NUTS Converter: description of the tool and calculation method

https://urban.jrc.ec.europa.eu/nutsconverter

Last update: August 2022

NUTS Converter

Description and main features

Open, web-based tool to convert European regional statistical data between different versions of the NUTS classification.

- ✓ **Converts** statistical data at NUTS1, NUTS2 and NUTS3 levels, and NUTS versions 2006, 2010, 2013, 2016, and 2021 in any direction;

- ✓ **Covers** all NUTS regions within EU27 + EFTA + UK countries;

- ✓ Accepts **several tabular data formats** (csv, xls, xlsx, ods, json);

- ✓ Automatically **detects the NUTS version** of input data;

- ✓ **Various covariate options**: population, built-up, and regional area (fully revised for the August 2022 version).
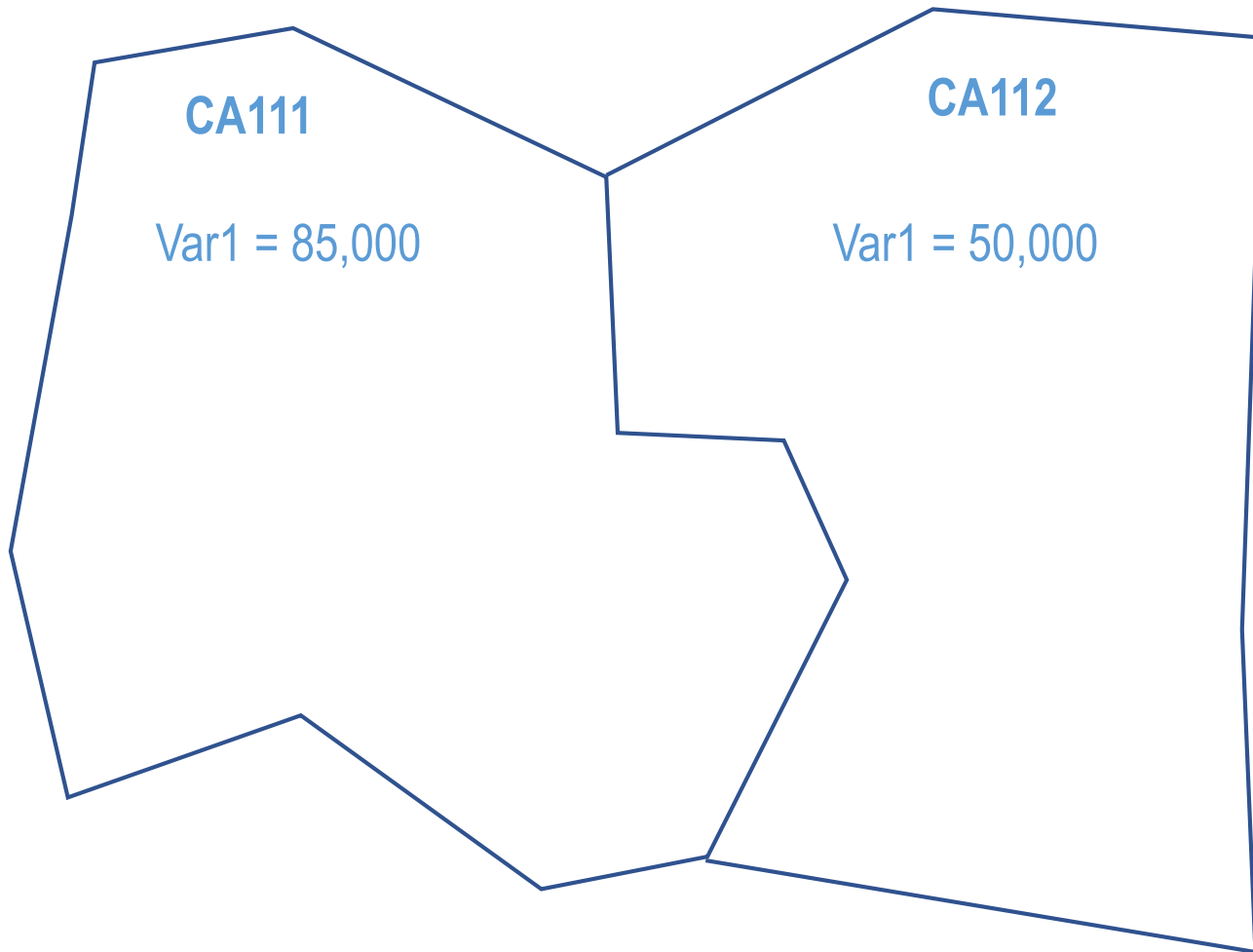
NUTS Converter

