

A System for Producing Braille Special
Codes which is Compatible with Automatic
Translation Programs.

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1. Introduction

At the present time there is no satisfactory system for transcribing manually or automatically specialist braille codes such as music, mathematics and scientific notation, which is compatible with the computer-assisted systems for literary text. Such a system may be highly desirable, as for example many books contain a large proportion of ordinary text and a small amount of mathematics or scientific notation.

There have been two types of approach to this problem:

(i) Manual transcription by a skilled brailist with the pages merged with the output of the automated system just before binding. Various systems are being developed which incorporate editing facilities and are capable of producing multiple copies (ref. 1). Most of these systems have been developed to be stand-alone but, in general, have had inadequate editing facilities. However the proposed scheme by Triformation Systems should overcome this problem using micro-digital-recorders and video display editing devices which will make the stand-alone system expensive (ref. 2). However none of these systems allows for merging the output with that from an automatic translation program such as DOTSYS.

(ii) Sophisticated computer programs capable of handling a range of these specialist codes are still being developed (ref. 1).

A particular pilot study has been undertaken of one possible solution to this problem and is described in outline below.

2. Basic Systems

If the literary text is to be translated automatically, by a program such as DOTSYS III, then it is desirable to merge the specialist codes with the literary text before the braille is embossed. Otherwise there is the time-consuming, and

therefore expensive, process of adding braille pages just before binding as well as the problem of page numbering, and the difficulties associated with ensuring continuity.

There are two ways of overcoming this problem when the literary text is being translated automatically. In both, the specialist codes are input by a skilled transcriber and the data is merged with the literary text -

(i) before being processed by the braille translation program. The program just adds page numbers and passes the data unchanged to the output file.

(ii) after the translation program but before the post-processor.

The former involves minimum modifications to existing software since, in DOTSYS, the post-processor is part of the program (ref. 3).

3. Input Keyboard

A Perkins keyboard has been modified so that braille can be input directly to a Sigma 5 computer (Fig. 1). After consideration of a number of systems, photo-cells were selected for maximum reliability (Fig. 2).

4. Software

Basic software has been developed to demonstrate the viability of the proposal. The basic system includes input of braille from the Perkins machine into the computer, display of the input on a line-printer or graphics terminal, basic interactive editing facilities on the graphics terminal and output to a Brailleboss (Fig. 3).

5. Conclusions

This system offers the possibility of economically producing braille textbooks, which include mathematics or scientific notation, using DOTSYS for the ordinary text and a skilled transcriber for the special codes.

References

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