

IVI Foundation
Meeting Summaries
February, 2015
Phoenix, AZ – IVI Foundation

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1. Meeting Attendees

Last Name	First Name	Company
Bellin	Jon	National Instruments
Fertitta	Kirk	Pacific MindWorks
Harvey	John	Keysight
Helsel	Bob	Bode Enterprises LLC
Lopes	Teresa	Teradyne
Mueller	Joe	Keysight
Pradhan	Santanu	Tektronix Inc
Rohacek	David	National Instruments
Ryland	John	Keithley
Schink	Steve	Keysight
Wang	Ted (Ping Chuan)	National Instruments
Wolle	Jochen	Rohde & Schwarz

2. VISA.NET Working Group

General Meeting Info:

Date of Meeting: February 10, 2015
Location: Phoenix
Chairperson: John Harvey
Minutes Prepared By: John Harvey

Meeting Attendees:

John Harvey	Keysight Technologies	john_harvey@keysight.com
John Ryland	Keithley	jryland@keithley.com
Kirk Fertitta	PMW	kirk@pacificmindworks.com
Teresa Lopes	Teradyne	teresa.lopes@teradyne.com
Jochen Wolle	Rhode & Schwarz	jochen.wolle@rohde-schwarz.com
David Rohacek	National Instruments	david.rohacek@ni.com
Ted Wang	National Instruments	ted.wang@ni.com
Pankaj Adhikari (phone)	National Instruments	pankaj.adhikari@ni.com
Dan Mondrik (phone)	National Instruments	dan.mondrik@ni.com
Bob Helsel	IVI Foundation	bob.helsel@ivifoundation.org
Joe Mueller	Keysight Technologies	joe_mueller@keysight.com
Steve Schink	Keysight Technologies	steve_schink@keysight.com
Santanu Pradhan	Tektronix	santanu@tek.com

Agenda:

Congratulations to all for a job well done!

Tuesday Feb. 10, 11:30-3:30.

- Action Item Reviews
- Editorial/Minor Specification Changes
- Defect follow-up in the next year
 - Postponed defects
 - Scanf issue
- VISA.NET logistics ongoing
- I/O TFS Housekeeping

Old Action Items

Date Added	Description	Assigned To / Updates	Target Date
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General			
2014-05-20	Set up weekly phone meetings between now and the next meeting, starting October 23. No meetings 11/13, 11/27, 12/25, 1/1.	John Harvey DONE Thru 12/31	2014-05-28
2014-02-06	WRT the Scanf comment, integrate changes suggested by NI to the existing source.	Kirk Fertitta	2014-02-27 2014-03-13
2014-02-06	WRT the Scanf comment, try to achieve the desired timeout behavior by modifying the MessageBasedReaderWriter class.	Kirk Fertitta, Dan Mondrik, Pankaj Adhikari	2014-02-27 2014-03-13
2014-04-24	Modify the IviPiaRegistration.bat file to remove the "/codebase" from the regasm command.	Pankaj Adhikari DONE	By next release of VISA SC
2014-06-19	Take a look at the description of precision modifier and decide how to give an accurate description of how it behaves for various numeric format types.	All DONE	2014-07-10
2014-10-15	Finish reviewing VPP-4.3.6, 4.3.5, and 4.3.4	John & Pankaj DONE	11/13/2014
2014-10-15	Run Review Process on v. 5.5 spec changes	Ted DONE	12/31/2014
2014-10-15	Fix COM IDL/PIA versions to 5.5	John DONE	11/1/2014
2014-10-15	Make VISA COM PDB DLL file available for WG use.	John DONE	11/1/2014
2014-10-15	Provide test results for NI and Keysight VISA and ANSI C functions as indicated by notes in TFS issues 48, 58, 59.	Ted & John DONE	11/1/2014
2014-10-15	Create defects for TFS issues 36 and 37, and close the issues.	John DONE	10/23/2014
2014-10-15	Determine the best technique for indicating that WIT items have been intentionally postponed.	Kirk & John DONE	
2015-01-08	Send new revision history document to Kirk for posting with the VISA SC 5.5	Ted DONE	2015-01-09
2015-01-08	Post VISA SC 5.5	Kirk DONE	2015-01-12
2015-01-08	Verify that checked in binaries are correct	Ted DONE (they are correct)	2015-01-15
2015-01-08	Branch the VISA-COM TFS Source.	John/Kirk DONE	2015-02-05

2015-01-08	Add the VISA binaries to TFS	Ted DONE	2015-01-22
2015-01-29	Post the VISA.NET Shared Components	Kirk DONE	2015-01-29

Editorial/Minor Specification Changes

The WG did quite a bit of prototyping and testing after the June approval of the first version of the specs and made quite a few small changes (minor and editorial) to the specs in the process. Those changes were posted for review in December and have now been approved, along with the VISA.NET Shared Components.

Defect follow-up in the next year

- Postponed defects
- Scanf issue
 - Pankaj has worked out the details. When he has done the technical work, he will send to Kirk for review and we can discuss it in a phone meeting.
- Spec Issues
 - Sec. 9.2.2.1 references Abort Read and Write functions. It should just refer to an Abort Async Operation function.
 - Everywhere the VisaAsyncResult class is described, the Index property is omitted.
 - Add a clarification to the spec: If a buffer is passed into an async operation by the user, then the implementation shall not resize it.
 - Add a clarification to the spec: For async I/O operations, a callback is allowed to end the operation that was responsible for the callback.
 - In certain places in the spec, it says that if the user passes in a character that can't be converted to ASCII, the implementation throws. However, it doesn't explicitly say that it will throw. The formatted I/O code uses the default converter, which does not throw if it cannot convert a character.
 - Pankaj will add these to VISA.NET TFS WIT.

VISA.NET logistics ongoing

The VISA and VISA.NET WGs will combine into a single I/O WG moving forward.

I/O TFS Housekeeping

- Finished in the Instrument Drivers WG meeting.

Meeting Schedule

Meetings will be scheduled as needed by the I/O WG.

New Action Items

<i>Date Added</i>	<i>Description</i>	<i>Assigned To / Updates</i>	<i>Target Date</i>
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General			
2014-02-06	Achieved the desired timeout behavior by Modify the MessageBasedReaderWriter class to achieve the desired timeout behavior. Review with Kirk.	Pankaj Adhikari, Kirk Fertitta	2014-02-27 ??
2015-02-10	Add new spec issues to IVI VISA.NET TFS defect tracking	Pankaj Adhikari	

3. Instrument Driver Working Group Meeting

3.1 General Meeting Info:

Date of Meeting: February 9, 2015
Location: Phoenix
Chairperson: John Harvey
Minutes Prepared By: John Harvey

3.2 Meeting Attendees:

John Harvey	Keysight Technologies	john_harvey@keysight.com
John Ryland	Keithley	jryland@keithley.com
Kirk Fertitta	PMW	kirk@pacificmindworks.com
Teresa Lopes	Teradyne	teresa.lopes@teradyne.com
Jochen Wolle	Rhode & Schwarz	jochen.wolle@rohde-schwarz.com
Jon Bellin	National Instruments	jon.bellin@ni.com
David Rohacek	National Instruments	david.rohacek@ni.com
Ted Wang	National Instruments	ted.wang@ni.com
Bob Hesel	IVI Foundation	bob.hesel@ivifoundation.org
Joe Mueller	Keysight Technologies	joe_mueller@keysight.com
Steve Schink	Keysight Technologies	steve_schink@keysight.com
Santanu Pradhan	Tektronix	santanu@tek.com

3.3 Agenda:

- IVI.NET Configuration Server Kickoff (Monday 8:30-2:30, w/ 1 hour break for lunch)
 - Introduction
 - Current Configuration Server Issues
 - COM Session Factory / Config Server memory leaks.
 - Revision history document implications.
 - Technical Approach
 - Specification work
- Other Instrument Driver WG topics (Monday 2:30-4:30)
 - Review Agenda
 - Review Action Items
 - Member Pages for Instrument Driver WG.
 - Installer file names (David)

- Help file names (Kirk)
- GetAttributeViString Behavior
- IVI-COM Fgen 5.0 Status
- Getting rid of FogBUGZ
- TFS Followup

3.4 IVI.NET Configuration Server (Monday 8:30-2:30)

Review Configuration Server Issues.

