TABLE OF CONTENTS

1 OVERVIEW ................................................................................................................................. 4

1.1 HISTORY .................................................................................................................................. 4

1.2 PURPOSE .................................................................................................................................. 4

1.3 GUIDELINE CHANGES .............................................................................................................. 4

1.4 CONFIDENTIALITY .................................................................................................................. 4

1.5 PARTICIPATION IN THE CERTIFICATION PROCESS .............................................................. 4

1.6 SOLICITING / HIRING OF CABLELABS EMPLOYEES, ............................................................ 5

1.7 INFORMATION SOURCES ........................................................................................................ 5

1.8 RULES OF ENGAGEMENT ..................................................................................................... 5

1.9 PUBLICITY FOR CERTIFICATION WAVES .......................................................................... 6

1.10 EFFECT OF CHANGES TO THE OPENCABLE SPECIFICATIONS. .............................................. 6

2 VENDOR ACTIONS REQUIRED FOR CERTIFICATION .......................................................... 7

2.1 PREREQUISITES FOR CERTIFICATION .............................................................................. 7

2.2 X.509 CERTIFICATE REQUEST PROCESS ......................................................................... 7

2.3 REQUEST FOR PRODUCT CERTIFICATION ........................................................................ 7

2.4 REQUIRED DOCUMENTATION FOR CERTIFICATION ....................................................... 7

2.5 REQUIRED PRODUCTS FOR CERTIFICATION ................................................................. 8

2.6 PAYMENT OF CERTIFICATION FEES .................................................................................. 10

2.7 POST CERTIFICATION REQUIREMENTS ............................................................................. 10

2.8 APPEALS PROCESS ................................................................................................................ 10

3 CERTIFICATION BOARD GUIDELINES ................................................................................ 12

3.1 APPROACH ............................................................................................................................. 12

3.2 SCOPE ...................................................................................................................................... 12

3.3 CERTIFICATION EVALUATION ............................................................................................. 12

3.4 INDEPENDENCE ..................................................................................................................... 12

3.5 RESULTS .................................................................................................................................. 12

4 APPENDIX I ................................................................................................................................ 13

4.1 SUBMISSION CLASSIFICATION CRITERIA ........................................................................... 13

4.1.1 Certification / Qualification ........................................................................................... 13

4.1.2 Re-Certification/Re-Qualification ................................................................................. 13

4.1.3 Paper Submissions ......................................................................................................... 13

4.1.4 OEM of a Certified/Qualified Product ......................................................................... 13

4.1.5 Change to Product after Certification Wave Testing Begins ......................................... 14

4.1.6 Reference Design Submission ...................................................................................... 14

5 APPENDIX II ................................................................................................................................ 15

5.1 OPENCABLE INTEROPERABILITY LABORATORIES OVERVIEW ........................................ 15

6 APPENDIX III ................................................................................................................................ 16

6.1 CERTIFICATION/INTEROP LAB ............................................................................................ 16

6.1.1 General Goals: ............................................................................................................... 16

7 APPENDIX IV ................................................................................................................................ 17

7.1 CERTIFICATION WAVE RESULTS FLOWCHART ................................................................ 17

8 APPENDIX V ................................................................................................................................ 18

8.1 DRY RUN PARAMETERS ........................................................................................................ 18
1 Overview

1.1 History
The cable industry inaugurated the OpenCable™ project in 1997, with the objectives of increasing competition in the supply of set-top and other equipment, defining a next generation digital video delivery system, enabling innovation in digital video and interactive services, and facilitating the retail availability of customer equipment. Additionally, the FCC’s Report and Order on Navigation Devices released on June 24, 1998 (63 Fed. Reg. 38095), requires that cable operators make separable security modules available by July 1, 2000 in order to facilitate commercial sale of navigational devices.

1.2 Purpose
The OpenCable certification process has been developed to provide a purchasing cable operator, retail distributor, and consumer with confidence that the certified Host or POD module equipment inter-operates with OpenCable products made by other vendors, and that the equipment does not cause physical harm to the network or disruption of service to any other Host Device or POD module or impede or impair the delivery of any services offered over the cable system to cable subscribers.

