

Scheme 3 - Core Metadata base module

The Core Meta data base module is one of the main parts of the new system and can be considered as the core of the system. Meta data base data handled by this module are used by all other modules of the system.

The data in the Meta data base, in essence, is information about Micro and Macro data i.e. description of the numerical data within the statistical production process and the real world meaning of this numerical data. Also the system Meta data base contain description of statistical surveys itself, their content and layout, description of validation, aggregation and reports preparation rules.

The system ensure that Meta data base is used not only as knowledge base for statisticians and users, but also as the key element for the creating universal, common, programming-free approach for different statistical surveys data processing instead of development of software specially for certain survey, where every change of the survey will require a corresponding adaptation of the programs source code, and where it will be also necessary to develop new software for every future survey.

System users can easy query necessary data form Micro data /Macro data bases navigating via Meta data base. Meta data are widely used for data analysis and dissemination.

► Structure of Micro data (observation data) [Bo Sundgren model]

Objects characteristics:

$$C_o = O(t).V(t)$$

where: **O** - is an object type; **V** - is a variable; **t** - is a time parameter. Every results of observations is a value of variable (data element) – **C_o**

All variable values have object (respondent) requisites added, which can be called vectors or dimensions. By analysing all the respondents' population, these dimensions are used for creating different groupings and for data aggregation.

In business statistics the following respondents requisites (vectors) for example can be added to each value of variable:

- Main kind of Activities (NACE classification);
- Kind of Ownership and Entrepreneurship (IUFIK classification)
- Regional location (Regional classification - ATVK)
- Employees group classification
- Turnover group classification.

► Structure of Macro data (statistics)

Macro data are the result of estimations (aggregations). The estimations are made on the basis of a set of Micro data.

Statistical characteristics:

$$C_s = O(t).V(t).f$$

where: **O** and **V** - is an object characteristics; **t** - is a time parameter, **f** – is an aggregation function (sum, count, average, etc) summarizing the true values of **V(t)** for the objects in **O(t)**. The structure for Macro data is referred in Meta data base to as box structure or “**alfa-beta-gamma-tau**” structure.

For data interchange **alfa** refers to the selection property of objects (**O**), **beta** – summarized values of variables (**V**), **gamma** – cross classifying variables, **tau** – time parameters (**t**).