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Line 21 Data Services

ANSI/CTA-608-E R-2014

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**Consumer
Technology
Association**

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FOREWORD

This standard was developed under the auspices of the Consumer Electronics Association (CEA) Technology & Standards R4.3 Television Data Systems Subcommittee.

eXtended Data Services (XDS) are additional services provided in Line 21 Field 2 data. New services may have been standardized by CEA since the publication of this standard. No attempt is made to list XDS Private Data Services, although it is requested that users of such services notify CEA of Private Data packet assignments. XDS services, whether Private Data or not, may not be meant for transmission to the television receiver.

CEA-608-E supersedes CEA-608-D.

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CONTENTS

| | |
|---|-----------|
| 1 Purpose and Scope | 1 |
| 1.1 Purpose | 1 |
| 1.2 Scope | 1 |
| 1.3 Other Vertical Interval Lines | 1 |
| 1.4 Antecedent Documents | 1 |
| 2 References | 2 |
| 2.1 Normative References..... | 2 |
| 2.2 Informative References..... | 2 |
| 2.3 Regulatory References | 3 |
| 2.4 Antecedent References..... | 3 |
| 2.5 Reference Acquisition..... | 3 |
| 3 Definitions | 5 |
| 3.1 Definitions | 5 |
| 3.2 Terms Employed..... | 5 |
| 3.2.1 Acronyms | 5 |
| 3.2.2 Glossary (Informative)..... | 6 |
| 3.3 Compliance Notation..... | 9 |
| 4 Background (Informative) | 10 |
| 4.1 Data Types in the Line 21 Signal..... | 10 |
| 4.2 Program Distribution Paths..... | 10 |
| 5 Signal Characteristics | 12 |
| 5.1 Introduction..... | 12 |
| 5.2 Line 21 Waveform | 12 |
| 5.3 Data Formats..... | 15 |
| 6 Closed Captioning | 15 |
| 6.1 Introduction..... | 15 |
| 6.2 Background and Foreground Attributes | 15 |
| 6.3 Closed-Group Extensions (Informative)..... | 17 |
| 6.4 Character Sets (Normative) | 18 |
| 6.4.1 Standard | 18 |
| 6.4.2 Optional Extended Characters | 18 |
| 7 Text Mode | 26 |
| 7.1 Introduction..... | 26 |
| 7.2 Text Mode Service Providers and Equipment Manufacturers | 26 |
| 7.3 Field 2 Text Bandwidth Considerations | 26 |
| 7.4 Real-Time Scrolling Display | 26 |
| 7.5 Other Real-Time Display Methods | 27 |
| 7.6 Delayed Display | 27 |
| 7.7 Other Interruptions | 27 |
| 7.8 Automatic Erasure of Text and Background | 27 |
| 7.9 Data Channel Nomenclature for Text Services | 28 |
| 7.10 Transmitting URLs in T-2..... | 28 |
| 7.11 Character Set | 28 |
| 7.12 Standard Syntax | 28 |
| 7.13 Special Characters | 31 |
| 7.14 Bandwidth Considerations | 31 |

