

IVI Foundation
Meeting Summaries
Oct. 14-16, 2008
Portland, Oregon

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Chapter 1 Meeting Attendees

Last Name	First Name	Company	Email
Adorno	Noel	National Instruments	Noel.Adorno@ni.com
Bellin	Jon	National Instruments	Jon.Bellin@ni.com
Cone	Evan	National Instruments	Evan.Cone@ni.com
Essner	Don	DRS-SSI	dessner@drs-ssi.com
Fertitta	Kirk	Pacific MindWorks, Inc.	kirk@pacificmindworks.com
Gaudette	Tom	The MathWorks	Tom.Gaudette@mathworks.com
Gorringe	Christopher	EADS Test & Service	chris.gorringe@eads-ts.com
Haider	Zulfiqar	National Instruments	Zulfiqar.Haider@ni.com
Harvey	John	Agilent	john_harvey@agilent.com
Helsel	Bob	IVI Foundation	bob.helsel@ivifoundation.org
Lopes	Teresa	Teradyne	Teresa.Lopes@Teradyne.com
McCarthy	Alex	National Instruments	Alex.McCarthy@ni.com
Mondrik	Dan	National Instruments	Dan.Mondrik@ni.com
Mueller	Joe	Agilent	joe_mueller@agilents
Piotrowski	Jim	National Instruments	Jim.Piotrowski@ni.com
Pleasant	Dan	Agilent	dan_pleasant@agilent.com
Rust	Scott	National Instruments	Scott.Rust@ni.com
Ryland	John	Keithley Instruments	jryland@keithley.com
Schares	Jason	Rockwell Collins	jrschares@rockwellcollins.com
Valois	Hugues	Pacific MindWorks, Inc.	hugues@pacificmindworks.com
Wolle	Jochen	Rohde & Schwarz	Joche.Wolle@rohde-schwarz.com

Chapter 2 Technical Committee

General Meeting Info:

Date of Meeting: October 16, 2008
Location: Portland
Chairperson: Scott Rust
Minutes Prepared By: Scott Rust

Topics To Be Discussed:

- Review Agenda
- Review Voting Members In Attendance
- Patent Call
- Approve minutes from the May 2008 Technical Committee Meetings
- Review outcome of recent eVotes, IPR Declarations, Editorial Changes, and Reviews
- Review Action Items from Previous Meeting
- Review Spec Status Document
- Working Group Topics
 - o Status of boilerplate changes to all specs – Noel
 - o 64-bit WG Overview – Jon
 - o Non-Unique Physical Names Issues Status – Jon
 - o Minimum/Recommended Web Site Responsibilities for WG Chairpersons – Scott
 - o Two Letter Company Abbreviations – Kirk
 - o Proposal to start an Instrument Description Discovery working group – Chris
 - o Considerations for adding String versions of Trigger Source Names – Evan
 - o Status of the Data Conversion and Frequency Translation Specifications – Evan
 - o IVI 3.3 Changes for Setting Time – John Harvey
 - o IVI 3.3 Changes for Standard Trigger Source Names – John Harvey
 - o VISA Spec Status and Approval – Dan Mondrik
- New Business
- Discuss Upcoming Meetings

Voting Members In Attendance

Present	Organization Name	Name
X	Agilent Technologies	Joe Mueller
X	Keithley Instruments	John Ryland
X	National Instruments	Scott Rust

Present	Organization Name	Name
X	Rohde & Schwarz	Jochen Wolle
	Aeroflex Corporation	Marv Rozner
	BAE Systems	Wade Lowdermilk
	California Instruments	Kevin Lam
X	DRS Sustainment Systems	Don Essner
	Harris Corp. - GCSD Div.	John Sylvia
X	The MathWorks, Inc.	Tom Gaudette
X	Pacific MindWorks, Inc.	Kirk Fertitta
	Pacific Power Source, Inc.	Eric J. Lord
	Phase Matrix	Michael Granieri
X	Rockwell Collins	Jason Schares
X	Tektronix	Paul Nelson
X	Teradyne, Inc.	Teresa Lopes
X	TYX/EADS	Chris Gorringe
	Vektrex Electronic System	Jeff Hulett
	VXI Technology	Steven Ross
	Xantrex Technology, Inc.	Omar Vitobaldi

There are 11 voting members in attendance, which satisfies the requirements for a quorum of 5 of Voting Members. (Quorum is 25% of Voting Members. There are currently 20 Voting Members.)

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 which 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.

.....

John Harvey reminded the group of a VISA patent filing that Agilent brought up a few meetings ago. Agilent has offered to license this patent. To be discussed in the BoD meeting later today.

Approve minutes from the May 2008 Technical Committee Meetings

The minutes from the May 2008 Technical Committee Meetings are posted on the IVI Foundation web site.

No issues were brought up with the minutes. The TC chairman accepted the minutes.

Review outcome of recent IPR Declarations, eVotes, and Reviews

Editorial changes to Update Contact Info in All Specifications

The changes to the specification boilerplate information will be discussed later in this meeting.

There were no other recent IPR Declarations eVotes, or Reviews to discuss.

Review Action Items from February 2009 Meeting

Owner	Action Item	Status
Joe Mueller	Add to Operating Procedures something to capture the issues surrounding archiving of the web site and preserving old versions of specs in the Membership area of the web site.	(5/15/08) Remains open. (10/16/08) Group agreed that this doesn't belong in Operating Procedures. TC chair will document on TC members only web site. Complete.
Scott Rust	Track whether working groups have put their previous spec versions in the Membership area of the web site.	(5/2/08) Noel has done this for NI' owned specifications. (5/15/08) Scott to remind all spec owners to maintain previous version of specs on web site. (10/16/08) Need to check again. Can be rolled in to setting expectations for working group chairman with regard to web site.
Scott Rust	All the IVI specs have text at the beginning with obsolete contact information. The specs should be updated to refer to the IVI Foundation web site only, which in turn should have the contact information. Run editorial change process and then direct all spec owners to update their spec boilerplate with new text for how to contact the IVI Foundation, with an editorial change.	(5/2/08) Noel posted change document. Most specs have been updated. Reminders have been sent. Will discuss status at May TC meeting. (5/15/08) remains open (10/16/08) Still in progress. To be discussed later in meeting.

Owner	Action Item	Status
		Complete.
Joe Mueller	Joe Mueller to work with the legal WG to post their license regarding implementing a multi-vendor VISA to the legal web site.	(02/08/08) Not done. Joe will do this by the end of February 2008. (5/15/08) Remains open. (10/16/08) Forwarded the patent application on to interested parties. Moved BoD meeting to deal with this and other IP issues. Complete.
Alex M	Alex to discuss backup requirements at next Marketing Working Group meeting	Complete
Kirk Fertitta	Kirk to setup WebEx meeting to discuss use policies for FogBUGz. Tom Gaudette, John Harvey, Zulfiqar Haider wish to participate.	(10/16/08) Not done.
John Harvey	Post resolution to start work to update IVI 3.3 with standard trigger source names two weeks prior to next IVI TC meeting.	(10/16/08) Will vote on resolution during today's meeting. Complete
Dan Pleasant	Run appropriate Minor Change Process to add setting time for instruments to the IVI 3.3.	(10/16/08) Has been rolled into other changes being made by John Harvey. Will vote on resolution during today's meeting. Complete
Scott Rust, Jon Bellin	Post resolution to start work on updating IVI 3.1 and IVI 3.5 for non-unique repeated capability physical names two week prior to next TC Meeting.	(10/16/08) Did not have consensus with working group on a proposed solution. Discussed during Shared Component Management WG. Plan to vote on resolution to start the work later in this meeting. Complete
John Harvey	Remove link to spec for IVI 3.7 Event Server on public IVI web site. Leave text, but say that spec is "Obsolete". Make the last version of the spec available on the member's only area.	(10/16/08) Complete.
John Harvey	Follow-up with the VISA WG regarding issue of scanning for devices on all busses.	Complete
John Harvey	Try to find time for weekly .NET telecom that works for Tektronix in India.	Complete
All WG Chairs	All WG Chairpersons are to post completed action items and detailed agendas for the upcoming meeting by October 1st.	Complete
All Wg Chairs	All WG Chairpersons to submit minutes for the May meeting to Bob H in two weeks – June 1st .	Complete

Owner	Action Item	Status
Scott Rust	Action Item: Scott to post the agenda for October meeting with a review schedule within the next month.	Complete

