



**STATSKONTORET**

*Swedish Agency for Public Management*

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*Conference session topic:*  
**Standards & Interchange**

*Title:*  
**Standard Messages for Interchange of Records - A Concept to Improve Interoperability**

**The Current State**

Since many years, organisations exchange electronic data to conduct their business. Most of these connections have been established based on bilateral agreements and they rely on tailor made designs to achieve the technical, semantic and organisational interoperability needed. When once set up, the interchange often operates smoothly, but the cost to get there may in many cases be prohibitive. To-day's solutions may also be error prone and sensitive to changes, as the existing implementations mostly depend on the internal design structures of the systems that are interconnected.

Supported by a number of technical specifications and public procurements of IT products and services providers, e.g. for secure authentication and data transfer via the Internet, the Swedish public sector is fairly well equipped with a broad tool-set to solve technical interoperability needs. Although the demand for extended information exchange seems to be growing fast, the actual number of implementations of new use cases is increasing too slowly. An analysis of the current situation has indicated that one impediment for a faster implementation of the interchange of electronic records between public sector organisations is still the effort to reach the bilateral agreements needed. The projects are now also focusing more on the syntax and the semantics of the information structures to be exchanged than on the questions about the technical interoperability issues. Electronic identification and signature technology as well as security issues for the data transport level via the Internet are still major concerns, but we claim to be offering adequate solutions for this with the practice proven e-id and e-Link



products and the so called Infra Service provided by some leading private partners.

We discussed the situation with a number of the central government agencies, like the Tax Board, the Company registry, the Land Registry and others that are collecting and providing digital information. Pieces of their data base information may be necessary for the case processing in many other parts of the public sector, also on regional and local level. It may also be requested from or needed to conduct business in the private sector. Extracts from public data bases are used in many business processes, e.g. by banks, insurances, accountants, brokers, car dealers and many others. They all want to set up individual connections to the public databases, which often involves tedious and costly implementation work on both sides. However, the needs seem to follow the good old 80/20 rule – 80% of the use cases involve the same 20% of the records available – perhaps even less.

### **The Concept**

Based on those facts, the idea came up to try to identify a limited set of those frequently exchanged message types, to model those information sets, to structure them into re-usable core components as far as possible and to publish them as XML schemas, as an open source, publicly available to all interested parties, including consultants and software houses.

Examples of standard messages could be extracts from public records about citizens, students, companies, land properties, motor vehicles, driving licenses, financial reports and so on. An important requirement was to facilitate the correct and intended use of these interfaces to public databases. To achieve that, it is necessary to clarify and publish the legal base to allow this way of direct electronic access to specific public data (purpose, restrictions, fees etc.). The method chosen was to develop and publish a check list and a template for what should be considered and included in the process to develop this kind of license agreements, with individual adaptations possibly required for each registry and for each standard message purpose or type.

### **The Records Management View**

From the records manager's and archivist's perspective, the electronic traffic between different authorities often appeared to be out of control. These new alternative communication channels had been established by IT people, in parallel with the traditional, paper based routines, and the records and archival status of these messages was often diffuse. An advantage with the introduction of the concept of electronic standard messages in this case



would be that the structuring, publishing and licensing process required made these electronically exchanged information sets more visible. Consequently, their records status would be better recognised.

### **From Idea to published recommendation**

The concept was developed in 2004 and then presented to the newly inaugurated “National Interoperability Board” of Sweden. They decided to start the process to make the use of standard XML-based message formats for frequently interchanged electronic records to a recommendation for the whole public sector in Sweden. This process involved an extensive referral for consideration to the authorities concerned and to the IT industry, resulting in a number of comments and suggestions for improvements. The first version of the recommendation was finally approved and published in February 2005 (available at the web site [http://www.e-namnden.se/enamnden/templates/Page\\_\\_\\_\\_863.aspx](http://www.e-namnden.se/enamnden/templates/Page____863.aspx) , only in Swedish language version).

The recommendation consists of three parts:

Guidelines and best practices for XML Schema development,  
Guidelines how to use the license agreement template and a  
Check list for the legal terms of information access and use.

### **State of implementation**

Before and after publication, the standard messages recommendations have been presented and discussed at a number of conferences and seminars for project-, IT- and records managers in the public sector, including members of the Swedish archivist community.