| | | |
|-----------|---|-----------|
| 8 | Field 2 Formats and Protocols | 32 |
| 8.1 | Introduction..... | 32 |
| 8.2 | Signal Characteristics..... | 32 |
| 8.3 | Data Formats..... | 32 |
| 8.4 | Closed Caption Mode..... | 32 |
| 8.5 | Text Mode..... | 32 |
| 8.6 | XDS Mode..... | 33 |
| 8.6.1 | XDS Characters..... | 33 |
| 8.6.2 | Control Codes..... | 33 |
| 8.6.3 | Checksum..... | 34 |
| 8.6.4 | Interleave Service Example..... | 34 |
| 8.6.5 | Multiple Interleave..... | 35 |
| 8.6.6 | Packet Length..... | 35 |
| 8.6.7 | Packet Suspension..... | 35 |
| 8.6.8 | Packet Termination..... | 35 |
| 9 | XDSPackets | 36 |
| 9.1 | Introduction..... | 36 |
| 9.2 | General Use..... | 36 |
| 9.3 | XDS Packet Control Codes..... | 37 |
| 9.4 | Class Definitions..... | 37 |
| 9.5 | Type Definitions..... | 38 |
| 9.5.1 | Current Class..... | 38 |
| 9.5.1.1 | Type=0x01 Program Identification Number..... | 38 |
| 9.5.1.2 | Type=0x02 Length/Time-in-Show..... | 38 |
| 9.5.1.3 | Type=0x03 Program Name (Title)..... | 38 |
| 9.5.1.4 | Type=0x04 Program Type..... | 39 |
| 9.5.1.5 | Type=0x05 Content Advisory..... | 40 |
| 9.5.1.5.1 | U.S. TV Parental Guideline Rating System..... | 41 |
| 9.5.1.5.2 | Canadian English Language Rating System..... | 42 |
| 9.5.1.5.3 | Système de classification français du Canada..... | 43 |
| 9.5.1.5.4 | General Content Advisory Requirements..... | 44 |
| 9.5.1.6 | Type=0x06 Audio Services..... | 44 |
| 9.5.1.7 | Type=0x07 Caption Services..... | 45 |
| 9.5.1.8 | Type=0x08 Copy and Redistribution Control Packet..... | 45 |
| 9.5.1.9 | Type=0x09 Reserved..... | 47 |
| 9.5.1.10 | Type=0x0C Composite Packet-1..... | 47 |
| 9.5.1.11 | Type=0x0D Composite Packet-2..... | 47 |
| 9.5.1.12 | Type=0x10 to 0x17 Program Description Row 1 to Row 8..... | 48 |
| 9.5.2 | Future Programming..... | 48 |
| 9.5.3 | Channel Information Class..... | 48 |
| 9.5.3.1 | Type=0x01 Network Name (Affiliation)..... | 48 |
| 9.5.3.2 | Type=0x02 Call Letters (Station ID) and Native Channel..... | 48 |
| 9.5.3.3 | Type=0x03 Tape Delay..... | 49 |
| 9.5.3.4 | Type=0x04 Transmission Signal Identifier (TSID)..... | 49 |
| 9.5.4 | Miscellaneous..... | 49 |
| 9.5.4.1 | Type=0x01 Time of Day..... | 49 |
| 9.5.4.2 | Type=0x02 Impulse Capture ID..... | 50 |
| 9.5.4.3 | Type=0x03 Supplemental Data Location..... | 50 |
| 9.5.4.4 | Type=0x04 Local Time Zone & DST Use..... | 50 |
| 9.5.4.5 | Out-of-Band Channel Information..... | 51 |
| 9.5.4.5.1 | Type=0x40 Out-of-Band Channel Number..... | 51 |
| 9.5.4.5.2 | Type=0x41 Channel Map Pointer..... | 51 |
| 9.5.4.5.3 | Type=0x42 Channel Map Header Packet..... | 52 |
| 9.5.4.6 | Type=0x43 Channel Map Packet..... | 52 |
| 9.5.5 | Public Service Class..... | 53 |

| | |
|--|----|
| 9.5.5.1 Type=0x01 National Weather Service Code (WRSAME) | 53 |
| 9.5.5.2 Type=0x02 National Weather Service Message | 55 |
| 9.6 Encoder Operation (Informative) | 55 |
| 9.6.1 General Usage Types | 55 |
| 9.6.2 XDS Packet Usage Recommendations | 56 |
| 9.6.2.1 Initial Setup | 56 |
| 9.6.2.2 Program Identification Number (Scheduled Start Time) | 56 |
| 9.6.2.3 Length/Time-in-Show | 56 |
| 9.6.2.4 Program Title | 56 |
| 9.6.2.5 Content Advisory | 56 |
| 9.6.2.6 Program Description Row 1 to Row 8 | 56 |
| 9.6.2.7 Network Name (Affiliation) | 57 |
| 9.6.2.8 Call Letters (Station ID) and Native Channel | 57 |
| 9.6.2.9 Tape Delay | 57 |
| 9.6.2.10 Time of Day | 57 |
| 9.6.2.11 Impulse Capture ID | 57 |
| 9.6.2.12 Local Time Zone & DST Use | 57 |
| 9.6.2.13 National Weather Service Code (WRSAME) | 57 |
| 9.6.2.14 National Weather Service Message | 58 |
| 9.6.2.15 Program Type | 58 |
| 10 Component Television Systems –Analog (480I) | 58 |
| 10.1 Color Difference | 58 |
| 10.2 RGB | 58 |
| Annex A Character Set Differences (Informative) | 59 |
| Annex B Service Providers (Normative) | 61 |
| B.1 Introduction | 61 |
| B.2 New Mid-Screen PACs | 61 |
| B.2.1 TeleCaption I | 61 |
| B.2.2 TeleCaption II | 61 |
| B.3 Delete to End of Row | 62 |
| B.4 Tab Offsets | 62 |
| B.5 Base Row Implementation | 63 |
| B.6 New Displayable Characters | 64 |
| B.7 Protocols for Paint-On Style | 64 |
| B.8 Proper Order of Data | 65 |
| B.8.1 Roll-Up Style | 65 |
| B.8.2 Paint-On Style | 65 |
| B.8.3 Pop-On Style | 65 |
| B.9 Supporting the TeleCaption I Decoder | 66 |
| B.10 Supporting the TeleCaption II Decoder | 67 |
| B.11 Other Encoding and Transmission Information | 68 |
| B.11.1 Using Incompatible or Non-Standard Features | 68 |
| B.11.2 Timing of Control-Code Transmissions | 68 |
| B.11.3 Integrating Live Transmissions with Encoded Data | 68 |
| B.11.4 Miscellaneous Control Codes Can Stand Alone | 68 |
| B.11.5 Avoiding Invalid Control Codes | 68 |
| B.11.6 Field 2 Captioning Codes | 69 |
| B.11.7 Maintaining Captioning Sync | 69 |
| B.12 Backspacing | 69 |
| B.13 Data Channel Nomenclature for Caption Services | 69 |
| B.14 Double Control-Byte Pairs | 70 |
| B.15 Non-Functioning Control Byte Pairs | 70 |