Review Spec Status Document



IVI_Spec_Lifecycle_S
tatus.xls

Working Group Topics

Status of boilerplate changes to all specs

Specifications	Owner Name	Address updates?
Operating & Legal:		
IVI-1.2: Operating Procedures	Joe Mueller	Yes
Architecture:		
IVI-3.1: Driver Architecture Specification	Noel Adorno	Yes
IVI-3.2: Inherent Capabilities Specification	Noel Adorno	Yes
IVI-3.3: Standard Cross-Class Capabilities	John Harvey	Yes
IVI-3.4: API Style Guide	John Harvey	Yes
IVI-3.5: Configuration Server Specification	John Harvey	Yes
IVI-3.6: COM Session Factory Specification	Chris Gorringer	Yes
IVI-3.9: C Shared Components Specification	Zulfiqar Haider	Yes
IVI-3.10: Measurement and Stimulus Subsystems (IVI-MSS)	John Harvey	Yes
IVI-3.12: Floating Point Services Specification	Zulfiqar Haider	Yes
IVI-3.14: Primary Interop Assembly Specification	John Harvey	Yes
IVI-3.15: IviLxiSync Specification	Joe Mueller	Yes
IVI-5.0: Glossary	Noel Adorno	Yes
Instrument Classes:		
IVI-4.1: IviScope Class Specification	Srdan Zirojevic	Yes
IVI-4.2: IviDmm Class Specification	Zulfiqar Haider	Yes
IVI-4.3: Fgen Class Specification	Evan Cone	Yes
IVI-4.4: IviDCPwr Class Specification	John Harvey	Yes
IVI-4.6: IviSwch Class Specification	Srdan Zirojevic	Yes
IVI-4.7: IviPwrMeter Class Specification	Zulfiqar Haider	Yes
IVI-4.8: IviSpecAn Class Specification	Noel Adorno	Yes
IVI-4.10: IviRFSigGen Class Specification	Jochen Wolle	Yes (to be posted)
VISA Implementation:		
VPP-4.3: The VISA Library	Dan Mondrik	Yes
VPP-4.3.2: VISA Implementation Specification For Textual Languages	Dan Mondrik	Yes
VPP-4.3.3: VISA Implementation Specification For The G Language	Dan Mondrik	Yes
VPP-4.3.4: VISA Implementation Specification For COM	Dan Mondrik	Draft Complete
VXIplug&play Specifications:		
VPP-1: Charter Document	Scott Rust	Yes
VPP-2: System Frameworks Specification	Noel Adorno	Draft Complete
VPP-3.1: Instrument Drivers Architecture an Design Specification	Noel Adorno	Yes
VPP-3.2: Instrument Driver Functional Body Specification	Noel Adorno	Yes
VPP-3.3: Instrument Driver Interactive Developer Interface Specification	Noel Adorno	Yes
VPP-3.4: Instrument Driver Programmatic Developer Interface Specification	Noel Adorno	Yes
VPP-6: Installation and Packaging Specification	Noel Adorno	Yes
VPP-7: Soft Front Panel Specification	Noel Adorno	Yes

Specifications	Owner Name	Address updates?
VPP-9: Instrument Vendor Abbreviations	Noel Adorno	Yes
Draft specifications:		
Counter Timer	Don Essner	Yes
AC Power Supply	Omar Vitobaldi	Yes
Digital	Teresa Lopes	N/A
IviDigitizer	Dan Pleasant	Yes
IviDownconverter	Evan Cone	Yes
IviUpConverter	Evan Cone	Yes

All specification work necessary to update the contact boilerplate has been completed. This task is closed.

64-bit WG Overview

Noel Adorno gave a short presentation on the status of the 64-bit WG activities.

Work is near completion. Changes will be posted for review on November 15. The review period will expire on Jan 19th. The TC will vote to approve the changes at the February meeting.



ReadOnly-1-Rev-3-May 2008 Vista WG sur

Non-Unique Physical Names Issues Status

A consensus was reached on how to allow for non-unique physical names during the Shared Component Management WG earlier in the day. See the Shared Component Management WG Meeting minutes for the details. There are two sets of changes – Changes to IVI-3.1, IVI-3.4, and IVI-3.5, and changes to all existing class specification.

Resolution (2008-10-16:#01) Jon Bellin moved that the following specs will be updated to allow IVI drivers to use the same physical identifier for different repeated capabilities by qualifying the physical identifier name with the repeated capability name in the configuration store, and by accepting either the simple or fully qualified names from user programs: IVI-3.1, IVI-3.4, and IVI-3.5. These changes are to be reviewed, approved, and integrated along with the 64-Bit WG changes. Kirk Fertitta seconded the resolution. The resolution was approved with 9 YES votes. This resolution is a minor change. Jon Bellin will lead the effort and work with John Harvey to make/review the changes

Resolution (2008-10-16:#02) Jon Bellin moved that all existing class specifications that define repeated capabilities be changed so that for each capability name an alternative name is provided that starts with the name of the class, and that driver installers should use the alternative name when registering physical name identifiers in the configuration store. Kirk Fertitta seconded the resolution. The resolution was approved with 9 YES votes. This is a minor change. Noel and Jon to coordinate the effort with existing class spec owners.

Action Item: Scott Rust to notify all specification owners of new specs that are currently in development to have both the simple and the fully qualified repeated capability names. The

simple repeated capability name needs to be retained for the case where two classes share the same physical repeated capability names.

Minimum/Recommended Web Site Responsibilities for WG Chairpersons

Scott Rust made the following proposal for minimum and recommended responsibilities for WG Chairpersons with regard to maintaining the members only working group web sites.

Minimum

- Working Group Chairperson Contact Info: email and phone number
- Title of the Working Group
- Most recently superseded approved specification (or statement that it doesn't exist for 1.0 or prior specs)

Recommended

- Charter
- Meeting Minutes
- All previous relevant versions of specifications (at chairperson's discretion)
- Link to current approved specification
- Other relevant documents
 - Presentations
 - Change documents or Proposals
 - Schedules
 - Other Files

Action Item: Scott Rust to post above text to TC web page and notify all working group chairpersons of the expectations

Two Letter Company Abbreviations

Kirk raised some thoughts regarding 2 letter abbreviations. IVI C drivers require that the driver prefix start with the company's 2 letter prefix that is registered in VPP-9.

Do we want to keep this requirement? There was consensus to keep the requirement.

How can we make the process to obtain these abbreviations more visible? The prefix requirements and reference to VPP 9 are currently in IVI 3.1.

Action Item: Noel Adorn to run editorial change process to update VPP-9 with more explicit instructions on how to obtain a 2-letter abbreviation.

Proposal to start an Instrument Description Discovery Working Group

Chris discussed the current status of the group and the proposed charter for the group.

Instrument Description Discovery Working Group Charter

To provide a central location where vendors can record where Instrument Description files, relevant to their instruments, are located together with their format, and an API with which users can interrogate that location. The presence of such a URI for descriptions would be completely optional, however where present this would provide a single method to obtain the location of such information.

The proposal may be to consider updates to the Configuration Store schema such that a URI representing the location of any associated instrument description file (e.g. ATML IEEE Std.1671.2) could be stored with reference to an Instrument Model/Option.

Resolution (2008-10-16:#03): Chris Gorringer moved to create an Instrument Description Discovery Working Group and approve their charter. Joe Mueller seconded. Resolution approved with 10 YES votes.

Chris is to lead the group. Volunteers to participate were John Harvey, Joe Mueller, Teresa Lopes, Rob Purser, Jason Schares, Zulfiqar Haider, and Paul Nelson. John Harvey requests that this be in the 1st track for face-to-face meetings.

Status of the Data Conversion and Frequency Translation Specifications

Upconverter, Downconverter, and Digitizer specs are complete. The group will contact previous members of the Synthetic Instrument I/O WG to see if they would like to participate in a review and have any feedback. Plan to do a review period such that we can vote on the specifications at the February 2009 meeting.

Action Item: Evan – Make sure the repeated capability names in Upconverter, Downconverter, and Digitizer specification are in the appropriate form

The Arb work is just starting. The group only needs a half day meeting at the February meeting.

Considerations for adding String versions of Trigger Source Names

The IviFGen class currently has a trigger source attribute in the base class that is an enum. There will be several trigger attributes that will be added such as a pause trigger. These new trigger attributes will be strings.

The group wants to add a string version of the trigger source enum that is currently in the base class. Can they add this new attribute to the base class?

