

**COMMISSION IMPLEMENTING REGULATION (EU) 2018/1799****of 21 November 2018****on the establishment of a temporary direct statistical action for the dissemination of selected topics of the 2021 population and housing census geocoded to a 1 km<sup>2</sup> grid****(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 223/2009 of 11 March 2009 on European statistics and repealing Regulation (EC, Euratom) No 1101/2008 of the European Parliament and of the Council on the transmission of data subject to statistical confidentiality to the Statistical Office of the European Communities, Council Regulation (EC) No 322/97 on Community Statistics, and Council Decision 89/382/EEC, Euratom establishing a Committee on the Statistical Programmes of the European Communities <sup>(1)</sup>, and in particular Article 14(2) thereof,

Whereas:

- (1) The dissemination of Union-wide harmonised census topics on a constant area grid, in particular on a 1 km<sup>2</sup> grid, is a key European statistical output for future policy-making and census strategies by the Member States.
- (2) Pursuant to Article 14(1)(b) of Regulation (EC) No 223/2009, the Commission may decide in specific and duly justified cases, in order to meet unexpected needs, on a temporary direct statistical action which shall fulfil conditions laid down in Article 14(2) of that Regulation.
- (3) This temporary direct statistical action should provide for data collection covering one reference year. All Member States should be able to produce univariate census data geocoded to a 1 km<sup>2</sup> grid at the reference date for the 2021 population and housing census; the Union should also make financial contributions to National Statistical Institutes and other national authorities to cover the incremental costs incurred by them. This action is supported by a cost-effectiveness analysis and an estimate of overall incremental production costs provided by the Commission.
- (4) This action is justified by a common need across the Union for reliable, accurate and comparable information on population distribution with sufficient spatial resolution, founded on harmonised output requirements and intended in particular for pan-European regional policy-making.
- (5) Harmonised, spatially resolved demographic information across the Union is available, and the objective is to disseminate one dataset per Member State, containing selected topics of the 2021 population and housing census geocoded to a 1 km<sup>2</sup> grid. There is no additional burden on respondents as all necessary information will be obtained from the 2021 census data.
- (6) In particular, in order to achieve comparable harmonised outputs across the Union, a Union-wide constant area grid consisting of 1 km<sup>2</sup> cells needs to be determined. Furthermore, the specific topics and their breakdowns as well as the detailed programme to be disseminated on this 1 km<sup>2</sup> grid need to be established. Finally, it is necessary to specify the required spatial and statistical metadata for such a dataset.
- (7) Directive 2007/2/EC of the European Parliament and of the Council <sup>(2)</sup> and related Commission Implementing Regulations lay down the required metadata <sup>(3)</sup>, data format <sup>(4)</sup>, and network services <sup>(5)</sup> for the dissemination of spatial data. In particular, point 1 of Annex III covers possible statistical grid systems for spatial data dissemination and, according to point 10 of Annex III, is applicable to spatial datasets under the theme 'Population distribution — demography'.

<sup>(1)</sup> OJ L 87, 31.3.2009, p. 164.

<sup>(2)</sup> Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an infrastructure for spatial information in the European Community (INSPIRE) (OJ L 108, 25.4.2007, p. 1).

<sup>(3)</sup> Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata (OJ L 326, 4.12.2008, p. 12).

<sup>(4)</sup> Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services (OJ L 323, 8.12.2010, p. 11).

<sup>(5)</sup> Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services (OJ L 274, 20.10.2009, p. 9).

