

Annex D: Interface between Data Transfer Sublayer and Communications Equipment (mandatory)

The interface between the Data Transfer Sublayer and the communications equipment **shall** ⁽¹⁾ be as defined in this Annex. This is currently cryptographic equipment but in time, cryptographic services may move to the application layer.

If the Data-Transfer-Sublayer connection point to the communication equipment is not to a cryptographic device, this definition **shall** ⁽²⁾ apply to the interface between the Data Transfer Sublayer and the modem.

The interface **shall** ⁽³⁾ be a synchronous serial digital data interface.

[Note: This requirement may be waived for an implementation if it can be shown that the communication equipment used with the sublayer protocols, i.e., the cryptographic equipment or modem, removes any start-bits, stop-bits, or other character-framing bits associated with the interface. Many current implementations of the STANAG 4285 and MIL-STD-188-110A waveforms transmit any start and stop bits that are present on the asynchronous baseband digital interface to the modem, but there is no real requirement in these respective standards for this. Modems may be implemented that allow independent specification of the character-framing and synchronization for the baseband interface and over the air gap. The real requirement on the 5066 sublayer interface is that no bits other than those specified for valid protocol data units in the protocol sublayers 5066 shall be transmitted over the air-gap between nodes.]

The line-drivers and receivers for the interface **shall** ⁽⁴⁾ be configurable for either balanced or unbalanced connection, in accordance with EIA-232D/423 for unbalanced connections and EIA-422 for balanced connections.

With respect to functional roles on the interface, the Data Transfer Sublayer **shall** ⁽⁵⁾ be hosted in a Data Terminal Equipment (DTE).

The clock source for the data output from the DTE (i.e, DTE data out) on the interface **shall** ⁽⁶⁾ be either configurable or from the DCE (i.e, either the cryptographic equipment or the modem).

The clock source for the data input to the DTE (i.e., DTE data input) **shall** ⁽⁷⁾ be from the DCE (i.e, either the cryptographic equipment or the modem).

The interface **shall** ⁽⁸⁾ provide full hardware-level handshaking for flow-control, in accordance with any standard recommendations.

Compatibility with MIL-STD-188-114 polarity, levels, and slew rates additionally may be required for interoperability with existing (cryptographic) equipment.