Possible Approaches:

- 1) Add all the new triggers enums (this is not allowed).
- 2) Add all new triggers attrs as strings and leave main trigger source attr as an enum.
- 3) Add all new triggers attrs as strings and add a string version of the main trigger attr.

We reviewed what IVI 3.3 says about the issue. It allows both options 2) and 3).

The topic needs further discussion at the February meeting.

We need to schedule a track 1 discussion on the topic.

IVI 3.3 Changes for Setting Time – John Harvey

Resolution (2008-10-16:#04): Joe Mueller moved to start work on changing IVI-3.3 and IVI-3.4 to add methods for setting absolute time with 1588.2008 style resolution. Changes will be integrated with currently scheduled 64-bit changes, following the same review and approval schedule. Teresa seconded the resolution. Resolution passed with 10 YES votes. This resolution is a minor change. John Harvey will lead the effort.

IVI 3.3 Changes for Standard Trigger Source Names – John Harvey

Resolution (2008-10-16:#05): Joe Mueller moved to start work on changing IVI-3.3 to add a list of standard set of strings to be used as trigger sources for new specifications. It should be understood that trigger properties in existing specs are grandfathered. Changes should be integrated with currently scheduled 64-bit changes, following the same review and approval schedule. Tom Gaudette seconded. Resolution passed with 10 YES votes. This resolution is a minor change. John Harvey will lead the effort.

VISA Spec Status and Approval – Dan Mondrik

The working group met yesterday. The 45 day review concluded today. The group recommends that we approve the updated specifications.

Resolution (2008-10-16:#06): The VISA WG moved to approve changes for VISA C Plug-In Arch for Vista 64. The updated specs include VPP-2 (Frameworks), VPP-4.3 (VISA Library), VPP-4.3.4 (VISA COM), VPP-6 (Installation). A new specification was created – VPP-4.3.5 (VISA Shared Components). Resolution approved with 10 YES Votes.

New Business

No new business.

Discuss Upcoming Meetings

The next meeting will be held February 10th – 12th. Location is Austin. National Instruments to host.

Working Group	Time
.NET	$\frac{3}{4}$ to 1 day
Technical Committee Meeting and BoD and Annual Meeting	$\frac{3}{4}$
Users Committee	0
Operating Procedures	0
Marketing Committee and Web site review	$\frac{1}{2}$ to $\frac{1}{4}$
Shared Components Management	$\frac{1}{4}$
AC Power Supply (Track 2)	TBD
Counter/Timer (Track2)	$\frac{1}{2}$
VISTA & 64-bit Working Group	0 to $\frac{1}{4}$
VISA (same day/track as 64-bit)	0
Data Conversion	$\frac{1}{2}$ to 1
Frequency Translation	0
Instrument Capability Discovery (Track 1)	$\frac{1}{2}$
FGen Trigger Source Name Issue (Track 1)	$\frac{1}{4}$
Totals	

Kirk requests that we don't overlap Data Conversion, .NET, and Marketing

Action Item: All WG Chairpersons are to post completed action items and detailed agendas for the upcoming meeting by January 27th.

Action Item: All WG Chairpersons to submit minutes for the October meeting to Bob H in two weeks – October 31st.

Action Item: Scott to post the agenda for February meeting with a review schedule by Jan 6th.

Suggestion for Boston for the May 2009 meeting. Tentative dates are May 19th – 21st. If Bob can't find a hotel, he can switch to Colorado.

Summary of Action Items Created at the October 2008 Technical Committee Meeting

Owner	Action Item	Status
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Owner	Action Item	Status
Scott Rust	Track whether working groups have put their previous spec versions in the Membership area of the web site.	(5/2/08) Noel has done this for NI' owned specifications. (5/15/08) Scott to remind all spec owners to maintain previous version of specs on web site. (10/16/08) Need to check again. Can be rolled in to setting expectations for working group chairman with regard to web site.
Kirk Fertitta	Kirk to setup WebEx meeting to discuss use policies for FogBUGz. Tom Gaudette, John Harvey, Zulfiqar Haider wish to participate.	(10/16/08) Not done.
Scott Rust	Scott Rust to notify all specification owners of new specs that are currently in development to have both the simple and the fully qualified repeated capability names. The simple repeated capability name needs to be retained for the case where two classes share the same physical repeated capability names.	
Scott Rust	Scott Rust to post minimum and recommended web site requirements for WG chairpersons to TC web page and notify all working group chairpersons of the expectations	
Noel Adorno	Noel Adorno to run editorial change process to update VPP-9 with more explicit instructions on how to obtain a 2-letter abbreviation.	
Evan Cone	Make sure the repeated capability names in Upconverter, Downconverter, and Digitizer specification are in the appropriate form	
All WG Chairpersons	All WG Chairpersons are to post completed action items and detailed agendas for the upcoming meeting by January 27th.	
All WG Chairpersons	All WG Chairpersons to submit minutes for the October meeting to Bob H in two weeks – October 31st.	
Scott Rust	to post the agenda for February meeting with a review schedule by Jan 6th .	

Adjourn

Meeting Adjourned.

Chapter 3 .NET Working Group

General Meeting Info:

Date of Meeting: October 14, 2008
Location: Portland, OR
Chairperson: John Harvey
Minutes Prepared By: John Harvey

Meeting Attendees:

Name	Company	Phone	Email
Hugues Valois	Pacific Mindworks	858-587-8876 x227	hugues@pacificmindworks.com
Jason Schares	Rockwell Coolins	319-295-8655	jrschare@rockwellcollins.com
John Ryland	Keithley Instruments		jryland@keithley.com
Dan Pleasant	Agilent Technologies		dan_pleasant@agilent.com
Paul Nelson	Tektronix	503-627-3138	paul.n.nelson@tek.com
Joe Mueller	Agilent Technologies	970-679-3535	joe_mueller@agilent.com
Teresa Lopes	Teradyne	978-370-1377	teresa.lopes@teradyne.com
John Harvey	Agilent Technologies	970-679-3535	john_harvey@agilent.com
Zulfiqar Haider	National Instruments		zulfiqar.haider@ni.com
Chris Gorringer	EDS Test & Services		chris.gorringer@eads.ts.com
Tom Gaudette	The Mathworks	508-647-7759	tom.gaudette@mathworks.com
Kirk Fertitta	Pacific Mindworks	858-587-8876 x237	kirk@pacificmindworks.com
Don Essner	DRS-SSI	314-553-4238	dessner@drs-ssi.com
Jon Bellin	National Instruments	512-683-5516	jon.bellin@ni.com
Murali Sreedhara*	Tektronix		murali.sreedhara@tektronix.com
Yves Maumary*	Agilent Technologies		yves_maumary@agilent.com
Ted Briggs*	Gage		ted.briggs@gage-applied.com

* Joined afternoon phone conference.

Agenda:

Morning:

- Review action items (John/All)
- Review issues list (John)
- Assess specs futures & 64-bit approval schedule (John)
 - Changes to IVI-3.3 and IVI-3.4
 - Review classes/specs that could potentially use the waveform object – see recipe document.
 - Wrap up the recipe document and DMM spec (Joe).
- Work on details of waveform use cases – add the C# code for the use cases to the Waveform solution (All, Hugues will drive)

Afternoon:

- Review the potential impact of waveform work on the Data Conversion & Frequency Translation WG (Tom)
- Discuss spectrum & power alternatives (or time, frequency, & arbitrary). (Tom)

- Add time
 - Complex?
- Summarize and assess waveform progress (John)

Review Action Items

Specification Changes

The IVI.NET group drove several specification changes over that last 5 months. John made changes to the specs. These changes will be integrated into the set of 64-bit specification changes. The changes to IVI-3.3 and 3.4 are needed for new class specs. The changes to IVI-3.14 are needed to build PIAs for the version of the IVI Shared Components that will include the first set of 64-bit components.

These specifications will be posted on the Vista & 64-bit WG web page as they are ready for review.

IVI-3.3

A list of standard trigger source strings was added to IVI-3.3. In the future, all properties and method parameters for trigger sources will be implemented as strings. There are appropriate grandfather provisions for existing class specs. Several people indicated an interest in getting a list of the defined strings. To get a list, email John Harvey

“Absolute Time” methods were also added to IVI-3.3. If 1588.2 style resolution is needed for time, these are the recommended methods to use.

IVI-3.4

Recommendations were added to IVI-3.4 with regard to “Absolute Time” methods.