The national tax board, the company register, and some regional and local government authorities are now in the progress of designing their first cross organisational applications, with records interchange based on the new standard message format recommendations. A number of projects are being developed in the spirit of the standard message concept, but at the moment (Aug 2005), we are still waiting for the first fully compliant application to go live.

### **Problems to be solved**

We are aware that this is a long term endeavour and there are of course some open problems to deal with before we will reach a critical mass of standard message applications implemented, up and running.



First, we need to get the word spread about the general idea of the concept, and to get a wider understanding and acceptance of the advantages to be gained. Marketing and motivation are the first requirements to be fulfilled.

Second, the proper applications need to be identified and the systems development projects involved must be defined, designed and funded. The initial investment to switch from older structures to modern, XML-based technology must be motivated and the project teams involved may need additional education and training.

Third, it appears that it is not always a trivial task, from the legal point of view, to introduce new electronic connections between independent bodies. External, direct access to many public data bases is strongly restricted and the different authorities have their own legal frameworks that they must adhere to. The legislation is sometimes not adapted to the new electronic world and many legal officers do not feel comfortable with applying paper based rules and traditions to an abstract and unfamiliar new technical environment. Thus, the cultural and legal obstacles must not be underestimated.

Fourth, the XML syntax oriented recommendations have proven not to be enough for the parties involved to agree upon exactly how the information objects to exchange shall be named, structured and interpreted. The lack of semantic interoperability becomes more and more evident and the awareness and demand for common terminology analysis and information modelling is growing. Many terminology projects are also initiated all over the world and running on local, regional, national and international levels, but the problem is that there are so many of them, overlapping and running in parallel, without coordination and transparency

Most of the issues listed above are not mainly technical but administrative or organisational, and they have to do with insufficient information and training resources, unclear or overlapping responsibilities, missing approval and publication processes, lack of proper versioning and change management practices etc.

We also need to deal with many different views of how to set priorities, of top-down vs. bottom-up strategies for terminology and modelling work, of different process an information model approaches etc.

Harmonisation with existing standards and initiatives are other important tasks, to minimize duplication of work and conflicting approaches.



This cannot be entirely avoided, as some sectors already have developed and agreed upon working models, but the important thing is to be aware of these differences and to find pragmatic ways of co-existence.

### **The way forward**

We now continue our work with information and marketing activities.

Further, we focus more on terminology, metadata and information modelling standardisation at the moment than on the XML-based syntax issues, to reach a consensus around the generic approach to establish standardised formats for frequent interchange of records.

For this purpose, the National Interoperability Board has initiated a new project in this autumn, where some of the major authorities and public data base owners are requested to cooperate in a terminology and modelling pilot project. The task is to identify and agree upon the definitions of a few central core components, that are urgently needed to agree upon to come forward in the practical implementation process of some important standard messages.

We also increase our efforts to investigate and cooperate with similar national and international activities. In this area, we see the CEN/ISSS eGovernment Focus Group, the CEN/ISSS Administrative Nomenclature Workshop (ADNOM) and the EU Commission's IDABC XML Clearing House initiatives as important platforms.

The DLM Forum network could certainly also play a significant role to spread and promote those ideas in the community of European national archives and eGovernment organisations as well as to the consultants and IT industry members present.



*About the author:*

**Karl Wessbrandt** is an advisor at Statskontoret, the Swedish Agency for Public Management, a central government agency with the task to promote the development of a just, democratic and efficient public sector in Sweden.

Karl is Statskontoret's representative in the DLM Forum and he is the coordinator of the Swedish "XML Academy" Network. He is a delegate of the ISO TC46/SC11 Archives/Records Management standardization committee and a member of the CEN/ISSS eGovernment Focus Group. He is also working in the expert groups of the European Commission's IDABC Program on Open document formats, Interoperability and XML issues.

In the years 1993-2001 he was an independent IT management consultant, specialising in process and information management. Before that he held various management positions in the IT industry.

He is a frequent conference speaker and author of reports and articles on interoperability, document and records management. He holds a Bachelors degree in Informatics from the University of Göteborg. In 1997 he was awarded the AIIM Master of Information Management.