The OpenCable certification process takes six weeks to complete which includes a week of dry run interoperability testing, four weeks of audit testing, and a week to analyze and summarize the results for review by the review board. This six-week process is referred to as a “Certification Wave”. The Certification Waves are scheduled and conducted several times a year based on estimated participation from OpenCable vendors. In addition, CableLabs will use reasonable efforts to accommodate Vendor scheduling requests for the timing of the Certification Waves.

1.3 Guideline Changes
The certification process is continuing to develop and improve as the Certification Waves are conducted. New procedures, tools, processes, and requirements will certainly be added and changed. These guidelines are developed specifically for the Certification Waves, and are subject to continuous refinement as the process matures and can become more streamlined.

CableLabs and the Certification Board reserve the right to change these guidelines prior to subsequent Certification Waves, to waive any of these guidelines, or to grant conditional certification.

1.4 Confidentiality
Information and documentation related to participation in the OpenCable certification process is considered “Information” as defined in the OpenCable Confidential Information Access Agreement (http://www.opencable.com/downloads/OC_access_agreement.pdf).

Certification test results are not provided to anyone other than the review board members, and the individual vendor, for their use in evaluating the vendor’s compliance to the OpenCable standard.

The first week of the Certification Process (the “Dry Run”) is an open environment with multiple vendors working side by side in joint effort to assess their interoperability with each of their products that they are considering for submission for certification. Necessarily, since the OpenCable standard is all about interoperability between different vendors, certification of one vendor’s equipment will involve other vendors’ equipment.

Vendors are encouraged to add proprietary enhancements to their products, but such enhancements will not be tested or certified as part of the certification process (nor should such proprietary enhancements interfere with interoperability).

1.5 Participation in the Certification Process
The opportunity to participate in the Dry Runs will be open to any interested vendor with a Point of Deployment (“POD”) module and/or Host equipment and a signed OpenCable Confidential Information
Access Agreement (http://www.opencable.com/downloads/OC_access_agreement.pdf). PODs products are determined to be “qualified” rather than certified, since they only purchased by cable operators. Qualification of a POD gives cable operators confidence that the POD will be suitable for use in a certified host. The word “certification” in this document means “qualification” for POD products. Participation in Certification Waves will be open as described above, but will also require compliance with the criteria described in this document.

1.6 Soliciting / Hiring of CableLabs Employees.
Continuous employment of CableLabs’ employees is important to the certification process. Therefore, during vendor's participation in the OpenCable certification program (the “Program”) and for a period of 12 months after termination of such participation (the “Restricted Period”), vendor shall not without CableLabs' prior written consent, directly or indirectly cause or attempt to cause any employee of CableLabs that has been employed at CableLabs for less than two years to terminate his or her employment relationship with CableLabs; or interfere or attempt to interfere with the relationship between CableLabs and any such of its employees; or solicit, hire or attempt to hire any such employee of CableLabs.

Vendor’s obligation under this covenant prohibiting unfair hiring practices (the "Covenant") shall survive the termination of vendor's participation in the Program and shall thereafter be enforceable irrespective of the circumstances of such termination or any other fact or event.

Vendor acknowledges that if vendor breaches any obligation under this Covenant, CableLabs will suffer immediate and irreparable harm and damage for which money alone cannot fully compensate CableLabs. Vendor therefore agrees that upon such breach or threatened breach of any obligation under this Covenant, CableLabs shall be entitled to prohibit vendor from any further participation in the Program or any other certification or testing program conducted by or under the auspices of CableLabs during the Restricted Period, and in addition, shall be entitled to entry of a temporary restraining order, preliminary injunction, permanent injunction or other injunctive relief, without posting any bond or other security, compelling vendor to comply will any or all such provisions. This paragraph shall not be construed as an election of any remedy, or as a waiver of any right available to CableLabs under this agreement or the law, including the right to seek damages from vendor for a breach of any provision of this Covenant, nor shall this paragraph be construed to limit the rights or remedies available under applicable law for any violation of any provision of this Covenant.

