



SLOVENSKI STANDARD
SIST EN 300 797 V1.2.1:2006

01-marec-2006

Digitalna zvokovna radiodifuzija (DAB) – Vmesniki za razpošiljanje – Vmesnik za prenos storitev (STI)

Digital Audio Broadcasting (DAB); Distribution interfaces; Service Transport Interface (STI)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 797 V1.2.1:2006](https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006)

[https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-](https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006)

[b2a947d6d137/sist-en-300-797-v1-2-1-2006](https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006)

Ta slovenski standard je istoveten z: EN 300 797 Version 1.2.1

ICS:

33.170

Televizijska in radijska
difuzija

Television and radio
broadcasting

SIST EN 300 797 V1.2.1:2006

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 797 V1.2.1:2006

<https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006>

ETSI EN 300 797 V1.2.1 (2005-05)

European Standard (Telecommunications series)

Digital Audio Broadcasting (DAB); Distribution interfaces; Service Transport Interface (STI)

European Broadcasting Union

Union Européenne de Radio-Télévision

iTeh STANDARD PREVIEW

(standards.iteh.eu)

EBU-UER

DAB

SIST EN 300 797 V1.2.1

Digital Audio Broadcasting

<https://standards.iteh.ai/catalog/standards/sist/01476bbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006>



Reference

REN/JTC-DAB-37

Keywords

audio, broadcasting, DAB, data, digital, interface,
transport

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 797 V1.2.1:2006

<https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d1-2006-300-797-v1-2-1-2006>

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2005.

© European Broadcasting Union 2005.

All rights reserved.

DECT[™], **PLUGTESTS**[™] and **UMTS**[™] are Trade Marks of ETSI registered for the benefit of its Members.
TIPHON[™] and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPP[™] is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

Contents

Intellectual Property Rights	10
Foreword.....	10
Introduction	11
1 Scope	13
2 References	13
3 Definitions, abbreviations, symbols and terminology	14
3.1 Definitions	14
3.2 Abbreviations	17
3.3 Symbols.....	18
3.3.1 Numerical ranges	18
3.3.2 Bit and byte numbering.....	19
3.3.3 Arithmetic operators	19
3.3.4 Logical operators	19
3.3.5 STI-C(LI) Field Types	19
3.4 Ordering of bytes and bits for transmission.....	19
3.5 Reserved bits	20
3.6 STI-C character set.....	20
3.6.1 STI-C(LI) message character set	20
3.6.2 STI-C(TA) character set	20
4 Overview of the Service Transport Interface definition.....	20
4.1 Conceptual model of the Service Transport Interface.....	20
4.2 The logical model of the STI.....	23
4.3 The layered model of the STI.....	24
4.4 The implementation model of the STI.....	25
4.4.1 Examples of network topologies.....	25
4.4.2 Hierarchical collection networks.....	27
4.4.3 Multicasting	27
5 Logical definition of the STI Data Part, STI-D(LI)	28
5.1 General structure	28
5.2 Error field (ERR).....	30
5.3 Frame characterization field (FC)	30
5.3.1 Service provider identifier field (SPID).....	30
5.3.2 Reserved bits.....	30
5.3.3 Data length field (DL).....	31
5.3.4 Reserved bits.....	31
5.3.5 Data frame count field (DFCT).....	31
5.3.6 Number of streams field (NST)	31
5.4 Stream characterization field (STC).....	31
5.4.1 Individual stream characterization field (ISTC _{Strm}).....	31
5.4.1.1 Type identifier field (TID)	32
5.4.1.2 Stream length field (STL)	32
5.4.1.3 Type identifier extension field (TIDext)	32
5.4.1.4 Stream cyclic redundancy checksum flag field (CRCSTF).....	33
5.4.1.5 Stream identifier field (STID).....	33
5.5 End-of-header field (EOH).....	33
5.5.1 Reserved bytes	33
5.5.2 Header cyclic redundancy checksum field (CRCH)	33
5.6 Main stream data field (MST)	34
5.6.1 Individual stream data field (ISTD _{Strm}).....	34
5.6.2 Stream cyclic redundancy checksum field (CRCST _{Strm}).....	34
5.7 End-of-frame field (EOF).....	34
5.8 STI-D(LI) time stamp field (TIST)	34
5.9 Details of the individual streams carried in the MST	34