Review Technical Options.

Look at the spec and API.

3.4.1 Current Configuration Server Issues

- There are known memory leaks in the COM Configuration Server. Several years ago, Keysight (Agilent at the time) reported significant leaks and greatly reduced them by converting from MSXML 4.0 to MSXML 6.0. However, at that time we reported that there were still smaller leaks in the COM server, and people agreed at the time that we would live with that moving forward.
- In the last six months, NI and PMW have reported a customer issue with the memory leaks.
- The implementation was auto-generated from Rational Rose. The code is hard to read and maintain.
- The PIA does not look like a native .NET API.

3.4.2 Technical Options

- At the last IVI Foundation meeting, Keysight proposed a .NET configuration server. Keysight has a full implementation with a suite of unit tests ready to contribute.
 - Using this would imply three implementations of the configuration server – COM, C, and .NET.
 - The C implementation was originally based on the COM implementation, but NI converted it to a pure C implementation
 - The C implementation does not use MSXML
- Another solution has surfaced in the Instrument Drivers WG. Since there are issues with the COM configuration server, rewrite it to call the C implementation, and take a similar approach with .NET
 - The COM and .NET implementations become thin veneers on the C code.
 - There is a single implementation of the configuration server logic. It will be consistent across API types, and in theory it will be easier to maintain.
 - We do add some complexity with sequencing maintenance and builds. How much this actually affects things depends in part on how often we change the API.
 - We can leverage all of the existing unit tests.
 - There is no existing interop code for the C server.

- A third solution is to leave the COM server as is, but to layer the .NET server on the C server.

Direction:

- John will look at the COM implementation and see if he can easily find the leaks.
- John will also look at what it might take to do an implementation on top of the C server.
- Could the IVI Foundation hire someone to re-implement the COM server on top of the C server? If decide to suggest this, take it up with the BOD.
- How do we validate that any fixes have eliminated the leaks?
 - Perhaps create tests that clearly show a use pattern that makes the process working set go out of control.
 - There are some hints in the web forum post about code that that excites the problem.
 - Joe can supply driver-related code that leaks.
 - Kirk can also supply driver-related code that leaks.
- Zulfiqar will send some memory leak tests to John.

3.4.3 Specification

- Keysight has completed a substantial portion of the IVI-3.5 specification changes. Since the spec specifies the API rather than the implementation, we should be able to use what Keysight has done regardless of the implementation option that we choose.
- The current implementation targets .NET Framework 4. Should we target 2.0? There are installer implications. We will table this question for now.

3.5 Other Instrument Driver WG topics (Monday 2:30-4:30)

3.6 Old Action Items:

<i>Date Added</i>	<i>Description</i>	<i>Assigned To / Updates</i>	<i>Target Date</i>
General			
2014-05-19	Contact Pacific Power and Ametek to see if they are willing to participate in creating the .NET API for the ACPwr class.	Kirk Fertitta 2014-07-17 - Ametek doesn't have the resource. 2015-02-10 – We will wait for some interested party to volunteer for the work and remove this from the action items.	
2014-05-19	Share the code that is needed to reproduce issue 80, and share the use case that requires the apartment specification.	John Harvey	2015-05
2014-05-19	See if we can reproduce the version/threading issue with the Config Server or the Session Factory or the VISA COM basic formatted I/O.	John Harvey	2015-05
2014-09-18	Determine exactly where the current set of files for the config server and IVI type library came from - since Agilent sent the set of files to NI, John will research.	John Harvey DONE	2014-09-30
2014-09-18	Make changes to IVI-3.17 to clarify the need to deliver policy files, the use of parentheses in directory and registry key names.	David Rohacek DONE	2014-10-31
2014-09-18	Make changes to IVI-3.17 to make changes related to driver installer bundling. This is an editorial change.	David Rohacek DONE	2014-12-15
2014-09-18	Make changes to IVI-3.17 to make changes related to the shared component installer packaging. This is a minor change.	David Rohacek DONE	2014-12-15
2014-10-16	Remove RFSigGen and Scope from the list of provisional class in the installer.	David Rohacek DONE	
2014-10-16	Modify IVI-3.14 to say that PIAs and policy files must be bitness-specific.	John Harvey DONE	2014-11-15
2014-10-16	Check to see if any of the new released drivers implement LxiSync	Jochen Wolle DONE – Did not use LxiSync	2014-10-31

2014-10-16	Review defects remaining in FogBUGZ and decide what to do with each of them.	All	??
2014-10-16	Create meeting arrangements for phone WG meetings.	John Harvey DONE	2014-10-20
2014-12-17	Add a TFS defect for the memory leak issue reported on the web forum.	John Harvey DONE - The defect had already been added via FogBUGZ. I added a link from the bug to the web forum topic.	2014-12-17
2014-12-17	Create a version branch for IviComConfigServer for v.2.3.0 of the IVI Shared Components.	John Harvey, Kirk Fertitta	2014-02-05
2014-12-17	Reorganize the Instrument Driver WG web pages.	John Harvey DONE	??
2014-12-17	Consider how to get rid of FogBUGZ.	All	??
2014-01-15	Correct the tab on the new InstrumentDrivers WG page.	John Harvey DONE	2014-01-15

3.7 Assembly Approval Table

Class	Status
ACPwr	No .NET API
Counter	Provisional
DCPwr	Approved
Digitizer	Provisional
DMM	Approved
Downconverter	Provisional
Fgen	Provisional
LxiSync	Provisional
PwrMeter	Provisional
RFSigGen	Approved
Scope	Approved
SpecAn	Approved
Swtch	Approved
Upconverter	Provisional

3.7.1 Member Pages for Instrument Driver WG.

<http://www.ivifoundation.org/membership/committees/InstrumentDrivers/Default.aspx>

3.7.2 Installer file names (David)

We decided to make the IVI Shared Components installer .exe files available on the web site, but not the msi files. For the latest version we did not include the version in the msi file name, so that the information is still not available to users. If you rename msi files, repairs and uninstalls may not work correctly (in some circumstances IE caches msi files which may get out of sync with exe installers.)

One option is to rename the exe but not the msi (requires a change to 3.17).

The other is to change the build process to use the name currently specified. This the proposal from NI. It is also the consensus of the group. NI will make the build system changes the next time they have to build shared components.

Web pages are also required (kirk made these changes on the fly):

- For IVI and IVI.NET Shared Components, only the exe files should be posted on the IVI Shared Components page that is visible to everyone.
- The msi files will be posted to the Shared Components WG page so that members can retrieve them for inclusion in other installers.
- Kirk will decide how to treat old version going forward.