[Note to Michael--I changed the format from fully justified to left justified]

1.7 Information Sources
CableLabs’ web site http://www.opencable.com will be used to post all requirements for interoperability and the current versions (including proposed changes) to the OpenCable PICS specification. CableLabs will notify vendors of changes or proposed changes via the OpenCable NDA Participants email reflector. Additional guidance documents discussing functionality to be tested may also be distributed via email reflector.

1.8 Rules of Engagement
The purpose of having Certification Waves at CableLabs is to provide all vendors with an environment that enable each vendor to determine the readiness of their product for certification. The environment for testing interoperability is a controlled environment that is established with equipment provided by other vendors and with equipment and facilities provided by CableLabs. This gives vendors the advantages of working together to test interoperability while limiting access to sensitive or proprietary information.

In order to have such a multi-vendor environment work successfully, and allow CableLabs to provide a fair and open environment for resolution of interoperability issues, CableLabs has adopted the following Rules of Engagement to cover the vendor interaction while at CableLabs, particularly during the Dry Run portion of the Certification Waves.

Vendors applying for certification or participating in any aspect of a Certification Wave must not:
• Access competitors’ equipment or other facilities at CableLabs without permission.
• Share or copy confidential information.
• Reveal other vendors’ test results.
• Offer anything of value to the Certification Board or to CableLabs staff involved in the certification process.
• Claim to have CableLabs Certified prior to receiving certification.

Vendors who achieve certification must:
• Comply with the CableLabs’ Guidelines as to the use of the “OpenCable” and “CableLabs Certified” or other CableLabs’ trademarks.
• Resubmit any certified product that is modified subsequent to certification.

CableLabs will advise such vendor’s legal department if there is a violation of these rules. CableLabs also reserves the right to bar from participation in the certification process at CableLabs specific vendor personnel who engage in serious violations of these rules.

1.9 Publicity for Certification Waves
• CableLabs will make public the names of vendors who have applied for certification and which vendors have passed.
  ▪ CableLabs can provide quotes for vendor press releases. Please contact Mike Schwartz at m.schwartz@cablelabs.com to arrange this.
  ▪ Any vendor’s news release regarding the certification process must be submitted to CableLabs public relations’ office, via Mike Schwartz, for review and approval. This process can take up to seven days for completion.
  ▪ Under no circumstances should vendors post their press release without review and/or prior to the official release of the CableLabs press release.
  ▪ Vendors must not, without CableLabs written permission, discuss with the press any interoperability problems that occur during a Dry Run.

1.10 Effect of Changes to the OpenCable Specifications.
Changes to, or sunsetting of, OpenCable HOST-POD Specifications shall have no effect (including, without limitation, with respect to time or quantity) on a vendor’s right to start, re-start, or continue to manufacture, use, sell, and distribute previously certified Host Devices or POD modules. For clarification, no change shall obligate a vendor to re-certify, modify, or re-label previously Host Devices or POD Modules, or to create or develop a new product for submission to CableLabs for certification.
2 Vendor Actions Required for Certification

2.1 Prerequisites for Certification
Prior to officially submitting a product for certification, each vendor must:
1. Conduct and successfully pass vendor-developed tests to establish compliance to the OpenCable specifications.
2. Participate, actively support and successfully complete the required Dry Run process by completing the tests defined in the Dry Run Test plan, performed by CableLabs personnel, associated with a particular Certification Wave Dry Run.

2.2 X.509 Certificate Request Process
In accordance with the requirements for X.509 certificates as defined in the POD Copy Protection specification, certificates must be requested for testing and certification of OpenCable Hosts, POD's and OCAP implementations. For more information regarding the procedure to obtain certificates, please send e-mail to opencable_cert@cablelabs.com.

2.3 Request for Product Certification
Upon completion of the Certification prerequisites, each vendor may apply to have the product entered into the formal certification process. A formal notification of the vendor’s intent must be provided by noon of the Monday following completion of the Dry Run (1st week of the Certification Process) in email to: opencable_cert@cablelabs.com

2.4 Required Documentation for Certification
Seven copies of all required documentation to support the product submitted for certification must be submitted in a CD-ROM format to the OpenCable Certification Board. The documents must be sent via overnight mail and received by noon of the Monday following completion of the Dry Run (1st week of the Certification Process).