Development time-line

- ✓ Mid-2018: Desktop prototype (tool in ESRI ArcGIS)

- ✓ Mar 2019: Web tool release

- ✓ Sep 2019: Added conversion at NUTS1 level

- ✓ Nov 2019: Added possibility to convert variables in relative values

- ✓ Jan 2020: Added possibility to convert multi-dimensional tables

- ✓ Aug 2022: Added conversion for the new NUTS 2021; full revision of conversion matrices.
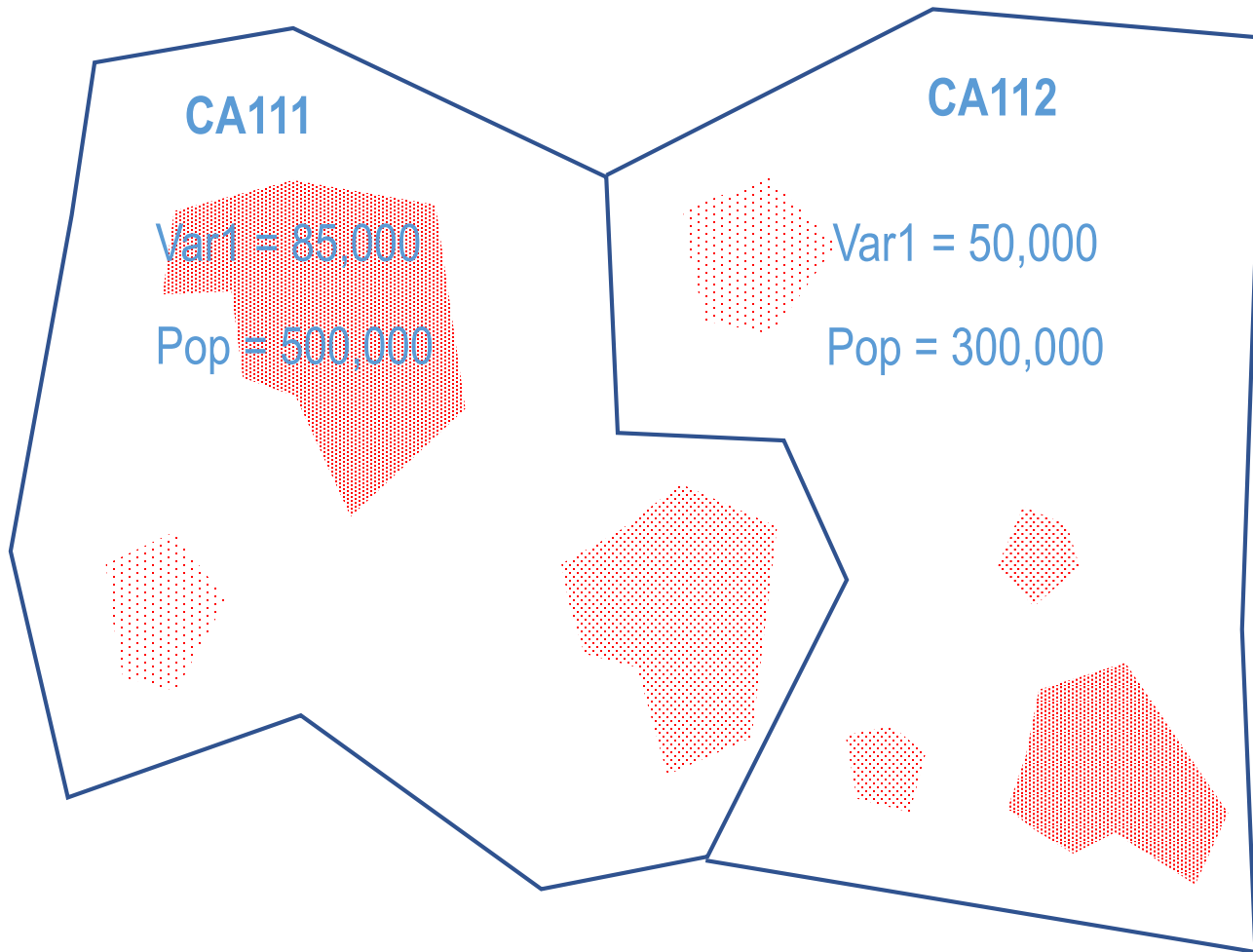
Method

