSG:3067
places <- ogc_get_nimisto(search_string = "kainu")
print(places)

# Search with a bounding box (in EPSG:4326) and transform to EPSG:4326
places_bbox <- ogc_get_nimisto(
  search_string = "kainu",
  bbox = "24.5,60.1,25.5,60.5",
  crs = 4326
)
```

```
print(places_bbox)

# Fetch all place names (no search filter) with a custom limit
all_places <- ogc_get_nimisto(
  search_string = NULL,
  limit = 100
)
print(all_places)

## End(Not run)
```

`ogc_get_statfi_area` *Retrieve Finnish Administrative Area Polygons*

Description

Retrieves municipality or other administrative (multi)polygons from Statistics Finland's OGC API. Supports different years, scales, and tessellation types for Finnish administrative boundaries.

Usage

```
ogc_get_statfi_area(
  year = 2022,
  scale = 4500,
  tessellation = NULL,
  crs = 3067,
  limit = NULL,
  bbox = NULL
)
```

Arguments

`year`	Integer. Year of the administrative borders. Options: 2020, 2021, 2022. Default: 2022.
`scale`	Integer. Map scale/resolution. Options: 1000 (1:1,000,000), 4500 (1:4,500,000). Default: 4500.
`tessellation`	Character or NULL. Type of administrative unit. Options: "avi", "ely", "hyvinvointialue", "kunta", "maakunta", "seutukunta", "suuralue", "tyossakayntialue", "vaalipiiri". If NULL, retrieves all units. Default: NULL.
`crs`	Integer. Coordinate Reference System (EPSG code). Options: 3067 (ETRS89 / TM35FIN), 4326 (WGS84). Default: 3067.
`limit`	Integer or NULL. Maximum number of features to retrieve. If NULL, retrieves all available features. Default: NULL.
`bbox`	Character or NULL. Bounding box for spatial filtering in format "xmin,ymin,xmax,ymax" (in the specified CRS). Default: NULL.

Value

An sf object containing the requested spatial data, or NULL if no data is retrieved.

Author(s)

Markus Kainu markus.kainu@kapsi.fi

Examples

```
## Not run:
# Get all municipalities for 2020 at 1:4,500,000 scale
munis <- ogc_get_statfi_area(year = 2020, scale = 4500, tessellation = "kunta")

# Get wellbeing areas for 2022 with a limit of 10 features
wellbeing <- ogc_get_statfi_area(year = 2022, tessellation = "hyvinvointialue", limit = 10)

# Get data within a bounding box
bbox <- "200000,6600000,500000,6900000"
data <- ogc_get_statfi_area(year = 2021, bbox = bbox, crs = 3067)

## End(Not run)
```

---

ogc_get_statfi_area_pop

Retrieve Finnish Administrative Area Polygons with Population Data

---

Description

Retrieves municipality or other administrative (multi)polygons with population data from Statistics Finland's OGC API. Supports different years and coordinate reference systems for Finnish administrative boundaries at a fixed scale of 1:4,500,000.

Usage

```
ogc_get_statfi_area_pop(year = 2023, crs = 3067, limit = NULL, bbox = NULL)
```

Arguments

year	Integer. Year of the administrative borders and population data. Options: 2019, 2020, 2021. Default: 2021.
crs	Integer. Coordinate Reference System (EPSG code). Options: 3067 (ETRS89 / TM35FIN), 4326 (WGS84). Default: 3067.
limit	Integer or NULL. Maximum number of features to retrieve. If NULL, retrieves all available features. Default: NULL.
bbox	Character or NULL. Bounding box for spatial filtering in format "xmin,ymin,xmax,ymax" (in the specified CRS). Default: NULL.

Value

An sf object containing spatial data and population statistics, pivoted to wide format with variables as columns, or NULL if no data is retrieved.

Author(s)

Markus Kainu markus.kainu@kapsi.fi

Examples

```
## Not run:
# Get population data for 2020
pop_data <- ogc_get_statfi_area_pop(year = 2020, crs = 3067)

# Get population data within a bounding box
bbox <- "200000,6600000,500000,6900000"
pop_data <- ogc_get_statfi_area_pop(year = 2021, bbox = bbox, crs = 3067)