Minimum required documents include:
1. Executive Summary with completed Certification Application,
2. Completed Conformance Checklist (PICS or Protocol Implementation Conformance Statement)
3. Detailed Acceptance Test Plans (ATP)
4. Interoperability Test Report

1. Executive Summary with completed Certification Application. The Executive Summary should include the following:
   a. Product Summary. A high level description of the product being submitted for certification and why the product should be accepted for certification. Details on tasks and efforts conducted by the vendor may be highlighted here.

   b. Testing Efforts Description: A summary of the activities the vendor has undertaken to ensure the product is compliant to OpenCable specifications and is stable and ready to proceed for certification testing. The summary should include a list of all of the testing activities conducted not just the effort to test for PICS compliance.

   c. Test Results Summary. A report of the PICS results shall be provided which summarizes the results of the vendor’s testing such that a determination of the vendors readiness to enter the certification testing process.

   The report should include;
   - Total PICS items Compliant:
   - Total PICS items Non Compliant: and
   - Total PICS items Not Applicable.
   - A description of the vendors testing approach.
   - An explanation and justification of compliant items that were passed based on design reviews or implied success based on non-direct testing.
OpenCable Certification Wave Guidelines

- An explanation of any Non Compliant items with justification why the requirement will not impact the certification process results.
- An explanation of any Not Applicable items are not relevant to the certification testing process.

d. **Certification Application:** A completed Certification Application (See Appendix VII.) with product model and serial numbers for the product being sent to CableLabs. The type of submission should be indicated in the application according to the type of submission as defined in Section 4, “Appendix I”, “Submission Classification Criteria.” Also included should be any exceptions or additional information that a vendor believes the OpenCable Certification Board should know. An Officer and Quality Assurance Manager of the Vendor Company must sign this document to verify the accuracy of the contents.

2. **Completed Conformance Checklist (PICS).** The Conformance Checklist should be a completed version of the latest OpenCable PICS specification.
   “Completed” means each line item is clearly marked with a “Yes” “No” or “N/A.”
   Each PICS line item must reference the specific test or tests performed that was used to verify each PICS item.
   The Conformance Checklist is a vendor’s formal affidavit to the level of the product’s conformance to the OpenCable specification.

3. **Detailed Acceptance Test Plan (ATP).** Each vendor is responsible, with respect to its own product, for writing and verifying each feature for all the line items of the OpenCable PICS and for testing the product against it.
   The actual data gathered for each test must be supplied.
   Each test case must reference all the PICS items that are verified by the test case. It should also be noted if the test case is only a partial verification.
   The various sources of test procedures for product vendors are
   a. silicon vendors (for POD module and/or Host conformance to specs);
   b. commonly used or widely available ATPs for the cable industry;
   c. The vendor’s internally-developed ATPs.

4. **Interoperability Test Report.** The Interoperability Test Report is a summary of all the testing performed at CableLabs, MSO locations (field trial), other Interop locations, and other vendor sites. The testing performed and summarized in the Interoperability Test Report should demonstrate that the product for which certification is applied for inter-operates. Interoperability goals are as follows:
   POD Modules: demonstrate interoperability with the available OpenCable features on at least three Host devices or appropriate test platforms.
   Host Devices: demonstrate interoperability with the available OpenCable features on (1) at least two POD Modules based on different hardware platforms and (2) each of the deployed headend networks (currently Motorola, Scientific Atlanta, and Harmonic).

2.5 **Required Products for Certification**
Each vendor must also provide the following number of units to be certified for the testing process:
- PODs – 5 units
- Host devices – 5 units
- DTVs – 3 units (submitting vendors must provide test results from an additional 2 DTV devices, such DTV devices to be held by vendor for 60 days after the certification decision)

All products submitted must be the final production ready product that the vendor intends to market as OpenCable compliant or CableLabs Certified™. The products must be received by the Monday following
completion of the Dry Run (1st week of the Certification Process) to enable the setup and start of audit testing.

