Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	CS Docket No. 97-80
Implementation of Section 304 of the Telecommunications Act of 1996	)	
	)	
Commercial Availability of Navigation Devices	)	
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	PP Docket No. 00-67

REPLY COMMENTS OF VERIDIAN CORPORATION

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SUMMARY

Veridian Corporation ("Veridian"), a provider of information technology solutions and engineering services to the public and private sector intelligence community, and developer of VeriFIDES™ digital copy protection technology,[1] does not object to the rules proposed to support "plug-and-play" operation of consumer electronics equipment and cable systems.[2] Veridian's reply comments are focused on the encoding rules accompanying the proposed plug-and-play standard. Veridian supports in principle the adoption of appropriate encoding rules. While Veridian shares the preference of many commenters for allowing the market to work, the fact is that a market for digital copy protection methodologies has failed to develop so far, indicating this as an area where market forces likely need to be catalyzed by standards allowing a smorgasbord of digital copy protection technologies to compete.

But, while encoding rules are welcome as a principle, the encoding rules that the plug-and-play Memorandum of Understanding ("MOU") proposes to tack on to the plug-and-play standard do not fulfill that needed standard-setting function. The proposed rules, which are based on the 5C Digital Transmission Content Protection ("DTCP") specification, and require use of Cable Television Laboratories, Inc. ("CableLabs")'s "DFAST" scrambling technology,

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[1] Veridian previously described the VeriFIDES™ technology to the Commission in late 2002. *See* Comments of Veridian Corporation, *In the Matter of Digital Broadcast Copy Protection*, Notice of Proposed Rulemaking, MB Docket No. 02-230 (filed Oct. 30, 2002) ("Veridian Broadcast Flag Comments"). *See also* Reply Comments of Veridian Corporation, *In the Matter of Digital Broadcast Copy Protection*, Notice of Proposed Rulemaking, MB Docket No. 02-230 (filed Feb. 21, 2003) ("Veridian Broadcast Flag Reply Comments").

[2] *See In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices; Compatibility Between Cable Systems and Consumer Electronics Equipment*, Further Notice of Proposed Rulemaking, CS Docket No. 97-80, PP Docket No. 00-67, Further Notice of Proposed Rulemaking (rel. Jan, 10, 2003) ("*FNPRM*").

are flawed in several respects, and Veridian shares many of the objections to these rules raised in the comments.

First, as Veridian has explained in prior comments in the proceeding, the DTCP specification upon which the encoding rules are based, as well as the watermarking provisions attached to the proposed DFAST license, offer only elementary digital copy protection.[3] Equally important, *second*, adoption of this regime would cast the Commission in the role of favoring one method over others as opposed to setting the standards that would allow many digital copy protection methods to compete. Indeed, by short-circuiting any standard-setting to "pick a winner," the proposed rules do not include any such standards.

As Veridian has argued in its comments in the broadcast flag proceeding, which raises a very similar set of issues relating to digital broadcast television transmissions, the Commission should phrase any mandated requirement in terms of characteristics and specifications, not in terms of products, to allow the market to select the best product and encourage innovation.[4] At the very least, such standards should prescribe a minimum level of robustness and reliability, openness to all platforms and consumer electronics manufacturers, compatibility with competing and next-generation methods, "visibility" that allows the technical community and consumers to inspect and critique the system, and "renewability" enabling the system to protect future content in the event the system is compromised.

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[3] See *Ex Parte* Letter from Paul B. Schneck, Chief Technology Officer, Veridian, to Michael K. Powell, Chairman, FCC (dated Oct. 25, 2001) ("Veridian *Ex Parte* Letter "), at 1 (submitted in connection with the following dockets: *In the Matter of Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, MM Docket No. 00-39; *In the Matter of Commercial Availability of Navigation Devices*, CS Docket No. 97-80; *In the Matter of Compatibility Between Cable Systems and Consumer Electronics Equipment*, PP Docket No. 00-67).

[4] *See* Veridian Broadcast Flag Comments at 9-10; Veridian Broadcast Flag Reply Comments at 20.