| | |
|--|-----------|
| Annex C Decoder Manufacturers (Normative) | 71 |
| C.1 Introduction | 71 |
| C.2 Processing Color in a Monochrome-Display Decoder (Regulatory) | 71 |
| C.3 Smooth Scroll (Preferred) | 71 |
| C.4 Roll-Up Row/Base Row Conflicts (Preferred) | 72 |
| C.5 Allocation of Rows in Memory (Regulatory) | 72 |
| C.6 Receiving Too Many Rows of Caption Data (Preferred) | 73 |
| C.7 PACs and Tab Offsets (Regulatory/Preferred)..... | 73 |
| C.8 Solid Spaces Added for Legibility (Regulatory/Preferred) | 73 |
| C.9 Automatic Caption Erasure (Preferred) | 74 |
| C.10 Style Switching (Regulatory) | 74 |
| C.11 Response to EOC During Roll-Up Captioning (Regulatory)..... | 74 |
| C.12 Prompt Response to Caption Commands (Regulatory) | 74 |
| C.13 Right Margin Limitation (Regulatory/Normative)..... | 75 |
| C.14 Special Cases Regarding Attributes (Normative)..... | 75 |
| C.15 Remembering Cursor Location (Preferred)..... | 75 |
| C.16 Proper Implementation of EDM and ENM Commands (Normative) | 75 |
| C.17 Using Unique Control Codes to Flag Field Reversal (Optional) | 76 |
| C.18 Data Channel Nomenclature for Captions and Text (Informative)..... | 76 |
| C.19 Flashing Underline (Optional)..... | 76 |
| C.20 Viewer Control by XDS Content Advisory (Regulatory)..... | 76 |
| C.21 Display Enable/Disable Logic and Timing (Regulatory) | 76 |
| C.22 Safe Caption Area (Regulatory)..... | 77 |
| | |
| Annex D Captioning and Text Encoder Manufacturers | 78 |
| D.1 Introduction (Informative) | 78 |
| D.2 Transmission of Control Code Pairs (Normative/Regulatory) | 78 |
| D.3 Text-Mode Multiplexing (Informative) | 78 |
| D.4 Automatic Caption Blanking (Informative)..... | 78 |
| D.5 Vendor and Version Enquiry (Informative)..... | 79 |
| D.6 Encode Disable Mode (Informative)..... | 79 |
| D.7 Field 1 Waveform When Processing Field 2 (Regulatory/Informative)..... | 79 |
| D.8 Re-Encoding Delays (Normative) | 80 |
| D.9 Field 2 Text Bandwidth Considerations (Normative) | 80 |
| | |
| Annex E XDS Encoder Manufacturers | 81 |
| E.1 Introduction (Informative) | 81 |
| E.2 Maintaining Captioning Sync (Informative)..... | 81 |
| E.3 Data Channel Bandwidth (Normative)..... | 81 |
| E.4 Packet Integration (Normative) | 82 |
| E.4.1 Two Way Integration (Normative) | 84 |
| E.4.2 Bridging (Informative)..... | 84 |
| E.4.3 Store and Forward (Normative)..... | 84 |
| E.4.4 Three-way Integration (Normative) | 84 |
| E.5 Field Reversal (Normative)..... | 85 |
| E.6 Typical Packet Insertion Points (Normative)..... | 85 |
| E.7 High Level Encoder Requirements (Normative) | 85 |
| E.7.1 Re-encoding Delays | 85 |
| E.7.2 Field 2 Text Service Requirements..... | 86 |
| E.7.3 XDS Packet Handling Requirements | 86 |
| E.8 Line 21 Data Flow (Normative)..... | 87 |
| E.8.1 Sources of Captioning, Text and XDS Data..... | 89 |
| E.8.1.1 Caption File (Optional) | 89 |
| E.8.1.2 SMPTE Time Code Data (Optional)..... | 89 |
| E.8.1.3 Time Code Driver (Optional)..... | 89 |
| E.8.1.4 XDS/Text File (Optional)..... | 89 |

