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**STATISTICAL OFFICE OF THE
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Joint ECE-EUROSTAT work session
on Population and Housing Censuses¹
(Dublin, Ireland, 9-11 November 1998)

Study topic 3

**NEW POSSIBILITIES FOR TERRITORIAL BREAKDOWNS BY MEANS OF STATISTICS BASED ON
CO-ORDINATES IN AUSTRIA**

Supporting paper submitted by the Austrian Central Statistical²

Summary

I. Problems

1. The statistical and administrative territorial breakdowns already available within the official statistics are too large for the solution of problems of local planning. These statistical areas differ so much in their size and density of characteristics that their statistical analysis and cartographical presentation might lead to wrong conclusions. The choice of the unit of breakdown depends on the task. So the users of GIS want to get as many data as possible of the Combined Census (= Population Census, Housing Census and Census of Non Agricultural Units of Employment) possible on the basis of co-ordinates. But for each building only the number of resident population, number of dwellings and number of non agricultural units of employment are given to the user provided he uses these data only for the formation of individual areas by aggregating them. The user gets characteristics of the resident population only if it numbers at least 30 persons.

1 The papers which are prepared for this work session will be treated in the same manner, as papers that are prepared for seminars.

2 Prepared by Helmut Desoye, Martin Weber and Erich Wonka

II. Small area characteristics

2. Experiences made with co-ordinate based statistics in foreign countries cannot be directly transferred on Austrian conditions. It was therefore decided to find a way suitable to Austrian conditions. Precondition are co-ordinates for each building within the Register of Buildings of the Austrian Central Statistical Office (= Österreichisches Statistisches Zentralamt = ÖSTAT). In collaboration with the Federal Office of Meteorology and Surveying (= Bundesamt für Eich- und Vermessungswesen = BEV) it is planned to take over the co-ordinates of the land register into the Register of Buildings.

3. In this way it is possible to aggregate the statistical data in optional ways. The essential object of small area breakdowns is the presentation of statistical maps. As the expenditure for the breakdown of an area into building blocs and for breakdowns based on these is very high it cannot be done by ÖSTAT. Otherwise the breakdown of a commune into grid squares can be done by ÖSTAT as ordered work.

II.1. Buildings

4. Buildings according to the ÖSTAT definition are edifices standing alone or - in case of coherent built up areas - clearly separated edifices from its neighbours. Their area has to be at least 20 square metres. The cartographical presentation of statistical data on the level of buildings would be the ideal of a small area presentation. But this is not possible because of confidentiality and data protection and because it would require an inspection in the area itself.

II.2. Building blocs and areas based on them

5. Building blocs exist only within densely built up areas of a town which mostly means inner urban areas and core areas of suburbs. With building blocs and their breakdowns the thematical reference is given to the local planning and to the dedication map of areas.

II.2.1. Building blocs

6. A building bloc is an area delimited by streets (or rivers, railways and so on). Clearly delimited building blocs exist only within the more central parts of towns. They are based on the topographical reality and are useful for direct planing measures within the framework of urban renewal.

II.2.2. Subdivided building blocs

7. The problem with the building blocs is the fact that their different size distorts the statistical interpretation. Therefore very large building blocs should be subdivided along lines apt for such a subdivision. If the planner needs statistical information to update the map of area dedication or to prepare it he has to carry over the breakdown into subdivided building blocs which gives solutions and perspectives for the future possibilities of the development of a commune.

II.2.3. Building bloc sides

8. The building bloc side is the part of a building bloc situated on the respective section of a street. The buildings are allocated to these bloc sides by means of their house numbers. Data referring to areas as for instance those for density cannot be used for building bloc sides.

II.2.4. Summed up building blocs because of confidentiality

9. Especially in the case of statistical evaluations from censuses it happens that building blocs have less than 30 inhabitants so that the confidentiality criteria is not met. This means that the building blocs have to be united with neighbouring ones.

II.2.5. Building blocs united to planning areas

10. In the course of the formation of planning areas it is necessary to pay attention to the fact that facilities of services form a unit with their residential areas. They are areas with which the population living there should identify itself.

II.3. Grid squares

11. The delimitations of the grid squares are defined by the grid squares and have no relation to topographical realities the distribution of objects is represented quite well. Another advantage of the grid squares is the fact that depending on the task they may be enlarged or reduced in size.