

# Package: inegiR (via r-universe)

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**Type** Package

**Title** Integrate INEGI's (Mexican Stats Office) API with R

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**Author** Eduardo Flores

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**Description** Provides functions to download and parse information from INEGI (Official Mexican statistics agency). To learn more about the API, see [https://www.inegi.org.mx/servicios/api\\_indicadores.html](https://www.inegi.org.mx/servicios/api_indicadores.html).

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**License** CC0

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 inegiR-package

*Integrate INEGI's (Mexican Stats Office) API with R*


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## Description

Provides functions to download and parse information from INEGI (Official Mexican statistics agency).

## Details

Package: inegiR  
 Type: Package  
 Version: 2.0  
 Date: 2018-03-27

## Author(s)

Eduardo Flores <eduardo@enelmargen.org>

## References

The INEGI API can be found here: <http://www.inegi.org.mx/desarrolladores/indicadores/apiindicadores.aspx>

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ext_geo	<i>Extracts INEGI GeoJSON</i>
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---

**Description**

Helper function

**Usage**

```
ext_geo(x)
```

**Arguments**

x                      GeoJSON description

**Value**

Data.frame

---

get_gas	<i>Gets gas cost from INEGI API</i>
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---

**Description**

Helper function

**Usage**

```
get_gas(token, onlyPremium = FALSE)
```

**Arguments**

token                      Sakbe API token supplied by INEGI  
onlyPremium                Only export premium price

**Value**

data.frame

---

incat_	<i>Get INEGI Catalogs</i>
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---

**Description**

Allows you to download the catalogs of frequencies, sources, notes, topics and indicator names. Called in the background in some functions.

**Usage**

```
incat_freq(token, id = NULL)
incat_source(token, id = NULL)
incat_notes(token, id = NULL)
incat_topic(token, id = NULL)
incat_indicator(token, id = NULL)
```

**Arguments**

token	INEGI API token
id	Optional id. If NULL, will download entire catalog.

**Value**

data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
# Get the corresponding frequency for frequency id #8 (monthly)
## Not run:
token <- "webservice token"
incat_freq(token, id = "8")

## End(Not run)
# Get all of the note descriptions
## Not run:
token <- "webservice token"
incat_notes(token)

## End(Not run)
#' # Get all of the sources descriptions
```

```
## Not run:  
token <- "webservice token"  
incat_source(token)  
  
## End(Not run)
```

---

incat_neumonics	<i>Obtains the catalog of economic data neumonics</i>
-----------------	---

---

### Description

Neumonics are shorthand names for series of economic data, akin to the Fed FRED names. This catalog downloads the neumonic with the indicator code, to easily match with an API call. This catalog is maintained by INEGI.

### Usage

```
incat_neumonics()
```

### Value

```
data.frame
```

### Author(s)

Eduardo Flores

### Examples

```
## Not run:  
catalog <- incat_neumonics()  
  
## End(Not run)
```

---

inegi_bop	<i>Balance of Payments for Mexico</i>
-----------	---------------------------------------

---

### Description

Returns Current Account revenue, expenses and total and Financial Account total, errors, reserves and adjustments for Mexico.

### Usage

```
inegi_bop(token)
```

**Arguments**

token            API token supplied by INEGI

**Value**

Data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:
token <- "webservice_token"
balance_of_payments <- inegi_bop(token)

## End(Not run)
```

---

inegi_denue	<i>Returns DENUE businesses</i>
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**Description**

Returns data.frame with businesses registered in DENUE in the vicinity of supplied coordinates.

**Usage**

```
inegi_denue(latitud, longitud, token, meters = 250, keyword = "todos")
```

**Arguments**

latitud            Character vector with latitud (in decimals)  
 longitud            Character vector with longitud (in decimals)  
 token              API token supplied by INEGI  
 meters             Meters to search in a circle from coordinates. Defaults to 250  
 keyword            Keyword to search in business description (in spanish). Defaults to all (todos).

