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Mark Richer
President
Advanced Television Systems Committee
1750 K Street, N.W., Suite 1200
Washington, DC 20006

Dear Mr. Richer: May 28, 2003

Yesterday, Sharp Laboratories voted "No" on the T3 ballot to approve a new version of Annex D of A/53B as a full ATSC Standard. This letter and our attached comments accompany our vote.

Please note that we believe there has been some fine engineering work done to develop this subsystem. Sharp would have likely voted "Yes" on a ballot that had proposed approving the Enhanced 8-VSB system as a Candidate Standard. If the current T3 ballot proposing full ATSC Standard is not approved, Sharp would recommend initiation of another ballot that seeks to approve this document as a Candidate Standard.

Respectfully submitted,

Adam Goldberg
Sharp Laboratories of America

cc: R. Justus, T3 Chair
J. Whitaker, ATSC

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ATTACHMENT:
SHARP LABORATORIES OF AMERICA
COMMENTS ON BALLOT OF
WORKING DRAFT ANNEX D OF A/53B

1) When the T3/S9 effort was undertaken it was charged with a goal of improving Main mode 8-VSB reception, and to add pedestrian and mobile reception capability. Yet this proposed Standard offers no claimed improvement to reception of Main mode data. Indeed, the draft standard itself states only that "The optional modes are designed to avoid impact on any remaining payload in the Main Service." In our view, the ATSC has lost sight of its main goal.

   Nevertheless, we agree that the proposed Enhanced 8-VSB system may have some value, but we believe this will be best explored by approving the document as a Candidate Standard, and collecting as Candidate Standards the remaining components of a working application (note that an application has not yet been defined), so that the entire sub-system can be tested and verified with the actual application in mind. See the December 2002 recommendation of the ATSC Architecture Team, reproduced in item 6) below.

2) 'Robust' mode applications have been loosely postulated, but none agreed. Many business and technical issues remain to be overcome and, in fact, work continues. If these suggested service improvements are necessary or desirable, they should be developed as a complete 'product' rather than as isolated 'components'. No benefit is derived by rushing Annex D to full Standard before corresponding work on Annex C, A/65 and other key components is completed.

3) In fact, we believe that approving as a full ATSC standard only the RF Transmission subsystem for Enhanced 8-VSB would suggest that it is ready for commercial deployment, when in fact there has been little industry dialog, and certainly no agreement, as to the purpose of this new robust transmission capability. If this document were approved as a full ATSC Standard, there would be a risk that some broadcasters may find it in their own business interests to deploy certain robust data transmission services using the Enhanced 8-VSB sub-system, thus diverting data capacity from the HDTV program services which are at the core of a successful transition to digital television. Broadcasters cannot deploy robust data services alone. Consumer electronics manufacturers must join Broadcasters in an agreed plan, if possible, so that products can be produced which create a sustainable, industry-wide business model utilizing these new capabilities. While such deliberations take place, Candidate Standard status would be a better place for the Enhanced 8-VSB RF/transmission sub-system.

4) We have serious concerns about the impact of E8-VSB standardization on the marketplace. Signaling to consumers and the consumer and trade press that terrestrial DTV spectrum may now be diverted to other non-core, non-HDTV uses, when in fact no such decision has been made by the affected industries, would be damaging to

consumer confidence, slow HDTV receiver sales, and would likely extend and confuse the DTV transition.

5) Layering Issues

a. Section 5.2, Figure D5.2

The functional block diagram shows several input "MPEG streams". The layering of the specifications puts this annex as the layer that describes how an input Transport Stream is formatted for emission. However, this diagram shows that the input to this layer *is no longer a transport stream*.

In fact, §5.2 reads, in part "Transmitting enhanced 8-VSB (E8-VSB) requires processing as shown in Figure D5.2 …", yet in fact E8-VSB transmission requires *quite a bit more* processing than that described.

There is and should be an effort to maintain compatibility with equipment that broadcasters have already purchased and installed. The digital transition is hampered enough by other reasons -- changing specifications at the interface between the Transport Layer and the Physical Layer, as this Working Draft does, seems ill-advised.

b. Section 5.4.2.1

This section reads, in part, "The input to the preprocessor shall be 188-byte MPEG-2 packets." In fact, the inputs are three separate streams of such packets. As noted above, this text describes and seemingly admits that the input to the E8-VSB layer is (relative to the current Annex D) no longer a Transport Stream, but rather three separate streams of transport packets – none of which are Transport Streams.

6) In December, 2002, the T3 Architecture Team, comprised by the Chairs of all of the T3 Specialist Groups, recommend that no robust-mode system standards should move beyond Candidate Standard status until all robust mode amendments reach Candidate Standard, and an Implementation Guide has been approved by T3. These recommendations were sound, and should be followed. See the December recommendation below, and in particular, item 4. at the end [underlined here for emphasis]:

From: "Michael A. Dolan" <miked@tbt.com>
Reply-To: t3@list.atsc.org
Date: Fri, 13 Dec 2002 10:12:49 -0800
To: t3@list.atsc.org (ATSC T3)
Cc: a-team@list.atsc.org
Subject: [ATSC-T3] Architecture Team Recommendation - Robust Mode Documentation

Regarding the question of how to document ATSC's Robust Mode Standardization work, the Architecture Team recommends:

1. Specialist groups should document the details of the robust mode work in their fields of

expertise in the form of amendments to the relevant documents in which the material otherwise fits, specifically:

A. S9 should capture the RF characteristics of robust mode emission in the form of an amendment to A/53 (as it is currently doing)

B. S8 should capture the:

a. MPEG-2 transport layer characteristics of robust mode emission in the form of an amendment to A/53.
b. PSIP layer characteristics of robust mode emission in the form of an amendment to A/65.

C. S6 should:

a. capture any new encodings that are not documented in existing external standard as separate ATSC standards
b. capture any reference to, constraints and extensions to all new encodings as an amendment to A/53.

D. S13 should capture any ramifications to data broadcasting an amendment to A/9x as needed.

2. A new T3 adhoc group should be formed to draft:

a. Implementation Guide - Adding Robust Mode to Existing Services (informatively tying together all the amendments)
b. Recommended Practice - Robust Mode Only Service

3. All amendments should be drafted as Candidate Standards.

4. No document should advance until all robust mode amendments reach Candidate Standard, and the Implementation Guide is approved by T3.

Craig Tanner
Adam Goldberg
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May 28, 2003