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- Approved

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Telecommunications and Information Exchange Between Systems

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ISO/IEC JTC1/SC6 Secretariat Ms. Jooran Lee, KSA (on behalf of KATS) Korea Technology Center #701-7 Yeoksam-dong, Gangnam-gu, Seoul, 135-513, Republic of Korea ; Telephone: +82 2 6009 4808 ; Facsimile: +82 2 6009 4819 ; Email : jooran@kisi.or.kr	

Liaison statement to SWG for Technology Watch, SC 29, SC 32 and SC 34 from SC 6 titled "Comments on Presentation at TWG on Efficient Binary Representation of XML".

The ASN.1 group (joint work between JTC 1/SC 6/WG 9 and ITU-T SG 17 Q.10 producing ISO/IEC International Standards and ITU-T Recommendations as joint texts) noted the circulation of a presentation to the Special Working Group for Technology on "Efficient binary representation of XML" circulated in accordance with JTC 1 Gold Coast resolution 45, to SC 6, SC 29, SC 32 and SC 34 to assess potential opportunities.

The presentation slides reflect a very personal view on a matter that is an important current topic of research and standardization, and concentrate on one approach which is vendor-specific and not part of any standard. The ASN.1 group is responsible for the development and maintenance of several International Standards closely related to the topic of the presentation and would have certainly provided substantial negative comments and a more balanced view if we had been consulted before its circulation.

The ASN.1 family of International Standards (ISO/IEC 8824, ISO/IEC 8825, and ISO/IEC 24824, and their equivalent ITU-T Recommendations) provides solutions for a wide range of use cases in which the verbosity of XML and the cost of encoding/decoding XML are a problem.

The ASN.1 notation (specified in ISO/IEC 8824), the Packed Encoding Rules (specified in ISO/IEC 8825-2), and the standard mapping from W3C XML Schema to ASN.1 (specified in ISO/IEC 8825-5), when used in combination, can provide an excellent reduction both in size of the encodings and in CPU usage whenever a stable XSDL schema is available and shared among all the communicating parties. The resulting XML documents fully conform to the schema.

On the other hand, Fast Infoset (ISO/IEC 24824-1, developed with input from several vendors and not just a product by Sun Microsystems as incorrectly stated in the presentation) achieves a very good balance between compactness, processing speed, ease of use, and simplicity of implementation, and can be used in a large variety of applications to efficiently exchange XML documents of all kinds.

It is hard to imagine a real situation where the use of XML (with or without XSDL) is being required but neither Fast Infoset nor ISO/IEC 8824 with ISO/IEC 8825 provide sufficient compactness and encoding/decoding speed for the application.

A general recommendation from the ASN.1 group would be for users to adopt an approach based on ISO/IEC 8824 and ISO/IEC 8825 whenever a stable XSDL schema is available to all communicating parties, and an approach based on ISO/IEC 24824-1 (Fast Infoset) whenever more flexibility is needed. (This is based on the assumption that the use of XML or XSDL in a given application is a requirement. If it is not, then an alternative approach is to define the data structures directly in ASN.1 notation instead of XSDL, and then use the standard encoding rules of ASN.1 to encode the data.)

One of our concerns with the presentation is that it discusses the problem of XML's inefficiency mainly within the context of the World Wide Web Consortium's ongoing work on binary XML, and fails to discuss the existing International Standards that address exactly the same problem. This can cause confusion for someone who is not familiar with the work of both organizations (the W3C's working group on Efficient XML Interchange and ISO/IEC JTC 1/SC 6 or ITU-T SG17) to evaluate the best technology to deploy to address the various requirements in this area.

We believe that the problem of XML's inefficiency is already adequately addressed by the existing standards of the ASN.1 family. This is not to say that a better technology cannot or does not exist. However, any discussion about potential international standardization of, or reference by international standards to, an incompatible alternative technology that addresses the same problem should take into account the existence of those International Standards. There should also be compelling reasons for further standardization or use of alternative technologies, as well as a reasonable prediction that the resulting benefits to the user community will be larger than the potential damage caused by the existence of mutually incompatible standards.

The TWG, SC 29, SC 32 and SC 34 are urged to consult with SC 6 experts in any further work in this area.