5.9.1	MSC sub-channel streams	34
5.9.1.1	MSC audio stream.....	34
5.9.1.2	MSC data stream.....	35
5.9.1.3	MSC packet mode stream	35
5.9.2	MSC sub-channel contributions.....	35
5.9.2.1	MSC packet mode data contributions	35
5.9.3	FIC FIG stream.....	35
5.9.4	FIC FIB stream.....	35
5.9.5	In-house data.....	36
6	Logical definition of the STI Control Part STI-C(LI)	36
6.1	General Structure.....	36
6.2	Message handling.....	37
6.2.1	Data Exchange Sessions	38
6.3	STI-C(LI) message set.....	38
6.4	Action messages.....	40
6.4.1	General rules to use action messages	41
6.4.2	RCONFIG messages.....	41
6.4.2.1	RCONFIG REQ	42
6.4.2.2	RCONFIG DEF.....	42
6.4.2.3	RCONFIG INF.....	43
6.4.2.4	RCONFIG CAN.....	43
6.4.2.5	RCONFIG ACK.....	44
6.4.2.6	RCONFIG ERR	44
6.5	Configuration messages	45
6.5.1	General rules to use configuration messages	46
6.5.2	CONFDEF messages	47
6.5.2.1	CONFDEF INF.....	47
6.5.2.2	CONFDEF DEF	48
6.5.2.3	CONFDEF END	48
6.5.2.4	CONFDEF DEL.....	49
6.5.2.5	CONFDEF ERR.....	49
6.5.3	SUBCHAN messages.....	50
6.5.3.1	SUBCHAN DEF	50
6.5.4	USESTRM messages.....	51
6.5.4.1	USESTRM DEF.....	51
6.5.5	CMPNENT messages	52
6.5.5.1	CMPNENT DEF	53
6.5.6	SERVICE messages.....	54
6.5.6.1	SERVICE DEF	54
6.5.7	USEFIGF messages	55
6.5.7.1	USEFIGF DEF.....	55
6.6	FIG file messages	55
6.6.1	General rules to use FIG file messages	56
6.6.2	FIGFILE messages	56
6.6.2.1	FIGFILE INF	57
6.6.2.2	FIGFILE DEF	57
6.6.2.3	FIGFILE REC	58
6.6.2.4	FIGFILE END.....	58
6.6.2.5	FIGFILE DEL	58
6.6.2.6	FIGFILE SEL.....	59
6.6.2.7	FIGFILE DES	59
6.6.2.8	FIGFILE ERR	60
6.7	FIB grid messages	60
6.7.1	General rules to use FIBGRID messages.....	61
6.7.2	FIBGRID messages	61
6.7.2.1	FIBGRID INF	62
6.7.2.2	FIBGRID DEF	62
6.7.2.3	FIBGRID REC	62
6.7.2.4	FIBGRID END	63
6.7.2.5	FIBGRID ACT.....	63
6.7.2.6	FIBGRID ERR.....	64

