



Advanced Television Systems Committee

T3 LETTER BALLOT
(Working Draft) Direct-To-Home Satellite Broadcast Standard
January 24, 2003

On December 2, 2002, the voting-eligible members of ATSC Technology Group on Distribution (T3) authorized the balloting of the (Working Draft) DTH Satellite Broadcast Standard (Doc. T3-593). It is attached for your review and approval.

Please mark your vote and return this ballot form before the four-week deadline of Friday, February 21, 2003.

Question 1: Should the (Working Draft) DTH Satellite Broadcast Standard (Doc. T3-593) be approved as presented?

Yes

No

Abstain

Question 2: Shall the ATSC President, in consultation with the Chairman of T3-Technology Group on Distribution, be given "editorial privileges" on the approved document referenced above?

Yes

No

Abstain

Member Organization **Sharp Laboratories of America**

Signature _____

Date January 27, 2003

Editorial comments, or specific objections:

See attached

Please return this T3 Letter Ballot by Friday, February 21 to the ATSC.



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Sharp Laboratories of America
comments on

T3-593, “DTH Satellite Broadcast Standard”

1) Section 6.4, “Constraints on PSI”

This section contains incorrect and misleading requirements that have been addressed during the recently-completed ballot resolution of an amendment to SCTE 54, as well as some incorrect requirements that are remnant of previous versions of various standards.

The first bullet, and any mention of “Program Map Tables” (plural) is incorrect.

The second, third and last bullets are misleading and imprecisely specified. See the SCTE 54 amendment resolution for proper wording. Generally speaking, the revision to SCTE 54 should be included in this section in its entirety.

Suggested Fix: Replace section with equivalent section from SCTE 54 2003.

2) Section 6.5.1, “Audio PES Constraints”

Multi-stream AC-3 decoders, while anticipated by ATSC standards, have never gained marketplace acceptance. While ATSC standards may be lauded for taking an advanced view of audio decoding systems, we believe that it is no longer appropriate to write standards that include multi-stream decoding as an option without prejudice against such an option. In fact, we believe that no such option should be propagated any further.

Suggested Fix: Remove mention of the normative option “... may be capable of simultaneously decoding more than one elementary stream ...”

Or

Suggested Fix: Reword the normative option as “and then combining the program elements into a complete program, but as of January, 2003, no such decoders have been widely deployed and implementers are cautioned against using this feature.”

3) Section 6.7, “Descriptors”

This section requires the Program Smoothing Buffer Descriptor to be present in the transport stream, as per Annex C of A/53-B. This descriptor adds a requirement for smoothness on elementary stream data which is superfluous and unnecessary legacy of previous ATSC standards and should be removed.

Suggested Fix: Remove the section “Program Smoothing Buffer Descriptor,” from the section.

4) Section 7.1, “Possible Video Inputs”

This section is entirely informative and should be marked as such.

Suggested Fix: Add the words “(Informative)” to the section title.

5) Section 7.3.1, “Sequence Header Constraints”

The last sentence in this section may be misinterpreted as meaning this standard is enforcing an additional constraint on ISO/IEC 13818-2 MP@HL.

Suggested Fix: Remove the words “set at” from the last sentence of this section.

6) Section 7.3.2, “Compression Format Constraints”

This section states, “A multi-program transport stream shall not mix two different frame rates within the same multiplex.” We do not believe this to be a reasonable constraint, nor what was intended.

Suggested Fix: Reword the indicated sentence to read, “A multi-program transport stream shall have either 30/60Hz-based frame rates or 25/50Hz-based frame rates, but shall not have both.”

7) Section 7.3.3, “Sequence Extension Constraints”

This section states, “A `sequence_extension` structure is required to be present after every `sequence_header` structure. This means that video shall be encoded in accordance with MPEG-2. Table 7.4 identifies parameters in the sequence extension part of a bit stream that shall be constrained by the video subsystem and lists the allowed values for each.”

This paragraph mixes statement-of-fact (“is”) and requirements (“shall”) in a way that is confusing.

Suggested Fix: Replace quoted paragraph with “A `sequence_extension` shall be present immediately after each `sequence_header`. The `sequence_extension` shall conform to the constraints in Table 7.4.”

8) Generally speaking

Specifications should include normative requirements (“shall”), normative options (“may”, “should”, “need not”), and statements-of-fact (“is”). Generally, these should not be mixed in a way likely to cause confusion.

One such confusing construct is found in, for example, Section 7.3.3 and Section 7.3.4. The latter reads, in part, “Table 7.5 identifies ... that shall be constrained ...” This mixes a statement-of-fact, “identifies” with a normative requirement “shall be constrained” in a way

that (when strictly parsed) could mean (paraphrasing), “Table 7.5 identifies some things that T3-593 is required to constrain.” Note that this is a requirement on the document, not on what a compliant stream contains.

Suggested Fix: A thorough scrubbing of the document for statements of fact about normative requirements and appropriate rewording be implemented.

In particular, for Section 7.3.5:

Suggested Fix: Reword to read, “The sequence display extension shall conform to the constraints listed in Table 7.5.”

In particular, for Section 8.1.1:

Suggested Fix: Reword to read, “The sample rate shall be either 48 kHz or 44.1 kHz. That is, fscod shall contain either ‘00’ (48 kHz) or ‘01’ (44.1 kHz).”

9) Section 7.3.6, “MPEG-2 Still Pictures”

A/53-B specifically excludes the MPEG-2 Still Picture model. This section makes it a normative option.

10) Section 8.2, “MPEG-1 Layer II Audio” and Section 8.2.1, “Audio Coding Modes”

Section 8.2 allows ISO/IEC 11172-3 audio and imposes the constraints from Section 8.2.1. However, Section 8.2 is imprecise about “MPEG-1 Layer II Audio” and Section 8.2.1 lists constraints that have no meaning with respect to MPEG-1.

Suggested Fix: Reword Section 8.2 to, “The transport stream may contain audio conforming to ISO/IEC 11172-3 Layer II (MPEG-1 Layer II), e.g., with stream_type 0x03. Audio streams with this stream type shall not have 32kHz-sampled audio, and shall not have streams coded as “Dual Mono”. Delete section 8.2.1.

11) Typography in sections 9.2.1, 9.9.1, 9.9.2, 9.9.3.

Tables defining syntax should conform to ATSC standard typography.

12) Section 9.9.6, “PSIP STD Model”

This section does not define a PSIP STD Model.

Suggested Fix: Reword section title to “STD Buffer Model Constraints”

13) Section 9.9.6.1, “Buffer Model for Satellite”

This section does not seem to impose a buffer model requirement or set of constraints, as it is only a "... recommended buffer model ...". Furthermore, the numbered list of constraints at the end of the section is misnumbered and poorly constrained.

Suggested Fix: Replace this entire section with the following: "Transport streams compliant with this standard shall comply with the buffer model defined and constrained for the Terrestrial Broadcast system. In particular, maximum cycle times for various tables and maximum bit rates for various PIDs shall be as required by A/65-A Section 7.1."