The products should be shipped to:
OpenCable Certification Board
  c/o Cable Television Laboratories, Inc.       Fax:  303-661-9199
  Attn:  Project Manager, OpenCable Certification  Phone:  303-661-9100
  400 Centennial Parkway
  Louisville, CO  80027-1266
  USA
A packing list of all equipment shipped should also be emailed to:
  opencable_cert@cablelabs.com
2.6 Payment of Certification Fees
Certification fees (if required by CableLabs) must be submitted by the Monday following completion of the Dry Run (1st week of the Certification Process).

Certification fees will also apply to any re-certification of products that may be required if there are any changes to the hardware or software of a previously certified product. Re-certification is not required if the only change is the substitution of production DFAST keys for evaluation keys.

CableLabs reserves the right to set and changes fees as necessary for each product type submitted for certification. Fees will be established prior to the start of each Certification Wave.

2.7 Post Certification Requirements
After certification/qualification is granted, the Certification Board requires the following:
1. The vendor must provide five additional products, for PODs and Host STBs, before the beginning of the next Certification Wave. DTVs are exempt from this requirement.
2. All products submitted by the vendor will remain at CableLabs for a period of one year. Products submitted will be used as new vendors come into the market to ensure that new products continue to inter-operate with existing and/or previously certified products.

2.8 Appeals Process
The Certification Board will consider appeals for products that do not achieve certification. For a valid appeal, the vendor MUST follow these steps, in the order listed:

- Participate in a conference call with CableLabs technical staff for detailed discussions of test results. The appropriate Project Manager will schedule this call at the request of the vendor, after certification test results have been circulated to vendor.

- If the conference call does not resolve all questions about why the product did not achieve certification, CableLabs, through the Project Manager, will schedule a visit (at a mutually agreed time) for the vendor to view the results of tests performed at CableLabs.

- If the vendor believes grounds for an appeal exist after completing steps 1 and 2, the vendor may submit a formal appeal request to the Project Manager, complete with backup data to document any test results the vendor believes the Certification Board should consider. The formal appeal and backup data will be forwarded to the Certification Board for review. The deadline for filing an appeal will be by the close of business on the Tuesday prior to the week for product submission to the following wave.

- The fee for filing an appeal will be established prior to each Certification Wave. This fee must accompany the formal appeal request.

The project’s Certification Board will evaluate appeals fairly and in a non-discriminatory manner, as described above. The Certification Board may request whatever additional information or tests it deems necessary and advisable in order to resolve the issue on appeal.

The Project Manager will communicate the decision of the Certification Board to the appealing vendor. Vendors should be aware that while the Certification Board makes every effort to act on a timely basis, it might take several weeks before any decision is reached on an appeal. Please refer to appropriate flowchart in Appendix A. In appropriate circumstances, such as where time to market is urgent, CableLabs will use its best efforts to process an appeal within a compressed schedule.

If the appealing vendor believes grounds for appeal still exist after the decision of the Certification Board has been communicated to vendor, the vendor may submit a second formal appeal request, including another appeals fee. The second formal appeal request should include as much backup data and new information as vendor believes is necessary for the Certification Board to consider.
Vendors in the Certification and Qualification appeals process should also be aware that only one CableLabs press release will be posted per certification wave. If a product is granted certification as a result of an appeal, there will be no press release referencing that vendor until the end of the next cycle. However, documentation on the project website will be updated to include the newly certified product.
3 Certification Board Guidelines

3.1 Approach
The delivery of the above documents, POD modules and/or Hosts to CableLabs, while required to begin the certification process, does not mean a vendor is automatically certified, qualified or verified for interoperability. The OpenCable Certification Board will verify the completeness and accuracy of the reports and data provided by each vendor, and the results of the Audit ATP obtained during the certification process. Following the CableLabs Board review and approval, the OpenCable Certification Board will notify vendors of the results of the Certification Board's review.

3.2 Scope
The Certification Board’s activities will be limited to interpretation of the OpenCable specification and certification of conformance to the OpenCable specification and interoperability. The Board’s activities will not extend to pricing for POD modules or Host devices, or deployment or business strategies. No “purchase/do not purchase” recommendations will be made (and no CableLabs member can or will be required to purchase only OpenCable certified POD modules or Hosts). Cable operators will make purchasing decisions independently based on test results, individual system needs, and their overall requirements. CableLabs’ web site http://www.opencable.com will be used to list all vendors who have applied for or received OpenCable certification.

