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Specification for

Digital data transmission —

**Part 6: Complements to the basic mode
control procedures; recovery, abort and
interrupt, multiple station selection**

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Foreword

This Part of this British Standard has been prepared under the authority of the Data Processing Standards Committee and is based on International Standard ISO 2628.

It is complementary to BS 4505-1, BS 4505-4 and BS 4505-7 and introduces rules for recovery, abort and interrupt and multiple station selection procedures which were not included in these standards.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Section 1. General

1 Scope

This Part of this British Standard defines additional rules for a data communication system operating according to the basic mode control procedures defined in BS 4505-1, BS 4505-2, BS 4505-3, BS 4505-4 and BS 4505-7.

It extends the use of some of the transmission control characters described in BS 4505-1 and BS 4505-4. The following is a brief outline of the functions of each of the complements.

- a) *Recovery procedures.* System guidelines are given for the use of timers and counters which may be used as an overall check on the correct operation of the system.
- b) *Abort and interrupt procedures.* Procedures are defined which allow a master station to abort a data message which it is transmitting and for a slave station to interrupt a data message which it is receiving.
- c) *Multiple station selection.* Procedures are defined which may be used by the master station to select more than one slave station so that all the selected slave stations receive the same transmission simultaneously.

2 References

The titles of the publications referred to in this standard are listed on the inside back cover.

3 Definitions

For the purposes of this British Standard the definitions of the control characters and phase linkages, and the terminology, given in BS 4505-1 apply.

Section 2. Recovery procedures

4 Recovery procedures; general

These recovery procedures are system guidelines which should be used by all stations, as applicable. However, it is recognized that the detailed method of station mechanization, absolute value of timers, etc., may vary with applications and communication facilities.

In some cases, these recovery procedures can only detect the error condition and then notify the operator or the processor program, or both. In more sophisticated cases, automatic recovery is partially or completely possible. In other cases, only operators can perform the recovery procedures. Operator recovery procedures are not part of this standard. However, the operator may do such things as retry n more times, establish voice communication to the distant station in order to determine trouble, etc.

For a good system, the functions of timers A, B, and C, described below, need to be utilized. The value of the timer may vary over a wide range depending upon whether the functions are implemented via hardware, software or a human operator.

It is recognized that in some systems additional timers may be required for such purposes as aiding synchronization procedures, added reliability, etc.

5 Timers and counters

5.1 General Timers are primarily used as aids in recovery procedures when recognition of specific control characters does not occur. The action taken following a time-out is specified in general terms to provide system protection. The absolute values of the timers are dependent upon such factors as manual use, non-manual data entry, speed of transmission, type of data source/sink, etc.

Counting is primarily used as an aid in determining what recovery alternative is applicable in each error condition. The number of consecutive negative or invalid replies and the number of consecutive attempts to recover, using one recovery procedure before an alternative is chosen, depends upon the network configuration, quality of the channel, and application.

5.2 Timer A (no-response timer)

Where implemented: control station, master station, or both.

Purpose: protection against an invalid response or no response.