6.8	Resource messages	65
6.8.1	General rules to use resource messages	65
6.8.2	RESOURC messages	66
6.8.2.1	RESOURC INF	66
6.8.2.2	RESOURC DEF	66
6.8.2.3	RESOURC END	67
6.8.2.4	RESOURC ERR	67
6.8.3	CHANCAP messages	67
6.8.3.1	CHANCAP DEF	68
6.8.4	STLIMIT messages	68
6.8.4.1	STLIMIT DEF	68
6.8.5	IDALLOC messages	69
6.8.5.1	IDALLOC DEF	69
6.8.6	IDLIMIT messages	71
6.8.6.1	IDLIMIT DEF	72
6.8.7	PACKCON messages	73
6.8.7.1	PACKCON DEF	73
6.8.8	FIGBLCK messages	74
6.8.8.1	FIGBLCK DEF	74
6.8.9	ANNSEND messages	75
6.8.9.1	ANNSEND DEF	75
6.9	Information messages	76
6.9.1	General rules to use information messages	77
6.9.2	CONINFO messages	77
6.9.2.1	CONINFO INF	77
6.9.2.2	CONINFO DEF	77
6.9.3	CONNNAME messages	78
6.9.3.1	CONNNAME INF	78
6.9.3.2	CONNNAME DEF	78
6.9.3.3	CONNNAME REC	79
6.9.3.4	CONNNAME END	79
6.9.3.5	CONNNAME ERR	79
6.9.4	FIGINFO messages	80
6.9.4.1	FIGINFO INF	80
6.9.4.2	FIGINFO DEF	80
6.9.5	FIGNAME messages	81
6.9.5.1	FIGNAME INF	81
6.9.5.2	FIGNAME DEF	81
6.9.5.3	FIGNAME REC	82
6.9.5.4	FIGNAME END	82
6.9.5.5	FIGNAME ERR	82
6.9.6	COUNTER messages	83
6.9.6.1	COUNTER INF	83
6.9.6.2	COUNTER DEF	83
6.10	Supervision Messages	84
6.10.1	General rules for the use of supervision messages	85
6.10.2	PRERROR messages	85
6.10.2.1	PRERROR GBG	85
6.10.2.2	PRERROR UKN	85
6.10.2.3	PRERROR SYN	86
6.10.2.4	PRERROR SEM	86
6.10.2.5	PRERROR PRT	87
6.10.3	ALARMST messages	88
6.10.3.1	ALARMST INF	88
6.10.3.2	ALARMST DEF	88
6.10.4	STERROR messages	89
6.10.4.1	STERROR INF	89
6.10.4.2	STERROR DEF	90
7	Transport Adaptation for the STI control part STI-C(TA)	91
7.1	General structure	91
7.1.1	STI-C(TA) on synchronous physical links	91

7.1.2	STI-C(TA) on asynchronous physical links.....	92
7.2	The data link layer.....	93
7.2.1	Start field (START).....	93
7.2.2	Network packet.....	93
7.2.3	Cyclic redundancy checksum field (CRC).....	93
7.2.4	End field (END).....	93
7.2.5	Data link packet handling.....	93
7.2.5.1	Packet transmission.....	93
7.2.5.2	Packet reception.....	93
7.3	Padding character.....	93
7.4	The network layer.....	93
7.4.1	Source address field (SAD).....	94
7.4.2	Destination address field (DAD).....	94
7.4.3	Transport packet.....	94
7.4.4	Separator fields (SEP).....	94
7.4.5	Network packet handling.....	94
7.4.5.1	Packet transmission.....	94
7.4.5.2	Packet reception.....	94
7.5	The transport layer.....	94
7.5.1	Packet number (PKTNUM).....	94
7.5.2	Acknowledge Number (ACKNUM).....	95
7.5.3	Repetition Index (REP).....	95
7.5.4	Acknowledge field (ACK).....	95
7.5.5	Flag field (FLAG).....	95
7.5.6	Logical packet.....	95
7.5.7	Separator fields (SEP).....	95
7.5.8	Transport packet handling.....	95
7.5.8.1	Opening a connection.....	96
7.5.8.2	Closing a connection.....	96
7.5.8.3	Transmission on an open connection.....	97
7.5.8.4	Reception on an open connection.....	97
7.6	The logical layer.....	97
7.6.1	STI-C(LI).....	97
7.6.2	Logical packet handling.....	98
7.6.2.1	Packet transmission.....	98
7.6.2.2	Packet reception.....	98
8	Generic transport frame STI(PI, X).....	98
8.1	General.....	98
8.2	Adaptation of the logical layer.....	98
8.2.1	Synchronization field (SYNC).....	100
8.2.1.1	Error field (ERR).....	100
8.2.1.2	Frame synchronization field (FSYNC).....	100
8.2.2	Transport frame header field (TFH).....	101
8.2.2.1	Data frame size field (DFS).....	101
8.2.2.2	Control frame size field (CFS).....	101
8.2.3	Data frame field (DF).....	101
8.2.3.1	STI-D(LI) data field (D-LIDATA).....	101
8.2.3.2	Data frame padding field (DFPD).....	101
8.2.4	Control frame field (CF).....	101
8.2.5	Frame padding field (FRPD).....	101
9	Physical Interfaces for synchronous links.....	102
9.1	G.703 interfaces, STI(PI, G.703).....	102
9.1.1	General description.....	102
9.1.2	Adaptation of the STI(PI, X) to the STI(PI, G.703).....	102
9.1.3	Physical interface.....	102
9.2	V.11 interface, STI(PI, V.11).....	102
9.2.1	General description.....	102
9.2.2	Adaptation of the STI(PI, X) to the STI(PI, V.11).....	102
9.2.3	Physical interface.....	103
9.3	WG1/WG2 interface, STI(PI, WG1/2).....	103

