To:   X3 OMC

From: Richard Hovey

Date: September 5, 1966

Subj: X3 OMC Copy Protection ad hoc group - Convener's Report


1  Introduction

The X3 OMC ad hoc group on Copy Protection met on August 6 to
"to determine the interest of X3 TCs in copy protection in a
general-purpose computing system to protect analog and digital
video content against unauthorized copying, specifically in the
areas of linear motion pictures and DVD technology."

The following X3 Technical Committees were represented:
    X3B11 - optical digital data disks
    X3L3  - audio/picture coding
    X3T10 - lower level interface
    X3T13 - i/o interface - at attachment

The X3 OMC and the Information Technology Industry Council were
also represented. The meeting agenda and a list of attendees is
attached.

The first objective of this meeting was to establish a common
understanding of the different policy, market, and technical
objectives of the industries which are trying to agree on the
means for protecting DVD content. The second objective was to
examine the technical approaches proposed by the cross-industry
Copy Protection Technical Working Group (CPTWG) to determine how
X3 can expeditiously support those aspects of the work which are
suitable for Information Technology standards solutions.


2  Findings

2.1  Existing X3 structures and scopes

The consensus of the meeting was that X3 Technical Committees
oversee some of the enabling technologies that are being applied
or extended to meet copy protection requirements. There are
a variety of relationships between X3 TCs and the CPTWG that
appear appropriate under the existing TC structures in these
instances.

o   standards development role

    The Multimedia Command set project (MMC-2) approved for X3T10
    is slated to include the SCSI and IDE interface commands
    needed to support DVD-ROM, DVD-R, and DVD-RAM devices. There
    have already been some presentations to T10 concerning the

command extensions that will be needed to support the media scrambling and key exchange schemes that are proposed for protecting DVD content.

Current plans call for the MMC-2 specifications to be developed and agreed in X3T10, and submitted to ISO/IEC Joint Technical Committee 1 Subcommittee 25 Working Group 4 for international adoption. X3T10 should keep CPTWG Subcommittee 1 (DVD) informed of the progress on DVD command extensions through an active liaison arrangement.

o   standards processing role

The DVD Consortium sector format specifications for DVD discs containing protected content might normally be processed through ECMA and then submitted for international endorsement by JTC1, with X3B11 playing a contributory role.

However, because the copy protection issue is currently centered on U.S. public policy considerations it may be advisable to process these standards through X3B11 in parallel, so that they are subjected to broader U.S. public review and achieve interim American National Standard status. This may be a consideration to be called out as part of a new domestic project proposal so that it is brought to the attention of affected companies holding memberships in both ECMA and X3B11.

o   standards advisory role

The MPEG-2 standard which has been selected by the motion picture and consumer electronics industries for encoding video content on DVD discs originated in large measure within X3L3, and consequently X3L3 has the expertise to advise CPTWG subcommittees on the application of this standard.

One example might be to advise CPTWG/SC3 (Transmission Media) on the MPEG-2 options and encryption facilities which may be more appropriate to distributed environments; another might be to advise CPTWG/SC2 (A/V Copy Protection Information) on embedding copy control information within an MPEG stream. X3L3 also has the expertise and interest to comment on software security and performance issues relating to descrambling and decoding DVD MPEG-2 content in software implementations.


2.2  Possible new X3 structures and scopes

No single X3 Technical Committee currently has a system-level scope to match the packaging of technologies proposed for DVD copy protection. Moreover, there are elements of the DVD copy protection proposal which may most logically be developed in committees outside of X3 but which need to be followed closely by X3 because of the potential impact on computer system archi-

tectures and performance.

A specific instance of the latter is the proposal to develop a
standard for external analog video signalling that will render
such signals suitable for immediate display but unsuitable
for copying. This is not an area of particular X3 expertise
but because such functions may need to be turned on and off
under internal software control the performance aspects of any
technical approaches proposed elsewhere need to be reviewed.

A number of alternatives for dealing with these aspects were
discussed:

1. retain the X3 OMC Copy Protection ad hoc to monitor and
   report on
   - the CPTWG, so long as it continues to develop the system-
     level agreements;
   - related development, processing, and advisory activities
     undertaken by individual TCs such as suggested above;
   - related activities such as analog signalling schemes which
     may be undertaken in other bodies.

2. establish a new Task Group to deal with Copy Protection
   specific to DVD (e.g., a new TG under X3B11) to
   - monitor and report as in 1, above;
   - provide the structure and administrative experience needed
     for rapid X3 response;
   - prepare for any handoff from CPTWG or elsewhere of DVD
     consensus work needing to be completed or formally stan-
     dardized.

3. establish new Technical Committee to deal with Copy Protec-
   tion in general, as it applies to general-purpose computing
   environements (i.e., including the DVD issues but also ex-
   tending to, for example, settop-type constraints applied to
   PCs)]

The sense of the OMC Copy Protection ad hoc is that although
alternatives 2 and/or 3 may be appropriate steps for X3 to take
as events merit, it is probably premature to do so now and
alternative 1 seems the reasonable approach to the system-level
issues.


3  Agenda

    Meeting:  X3 OMC Copy Protection ad hoc
    Invitees: X3 TC chairmen and IRs from TCs with relevant
              expertise
    Date:     Tuesday, August 6
    Time:     12:00 - 4:00p EDT
    Place:    Information Technology Industry Council
              1250 I St NW, Washington DC 20005

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12:00        Introductory Remarks                    Hovey

                 subject matter and scope
                 goals of the OMC ad hoc
                 broader perspective
                 industry associations


12:30        Chronology                              Silletti
                 DVD roots
                 proposed technical mandates
                 cross-industry technical forum
                 new subcommittee structure


1:15         Policy Issues                           Branton
                 approaches of different industries
                 IT industry goals and concessions
                 anti-circumvention approach
                 legislative climate
                 IT proposal for proceeding


2:00         Technology Overview                     Hovey
                 copy generation management
                 content scrambling
                 analog protection

2:45         Possible X3 Roles                       Hovey

3:00         General Discussion                      All
                 areas for standardization
                 interest and expertise of TCs
                 proposed X3 TCs roles
                 OMC report process
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4  Participants

o  X3 OMC
    -  Ron Silletti
    -  Rich Hovey

o  X3B11 - optical digital data disks
    -  Steve Heil

o  X3L3 - audio/picture coding
    -  Michael Nier
    -  Pete Shirling
    -  Fritz Whittington

o  X3T10 - lower level interface
    -  John Lohmeyer

o  X3T13 - i/o interface - at attachment
    -  Gene Milligan
    -  Devin Worrell

o  Information Technology Industry Council
   -  Fiona Branton

o  other [TI]
   -  Madhu Nerlikar
   -  Roy Edenson