**Value**

Data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
# All businesses in a 1 km radius from the Macroplaza in Monterrey, Mex.
## Not run:
token<-"webservice_token"
latitud<- 25.669194
longitud<- -100.30990
businesses <- inegi_denue(latitud, longitud, token, meters = 1000)

## End(Not run)
```

---

inegi\_denue\_grid      *Find businesses in a grid larger than 5 kms*

---

**Description**

Returns data.frame with businesses registered in the DENUE in spaces larger than 5 kilometers. Calls make\_grid. Functions contributed by Arturo Cardenas <https://github.com/arturocm>.

**Usage**

```
inegi_denue_grid(lat1, lat2, lon1, lon2, token, meters = 5000,
  keyword = "todos", space_lat = 0.07, space_lon = 0.07,
  uniqueonly = TRUE)
```

**Arguments**

lat1	First corner (latitud)
lat2	Second corner (latitud)
lon1	First corner (longitud)
lon2	Second corner (longitud)
token	API token supplied by INEGI
meters	Distance in meters to search by coordinate
keyword	Keyword of businesses to include. Defaults to all ("todos")
space_lat	Space between latitud coordinates defaults to 0.07 degrees
space_lon	Space between longitud coordinates defaults to 0.07 degrees
uniqueonly	Default = TRUE, eliminates duplicate businesses

**Details**

Makes a loop for each pair of coordinates, creating a grid to extract businesses inside. Uses maximum and minimum coordinate pairs to draw frame.

**Value**

Data.frame

**Author(s)**

Arturo Cardenas

**Examples**

```
## Not run:
token<-"webservice_token"
latitud1 <- 25.669194
latitud2 <- 25.169194
longitud1 <- -100.30990
longitud2 <- -101.20102
businesses <- inegi_denue_grid(latitud1, latitud2, longitud1, longitud2, token)

## End(Not run)
```

---

inegi_denue_stats	<i>Returns statistics of coordinate</i>
-------------------	---

---

**Description**

Returns basic statistics of businesses, using DENUÉ, in the vicinity of coordinates.

**Usage**

```
inegi_denue_stats(latitud_vector, longitud_vector, token, meters = 250,
  keyword = "todos")
```

**Arguments**

latitud_vector	number of column in data with latitud column
longitud_vector	number of column in data with longitud column
token	API token supplied by INEGI
meters	Distance in meters to search by coordinate
keyword	Keyword of businesses to include. Defaults to all ("todos")

**Details**

Some columns, like employee numbers are experimental (the employees are added considering size of company).

**Value**

Data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:
token<-"webservice_token"
df <- as.data.frame(latitud = c(25.669194, 25.121194),
                    longitud = c(-100.30990, -99.81923))
stats <- denue_varios_stats(data = df,
                           col_lat = 1,
                           col_long = 2,
                           metros = 500)

## End(Not run)
```

---

`inegi_destiny`*Returns INEGI destiny id's with matching searches*

---

**Description**

Returns data.frame with id's and coordinates that match with the API names.

**Usage**

```
inegi_destiny(search, token)
```

**Arguments**

<code>search</code>	Character vector to search for
<code>token</code>	Sakbe API token supplied by INEGI

**Value**

Data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
# All id's in Monterrey, Mex.
## Not run:
token <- "webservice_token"
dest_ids <- inegi_destiny("monterrey", token)

## End(Not run)
```

---

inegi\_partner\_exports *Exports of Mexico to trade partners*

---

**Description**

Returns exports to main trading partners of all products. Regions are the following: United States, Canada, China, CentralAmerica, SouthAmerica

**Usage**

```
inegi_partner_exports(token)
```

**Arguments**

token            API token supplied by INEGI

**Value**

data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:  
token <- "webservice_token"  
xbycountry <- inegi_partner_exports(token)  
  
## End(Not run)
```

---

inegi\_route            *Returns the route between two points in Mexico*

---

**Description**

Uses SAKBE API to return a route between two destiny id's considering the given parameters.