3.7.3 Help file names (Kirk)

- IVI-3.1 specifies help file names. If you apply the spec rigidly, you run into naming conflicts. The name should be based on the name of the driver, followed by the appropriate extension.
- The .NET spec says that the file name should include FX<version>, usually FX20. Note that examples are inconsistent and should be changed.
- The spec naming conventions fit cases where there is a single help file, but not do not apply to Visual Studio help 2 or 3. For help 2, there are multiple with the same extension, and they can't all have the same name. For help 3, you can't have '.' in the file name, and the .NET file name in particular requires this (E.g. "Pmw1243.Pm3456.FX20")
- C file names include "_64" and (optionally) "_32". In cases where there is a C wrapper on COM or vice versa, this can affect the COM names as well. It would be nice to not include the bitness in the help file name.
- Jon Bellin captured precise language for a specification change and notified Vesna. The changes reflect the following:
 - Help formats shall be readily viewable by customers.
 - File names shall be easily recognizable as associated with the driver.

3.7.4 GetAttributeViString Behavior

- Jon Bellin crafted language that allowed the buffer size return value to be the maximum size for attributes for which this value varies.
- In addition, he added a recommendation that if the maximum size cannot be determined, the driver developer should use a function to return the string, rather than an attribute.

3.7.5 What to do with FogBUGZ?

- Do we really need to maintain both TFS and FogBUGZ systems? Can we give people in general the ability to submit defects to TFS using the web interface, and allow them to track issues there?
- Postponed to the Shared Components WG session.

3.7.6 IVI-COM Fgen 5.0 Status

- Nimbus 4 now includes the Fgen 5.0 extensions. The extensions are in a special “Back Door” that gives access to a project that understands the extensions. People who prototype will need to unregister the old version of the type library (the one that is installed with the IVI Shared Components) and register the new one. Kirk has an email that describes the process.
- Keysight is close to being able to prototype an Fgen driver to validate the type library, but this may not be done by the May meeting, but is fairly confident in an October date. After prototyping, we should be ready to include the new shared components in the IVI Shared Components installer.

3.7.7 TFS Followup

- Kirk and John will handle this after the I/O WG meeting.

3.7.8 Backlog:

- Testing Backwards Compatibility with Policy Files – see notes from the May, 2014 (Singapore) face to face.
- Let’s discuss putting pre-release and release versions of the built installers into TFS. Kirk also wants to discuss SharePoint possibilities as part of this discussion.
- Monitor driver prototyping and development so that we can unconditionally release additional IVI.NET instrument class assemblies as needed.
- Version DLLs are the key files used by MSI to identify the version of the shared components installed. The issue is that the file in ProgramFiles on a 64-bit PC is 32-bit - should it be 64-bit? See minutes from 10-27-2014.

- Combining 32-bit and 64-bit shared component installers. David will follow up with NI installer gurus and we will revisit at the October face-to-face meeting.

3.8 Schedule

We will continue with weekly meetings on Thursdays, 9am Mountain Time, starting February 19, 2015. We will alternate general Instrument Drivers WG topics with Config Server discussions, and will start Feb. 19 with general Instrument Drivers WG topics.

3.9 New Action Items:

<i>Date Added</i>	<i>Description</i>	<i>Assigned To / Updates</i>	<i>Target Date</i>
General			
2014-05-19	Share the code that is needed to reproduce issue 80, and share the use case that requires the apartment specification.	John Harvey	2014-06-30
2014-05-19	See if we can reproduce the version/threading issue with the Config Server or the Session Factory or the VISA COM basic formatted I/O.	John Harvey	2014-06-30
2014-12-17	Create a version branch for IviComConfigServer for v.2.3.0 of the IVI Shared Components.	John Harvey, Kirk Fertitta	2015-02-09
2015-02-09	Revise IVI-3.1 to loosen the requirements around help file names and revise IVI-3.2 r.e. returning buffer sizes.	Vesna	2015-03-01
2015-02-09	Add an editorial note to IVI-4.3 sec. 3.3 that indicates that the IVI-COM components do not currently include support for the extensions, but IVI-C and IVI.NET do.	John Harvey	2015-03-01
2015-02-09	John will look at the COM implementation and see if he can easily find the leaks.	John Harvey	2015-02-26
2015-02-09	John will also look at what it might take to do an implementation on top of the C server.	John Harvey	2015-02-26
2015-02-09	Make the build system changes to name the shared component installers with versions numbers.	David Rohacek	Next SC release
2015-02-09	Moving forward, post old versions of msi files only on the Shared Components WG page.	Kirk Fertitta	Next SC release

4. Shared Components Working Group Meeting

General Meeting Info:

Date of Meeting: February 10, 2015
Location: Phoenix
Chairperson: Kirk Fertitta
Minutes Prepared By: Kirk Fertitta

Meeting Attendees:

Jochen Wolle	Rhode & Schwarz	jochen.wolle@rohde-schwarz.com
John Harvey	Keysight Technologies	john_harvey@keysight.com
Kirk Fertitta	PMW	kirk@pacificmindworks.com
Joe Mueller	Keysight Technologies	joe_mueller@keysight.com
Teresa Lopes	Keysight Technologies	joe_mueller@keysight.com
Bob Hesel	IVI Foundation	bob.hesel@ivifoundation.org
Steve Schink	Keysight Technologies	steve_schink@keysight.com
David Rohacek	National Instruments	david.rohacek@ni.com
Ted Wang	National Instruments	ted.wang@ni.com
John Ryland	Keithley Instruments	jryland@keithley.com

Agenda:

Tuesday Morning (8:30-11:30)

- Review agenda and action items. (All)
- Discuss SharePoint
- Distribution rights for visatype.h and visa.h
- Review FogBugz defects

Old Action Items:

<i>Date Added</i>	<i>Description</i>	<i>Assigned To / Updates</i>	<i>Target Date</i>
<i>General</i>			

Discussion of Moving Totally to VSONline (Away from FogBugz)

- There is a desire to move all defect tracking to VSONline and stop using/paying for FogBugz.
- Group believes that we can move from FogBugz if we can get IVI members access to VSONline.
 - John Harvey reminded us that we believe the Web Forum can mitigate some of the possible need for public access to FogBugz cases.
- The VSONline Stakeholder license seems to be a way to provide free access to members.
- For now, we will not create a TFS project to capture spec “bugs”. Rather, we’ll rely on WG meeting minutes to capture activity/discussion on those kinds of non-code items.
- What to do about existing FogBugz history.
 - Do we need preserve the history of all closed cases?
 - John Harvey: There seems to be a way to export to Excel. We could preserve the data in this form but not worry about importing that into VSONline.
- During the meeting, John Harvey began capturing screenshots of closed cases in order to preserve case history at some level.
- During the meeting, Kirk migrated 8 open cases to TFS and closed those cases in FogBugz.
- Vesna has been deactivated as a user and John will be as well so that FogBugz is no longer used at all.
- Kirk will keep FogBugz account open for one more month to ensure there are no “oh shoot” issues.

SharePoint Instead of Web Pages

- Do we want move to a SP-based model for managing WG documents and artifacts?
- John Harvey: Currently John Harvey manages his WG documents using web tools. He finds it relatively easy.
- John Harvey expressed concerns about time involved in managing SharePoint but if Kirk (or somebody else) is willing to do that, then he’d be ok with it.