IVI-3.14

Requirements and recommendations related to the use of TlbImp.exe to create Primary Interop Assemblies (PIAs) were changed. Version 2.0 is now recommended/required, rather than version 1.0, for a variety of reasons. There was one issue related to backwards compatibility that was discussed in this meeting and the 64-bit WG meeting. The recommended solution is to install old 1.0 generated PIAs into the Global Assembly Cache (GAC). The groups agreed to this recommendation pending approval by the Vista & 64-bit WG. Since the issue impacts the installers, and since the current 64-bit component development is using TlbImp.exe version 2.0, the next published set of IVI Shared Components will be impacted by this decision. See the 64-bit WG meeting minutes for the resolution.

John Harvey will post a PowerPoint slide set explaining the issue and the recommendation on the IVI.NET WG web page.

Action Item List

Action Items in green are complete and will be removed from the ongoing list..

2008-09-23	John – Send email to Data Conversion & Frequency Translation WG chairs inviting them to the IVI.NET meeting to review the waveform design. Shoot for beginning of the afternoon.	Done – We need to clarify the call in number.
2008-05-13	Joe - Finish edits to the DMM spec.	5-13: Joe has delivered a new version that needs to be reviewed. It has been posted to the web site. 6-10: Finished review. Joe has several minor changes to make, documented in the minutes for 6-10-2008. 7-22: Joe has kept this current. Can send out if needed. 10-13: Still Current – no outstanding issues. Needs a little more review, need to discuss mechanics of recent changes.
2008-05-13	Joe – Revise DMM assembly if needed	2-19: Potential for minor changes to make assembly match DMM spec changes. Won't be done until after spec changes are complete. 10-13: Still waiting for DMM spec changes to be completed & approved.
2008-05-13	John – Update date of link to IVI-3.1 on web site.	5-19: Done.
2008-05-13	John – In the Issues List document, move issues to appropriate categories per today's discussion and issue resolutions, and post to the web site by May 21.	5-19: Done.
2008-05-13	John – Item for Technical Committee: Discuss removal of IDL and C header code from specs	5-15: Done – Discussed by the technical committee on 5/15. Refer to technical committee minutes.
2008-05-13	Hugues – Follow up on issues with recipe document in phone meetings.	Done
2008-05-13	Kirk – Add a discussion of the “Trigger Source as a String” section to the recipe document.	8-19: Kirk will do the write-up and send to Joe. Joe will incorporate it into the current version. Tom has the current version of the recipe document(?). John will review minutes to see when the last time we reviewed this document was, and email Kirk, Joe & Tom with the

		<p>resulting conclusion about who should have the latest copy. The 6-10 version on the web site has basic waveform changes, but not changes based on Tom's waveform work. If the web site doesn't have the latest copy, John will post.</p> <p>10-13: Latest has been posted. Trigger string section has not been added.</p>
2008-05-13	John – Hold a conference call to discuss sec. 6 of IVI 3.1 with Zulfiqar, Noel, and others from NI, and Hugues.	<p>8-19: Not until September.</p> <p>10-13: Delayed – will try to get this done before the next face-to-face meeting.</p>
2008-05-13	John – Add the standard trigger list strings to IVI 3.3. Specify the text that should be used in the class specs in the appropriate document.	<p>5-27: Done. Needs to be reviewed – medium priority.</p> <p>6-24: John will make changes suggested in the meeting and send out the document. Will integrate with Dan Pleasant's LXI current time changes.</p> <p>8-19: John will review meeting minutes to see what is still required.</p> <p>9-25: Reviewed in 64-bit and Vista WG – Some changes were discussed and need to be reviewed in Portland.</p>
2008-05-13	John – If Agilent contributes test programs, declare them in the BOD IP declarations.	5-15 Between Technical WG and Shared Components WG, solved this in Munich
2008-05-13	John – Organize tests for migrating PIAs to .NET 2.0, then hold a conference call to discuss results and proposal.	<p>5-27: Started working on .NET 2.0 PIA for the configuration server.</p> <p>8-19: Config Server PIAs generated with .NET 2.0. Will be testing in the next couple of weeks.</p> <p>10-13: PIAs are done, built with tlbimp 2.0, delivered to Zulfiqar. Need to discuss testing strategy, but John has one and has implemented and used it.</p>
2008-06-10	Tom – Write a section in the recipe document dealing with the class API for using the waveform object. (adapted from: Unassigned – Add a discussion of the waveform pattern &	<p>6-24: Tom modified the IviScope spec to show use of the waveform object and emailed to all.</p> <p>7-22: We finished a pass thru the sections that Tom has modified.</p>

	class to the recipe document.)	Tom will continue with changes based on the pattern of what we did with the sections we reviewed. 8-19: Still needs to finish this. 10-13: Still outstanding pending further waveform discussion.
2008-06-10	Joe – Make minor changes to the recipe document based on today’s review.	7-22: Still needs minor changes, and some scope related changes. Tom is hopeful that future scope changes won’t require changes to the recipe document. 8-19: Joe is waiting until all changes are ready. 10-13: Recipe document is current with changes in the DMM spec. Tom will add waveform info (see previous item).
2008-07-15	Joe – Report on status of waveform object and where we need to discuss and document additional semantics.	8-19: Joe has the latest code and will work on this for next week. 9-16: Joe reviewed and the group proposed a set of next steps. 10-13: Done
2008-08-19	Unassigned – Would like some waveform object code to play with by the Oct. IVI meeting. Not necessarily something that talks to an instrument, but something that can be used to see how the waveform definition might be implemented.	8-19: The form this takes will be discussed over the next couple of weeks. 10-13: Done

Issues List

John reviewed the issues list and minimal changes were made. John will post the updated list to the IVI.NET WG web page.

Specs Future & 64-bit Approval Schedule

.NET Specification Schedule

John discussed the schedule for modifying specs for IVI.NET. This is somewhat dependent on the schedule for the set of 64-bit related changes being driven by the Vista & 64-bit WG.

Zulfiqar asked how spec owners would be involved in the .NET specification changes. For example, should the revised DMM spec that Joe is working on be on the DMM page. John suggested that this would be appropriate in the future, but not at this time. The current DMM

spec that Joe has been working on is a draft of the proposal that the .NET WG will bring to the table, and a pattern for changing other class specs.

The current expectation is that 64-bit spec changes will be put out for review within a few weeks of this meeting, pending some outstanding issues/review of IVI 3-14 and 3.5. With this schedule, the specs would be available sometime in January for IVI.NET changes (assuming an E-vote to approve), or after the February IVI meeting (if there is a face-to-face vote).

Changes to IVI-3.3 and IVI-3.4

There was discussion of the current description of trigger source strings as case-insensitive but case-preserving. Jon brought up several potential issues related to preserving case, including a scenario when the driver cache is invalidated and the driver has to check with the instrument to see what the actual value is. In this case, there isn't any guarantee that the driver can return the original casing.

We agreed upon the following text:

All new IVI specifications approved after January 1, 2009, shall use strings for trigger sources and LXI arming sources. The strings shall be treated as case-insensitive. In cases where the value is not pre-defined by the driver, the driver shall preserve the case of the string that the user passed to the driver. In cases where the value is pre-defined by the driver, the driver shall return the driver-defined value.

Review classes/specs that could potentially use the waveform object.

The following class specs will potentially use the waveform object: Scope, Digitizer, Fgen/Arb, SpecAn, SigGen, DMM (multipoint mode?)

The following class specs will likely not use the waveform object: Digital, Counter/Timer, DCPwr, ACPwr, Swtch, Up/Down Converter.

Wrap up the recipe document and DMM spec (Joe).

We discussed progress on both the DMM spec and the recipe document. Aside from a few minor edits, the DMM spec is complete. The recipe document is complete aside from adding waveform related instructions. Joe is not on the hook for the waveform instructions.

Details were recorded in Joe's documents. John will post these to the IVI.NET WG web page.

Waveform Use Cases

There was some discussion of use cases mixed into much of the other waveform discussion, but no concrete work focused on use case code.

At the last second, we remembered capacity – this showed the value of continuing through the use cases.

Changes were recorded in Hugues' IVI.NET project. John will post these to the IVI.NET WG web page.

Waveform Data Conversion & Frequency Translation Impact

Changes were recorded in Hugues' IVI.NET project. John will post these to the IVI.NET WG web page.

Spectrum & Power Alternatives

Changes related to a spectrum alternative were recorded in Hugues' IVI.NET project. John will post these to the IVI.NET WG web page.

