



IVI-1.2: Operating Procedures

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FINAL

Important Information

IVI-1.2: Operating Procedures is authored by the IVI Foundation member companies. For a vendor membership roster list, please visit the IVI Foundation web site at www.ivifoundation.org, or contact the IVI Foundation at 2515 Camino del Rio South, Suite 340, San Diego, CA 92108.

The IVI Foundation wants to receive your comments on this specification. You can contact the Foundation through email at ivilistserver@ivifoundation.org, through the web site at www.ivifoundation.org, or you can write to the IVI Foundation, 2515 Camino del Rio South, Suite 340, San Diego, CA 92108.

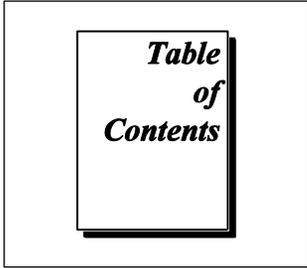
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IVI-1.2 Operating Procedures

IVI Operating Procedures Revision History

This section is an overview of the revision history of the IVI Operating Procedures.

Table 1-1. IVI Operating Procedures Revisions

Revision Number	Date of Revision	Revision Notes
Revision 1.0	July 6, 2004	Initial version
Revision 1.3	May 4, 2006	Updated instruction regarding class committee deliverables (passed by TC in vote before May meeting) Added Appendix C regarding extending class specifications Added shared component management process (section 8) Updated section 4
Revision 1.3	October 12, 2006	Added section 8.1 as directed by technical committee to clarify that the shared component management includes VISA components.
Revision 1.4	October 18, 2007	Updated to reflect by-law change that enables TC to take action at a live meeting with 2/3 of those present provided no no-votes.
Revision 1.6	June 9, 2010	Updated for .NET
Revision 1.8	June 6, 2016	Added section 9.2 describing the requirement that shared components be supplied to the Foundation with full source code.
Revision 1.9	October 19, 2018	Added section on Procedures Used When Developing Linux Components for VISA

1. Overview of the IVI Operating Procedures

1.1 Introduction

IVI-1.2 *Operating Procedures* describe IVI Foundation rules and practices for conducting business. All discussions and business conducted in any forum within the foundation shall conform to these procedures. These procedures include an arbitration process for anyone that claims conformance to the IVI specifications.

In general the foundation by-laws are the ultimate authority on foundation procedures. If they are found to conflict in any way with anything appearing in this document, the by-laws take precedence.

Where procedures are not defined by the document or the by-laws, the IVI Foundation uses *Robert's Rules of Order (Revised)*.

1.2 Audience of Specification

This document is intended for members of the IVI Foundation.

1.3 References

See www.robertsrules.com/ for Roberts Rules of Order
See www.ivifoundation.org for IVI Foundation by-laws

2. Procedures Used When Running Meetings

The following procedures are used to guide the meetings of committees and sub-committees of the IVI Foundation.

Note: The terms sub-committee and working group are interchangeable. Committees, which the by-laws only permit the Board of Directors to create, also follow these operating procedures.

Meetings will be run with Roberts Rules of Order as a guiding principle.

2.1 Chairperson and Purpose

Each committee or sub-committee of the IVI Foundation shall have a chairperson and a written charter that clearly describes the purpose of the group

2.2 Phone Meetings

Meetings by Phone Conference, Web-ex or other electronic means shall be considered as fully valid face-to-face meetings, and shall follow the same rules except as noted.

- Votes should be conducted by role call
- Timetable for these meetings does not need to follow the guidelines *above*
- 7 days notice of the meeting with agenda and call details

2.3 Notice

Sufficient notice (where and when) will be given prior to each physical meeting, giving location, time and date. Since physical meetings require travel, they shall be announced with at least 1-month notice with details posted on the organization web site so that reasonable travel plans can be made.

Phone meetings shall be announced with 1-week notice.

Note that meetings may be scheduled with less notice, but binding decisions can not be made at these meetings.

2.4 Quorum and Voting

A quorum shall be established at each meeting. All voting is conducted with one vote per member company with voting privileges. If more than one representative is attending from a single company, the voting representative should be clearly identified when establishing quorum.

Sub-committees generally make decisions by consensus. If they are unable to reach a conclusion by consensus they should bring the issue to their parent committee.

See section 3 of this document for details regarding how many members must be present to establish a quorum for various groups and business items and the majority necessary to pass a resolution.

2.5 General practices

The following sections describe general practices.

2.5.1 IVI Foundation Large Group Meetings

Meeting notices including meeting schedule shall be sent to the membership not less than 10 or more than 60 days before the meeting. Generally we do this by sending out e-mail announcement to the IVI list server and posting details on the web.