- (8) Regulation (EC) No 763/2008 of the European Parliament and the Council <sup>(1)</sup> and related Commission Implementing Regulations establish common rules for transmission of the 2021 census data, in particular the reference year and the required metadata <sup>(2)</sup>, the technical specifications of the census topics and their breakdowns <sup>(3)</sup>, and the technical format <sup>(4)</sup>.
- (9) Member States should transmit their validated data and metadata in electronic form, in an appropriate technical format to be provided by the Commission. The Statistical Data and Metadata eXchange (SDMX) initiative on statistical and technical standards for the exchange and sharing of data and metadata, on which the Census Hub is based, was launched by the Bank of International Settlements, the European Central Bank, the Commission (Eurostat), the International Monetary Fund, the Organisation for Economic Cooperation and Development (OECD), the United Nations and the World Bank. For the exchange of official statistics, SDMX and the Census Hub provide statistical, technical and transmission standards. A technical format in accordance with those standards should therefore be introduced.
- (10) The Commission (Eurostat) hosted a project on 'Harmonised protection of census data in the ESS', which delivered good practices and implementation guidelines for the harmonised disclosure protection of 1 km<sup>2</sup> grid data.
- (11) The measures provided for in this Regulation are in accordance with the opinion of the European Statistical System Committee,

HAS ADOPTED THIS REGULATION:

#### *Article 1*

##### **Subject matter**

A temporary direct statistical action is hereby established in order to develop, produce and disseminate selected topics of the 2021 population and housing census geocoded to a 1 km<sup>2</sup> grid ('1 km<sup>2</sup> grid data').

To this end, a unique harmonised and constant geospatial reference grid for Europe is determined consisting of cells with an area of 1 km<sup>2</sup>. And the specific topics and their breakdowns are established as well as the detailed programme and metadata for the dissemination of 2021 population and housing census data geocoded to the 1 km<sup>2</sup> reference grid.

#### *Article 2*

##### **Definitions**

For the purposes of this Regulation, the definitions in Article 2 of Regulation (EC) No 763/2008 shall apply.

The following definitions shall also apply:

- (1) 'grid', 'grid cell' and 'grid point' mean grid, grid cell and grid point as defined in Annex II (2.1) of Regulation (EU) No 1089/2010;
- (2) 'total population' means all persons of a grid cell whose usual residence is located in that grid cell;
- (3) 'data item' means a single measurement contained in the table defined in Annex II of this Regulation;
- (4) 'data value' means the information provided by a data item. A data value can be either a 'numerical value' or a 'special value';

<sup>(1)</sup> Regulation (EC) No 763/2008 of the European Parliament and of the Council of 9 July 2008 on population and housing censuses (OJ L 218, 13.8.2008, p. 14).

<sup>(2)</sup> Commission Regulation (EU) 2017/712 of 20 April 2017 establishing the reference year and the programme of the statistical data and metadata for population and housing censuses provided for by Regulation (EC) No 763/2008 of the European Parliament and of the Council (OJ L 105, 21.4.2017, p. 1).

<sup>(3)</sup> Commission Implementing Regulation (EU) 2017/543 of 22 March 2017 laying down rules for the application of Regulation (EC) No 763/2008 of the European Parliament and of the Council on population and housing censuses as regards the technical specifications of the topics and of their breakdowns (OJ L 78, 23.3.2017, p. 13).

<sup>(4)</sup> Commission Implementing Regulation (EU) 2017/881 of 23 May 2017 implementing Regulation (EC) No 763/2008 of the European Parliament and of the Council on population and housing censuses, as regards the modalities and structure of the quality reports and the technical format for data transmission, and amending Regulation (EU) No 1151/2010 (OJ L 135, 24.5.2017, p. 6).

- (5) 'numerical value' means an integer number equal to or greater than '0' that provides statistical information on the observation of that data item;
- (6) 'validated data' means data verified by the Member States according to agreed validation rules;
- (7) 'observed value' means a numerical value that represents observed or imputed information to the best of knowledge based on all available 2021 census information, in particular before the application of any statistical disclosure control measures;
- (8) 'confidential value' means a numerical value which, in order to protect the statistical confidentiality of the data, must not be divulged in accordance with the Member States' protective measures against disclosure of statistical data;
- (9) 'special value' means a symbol that is transmitted in a data item instead of a numerical value;
- (10) 'flag' means a code that can accompany a particular data item to describe a specific characteristic of its data value.