We did not define a power alternative. Tom thought it was not clear what spec required a power alternative. We decided to postpone discussion of a power alternative until there was a class spec that needed it.

Assess Progress

Potential .NET WG Work:

- Finish up Waveform efforts.
- Finish recipe document.
- Work on all specs, including those that do require waveform work.
 - Class specs that don't require waveform work.
 - Class specs
 - IVI-3.2
 - Wait for 64-bit changes to be approved.

Other IVI events that will compete with .NET for people's time:

- 64-bit specification review in November-December time frame.
- 64-bit OS and 32-bit OS installers for IVI Shared Components.
- 64-bit OS and 32-bit OS installers for IVI VISA Shared Components

The consensus was to focus on finishing up the waveform work (including resultant changes to the recipe document) and other IVI events between now and the beginning of the year.

Action Items Moving Forward

The following list of action items replaces the list above. Incomplete items were carried over.

2008-05-13	Joe - Finish edits to the DMM spec.	5-13: Joe has delivered a new version that needs to be reviewed. It has been posted to the web site. 6-10: Finished review. Joe has several minor changes to make, documented in the minutes for 6-10-2008. 7-22: Joe has kept this current. Can send out if needed. 10-13: Still Current – no outstanding issues. Minimal editorial changes.
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2008-05-13	Joe – Revise DMM assembly if needed	2-19: Potential for minor changes to make assembly match DMM spec changes. Won't be done until after spec changes are complete. 10-13: Still waiting for DMM spec changes to be completed & approved.
2008-05-13	Kirk – Add a discussion of the “Trigger Source as a String” section to the recipe document.	8-19: Kirk will do the write-up and send to Joe. Joe will incorporate it into the current version. Tom has the current version of the recipe document(?). John will review minutes to see when the last time we reviewed this document was, and email Kirk, Joe & Tom with the resulting conclusion about who should have the latest copy. The 6-10 version on the web site has basic waveform changes, but not changes based on Tom's waveform work. If the web site doesn't have the latest copy, John will post. 10-13: Latest has been posted. Trigger string section has not been added.
2008-05-13	John – Hold a conference call to discuss sec. 6 of IVI 3.1 with Zulfiqar, Noel, and others from NI, and Hugues.	8-19: Not until September. 10-13: Delayed – will try to get this done before the next face-to-face meeting.
2008-06-10	Tom – Write a section in the recipe document dealing with the class API for using the waveform object. (adapted from: Unassigned – Add a discussion of the waveform pattern & class to the recipe document.)	6-24: Tom modified the IviScope spec to show use of the waveform object and emailed to all. 7-22: We finished a pass thru the sections that Tom has modified. Tom will continue with changes based on the pattern of what we did with the sections we reviewed. 8-19: Still needs to finish this. 10-13: Still outstanding pending further waveform discussion. Rob Purser may inherit.
2008-06-10	Joe – Make minor changes to the recipe document based on today's review.	7-22: Still needs minor changes, and some scope related changes. Tom is hopeful that future scope changes won't require changes to

		the recipe document. 8-19: Joe is waiting until all changes are ready. 10-13: Recipe document is current with changes in the DMM spec. Tom/Rob Purser will add waveform info (see previous item).
2008-08-19	Hugues/Group – Would like some waveform object code to play with by the Oct. IVI meeting. Not necessarily something that talks to an instrument, but something that can be used to see how the waveform definition might be implemented.	8-19: The form this takes will be discussed over the next couple of weeks. 10-13: Still actively working on waveform design as a group.
2008-10-14	Joe/John – Pick up changes from the Waveform solution and add them to the recipe document.	
2008-10-14	John – Post various files mentioned in the minutes to the web site. <ul style="list-style-type: none"> • New VS Solution from Hugues • TlbImp PowerPoint slides • New Issues List • New DMM Spec & Recipe doc • WG Minutes 	

Chapter 4 IVI Frequency Translation working group minutes

October 15, 2008

Location: Portland, Oregon

Meeting Attendees

Name	Company	Email
Evan Cone	National Instruments	evan.cone@ni.com
Dan Pleasant	Agilent Technologies	dan_pleasant@agilent.com
Chris Gorringe	EADS	chris.gorringe@eads-ts.com
Kirk Fertitta	Pacific Mindworks	kirk@pacificmindworks.com
Jochen Wolle	Rohde & Schwarz	jochen.wolle@rohde-schwartz.com
Joe Mueller	Agilent Technologies	joe_mueller@agilent.com
Scott Rust	National Instruments	scott.rust@ni.com

Don Essner	SEI	dessner@drs-ssi.com
Teresa Lopes	Teradyne	Teresa.Lopes@Teradyne.com

Record of Discussion:

- No Patent Issues were raised.
- Minutes from last conference call were approved
- Reviewed changes in Upconverter and Downconverter
- Reviewed Status slides
- Discussed SIWG feedback – send email with the following information:
 - Note that specifications are at release candidate stage, and that we are soliciting involvement from the group that was actively involved at the beginning
 - We haven't done much system-level prototyping, so that would be most appreciated
 - Notify us if they would like to be involved
 - Don't give impression that they can veto it or implement to it- it could still change
 - Ask for feedback within 45 days, to give us time for 45 day IVI review period to approve at Feb IVI meeting
 - Send out within next 2 weeks
- Decision: Approve Digitizer, Downconverter, and Upconverter at February meeting ahead of IVIFgen changes
 - Useful, since IVIFgen already exists, customers can prototype SIWG solution with existing IVIFGen specification
- Downconverter: Current version of specification is Draft 18.
- Upconverter: Current version of specification is still Draft 13.

Action Items:

- DONE: Evan to check with Mike and Anthony on prototyping time-table
 - Phase Matrix and BAE declined to prototype (spec or system-level)
- Kirk to update software components for Upconverter and Downconverter
- Dan to send out SIWG email with notes above
- Kirk to contact Boeing to ask them about system-level prototyping
- Evan to post slides and send out links to latest specifications and slides

No meeting on Wednesday, Oct 22 at 9:30am CDT. No future conference calls planned – from now on, they will be scheduled as needed.

Chapter 5 IVI Marketing Committee Meeting Minutes

General Meeting Info:

Date of Meeting: October 16, 2008
Location: Portland, OR
Chairperson: Alex McCarthy

Minutes Prepared By: Alex McCarthy

Meeting Attendees:

Name	Company	Attended
Alex McCarthy	NI	Y
Bob Helsel	IVI Foundation	Y
Jochen Wolle	Rohde & Schwarz	Y
Kirk Fertitta	Pacific MindWorks	Y
Nicole Dierksheide	Agilent	N
Tom Gaudette	The MathWorks	Y
Joe Mueller	Agilent	Y
John Harvey	Agilent	Y
Teresa Lopes	Teradyne	Y
Chris Goringe	EADS	Y
Don Essner	DRS	Y
John Ryland	Keithley	Y
Jason Schares	Rockwell Collins	Y
Evan Cone	NI	Y
Paul Nelson	Tektronix	Y
Dan Mondrik	NI	Y
Noel Adorno	NI	Y

Discussion Topics:

- Roll call
- Review action items from previous meeting (Alex)
- Discuss web site changes (Bob)
- Getting Started Guide copyright and shortened versions (Joe/Nicole)
- Review marketing budget and discuss marketing plan (Bob H.)
- Update IP policy and patents documents on web site (Bob H.)
- New Business

Record of Discussions:

Review action items from previous meeting

Owner	Action Item	Deadline	Status
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Owner	Action Item	Deadline	Status
Bob	Post old press releases with Tango	First week of Sept.	Pending (Scott)
Bob	Send email to working group chairs requesting they add their email addresses to their working group pages. Please note these pages are not public and should not allow crawlers to scrap email addresses.	Reassigned from July call minutes	Done
Bob H	Collect May Munich minutes and post on meeting page.	End of August	Done
Nicole	Draft GSG permitted uses statement to review at next call	Next IVI Marketing in August	Done
Alex	Continue GSG Copyright / Changes on agenda	Next IVI Marketing in August	Done
Bob	Get a quote from Scott in early September to make recommended changes. (Done) Send quote for recommended changes and improving browser experience to marketing members	Before Sep. marketing call	Done
Alex	Add reviewing web site quotes to next marketing agenda call	Before Sep. marketing call	Done
Bob	Lead effort in developing draft 2009 marketing plan before September marketing meeting	Before Sep. marketing call	Done
Bob	Ask Joe and Scott what is the status of IP/Patents/Trademarks and impact on marketing committee (e.g. posting the patent press release)	Before next IVI marketing meeting	Pending
Bob	Ask Tango to buy and implement driver improvement changes	Before next IVI marketing meeting	Done
Bob	Move forward with improving menu navigation changes if cost doesn't exceed \$1500	Before next IVI marketing meeting	In process
Alex	Alex will draft a short statement on shortened GSG versions	Before 10/1/08	Done
Bob	Forward GSG usage statements to Chris at	9/25/08	Done

Owner	Action Item	Deadline	Status
	Agilent		
Nicole	Develop draft copyright policy before next meeting using the statements above and the shortened version statement	Before next IVI marketing meeting	Done
Bob and Alex	Bob and Alex to kick off marketing budget and plan discussion via email	Before next IVI marketing meeting	Done

Notes from Reviewing Past Action Items

- Still looking for missing PRs. For example, donating IVI logo to IVI Foundation
 - o **Action: all – look for and send to Bob H old PRs**
- Chris Van Woerkom of Agilent sent an email indicating the policy is too restrictive to use GSG and requested reconsideration. We covered this later in the meeting.