Third, virtually the only defense of the encoding rules offered by their proponents is not the merit of the technology or the appropriateness of the Commission picking winners, but rather the argument that the encoding rules are an inseparable part of the bargain leading to the plug-and-play proposal. Because of this link, the rules' proponents claim that the Commission should adopt both bodies of rules without engaging in any independent public interest scrutiny of the encoding rules.[5] This argument is unpersuasive for two reasons. First, even in the case of an industry-wide settlement that commands the consensus of all stakeholders, the Commission must in fact conduct its independent public interest inquiry before approval. Second, the bargain whose sanctity is defended by the rule proponents was the result of a process that was effectively closed to many parties with legitimate interests.

The Commission, therefore, should "delink" the plug-and-play proposal from the proposed encoding rules. It should adjudicate the former based on its merits, and it should conduct further proceedings to formulate encoding rules for multichannel video programming distributor transmissions. Rules that allow competition among alternative digital copy protection technologies, including appropriate standards to ensure that market forces are allowed to work and that the consumers' interests are protected, should also be the subject of further proceedings.

Here, as in the broadcast flag proceeding, a formal or informal negotiated rulemaking is an appropriate vehicle for the Commission to develop the needed rules in an alliance with the industry. The two proceedings need not be consolidated – the interested parties

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[5] *See* Comments of Comcast Corporation at 3 (Because the parties to the MOU made significant concessions in reaching agreement on the MOU, the rules proposed in the MOU, including those on encoding and digital connectors, must be adopted " *in their entirety*. Removing or rewriting certain provisions will jeopardize the entire Agreement. . . .") (emphasis in original).

in each are overlapping but not identical. At the same time, the issues in the two proceedings also bear many substantive similarities, and the Commission should be mindful of these parallels. At a minimum, if it approves (expressly or tacitly) the content protection rules incorporated in the DFAST license, the Commission should eliminate the requirement of first applying to CableLabs for approval of a different digital copy protection method. The Commission should resolve these applications in the first instance with input from CableLabs, not on appeal from CableLabs' decisions.

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REPLY COMMENTS OF VERIDIAN CORPORATION

Veridian Corporation ("Veridian"), a provider of information technology solutions and engineering services to the intelligence community, Department of Defense, civilian government agencies and the private sector, hereby submits its Reply Comments in the above-captioned proceeding. As the Commission is aware, Veridian has developed the VeriFIDES™ digital copy protection technology, which can protect all types of transmissions of digital content, whether broadcast over the air or transmitted over a multichannel video programming distribution ("MVPD") or personal computer ("PC") platform.

The Commission's *FNPRM* seeks comment regarding the Memorandum of Understanding ("MOU") and accompanying proposed rules jointly submitted to the Commission by cable multiple system operators ("MSOs") and consumer electronics ("CE") manufacturers to facilitate "plug-and-play" compatibility of consumer electronics devices with digital cable

services.[6] Veridian does not object to the rules proposed to support "plug-and-play" operation of consumer electronics equipment. Veridian's reply comments are focused on the encoding rules accompanying the proposed plug-and-play standard.

Veridian supports in principle the adoption of appropriate encoding rules. But, while encoding rules are welcome as a principle, the encoding rules that the MOU proposes to tack on to the plug-and-play standard do not fulfill that needed standard-setting function. The proposed encoding rules, which are based on the 5C Digital Transmission Content Protection ("DTCP") specification, and require use of Cable Television Laboratories, Inc. ("CableLabs")'s "DFAST" scrambling technology, are flawed in several respects, and Veridian shares many of the objections to these rules raised in the comments.

I. ENCODING STANDARDS ARE NECESSARY

While Veridian shares the preference of many commenters for allowing the market to work, the fact is that a market for digital copy protection methodologies has failed to develop so far, indicating this as an area where market forces likely need to be catalyzed by standards allowing a smorgasbord of digital copy protection technologies to compete in the marketplace. In particular, there is no basis in the record for the distinction drawn by the Motion Picture Association of America ("MPAA") between encoding issues pending here and those in the broadcast flag proceeding.

