

## Proposed new Recommendation X.220

### USE OF X.200 SERIES PROTOCOLS IN CCITT MODIFICATIONS

The CCITT,

considering

- (a) that administrations in many countries are implementing a variety of telecommunications services;
- (b) that these services may be carried on a variety of networks;
- (c) that users of these services desire a unifying architecture for the applicable protocols;
- (d) that such an architecture is provided by Recommendation X.200 which defines the Reference Model of Open Systems Interconnection for CCITT applications;
- (e) that a number of protocols conforming to this architecture are defined in the X.200 Series of Recommendations and in other Recommendations,

unanimously declares the view

that for CCITT applications the functional suites of protocols, which involve the use of protocols in the X.200 Series of Recommendations, are summarized in this Recommendation. Details, as well as any conformance requirements, are contained in the relevant Recommendations.

A growing number of data terminal equipments are being designed to support more than one CCITT service and/or are being designed to be capable of being connected to more than one type of network. In order to facilitate the design of such equipments, the various OSI protocol suites involving use of the X.200 Series of Recommendations are documented herein.

These protocol suites are depicted in Figure 1/X.220, which portrays the protocols according to the seven layers defined in Recommendation X.200. The CCITT applications covered are Message Handling Systems (MHS), Directory, Teletex and Document Architecture Transfer and Manipulation. The networks covered are PSPDN, CSPDN, PSTN and ISDN. The intent is to give a general view of the set of protocol suites in a single figure, while relying on the other Recommendations referenced to provide the necessary additional details.

#### Notes to Figure 1/X.220

The modem may also be integrated within the terminal and in such cases V.24 need not apply. For telematic terminals, see 3.2.1 of T.70.

For automatic calling and/or answering, V.25 or V.25bis may be applicable.

For terminals connected to a PSTN, CSPDN or ISDN (circuit switched) and accessing a PSPDN in accordance with X.32 or X.31, the X.25 LAP B procedures are used as set forth in X.32 or X.31.

For DTE-to-DTE connections, telematic terminals employ the X.75 LAP B procedures for single link operation (see

3.2.2 and 3.3.2 of T.70 and 2.1.2.2 of T.90). For other terminals, the ISO 7776 LAP B procedures may apply for DTE-to-DTE connections.

For half duplex operation over the PSTN, the LAP B procedures are extended to include a half duplex transmission module (HDTM) as defined in 5.6 of X.32 and in T.71.

Terminals obtaining packet access on the D-channel use the LAP D procedures of Q.921 to support both the Q.931 access connection control procedure (if needed) and the X.25 packet layer procedures. Terminals obtaining packet access on the B-channel use the LAP D procedures of Q.921 to support the Q.931 access connection control procedure (if needed) and the X.25 LAP B procedures to support the X.25 packet layer procedures.

For terminals connected to a PSTN, CSPDN or ISDN (circuit switched) and accessing a PSPDN in accordance with X.32 or X.31, the network connection is established by two stage selection; the first stage uses the call control procedures of the attached network (as shown in Figure 1/X.220) and the second stage uses the X.25 call control procedures.

For terminals connected to a PSTN, CSPDN or ISDN (circuit switched) and accessing a PSPDN in accordance with X.32 or X.31, the X.25 packet layer procedures apply during the data transfer phase of the PSTN, CSPDN or ISDN. However, for telematic terminals connected to a CSPDN and accessing a PSPDN, a minimum network layer functionality is required during the data transfer phase of the CSPDN (see 3.3.3 of T.70).

For DTE-to-DTE connections, telematic terminals connected to a CSPDN use the minimum network layer functionality (see 3.3.3 of T.70) during the data transfer phase of the CSPDN and telematic terminals connected to a PSTN use the X.25 packet layer procedures (see 3.2.3 of T.70); telematic terminals connected to an ISDN (circuit switched) use the X.25 packet layer procedures as specified in ISO 8208 (see 2.1.2.3.2 of T.90) or, in addition, as a user option, the minimum network layer functionality (see 2.1.1 of T.90). For other terminals, the ISO 8208 X.25 packet layer procedures may apply for DTE-to-DTE connections.

The Q.931 access connection control procedures are used if needed.

For telematic terminals, the transport protocol is in accordance with T.70, section 5 plus Annexes A and B; the use of X.224 class 0 plus application rules is optional but needs further consideration to ensure that there are no discrepancies with T.70. For terminals communicating with network based services such as MHS and Directories, the X.224 procedures apply including the mandatory support of class 0.

T.62 bis, together with the relevant service and protocol elements of X.215 and X.225, are intended to be equal to T.62.

To obtain backward compatibility with X.410 (1984), RTSE uses the "X.410-1984 mode" services of ACSE and the Presentation Layer. The "normal mode" is used in all other cases.

Directory uses ROSE but not RTSE.

The use of ROSE and RTSE in the T.400-Series is for further study.

T.330 describes Group 4 Facsimile and Teletex access to the MHS Interpersonal Messaging System (IPMS) in the T.62bis/X.225 environment.

The use of MHS to transfer documents conforming to the T.410-Series is described in T.411.

Character repertoire definition of T.61 only.

