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**EUROPEAN COMMISSION
STATISTICAL OFFICE OF THE
EUROPEAN COMMUNITIES (EUROSTAT)**

**ORGANISATION FOR ECONOMIC
COOPERATION AND DEVELOPMENT (OECD)
STATISTICS DIRECTORATE**

Joint ECE/Eurostat/OECD Meeting on the Management of Statistical Information Systems (MSIS)
(Geneva, 17-19 May 2004)

Topic (iii): Open source and software consortia in statistics

THE PC-AXIS SOFTWARE FAMILY – “CONSORTIUM” FOR OUTPUT DATABASES

Invited Paper

Submitted by Statistics Sweden, Sweden¹

Summary

1. PC-Axis is a suite of software created to serve as a platform for coherent, efficient, and user-friendly dissemination of official statistics. It is ideal for national statistical offices and other organizations engaged in the dissemination of social and economic statistics. The suite supports the whole specter of dissemination products: comprehensive on-line databases, off-line electronic products such as CD-ROM's, and publications on paper or on the web.
2. PC-Axis was developed for the 1990 Swedish Population Census, to be used by the main users of the results of the Population Census. The PC-Axis file format is very metadata rich and is a file format in plain ASCII that mirrors the ideas used in the Axis system and its successor the PX macro Meta model. The PC-Axis file format has the extension PX, which explains the names of some of the products in the PC-Axis family.
3. Keywords to describe the PC-Axis family are (with relevant software mentioned within parentheses):
 - Dissemination of statistics online (PX-Web or PX-Web components) and off line (PC-Axis Main module);
 - Dynamic tables – pivot function (PX-Web and PC-Axis Main module);
 - Conversion to different file formats (PX-Web and PC-Axis) i.e. Excel, Lotus, txt, etc. and for PC-Axis only Gesmes/TS (and XML when a DTD is available);
 - Output database (PC-Axis database and/or SQL database);
 - Many dimensional Matrices/Cubicles/Boxes (PC-Axis files and SQL database);
 - Metadata rich data model in SQL and in the PC-Axis file format;
 - Windows (PC-Axis) and Internet (PX-Web);

¹ Prepared by Lars Nordbäck (lars.nordback@scb.se).

- PC-Axis files in a catalogue structure forms a PC-Axis database and is accessed without using SQL (PC-Axis Main module and PX-Web);
 - SQL-extension (Sybase/Oracle/MS-SQL-Server) for a SQL database structured according to the common macrometa data model (PC-Axis SQL and in some cases PX-Web components and PC-Axis/PX-Batch components in Internet User Interface to a macro database);
 - Grouping facilities (PC-Axis and PX-Web);
 - Graphs (PX-iGraph);
 - Maps (PX-Map and PX-iMap);
 - Production of PC-Axis files from different sources (PC-Axis SQL, PX-Batch, PX-Make, PX-Edit and the Australian SuperStar/SuperCross);
 - Tables direct from a SQL or a PC-Axis database inserted into MS-Word or MS-Excel (PX-Publ).
4. The programs in the family are the following: PC-Axis Main module, PC-Axis SQL Macro, PC-Axis SQL Micro, PX-Batch, PX-Web, PX-Check, PX-Publ, PX-Publ Macros, PX-Make, PX-iGraph, PX-Map, PX-iMap and PX-Edit.
5. Users of the PC-Axis family software are Algeria, Basque country, Bolivia, Brazil, Croatia, Denmark, Estonia, UN/ECE, Faroe Islands, Finland, Greenland, Iceland, Ireland, Kuwait, Latvia, Lithuania, Namibia, Norway, Philippines, Slovenia, South Africa, Spain, Sweden (10 sites) and Uganda.
6. The structure of the “Consortium” can be described as follows:
- Statistics Sweden as the leading country managing the cooperation;
 - The PC-Axis International Reference Group for all parties outside Sweden using PC-Axis as a dissemination tool;
 - A Nordic kernel for cooperation in the output database area where Denmark, Norway and Sweden are using the same data model;
 - A Swedish user group for the use of PX-Web applications in other organisations in Sweden.
 - An internal user group at Statistics Sweden;
 - A board where some of the main end users are consulted concerning the development of Sweden’s Statistical Database;
 - A steering committee for the Data Base Project at Statistics Sweden, where PC-Axis constitutes one of the important ingredients.
7. The stepwise development for dissemination of statistics on the web is:
- A simple way of establishing an Internet based statistical Database is to make PC-Axis files using PX-Make and put them together with PX-Web on the website;
 - A further step then can be taken establishing a SQL based output database using the Macro Meta data model;
 - Internal use of the PC-Axis SQL additions making PC-Axis files for the PX-Web;
 - Make publications on paper or on the web using PX-Publ;
 - Establish a SQL user interface using components from PC-Axis SQL saved queries, PX-Batch and PX-Web.
8. The following programs are possible to transfer to other organizations for statistics dissemination if a license is agreed with Statistics Sweden: PC-Axis Main module, PX-Web, PX-Make, PX-Edit, PX-Map, PX-iMap. Under specific circumstances, the SQL-related programs PC-Axis SQL, PX-Batch and PX-Publ also can be transferred. For more information and references visit the website <http://www.pc-axis.scb.se/>
9. Questions on the PC-Axis software family and the license conditions for the use of the software for dissemination of statistics can be sent to lars.nordback@scb.se.