3.3 Certification Evaluation
Certification will be evaluated fairly and equitably, using objective, non-discriminatory, and verifiable criteria. Decisions of the Certification Board may be reviewed and ratified by the CableLabs Board of Directors.

3.4 Independence
Neither the Certification Board nor CableLabs staff may solicit or accept anything of value from a vendor seeking certification. All vendor communication should be with the OpenCable Program Manager.

3.5 Results
If certification is not awarded, the Certification Board will share information with the vendor as to why the product failed (see Certification Wave Results Flowchart in Appendix IV).
4 Appendix I

4.1 SUBMISSION CLASSIFICATION CRITERIA

4.1.1 Certification / Qualification
A product is considered for certification/qualification submission under any one of the following conditions:
- Products being submitted the first time for certification/qualification
- Products that have been submitted for certification/qualification in past waves, but did not achieve certification/qualification status
- Material changes to a Product (e.g., new power supply, chassis or casing, hardware (silicon, tuner, active components, new SW, new interface, etc.)

The product must be labeled, as it will be marketed, with the model number matching the application form; and the model, SW and HW revs shown on the application.

The requirements for certification/qualification are 5 POD modules, 5 Host devices or 3 DTV devices (and test results from an additional 2 DTV devices, such DTV devices to be held by vendor for 60 days after the certification decision), and a full set of documentation as outlined on page 4 of this document. If certification/qualification is not achieved, the full requirements are due for any and ALL subsequent attempts until such status is achieved.

4.1.2 Re-Certification/Re-Qualification.
A certified product MUST be submitted for “re-certification” and/or “re-qualification” under any one of the following conditions:
- ANY minor change to the software of a certified product.
- ANY minor change to the hardware of a certified product.

Applications for Re-Certification or Re-Qualification will be evaluated within two weeks after submission. Use of the Re-Certification or Re-Qualification procedure may be granted in the sole discretion of the Certification Board on a case by case basis.

4.1.3 Paper Submissions.
Some minor changes to an already-certified product may be presented for consideration by the Certification Board, allowing a product to maintain its certified status. Examples of paper submissions include:
- Change in color
- Change in case material
- Minor change in a component (e.g., new power supply vendor)
- Vendors considering a paper submission should provide an affidavit detailing any change, as well as complete hardware, software, and documentation for the Product, and a complete set of regression test results.
- Applications for Paper Submission will be evaluated within two weeks after submission. Use of the Paper Submission procedure may be granted in the sole discretion of the Certification Board on a case by case basis.

4.1.4 OEM of a Certified/Qualified Product
The OEM (Original Equipment Manufacturer) product submission for certification is not associated with a particular Certification Wave and will be evaluated independently upon satisfaction of the prerequisites for application as described below. The same submission requirements apply to OEM products, re: documentation, labeling, product submissions, etc.

The OEM product MUST meet all of the following conditions:
- Same software as certified/qualified product
- Same hardware as certified/qualified product
The only acceptable difference between the certified/qualified product and the OEM submission is the company logo affixed to the outer casing of the modem. OEM product submissions of a product that has already been certified can be made at any time, without having any correlation to a specific OpenCable Certification Wave.

If the OEM product submission is based on a non-certified/qualified product, the OEM submission is considered a “new” product and must follow the guidelines outlined above in the “Certification” section 4.1.1.

4.1.5 Change to Product after Certification Wave Testing Begins

Vendors who submit a product on the required submission date, and later realize an error exists on the software revision, will have an opportunity to correct the software change during the first two weeks of the certification wave ONLY. Changes must be scheduled through the Project Manager at a scheduled time that is acceptable for the labs. An affidavit of changes must accommodate the product revision.

The fee for changes will be established prior to each Certification Wave. No changes will be accepted beyond the second week. No hardware changes will be accepted.

4.1.6 Reference Design Submission

In order to support new vendors to the industry and the market, and to allow additional chip vendors and new OpenCable vendors to get early feedback regarding their product, CableLabs allows non-production models to be submitted under the following conditions. These conditions will maintain the quality of the CableLabs Certification/Qualification Process for products targeted for volume production, but also allow for new designs to reach the market sooner. Reference design products are prototypes or test versions of new products, not intended for retail, submitted to CableLabs for the acquisition of test results only. Because these reference designs are prototypes or test versions, they require extra steps and procedures, which both take more time and disrupt the normal testing of production models.