**Usage**

```
inegi_route(from, to, token, pref, vehicle, calc_cost = FALSE,  
            rawJSON = FALSE)
```

**Arguments**

from	Destiny id from where the route begins
to	Destiny id of end of route
token	Sakbe API token supplied by INEGI
pref	Preference for road: 1 = with tolls (cuota), 2 = without tolls (libre), 2 = suggested route
vehicle	Vehicle choice: 0 = motorcycle, 1 = auto, 2 = two axis bus, 3 = three axis bus, 4 = four axis bus, 5 = two axis truck, 6 = three axis truck, 7 = four axis truck, 8 = five axis truck, 9 = six axis truck, 10 = seven axis truck, 11 = eight axis truck, 12 = nine axis truck.
calc_cost	if TRUE will use the price of gasoline to calculate total cost of trip. Very experimental, defaults to FALSE.
rawJSON	if TRUE returns only the JSON data, not parsed

**Value**

list

**Note**

To calculate the cost, it is wiser to use the more conservative estimate. Thus, this function assumes a premium type of gasoline (the most expensive) at the lower end bound of fuel-efficiency (11 kms per liter)

**Author(s)**

Eduardo Flores

**References**

See the official API here: <http://www.inegi.org.mx/desarrolladores/sakbe/apisakbe.aspx>

**Examples**

```
# Macropiazza in Monterrey to Mexico City airport.
## Not run:
token <- "webservice_token"
route <- inegi_route(from = 6940, to = 57, token, pref = 2, vehicle = 1)

## End(Not run)
```

---

inegi_sectors	<i>Sectorial activity indices</i>
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---

**Description**

Returns indexes of economic sector as defined in INEGI (subsectors of IGAE). None of the series are seasonally adjusted.

**Usage**

```
inegi_sectors(token)
```

**Arguments**

token            API token supplied by INEGI

**Value**

data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:  
token <- "webservice_token"  
sectors <- inegi_sectors(token)  
  
## End(Not run)
```

---

inegi_series	<i>Returns INEGI data series</i>
--------------	----------------------------------

---

**Description**

Returns a data.frame with the time series chosen from INEGI webservice. If the parameter Metadata is TRUE, a list is returned with two objects: data and metadata.

**Usage**

```
inegi_series(series_id, token, geography = "00", database = "BIE",  
             metadata = FALSE, lastonly = FALSE, as_tt = FALSE,  
             as_compact = FALSE)
```

**Arguments**

series_id	an indicator ID. These are obtained via the INEGI API documentation.
token	API token supplied by INEGI.
geography	Geography code of INEGI. Defaults to 00 (National)
database	Is the id from BIE (Banco de Informacion Economica) or BISE (Banco de Indicadores)? Defaults to BIE. To learn more about what database your indicator is stored in, visit INEGI docs.
metadata	Defaults to FALSE, if TRUE, returns a list with metadata information.
lastonly	Do you want only the last observation? Defaults to FALSE.
as_tt	Do you want the output of the data.frame to be a tibble time object? Defaults to FALSE.
as_compact	Do you want the output always as a data.frame or time tibble? If the output contains metadata, each data point will be replicated in a column. If the output does not contain metadata there is no change. Previously, this was achieved with compact_inegi_series.

**Value**

data.frame or list

**Note**

Adding the entire INEGI URL as a series is deprecated since v3, due to a change of API specifications in INEGI. INEGI docs can be found at: [https://www.inegi.org.mx/servicios/api\\_indicadores.html](https://www.inegi.org.mx/servicios/api_indicadores.html). Coercing biweekly indicators to monthly is also deprecated inside this function. Use tibbletime functions to coerce instead.

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:  
# General INPC series  
token <- "webservice_token"  
inpc_id <- "216064"  
INPC <- inegi_series(inpc_id, token)  
  
## End(Not run)
```

---

inegi\_series\_multiple *Returns multiple INEGI data series*

---

### Description

Returns a data.frame with multiple time series chosen from INEGI webservice. The output will always be a data.frame (not tibble) with compacted metadata. (See `inegi_series` to understand `as_tt = FALSE` and `as_compact = TRUE`).

### Usage

```
inegi_series_multiple(series_id, token, names = NULL, geography = "00",  
  database = "BIE")
```

### Arguments

<code>series_id</code>	A vector of indicator ID's. These are obtained via the INEGI API documentation.
<code>token</code>	API token supplied by INEGI.
<code>names</code>	Optional vector of names to assign to each id. If NULL, a numerical index is assigned.
<code>geography</code>	Geography code of INEGI. Defaults to 00 (National)
<code>database</code>	Is the id from BIE (Banco de Informacion Economica) or BISE (Banco de Indicadores). Defaults to BIE. To learn more about what database your indicator is stored in, visit INEGI docs.