- Dasymetric areal interpolation:

  - Set of pre-calculated look-up matrices establishing the relationship between regions of different NUTS versions;

  - Relationships are based on the geographical overlay between NUTS versions and the underlying distribution of a covariate available at high spatial resolution (100 x 100 metre).

- Threshold for detection of spatial differences between boundaries = 1 km^2. If spatial difference is between 1 and 5 km^2, presence of population or artificial surfaces is required for it to be considered a 'real' change between NUTS boundaries.

Calculation example 1: Conversion of variable in absolute values

CA111

Var1 = 85,000

CA112

Var1 = 50,000

European Commission

Calculation example 1: Conversion of variable in absolute values

CA111

Var1 = 85,000

Pop = 500,000

CA112

Var1 = 50,000

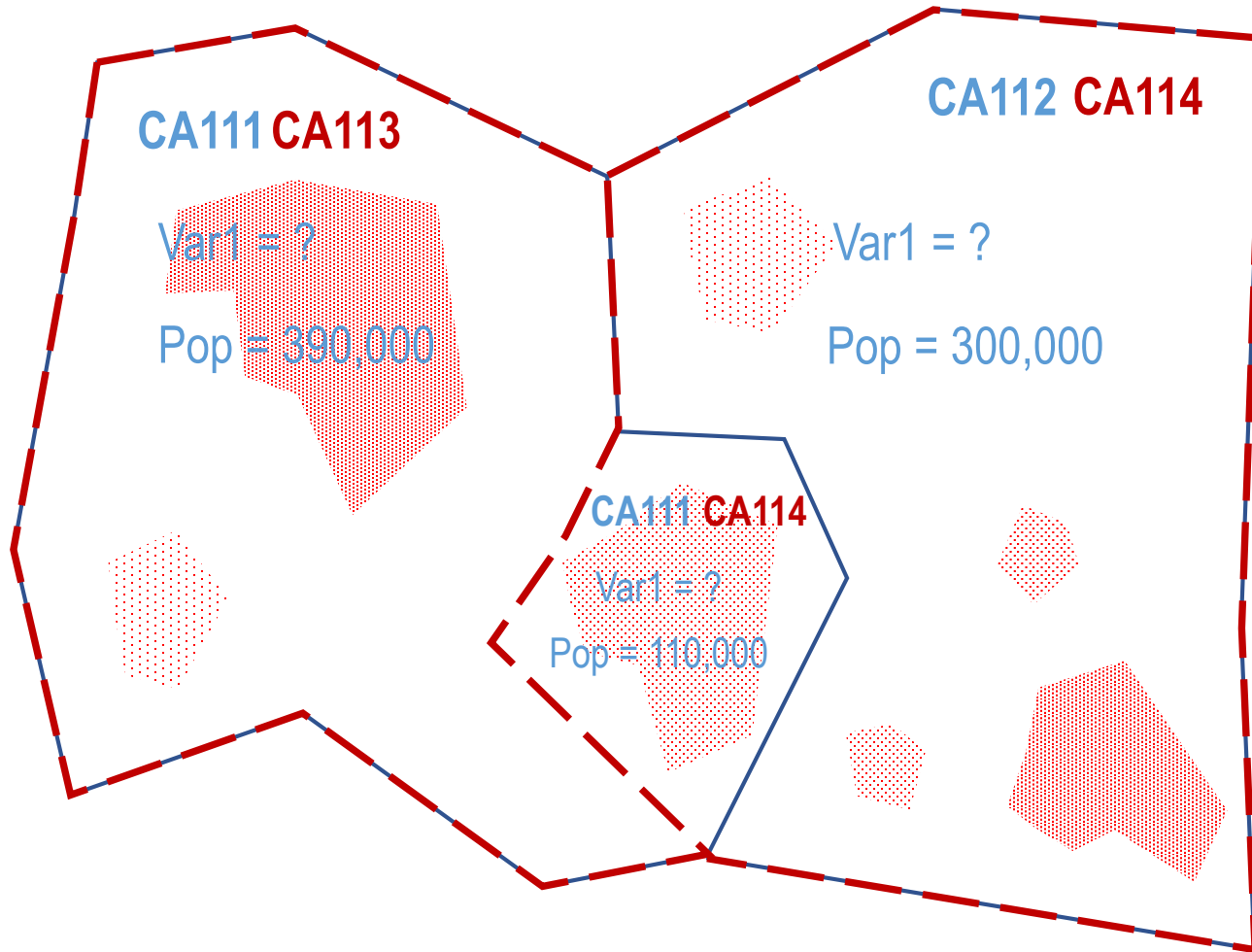Pop = 300,000

Code	Pop	Abs_var
CA111	500000	85000
CA112	300000	50000

Population distribution (ancillary data, usually grid based at a resolution of 100 x 100 m)

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Calculation example 1: Conversion of variable in absolute values

Var1 CA111CA113 = 85,000 * (390 / 500) = 66,300

Var1 CA111CA114 = 85,000 * (110 / 500) = 18,700

Var1 CA112CA114 = 50,000 * (300 / 300) = 50,000

Code1	Code2	Pop	Abs_var
CA111	CA113	390000	66300
CA111	CA114	110000	18700
CA112	CA114	300000	50000