Discuss Web Site Changes (Bob)

- Discussion
 - o Scott at Tango is working on improvement. Expect completion in the next couple of weeks.
- Improving menus
 - o Quote came back at ~ \$1100 and Scott is working on this.

Getting Started Guide copyright and shortened versions (Nicole/Joe)

- Need to reword intent on asking for permission to reference vs develop a shortened version of GSG.
 - o **Action: Alex include discussion on permission and shortened or reference policy on next con call**
- Should we do a prototype of a shortened version to make sure the result is presentable and easy to generate. Developing shortened versions requires some tweaking using the Adobe tools. Bob suggested contracting a technical writer to develop prototype of

shortened version. Joe will send list of hand tweaks to Bob H. Use Chapter 3 for the prototype. Also, a contractor provides a source for other companies to hire.

- **Action: Bob H – Supervise development of sample shortened version for review at a future marketing con call.**
- Developing shortened versions of the guide where part of the original intent. IVI Foundation would still have copyright to the shortened version.
 - **Action: Alex discuss at future marketing meeting for the IVI Foundation of the shortened version for each of the ADEs. These will be posted on the web site.**
- Consider having links from vendors' site to IVI and IVI to vendors site for shortened versions. Discussed concerns about broken links.
- Should we allow changes with chapters (e.g. using different instruments in examples)? The consensus of those present is not to allow changes within chapters due to extended discussions and protracted review cycles.
- Discussed how to handle software updates in the GSG. Most chapters were written and then reviewed by at least one other company. We should consider periodic updates for all chapters. Use technical writer to implement changes. Can also keep older versions of shortened chapters on the web site. The intent is to keep the GSG updated with the latest vendor software versions while making as few changes as possible. Screen resolution was an issue when it was originally written in 2007. Consider asking vendors if they want to update their sections that year.
 - **Action: Alex to add periodic GSG updates to the next IVI marketing con call.**
 - **Action: Alex – Discuss periodic GSG updates for new releases of software BEFORE paying for additional shortened versions.**

Review marketing budget and discuss marketing plan

- Bob H. walked through summary of the IVI Budget. Approx. \$28k income balance. There is an estimated \$14.5k in additional expenses for Tango web site changes, management services fees, and other expense line items. The marketing budget showing ~13.3k remaining in '08. Some of this will be targeted to developing shortened GSG versions.
 - FrogBugs software was purchased earlier in the year. Need to make use of it.
- Previous marketing plans
 - While specific tasks for a year were detailed, there was not a plan in place. Have a message that wanted to promote.
- Specific previous tactics
 - up with new technology
 - Working on IVI tri-fold
 - IVI plaques at previous AutoTestCon. Were not collected and may not be available now. Consider doing this again and then collecting them
- Potential future tactics
 - Timely PRs showing progress by IVI Foundation. For example, release of new specs (past and present) to show IVI is still innovating and keeping
 - Demo training showing how easy it to use IVI. Materials would be based on GSG.

- Members would provide content to a technical writer to pull together content
 - Can use beyond AutoTestCon. For example, Asia and Europe value training more than presentations
- Press releases
 - Low cost, effective way to get attention for IVI
 - Have technical writer develop with review by marketing committee
- Trade articles
 - Update list from last year
 - Overlap between IVI interests and vendor interests
 - Can be repurposed for other articles and white papers
 - “Coke vs. Pepsi” style articles. Compare IVI drivers versus custom drivers showing pros and cons of each.
- GSG Shortened Versions
 - From previous discussion.
- Update plaques and use again
- Keep current messaging. Send out list potential activities and ask for owners. Bob will also include cost if we wanted to have an outside resource develop this.
 - **Action: Alex to add discussing keeping current messaging and asking volunteers to own some of them to the next marketing con call.**
- **Action: Bob H to draft a press release for recent IVI developments working with Joe, John H. and Jochen.**

IP policy and patents documents on web site (Bob H.)

- This was deferred to the Board of Directors meeting later in the day.

New Business

- Next marketing meeting will be mid-November.

Summary of New Action Items:

Owner	Action Item	Deadline	Status

Chapter 6 Vista and 64-Bit Working Group

General Meeting Info:

Date of Meeting: October 15, 2008
Location: Portland, Oregon
Chairperson: Jon Bellin
Minutes Prepared By: Jon Bellin

Meeting Attendees:

Name	Company	Phone	Email
Jon Bellin	National Instruments	512-683-5516	jon.bellin@ni.com
Noel Adorno	National Instruments	512-683-5071	Noel.adorno@ni.com
Zulfiqar Haider	National Instruments	512-683-8374	Zulfiqar.haider@ni.com
Dan Mondrik	National Instruments	512-683-8849	Dan.mondrik@ni.com
Jim Piotrowski	National Instruments	512-683-5752	Jim.piotrowski@ni.com
John Harvey	Agilent Technologies	970-679-3535	John_Harvey@agilent.com
Hugues Valois	Pacific Mindworks	858-587-8876x227	hugues@pacificmindworks.com
John Ryland	Keithley	440-498-3134	jryland@keithley.com
Paul Nelson	Tektronix	503-627-3138	Paul.n.Nelson@tek.com
Jason Schares	Rockwell Collins	319-295-8655	jrschare@rockwellcollins.com

Topics to Be Discussed:

- Remaining action items from previous meeting
- Review status of software development for 64-bit IVI shared components
- Review schedule of IVI specification changes for 64-bit
- Finish reviewing changes to IVI-3.1 and IVI-3.14 for 64-bit
- Review slides explaining the specification changes made for 64-bit
- Discuss issue regarding ModulePath and Published API
- Review changes to IVI-3.5
- Identify action items

Remaining Action Items from Previous Meeting

- Jon Bellin:
 - Send Scott a resolution on beginning the physical names change to the spec.
 - Schedule a conference call on the physical names issue.
- Noel Adorno:
 - Create a change document to update IVI-3.1 Sections 4.3.5 and 5.9.1 for the new physical name uniqueness rules (see section 1.8 of this document). Send out to list server for review by August 1, along with the corresponding change document for IVI-3.5 from John Harvey.

- When we release the new shared component installer, retain the most recent legacy version of the shared component installer on the web site and document why we are retaining it on the web site (using the language in IVI-3.1, Section 6.3.4, IVI Shared Component Installation).
- John Harvey:
 - Send out a proposal on possible changes to API Style Guide (IVI-3.4) by July 1.
 - Prepare a change document for IVI-3.5 to explicitly state the physical name uniqueness requirements based on how the Config Server currently works. Send to John and Noel by July 1.
 - Include changes suggested by Zulfiqar regarding inconsistencies found between the spec and the API.

Status of Software Development for 64-bit IVI Shared Components

Reviewed and updated the document named: “IVI 64-bit software schedule 2008-10-15.doc”.