- John Harvey pointed out that the version history feature of SP is a bonus.
- John Ryland pointed out that a number of users will need access – everybody that currently has a member page login on the web site.
 - This drives cost concerns.
- Possible “opportunity” to leverage other SP features such as Calendar for Foundation meetings/events and SP lists for member contact info.
- Kirk is willing to do initial investigation, setup, pricing report.
- One option for controlling cost is to have a single user (e.g. “ivimember”) with read-only access for non-WG chairpersons.
 - Joe points out that we’d need to make sure this did not violate any MS licensing rules.
- Question: If the worst case scenario is that we need a separate account @ \$5/mo/user and we have 50 users, would we pay?
 - Bob says we could afford it but we’d need to be getting value from it.
 - Bob’s impression is that the value added is incremental.
 - Bob points out that in 2014 we spent a couple thousand more than we made.
 - Bob seems to think we’re running a little “hot”.
 - Joe says that at the pace of work in the previous few years, this would be very worthwhile.
 - Feels like there’s benefit.
- **Group feels like there is enough value that we’d take it if cost was not an issue.** Working group folks would take the time to move their docs over and start using.
- If we were paying for about 10 users @ \$5/mo/user then that would be an easy “yes” to move forward.

Distribution of visa.h and visatype.h

- Joe summarized issue: What rights do customers have in distributing these. There was general agreement that the intent was that “source code” referred to files that we do not distribute but that are used to create files that we do distribute.
- Kirk seems to recall that his chief objection was fear over allowing people to redistribute pieces of the shared components without actually running the Shared Components Installer.

- David’s team did further investigation of the end user that he believes was the source of the original request and the conclusion was that they actually did not need to redist pieces of the shared components.
- **Group agrees to resolve this issue as no action necessary at this time.**

Review Defects

New Action Items:

Date Added	Description	Assigned To / Updates	Target Date
General			
2/10/2015	Get email login credentials for NI build machine to Kirk.	2/10/2015	3/1/2015
2/10/2015	John Harvey to look at exporting existing cases to preserve FogBugz history.	2/10/2015	3/1/2015
2/10/2015	Kirk to look into pricing. Need to make sure licenses are transferrable. If shared “ivimember” user is kosher legally, then we could be a “go”.	2/10/2015	3/1/2015
2/10/2015	Kirk to perform FogBugz backup.	2/10/2015	3/1/2015

5. IVI Marketing Committee

Feb. 10, 2015

IVI Marketing Plan 2015 – Update Feb. 2015

IVI Charter:

The primary purpose of the IVI Foundation is to promote the development and adoption of standards for programming test instruments. In doing so, the Foundation focuses on the needs of people that build and maintain high performance test systems with off-the-shelf instrument drivers. The IVI Foundation builds on existing industry standards to create specifications that simplify interchanging instruments and provide better performance and simplified maintenance.

Goals:

1. Communicate IVI driver basics to demonstrate the savings in cost and time, and improvement in quality to test system developers.
2. Promote IVI Web Forum to address support issues in the use of drivers.

Tactics:

1a. Update IVI Getting Started Guide

- Retrieve updates in text and graphics from member authors and revise master version and short guides in FrameMaker.
- In process: Copies of guides sent to all authors for edits in MS Word. In general, edits should be minor. Expect responses in Feb. Will edit into pamphlets and master guide, and post on the IVI site.
- 1b. update GSG videos: Expect to begin this process in March.

1c. translation of GSG & pamphlets into Chinese, if cost within IVI Mkt budget. (Jochen to get quote.) Expect to pursue this by end of March when GSG and pamphlets are complete.

2. Videotape IVI Instrument Driver Fundamentals Course

- Divided into 4-5 lessons. Joe is presenter; Bode Ent. videotapes and packages.
- Post on website by end of 2014.
- PR to advertise
- 2.5 hr. course
- *Note:* Translate the presentations in simplified Chinese in presentations, if we have funds in budget to do this.

- Update: Joe and Bob have begun taping this presentation. Difficult to schedule. We will probably divide this into segments ~ 15 min. each. So I estimate 8 – 10 segments.

3. Commit to IVI participation in LXI Newsletter

- 1 article per issue based on IVI Web Forum Q/A
 - Bode Ent. edits and packages from IVI content authors (from current Moderators). Articles based on web forum content. Moderators decide on content for whole year. ~500 word articles. There is 1 article per moderator per year.
 - 2015 issues of the LXI newsletters: January, April, July, September
- 1 short article describing connection of LXI and IVI drivers in every issue

Update: First article in Jan. issue of LXI Newsletter at http://lxistandard.org/01132015_LXI_newsletter.html, which was submitted by NI. Next IVI article due for April issue. Vesna and Courtney were authors.

4. (Not approved until we get more data) Webinar of Overview of IVI Instrument Driver Fundamentals Course and Q/A

- Deferred until we get IVI course taped and posted.
- Point to the videotapes of course on our website. Promote those tapes.
- Run in US, Europe, and Asia (only do in Asia, if we have translations)
 - Publicize through LXI newsletter, Press releases, DOD, and via members' communications.
 - Promote IVI Web Forum as well.
- We will do videos of course first, and then get feedback first.
- In China you need a translation; also, you need web access in China; therefore, it would be much higher cost in China. We would need support for this.
- Conclusion: We need to get this additional information and see the total cost and effort prior to authorizing this.

5. Two presentations at Autotestcon

- Update: Bob will apply in March.
- Preparation in March 2015; Bode Enterprises applies in March and hosts in September.

- Seminar on IVI basics (done by Joe Mueller in Autotest 2014)
- Panel presentation with LXI on test system development with LXI instruments and IVI drivers targeting mil/aero applications.

6. Technical Committee

6.1 General Meeting Info:

Date of Meeting: February 11, 2015
Location: Phoenix
Chairperson: Jon Bellin
Minutes Prepared By: David Rohacek

6.2 Topics To Be Discussed:

- Review Agenda
- Review Voting Members In Attendance
- Patent Call
- Approve minutes from the October 2014 Technical Committee Meeting
- Review outcome of recent eVotes, IPR Declarations, Editorial Changes, and Reviews
- Review Action Items from Previous Meeting
- Review Spec Status Document
- Working Group Topics
 - Vote on IVI-3.17 minor change
 - Vote on VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 minor changes
 - Approve charter for new Instrument Drivers working group
 - Approve charter for new I/O working group
 - Windows 10
- New Business
 - Discuss cleanup of main Membership web page
 - IVI-COM Configuration Server memory leak
 - Discuss the DoD ATS meeting in Orlando
- Discuss Upcoming Meetings
- New Action Items

6.3 Voting Members In Attendance

Present	Organization Name	Name
	Aeroflex Corporation	Mark Meldrum / Marv Rosner
X	Keysight Technologies	Joe Mueller
	Bustec Ltd.	Fred Bloennigen
	Astronics	Dan Masters
X	Keithley Instruments	John Ryland
	MathWorks	Rob Purser / Vinod Cherian
X	National Instruments	Jon Bellin
X	Pacific MindWorks, Inc.	Kirk Fertitta
X	Rohde & Schwarz	Jochen Wolle
X	Tektronix	Santanu Pradhan
X	Teradyne, Inc.	Teresa Lopes
	VTI Instruments	Sangram Gaikwad / Tom Sarfi

There are 7 voting members in attendance, which satisfies the requirements for a quorum of 3 Voting Members. (Quorum is 25% of Voting Members. There are currently 12 Voting Members.)

6.4 Patent Call

Please be aware that this meeting is being held under the Intellectual Property Rights policy adopted by IVI Foundation. If you do not have a copy of this policy, please see me during this meeting. You may also view and download a copy of that policy at the Organization>>Legal Documents section of the Consortium website.

At this time, I would ask that anyone in attendance inform me if they are personally aware of any claims under any patent applications or issued patents that would be likely to be infringed by an implementation of the specification or other work product that is the subject of this meeting. You need not be the inventor of such patent or patent application in order to inform us of its existence, nor will you be held responsible for expressing a belief that turns out to be inaccurate.

