

Source: Document 6A/TEMP/227

Document 6/303-E
27 October 2010
English only

Working Party 6A

DRAFT NEW RECOMMENDATION ITU-R BS.[CAP.RAD]

Digital radio broadcast service, captioned radio

Scope

This Recommendation describes mechanisms to support captioned radio broadcast services on the basis of terrestrial digital sound broadcasting systems described in Recommendation ITU-R BS.1114 as well as traditional analogue FM system(s).

The ITU Radiocommunication Assembly,

considering

- a) that there are an estimated 650 million people worldwide with sensory disabilities;
- b) that the goal of the United Nations *Convention on Rights of People with Disabilities* (CRPD) Article 9 is to: *Promote the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at minimum cost;*
- c) that the ITU-Radiocommunication Sector has recognized the fundamental importance of *Bridging the disabilities Digital Divide* as a threshold initiative to improve access for all;
- d) that Digital Radio Systems of multiple types are now operational on a variety of continents;
- e) that each Digital Radio System in operation supports multiple flexible service modes that in theory are capable of supporting transmission of live captioning;
- f) that to implement those digital radio service modes will enable hundreds of millions of deaf and hard of hearing individuals worldwide to have access to the live radio medium;
- g) that Recommendation ITU-R BS.1114 describes Digital Sound Broadcasting (DSB) System A, also known as the Eureka 147 Digital Audio Broadcasting (DAB) System; Digital System F, also known as the ISDB-T_{SB} System; Digital System C, also known as the IBOC DSB System;

h) that traditional analogue frequency modulation (FM) transmissions are capable of transmitting captioning as described in Recommendation ITU-R BS.643 known as the Radio-Data System (RDS) and described in Recommendation ITU-R BS.1194 System A known as the Data Radio Channel (DARC) System;

j) that consumer radio receivers are widely available today that have been shown as configurable to display captioning,

recommends

1 that, in the case of programmes intended for radio broadcast using the ITU DSB systems described in Recommendation ITU-R BS.1114, appropriate modes should be identified in all systems to support captioned radio with a minimum 500 bits/second capacity, as described in Annex 1;

2 that, in the case of programmes intended for radio broadcast using traditional analogue FM methods, account should be taken in the guidelines for captioning described in Annex 2,

further recommends

1 that manufacturers of consumer radio receivers employing any or all of the ITU DSB System A, ITU DSB system F, ITU DSB system C and/or traditional analogue FM be strongly encouraged to produce receivers that display captioning in a way consistent with ITU-R recommendations;

2 that broadcasters be strongly encouraged to transmit programmes with captioning as an integral part of their broadcast.

ANNEX 1

Mechanism for supporting captioning using ITU DSB systems

Abbreviations

AAS-CC	Advanced application services - Closed caption
DAB	Digital audio broadcasting
DRM	Digital Radio Mondiale
DSB	Digital sound broadcasting
IBOC	In-band on-channel
SB	Integrated services digital broadcasting - terrestrial sound broadcasting
MSC	Main service channel
PES	Packetized elementary stream

Table 1 lists the mechanisms and properties of ITU DSB Systems with respect to their capability of transmitting captioning at a minimum 500 bits/second rate.

TABLE 1

Digital Radio System	500 bit/sec capacity	Mechanism for supporting captioning	
			Reference
BS.1114 System A (DAB)	Yes	MPEG Audio Layer II Ancillary Data	ISO/IEC 11172-3 and ISO/IEC 13818-3
BS.1114 System C (IBOC)	Yes	AAS - CC Service Token	NRSC-5B
BS.1114 System F (ISDB-T _{SB})	Yes	PES packets containing private data	ITU-T H.222.0 and ARIB STD-B24 Vol. 1 Part 3

REFERENCES (INFORMATIVE)

- (1) ISO/IEC 11172-3: Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1.5 Mbit/s - Part 3: Audio.
- (2) ISO/IEC 13818-3: Information technology - Generic coding of moving pictures and associated audio information - Part 3: Audio.
- (3) ITU-T H.222.0: Information technology - Generic coding of moving pictures and associated audio information: Systems.
- (4) NRSC-5B: In-band/on-channel Digital Radio Broadcasting Standard, National Radio Systems Committee (www.nrscstandards.org), April, 2008.
- (5) ARIB STD-B24 Vol. 1 Part 3: Data coding and transmission specification for digital broadcasting, Volume 1, Part 3 - Coding of caption and superimpose.

ANNEX 2

Mechanism for supporting captioning using traditional analogue FM

Abbreviations

DARC	Data radio channel
ODA	Open data applications
RDS	Radio data system

Table 2 shows the mechanism and properties of traditional analogue FM Systems with regard to its capability of transmitting captioning at a minimum 500 bits/second rate.

TABLE 2

Data channel system	500 bit/sec capacity	Mechanism for supporting captioning	
			Reference
Rec. ITU-R BS.643 (RDS)	Yes	ODA	IEC 62106 ed2.0
Rec. ITU-R BS.1194 System A (DARC)	Yes	Mode 1 transmission data or Short Message Channel	ETSI EN 300 751

REFERENCES (INFORMATIVE)

- (6) IEC 62106 ed2.0: Specification of the Radio Data System (RDS) for VHF/FM sound broadcasting in the frequency range from 87.5 MHz to 108.0 MHz.
- (7) ETSI EN 300 751: Radio broadcasting systems; Data Radio Channel (DARC); System for wireless infotainment forwarding and teledistribution.