The IVI Foundation shall:

- Plan tentative meeting dates two meetings in advance.
- At any given meeting finalize the location and dates for the following meeting, typically 3-4 months hence.
- Distribute an overall meeting schedule (topics, days, and times) 30-60 days in advance
- Committee and sub-committee chairpersons provide detailed agendas for their meetings one week before the first day of the meeting.

2.5.2 Chairperson Neutrality

In order to maintain order in the meeting it is helpful for the chairperson to maintain a neutral position. When the chairperson is unable or unwilling to do this, he/she should request someone from the group that has not committed to a position on the issue to temporarily act as chairperson (per Roberts Rules of Order).

2.6 Distribution Of Documents

For all major technical documents to be discussed at a meeting, said documents should be available to all committee members, either distributed or posted on the organization web site with notice of their availability at least two weeks prior to the meeting at which they are to be discussed. This time is necessary for the individuals to study the technical documents, and perhaps get input from colleagues in their organization that will not attend the meeting. Votes shall not be taken on documents that are not made available by this deadline.

2.6.1 Other Supporting Materials

It may be appropriate to distribute short documents (one or two pages) at the meetings, but it is recommended that for controversial subjects all documents comply with the two week deadline.

2.7 Minutes

All meetings shall have minutes. It is recommended that the chairperson select someone other than him/herself to take the minutes. However, it is the chairperson's responsibility to make sure the minutes are taken and fairly reflect the discussions at the meetings.

Minutes should be based on a *standard foundation template* (see www.ivifoundation.org) and should include:

- List of attendees
- Date of meeting
- Person taking minutes & chairperson
- Location
- Agenda

- Record of discussion – primarily: key decisions, issues, reasoning behind decisions. It is appropriate for the minute taker to interrupt the discussion to ensure they have accurately captured comments.
- Action items with owners and due dates

3. Quorum and General Voting Requirements

This section describes general voting requirements. In general, per the by-laws of the foundation, business is conducted in accordance with Robert’s Rules of Order (revised).

Because the IVI Foundation is especially concerned about the maintenance of technical specifications, certain extraordinary rules apply to some resolutions as indicated in section 3.2.

3.1 Quorum

The following table describes the criteria needed for a quorum at various IVI Foundation meetings. Note that this only applies to live meetings. Note that “Live Meetings” include both face-face meetings and meetings conducted telephonically.

Table 3-1. Quorum Criterion

Body Taking Action	Quorum Requirements
Technical Committee	<i>25% of those entitled to vote or 2, whichever is more</i>
Board of Directors	<i>A majority (that is, greater than 50%) of the directors in office</i>
Voting Membership (Annual Meeting)	<i>25% of those entitled to vote or 2, whichever is more</i>

3.2 Necessary Majority to Pass Various Resolutions

The following table describes the criteria needed for a vote to pass on various types of resolutions. Note that “Live Meetings” include both face-face meetings and meetings conducted telephonically. Electronic votes are those that are conducted via e-mail.

NOTE: All decisions are based on the number of “Yes” votes cast in comparison with the total eligible. *This eliminates the traditional interpretation of an “abstain” as supporting the majority that express a preference.*

Table 3-2. Number of Votes Required to Pass a Resolution

Body Taking Action	Type of Action	Live Meetings	Electronic
Technical Committee	General actions	>50% of those present [†]	>50% of voting members
Technical Committee	Initiate new technical work	2/3 of voting members present without any no-votes	2/3 of voting members
Technical Committee	Change a specification	2/3 of voting members present without any no-votes	2/3 of voting members
Technical Committee	Approve a new or modified piece of technical work	>50% of those present [†]	>50% of voting members
Board of Directors	General actions	>50% of those present [†]	>50% entire BoD
Board of Directors or	Change by-laws or change the number of Directors	2/3 of those present [†]	2/3 of those entitled to vote

Annual Meeting (Voting Membership)			
Technical Committee or Board of Directors	Any resolution that modifies the rules of order or prevents some other resolution from being considered	2/3 of voting members	2/3 of voting members

† *Provided a quorum is present at a properly convened meeting.*

Note that for resolutions that require 2/3 of those present that if 30 (or 29 or 28) members are present and 20 vote in favor of a resolution it passes.

Note that for resolutions that require >50% of those present, that if 30 (or 31) members are present a minimum of 16 votes is necessary to pass the resolution.

3.3 Conducting Votes Electronically

The foundation allows all business to be conducted electronically. Unless a specific exception is declared by the chairperson, electronic votes are conducted by e-mail. The only requirement for the respondent is that they clearly indicate their preference on the vote. Generally an e-mail reply with either “in favor” or “opposed” is adequate.

