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Amendment 1

Power system control and associated communications – Deregulated energy market communications

Commission Electrotechnique Internationale
International Electrotechnical Commission
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For price, see current catalogue

FOREWORD

This amendment has been prepared by IEC technical committee 57: Power system control and associated communications.

The text of this amendment is based on the following documents:

Enquiry draft	Report on voting
57/556/Q	57/576/RQ, 57/576A/RC

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2003. At this date, the publication will be

* reconfirmed;
* withdrawn;
* replaced by a revised edition, or
* amended.

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0.1 Reference documents

Add the following reference to the list:

ISO/IEC 14662, *Information technology – Open-edi reference model*

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Add the following new annex E:

Annex E

Use of Internet technologies

E.1 Technological advancement

The report gives an overview of market models at the time of writing and possible communication platforms based on UN/EDIFACT messages or Internet technologies as HTML over HTTP. Whereas EDIFACT messages were widely used (e.g. in the Edic System of Scandinavia and now also in some other European countries and elsewhere), the Internet approach at the time of writing had the drawback that no standardized messages in HTML were available leading to proprietary solutions. Also security of the Internet was an issue.

In the meantime the Internet Language Definition Standard XML (eXtensible Markup Language) was defined by W3C as a subset of SGML (Standard Generalised Markup Language). With XML applications can share data using a Schema as DTD (Document Type Definition) or XSD (XML Schema Definition) which defines the grammar. One of the outstanding features of XML is that data can be given a name tag which makes it easier to map data to data bases. Whereas the main purpose of XML is data transmission between applications and data bases the content can also easily be visualized with an Internet Browser using CSS (Cascaded Style Sheets) or XSLT (Extensible Stylesheet Language for Transformation) together with CSS

UN/EDIFACT and XML are not competing solutions and can be combined in what is now called "Web-EDI". Already regional new initiatives are taken to define their own XML/EDI solutions. Many XML architectures have been proposed, so far none of these is a global Standard and they compete against each other. The most promising architecture seems to be ebXML (electronic business XML) supported by UN/CEFACT (The United Nations Centre for Trade and Electronic Business) which is intended to become an International Standard. This architecture can be combined with EDIFACT messages mapped to XML. The mapping is already done by CommerceNet, XML/EDI Group and ANSI ASC X12 Working Group and will be soon available in the Internet. Alternatively, the content of EDIFACT messages is re-engineered using so called core components from a future and hopefully standardized global e-business XML vocabulary under the auspices of UN/CEFACT.

Business processes can be modelled with the meta language UML (Unified Modeling Language of Open Management Group (OMG)). Figure E.1 shows the modelling with UML and the production of XML Schemas with the XMI (XML Meta Interchange) of OMG.
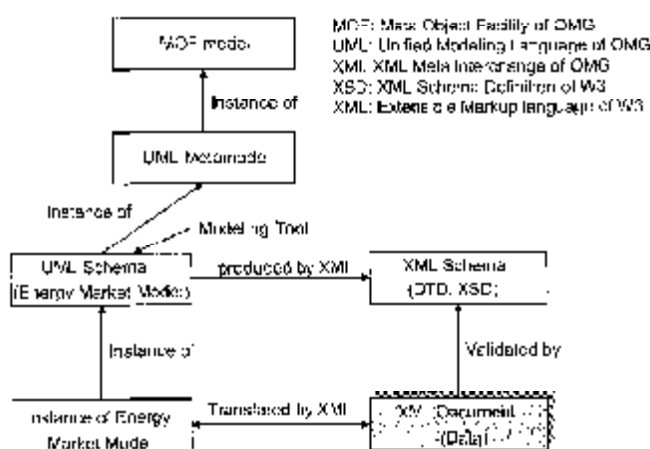

Figure E.1 – UML-Modelling and XML Schema

Electronic business with XML-messages is estimated to have the potential to become a big global market within the next couple of years if a single global International Standard can be successfully implemented. Given the potential of XML it will be wise to base the communication of electricity markets on the coming XML Standard Architecture of UN/CEFACT. This allows vendors to offer products across different markets with lower cost. Using general used platforms has also advantages regarding implementation, test and future development. In the meantime, besides EDIFACT, also non-standard XML solutions are possibly which may migrate in the future to the Standard Architecture.

E.2   Generic e-business architecture

The technical Standard Architecture of e-business based on XML should follow the "Open-edi reference model" (ISO/IEC 14662) and the e-business semantic of the UN/CEFACT UMM (Unified Modeling Methodology), Document N090, where applicable. The content and structure of existing EDIFACT messages already used for the electricity market should be taken into account. Whereas EDIFACT is more intended for large business, the future XML communication architecture should be scalable and also affordable for small business.