According to the MPAA, while the market has failed to provide adequate protection for digital broadcast transmissions, this has not happened in the case of MVPD

[6] Letter from Carl E. Vogel, President and CEO, Charter Communications, *et al.*, to Michael K. Powell, Chairman, FCC (dated Dec. 19, 2002) ("MOU Cover Letter") and accompanying *Memorandum of Understanding Among Cable MSOs and Consumer Electronics Manufacturers* ("MOU").

transmissions.[7] Therefore, in MPAA's view, the Commission should mandate a digital copy protection method for the former and should not do so in the latter case. In reality, however, there is no meaningful distinction between the two parallel proceedings. In both cases, the market has not functioned properly to ensure adequate digital copy protection, and in both cases it would be inappropriate to try to resolve this problem by picking one method to the exclusion of all others.[8] Rather, here as in the broadcast flag proceeding, the Commission should facilitate the working of market forces by setting appropriate standards.

II. THE COMMISSION SHOULD NOT PICK ANY PARTICULAR DIGITAL COPY PROTECTION METHODOLOGY FOR MVPD TRANSMISSIONS

While encoding rules are welcome as a principle, the encoding rules that the MOU proposes to tack on to the plug-and-play standard are flawed in several respects, and Veridian shares many of the objections to these rules raised in the comments.

By themselves, the encoding rules attached to the MOU address a relatively narrow set of situations: specifically, copy protection models that diverge from "copy never" for certain programming and "copy one" generation for certain other programming are subject to FCC approval.[9] These proposed rules, however, are supplemented – and undermined – by the requirements accompanying the DFAST license. This parallel body of requirements would

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[7] *See* MPAA Comments at 6-7 ("This is not an instance where the market has failed, and where Commission involvement is necessary to remedy the failure. Unlike the situation with over-the-air digital broadcast television, content providers are fully able to protect their interests vis-à-vis cable programmers through licensing arrangements.").

[8] *Accord,* Comments of Public Knowledge and Consumers Union (the "Consumer Groups") at 11 ("By approving the MOU and DFAST license in their current state, the Commission will be locking in the 5C group of technologies. This will create substantial barriers to entry for other copy-protection technologies, and will make competition in this market extremely difficult.").

[9] *See* MOU, Proposed Encoding Rules § 76.1903, subsection 2.

anoint the DTCP specification automatically as the digital copy protection method of choice for MVPD transmissions. Any different method would have to be approved by CableLabs under an essentially standardless process and subject only to *ex post facto* oversight by the Commission.

As Veridian has explained in prior comments in the proceeding, the DTCP specification provides incomplete security, as it offers only elementary digital copy protection.[10] In particular, the specification supports only "conditional access," that is, whether or not content can be viewed, and elemental copy control, *i.e.*, allowing no copies, a single-generation copy, or unlimited copying. In contrast, with the VeriFIDES™ and other source encryption technologies, access to content can be denied, or obtained only with full copy protection, controlling the use of any copies that may be made.

The robustness and compliance rules attached to the DFAST license purport to supplement that protection through the device of "watermarking."[11] As Veridian has explained in the broadcast flag proceeding, however, watermarking is itself an inadequate form of digital copy protection, since devices not equipped with the watermarking hardware remain free to access content without any digital copy protection.[12] The immediate consequence of this fact is that, in the proposed content-protection regime, all recording devices must be equipped with watermark detection and content protection circuitry. In contrast, content-encryption based systems can function without the vulnerability of devices that do not incorporate digital copy

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[10] *See* Veridian *Ex Parte* Letter at 1.

[11] *See* Section 2.5, Exhibit B ("Compliance Rules") of DFAST Technology License Agreement for Unidirectional Digital Cable Products appended to MOU (setting forth operational guidelines for licensees with regard to a "consensus watermark").

[12] *See* Veridian's Broadcast Flag Comments at 5 (explaining that with technologies that involve transmitting content "in the clear," devices that do not respond to the watermark or flag, such as legacy devices or ones built or modified by would-be pirates, would render the watermark or flag ineffective; content received by such devices could copied or redistributed).

protection – such devices would simply not have access to protected (encrypted) content. Moreover, content-encryption-based approaches do not require any copy protection circuitry on recording or transmission devices (such circuitry is required only on the playback devices that enable a viewer to watch or listen to the content). Many other commenters in the broadcast flag proceeding share Veridian's view about the inadequacy of watermarking.[13]

Another problem associated with the DTCP specification is that it applies only to MVPD transmissions as opposed to interactive services.[14] Veridian agrees with those commenters who fear that this limited scope will stand in the way of convergence between MVPD consumer electronics equipment and computers.[15]