3.3.1 Posing a Resolution Electronically

Since the electronic medium does not provide a convenient way to introduce a motion or debate a resolution, the following guidelines shall be followed:

1. **Chairperson posing a resolution:** If the resolution is not expected to be contentious, the chairperson is authorized to compose the resolution and call for a vote without second or debate. *The resolution must be composed in a way that does not bias the respondents.* Once the chairperson calls for a vote, any member authorized to vote may assert their right to debate the resolution at which point the resolution and the vote are declared invalid by the chairperson and process three below may be used.
2. **Sub-Committee posing a resolution:** If the resolution is being posed to a parent committee by a sub-committee, then the sub-committee or its’ chairperson shall compose the resolution (note that this policy should be followed for face-to-face meetings as well) and the chairperson of the parent committee shall call for a vote without a second or debate. If any member authorized to vote wishes to debate the resolution, the chairperson of the parent committee will withdraw the current call for a vote and provide ample time for an e-mail based discussion after which the chairperson of the sub-committee may again call for a vote.
3. **Member posing a resolution:** If a member would like to pose a resolution, the usual requirement of a second and debate is required. The following process shall be followed:
 - a. Any member may compose a resolution and send it to the chairperson.
 - b. The chairperson should send to the membership and request a second in a timely fashion.

- c. If a second is received, the chairperson should allow a reasonable amount of time for electronic based discussion.
- d. Once electronic discussion has come to a close, as evidenced by a lack of e-mail traffic, the chairperson should call for a vote.

Throughout the discussion process, all members authorized to vote on the resolution shall be included on any official electronic correspondence regarding the resolution.

The process for members posing resolutions is by necessity lengthy and awkward. Therefore this process should be avoided. Where practical, it is preferable to form subcommittees to meet telephonically and following process two above.

3.3.2 Form of the Electronic Call for Vote

When the chairperson of a committee calls a vote electronically, the following should be included in the e-mail:

- Text of the resolution
- Instructions for casting a vote (should be a simple reply)
- Details of the process (1,2, or 3 above) being followed
- Requirements for passing the resolution
- Names and e-mail addresses of members authorized to vote
- Subject line clearly indicating the need for a response
- Deadline for the response

See appendixes A and B for sample e-mail messages.

3.3.3 Recording of Resolutions

At the next regular meeting of any body that passes a resolution electronically, the passed resolution shall be incorporated into the minutes of that meeting.

3.3.4 Multiple Resolutions

It is permissible to incorporate multiple resolutions into a single e-mail. Respondents need to clearly indicate which resolutions their votes correspond to.

4. Procedures Regarding Creating a New Specification

This section details the procedures that are to be followed when a member wishes to propose the creation of a new specification. This section summarizes in one location the guidelines and rules that are presented in the IVI Foundation by-laws and intellectual property policy.

4.1 Proposing New Technology

Any member in good standing may propose that the IVI Foundation adopt a new technology as an official IVI Foundation specification. This proposal may be done:

- In response to a request for proposal (RFP) from the IVI Foundation Technical Committee; or
- Unsolicited if the member deems it appropriate.

The member may make their proposal to the IVI Foundation Technical Committee in writing, in person at any face-to-face meeting of the Technical Committee. The proposal shall outline the details of the proposed technology, the member's willingness to participate in creating the specification, and most importantly, any potential intellectual property issues related to the technology.

The submission shall be adequately discussed at a Technical Committee meeting or by email communication for a period set by the Technical Committee chairperson but not to be less than 2 weeks.

Once the discussion is exhausted, the Technical Committee shall vote whether to proceed with the new technology process. If approved, the submitting member must then complete the **IVI Foundation Submission of Technology Form** available from the IVI Foundation's website, stating what intellectual property relating to the technology they own and indicating their willingness to license that technology to the IVI Foundation, including sub-licensing rights, on either a fee-free basis or under reasonable terms.

Although not officially required to do so, until actually voting on the specification, other members of the IVI Foundation should, in accordance with the IP Policy, notify the foundation of any IP related to the submitted technology as early in the process as possible.

Once the technical committee has received the IVI Foundation Submission of Technology Form from the submitting member, it shall vote whether to initiate the new technical work (this vote requires a 2/3 super-majority).

The member's proposal as well as submission of technology form are then passed on to the board of directors for final approval.

4.2 Creating the Specification

Once the board grants approval, a sub-committee of the Technical Committee is created to draft the specification. This sub-committee shall be chaired by a representative of an IVI Foundation member, preferably a representative of the member originally proposing the technology.

The sub-committee shall present a charter as well as a proposed timeline for creating the specification to the Technical Committee within 3 months of its establishment.

The sub-committee then proceeds to create the specification document and shall operate according to the requirements of the IVI Foundation as set in the by-laws and this document.

Once the sub-committee has created the specification and is comfortable with its contents, it submits its final draft to the Technical Committee for approval.

4.3 Adopting a New Technical Specification

The following process shall be followed when adopting a specification:

1. Initiation of work

Work can either be initiated as the result of a member proposing an existing body of work, or through the technical committee resolving to create a new body of work. The IVI Foundation Technical Committee officially initiates new work by approving a charter for a working group. This resolution may only be passed with a 2/3 majority of the Technical Committee per section 5.5 of the IVI by-laws.