.....

6.5 Approve minutes from the October 2014 Technical Committee Meeting

The minutes from the October 2014 Technical Committee Meeting are posted on the IVI Foundation web site.

No issues were brought up with the minutes. The minutes are accepted.

6.6 Review outcome of recent IPR Declarations, eVotes, and Reviews

6.6.1 IVI Shared Components 2.3.0

On October 28th, Kirk Fertitta announced the IVI Shared Components review via the email below.

From: Kirk Fertitta <kirk@pacificmindworks.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 10/28/2014 12:57 PM
Subject: IVI Shared Components 2.3.0 available for review

The IVI Shared Components 2.3.0 are now available for review at the following URL:

<http://www.ivifoundation.org/membership/committees/SharedComponentLifecycle/Default.aspx>

The review will end on November 11th, 2014. Please send any questions or comments or bug reports to kirk@pacificmindworks.com.

Regards,

Regards,

Kirk Fertitta
Chief Technical Officer
Pacific MindWorks, Inc.
ph: 858-207-6198
fax: 858-521-1385

Because multiple issues were found and corrected, Kirk Fertitta reinitiated the review process via email below:

From: Kirk Fertitta <kirk@pacificmindworks.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/03/2014 10:32 PM
Subject: IVI Shared Components 2.3.0 available for review

During the review cycle for IVI Shared Components 2.3.0, a minor issue was discovered and corrected. We are reinitiating the review process.

The updated IVI Shared Components 2.3.0 are now available for review at the following URL:

<http://www.ivifoundation.org/membership/committees/SharedComponentLifecycle/Default.aspx>

The review will end on December 12h, 2014. Please send any questions or comments or bug reports to kirk@pacificmindworks.com.

Regards,

Kirk Fertitta
Chief Technical Officer
ph: 858-207-6198
fax: 858-521-1385

The review period for the IVI Shared Components 2.3.0 has ended without additional objections. The IVI Shared Components 2.3.0 have been posted on the IVI web site.

6.6.2 IVI-3.14 and IVI-4.2 Editorial Changes

On November 10th, John Harvey announced IVI-3.14 and IVI-4.2 Editorial Changes via the email below.

From: <john_harvey@keysight.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 11/10/2014 02:11 PM
Subject: Editorial Review: IVI-3.14 Primary Interop Assembly Specification / IVI-4.2 IviDmmClass Specification

Greetings,

At the October, 2014 IVI Foundation meeting in Washington DC, we determined that description in IVI-3.14 of how tibimp is used to create PIAs included some descriptive text that was not accurate. The updated specification and associated change document are now posted for review at <http://www.ivifoundation.org/membership/committees/IviCOM/Default.aspx>.

In addition, IVI-4.2 contained a fairly confusing formatting error, and the updated specification and associated change document are now posted for review at <http://www.ivifoundation.org/membership/committees/IVIDmm/Default.aspx>.

The review period for these editorial changes is November 10-24, 2014.

Please contact me with any feedback.

Best Regards,
John Harvey

Keysight Technologies, Inc.
970 679 3535

The review period for the IVI-3.14 and IVI-4.2 editorial changes have ended without objections. The editorial changes are accepted and have been posted.

6.6.3 IVI-3.17 Editorial Change

On December 1st, Vesna Jadric announced IVI-3.17 Editorial Change via the email below.

From: <vesna.jadric@ni.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/01/2014 09:39 AM

Subject: Editorial Review: IVI-3.17: Installation Requirements specification (6-day review)

Greetings:

At the October, 2014 IVI Foundation meeting in Washington D.C., the Instrument Drivers WG determined that multiple updates should be made in the IVI-3.17 spec. Please refer to the Change Document attached below for details.

The change document and updated specification are also posted on the [IVI-3.17 internal web page](#).

The review period for this editorial change is **December 01 - 10, 2014**.

Please contact me with any feedback.

Best Regards,

Vesna Jadric
Instrument Drivers/IVI | National Instruments | 512-683-5360

The review period for the IVI-3.17 editorial change has ended without objections. The editorial changes are accepted and have been posted.

6.6.4 IVI.NET Shared Components 1.1.2

On December 8th, Kirk Fertitta announced the IVI.NET Shared Components review via the email below.

From: Kirk Fertitta <kirk@pacificmindworks.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/08/2014 10:43 AM
Subject: IVI.NET Shared Components 1.1.2 available for review

The **IVI.NET Shared Components 1.1.2** are now available for review at the following URL:

<http://www.ivifoundation.org/membership/committees/SharedComponentLifecycle/Default.aspx>

The review will end on **December 15th, 2014**. Please send any questions or comments or bug reports to kirk@pacificmindworks.com.

Regards,

Kirk Fertitta
Chief Technical Officer
Pacific MindWorks, Inc.
ph: 858-207-6198
fax: 858-521-1385

The review period for the IVI.NET Shared Components 1.1.2 has ended without objections. The IVI.NET Shared Components 1.1.2 have been posted on the IVI web site.

6.6.5 VISA Shared Components 5.5.0

On December 8th, Kirk Fertitta announced the VISA Shared Components review via the email below.

From: Kirk Fertitta <kirk@pacificmindworks.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/08/2014 01:02 PM
Subject: VISA Shared Components 5.5.0 available for review

The **VISA Shared Components 5.5.0** are now available for review at the following URL:

<http://www.ivifoundation.org/membership/committees/SharedComponentLifecycle/Default.aspx>

The review will end on **December 22nd, 2014**. Please send any questions or comments or bug reports to kirk@pacificmindworks.com.

Regards,

Kirk Fertitta
Chief Technical Officer
Pacific MindWorks, Inc.
ph: 858-207-6198
fax: 858-521-1385

The review period for the VISA Shared Components 5.5.0 has ended without objections.

6.6.6 VISA.NET Shared Components 5.5.0

On December 8th, Kirk Fertitta announced the VISA.NET Shared Components review via the email below.

From: Kirk Fertitta <kirk@pacificmindworks.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/08/2014 01:03 PM
Subject: VISA.NET Shared Components 5.5.0 available for review

The **VISA.NET Shared Components 5.5.0** are now available for review at the following URL:

<http://www.ivifoundation.org/membership/committees/SharedComponentLifecycle/Default.aspx>

The review will end on **January 26th, 2015**. Please send any questions or comments or bug reports to kirk@pacificmindworks.com.

Regards,

Kirk Fertitta
Chief Technical Officer
Pacific MindWorks, Inc.
ph: 858-207-6198
fax: 858-521-1385

The review period for the VISA.NET Shared Components 5.5.0 has ended without objections.

6.6.7 IVI-3.17 Minor Change

On December 10th, Vesna Jadric announced IVI-3.17 Minor Change via the email below.

From: <vesna.jadric@ni.com >
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/10/2014 09:41 AM
Subject: Minor Change: IVI-3.17: Installation Requirements specification (21-day review)

Greetings,

The Instrument Drivers Working Group noted that what is posted on the IVI Foundation shared components web page currently violates the spec with regard to shared component installer packaging. The spec changes in Section 6.4 address two perspectives – packaging for vendors and packaging for customers.

The change document and updated specification are posted on the [IVI-3.17 internal web page](#).

The review period for this editorial change is **December 10 - January 13, 2014**.

Please contact me with any feedback.

