

Question: E(5)/VIII

STUDY GROUP VIII - CONTRIBUTION 225

SOURCE : UNITED KINGDOM
TITLE : PROPOSAL TO INCLUDE SIMPLEX OPERATION FOR GROUP 3
FACSIMILE TERMINALS

1. Introduction

As the use of Group 3 facsimile terminals has increased, the range of applications has also increased. The purpose of this contribution is to propose the urgent study of amendments to Recommendation T.30 to cover simplex operation, ie transmission of documents to single or multiple (parallel) destinations without pre- and post-message responses.

The major applications for this type of operation are on leased circuits and broadcast applications (either point-to-point or multi-point) as well as the domestic market.

The inclusion of this capability as a user selectable function would be relatively simple requiring only small changes to existing hardware and software.

2. Technical Requirements

2.1. In the following paragraphs a number of technical requirements are given which need to be considered before completing the specification. Proposals for the inclusion of other requirements would be welcome.

2.2. The basic philosophy is to take the existing procedures defined in Recommendation T.30 and make minimum changes to them. This approach has the obvious advantage of requiring minimum change to existing implementations and consequently minimum development.

2.3. In the case of multi-point operation it would be necessary to indicate to the receiving terminals that a message is about to be sent. The current text of Recommendation T.30 does not include such an explicit signal. However, it is proposed that the existing Calling Tone (CNG) signal should be to carry additional information, ie page numbers. This latter information could be useful in one type of broadcast application where a number of pages might be sent on a cyclic basis and the receiver might only wish to receive a selection of them. For simplicity, this "new" signal is referred to as the Start-Up signal (SUP).

2.4. Another item which needs consideration is addressing. For example, in multi-point connection, a message might be destined for only one terminal or maybe a group of all terminals. The address field in the HDLC frames could be used for this; alternatively the address information could be included in the SUP.

2.5. To enable the widest range of applications to use the simplex mode, it is proposed that at the end of each page, the transmitter returns to the beginning of Phase B and retransmits the SUP and DCS signals. If this procedure is used, then there is no requirement for the Multi-Page Signal (MPS). Also, receivers may join the channel at any time and will be able to synchronise after 1 page at the most.

2.6. One theoretical disadvantage of simplex operation based upon the existing Group 3 procedures is that the transmitter would not know whether the message had been received correctly. However, in some applications this might not be a significant problem eg. domestic use.

In those applications where error free reception is important, a number of different options could be considered. One option would be to send the message in the Group 3 Error Correction Mode (ECM) and repeat each page 3 times to enable the receiver to correct any errored frames. The disadvantage of this approach is that the transmission time of each page is trebled.

2.7. As a stimulus to discussion, two flow diagrams are included as part of this contribution, see figs. S01/T.30 and S02/T.30. These flow diagrams have been drawn on the basis that ECM is not used and at the end of each page, the transmitter precedes each subsequent page with the SUP and DCS signals. Although the term "Disconnect The Line" is used in the flow diagrams, this should be interpreted according to the type of application being used. For example, on a leased multipoint configuration, it should be interpreted as meaning return to the idle state.

3. Conclusions

There is a clear need for the standardisation of a simplex mode of operation for Group 3 terminals and the most logical way to develop this is to base it upon the procedures defined in Recommendation T.30. A number of technical items requiring further consideration have been included in this contribution as initial thoughts to stimulate further discussion.

The United Kingdom proposes that the study of a simplex mode of operation for Group 3 facsimile terminals should be developed as soon as possible.