### Article 3

#### Technical specifications of the 1 km<sup>2</sup> reference grid

1. In accordance with Section 1.5 of Annex IV of Regulation (EU) No 1089/2010, the statistical 1 km<sup>2</sup> reference grid for pan-European usage shall be the Equal Area Grid 'Grid\_ETRS89-LAEA1000'. The spatial extent of the reference grid in the coordinate system specified for this grid in Section 2.2.1 of Annex II of the same Regulation shall be limited to easting values between 900 000 and 7 400 000 metres and northing values between 900 000 and 5 500 000 metres for the purpose of this Regulation.
2. In accordance with Section 1.4.1.1 of Annex IV of the same Regulation, each individual grid cell of the 1 km<sup>2</sup> reference grid shall be identified by a unique grid cell code, which is composed of the characters 'CRS3035RES1000mN'. This is followed by the northing value in metres of the grid point in the lower-left corner of the grid cell, followed by the character 'E', followed by the easting value in metres of the grid point in the lower-left corner of the grid cell.
3. The country code of the transmitting Member State as defined in the Interinstitutional Style Guide published by the Publications Office of the European Union, followed by the character '\_', shall be prepended to the cell code of each grid cell transmitted by that Member State.

### Article 4

#### Technical specifications of the 1 km<sup>2</sup> grid data topics and their breakdowns

The technical specifications of the topics set out in the Annex to Regulation (EU) 2017/543 for the 2021 census data shall apply. The breakdowns of the topics for the purpose of this Regulation are specified in Annex I of this Regulation.

### Article 5

#### Programme of the 1 km<sup>2</sup> grid data

1. The programme of the 1 km<sup>2</sup> grid data to be transmitted by each Member State to the Commission (Eurostat) for the reference year 2021 is specified in Annex II.
2. Member States shall replace any confidential value with the special value 'not available'.

### Article 6

#### Output harmonisation

1. In order to facilitate Union-wide comparability, the output data values to be disseminated shall be harmonised. To this end, preference shall be given to numerical values over special values as far as possible.

2. In order to ensure sufficiently accurate and reliable information on the spatial distribution of the total population, Member States shall respect the following requirements:

- (a) data items on total population shall not be reported as confidential;
- (b) data items on total population with an observed value other than '0' shall be marked with the flag 'populated'; and
- (c) data items on total population with an observed value '0' shall not be marked with the flag 'populated'.

#### *Article 7*

#### **Metadata**

Member States shall provide the Commission (Eurostat) with metadata for the 1 km<sup>2</sup> grid data in accordance with Annex III.

#### *Article 8*

#### **Reference date**

The reference date of the 1 km<sup>2</sup> grid data transmitted by each Member State shall be identical to the reference date reported by that Member State in accordance with Article 3 of Regulation (EU) 2017/712.

#### *Article 9*

#### **Data and metadata transmission date**

1. Member States shall provide the Commission (Eurostat) with validated and aggregated data and with metadata on total population by 31 December 2022.
2. Without prejudice to paragraph 1, Member States shall provide the Commission (Eurostat) with validated and aggregated data and with metadata by 31 March 2024.

#### *Article 10*

#### **Technical format for data and metadata transmission**

The technical format to be used for data and metadata transmission shall be the SDMX format as implemented through the Census Hub. Member States shall transmit the required data and metadata in accordance with the data structure definitions and related technical specifications provided by the Commission (Eurostat). They shall store the required data and metadata until 31 December 2034 for any later transmission requested by the Commission (Eurostat).

#### *Article 11*

#### **Quality requirements**

1. Member States shall ensure the quality of the data transmitted.
2. For the purposes of this Regulation, the quality criteria referred to in Article 12(1) of Regulation (EC) No 223/2009 shall apply to the data to be transmitted.
3. At the request of the Commission (Eurostat), Member States shall provide it with additional information necessary to evaluate the quality of the statistical information.

#### *Article 12*

#### **Dissemination**

1. The Commission (Eurostat) shall disseminate the 1 km<sup>2</sup> grid datasets referred to in Article 5 as well as the associated metadata referred to in Article 7.

