

# ISO/IEC 13239:2002-07 (E)

## Information technology - Telecommunications and information exchange between systems - High-level data link control (HDLC) procedures

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
1	Scope .....	1
2	Normative references .....	2
3	Definitions, acronyms and abbreviations .....	3
3.1	Definitions .....	3
3.2	Acronyms and abbreviations .....	8
4	HDLC frame structure .....	10
4.1	Frame formats .....	11
4.2	Elements of the frame .....	12
4.3	Transparency .....	15
4.4	Transmission considerations .....	17
4.5	Inter-frame time fill .....	17
4.6	Invalid frame .....	17
4.7	Extensions .....	18
4.8	Addressing conventions .....	18
4.9	Frame format field .....	19
5	HDLC elements of procedures .....	21
5.1	Data link channel states .....	21
5.2	Modes .....	22
5.3	Control field formats .....	25
5.4	Control field parameters .....	27
5.5	Commands and responses .....	31
5.6	Exception condition reporting and recovery .....	53
6	HDLC classes of procedures .....	58
6.1	Types of data station .....	59
6.2	Configurations .....	60
6.3	Operational modes .....	60
6.4	Addressing scheme .....	60
6.5	Send and receive state variables .....	60
6.6	Fundamental classes of procedures .....	60
6.7	Optional functions .....	62
6.8	Consistency of classes of procedures .....	62
6.9	Conformance to the HDLC classes of procedures .....	62
6.10	Method of indicating classes and optional functions .....	63
6.11	Unbalanced operation (point-to-point and multipoint) .....	66
6.12	Balanced operation (point-to-point) .....	69
6.13	Unbalanced connectionless operation (point-to-point and multipoint) .....	73
6.14	Balanced connectionless operation (point-to-point) .....	76
6.15	Uses of the optional functions .....	78
7	General purpose Exchange Identification (XID) frame .....	85
7.1	General purpose XID frame information field structure .....	85
7.2	General purpose XID frame information field encoding .....	85

7.3	Single-frame exchange negotiation process .....	91
7.4	Frame check sequence negotiation rules .....	92
7.5	Rules for negotiation use of the frame format field in non-basic frame format mode .....	93
8	Resolution/negotiation of data link layer address in switched environments .....	93
8.1	Operational requirements .....	93
8.2	Address resolution .....	94
Annex A (informative) Explanatory notes on the implementation of the frame checking sequence ..		95
Annex B (informative) Example of the use of commands and responses .....		97
Annex C (informative) Time-out function considerations for NRM, ARM and ABM .....		118
Annex D (informative) Examples of typical HDLC procedural subsets .....		120
Annex E (informative) Illustrative examples of 16/32-bit FCS negotiation .....		123
Annex F (informative) Guidelines for communicating with LAPB X.25 DTEs .....		125
Annex G (informative) Examples of information field encoding in multi-selective reject frames .....		126
Annex H (normative) Frame format types .....		127