While no PICs or ATP data are required, in all other respects, vendors must submit all required information along with the application for reference design testing, in accordance with these Certification Wave Guidelines. In addition, vendors must include two original signed "Reference Design Testing Agreement" documents available from opencable_cert@cablelabs.com.

Products will be accepted and tested during the same cycle as the CableLabs Certification Waves. Representatives will not be allowed to participate in the wave, and while CableLabs will provide results to the reference design vendor, there will be no public announcement that a design has been submitted for testing or what the results of the testing are. Vendors may, at their discretion, share this information with their customers.

Vendors interested in submitting a reference design should follow regular submission procedures as stated within this document.
5 Appendix II

5.1 OpenCable Interoperability Laboratories Overview

The OpenCable labs used in the Interoperability Demonstrations have been designed to facilitate the testing of interoperability between different OpenCable products. CableLabs’ objective is to facilitate full interoperability of POD modules, Host devices, and separate networks by using these lab facilities.

Each of the three OpenCable labs is used to assist vendors in obtaining their certification on time.

- **The Certification/Interop Lab** focuses on full functionality, configureability, and manageability per all the OpenCable Specifications. Examines inter-operable functionality and conformance with a network comprised of 3 Head-ends (Motorola, Scientific Atlanta, and Harmonic with multiple Conditional Access Systems) and a varying combination of POD modules and Host devices. Depending on the number of Host devices submitted for testing by vendor, this lab’s configuration allows 10 POD/Host combinations to be connected to any of the three Head-ends independent from each bench. This laboratory also verifies OpenCable compliance using test tools. This lab will also be used for Dry Runs and inter-operability testing.

- **The OpenCable Headend Room** contains all of the OpenCable headend equipment that is used for interoperability and certification testing. The headend equipment in this room is meant to be representative of headend equipment deployed in cable systems that will support OpenCable equipment. Note: The cable plant characteristics at CableLabs are ideal and do not necessarily represent the actual environment that deployed devices will encounter.
6 Appendix III

6.1 Certification/Interop Lab

6.1.1 General Goals:
The focus of this lab is on specification conformance with full functionality, configure-ability, and manageability per all OpenCable specifications, in order to allow vendors to evaluate their products in a larger multi-vendor network but still utilizing in-house cable plant for full functionality, conformance, interoperability, and stability. Testing also includes protocol verification using test tools. The additional goal of this lab is to allow vendors to evaluate their OpenCable product’s specification conformance with basic functionality, interoperability, and stability in the most simple, yet diverse environment. This is also the lab that will be used to allow new vendors the opportunity to bring their OpenCable devices in and inter-operate with other vendors’ OpenCable devices.

6.1.1.1 Minimum Admission Criteria:
The minimal requirements for connectivity of the OpenCable products in the Interop Lab are as follows:

1) The POD module and/or Host device must be able to achieve initialization with the SCM POD Tool, or other OpenCable devices.
2) The POD module and/or Host device must be able to pass/decode MPEG-2 video and AC3 audio for display on a television set, via RF, s-video or RCA.
3) The POD module must be able to decrypt MPEG-2 video provided from the headend and CA system with which it is paired.
4) The Host device must support OOB FDC demodulation.

Objective: complete interoperability testing with other OpenCable devices
7 Appendix IV

7.1 Certification Wave Results Flowchart

- Conduct 2 hour Engineering Meeting
  - Failures Reproduced/Understood by Vendor
  - Test Upgraded Product at Dry Run
  - Send Updated Product to Dry Run

- Send Raw Data Results to Certification Board
  - Certification Board Makes Decision
  - Send Official Certification Letter to GM
  - Fax Test Results Matrix and Discoveries to GM

- Conduct 30 minute tele-conference overview of matrix and discoveries with GM and Product Manager

- Fax Test Results Matrix and Discoveries to GM
  - Certification Board Makes Decision
  - Test Results Submitted to Certification Board
  - Press Release Announcement

- Failed
  - Dispute
  - Send Raw Data Results to Certification Board
  - Certification Board Makes Decision

- Passed
  - Send Raw Data Results CD and Certification Mark Use Agreement Overnight
  - Enter Next Certification Wave
8 Appendix V

8.1 Dry Run Parameters

CableLabs offers the opportunity for vendor companies to perform basic functionality, through advanced stability testing, of POD modules and/or Host devices in an event called “Dry Run”. A Dry Run is free of charge and may be broken down into two, half-week sessions: Certification Dry Run and Non-Certification Dry Run.