When the work is initiated, anyone submitting technology, techniques, or approaches for the basis of all or part of the new specification is required to complete an IP disclosure, substantially equivalent to the example included in Appendix A of the IVI IP Policy.

2. Creation of draft

The working group conducts meetings as appropriate to prepare a draft. Note that this work is all conducted under the disclosure requirement of the IVI IP Policy. While the work is conducted, working group members are reminded of the IVI IP Policy and the requirement that participants disclose and IP they are aware of. This is done at the beginning of technical committee meetings.

If the chairperson of the working group feels any members of the group have not had appropriate notification of the IP requirement (for instance because all working group meetings have taken place telephonically without a corresponding technical committee meeting), the working group chairperson shall issue a patent call by reading and explaining the patent call from Appendix C of the IVI IP Policy. This action should be duly noted in the minutes, along with any responses from the membership indicating any knowledge of relevant IP. Further, the chairperson shall report any indication of an IP issue to the Technical Committee chairperson.

3. Request for Final Comment and IP Declaration

The chairperson of the Technical Committee shall submit the completed draft specification to the general membership. Any members reviewing the specification shall submit comments and errata to the working group chairperson.

During the review period, every member is requested to complete an IP declaration consistent with Appendix B of the IVI IP Policy (version 1.1). This IP declaration is *solicited from all members regardless of their participation in the specification or their desire to vote.*

The review period shall be at least 45 days.

4. Response to inputs from membership review

The working group then addresses the comments and within its discretion accepts or rejects each of them. Once the specification draft has been revised, the working group chairperson and the Technical Committee chairperson shall cooperate to determine whether a new review period is required, and if so repeat the process outlined above.

5. Vote by Technical Committee and Additional IPR Declaration

If the Technical Committee Chairperson feels that changes to the draft are sufficient to warrant an additional IP declaration, or if any member requests an additional IP declaration, an IP declaration per Appendix B of the IP Policy may be required at this time.

Once the specification is ready for vote, the Technical Committee chairperson submits the specification for approval by the technical committee. If an additional IPR declaration is required, the minimum time period is 30 days. If the additional IPR declaration is not required, the minimum time period shall be 6 full business days (for instance calling for the vote on Tuesday, then have full 6 days from Wednesday of one week through Wednesday of the following week, and votes are tallied on Thursday at the beginning of business).

The outcome of the vote is determined according to the voting procedures set forth in section 3.2 (Necessary Majority to Pass Various Resolutions) above for approving a new piece of work, including any requirements on quorums and voting eligibility. If there are any intellectual property licensing issues that relate to the specification, they are to be resolved, and the appropriate licenses obtained prior to the posting of the completed specification.

6. Collection of licenses

If a member is to license its IPR to the IVI Foundation, the appropriate **Generic License Agreement (With License Fee or No License Fee)** shall be obtained from the IVI Foundation offices and adapted to the specific IPR being granted and the license fees agreed upon.

7. Vote by Board of Directors

Per section 5.5 of the by-laws, an additional vote shall be conducted by the Board of Directors to pass the new specification. This vote requires a simple majority as do other resolutions acted on by the Board of Directors.

4.4 Summary of Voting Requirements

Table 4-1, *Summary of Voting Requirements*, summarizes the voting requirements for various measures.

Table 4-1 Summary of Voting Requirements

		Create a new specification or Working Group	Major Change	Minor Change	Editorial
Action Needed to Start Work	Build consensus to start work and identify participants	Yes (During Technical Committee or WG Teleconference)	Yes (During Technical Committee or WG Teleconference)	Yes (During Technical Committee or WG Teleconference)	Yes (Only requires TC chair or current spec owner agreement)
	Vote to start work or approve charter of WG	2/3 super-majority of TC however at Live Meetings must not have no votes [†]	2/3 super-majority of TC however at Live Meetings must not have no votes [†]	N/A	N/A
	IPR Declaration	Required from company that submits new IP	Required from company that submits new IP	N/A	N/A
Call for Final Review	Minimum Review Period	45 Days	45 Days	3 Weeks (or 45 Days if IPR Declaration Required)	6 Business Days (Email List Server - Document Change & ask for Objections)
	IPR Declaration	45 Days (overlaps with review period)	45 Days (overlaps with review period)	45 Days (IPR at TC Chairman's discretion, overlaps with review period)	N/A
Final Vote	Votes Needed for Passage	TC Majority [†]	TC Majority [†]	2/3 super-majority of TC however at Live Meetings must not have no votes [†]	N/A
	IPR Declaration	30 Days (At any member's request)	30 Days (At any member's request)	30 Days (At any member's request)	N/A

Document Action in Technical Committee Meeting Minutes	Yes	Yes	Yes	Yes
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† See section 3.2 regarding special conditions for TC majority and super-majority requirements for electronic and live meetings.