9.3.1	General description	103
9.3.2	Adaptation of the STI(PI, X) to the STI(PI, WG1/2).....	103
9.3.3	Adaptation to the WG1/2 frame structure.....	104
9.3.4	Physical interface	104
9.4	IEC 60958 interface, STI(PI, IEC 60958)	104
9.4.1	General description	104
9.4.2	Adaptation of the STI(PI, X) to the STI(PI, IEC 60958).....	104
9.4.3	Adaptation to the IEC 60958 frame structure	105
9.4.4	Physical interface	105
9.5	G.704 interface with error protection, STI(PI, G.704/1)	106
9.5.1	General description	106
9.5.2	Transparency of STI(PI, G.704/1) layer to STI-D(LI).....	106
9.5.2.1	Transparency of STI(PI, G.704/1) _{5 592} layer to STI(PI, X)	106
9.5.2.2	Transparency of STI(PI, G.704/1) _{5 376} layer to STI(PI, X).....	106
9.5.3	STI(PI, G.704/1) structure	107
9.5.3.1	G.704 reserved bytes.....	107
9.5.3.2	STI(PI, G.704/1) reserved bytes.....	107
9.5.3.2.1	Multiframe management byte, $M_{bl,s}$	108
9.5.3.2.2	Multiframe supervision byte, $S_{bl,s}$	110
9.5.4	STI(PI, G.704/1) multiframe generation.....	110
9.5.4.1	General description	110
9.5.4.2	Error coding and interleaving for STI(PI, G.704/1) _{5 592}	111
9.5.4.2.1	Coding array formation	111
9.5.4.2.2	Interleaving.....	111
9.5.4.2.3	Output array formation	112
9.5.4.3	Error coding and interleaving for STI(PI, G.704/1) _{5 376}	112
9.5.4.3.1	Coding array formation	112
9.5.4.3.2	Interleaving.....	113
9.5.4.3.3	Output array formation	113
9.5.5	Order of data transmission	113
9.5.6	Error protection code	113
9.5.7	Synchronization	113
9.5.7.1	Synchronization of G.704 frames.....	113
9.5.7.2	Synchronization of STI(PI, G.704/1) multiframe	114
9.5.8	Physical interface	114
9.5.9	Modifying the STI-D(LI) ERR field.....	114
9.6	G.704 interface without error protection, STI(PI, G.704/2)	117
9.6.1	General description	117
9.6.2	Adaptation of the STI(PI, X) to the STI(PI, G.704/2)	117
9.6.3	Adaptation to the G.704 frame structure.....	117
9.6.3.1	G.704 reserved bytes.....	117
9.6.3.2	STI(PI, G.704/2) generation.....	117
9.6.3.2.1	Output array formation	117
9.6.3.2.2	Order of data transmission.....	118
9.6.3.2.3	Synchronization of G.704 frames	118
9.6.4	Physical interface	119
9.7	H.221 interfaces, STI(PI, H.221).....	119
9.7.1	General description	119
9.7.2	Adaptation of the STI(PI, X) to the STI(PI, H.221).....	119
9.7.3	Adaptation to the H.221 frame structure.....	119
9.7.3.1	H.221 reserved bits.....	119
9.7.3.2	STI(PI, H.221) generation.....	119
9.7.4	Physical interface	119
10	Physical Interfaces for asynchronous links	120
10.1	V.24 interface, STI(PI, V.24).....	120
10.1.1	General.....	120
10.1.2	Adaptation of the STI(PI, X) to the STI(PI, V.24).....	120
10.1.3	Physical interface	120
Annex A (normative):	Calculation of CRC words in the STI	122