Schedule for IVI Specification Changes for 64-Bit

Spec	Spec Name	Impact	Owner	Status / Action Items
IVI-3.1	Driver Architecture	Major	NI	Done after making any edits from this meeting.
IVI-3.2	Inherent Capabilities	Minor or None	NI	Done
IVI-3.3	Std Cross-Class Capabilities	Major	Agilent	Done
IVI-3.4	API Style Guide	Minor	Agilent	Done
IVI-3.5	Configuration Server	Minor	Agilent	Review updates in telecom next week. One big issue remains.
IVI-3.6	COM Session Factory	None	EADS	N/A
IVI-3.7	IVI Event Server	None	Agilent	N/A
IVI-3.9	C Shared Components	None	NI	N/A
IVI-3.10	MSS	None	Agilent	N/A
IVI-3.12	Floating Point Services	None	NI	N/A
IVI-3.14	Primary Interop Assembly	Minor	Agilent	Done after making edits from this meeting.

IVI-3.15	IviLxiSync	None	Agilent	N/A
IVI-5.0	Glossary	Minor	NI	Done
IVI-nn	Class Specs	None	Various	N/A

Finish Reviewing Changes to IVI-3.1 for 64-Bit

We had previously finished reviewing IVI-3.1 in several conference calls since the last meeting. However, our review of IVI-3.14 revealed installation instructions that belong in IVI 3.1. Accordingly, Noel proposed changes to IVI-3.1. We reviewed and edited them at the meeting, in conjunction with our review of IVI-3.14.

The only thing missing is directory tree examples for IVI-COM for inclusion in IVI-3.1. John Harvey agreed to create them overnight.

Finish Reviewing Changes for IVI-3.14 for 64-Bit

John Harvey explained an issue regarding PIA compatibility with existing user programs resulting from upgrading from version 1.0 to version 2.0 of the .NET Framework for building the IVI-COM PIAs. (Note: .NET 2.0 was introduced with Visual Studio 2005.) For example, if you have a client that uses .NET 1.x and a Config Server PIA that uses .NET 2.0, .NET 1.x will be loaded first and the system will try to run the Config Server with .NET 1.x. .NET 2.0 won't load, and thus the Config Server won't work.

The proposed solution is to leave our legacy (.NET 1.0-based) PIAs in the GAC but not install them into the IVI or VISA COM PIA subdirectories. By leaving them in the GAC, we still support (at run-time) user components that were built with .NET 1.0. But by installing only the PIAs built with .NET 2.0 into the IVI and VISA COM PIA subdirectories, we encourage users to move off of .NET 1.0. Users will have to change their references in their Visual Studio projects. (So we will have run-time but not build-time compatibility.) This fact should be included in the Revision History document that is available on the web site with the IVI shared component installer. This proposal was agreed to at the meeting.

We then reviewed sections regarding installation, simplified them, and added text to IVI-3.1.

We reviewed the proposed changes to Appendix, made some minor edits, and deleted sections A.3 and B.4 as redundant.

Review Slides Explaining Specification Changes for 64-Bit

We reviewed the slides and made some edits. Some edits are to be made by Noel after the meeting.

Discuss Issue Regarding ModulePath and Published APIs.

IVI-3.1 requires ModulePath32 and/or ModulePath64 for IVI-C drivers and IVI-C wrappers. IVI-3.5 was not clear as to the requirement. We modified Section 2.5.2 of IVI-3.5 to make the requirement clear.

IVI-3.1 does not require the Published API field. IVI-3.5 requires it in an odd way: It requires that you include both IVI-C and IVI-COM Published APIs if you have both IVI-COM and IVI-C APIs in your driver module.

The question arises as to whether IVI-3.1 should require Published API items in the config Store. A reason to do so is that it allows NI to use the presence of a Published API for IVI-C to identify drivers that have an IVI-C interface (wrapper or native). Another way to do this is to use the presence of a non-empty ModulePath32 or ModulePath64. However, IVI-COM drivers (without C wrappers) created using Nimbus prior to a recent version (1.1.11.7) set ModulePath to the COM DLL's name. [NI needs to determine whether a driver has an IVI-C interface so that its IVI-C class drivers can know whether to call the IVI-C interface or to use the IVI-COM class-compliant interface.]

The consensus is that we will require Published API items moving forward. We added text to Section 6.6.5 and Section 9 of IVI-3.5 to require drivers to include Published API items.

Review Changes to IVI-3.5

Other than the changes mentioned in the previous section, we did not review IVI-3.5 at the meeting. We plan to review them in a conference call next week.

Items to refer to Technical Committee:

- Duplicate physical names issue (from the May 2008 meeting). This problem should be resolved quickly because the IVI-3.1 and IVI-3.5 specs do not reflect the actual implementation of the Config Server. We don't want to mislead users into thinking they can create duplicate physical names in cases that the Config Server does not support.

Action Items:

- Jon Bellin:
 - Post these minutes and the updated 64-bit schedule to the IVI web site.
 - Send out action items
- Zulfiqar:
 - Include in the Revision History document for the Shared Component Installer a notification of the build-time incompatibility resulting in our now using .NET 2.0 in building the IVI-COM shared components.

- Submit the new IVI Shared Component Installer (with the native C configuration server) to the working group for review by November 3.
- Noel Adorno:
 - Complete edits to the slides, and post them to the working group web site.
 - Arrange a conference call to review the changes to IVI-3.5. The conference call should occur by **October 24**.
 - Required attendees: John Harvey, Kirk Fertitta, Jon Bellin, Zulfiqar Haider.
 - Possibly include the duplicate names issue if we don't resolve it tomorrow.
 - Submit the specs for approval to the list server by November 15.
 - These will exclude the changes for the duplicate physical names problem, unless we resolve this issues by October 31 and the spec changes are straightforward.
 - Allow 60 days for the review.
 - Depending on the discussions of the physical names issue, create a change document to update IVI-3.1 Sections 4.3.5 and 5.9.1. Send out to list server for review along with the corresponding change document for IVI-3.5 from John Harvey.
 - When we release the new shared component installer, retain the most recent legacy version of the shared component installer on the web site and document why we are retaining it on the web site (using the language in IVI-3.1, Section 6.3.4, IVI Shared Component Installation).
- John Harvey:
 - Send to Noel directory structure examples for IVI-COM for inclusion in Appendix C of IVI-3.1 by October 16.
 - Submit edited IVI-3.14 to Noel by October 16.
 - Investigate the Serialize bug in the COM Configuration Server on Vista 64.
 - Submit revised COM Configuration Server to Zulfiqar by October 29.
 - Determine whether Agilent includes the Published API for IVI-C for their IVI-COM drivers that have C wrappers
 - Depending on the discussions of the physical names issue, prepare a change document for IVI-3.5 to explicitly state the physical name uniqueness requirements based on how the Config Server currently works. Send to Jon and Noel.

Chapter 7 IVI Data Conversion working group minutes

15 October 2008

Face-to-face meeting, Portland, Oregon

- Attendees:

Name	Company	Email
Evan Cone	National Instruments	evan.cone@ni.com
Dan Pleasant	Agilent Technologies	dan_pleasant@agilent.com
Chris Gorringe	EADS	chris.gorringe@eads-ts.com
Kirk Fertitta	Pacific Mindworks	kirk@pacificmindworks.com
Jochen Wolle	Rohde & Schwarz	jochen.wolle@rohde-schwarz.com
Joe Mueller	Agilent Technologies	joe_mueller@agilent.com
Scott Rust	National Instruments	scott.rust@ni.com
Don Essner	SEI	dessner@drs-ssi.com
Teresa Lopes	Teradyne	Teresa.Lopes@Teradyne.com

- Patent review – nothing new.
- Last meeting minutes
- Action items:
 - DataTranslation has started prototyping (Maher Salha msalha@datx.com) – reported by Kirk.
 - Update IDL files for the recent changes to the digitizer interface (Kirk)
 - Fix IDL file problems (Kirk)
 - Many properties have no units specified (e.g. Channel interface, Range and Offset) in the description text - units would be very useful for the developer.
 - Sample rate (Acquisition interface) comment is wrong: it's the inverse of the interval
 - Error text for UNKNOWN CHANNEL NAME is wrong: %s where it should be %1
 - Help text for Fetch/Read, int: unit is not Volts but raw ADC, and units for scale factor and scale offset missing
 - Read/Fetch methods: Xincrement should ALWAYS be InOut
 - Acquisition.Status properties are missing from the Nimbus model
 - Try to get somebody from R&S to join the ARB discussions (Jochen)
 - Call Fred Harrison at C&H (Anthony)
 - Fill in ARB requirements worksheet (Teresa & Ted)
 - Send an email to the members of the old SIWG to tell everyone that the specs are about done and that they should look at them (Dan & Evan)
- ARB discussions only at this meeting.
 - Got through the 'General' and 'Markers' tabs on the spreadsheet
 - Triggers: Existing IviFGen has trigger mode that doesn't fit well with the newer ARBs on the requirements spreadsheet.

