INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Z.302

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

MAN-MACHINE LANGUAGE

THE META-LANGUAGE FOR DESCRIBING MML SYNTAX AND DIALOGUE PROCEDURES

ITU-T Recommendation Z.302

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Z.302 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.302

THE META-LANGUAGE FOR DESCRIBING MML SYNTAX AND DIALOGUE PROCEDURES

1 Introduction

Syntax diagrams are a method of defining language syntax[1)]. A syntax diagram consists of terminal and non-terminal symbol boxes connected by flowlines. An annotation symbol is used to insert comments. The syntax of a language can be defined by a series of syntax diagrams, each diagram defining a particular non-terminal symbol. In the MML Recommendations, syntax diagrams are used to assist in specifying the syntax of the MML input, MML output and the user-system dialogue procedures. A path through a syntax diagram defines an MML input, an MML output or a man-machine dialogue structure.

The sequence of symbols in a path through syntax diagrams does not always imply a corresponding order in time or in place. The order in time is only significant in dialogue procedures for changes in the direction of the information flow, i.e. from input to output or from output to input. For output on printers it represents an order in place (from left to right and from top to bottom). However, for output on VDTs, the order in place only applies to positions within a screen window (see Recommendation Z.322).

The following describes the use of syntax diagrams and states a set of rules for their use.

2 Terminology

2.1 Terminal symbols are those characters or strings of characters which actually appear in the input or output. To avoid possible misunderstanding, format effectors are represented by a crossed mnemonic of the intended format effector.

2.2 A non-terminal symbol does not immediately appear in MML input or MML output; it represents, within a syntax diagram, another syntax diagram by name. Hence it is an abbreviated symbol for a more complex construct (consisting of a set of terminal and/or non-terminal symbols) used in several places.

2.3 Annotation symbols (see § 3.7) are used to insert references to descriptive or explanatory notes. For example, they may be used to indicate mutually exclusive paths through a diagram.

3 Rules

3.1 Every symbol box (terminal or non-terminal) and consequently each diagram must have one, and one only, entry and one, and one only, exit flowline.

3.2 Each diagram must fit on a single page. Thus there is no off-page connector symbol.

3.3 Flowlines are always unidirectional. The preferred direction for flowlines which select alternatives is down. The preferred direction for flowlines which connect symbols is left-to-right. The preferred direction for flowlines which indicate repetitions (loops) is counterclockwise.

3.4 An arrowhead is required wherever any two flowlines come together, and wherever a flowline enters a symbol box. Additional arrowheads may be inserted wherever it is felt that this will improve the clarity of the diagram.

3.5 Terminal symbols are surrounded by boxes with rounded corners. The width of the box is proportional to the number of characters contained in the box. For short terminal symbols, the box may become a circle. Symbols representing system input are surrounded by a single solid line and those representing system output by a double solid line:

- for terminal input symbols see Figure 1a)/Z.302 and Figure 1b)/Z.302,
- for terminal output symbols see Figure 1c)/Z.302 and Figure 1d)/Z.302.

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1) The syntax diagrams used in MML are based on those used to describe the programming language PASCAL [1].

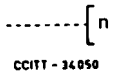
3.6 Non-terminal symbols are surrounded by rectangular boxes. The name of the non-terminal symbol must be written in lower case characters. Every non-terminal symbol must have an associated syntax diagram except where the symbol is annotated “Not further expanded in diagram form”. The non-terminal symbol used to name a particular syntax diagram must appear at the upper left corner of the diagram. Symbols representing system input are surrounded by a single solid line, those representing system output by a double solid line and symbols representing a combination of input and output by an outer solid and an inner dashed line:

a) for the non-terminal input symbol see Figure 1e)/Z.302,

b) for the non-terminal output symbol see Figure 1f)/Z.302,

c) for the non-terminal input/output symbol used in dialogue procedures see Figure 1g)/Z.302.

3.7 An annotation is denoted by the following symbol:



where n is a number referring to a descriptive or explanatory note. The text of the note must be located at the foot of the diagram.

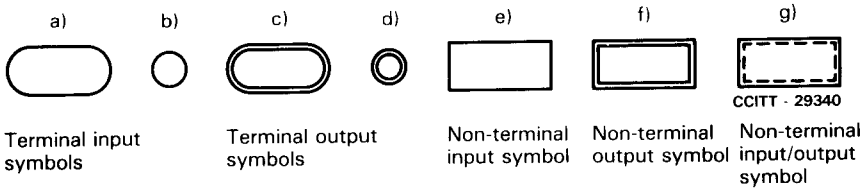


FIGURE 1/Z.302

Terminal and non-terminal symbols to be used for the CCITT man-machine language

Reference

[1] JENSEN (K.), WIRTH (N.): PASCAL, User Manual and Report, *Springer Verlag*, New York, 1975.