Calculation example 1: Conversion of variable in absolute values

CA113

Var1 = 66,300

Pop = 390,000

CA114

Var1 = 68,700

Pop = 410,000
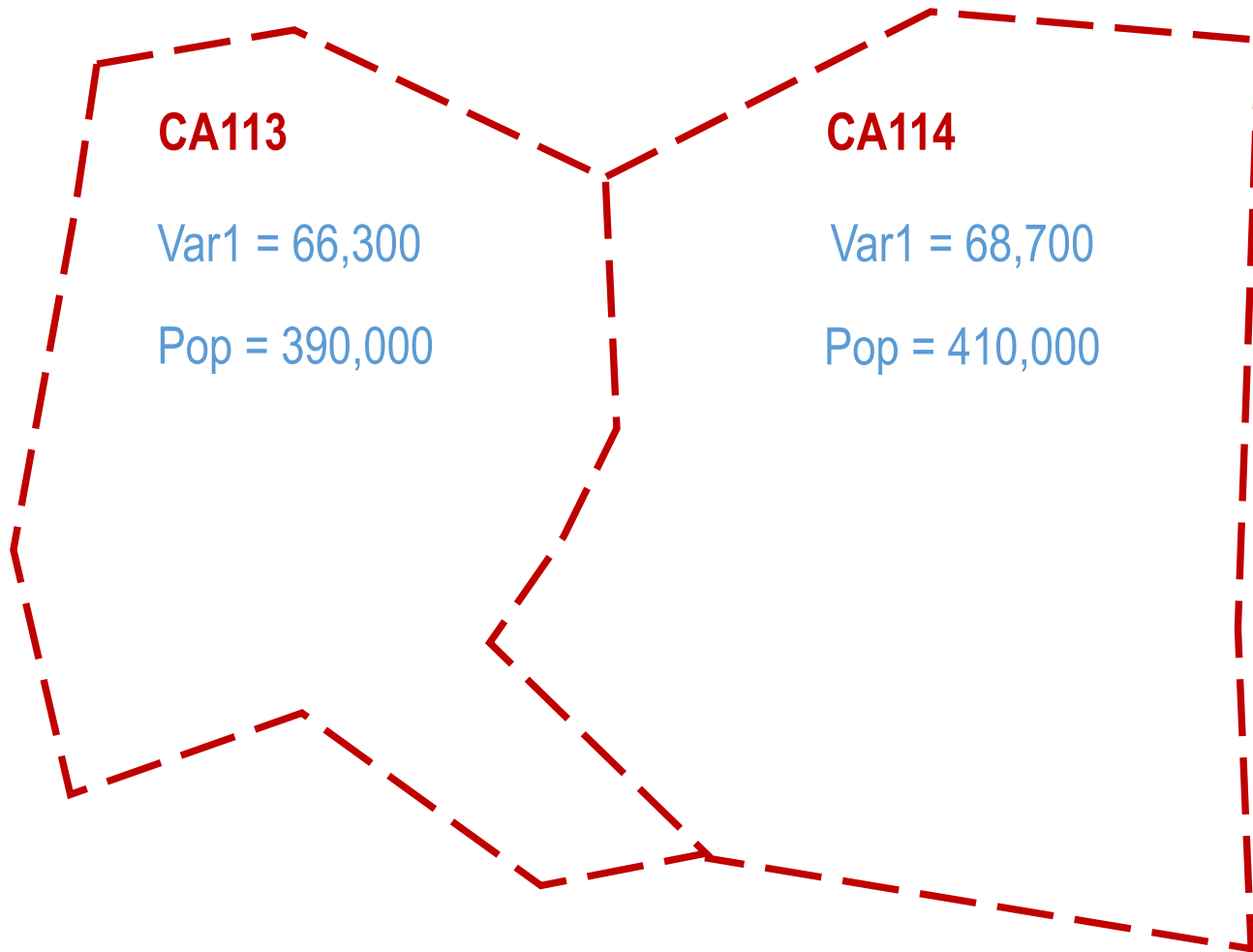
Var1 CA113 = 66,300

Var1 CA114 = 18,700 + 50,000 = 68,700

Code	Pop	Abs_var
CA113	390000	66300
CA114	410000	68700

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Calculation example 2: Conversion of variable in relative values