5. Required Deliverables from Class Committees

This section has specific instructions and deliverables for class committees.

5.1 Creating New Class Specifications

When creating a new class specification, the class will need to establish:

- COM GUIDs
- Help context IDs
- Error Numbers

COM GUIDs have been pre-allocated for all IVI classes so that IVI components will show up consecutively in the registry. New classes need to acquire GUIDs by making entries in the master GUID list on the IVI web site. This is currently located in the Architecture Control Section of the web site in the Members login area.

New classes also need to define help context IDs that do not overlap with existing classes. This is done by assigning each class a base ID, then all the IDs in the class are taken sequentially above this base. The control document is on the IVI web site in the Architecture Control Section in the Members login area. New classes should take the next available base address after the highest address currently defined and round up to the nearest multiple of 100.

Error and warning numbers also need to be uniquely defined for each class. New error and warning numbers are defined by incrementing sequentially from a base number assigned to the class. IVI-COM and IVI-C have separate error and warning bases. The error and warning bases for IVI-COM and IVI-C are define in IVI 3.1 section 5.6. New classes need to update this table with the four new base values.

5.2 Required Deliverables from Class Committees

In order to complete a new class specification, the following need to be provided by the class sub-committee before the final vote is called for:

Written Specification	The written specification shall be a Microsoft Word file based on the standard foundation boilerplate available in the Operating Procedures section of the IVI Foundation web site Assigning a Revision Number to a Specification
IDL Files	The IDL files that describe the interface to the class from COM. These files are used by the shared components committee to generate a type library. One file contains the interface definition, the other contains the corresponding help strings. <i>Note that this file shall be equivalent to the corresponding appendix in the specification.</i>
Help Files	A .chm (including the index – either embedded or as an external .chi file) that provides the standard foundation help. The style of these help files shall be consistent with other IVI help files.
XML IntelliSense File	This is the IntelliSense file that the shared components committee will compile into the Portable Interop Assembly (PIA).

Web Site Summary	A summary of the specification suitable for posting on the IVI Foundation web site as explanatory text for the class specification.
Visual C# Project	This is the .NET artifacts, including the project file, C# source for all interfaces, exceptions, enums, session factory, and any other required source to build the assembly. Note that the XML comments must be included in the source code in a style consistent with existing specifications.

6. Assigning a Revision Number to a Specification

There are three version levels that are possible for a specification – Major, Minor, and Editorial:

Major – The major version is the integer before the radix in the version number of a specification. The major version number increments if a change to the specification is no longer backwards compatible. In general, there is a bias towards not changing the major revision since it could indicate to users that they need all new drivers.

Minor – The minor version is the integer after the radix in the version number of the specification. The minor version number increments if the changes alter either the syntax or the semantics of a defined API, or add new requirements, or capabilities to the specification.

Editorial – Editorial changes do not change the citation for a spec (e.g., 3.1). Editorial changes are typically made to correct an error in the specification or to improve the ease-of-use of the specification. Editorial changes are displayed as the date that the Editorial change was made.

If a specification contains unapproved changes that require the Major or Minor version number to increment, then the specification title page shall prominently display the text “DRAFT REVISION”.

6.1 First Time Approval of a Specification

The first time that a specification is approved:

- The version number is 1.0
- The Editorial date is the date that the specification is submitted for approval by the Technical Committee.
- The revision history is cleared so it only shows changes after 1.0

6.2 Changes to Approved Specifications

All changes to an approved specification (Major, Minor, and Editorial) shall be noted in the Revision History section of the specification.

Changes that require that the Major or Minor version number increment, must be approved by the Technical Committee and the Board of Directors.

If the Major version number is incremented, the Minor version number shall be set to zero and the Editorial version shall be set to the date that the specification is submitted for approval by the Technical Committee.

If the Minor version number is incremented, the Major version remains the same and the Editorial version shall be set to the date that the specification is submitted for approval by the Technical Committee.

Editorial changes do not require a vote of the Technical Committee or the Board of Directors. However, Editorial changes shall be announced to all Foundation members via the list server. If no objections are voiced in one week, the Editorial changes are made to the specification and the updated specification is posted. The date on the cover of the

specification shall be updated to be the date of the editorial change. The Editorial changes shall be reviewed the next regularly scheduled Technical Committee meeting so that the changes can be logged in official meeting minutes.

6.3 Specifications for Shared Components

The version numbers of a shared component and the specification that defines the shared component are managed independently. That is, there shall be no attempt to make the version numbers of the shared component and its corresponding specification match.

The Shared Component Management working group shall maintain a document that identifies the most recent version of each shared component and the version number of the specification that defines the shared component.

