INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Z.321

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

MAN-MACHINE LANGUAGE

INTRODUCTION TO THE EXTENDED MML FOR VISUAL DISPLAY TERMINALS

ITU-T Recommendation Z.321

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Z.321 was published in Fascicle X.7 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation Z.321

INTRODUCTION TO THE EXTENDED MML FOR VISUAL DISPLAY TERMINALS

1 Scope of the Section

This Section deals with man-machine interfaces that take advantage of the input and output facilities usually available on visual display terminals (VDTs). The procedures described are not necessarily confined to this type of terminal; they can also be applied to printer-oriented terminals, such as teletypewriters, within the limits imposed by the facilities available at those terminals, e.g., information entry through menu selection.

By maintaining consistency with Recommendations Z.311-Z.317, these Recommendations facilitate a transition from a man-machine interface using basic syntax and dialogue procedures as described in Section 1 to one based on VDTs.

Diagrams and examples are used to clarify and illustrate the concepts explained in the text. The diagrams do not include exceptional cases and do not specify all possibilities available with the extended MML; those not shown diagrammatically, but which are allowed in the text, are subjects for further study and are not excluded from the extended MML. Similarly, the examples shown are not intended to imply a particular system implementation.

The Recommendations cover aspects of VDTs that users see and use, e.g., data entry, data display, interactive control, user guidance, etc. Specific terminal characteristics are avoided wherever possible.

2 Organization of Section 3

Section 3 consists of the following Recommendations:

Z.321 Introduction to the extended MML for visual display terminals

Z.322 Capabilities of visual display terminals

Z.323 Man-machine interaction

Recommendation Z.322 describes many of the capabilities currently available in VDTs. *Recommendation Z.323* focuses on actual man-machine interactions (i.e., *how* the capabilities are used) by addressing various aspects such as dialogue elements, monologue outputs, user assistance and interactive control.

3 Human factors

3.1 *The human factor view of the man-machine interface*

Human factor science characterizes the man-machine interface as any part of a system that the user comes in contact with – either physically, perceptually or conceptually. The user’s conceptual model of a system is the knowledge that organizes how the system works and how it can be used to accomplish tasks. The conceptual model forms an integral part of the user interface.

3.2 *The need for human factors considerations*

The aim of human factors is to satisfy the largest possible proportion of potential users rather than to tailor the system to one user, particularly one with a detailed and sophisticated knowledge of the system. Therefore a proper man-machine interface takes account of the user's needs as well as system requirements. Poor quality will show up as a high proportion of input errors, loss of user confidence and motivation and high training costs. A high quality man-machine interface is based on a truly representative user model.

Recognized human factors literature has been used in the formulation of Recommendations Z.322 and Z.323. Where appropriate, human factor aspects have been incorporated into the texts.