Head-end Vendor Requirements
All POD module manufacturers participating in the Dry Run must coordinate with CableLabs to ensure that the CA system needed to support POD module functionality is available at CableLabs.

CA Vendors are invited to CableLabs the week prior to the start of the “Certification Dry Run” week. This will allow CA vendors the opportunity to set up the head-end units in advance so that the POD module and Host vendors can begin testing immediately on the first day of the Dry Run.
## 9 Appendix VI

### Certification Application

#### Vendor Information

(Complete and return the following 3 pages)

<table>
<thead>
<tr>
<th>Manufacturer name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Officer in charge:</td>
<td></td>
</tr>
<tr>
<td>Corporate Officer phone:</td>
<td>Email address:</td>
</tr>
<tr>
<td>Fax #:</td>
<td>Pager:</td>
</tr>
<tr>
<td>Corporate Officer Address:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Product Availability:**

We plan to bring  

<table>
<thead>
<tr>
<th>Host(s)</th>
<th>POD module(s)</th>
</tr>
</thead>
</table>

**Applying for:**

- Certification/Qualification
- Re-Certification
- Paper Submission
- OEM Certification/Qualification
- Change after Certification Testing Begins
- Reference Design
- Common Module

**Signature of Product Manager**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
</table>

**Product Manager name and title:**

<table>
<thead>
<tr>
<th>Product Manager phone:</th>
<th>Email address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax #:</td>
<td>Pager:</td>
</tr>
<tr>
<td>Product Manager Address:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legal Department Contact:**

<table>
<thead>
<tr>
<th>Phone:</th>
<th>FAX:</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail:</td>
<td></td>
</tr>
</tbody>
</table>
**Product Information**

Manufacturer’s Name:  

Manufacturer’s Address:  

<table>
<thead>
<tr>
<th></th>
<th>POD Module</th>
<th>Host</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model #</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial #</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL and other safety record #’s:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCC and other regulatory record #’s:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product manufactured by:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name product will be sold under:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product is OEM from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product was designed by third party:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HW Rev:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW Rev:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTCP License obtained:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product meets OpenCable Specification</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Product was previously submitted for Certification</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Please complete all fields. Do not use TBD, N/A or other similar phrasing.
The completed Certification Application, the required documentation and equipment must be shipped by noon the Friday prior to each Certification Wave to:

OpenCable Certification Board
Email: opencable_cert@cablelabs.com
c/o Cable Television Laboratories, Inc.
Fax: 303-661-9199
Attn: Project Director, Systems Integration - OpenCable
Phone: 303-661-9100
400 Centennial Parkway
Louisville, CO 80027-1266
USA

This Certification Application together with the supporting test results and other documentation are being submitted to CableLabs and the Certification Board for use in granting certification for the product described in the “Product Information” section on the following page. The applicant (i) acknowledges that this information will be used and relied upon by the Certification Board in its decision to grant certification to the applicant, and (ii) certifies that:

- The test results accompanying this application have been gathered using the product configuration described in the “Product Information” section of this application.
- The information contained in this application, the supporting test results and other documentation supplied with this application are true and correct.
- The applicant has satisfied in all of the requirements to be certified as compliant with the OpenCable specification and interoperate with OpenCable equipment manufactured by different vendors.

Signature of Corporate Officer: ____________________________________________
Title: ___________________________ Date: ______________

Signature of Person Responsible for Quality Assurance: ________________________ Date: ______
Title: ___________________________ Date: ______________

Printed or typed name of Person
Responsible for Quality Assurance: ____________________________________________