

ECMA

EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION

STANDARD ECMA-37

FOR

SUPPLEMENTARY TRANSMISSION CONTROL FUNCTIONS

An Extension of the Basic Mode Control Procedures
for Data Communication Systems
According to Standard ECMA-16

June 1972

Free copies of this standard ECMA-37 are available from
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BRIEF HISTORY

Technical Committee TC9 of ECMA issued in May 1968 their Standard ECMA-16 for Basic Mode Control Procedures for Data Communication Systems using the ECMA 7-bit code. Further work was undertaken on definition of supplementary transmission control functions.

It has been accepted by the General Assembly of ECMA on June 5, 1972.

INTRODUCTION

The present Standard ECMA-37 describes the method for providing supplementary transmission control functions through the definition of Extension Sequences using DLE.

1. SCOPE

This Standard is an optional extension of Standard ECMA-16 on Basic Mode Control Procedure for Data Communication Systems.

It encompasses also formatting rules defined in Standard ECMA-24 on Code Independent Information Transfer.

It defines the method for providing supplementary transmission control functions through the definition of Extension Sequences using DLE.

2. DEFINITION

The character DLE is used as a prefix to one or more additional characters of the ECMA 7-bit code to form a sequence to represent supplementary transmission control functions beyond existing ones represented by a single transmission control character.

3. DLE SEQUENCES

The structure of DLE sequences allows them to be of different length.

Two-character sequences consist of DLE followed by one "final character".

More than two character sequences consist of DLE, continues with one or several "intermediate" characters and ends with one "final" character.

Final characters are the Transmission Control Characters and those in columns 3, 4, 5, 6 and 7 excluding the character DEL of the ECMA 7-bit code table.

The final characters in column 4, 5 and 6 are for private use. The Transmission Control Characters and the characters in column 3 and 7 are reserved for international standardization.

Intermediate characters are those in column 2 of the ECMA 7-bit code table.

Preference should be given to two-character sequences.

4. STANDARDIZED TWO-CHARACTER SEQUENCES

The following additional transmission control functions are standardized. When such optional functions are required, they must be represented by the corresponding two-character sequence:

Disconnect function (DLE EOT)

It initiates the clearing of the connection over the general switched network as indicated in Standard ECMA-16.

Initiation of code independent heading (DLE SOH)

It initiates a code dependent or independent heading as indicated in Standard ECMA-24.

Initiation of code independent block or text (DLE STX)

It initiates a code independent block or text as indicated in Standard ECMA-24.

Termination of code independent text (DLE ETB or DLE ETX)

It terminates a code independent block or text respectively as indicated in Standard ECMA-24.

Filling (DLE SYN)

It is used when filling is necessary for code independent information transfer as indicated in Standard ECMA-24.

Master station abort (DLE ENQ)

When the Master station decides to abort a code independent transmission, it immediately sends this sequence as indicated in Standard ECMA-24.

Note: DLE DLE

This sequence is used in the masking operation, as indicated in Standard ECMA-24.

Acknowledgement numbering (DLE 0 and DLE 1)

Sequential acknowledgement used in lieu of ACK to provide for numbering of acknowledging replies.

"As a basic rule DLE0 shall be used as the response to either a selection supervisory sequence or a bid for Master Status in the contention. DLE1 shall be used as the affirmative reply to the first block, DLE0 as the affirmative reply to the second block and so on alternating between DLE1 and DLE0 for subsequent blocks. No rules are defined for the use of DLE0 and DLE1 in recovery situations which apply following abort, interrupt, disconnect, time-out, etc."

The numbering cycle can be extended to DLE 0 through DLE 7, if required.

Station interrupt (DLE <)

Transmitted by a Slave station to request the Master station to stop transmitting as soon as possible as indicated in Standard ECMA-27.

Other supplementary transmission control functions may be defined later on.