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[13] *See, e.g.*, Comments of Motorola, *In the Matter of Digital Broadcast Copy Protection*, MB Docket No. 02-230 (filed Dec. 6, 2002), at 4 (marking technologies such as the broadcast flag that do not employ source encryption, are "ineffective security technolog[ies] that will not ultimately serve the interests of the DTV transition or the consumer community"); Comments of Public Knowledge and Consumers Union, *In the Matter of Digital Broadcast Copy Protection*, MB Docket No. 02-230 (filed Dec. 6, 2002), at 15 (noting the general belief among technologists that "marking" schemes are inherently less effective than end-to-end encryption); Comments of the Electronic Frontier Foundation, *In the Matter of Digital Broadcast Copy Protection*, MB Docket No. 02-230 (filed Dec. 6, 2002), at 7-8 (describing marking technologies such as the broadcast flag as "remarkably weak security measure[s]" because the mark is "merely a label that *advises* receiving equipment without *controlling* its operation") (emphasis in original).

[14] *See* Section 1.19, DFAST Technology License Agreement for Unidirectional Digital Cable Products (defining "unidirectional digital cable products" to exclude interactive products) appended to MOU.

[15] *See, e.g.*, Comments of the Consumer Groups at 12 (observing that "consumers will benefit if convergence between cable/CE equipment and computers and other digital devices continues," but noting that the DFAST license excludes interactive products from participating in a cable-system connected home network); Comments of ATI Technologies, Inc., *et al.* at 3-4 (noting that the definition of unidirectional digital cable products in the DFAST license would exclude products such as cable-modem-enabled PCs from obtaining a DFAST license); Comments of Intel Corporation (Erratum dated Apr. 16, 2003) at 6-7 (expressing concern that the DFAST license's exclusion of interactive products is "designed to preclude PC participation in a competitive market for navigation devices, or at least delay that participation until long after the incumbents have both defined and entered the market.").

Equally important, Veridian agrees with many of the commenters that it would be inappropriate for the Commission to pick one method and assign the custodian of that method the responsibility of evaluating all alternative technologies. Specifically, under the requirements accompanying the DFAST license, CableLabs must "approve or disapprove digital outputs and/or content protection technologies on a reasonable and nondiscriminatory basis within 180 days of submission...," with an opportunity by the licensee to appeal a negative ruling to the FCC.[16] This process creates in CableLabs a private gatekeeper with a vested interest in policing departures from its own digital copy protection technology. It would also cause unnecessary delay. The process could be expedited simply by eliminating the first of its two steps. Petitioners should be able to resort to the Commission directly, and CableLabs would be able to file comments with the Commission expressing its view on the proposed methodology. Alternatively, the Commission should delegate the responsibility of ruling on these petitions in the first instance to a private advisory body that represents *all* industries with a legitimate stake. Indeed, the DFAST license itself contemplates resort to such a body for purposes of interoperability testing and certification.[17]

III. ENDORSEMENT OF THE DTCP SPECIFICATION IS UNNECESSARY FOR THE OPERATION OF THE PLUG-AND-PLAY STANDARD

Plug-and-play operation can be achieved by compliance with the proposed compatibility rules, without a need for CE manufacturers to subscribe to the DFAST license. While the MOU claims that use of the DFAST license is "a key to 'plug-and-play' compatibility

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[16] Section 2.4.4, Exhibit B ("Compliance Rules") of DFAST Technology License Agreement for Unidirectional Digital Cable Products appended to MOU.

[17] *See* MOU § 3.7 (providing for a third party to handle interoperability testing and certification of consumer electronics equipment).

on a nationally portable basis,"[18] it is not clear why this is so. In other words, the prerequisites to plug-and-play operation are in place so long as cable systems comply with the specifications listed in the proposed rules (SCTE 40 2001, ANSI/SCTE 65 2002, ANSI/SCTE 54 2002, and the provisions of the Feb. 2000 NCTA/CEA PSIP agreement for systems with capacity over 750 MHz; and ANSI/SCTE 28 2001 and ANSI/SCTE 41 2001 for all digital systems), and so long as cable operators incorporate IEEE 1394 and DVI or HDMI interfaces in their set-top boxes.[19] Compliance with these rules is possible by using equipment that is not manufactured under the DFAST license and that uses a digital copy protection technology that does not conform to the DTCP specification.