| | |
|--|------------|
| E.8.1.5 XDS/Text Driver (Optional) | 89 |
| E.8.1.6 Real Time Clock..... | 89 |
| E.8.1.7 Serial/Keyboard Port Data (Optional) | 89 |
| E.8.1.8 Bridged Video Data (Optional) | 89 |
| E.8.1.9 Upstream Video Data (Required) | 89 |
| E.8.2 Demultiplexer..... | 90 |
| E.8.3 Incoming Data Filter (Optional)..... | 90 |
| E.8.4 Line 21 Data Buffers..... | 90 |
| E.8.4.1 Field 1 Caption and Text Buffers | 90 |
| E.8.4.2 Field 2 Caption Buffer | 90 |
| E.8.4.3 Field 2 Text Buffer | 90 |
| E.8.4.4 XDS Packet Demultiplexer..... | 90 |
| E.8.4.5 XDS Buffers..... | 93 |
| E.8.4.6 XDS Packet Multiplexer..... | 93 |
| E.8.5 Field Multiplexers | 93 |
| E.8.5.1 Field 1 Multiplexer | 93 |
| E.8.5.2 Field 2 Multiplexer | 93 |
| E.8.6 Encoding Process Flow for Video Signal | 94 |
| E.8.6.1 Upstream Video | 94 |
| E.8.6.2 Encoder | 94 |
| E.8.6.3 Encoded Video..... | 94 |
| E.9 Priorities for Field 1 Re-encoding (Integration) | 94 |
| E.10 Priorities for Field 2 Re-encoding (Integration) | 94 |
| E.10.1 Captioning vs Text vs XDS..... | 94 |
| E.10.2 XDS Vs XDS | 95 |
| Annex F FCC Regulations (Regulatory)..... | 96 |
| F.1 FCC Rules Excerpts | 96 |
| F.1.1 Character Set Table..... | 96 |
| F.1.1.1 Special Characters | 96 |
| F.1.1.2 Standard Characters | 96 |
| F.1.1.3 Mid-Row Codes | 99 |
| F.1.1.4 Miscellaneous Control Codes | 99 |
| F.1.1.5 PACs | 100 |
| F.2 U.S. FCC Rules | 102 |
| Annex G Future Expansion Plans (Normative) | 104 |
| G.1 XDS..... | 104 |
| G.1.1 Lengthening Existing Packets..... | 104 |
| G.1.2 Adding Additional Packets | 104 |
| G.1.3 Defining Additional Class Types | 104 |
| G.1.4 Adding Other Line Formats | 104 |
| G.2 Text..... | 104 |
| G.2.1 Enhanced Text Introduction | 104 |
| G.2.2 Article Identifiers..... | 104 |
| G.2.3 Page And Row Identifiers..... | 105 |
| G.2.4 Downward Compatibility | 105 |
| G.2.5 Examples | 105 |
| Annex H Recommended Schedule for Support of TeleCaption I and TeleCaption II Decoders in Closed-Caption Transmissions | 106 |
| Annex I [Intentionally Omitted]..... | 107 |
| Annex J Repetition Rates for Various Conditions (Informative)..... | 108 |
| J.1 Linear Lookup | 108 |

