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ECMA International

Standardizing Information and
Communications Systems

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ISO/IEC finishes fast-track standardization of ECMA standards for C# programming language and Common Language Infrastructure

Global standards for application development of Web services and other types of applications completed by worldwide standards body

Geneva – 2 April 2003: The International Organization for Standardization and International Electrotechnical Committee (ISO/IEC) today jointly published final international standards enabling the vendor-neutral programming of Web Services. These standards include C# (pronounced C-Sharp), an object-oriented programming language, and the Common Language Infrastructure (CLI) standard as well as the Common Language Infrastructure (CLI) technical report. These publications were enabled by ECMA International, which secured industry support and fast-tracked the specifications through the relevant ISO procedures. Specifications for each technology were developed by Microsoft and co-submitted to ECMA by Microsoft, Intel and Hewlett-Packard.

"The adoption by ISO/IEC of these ECMA standards is a defining moment in the history of ECMA International, a standards setting body formed more than 40 years ago, and a milestone in the standardization of innovative programming languages," said Jan van den Beld, Secretary General of ECMA International.

Mr. van den Beld continued, "Microsoft is to be congratulated on giving the industry powerful tools to enable vendor-neutral development of Web Services, which are creating new opportunities for application developers and enterprises alike."

"We're extremely gratified that ISO/IEC has recognized C# and the CLI as public standards," said John Montgomery, director of the Developer and Platform Evangelism Division at Microsoft Corp. "With the ratification of these two application and Web service-development standards by both ECMA International and ISO/IEC, the application development ecosystem has grown richer. Developers are enabled

with core Web services technologies that are endorsed by three of the world's most trusted standards organizations." (See <http://msdn.microsoft.com/net/ecma/>)

"Intel sees the CLI and C# specifications as instrumental in fostering innovation and giving developers more choices." said Colin Evans, Director, System Software Lab, Intel Research and Development. "For example, Intel's Open CLI Library will continue to expand the scope and performance of the standards-based CLI platform". (The Open CLI Library is available at SourceForge <http://sourceforge.net/projects/ocl>)

Ximian CTO and Mono Project leader Miguel de Icaza commented, "The CLI and C# are the most advanced runtime and development technologies available today. The ECMA/ISO standardization efforts enable separate implementations of this platform to interoperate. The Mono project, for example, is a multi-platform and open source implementation which builds on these public standards to create a complete, open source .NET implementation for Unix and Linux systems."

(See <http://www.go-mono.com/>)

Microsoft released C# in June 2000. In August, Microsoft, Hewlett-Packard and Intel co-submitted the specifications for CLI and C# to ECMA International's programming language technical committee (TC39). The co-sponsors, together with other ECMA members including IBM, Fujitsu, Plum Hall and Monash University, and expert guests including ISE and Ximian, then refined these specifications for approval as ECMA standards.

In December, 2001, the ECMA General Assembly approved the 1st edition of the C# and CLI standards as ECMA-334 and ECMA-335, respectively. A technical report on the CLI, ECMA-TR84, was also approved. ECMA then submitted the two standards and the technical report to ISO/IEC JTC 1 for Fast-Track adoption.

The standards and TR have now been published by ISO/IEC, and will be known formally as ISO/IEC 23270 (C#), ISO/IEC 23271 (CLI) and ISO/IEC TR 23272 (CLI TR).

About ECMA International

Since its inception in 1961, ECMA International (ECMA) has developed standards for information and communication technology (ICT). ECMA is a not-for-profit industry association of technology developers, vendors and users. Industry and other experts work together in ECMA to complete standards. ECMA then submits the approved work for approval as ISO, ISO/IEC and ETSI standards. ECMA offers industry a "fast track" into these organizations' standardization procedures, through which high quality standards are rapidly made available for implementation.

Main areas of standardization include: Scripting and programming languages; Optical and Magnetic storage; High speed interconnects; Safety, Environmental, Acoustical and Electromagnetic product attributes; Enterprise and Proximity Communication and Networking; and File and Volume structures. Publications can be downloaded free of charge from <http://www.ecma-international.org>.