### Value

data.frame

### Note

Adding the entire INEGI URL as a series is deprecated since v3, due to a change of API specifications in INEGI. INEGI docs can be found at: [https://www.inegi.org.mx/servicios/api\\_indicadores.html](https://www.inegi.org.mx/servicios/api_indicadores.html). Coercing biweekly indicators to monthly is also deprecated inside this function. Use `tibbletime` functions to coerce instead.

### Author(s)

Eduardo Flores

**Examples**

```
## Not run:  
# General INPC series  
token <- "webservice_token"  
some_series <- c("216064", "216097")  
result <- inegi_series_multiple(some_series, token)  
  
## End(Not run)
```

---

inegi_stind	<i>Student Price Index</i>
-------------	----------------------------

---

**Description**

Returns the student price index. See <http://enelmargen.org/ds/ipe/> for more information.

**Usage**

```
inegi_stind(token)
```

**Arguments**

token	API token supplied by INEGI
-------	-----------------------------

**Value**

Data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:  
token <- "webservice_token"  
studentinflation <- inegi_stind(token)  
  
## End(Not run)
```

---

inegi_tot	<i>Terms of trade for Mexico</i>
-----------	----------------------------------

---

**Description**

Returns the terms of trade for Mexico, defined as the price index of exports over the price index of imports.

**Usage**

```
inegi_tot(token)
```

**Arguments**

token	API token supplied by INEGI
-------	-----------------------------

**Value**

data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:  
token <- "webservice_token"  
tot <- inegi_tot(token)  
  
## End(Not run)
```

---

inegi_tradebal	<i>Trade balance</i>
----------------	----------------------

---

**Description**

Returns exports, imports and trade balance (all products, services and countries) in a data.frame. Wrapper for `inegi_series()` and `YoY()`.

**Usage**

```
inegi_tradebal(token)
```

**Arguments**

token	API token supplied by INEGI
-------	-----------------------------

**Value**

data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:  
token<-"webservice_token"  
external_com <- inegi_tradabal(token)  
  
## End(Not run)
```

---

inind\_ *INEGI Direct Indicators*

---

**Description**

Returns common indicators, for simplicity. Will return as a list, with metadata and tibble time dataframe.

**Usage**

```
inind_commerce(token)  
  
inind_auto(token)  
  
inind_gdp(token)  
  
inind_fx(token)  
  
inind_unemp(token)  
  
inind_prices(token)
```

**Arguments**

token            API token supplied by INEGI

**Details**

inind\_commerce = terciary industrial activity (commercial activity monthly). inind\_auto = auto production. innind\_gpd = Gross Domestic Product. inind\_fx = USDMXN Exchange rate. inind\_unemp = Unemployment rate. inind\_prices = National price index (for inflation).

**Value**

Data.frame

**Author(s)**

Eduardo Flores

**Examples**

```
## Not run:  
token<-"webservice_token"  
commerce_rate <- inind_commerce(token)  
  
## End(Not run)
```

---

make\_grid

*Makes a grid set of coordinates*

---

**Description**

Returns a set of coordinates that intertwine to create an area larger than 5 kilometers. Suggestion by Arturo Cardenas <https://github.com/arturocm>.

**Usage**

```
make_grid(lat1, lat2, lon1, lon2, space_lat = 0.07, space_lon = 0.07)
```

**Arguments**

lat1	First corner (latitud). Must be numeric.
lat2	Second corner (latitud). Must be numeric.
lon1	First corner (longitud). Must be numeric.
lon2	Second corner (longitud). Must be numeric.
space_lat	Space between latitud coordinates defaults to 0.07 degrees
space_lon	Space between longitud coordinates defaults to 0.07 degrees

**Value**

Data.frame

**Author(s)**

Arturo Cardenas

**See Also**

denuc\_grid

**Examples**

```
latitud1 <- 25.66919  
latitud2 <- 25.169194  
longitud1 <- -100.30990  
longitud2 <- -101.20102  
setofcoords <- make_grid(latitud1, latitud2, longitud1, longitud2)
```

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