# Limit to 10 features
pop_data <- ogc_get_statfi_area_pop(year = 2019, limit = 10, crs = 4326)

## End(Not run)
```

---

ogc_get_statfi_statistical_grid

Retrieve Finnish Statistical Grid with Population Data

Description

Retrieves population data for Finnish statistical grid cells from Statistics Finland's OGC API. Supports different years and grid resolutions, with data in EPSG:3067 (ETRS89 / TM35FIN).

Usage

```
ogc_get_statfi_statistical_grid(
  year = 2021,
  resolution = 5000,
  limit = NULL,
  bbox = NULL
)
```

Arguments

year	Integer. Year of the grid and population data. Options: 2019, 2020, 2021. Default: 2021.
resolution	Integer. Grid cell resolution in meters. Options: 1000 (1km), 5000 (5km). Default: 5000.

limit	Integer or NULL. Maximum number of features to retrieve. If NULL, retrieves all available features. Default: NULL.
bbox	Character or NULL. Bounding box for spatial filtering in format "xmin,ymin,xmax,ymax" (in EPSG:3067). Default: NULL.

Value

An sf object containing grid cell spatial data and population statistics, pivoted to wide format with variables as columns, or NULL if no data is retrieved.

Author(s)

Markus Kainu markus.kainu@kapsi.fi

Examples

```
## Not run:
# Get 5km grid population data for 2020
grid_data <- ogc_get_statfi_statistical_grid2(year = 2020, resolution = 5000)

# Get 1km grid data within a bounding box
bbox <- "200000,6600000,500000,6900000"
grid_data <- ogc_get_statfi_statistical_grid2(year = 2021, resolution = 1000, bbox = bbox)

# Limit to 10 features
grid_data <- ogc_get_statfi_statistical_grid2(year = 2019, resolution = 5000, limit = 10)

## End(Not run)
```

---

sotkadata_population *Municipality level population data from Sotkanet*

Description

This dataset contains population data at municipality level pulled from THL (Sotkanet) from 2000 to 2022

Usage

```
sotkadata_population
```

Format

A data frame with 7107 rows and 3 variables:

municipality_code municipality_code

primary.value primary.value

year year

sotkadata_swedish_speaking_pop

Municipality level Swedish speaking population numbers from Sotkanet

Description

This dataset contains Swedish speaking population figures at municipality level pulled from THL (Sotkanet) from 2000 to 2022

Usage

```
sotkadata_swedish_speaking_pop
```

Format

A data frame with 5761 rows and 3 variables:

municipality_code municipality_code

indicator.title.fi indicator.title.fi

primary.value primary.value

statfi_zipcode_population

Zipcode level population data from Statistics Finland

Description

This dataset contains population for each zipcode in Finland. Data is downloaded from Statistics Finland

Usage

```
statfi_zipcode_population
```

Format

A data frame with 3027 rows and 2 variables:

posti_alue posti_alue

X2022 X2022

to_sf *Transform a wfs_api object into a sf object.*

Description

Statistics Finland WFS API response object's XML (GML) content is temporarily written on disk and then immediately read back in into a sf object.

Usage

```
to_sf(api_obj)
```

Arguments

api_obj	wfs api object

Value

sf object

Note

For internal use, not exported.

Author(s)

Joona Lehtomäki joona.lehtomaki@iki.fi

wfs_api *WFS API*

Description

Requests to various WFS API.

Usage

```
wfs_api(base_url = "http://geo.stat.fi/geoserver/wfs", queries)
```

Arguments

base_url	string Api base url
queries	list List of query parameters

Details

Make a request to the spesific WFS API. The base url is http://geo.stat.fi/geoserver/wfs to which other components defined by the arguments are appended.

This is a low-level function intended to be used by other higher level functions in the package.

Note that GET requests are used using `httpcache` meaning that requests are cached. If you want clear cache, use `httpcache::clearCache()`. To turn the cache off completely, use `httpcache::cacheOff()`

Value

wfs_api (S3) object with the following attributes:

content XML payload.

path path provided to get the resonse.

response the original response object.

Author(s)

Joona Lehtomäki joona.lehtomaki@iki.fi

Examples

```
wfs_api(base_url = "http://geo.stat.fi/geoserver/wfs",
        queries = append(list("service" = "WFS", "version" = "1.0.0"),
              list(request = "getFeature",
                   layer = "tilastointialueet:kunta4500k_2017")))
```

Index