Best Regards,

Vesna Jadric
Instrument Drivers/IVI | National Instruments | 512-683-5360

Because multiple issues were found and corrected, Vesna Jadric reinitiated the review process via email below:

From: <vesna.jadric@ni.com >
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/15/2014 02:13 PM
Subject: Minor Change: IVI-3.17: Installation Requirements specification (21-day review)

Greetings:

During the review cycle for the IVI-3.17 minor specification change, an issue was discovered and corrected. **We are reinitiating the review process.**

The updated change document and specification are posted on the [IVI-3.17 internal web page](#).

The review period for this editorial change is **December 15, 2014 - January 20, 2015**.

Please contact me with any feedback.

Best Regards,

Vesna Jadric
Instrument Drivers/IVI | National Instruments | 512-683-5360

The review period for the IVI-3.17 minor change has ended without additional objections. The IVI-3.17 specification is now ready for vote.

6.6.8 IVI-3.3 Editorial Change

On December 10th, Vesna Jadric announced IVI-3.3 Editorial Change via the email below.

From: <vesna.jadric@ni.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/10/2014 10:29 AM
Subject: Editorial Review: IVI-3.3: Standard Cross-Class Capabilities Specification (6-day review)

Greetings,

Based on feedback from Kirk Fertitta, NI proposes to make an editorial change in the IVI-3.3 spec, Section 4.5.1, to remove a sentence that was incorrectly included in the Active <RC> property section.

The change document and updated specification are now posted on the [IVI-3.3 internal web page](#).

The review period for this editorial change is **December 10 - 19, 2014**.

Please contact me with any feedback.

Best Regards,

Vesna Jadric
Instrument Drivers/IVI | National Instruments | 512-683-5360

The review period for the IVI-3.3 editorial change has ended without objections. The editorial changes are accepted and have been posted.

6.6.9 IVI-3.1 Editorial Change

On December 15th, Vesna Jadric announced IVI-3.1 Editorial Change via the email below.

From: <vesna.jadric@ni.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/15/2014 12:18 PM
Subject: Editorial Review: IVI-3.1: IVI Driver Architecture Specification (6-day review)

Greetings:

National Instruments proposes to make multiple editorial updates in the IVI-3.1 spec. Please refer

to the Change Document attached below for details.

The change document and updated specification are also posted on the [IVI-3.1 internal web page](#).

The review period for this editorial change is **December 15, 2014 - January 07, 2015**.

Please contact me with any feedback.

Best Regards,

Vesna Jadric
Instrument Drivers/IVI | National Instruments | 512-683-5360

The review period for the IVI-3.1 editorial change has ended without objections. The editorial changes are accepted and have been posted.

6.6.10 IVI-3.2 Editorial Change

On December 15th, Vesna Jadric announced IVI-3.2 Editorial Change via the email below.

From: <vesna.jadric@ni.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 12/15/2014 12:20 PM
Subject: Editorial Review: IVI-3.2: Inherent Capabilities Specification (6-day review)

Greetings,

Based on feedback from Kirk Fertitta, NI proposes to make an editorial change in the IVI-3.2 spec, Section 5.11, to remove the requirement for IVI.NET drivers to include a statement in the component description identifying it as 64-bit.

The change document and updated specification are now posted on the [IVI-3.1 internal web page](#).

The review period for this editorial change is **December 15, 2014 - January 07, 2015**.

Please contact me with any feedback.

Best Regards,

Vesna Jadric
Instrument Drivers/IVI | National Instruments | 512-683-5360

The review period for the IVI-3.2 editorial change has ended without objections. The editorial changes are accepted and have been posted.

6.6.11 VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 Minor Changes

On December 16th, Ted Wang announced VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 Minor Changes via the email below.

From: <ted.wang@ni.com>
To: IVI-Foundation-Members-1@ivifoundation.org

Date: 12/16/2014 01:51 PM
Subject: VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 Minor Changes (21-day review)

Greetings:

The VISA working group has three specifications that are ready for review. The review period for these minor changes is **December 16, 2014 - January 20, 2015**.

Here is a summary of changes to each of the three specs.

VPP-4.3.4:

- Updated the version of the VISA COM type library to match the VISA COM DLL version.
- Clarified that the IDL files included in this specification may not have the same date, version, or helpstring as the actual IDL files used.

VPP-4.3.5:

- Made changes to clarify the behavior of the viParseRsrc/viParseRsrcEx functions.
- Modified the uninstallation behavior of the VISA Shared Components and VISA.NET Shared Installer.
- Clarified the necessary prerequisite software for installing VISA.NET Shared Components.

VPP-4.3.6:

- A variety of editorial and minor changes to clarify details and synchronize with the VISA.NET Shared Components.

The specifications are in a single zip file attached to this email. Please review these documents contact me with any feedback.

Thanks,
Ted Wang

The review period for the VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 minor changes has ended without objections. The VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 specifications are now ready for vote.

6.7 Review Action Items from Oct 2014 Meeting

Owner	Action Item	Status
Vesna Jadric	Record all resolutions in the lifecycle document.	[10/17/2014] Complete.
John Harvey	Provide IVI Config Server PIAs and Policy Files to NI by 10/24/2014	[10/24/2014] Complete.
David Rohacek	Provide a build of the IVI 2.3.0 SCs to Laurent, and Instrument Drivers Working Group by 10/31/2014.	[12/16/2014] Complete.
Kirk Fertitta	Post IVI Shared Components 2.3.0 after approval by Instrument Driver Working Group, by 11/14/2014.	[12/16/2014] Complete.
Ted Wang	Provide new globmgr.dll version 5.5 to John Harvey by 10/24/2014.	[10/24/2014] Complete.

Owner	Action Item	Status
John Harvey	Provide VISA PIAs and policy files to NI by 10/31/2014, with formatted I/O rebuilt if necessary.	[11/26/2014] Complete.
Ted Wang	Provide a build of the VISA Shared Components installer that incorporates the PIA and policy file changes, by 11/07/2014, to the VISA Working Group.	[12/16/2014] Complete.

6.8 Review Spec Status Document

The group reviewed and edited the Spec Status Document.



IVI_Spec_Lifecycle_Status.xlsx

6.9 Working Group Topics

6.9.1 Vote on IVI-3.17 Minor Change

The Instrument Drivers Working Group noted that the form of the Shared Components installers (.msi vs. .exe) posted on the IVI Foundation shared components web page currently violates the spec with regard to shared component installer packaging. The spec changes address two perspectives – packaging for vendors and packaging for customers.

The review period for this minor change has ended on January 20, 2015. All feedback received during the review period has been addressed.

Resolution (2015-02-11:#1): Kirk Fertitta moves that the IVI Foundation approve the minor change to the IVI-3.17 specification to address packaging of the IVI shared component installer files.

Seconded by Teresa Lopes.

The vote was 6-0-0. The resolution is approved.

Action item: Vesna to update the In Progress tab of the lifecycle document.

6.9.2 Vote on VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 Minor Changes

Here is a summary of changes to each of these three specifications:

VPP-4.3.4:

- Updated the version of the VISA COM type library to match the VISA COM DLL version.
- Clarified that the IDL files included in this specification may not have the same date, version, or helpstring as the actual IDL files used.

VPP-4.3.5:

- Made changes to clarify the behavior of the viParseRsrc/viParseRsrcEx functions.
- Modified the uninstallation behavior of the VISA Shared Components and VISA.NET Shared Installer.
- Clarified the necessary prerequisite software for installing VISA.NET Shared Components.

VPP-4.3.6:

- A variety of editorial and minor changes to clarify details and synchronize with the VISA.NET Shared Components.