CA111

Var2 = 8%

Pop = 500,000

CA112

Var2 = 11%

Pop = 300,000
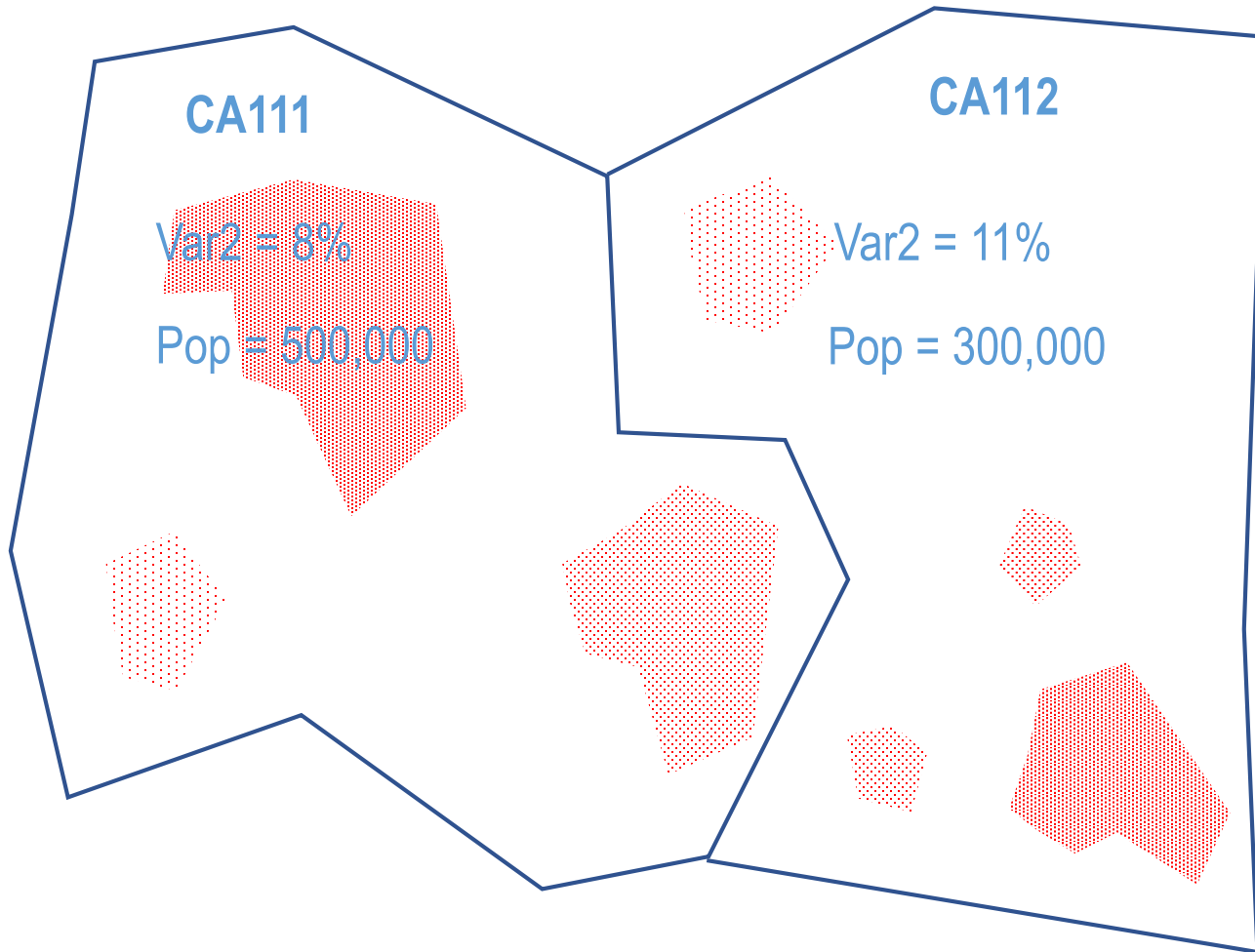
Code	Pop	Ratio_var
CA111	500000	8
CA112	300000	11

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Calculation example 2: Conversion of variable in relative values

CA111 CA113

Var2 = 8%

Pop = 390,000

CA112 CA114

Var2 = 11%

Pop = 300,000

CA111 CA114

Var2 = 8%

Pop = 110,000

Var2 CA111CA113 = 8%

Var2 CA111CA114 = 8%

Var2 CA112CA114 = 11%

Code1	Code2	Pop	Ratio_var
CA111	CA113	390000	8
CA111	CA114	110000	8
CA112	CA114	300000	11