The compliance and robustness rules attached as exhibits to the DFAST license are similarly unnecessary for the purposes of ensuring plug-and-play operation. Indeed, the "consensus watermark" contemplated in these rules has not even been developed yet.[20]

The parties to the MOU, apparently aware of the incongruity between the DFAST license and the proposed rules, purport to have submitted the DFAST license to the Commission "for informational purposes only."[21] How can the MSOs and CE manufacturers seriously maintain, however, that the Commission need not worry about the license when the license

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[18] *See* MOU Cover Letter at 3.

[19] *See* MOU § 3.8.

[20] *See* Section 1.1, Exhibit B ("Compliance Rules") of DFAST Technology License Agreement for Unidirectional Digital Cable Products (defining the "consensus watermark" as "a watermark that has been developed on a multi-industry basis . . . and that has thereafter been identified in a notice by CableLabs as the Consensus Watermark for purposes of this Agreement"), and Section 2.5.1 (describing, prospectively, the rules with which licensees must comply "[c]ommencing on the date that CableLabs identifies the Consensus Watermark.").

[21] MOU Cover Letter at 3.

contemplates a process of appeals to the Commission? The Commission is effectively being asked to rubber stamp the license *sub silentio*, and it should not do so.

The statement that the DFAST license is being provided only informationally is in stark contrast to the emphasis placed by Comcast on the need for the Commission to approve the entire package.[22] Indeed, the only defense of the rules offered by the rules' proponents is the argument that the encoding rules are an inseparable part of the bargain leading to the plug-and-play rules.[23] Because of this link, the rule proponents claim that the Commission should adopt both bodies of rules without engaging in any independent public interest scrutiny of the encoding rules.[24] This argument is unpersuasive for two reasons. First, even in the case of an industry-wide settlement that commands the consensus of all stakeholders, the Commission must in fact conduct its independent public interest inquiry before approval.[25] Second, the bargain whose sanctity is defended by the rule proponents was the result of a process that was effectively closed to many parties with legitimate interests.[26] The Commission, therefore, should "delink" the

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[22] *See* Comments of Comcast Corporation at 3 ("It is . . . critical that the Commission adopt the [MOU]'s . . .jointly proposed rules *in their entirety*. Removing or rewriting certain provisions will jeopardize the entire Agreement. . . .") (emphasis in original).

[23] *See id.*

[24] *See id.* (arguing that the equipment compatibility proposal and encoding rules must be adopted in their entirety because the parties to the MOU made significant concessions in reaching agreement on the MOU).

[25] Even where, for example, an agency is presented with a consensus proposal by an advisory committee formally convened pursuant to the Federal Advisory Committee Act, the agency must still make a determination regarding the matter considered by the committee under the standard required by law. *See* Federal Advisory Committee Act, 5 U.S.C, App. 2, § 2(b)(6) ("the function of advisory committees should be advisory only, and . . . all matters under their consideration should be determined, in accordance with the law, by the official, agency or officer involved.")

[26] *See, e.g.*, Comments of the Satellite Broadcasting and Communications Association ("SBCA") (dated Mar. 28, 2003), at 2-3 ("The MOU failed to reflect the views of a collective

plug-and-play equipment compatibility proposal from the proposed encoding rules. It should adjudicate the former based on its merits,[27] and it should make the latter the subject of further proceedings devoted to considering appropriate encoding rules for MVPD transmissions. The Commission should also conduct further proceedings to formulate rules that allow competition among alternative digital copy protection technologies. These rules should include appropriate standards to ensure that market forces are allowed to work and that the consumers' interests are protected.

IV. THE COMMISSION SHOULD CONSIDER APPROPRIATE MVPD ENCODING STANDARDS IN FURTHER PROCEEDINGS

The further proceedings that the Commission should conduct with respect to MVPD encoding need not be consolidated with the proceedings that are also needed in Veridian's view in the broadcast flag rulemaking. On the other hand, nor should the broadcast flag issue and the question of digital copy protection for the MVPD platform be resolved in isolation from one another. Both proceedings have a notable common characteristic. The Commission is being asked to relegate regulatory functions to a partisan gatekeeper group.[28]

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market-based solution because it excluded several major industry parties such as SBCA, [direct broadcast satellite] and the content providers from its negotiation and drafting process. It nonetheless attempts to unfairly impose the MOU's reach on the excluded parties through Commission regulations."); Comments of ATI Technologies, Inc., *et al.* (dated Mar. 28, 2003), at 5 (no information technology company was permitted to participate in the discussions creating the proposed rules and MOU despite repeated requests to do so, and despite the computer industry's interest in standards that will promote convergence between cable, CE equipment and computers); Comments of Intel Corporation (Erratum dated Apr. 16, 2003), at 4 (despite repeated requests to participate in the process that led to the MOU, Intel was excluded).