Annex B (normative):	Coding of timestamps in STI	123
B.1	General	123
B.2	Timestamp coding	123
B.2.1	Expected range of timestamp values	123
B.2.2	Null timestamp	123
B.2.3	Reserved timestamp values	123
B.2.4	Timestamp levels.....	123
B.3	Mapping to STI-D(LI) timestamp bits	124
B.4	Mapping to STI-D(PI, G.704/1) timestamp bits.....	124
B.5	Interpretation of timestamp value.....	124
B.6	Use of timestamps in LI and PI layers.....	124
Annex C (normative):	Definition of the WG1/2 Interface	125
C.1	WG1/2 interface overview	125
C.2	WG1/2 interface signals definition.....	126
C.3	WG1/2 interface data-frame syntax	127
C.4	WG1/2 physical interface.....	127
Annex D (normative):	Coding of NASC data	128
D.1	General	128
D.2	Frame Synchronous Signalling (FSS).....	128
D.2.1	FSS messages structure	128
D.2.2	Pre-assigned FSS message types.....	128
D.3	Asynchronous Signalling (ASS)	128
D.3.1	ASS messages structure.....	128
D.3.2	Pre-assigned ASS message types.....	129
Annex E (normative):	Behaviour of the STI during reconfiguration	130
E.1	DAB multiplex configuration management	130
E.2	STI reconfiguration procedure	131
E.2.1	Service configuration definition	131
E.2.2	Choosing the reconfiguration instant.....	131
E.2.3	Requesting a reconfiguration.....	132
E.2.4	Implementing the reconfiguration	132
Annex F (informative):	Use of the STI timestamp	133
F.1	Delay between Service provider and users.....	133
F.2	Setting the timestamp value	134
F.3	Using the timestamp in multicasting.....	134
Annex G (informative):	Examples of STI-C(TA) protocol	135
G.1	Opening and closing of an STI-C(TA) connection	135
G.2	Transmission on an open connection	136
G.3	Handling loss of packets.....	138
Annex H (informative):	Use of STI(PI,G.704/1) on T1 networks.....	140
H.1	Introduction	140
H.2	General outline of STI(PI, G.704/1-T1).....	140

H.3	Transparency of STI(PI, G.704/1-T1) layer to STI(PI, X).....	140
H.3.1	Transparency of STI(PI, G.704/1-T1) _{4 464} layer to STI(PI, X)	140
H.3.2	Transparency of STI(PI, G.704/1-T1) _{4 320} layer to STI(PI, X)	141
H.4	STI(PI, G.704/1-T1) structure	141
H.5	Error protection for STI(PI, G.704/1-T1).....	141
Annex I (informative):	Bibliography.....	145
History		146

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 300 797 V1.2.1:2006](https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006)

<https://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006>

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This European Standard (Telecommunications series) has been produced by Joint Technical Committee (JTC) Broadcast of the European Broadcasting Union (EBU), Comité Européen de Normalisation ELECtrotechnique (CENELEC) and the European Telecommunications Standards Institute (ETSI).

NOTE 1: The EBU/ETSI JTC Broadcast was established in 1990 to co-ordinate the drafting of standards in the specific field of broadcasting and related fields. Since 1995 the JTC Broadcast became a tripartite body by including in the Memorandum of Understanding also CENELEC, which is responsible for the standardization of radio and television receivers. The EBU is a professional association of broadcasting organizations whose work includes the co-ordination of its members' activities in the technical, legal, programme-making and programme-exchange domains. The EBU has active members in about 60 countries in the European broadcasting area; its headquarters is in Geneva.

European Broadcasting Union
CH-1218 GRAND SACONNEX (Geneva)
Switzerland

Tel: +41 22 717 21 11
Fax: +41 22 717 24 81

[standards.iteh.ai](http://standards.iteh.ai/catalog/standards/sist/0147bbbf-2064-43d1-8c77-b2a947d6d137/sist-en-300-797-v1-2-1-2006)

The Eureka Project 147 was established in 1987, with funding from the European Commission, to develop a system for the broadcasting of audio and data to fixed, portable or mobile receivers. Their work resulted in the publication of a European Standard, EN 300 401 [1], for DAB (see note 2) which now has world-wide acceptance. The members of the Eureka Project 147 are drawn from broadcasting organizations and telecommunication providers together with companies from the professional and consumer electronics industry.

NOTE 2: DAB is a registered trademark owned by one of the Eureka Project 147 partners.

National transposition dates	
Date of adoption of this EN:	27 May 2005
Date of latest announcement of this EN (doa):	31 August 2005
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2006
Date of withdrawal of any conflicting National Standard (dow):	28 February 2006

Introduction

The present document is one of a set associated with DAB. EN 300 401 [1] describes the transmitted signal; the interface between the broadcaster's transmitters and the listener's receiver. The associated documents, EN 300 798 [2] and ETS 300 799 [3] describe additional interfaces which can be used by broadcasters or network providers to build DAB networks.