7. IVI Standards Generation

It is useful for the IVI driver standards to have a benchmark that establishes a self consistent set of the IVI driver standards and provides a single citable standards version. To do so, the IVI Technical Committee shall, as it deems fit, create an IVI generation release. The release will be referred to as IVI-*<year>*. When the Technical Committee produces this release, it shall document on the IVI web site, in a public area, the year of the release, and the minimum version of the various standards that a driver must comply with to cite compliance with that IVI generation. A driver may cite compliance to that generation only if it complies with the specified standards versions or later.

Since the IVI generation will be cited based on a year, the Technical Committee shall identify the generation year based on the year following the most recent specification change in a particular generation. Drivers initially released on or after January 1, following the generation year, shall comply with the IVI generation of the previous year.

For instance, if the latest specification revision in the generation is February, 2134, the IVI generation would be IVI-2135. IVI compliant drivers initially released on or after January 1, 2136 would be required to comply with the IVI-2135 generation.

8. IVI Conformance Disputes Arbitration Process

8.1 Purpose

Purpose of the process:

- Provide a way for companies or individuals to raise concerns regarding illegitimate claims of IVI conformance
- Provide a way for the IVI Foundation to evaluate those complaints in a timely and equitable fashion
- Establish how the IVI Foundation responds to both legitimate and false complaints regarding IVI drivers

8.2 Raising concerns

To raise concerns about IVI conformance, a company, or individual should inform the IVI Foundation in writing of the complaint. The paper letter or e-mail should be sent to the IVI Foundation business address. This letter must include:

- The driver supplier name, along with contact information for the driver supplier
- Where, how, and when the driver was acquired
- The version of the driver
- Any compliance claims made about the driver
- Description of non-compliant behavior

8.3 IVI Foundation Evaluation Process

When the IVI Foundation receives a complaint regarding a driver, it will immediately notify the company that provides the driver of the complaint. Within 30 days, the company must respond to the IVI Foundation. If the company does not respond, it is assumed to be claiming that there is no infraction and the arbitration process will be started.

- a. If the company confirms the infraction, it will be given six months (in addition to the remainder of the 30 day response period) to either correct the specific flaws in the driver or remove claims of IVI compliance. If the situation is not corrected within six months, the IVI Foundation will begin the censure process.
- b. If the company claims the driver is in compliance, the arbitration process is initiated.

8.4 Arbitration

This process is invoked when there is a dispute regarding the efficacy of a complaint regarding the compliance of an IVI driver. It is presumed at the outset of this process that a written complaint as described above is available, as well as a written document from the provider of the driver stating why it disputes the complaint.

In order to resolve the complaint, a Compliance Review Committee will be created, in accordance with IVI Foundation by-laws, to review this complaint. The Compliance Review Committee is a subcommittee of the IVI Technical Committee. The Technical Committee chairman is responsible for creating the Compliance Review Committee and insuring that all the membership of the Technical Committee has an opportunity to volunteer for the Compliance Review Committee. The Technical Committee chairman will initiate this process as soon as is convenient after being notified of the dispute. The membership will be made up of volunteer members from the Technical Committee; they shall elect an impartial chair from their membership. Note that the committee may include both the driver supplier and/or the person or company that initiated the complaint regarding the driver in question.

The Compliance Review Committee will review the complaint and response. They will then discuss the problem either in person or via phone meeting with the driver supplier. The Compliance Review Committee will then formulate an authoritative opinion regarding the fact of the matter. The committee shall create a document either stating that the driver appears to be in compliance or stating the specific problems with the driver, including references to the appropriate IVI specifications as why the driver in question does not comply. This will be sent to both the driver supplier and the person or company that initiated the complaint.

If the flaw in the driver is found to be based on a lack of clarity in the specification then the Compliance Review Committee will forward the matter to the Technical Committee and the Technical Committee shall initiate a request to update the specification using defined operating procedures for submitting specification changes.

If the driver is found to be in compliance, the matter is finished.

If the driver is found to not be in compliance, and if the driver supplier agrees in writing to remedy the situation, the driver supplier will be given three months from the time they are informed of the problem to remedy the situation (either update the driver or remove claims of conformance).

If the driver supplier is not satisfied with the written conclusions of the Compliance Review Committee, the driver supplier may summarize the situation in writing to the IVI Board of Directors and request they take action on it. The Board of Directors shall review the findings of the Compliance Review Committee. If it does not agree, a new Compliance Review Committee will be formed to repeat the work of the previous committee. If the Board of Directors is in agreement with the Compliance Review Committee that the driver is falsely claiming compliance to IVI, or falsely using the IVI Foundation logo, the company providing the driver will be given one month to remedy the problem.

8.5 Censure

If the company producing the driver fails to remedy the problem in the prescribed period, the IVI Board of Directors shall take the following actions:

- a. It shall pass a resolution, based on a standard IVI Foundation form, indicating that the driver is not in compliance and the driver supplier has failed to correct it.
- b. It shall send a letter based on a standard IVI Foundation form to the provider of the driver stating that the provider is not allowed to use any IVI Foundation trademarks in reference to the driver in question.
- c. It shall remove the driver's registration information from the publicly available IVI website.