2. For the purposes of this Regulation, the programme of the 1 km<sup>2</sup> grid data and metadata to be transmitted by Member States and disseminated by Eurostat corresponds to the data that Member States disseminate at national level in accordance with Directive 2007/2/EC and its implementing Regulations (EC) No 1205/2008, (EC) No 976/2009 and (EU) No 1089/2010.

*Article 13*

**Entry into force**

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 21 November 2018.

*For the Commission*  
*The President*  
Jean-Claude JUNCKER

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## ANNEX I

**Technical specifications of the census topic breakdowns referred to in Article 4**

The technical specifications of the breakdowns for the purpose of this Regulation of the census topics specified in the Annex of Regulation (EU) 2017/543 shall be presented as follows:

- Each topic selected for dissemination on the 1 km<sup>2</sup> reference grid is quoted with its heading from the Annex of Regulation (EU) 2017/543.
- The technical specifications laid down in the Annex of Regulation (EU) 2017/543 referring to that topic in general shall apply.
- Thereafter, the breakdown for that topic is specified.
- All breakdowns are designed to break down any total or subtotal referring to persons.

**Topic: Place of usual residence**

The breakdown categories of this topic on which a Member State shall report are all cells of the 1 km<sup>2</sup> reference grid specified in Article 3(1) whose area includes a part of the territory of that Member State, complemented by a single virtual grid cell per Member State to account for persons that are not allocated.

Geographical area based on the 1 km <sup>2</sup> reference grid <sup>(1)</sup>		GEO.G.
x.	All grid cells belonging partly or entirely to the territory of the Member State	x.
y.	One virtual grid cell per Member State	y.

<sup>(1)</sup> The codes 'x.' are grid cell identification codes as specified in Article 3. The code 'y.' shall consist of the character string 'unallocated' prepended by the country code of the reporting Member State as specified in Article 3(3).

If the place of usual residence of a person is unknown within the territory of the reporting Member State that is covered by the reference grid, additional scientifically-based, well-documented, and publicly available statistical estimation methods may be used to allocate this person to a specific grid cell. Persons who are not allocated to any cell of the reference grid shall be allocated to the virtual grid cell GEO.G.y. of that Member State.

**Topic: Sex**

The breakdown **SEX**, specified in the Annex of Regulation (EU) 2017/543 for this topic shall apply for the purpose of this Regulation.

**Topic: Age**

The following breakdown categories shall be reported:

Age		AGE.G.
1.	Under 15 years	1.
2.	15 to 64 years	2.
3.	65 years and over	3.

As specified in the Annex of Regulation (EU) 2017/543, the age reached in completed years of age at the reference date shall be reported.

**Topic: Current activity status (number of employed persons)**

The following breakdown category included in the breakdown **CAS.L**, specified in Regulation (EU) 2017/543 shall be reported:

Current activity status		CAS.L.
1.	Employed persons	1.1.

The specification of 'employed' persons in the Annex of Regulation (EU) 2017/543 shall apply for this category.

**Topic: Country/place of birth**

The following breakdown categories included in the breakdown **POB.L.** specified in Regulation (EU) 2017/543 shall be reported:

	Country/place of birth	POB.L.
1.	Place of birth in reporting country	1.
2.	Place of birth in other EU Member State	2.1.
3.	Place of birth elsewhere	2.2.

**Topic: Place of usual residence one year prior to the census**

The following breakdown categories included in the breakdown **ROY.** specified in Regulation (EU) 2017/543 shall be reported:

	Place of usual residence one year prior to the census	ROY.
1.	Usual residence unchanged	1.
2.	Move within the reporting country	2.1.
3.	Move from outside the reporting country	2.2.

A move within the same grid cell shall be reported either as a 'Move within the reporting country' (ROY.2.1.) or as a 'Move from outside the reporting country' (ROY.2.2.) as appropriate.