Figure 1 shows a DAB network in outline. For convenience, the Network is split into a number of different parts, each managed by a different entity. The different entities are; the Programme/Data provider, the Service Component provider, the Ensemble provider and the Transmission Network provider.

NOTE: A Service Component provider may be generating a full DAB service or a component of a DAB service. For the purposes of the present document, the terms Service provider and Service Component provider are interchangeable.

Programme/Data provider

The Programme/Data provider is the originator of the audio programme or the data being carried within the DAB Service Component. The format for the output of the Programme/Data provider may take many different forms and should be agreed between the Programme/Data provider and the Service Component provider.

Service Component provider

The Service Component provider is producing one or more complete service components which may form the complete DAB Service, but may not. Data from the Service Component provider will comprise three different parts:

- Service Component data which is to be inserted into the DAB Main Service Channel (MSC);
- Service Information related to the Service Component data which is to be inserted into the Fast Information Channel (FIC);
- other data, not intended for transmission, including status monitoring or control.

The interface between the Service Component provider and the Ensemble provider is known as the Service Transport Interface (STI) and is the subject of the present document.

Ensemble provider

The Ensemble provider receives a set of service components from one or more Service Component providers. He then formats the FIC, and generates an unambiguous description of the full DAB ensemble.

The ensemble description is passed to the Transmission Network provider via an interface called the Ensemble Transport Interface (ETI) which is defined in ETS 300 799 [3].

Transmission Network provider

The Transmission Network provider generates the DAB Ensemble and transmits it to the receiver. The output of the Transmission Network provider is defined by EN 300 401 [1]. The Transmission Network provider is usually the final recipient of the ETI and is responsible for turning it into the DAB transmission signal using an OFDM generator.

In some cases, as an intermediate step, the Transmission Network provider may find it convenient to generate a baseband representation of the signal to be transmitted. The baseband representation, known as the Digital baseband I/Q Interface (DIQ), is a set of digital samples defining the In-phase (I) and Quadrature (Q) components of the final carrier. This interface is defined in EN 300 798 [2], and provides a convenient interface between digital processing equipment and radio-frequency modulating equipment.