Simplex Operation

Transmitting Station

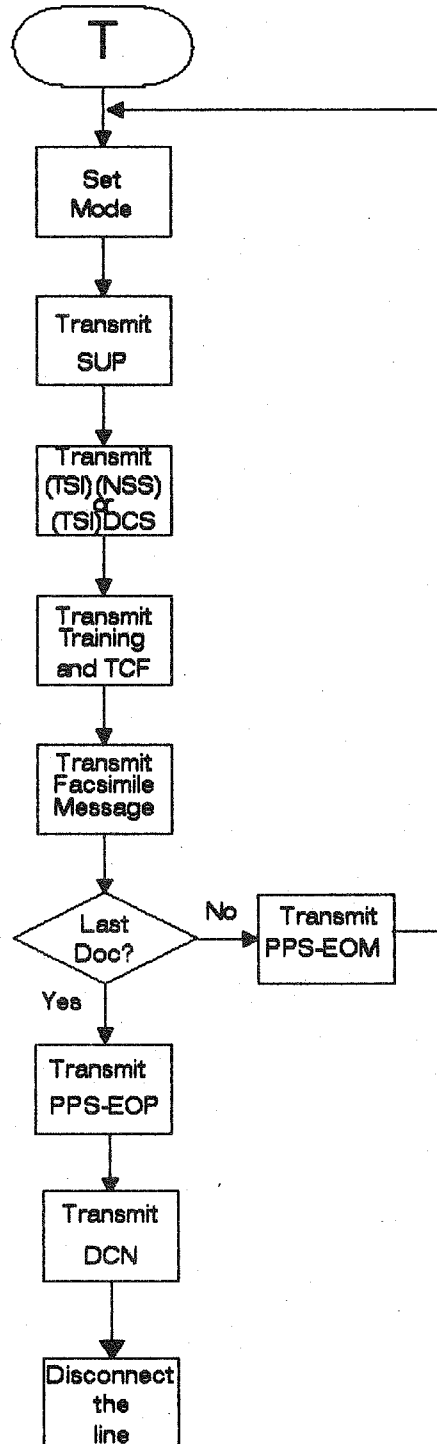
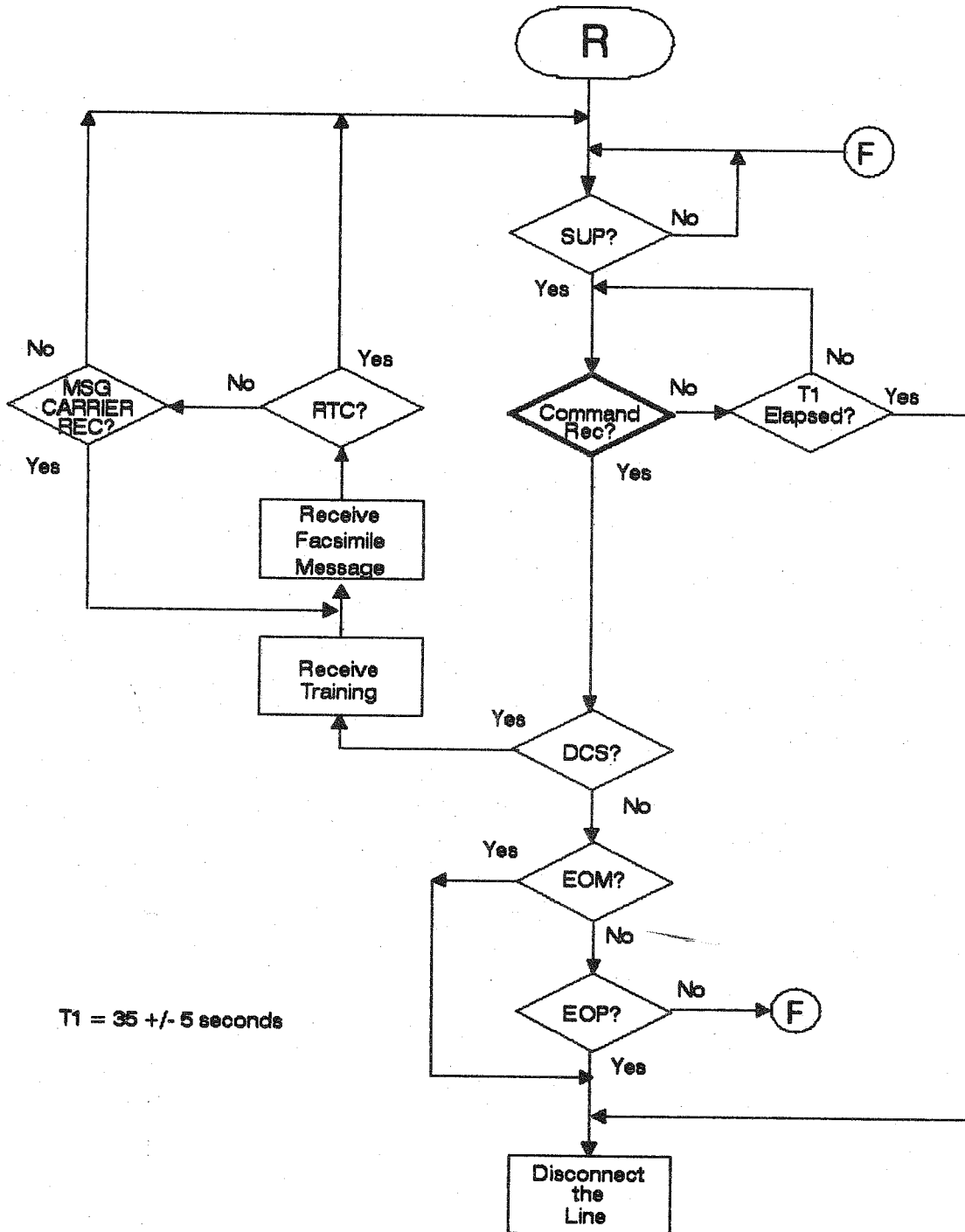


Figure S01/T.30

Receiving Station



T1 = 35 +/- 5 seconds

Figure S02/T.30