[27] Veridian does not at this time take a position on questions of Commission jurisdiction in connection with the proposed rules.

[28] In the case of copy protection for broadcast digital television ("DTV"), the MPAA has proposed that the Commission allow the movie studio and 5C company proponents of the broadcast flag to effectively function as the gatekeepers charged with the duty of approving copy

Normally, the Commission should stay its hand and let the market work. Where this does not prove possible (as has been the case in these two matters) elevating a private unrepresentative group into a quasi-regulator does not solve the problem. The Commission should either shoulder these regulatory responsibilities itself or should mobilize a process leading to the formation of a truly impartial and representative private body.

V. THE COMMISSION SHOULD CONDUCT FURTHER PROCEEDINGS ON COPY PROTECTION TECHNOLOGIES

The formulation of rules that allow competition among alternative digital copy protection technologies should be the subject of further Commission proceedings as well. As Veridian has explained in the broadcast flag proceeding, which raises a very similar set of issues relating to copy protection and digital broadcast television transmissions, any mandated requirements should be framed in terms of characteristics and specifications, not in terms of products, to allow the market to select the best product and encourage innovation.[29] At the very least, such standards should prescribe:

(1) A minimum level of robustness and reliability, for example, precluding the use of technologies that rely upon "shared secrets" similar to the now compromised DSS encryption system used to protect DVDs. As hackers have recently demonstrated, "shared secrets" technologies can easily be defeated, rendering "shared secrets" protection of little use;

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protection technologies for use with broadcast DTV. *See* Comments of MPAA, *In the Matter of Digital Broadcast Copy Protection*, MB Docket No. 02-230 (filed Dec. 6, 2002), at Att. C (describing criteria developed by MPAA and the 5C companies for admission to proposed "Table A" list of technologies approved for use in providing broadcast DTV copy protection).

[29] *See* Veridian Broadcast Flag Comments at 9-10; Veridian Broadcast Flag Reply Comments at 20.

(2) A requirement that technologies be open to all consumer equipment manufacturers, distribution platforms and content providers;

(3) A requirement that technologies be "visible" to all, that is, subject to inspection and review. Visibility would allow the consumer community and the technical community to be certain that there are no "backdoors" performing unauthorized functions (such as the capture of keystrokes by personal video recorders, as has recently come to light) and would allow the community to ensure the correctness of implementation. Although such exposure would accelerate the disclosure of vulnerabilities, it would also accelerate their removal. Professor Ross Anderson has recently proved that, contrary to many assertions, such open-source software is no more vulnerable than software that is kept confidential[30];

(4) A renewability requirement, meaning that technologies should be able to provide a means of protecting future content in the event of compromise, without requiring a total recall or invalidation of all installed consumer equipment; and,

(5) A compatibility requirement, directing that technologies be compatible with different, competing methods, and also with next-generation techniques with minimal conversion requirements.

Technologies that comply with these minimum objective standards will be capable of providing reliable protection of content while minimizing costs to consumers.

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[30] Ross Anderson, "Security in Open versus Closed Systems – The Dance of Boltzmann, Coase, and Moore," Cambridge University, *available at* http://www.ftp.cl.cam.ac.uk/ftp/users/rja14/toulouse.pdf.

VI. CONCLUSION

For the foregoing reasons, Veridian urges the Commission not to "rubber stamp" the rules proposed in the MOU in their current form. The Commission should instead delink the plug-and-play equipment compatibility proposal from the proposed encoding rules, adjudicate the former based on its merits, and make the latter the subject of further proceedings. Further proceedings should also be conducted to formulate rules that allow competition among alternative digital copy protection technologies, including appropriate objective standards to ensure that market forces are allowed to work and that the consumers' interests are protected.

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