The review period for this minor change has ended on January 20, 2015. No feedback has been received.

Resolution (2015-02-11:#2): Kirk Fertitta moves that the IVI Foundation approve the minor change to the VPP-4.3.4, VPP-4.3.5, and VPP-4.3.6 specifications based on changes listed above. Seconded by Teresa Lopes.

The vote was 6-0-0. The resolution is approved.

Action item: Vesna to update the In Progress tab of the lifecycle document.

6.9.3 Approve Charter for New Instrument Drivers Working Group

Charter:

“The Instrument Drivers Working Group deals with IVI instrument driver architecture. The scope includes all three IVI instrument driver technologies, IVI-C, IVI-COM, and IVI.NET, and all of the IVI-3.x and 5.x specifications, with the exception of IVI-3.15. The Instrument Drivers Working Group was created in May 2014, to consolidate work on all driver technology architecture into one working group.

The IVI-4.x specifications and IVI-3.15 are not explicitly in the scope of this working group, although the working group may deal with incidental issues (specification typographical errors, for example) that do not require instrument class or LXI domain expertise.

John Harvey from Keysight Technologies is the working group chairman.”

Resolution (2015-02-11:#3): Kirk Fertitta moves that we create an Instrument Driver working group and approve their charter as proposed above.

Seconded by Jochen Wolle.

The vote was 6-0-0. The resolution is approved.

Action item: Vesna to update the lifecycle document.

6.9.4 Approve Charter for New I/O Working Group

Charter:

“The I/O Working Group is responsible for standardizing a common interface for low level access of instrumentation hardware. This working group governs the VISA specifications for various programming languages (C, COM, .NET, G), and the shared components used by vendor implementations.

Ted Wang from National Instruments is the working group chairman.”

Resolution (2015-02-11:#4): Kirk Fertitta moves that we create an I/O working group and approve their charter as proposed above.

Seconded by Santanu Pradhan.

The vote was 6-0-0. The resolution is approved.

Action item: Vesna to update the lifecycle document.

6.9.5 Windows 10

NI completed testing of the IVI Shared Components from the IVI-C perspective and found no issues.

NI expects to test VISA Shared Components and VISA.NET Shared Components on Windows 10, by April 15th 2015.

PMW and Keysight Technologies expect to test the IVI Shared Components from the IVI-COM and IVI.NET perspectives before Windows 10 ships publicly.

Action item: Vesna include an agenda item for Windows 10 in the May 2015 TC meeting agenda.

6.10 New Business

6.10.1 Discuss cleanup of Main Membership Web Page

Ensure that the set of active working groups is accurate.

Jon Bellin proposed 4 top-level categories:

- 1) Active Technical Working Groups
 - a. Instrument Drivers
 - b. I/O
 - c. Windows 10
- 2) Maintenance Mode Technical Working Groups
 - a. Every class spec, including IviLxiSync
 - b. IVI-MSS

- c. *VXIplug&play*
 - d. Others
- 3) Suspended Technical Working Groups
 - a. Digital
 - b. Electro-Optical
 - c. Signal
 - d. Others
- 4) Administrative Committees
 - a. Legal
 - b. Shared Components
 - c. Marketing
 - d. Others

Some former working groups will not be included in any of these four categories. Instead, they will be subsumed by a top-level working group. Examples are IVI-3.1 and IVI-3.2, which are now subsumed by the Instrument Drivers Working Group.

Coincidentally, the Shared Components Committee discussed moving to SharePoint for document sharing. Kirk volunteered to implement this. Kirk has agreed to work with Working Group chairs to migrate to SharePoint and implement the categorization proposed herein.

There is consensus that the proposed structure and categorization is appropriate.

Action item: Vesna include an agenda item for Main Membership Page Reorganization in the May 2015 TC meeting agenda.

6.10.2 IVI-COM Configuration Server Memory Leak

The IVI-COM Configuration Server has a memory leak that cannot be fixed easily in the existing code base. The Instrument Driver Working Group is currently evaluating the idea of fixing the memory leak by re-implementing the IVI-COM Config Server on top of the IVI-C Config Server.

A customer has requested that we document the leak publicly. The Instrument Drivers working group agreed to add a known issues section to the Revision History document for the IVI Shared Components and to document the memory leak therein.

John Harvey proposed that we rename “IVI Shared Components Revision History” to “IVI Shared Components Release Notes” and update the description on the Shared Components download page to indicate that it covers current and previous revisions and includes Known Issues. This should be done for IVI Shared Components, IVI.NET Shared Components, VISA Shared Components, and VISA.NET Shared Components.

Action item: John Harvey to propose text documenting IVI-COM memory leak for review by Jon Bellin, Vesna Jadric, and Kirk Fertitta.

Action item: Vesna Jadric implement the changes to the IVI Revision History documents (IVI SCs and IVI.NET SCs).

Action item: Ted Wang implement the changes to the VISA Revision History documents (VISA SCs and VISA.NET SCs).

Action item: Kirk Fertitta implement the changes to the Shared Components download page.

6.10.3 Discuss the DoD ATS meeting in Orlando on May 11th

DoD requested that we report back to them on what we did to address their feedback from a few years ago.

A 3 hour meeting is scheduled for the afternoon of May 11th.

Planned IVI Foundation Representatives:

- Joe Mueller
- David Rohacek
- Vesna Jadric
- Teresa Lopes

We need to determine who will prepare the content for the meeting and we need to meet to review the content. The May IVI Meeting is the week before this DoD meeting. Joe proposed that Keysight and NI generate slides before a teleconference, approximately 3 weeks before the May IVI Meeting, and that we dedicate time during the May IVI Meeting to review the content.

Joe Mueller will drive this.

6.11 Discuss Upcoming Meetings

The next meeting will be May 06-08, 2015 (1:30 Wednesday – 12:30 Friday) in Denver (not at the airport).

Instrument Drivers	4 hrs (Thur. 3 rd)
I/O	2 hrs (Thur. 2 nd)
Shared Components Management	2 hrs (Thur. 1 st)
DoD Meeting Content	2 hrs (Wed. 3 rd)
Web Forum	1 hr (Wed. 2 nd)

Marketing	1 hr (Wed. 1 st)
Technical Committee Meeting and BoD	4 hrs (Friday)

Criteria for IVI meeting locations:

For US meetings:

- Major airport hub that allows most members a non-stop flight
 - Expensive: San Diego, Austin, San Francisco (Bay Area)
 - Moderate: Las Vegas, San Jose, Denver, Dallas, Orlando, Chicago, St Louis, Los Angeles, Atlanta, Boston, Long Beach, Orange County, Charlotte, Salt Lake City, Phoenix
- Hotel journey is 20 minutes on Google maps.
- Sleeping room price should not exceed \$169.
- Meeting fees should not exceed \$400.
- Internet bundled into the cost.

October 2015 meeting: Chicago – 10/19-10/21

Possibilities: **Chicago**, Boston, Long Beach, Atlanta

2016 plans

February

Possibilities: San Diego, Austin, Bay Area

May

Possibilities: Munich

October

Possibilities: Boston (hosted by TMW?)

