BELL TELEPHONE LABORATORIES
INCORPORATED

SUBJECT: X3.2 Approval of Proposed Code
Extension Standard - Case 39065

DATE: MAR 5 1968

FROM: D. A. Kerr

MEMORANDUM FOR FILE

ABSTRACT

USA Standards Institute Subcommittee X3.2, Codes and Input-Output, has approved a proposed USA Standard Code Extension Procedures for Information Interchange. A copy of the document is attached.

HO-3142

Copy to
All Supervision in Center 314

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USA Standards Institute Subcommittee X3.2, Codes and Input-Output, approved at their February, 1968, meeting a proposed USA Standard Code Extension Procedures for Information Interchange. The document will be forwarded to USA Standards Committee X3, Computers and Information Processing, for their approval for submission to the Institute. The document, identified as X3.2/647, is attached hereto.

The document was the seventh draft prepared by Task Group X3.2.4, Code Development, and approval by X3.2 represents the end of a series of quick reversals of technical position after a number of years of development.

Development of the doctrine of code extension procedures began over five years ago, when the newly-organized X3.2.4 first came to grips with the question of how to use the characters SO (Shift Out), SI (Shift IN), and ESC (Escape) which appeared in the newly-developed ASCII Code. Over the years, essentially the present doctrine emerged, and was subjected to considerable scrutiny as regards its suitability for various expected applications. The specific "intermediate-final partition" (refer to section 4 of the attachment) to be used for Escape sequences was subject to a number of proposals, but a widely-acceptable one was finally adopted.

Then, only a few months ago, the question of using code extension as a means to represent a hypothetical 8-bit code in a 7-bit environment was introduced as a significant aspect of the work. X3.2.4 developed a doctrine for such a means of representation, predicated upon a particular structure of 8-bit code.

This document drew criticism from two camps. One objected to the specific encoding relationships provided by the escape sequence doctrine as being too complex for this specific new use (i.e., 7-bit representation of an 8-bit code). The second camp argued that there were no criteria nor objectives for the establishment of a standard 8-bit code, and thus it

was inappropriate to establish at this time a structure for
the representation of such a code - if one should ever emerge -
in a 7-bit environment.

At the next meeting, these feelings were put forth through
extensive debate, and as a result, a new draft was prepared,.
removing the material on 8-bit code relationships. Further,
since the previous document's limitation on the use of SO
and SI - that they should only effect the graphic portion of
the code and should only cause their replacement with new
graphics - was seen as unduly restrictive by the first camp
mentioned above, the material on use of SO-SI was purged
altogether from the document.

This considerably thinned-out document was submitted to the
members of X3.2, who elected to take an X3.2 letter ballot
on its approval. The ballot received a majority of affirma-
tive votes, but there were both some negative votes and
reservations expressed in connection with some of the af-
firmative votes. One thread which ran consistently through
the negative comments was that the material on SO and SI
must be included.

Assuming that X3.2 would direct X3.2.4 to address themselves
to these comments - to either rebut them or accommodate them -
X3.2.4 debated the conflicting factors and finally prepared
a subsequent draft which would in fact "accommodate" the SO-SI
situation. This draft restored the procedures for using SO
and SI, but with the restrictions changed to mere cautions,
a compromise which seemed relatively harmless under the cir-
cumstances.

It was this document which X3.2 approved, this time by roll
call vote at their meeting, the rationale being that this
was not a "new" proposal but merely an accommodation of
reservations received during a "successful" letter ballot.

At this moment, a delegation of US experts on this subject
is in Paris meeting with the interested members of ECMA's
(European Computer Manufacturers Association) code standardi-
zation committee to determine whether this doctrine would
be acceptable to them as a candidate for international
standardization. Should agreement be reached between the
US and ECMA on this doctrine, their joint sponsorship will
give it a good chance for success within ISO (International
Organization for Standardization) when it meets later this
spring to treat this subject.

Preliminary reports of that meeting indicate that there is considerable hope for USASI-ECMA agreement. The ECMA members, however, apparently expressed a desire to have the SO-SI doctrine limited in its effect to graphics (the position taken consistently by the US until very recently). This could very possibly cause X3.2 to indeed revert to its previous position.

The doctrine approved by X3.2 is consistent with present Bell System plans in this area*. The doctrine preferred by the ECMA members, and formerly held by X3.2, may be said to be even more consistent with these plans.

D. A. KERR

HO-3142-DAK-MR

Att.
X3.2/647

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* Memorandum for File by D. A. Kerr dated February 5, 1968, "Standard Escape Sequences for Bell System Data Terminals - (Revision) - Case 39065"