## ANNEX II

**Programme of the statistical census data geocoded to the 1 km<sup>2</sup> reference grid referred to in Article 5**

The programme of the 1 km<sup>2</sup> grid data to be transmitted for the reference year 2021 shall consist of one two-dimensional table that cross-tabulates the set of grid cells **GEO.G.** defined in Annex I against the following selection of categories from the census topic breakdowns specified in Annex I:

Census topic categories to be broken down on the 1 km <sup>2</sup> reference grid		STAT.G.
0.	SEX.0.: Total population	0.
1.	SEX.1.: Male	1.
2.	SEX.2.: Female	2.
3.	AGE.G.1.: Under 15 years	3.
4.	AGE.G.2.: 15 to 64 years	4.
5.	AGE.G.3.: 65 years and over	5.
6.	CAS.L.1.1.: Employed persons <sup>(1)</sup>	6.
7.	POB.L.1.: Place of birth in reporting country	7.
8.	POB.L.2.1.: Place of birth in other EU Member State	8.
9.	POB.L.2.2.: Place of birth elsewhere	9.
10.	ROY.1.: Place of usual residence one year prior to the census unchanged	10.
11.	ROY.2.1.: Place of usual residence one year prior to the census: move within reporting country	11.
12.	ROY.2.2.: Place of usual residence one year prior to the census: move from outside of the reporting country	12.

<sup>(1)</sup> Data on the category 'employed persons' shall be transmitted as far as possible, subject to availability in the transmitting Member State.

## ANNEX III

**Required metadata for the 1 km<sup>2</sup> grid data referred to in Article 7****Metadata on data items**

1. Where applicable, Member States shall add the following flags to a data item:
  - (a) 'provisional';
  - (b) 'populated';
  - (c) 'revised';
  - (d) 'see information attached';
  - (e) 'confidential' <sup>(1)</sup>.
2. Only data values on 'total population' which are reported under Article 9(1) and which are not considered final data by the Member State at the time of reporting shall be accompanied by the flag 'provisional'.
3. The flag 'populated' shall be applicable only to 'total population' data items under the provisions specified in Article 6(2).
4. For each data value accompanied by at least one of the flags 'revised' or 'see information attached' an explanatory text shall be provided.
5. Each data item whose confidential value has been replaced by the special value 'not available' shall be marked with the flag 'confidential'.

**Metadata on the topics**

In addition to the metadata on the topics transmitted to the Commission (Eurostat) under Article 6 of Regulation (EU) 2017/712, Member States shall provide metadata on each topic included in Annex I informing about the data sources and methodology used to obtain the data values for that topic on the 1 km<sup>2</sup> reference grid. In particular, the metadata shall contain:

- information on the reliability and accuracy of the reported data values;
- a description of any methodology used to estimate the data values on the 1 km<sup>2</sup> reference grid, including reliability and accuracy of the resulting data values;
- a description of any methodology used to allocate persons to specific grid cells under the topic 'place of usual residence', including information on the characteristics of persons under the category GEO.G.y.

**Reference metadata**

The metadata information and structure laid down in the Annex of Regulation (EU) 2017/881 shall be supplemented for the purpose of this Regulation by the following items specifically referring to the 1 km<sup>2</sup> grid data:

- Item 3.3. 'Processing and evaluation' shall be supplemented by the additional sub-item 3.3.3. 'Additional information on generic (not topic-related) methodology applied in order to produce the 1 km<sup>2</sup> grid dataset'.
- Item 3.4. 'Dissemination' shall be supplemented by specific information about statistical disclosure control measures related to the 1 km<sup>2</sup> grid dataset. Member States shall provide the Commission (Eurostat) with information about the measures related to the harmonised protection of 1 km<sup>2</sup> grid data, in particular if they used the ESS good practices and implementation guidelines for the harmonised protection of 1 km<sup>2</sup> grid data.
- Item 4.2. 'Timeliness and punctuality' shall be supplemented by specific calendar date(s) of the transmission and possible revisions of the 1 km<sup>2</sup> grid data and metadata.
- Item 4. 'Assessment of data quality' shall be supplemented by the additional sub-item 4.7 'Geographic information – data quality' covering geographic quality principles, in particular territorial coverage and comparability, positional accuracy, as well as temporal coherence and completeness of the geographic data used for geocoding.

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<sup>(1)</sup> This flag is not applicable to data items on total population, as laid down in Article 6(2)(a).