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Harmonised population time-series (1990-2010) for Europe by means of the OLAP technology

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Text (100 – 500 words)
In the framework of the ESPON M4D and former ESPON 2013 Database project, we have faced the challenge of **combining socioeconomic data**, tipically reported by administrative units, e.g. NUTS, together with other spatial datasets and trying to build **time-series** for a range of years covered by different **NUTS breakdowns**. There has always been the interest from ESPON and DG-REGIO to build a **time-series database on population independent of the different NUTS versions**.
Having a good disaggregated dataset on population was a prerequisite to build a time-series database. When the **GEOSTAT 2006 population grid** was released we were able to use it in order to **redistribute population** from the different available time-series at NUTS3 level complied by ESPON M4D to 1 km2, proportionally to the GEOSTAT 2006 disaggregation.
Once done that, we have integrated the time-series in an **OLAP cube**, which facilitates the querying and analysis of such data by any NUTS breakdown. OLAP stands for On-Line Analytical Processing. It consists on a **multidimensional** data model, allowing complex analytical and ad-hoc **queries** with a rapid execution time. It can be used connecting MS Excel to the .cub file or by means of an online connection to a remote server. We are currently developing more interactive and visual web analysis tools which take profit of the OLAP Cube data model.