

ISDN——MODEL AND DEVELOPMENT

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ABSTRACT

A new RM for ISDN which is closer to the current distributed system is proposed. A new concept: Soft-bus is introduced for interfacing various function subsystems. Programming language and User commands must be expanded or developed to fit in with the new application requirement in ISDN.

I. Introduction

With the rapid development of the computer system and communication system, ISDN has become an attractive project in the communication departments all over the world. In such a situation, the more reasonable reference model is considered to improve the system design and applications.

II. Reference Model of ISDN

A new Reference Model (RM) for Integrated Services Data Network (ISDN) is shown in the following figure. The new RM is based on OSI RM but is closer to the current distributed computer system.

Layered structure is adopted. The function of each station can be divided into two levels---high level and low level. The high level is oriented to user's application and the low level is oriented to various function subsystems for graphic, voice, storage, as well as transmission service.

The high level function is composed of two layers: application layer and presentation layer. Application layer deals with distributed database, distributed calculation, and distri-

buted real-time control procedure. Presentation layer includes virtual character terminal service, virtual voice terminal service, virtual graphic terminal service, and virtual text transfer service.

The low level function is composed of several function subsystems. Each of them adopts layered structure according to the different special function protocols.

The interface between high level and low level is what we called "Soft-bus" which provides a set of standard interface commands in order to enhance the flexibility of expanding various function subsystems.

III. Development Direction of ISDN

Two interfaces must be treated carefully. One is the interface to the system. The requirement to this interface is good compatibility both in hardware and software. The other is the interface to the users. The requirement to this interface is friendly convenience in operating various system functions.

The standardization of the interface among all the function subsystems is the key problem. A reasonable abstraction for the operating system makes a good base for this aspect.

A new kind of programming language including voice and graphic processing functions should be developed. An alternative is to combine the voice and graphic functions with a mature programming language. User commands also must be expanded according to the characteristics of ISDN. In future, some commands will be the picture commands or oral commands, i.e., the commands will be input directly by graphic system or voice system.

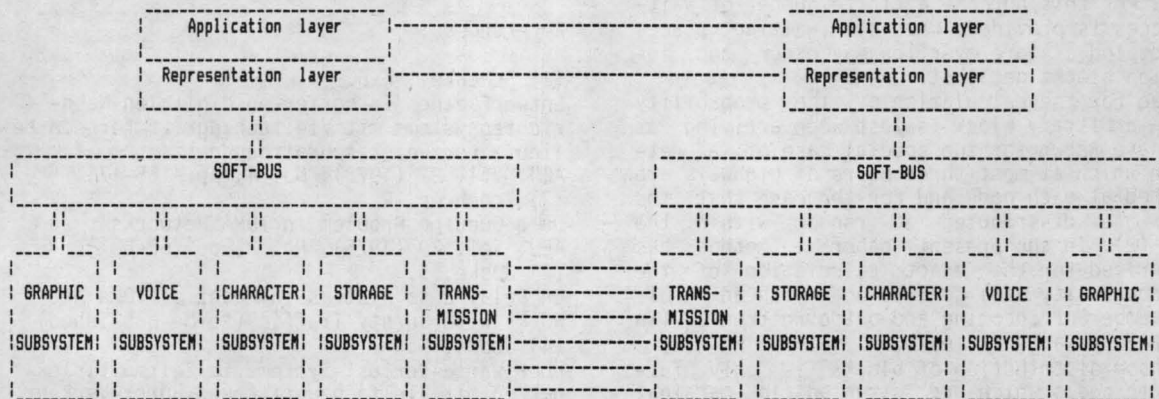


Figure Reference Model of ISDN