At its discretion, the Board of Directors may also remove the driver supplier from the IVI membership or issue a press release stating the situation with the driver supplier and problems with the driver in question.

8.6 Closure

All parties involved shall be notified of the results of the process.

If the driver supplier subsequently corrects the problem, it may request that the IVI Foundation update its judgment on the driver.

9. Shared Component Management Process

Processes for shared component review are determined by the Shared Component Management Working group chair. The processes support various needs including:

- Bug fix process that require quick turn-around and deployment
- Submitted technology review that requires submitted technology to be reviewed by the committee without exposing the internals to the public or broad membership.

In general, new or modified components are subjected to two reviews, one for the new or modified components and another for the revised installer that installs the new component.

Shared components are archived by multiple companies to achieve reasonable security through redundancy.

Once shared components have been fully reviewed, any necessary updates to the shared component installer are done with a minimum review period.

9.1 VISA Common Components

The VISA-COM common components are managed using the same process as used by the other IVI shared components.

9.2 Shared Components Source Code Availability

Any shared components contributed to the Foundation for inclusion in any of the IVI or VISA common components must be provided with full, buildable source code, along with complete instructions for performing a build. The Shared Component Management Working group chair shall determine the manner in which submitted shared component source code is maintained and made available to consortium members.

10. Procedures Used When Developing Linux Components for VISA

The paragraphs in this section describe the procedures used to develop, distribute, and maintain the VISA Shared Components for Linux, whose source is owned by the IVI Foundation, and the USBTMC Linux kernel driver, whose source code is contributed to an open source organization. The procedures are designed to give members the flexibility to support Linux distributions that are not directly supported by packages that IVI provides, while protecting the goal of vendor interoperability on Linux.

10.1 VISA Shared Components for Linux

10.1.1 IVI Supported Packages

IVI directly supports several VISA Shared Components for Linux packages that target the most important Linux distributions for test and measurement use. These are available on a members-only IVI Foundation web page for members to access. Members may redistribute them with their VISA implementations or as needed to customers.

10.1.2 Source Availability and Modifications

VISA Shared Components for Linux are covered by the IVI license. They are available to all members – bearing in mind that our existing packages should work quite broadly.

If the IVI Foundation shared component packages do not support a Linux distribution that a vendor would like to support, they may create a new version of the shared components that supports that version.

If a member needs to modify the source code to support a new Linux distribution, they must propose the changes to the I/O WG and the changes must be approved before they are made publicly available. The I/O WG will determine how to manage the modified source code in the VISA Shared Components for Linux source code repository.

Members must contribute any source changes to the IVI Foundation, with the understanding that the source may be used by other members over time.

Once a member starts distributing a new shared components package, they must contribute the package to the IVI Foundation, so that additional members that choose to support that distribution will be able to ship the same package.

10.1.3 Shared Component Support

All shared component support is handled by VISA vendors.

10.2 USBTMC driver

The primary method of distributing the USBTMC driver is through the Linux kernel. Since the IVI Foundation source has been submitted to the kernel and accepted, it is subject to the terms and conditions of the GPL2 license. In addition, the driver or any collective works that include the driver or that are distributed with the driver may be subject to the GPL2 license.

The IVI Foundation has created a package for distributing the new USBTMC code to Linux distributions that do not include the newer version of the driver. This package is available on the IVI Foundation internal git repository. If a vendor supports VISA on a

distribution that does not include the updated USBTMC kernel driver, they may distribute the IVI USBTMC package.

If the IVI-supplied distribution requires modifications to work on a distribution not supported by the IVI package, it is possible to use the kernel source code to modify the driver and create their own package. The IVI Foundation strongly discourages this.

When modifying kernel source code, members should make sure that the driver source they are working with includes the latest patches to the kernel driver. Members should be aware that due to GPL2 license restrictions, any modifications to the driver that are distributed to customers must be made available publicly.

Members are encouraged to cooperate with the I/O working group on future changes to the driver to make sure that the driver continues to meet the objective of providing a multi-vendor USBTMC solution on Linux. The contents of new revisions of the IVI package will be determined by the I/O working group.

Appendix A: Example: IVI Board of Directors E-Vote

The following is an example of the e-mail used to conduct an IVI Board of Directors Vote.

The IVI Technical Committee, following the process outlined in section 5.5a of our by-laws, has recommended the following resolution:

<text of resolution>

To vote, Directors merely need reply to this message before <date> and indicate either: in favor or opposed. If you object to voting on this topic via e-mail please reply by that same date explaining your objection. If there are 2 objections the e-mail vote will be nullified.