Calculation example 2: Conversion of variable in relative values

CA113

Var2 = 8%

Pop = 390,000

CA114

Var2 = 10.2%

Pop = 410,000
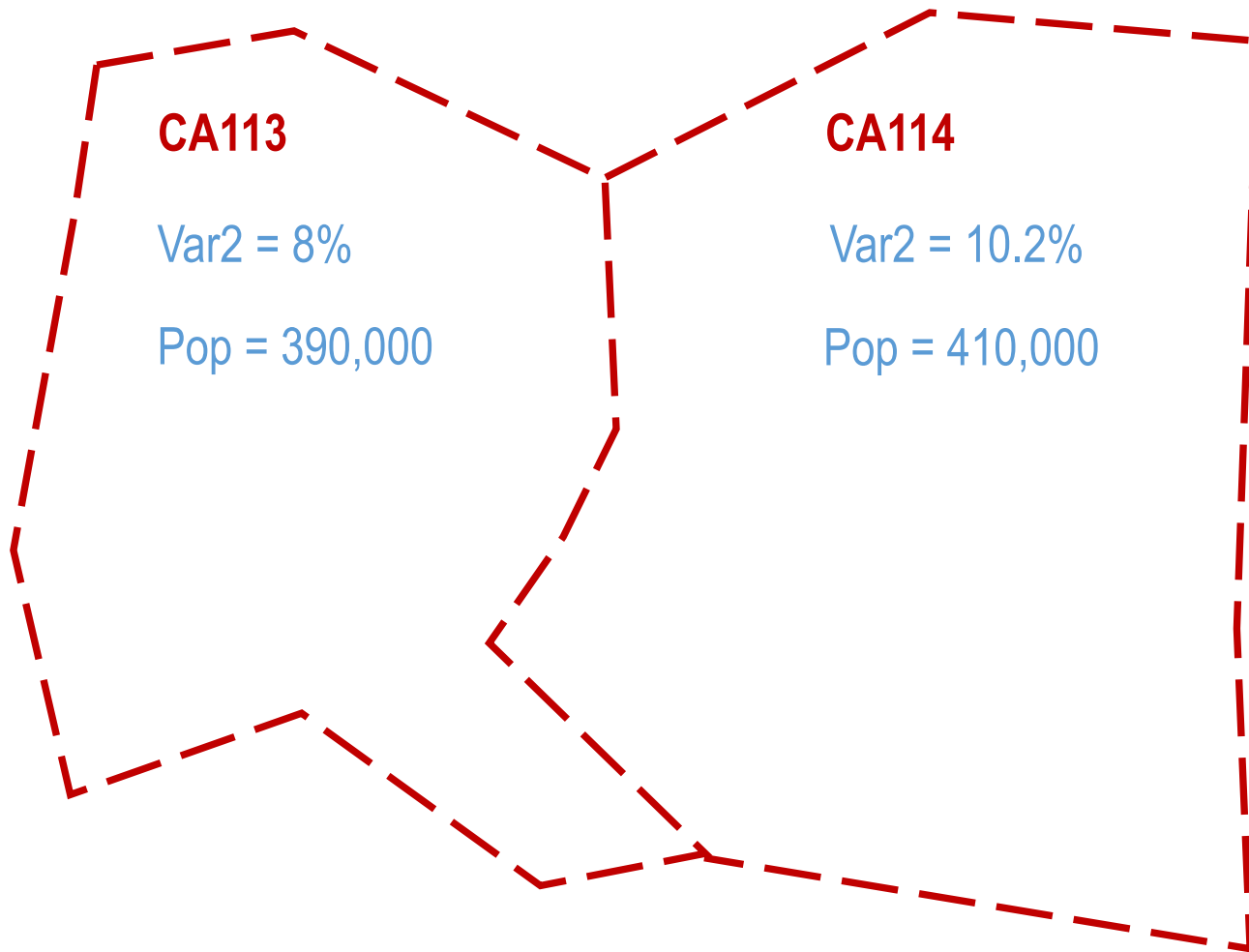
Var2 CA113 = (8 * 390) / 390 = 8

Var2 CA114 = [(8 * 110) + (11 * 300)] / 410 = 10.2

Code	Pop	Ratio_var
CA113	390000	8.0
CA114	410000	10.2

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Disclaimer

The European Commission Joint Research Centre (JRC) developed and maintains this tool to help users of statistical data resolve in a practical manner inconsistency of statistics reported at different NUTS versions. While this tool is designed to be as scientifically rigorous as possible, it is in no way intended to replace official statistics. If errors are brought to our attention, we will address them in a timely fashion. However, the European Commission accepts no responsibility or liability whatsoever for the use which may be made of the tool and/or its results.

Citation

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