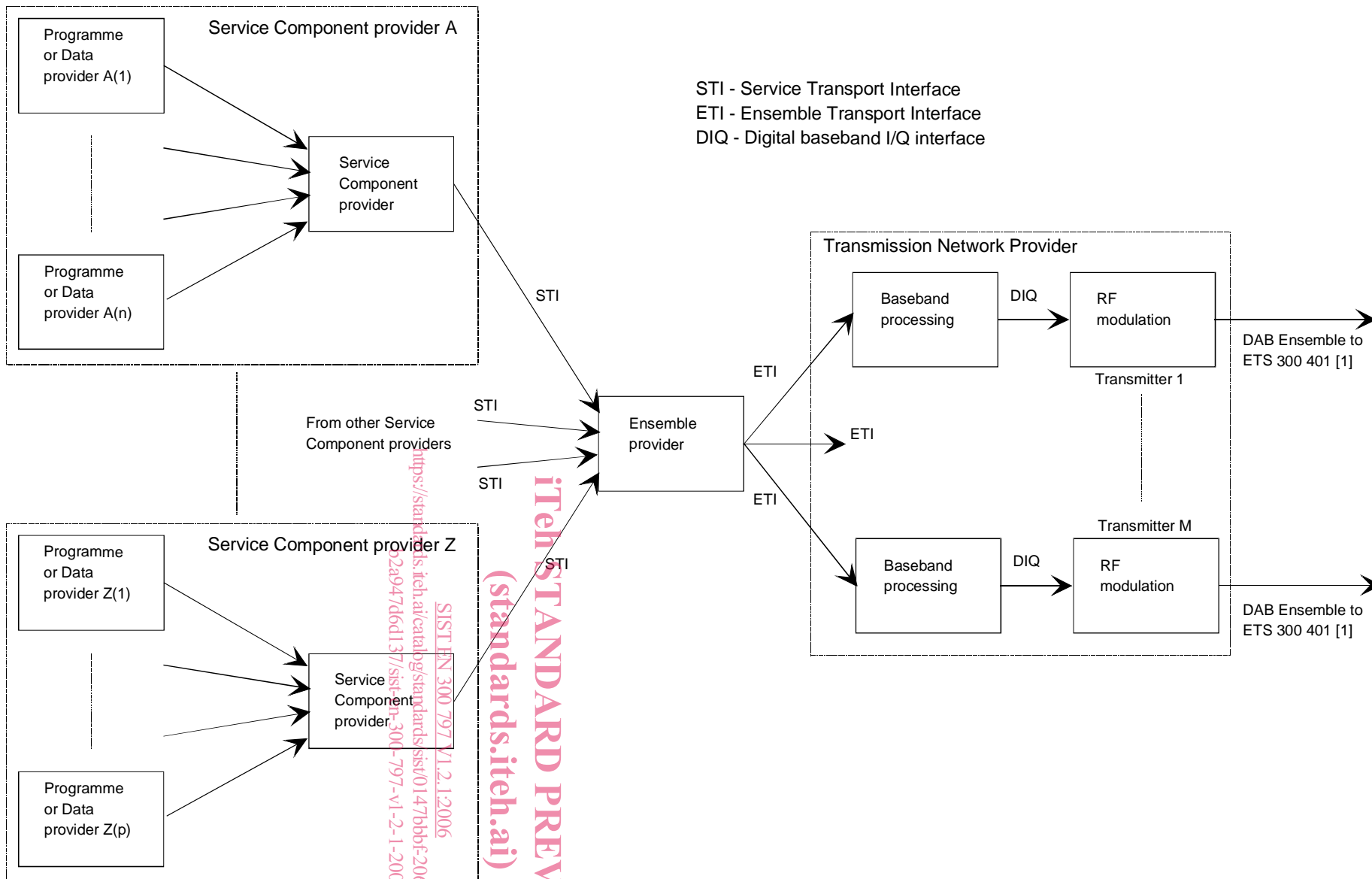


Figure 1: DAB network outline

1 Scope

The present document establishes a standard method for transporting Service components (audio and data) produced by Service providers at their own studios to the DAB multiplexing equipment located at the Ensemble provider's centre.

EN 300 401 [1] established a broadcasting standard for a DAB system. Broadcasters who implement DAB networks require methods for transporting DAB signals, or the component parts of a DAB signal, between studios, where the programme or data service originates, and the transmitter sites from which the signal will be radiated. The network of circuits connecting the studios to the Ensemble provider's ensemble multiplexer is generally known as the Collection Network. The network of circuits connecting the ensemble multiplexer to the transmitters is generally known as the Distribution Network.

The present document is applicable to Collection Networks used in a DAB System. It describes the characteristics of a signal suitable for transporting Service Components, Service Information and control data between a Service provider and an Ensemble provider. The interface is suitable for use on a number of different physical media and telecommunication networks. Provision is made for the inclusion of appropriate error detection and correction and for the management of network transit delay.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

- [1] ETSI EN 300 401: "Radio Broadcasting Systems; Digital Audio Broadcasting (DAB) to mobile, portable and fixed receivers".
- [2] ETSI EN 300 798: "Digital Audio Broadcasting (DAB); Distribution interfaces; Digital baseband In-phase and Quadrature (DIQ) Interface".
- [3] ETSI ETS 300 799: "Digital Audio Broadcasting (DAB); Distribution interfaces; Ensemble Transport Interface (ETI)".
- [4] ITU-T Recommendation G.703: "Physical/electrical characteristics of hierarchical digital interfaces", (section 6: "Interface at 2048 kbit/s).
- [5] ITU-T Recommendation X.24: "List of definitions for interchange circuits between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) on public data networks".
- [6] ITU-T Recommendation V.11: "Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s".
- [7] ITU-T Recommendation G.704: "Synchronous frame structures used at 1544, 6312, 2048, 8448 and 44 736 kbit/s hierarchical levels", (section 2.3: "Basic frame structure at 2048 kbit/s).
- [8] ITU-T Recommendation G.706: "Frame alignment and cyclic redundancy check (CRC) procedures relating to basic frame structures defined in Recommendation G.704".
- [9] ITU-T Recommendation V.24: "List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE)".