We will conduct this vote per the procedures described in sections 5.5a and 4.13 of our by-laws. According to this, we will pass the resolution if 50% of the directors vote in favor (note that since this is an e-mail notification there is no notion of a quorum nor of abstaining, so it is passed by 50% of the total membership). You should also be aware, that if any two directors explicitly object to passing the resolution it will not be passed.

Also, remember that there is not a way to defer to the majority (usually done with a vote of abstain). Any votes other than YES are tallied as NO. This is a consequence of the fact that an abstain conventionally counts towards the establishment of a quorum, but it lowers the number of YES votes needed to pass a resolution. For IVI e-mail votes of the Board of Directors, the number of YES votes needed to pass a resolution is fixed (currently 6) it does not relate to the number of respondents.

For your reference, the following are the directors of the IVI Foundation:

<company name>	<director>

Regards,

<Name>

Board of Directors Chairperson

Appendix B: Example: IVI Technical Committee E-Vote

The following is a template of for e-mails used to conduct IVI Technical Committee E-Votes.

The <working group name> has requested that the Technical Committee vote on the following resolution:

<text of resolution>

The vote will be conducted as follows:

- The deadline for your voting is midnight on <date of deadline>. If your vote is received after this deadline, your vote will be tallied as a NO.
- You may vote YES or NO. Please send your response to <email address> indicating either YES or NO. If you do not respond your vote will be tallied as a NO.
- The vote must be cast by your company's designated voter. Below is the list of voting member companies and their corresponding designated voter.

<company name>	<designated voter>

- This resolution requires <"two thirds" or "greater than 50%"> of the voting members to vote YES to pass. There are currently <number of voting members> voting members. So, <number of votes required to pass> YES votes are required to the resolution.

- Since this vote requires a fixed number of the voting members to pass, there is no notion of quorum, nor of abstaining. The vote will be evaluated strictly in terms of the number of YES votes received.

Regards,
<Name>
Technical Committee Chairperson

Appendix C: Extending Class Specifications

This appendix is for the convenience of working group chairpersons. It provides guidelines for process, clarification of deliverables, and draws attention to important IVI requirements that are easy to overlook.

1. Charter the work, clarifying the content of the additions/changes. This requires a 2/3 vote of the technical committee. At the same time establish a working group through an open invitation to the foundation.
2. Provide detailed documentation of the new functionality. Understand and document the impact on the existing API. Evaluate coverage with respect to the functionality of common instruments of the class and avoid standardizing on obscure or proprietary functions. Work towards consensus amongst working group.
3. Draft the API (can be a free format description). Evaluate the user experience with the API by considering what actual client code would look like in both C and COM development environments. Document the behavior model for the functionality being added. Consider fit with existing C and COM hierarchies, and other stylistic aspects of the base class. This would be a good time to solicit beyond the working group. Work towards consensus amongst working group.
4. Prototype the new API (actual implementation, may be partial in cases where a full implementation wouldn't provide new insights about the design).
5. Update the specification. Accumulate the new information in a change document. If the change document becomes ungainly, it may be appropriate to update the previous version of the specification tracking changes. In addition to the conventional documentation and the API, need to consider impact to:
 - a. Any changes to the existing behavior model (unlikely)
 - b. Additional group names, or changes to existing groups as a result of the additions.
 - c. Impact of disabling unused extension groups
 - d. C and COM hierarchies
 - e. Update interchangeability checking (normally in an appendix)
 - f. Consider any "Specific Driver Development Guidelines" (normally in an appendix)
 - g. Error Codes (contact error coordinator per IVI 3.1 Section 5.12)
 - h. As outlined on the architecture control section of the IVI web site (<ftp://www.ivifoundation.org/Member%20Login/ArchitectureControlDocuments/default.htm>) select any additional help context ID's and updated GUIDs for the components.
 - i. As outlined on the architecture control section of the IVI web site (<ftp://www.ivifoundation.org/Member%20Login/ArchitectureControlDocuments/default.htm>) select updated GUIDs for the components.

Since the last three items in the list above involve changes to the common infrastructure, need to carefully document the use of these values so that the IVI specifications can be appropriately updated when complete.

It is important to capture as much work as possible in the standard IVI templates to minimize the work when the specification is complete and the documents are merged.

6. Review and update the deliverables required from class committees as documented in Chapter 5 of this document.

7. Create new shared components for the specification. Include:
 - Signed PIA (contact Pacific Mindworks or Agilent technologies to get this signed)
 - Type Library
 - XML IntelliSense file
 - Compiled html help: .chm file, .chi file (index), .hXs,
 - .idl file with generic binding to help strings
 - .idl file with English help strings (to be included in base .idl file)

8. Once voted in, create the actual new specification, following the naming guidelines in IVI 3.12, make sure the website gets updated with the new specification and ensure that the shared components are evaluated by the shared components working group and incorporated into the installer.