| | |
|---|------------|
| J.2 Alternating Lookup..... | 110 |
| J.3 Linear VS Alternating Algorithm - Conclusions | 113 |
| J.4 Linear VS Alternating Algorithm - Detailed Analysis..... | 113 |
| J.5 Spreadsheet Heading Description..... | 113 |
| Annex K Canadian CRTC Letter Decisions and Official Translations (Informative)..... | 119 |
| K.1 Primary Language..... | 121 |
| Annex L Content Advisories (Informative)..... | 122 |
| L.1 Scope..... | 122 |
| L.2 Receiver Indication..... | 122 |
| L.3 Blocking | 122 |
| L.4 Cessation | 122 |
| L.4.1 Analog Cessation | 123 |
| L.4.2 Digital Cessation..... | 123 |
| L.5 Selection Advisory | 123 |
| L.6 Rating Information..... | 123 |
| L.7 XDS Data | 123 |
| L.8 Auxiliary Input..... | 124 |
| L.9 Invalid Ratings | 124 |
| L.10 Multiple Rating Systems | 124 |
| L.11 Blocking Hierarchy (Television Parental Guidelines)..... | 124 |
| L.12 Blocking Hierarchy (MPA Guidelines)..... | 126 |
| L.13 Blocking Hierarchy (Canadian English and French Language rating systems)..... | 126 |
| L.14 On Screen Display..... | 126 |
| L.15 Terms and Codes | 126 |
| Annex M Recommended Practice for Expansion of XDS to Include Cable Channel Mapping System Information (Informative)..... | 127 |
| M.1 Encoder Recommendations | 127 |
| M.2 Decoder Recommendations | 127 |

Tables

| | |
|--|----|
| Table 1 Field 1 and Field 2 Packets..... | 10 |
| Table 2 Line 21 Waveform Timing | 14 |
| Table 3 Background and Foreground Attribute Codes..... | 17 |
| Table 4 Special Assignments | 18 |
| Table 5 Extended Character Set—Spanish | 20 |
| Table 6 Extended Character Set—Miscellaneous..... | 21 |
| Table 7 Extended Character Set—French | 22 |
| Table 8 Extended Character Set—Portugese..... | 23 |
| Table 9 Extended Character Set—German..... | 24 |
| Table 10 Extended Character Set--Danish..... | 25 |
| Table 11 URL Types | 30 |
| Table 12 Abbreviated Forms | 30 |
| Table 13 Example—Hexadecimal Character Sequence | 35 |
| Table 14 Control Code Assignments | 37 |
| Table 15 Time/Date Coding | 38 |
| Table 16 Show Length Coding..... | 38 |
| Table 17 Hex Code and Descriptive Key Word | 39 |
| Table 18 Content Advisory XDS Packet..... | 40 |
| Table 19 Content Advisory Systems a0-a3 Bit Usage..... | 40 |
| Table 20 MPA Rating System..... | 41 |

| | |
|---|-----|
| Table 21 U.S. TV Parental Guideline Rating System | 41 |
| Table 22 Canadian English Language Rating System | 42 |
| Table 23 Canadian French Language Rating System | 43 |
| Table 24 Audio Services..... | 44 |
| Table 25 Language..... | 45 |
| Table 26 Audio Types | 45 |
| Table 27 Caption Services..... | 45 |
| Table 28 Caption Service Types | 45 |
| Table 29 Copy and Redistribution Control Packet..... | 46 |
| Table 30 CGMS-A Bit Meanings..... | 46 |
| Table 31 APS Bit Meanings | 46 |
| Table 32 Field Contents—Composite Packet-1..... | 47 |
| Table 33 Field Contents—Composite Packet-2..... | 48 |
| Table 34 Tape Delay Character Format..... | 49 |
| Table 35 TSID Bits..... | 49 |
| Table 36 Day and Year Character Format..... | 50 |
| Table 37 Supplemental Data Character Location | 50 |
| Table 38 Local Time Zone | 50 |
| Table 39 Out-of-Band Channel Number Format..... | 51 |
| Table 40 Channel Map Pointer | 51 |
| Table 41 Channel Map Header | 52 |
| Table 42 Channel Map Packet..... | 52 |
| Table 43 WRSAME Packet Code..... | 54 |
| Table 44 National Weather Service Code Data | 55 |
| Table 45 ISO 8859-1 and CEA-608-D Character Set Differences | 59 |
| Table 46 FCC Safe Caption Area Dimensions..... | 77 |
| Table 47 Initial Timer Values | 93 |
| Table 48 Top Level Data Integration Priority Table | 95 |
| Table 49 Special Characters | 96 |
| Table 50 Standard Characters | 97 |
| Table 51 Mid-Row Codes..... | 99 |
| Table 52 Miscellaneous Control Codes | 99 |
| Table 53 Preamble Address Codes (PACs)..... | 101 |
| Table 54 Linear Algorithm Lookup Table | 109 |
| Table 55 Alternating Algorithm Lookup Table | 111 |
| Table 56 Alternating Algorithm Lookup Table (Continued)..... | 115 |
| Table 57 Alternating Algorithm Lookup Table (Continued)..... | 116 |
| Table 58 Alternating Algorithm Lookup Table (Continued)..... | 117 |
| Table 59 Alternating Algorithm Lookup Table (Continued)..... | 118 |
| Table 60 Blocking Example A | 124 |
| Table 61 Blocking Example B | 125 |
| Table 62 Blocking Example C | 125 |
| Table 63 Blocking Example D | 125 |
| Table 64 Blocking Example E | 126 |

