

Distr.  
GENERAL

CES/SEM.47/24 (Summary)  
9 January 2002

Original: ENGLISH

STATISTICAL COMMISSION and  
ECONOMIC COMMISSION FOR EUROPE

COMMISSION OF THE  
EUROPEAN COMMUNITIES

CONFERENCE OF EUROPEAN STATISTICIANS

EUROSTAT

**Joint UNECE/Eurostat Seminar on Integrated Statistical  
Information Systems and Related Matters (ISIS 2002)**

(17-19 April 2002, Geneva, Switzerland)

Topic IV: Ways of making statistical information systems more responsive to users

**THE USE OF STATISTICAL METADATA MODELLING AND RELATED TRANSFORMATIONS TO  
ASSESS THE QUALITY OF STATISTICAL REPORTS**

**Invited paper**

Submitted by the University of Athens<sup>1</sup>

**Summary**

1. The amount of information processed by Statistical Institutes is constantly growing, as demands for well-timed data, of high quality are increasing. Since institutes operate under strict budgets and cannot indefinitely increase the workload of their personnel, they are forced to look for different ways of extending the automation of their internal procedures. This attempt is influenced by the use of *Internet*, as well as by the construction of new *metadata-enabled* Statistical Information Systems (SIS).

2. In this paper we discuss the advantages of collecting and using structured metadata from advanced systems for automating the statistical processing of information, which is necessary for building web sites that can support ad hoc user queries; a feature that is currently missing from almost every NSI's web site. Since a prerequisite for building such metadata-enabled systems is the use of a semantically rich metadata model, an example of a statistical metadata model developed under the IPIS project is illustrated using the Universal Modelling Language (UML), while the properties and semantics of this model are further examined. Furthermore, two types of transformations: mapping transformations and methodology-correcting ones that can be applied on specific classes of the model are discussed. Additionally, the simultaneous manipulation of both data and metadata is demonstrated by introducing a set of operators, including the addition and selection of data, the addition and removal of a variable and the grouping transformation. As a case study, we demonstrate how a statistical office can use the presented framework to build a web site offering ad hoc query capabilities to its data consumers.

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