6.12 Summary of Action Items Created at the February 2015 Technical Committee Meeting

Owner	Action Item	Status
Vesna Jadric	Record all resolutions in the lifecycle document.	
Vesna Jadric	Include an agenda item for Windows 10 in the May 2015 TC meeting agenda.	
Vesna Jadric	Include an agenda item for Main Membership Page Reorganization in the May 2015 TC meeting agenda.	
John Harvey	Propose text documenting IVI-COM memory leak for review by Jon Bellin, Vesna Jadric, and Kirk Fertitta.	
Vesna Jadric	Implement the changes to the IVI Revision History documents (IVI SCs and IVI.NET SCs): rename the	

Owner	Action Item	Status
	documents and add new section(s)	
Ted Wang	Implement the changes to the VISA Revision History documents (VISA SCs and VISA.NET SCs): rename the documents and add new section(s)	
Kirk Fertitta	Implement the changes to the Shared Components download page: update the description to indicate that it covers current and previous revisions and includes Known Issues.	

6.13 Adjourn

Meeting Adjourned.

7. Annual Membership Meeting

Feb 17, 2011

Called to order: 9:30

7.1 Review voting members in attendance, introductions

Voting Members in Attendance (establish quorum and voting representatives in attendance):

Company	Representative	Present
Aeroflex Corporation	Marv Rozner	
Bustec	Torsten Rissel	
DRS Sustainment Systems, inc	Don Essner	
EADS NA Test & Services	Dan Masters	
Keithley Instruments	John Ryland	X
MathWorks	Vinod Cherian	X
Pacific MindWorks, Inc.	Kirk Fertitta	X
Rockwell Collins	Jason Schares	
Tektronix	Santanu Pradham	X
Teradyne	Teresa Lopes	X
VTI Instruments	Sangram Gaikwad (Tom Sarfi)	

Company	Representative	Present
Agilent Technologies	Spon Joe Mueller	X
National Instruments	Spon Jon Bellin	X

Note: Quorum is 25% of voting membership or 2, whichever is *greater* (By-Laws section 3.6). Based on 14 voting members, a quorum is 4.

8/14 Present 2012-02-17 satisfies quorum.

7.2 Review Agenda

1. MEETING ATTENDEES	2
2. VISA.NET WORKING GROUP	ERROR! BOOKMARK NOT DEFINED.
3. IVI MARKETING	ERROR! BOOKMARK NOT DEFINED.
1. TECHNICAL COMMITTEE	3
4. ANNUAL MEMBERSHIP MEETING.....	38
5.....	41
6. IVI BOD MEETING FEB 17, 2012	ERROR! BOOKMARK NOT DEFINED.
7. RECOMMENDATIONS FROM TECHNICAL COMMITTEE.....	ERROR! BOOKMARK NOT DEFINED.
8. FINANCIAL REPORT.....	ERROR! BOOKMARK NOT DEFINED.
9.....	41

7.3 Review minutes of previous meeting

No concerns expressed

7.4 Circulate membership roster to be corrected by members

The file was scrutinized by members present. Some changes in contact information were made, but the membership list is correct.

7.5 Create slate of general directors representing general membership

There are 11 General-level members in the IVI Foundation, Inc., of whom, 5 are in attendance. Being more than 25% of the total membership that class, this constitutes a quorum.

NOTE FROM BY-LAWS 4.3c: "... Notwithstanding anything in these By-laws to the contrary, at the discretion of the Board, no Member shall be eligible to nominate or elect a Director if such Member's representative to the Board of Directors failed to attend a majority of the meetings of the Board in the previous year...."

Company	Representative	Able To Serve
Aeroflex Corporation	Marv Rozner	
Bustec	Torsten Rissel	
DRS Sustainment Systems, inc	Don Essner	
EADS NA Test & Services	Dan Masters	
Keithley Instruments	John Ryland	X
MathWorks	Vinod Cherian	X
Pacific MindWorks, Inc.	Kirk Fertitta	X
Rockwell Collins	Jason Schares	
Tektronix	Santanu Pradham	X
Teradyne	Teresa Lopes	X
VTI Instruments	Sangram Gaikwad (Tom Sarfi)	

14 total general members. As a class, General Members are permitted to nominate 5 directors.

Kirk Fertitta moves to nominate the 5 members listed in attendance above (John Ryland, Rob Purser, Kirk Fertitta, Santanu Pradham, Teresa Lopes).

Seconded: Teresa Lopes

Resolution passes: YES 5, No 0, Abstain 0

7.6 Identify Sponsor Directors as elected by Sponsor Members

The following directors were elected by their representative companies.

Company	Representative
Agilent Technologies	Joe Mueller
National Instruments	Jon Bellin
Rohde & Schwarz	Jochen Wolle

7.7 New Business

None

Adjourned

8. IVI BoD Meeting May 8, 2015

Called to order at: 10:00 AM

1. Directors in attendance

Present	Director	Company
X	Joe Mueller	Keysight Technologies
X	Jon Bellin	National Instruments
X	Jochen Wolle	Rohde & Schwarz
X	John Ryland	Keithley
X	Kirk Fertitta	Pacific MindWorks
X	Teresa Lopes	Teradyne
	Santanu Pradham	Tektronix

Quorum is a majority of directors. 6/7 satisfies the requirement.

2. Agenda Review

[IVI BoD Meeting May 8, 2015](#)

- [1. Directors in attendance](#)
- [2. Agenda Review](#)
- [3. Reminder of the IP Policy, Anti-trust, and Duty of Trust of Directors](#)
- [4. Resolutions passed by electronic means since last meeting](#)
- [5. Inputs Regarding Minutes of Previous Meeting](#)
 - [5.1 Action Items from Previous Meeting](#)
- [6. Recommendations from Technical Committee](#)
- [7. Membership Report](#)
- [8. Financial Report](#)
- [9. IVI Paid for conference phone](#)
- [10. SharePoint services and transition of consortium information](#)

3. Reminder of the IP Policy, Anti-trust, and Duty of Trust of Directors

The IVI Foundation has an IP policy that could require that some of your corporations' IP be licensed to the IVI Foundation and its members at no cost. Every participant in the IVI meetings

should be familiar with the obligations that participation in the standard incurs on your company.

Every member of the consortium is encouraged to familiarize themselves with legal requirements regarding anti-trust violations. Members need to be cautious and refrain from discussing markets and pricing.

Directors have a duty to the IVI Foundation. They are legally and ethically obligated to do the “right thing” for the IVI Foundation since they serve as a principal of that organization, if this conflicts with other responsibilities such as their duty to their employer, they need to take appropriate actions to resolve the conflict of interest.

4. Resolutions passed by electronic means since last meeting

No motions were passed by the Board of Directors since the last face-face meeting:

5. Inputs Regarding Minutes of Previous Meeting

None expressed

5.1 Action Items from Previous Meeting

NONE

Item	Owner	update
During the Shared Components meeting Kirk agreed to update operating procedures to reflect requirement that future shared components should include source code to be available to consortium in some form.	Kirk	Weren't checked in will do for October.

6. Recommendations from Technical Committee

None at this meeting.

7. Financial Report

Bob presented (will be incorporated in minutes later).



IVI P&L thru
4-23-2015_final.xlsx

Noted that we need to discuss consortium income and fee structure in October. We're fine for normal operations, need to consider impact of 2016 marketing and web forum.

<ACTION Bob> -- Ensure we cancel FogCreek.

8. IVI Paid for conference phone

Per our discussion at Feb 2013, this is the quarterly reminder that: Our resolution passed Feb 2013 that phone attendees will be charged 50% of meeting fee or \$100, whichever is more. Furthermore we decided this week that attendees for less than 5 hours of meetings that do not receive a meal, will be charged the same.

Actions for this meeting:

Attendees:

Bob Helsel will arrange for bills to be sent to: Bob will charge phone attendees for this meeting appropriately.

Kirk moves we adjourn, Teresa

New Business

None noted.

Adjourned 10:33 AM