Figures

| | |
|---|----|
| Figure 1 Program Distribution Path for Closed Captioned Programming | 11 |
| Figure 2 Line 21 Waveform Diagram | 13 |
| Figure 3 FCC Safe Caption Area | 77 |
| Figure 4 Line 21 Data Structures | 83 |
| Figure 5 Two-way Integration Process | 84 |
| Figure 6 Three Way Integration Process | 85 |
| Figure 7 Line 21 Data Flow Diagram | 88 |
| Figure 8 XDS Packet Handling | 91 |

LINE 21 DATA SERVICES

1 Purpose and Scope

This section describes the purpose and scope of the entire standard.

1.1 Purpose

CEA-608-D is a technical standard and guide for using or providing Closed Captioning services or other data services embedded in line 21 of the vertical blanking interval of the NTSC video signal. This includes provision for encoding equipment and/or decoding equipment to produce such material as well as manufacturers of television receivers which are required to include such decoders in their equipment as a matter of regulation (see Annex F). It is also a usage guide for producing material using such equipment, and for distributing such material.

This standard describes the specifications for creation, transmission, reception, and display of caption data, plus the relationship of Caption Mode data to other line 21 data. A comparison of decoders meeting Federal Communications Commission (FCC) rules to all decoders designed prior to the drafting of those rules and a timetable for the implementation of features which are unique to the different generations of decoders are retained from the prior version.

ATSC DTV Closed Captioning, as well as a method of carrying the CEA-608-E data stream in ATSC DTV is documented in CEA-708-C.

Guidance on digital transmission of CEA-608-E signals is provided in SMPTE 334 and SMPTE EG-43.

1.2 Scope

Where recommendations or requirements are made for service providers, they apply to anyone who creates, transmits, or modifies data, i.e., someone other than an equipment manufacturer. For example, a "caption service provider" could be the agency which creates the captions for a program, the distribution system (e.g. network) which carries the captions on line 21, or the local affiliate which uses its own data encoder to insert Text Mode or XDS between the captions. In a few cases specific categories of service providers are called out.

It is recommended that regardless of the function to be performed, the reader should become familiar at least with all the introductions to sections of this standard to avoid unintentionally degrading other services, and then concentrate on the sections which are appropriate to the activity being undertaken.

While there is no legal requirement to abide by this standard or its recommended practices, except for those portions labeled regulatory, it is strongly recommended that this advice be followed by line 21 data service providers and manufacturers of equipment used to transmit and receive these data services. Failure to follow these practices is likely to result in a degraded and inferior service and a non-uniform, unpredictable display of captions, text or operation of XDS features on the consumer's receiver.

It is necessary to abide by this Standard to be CEA-608-E compliant, however while methods described in this standard for the inclusion of a service shall be followed, unless otherwise stated no service is mandatory.

1.3 Other Vertical Interval Lines

Nothing in this standard shall preclude the use of the methods described in this standard for transmission of data on other lines of the Vertical Interval or when allowed the video portion of the NTSC television signal.

1.4 Antecedent Documents

CEA-608-E not only is an updated version, but it also includes and supersedes those documents listed in Section 2.4.