



Standard ECMA-321
June 2001

Standardizing Information and Communication Systems

Streaming Lossless Data Compression Algorithm – (SLDC)

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Brief History

In the past decades, ECMA has published numerous ECMA Standards for magnetic tapes, magnetic tape cassettes and cartridges, as well as for optical disk cartridges. Those media developed recently have a very high physical recording density. In order to make optimal use of the resulting data capacity, lossless compression algorithms have been designed that allow a reduction of the number of bits required for the representation of user data.

These compression algorithms are registered by ECMA, the International Registration Authority established by ISO/IEC. The registration consists in allocating to each registered algorithm a numerical identifier that will be recorded on the medium and, thus, indicate which compression algorithm(s) has been used.

This ECMA Standard is the fourth ECMA Standard for compression algorithms. The three previous standards are:

ECMA-151 <i>ISO/IEC 11558</i>	Data Compression for Information Interchange – Adaptive Coding with Embedded Dictionary – DCLZ Algorithm (June 1991)
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ECMA-159 <i>ISO/IEC 12042</i>	Data Compression for Information Interchange - Binary Arithmetic Coding Algorithm - (December 1991)
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ECMA-222 <i>ISO/IEC 15220</i>	Adaptive Lossless Data Compression Algorithm – (June 1995)
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This ECMA Standard ECMA-SLDC is based on ECMA-222. It has been extended by defining a set of control symbols, that identify:

- record boundaries in user data
- locations in the Encoded Data Stream at which the history buffer is reset
- locations in the Encoded Data Stream at which pad bits are inserted up to the next 32-bit boundary
- sections in the Encoded Data Stream that contain compressed or uncompressed data

This compression algorithm allows for records of different size and compressibility, along with File Marks, to be efficiently encoded into an output stream in which little or no additional control information is needed to later decode user data.

All ECMA Standards listed above have been adopted by ISO/IEC as International Standards. This ECMA Standard will also be contributed to ISO/IEC for adoption as an International Standard under the fast-track procedure.

This ECMA Standard has been adopted by the ECMA General Assembly of June 2001.

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