- Choices:
 - Add a new mode that creates a whole new triggering interface (using strings instead of enums for the trigger source), and turns off the original triggering extensions. Use a repcap for the possible trigger sources, and put electrical attributes on each item in the list.
 - Add a whole bunch of enum's to the existing trigger source possibilities. Add extension groups for each additional trigger destination (stop trigger, hold trigger, etc.), with electrical parameters (identical) in each extension group.
 - Preferred approach, after consulting with Joe and Kirk: Use sub-interfaces for triggering functions: AdvancedTriggering.StopTrigger, AdvancedTriggering.HoldTrigger, etc. The functionality of the existing Trigger Source is then duplicated (in the base class, or in an extension? This will be brought up in the technical committee meeting), with the new interface accepting a string instead of an enum. Each sub-interface has its own set of attributes to control electrical characteristics. Trigger source for each is a string. The existing Trigger Source attribute still works (enums are mapped to strings).
- Finished filling in all the interface definitions. Still a few questions for the larger group. To be addressed at the next teleconference.

Chapter 8 Counter/Timer Working Group

General Meeting Info:

Date of Meeting: October 14, 2008
Location: Portland, OR
Chairperson: Don Essner (DRS)
Minutes Prepared By: Don Essner

Meeting Attendees:

Name	Company	Email	Phone
Don Essner	DRS	dessner@seistl.com	314.553.4238
Zulfiqar Haider	NI	zulfiqar.haider@ni.com	512.683.8374
Scott Rust	NI	scott.rust@ni.com	512.683.nnnnn
Joe Mueller	Agilent	Joe_mueller@agilent.com	970.679.3248

Kirk Fertitta	Pacific Mindworks	kirk.fertitta@pacificmindworks.com	
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Agenda:

- 1) Review Action Items from last IVI Foundation meeting
- 2) Action Item comments
- 3) Review prototype activities and results
- 4) Review outstanding spec questions
- 5) Review latest Counter Specification Document
- 6) Create new Action Items

1) Review Action Items from the February IVI Foundation Meeting

#	Action Item	Discussion	Assigned To	Due Date
1	Post updated spec on the IVI Web and notify Working Group	Complete 2/15/2008.	DRS	2/15/2008
2	Post minutes on the IVI Web	Complete 2/15/2008.	DRS	2/15/2008
3	Remove Voltage Configure Manual from type lib	Complete 10/14/2008.	Agilent, Joe	10/14/2008
4	Incorporate changes from February meeting noted in green in the minutes	Complete 3/7/2008.	DRS, Don	3/1/2008
5	For 2 channel measurements, add specifically named primary channel attributes, see secondary channel attributes for examples	Make changes noted above in 1.d. Complete 3/7/2008.	DRS, Don	3/1/2008
6	Update include file, post to website and forward to Zulfiqar	Complete 3/7/2008.	DRS, Don	3/1/2008
7	Incorporate Trigger Signal tables in to IVI 3.3	In Work with Int 64 changes, planned for Jan 2009 vote. Alternate plan, cut/paste from 3.3 instead of referencing 3.3. See new Action Item	Agilent, Joe	4/1/2008
8	Get help context IDs reserved on the IVI website	Complete 10/14/2008.	Agilent, Joe	4/1/2008
9	Complete IDL to use for prototyping, send to WG	Complete 10/14/2008.	Agilent, Joe	4/1/2008
10	Add Help Strings to COM type library include file. Joe will divide effort into thirds and send Nimbus project and work break down to Phillip and Don to help.	Complete 10/14/2008.	Joe, Phillip, Don	4/1/2008
11	Work with NI prototypers to resolve outstanding spec issues	Completed 9/27/2008.	NI and DRS	4/1/2008
12	Make final .Net edits per .Net WG after Don's updates	Refer to .Net WG Action Items.	Joe	10/1/2008
13	Remove .Net artifacts just before submittal	Completed 9/27/2008.	Don	4/15/2008
14	Use Operating Procedures 5.2	Moved to new Action	Don	10/1/2008

#	Action Item	Discussion	Assigned To	Due Date
	Required Deliverables from Class Committees for Spec Release	Items.		
16	Website summary, pattern after others already there	Moved to new Action Items.	Don	10/1/2008
17	Post spec to IVI Website for final review	Completed 10/9/2008.	Don	10/6/2008
18	Release spec for approval	Not ready yet.		October 2008!!!

- 2) Action Items
 - a) See new Action Items

- 3) Review prototype activities and results
 - a) Incorporated changes from prototypers
 - b) Any further prototype work required? Zulfiqar said there are no pending prototype activities.

- 4) Review outstanding spec questions
 - a) Changed FetchContinuousTotalizeValue to FetchContinuousTotalizeCount.
 - b) Chris Hawkins suggested adding a Filter interface. The WG discussed this suggestion and decided to stay with the current COM hierarchy and not add another layer to the hierarchy.
 - c) Chris Hawkins suggested Adding a parent Totalize interface then have child interfaces for the three types of totalize. The WG discussed this suggestion and decided to stay with the current COM hierarchy and not add another layer to the hierarchy.

- 5) Plan upcoming tasks and activities. See Action Items.

- 6) Create new Action Items

#	Action Item	Discussion	Assigned To	Due Date
1	Post updated spec on the IVI Web	Complete 10/16/2008	DRS, Don	10/21/2008
2	Post minutes on the IVI Web	Complete 10/16/2008	DRS, Don	10/21/2008
3	Post Teleconference Minutes on the IVI Web	Complete 10/16/2008	DRS, Don	10/21/2008
4	Monitor IVI 3.3 Trigger Table approval progress and switch to alternate plan if it is dragging out.		DRS, Don	1/1/2008
5	Where to put IDL and help information and how to manage/maintain it.		Shared Component Management Committee	12/1/2008
6	Check on official decision to leave or remove C include file in spec		DRS, Don and Technical Committee	1/1/2009
7	Update spec descriptions to be "more" descriptive.		DRS, Don NI, Zulfiqar	12/1/2008
8	Review and Finalize spec. Depends on AI #7.		WG	1/1/2009
9	Update IDL based on finalized spec. Depends on AI #5 and #8.		Agilent, Joe NI, Zulfiqar	1/15/2009
10	Insert spec descriptions and summaries into Nimbus. Depends on AI #9.		NI, Zulfiqar	1/15/2009
11	Filling out the help context IDs		NI, Zulfiqar	1/15/2009
12	Change Courier/9 to Courier New/9		DRS, Don	12/1/2008
13	Add IviCounterChannels Count(IVI-C and COM), Item, and Name functions (COM Only) refer to Scope.		DRS, Don	12/1/2008
14	Check Header file for GatedSlope		DRS, Don	12/1/2008
15	Change IviCounterArmEnum to IviCounterArmTypeEnum in Code		Agilent, Joe	1/1/2009
16	Remove MaximumFrequencyRange.Configure from code		Agilent, Joe	1/1/2009
17	Check code for FrequencyRatio.NumeratorFrequencyEstimate FrequencyRatio.Estimate FrequencyRatio.Resolution		Agilent, Joe	1/1/2009
18	Change FetchContinuousTotalizeCount from DOUBLE to LONG		Agilent, Joe	1/1/2009
19	Use Operating Procedures 5.2 Required Deliverables from Class Committees for Spec Release		DRS, Don	1/1/2009
20	Website summary, pattern after others already		DRS, Don	1/1/2009

#	Action Item	Discussion	Assigned To	Due Date
	there			
21	Schedule 2 hr teleconferences for November 19, December 17, and January 14 at 8am MT and 9am CT		DRS, Don	11/12/2008

Chapter 9 IVI BoD Meeting October 16,2008

Called to order at: 16:03 2008-10-16

Directors in attendance

Present	Director	Company
X	Joe Mueller	Agilent
X	John Ryland	Keithley
X	Scott Rust	National Instruments
X	Jochen Wolle	Rohde & Schwarz
	Paul Nelson	Tektronix
X	Kirk Fertitta	Pacific MindWorks
X	Jason Shares (Dave Ptacek)	Rockwell-Collins
X	Don Essner	DRS
X	Teresa Lopes	Teradyne
X	Tom Gaudette	The MathWorks

Quorum is a majority of directors. 9 out of 10 satisfies the requirement.

Agenda Review

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 - 6.1 WEB SITE 44
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7. IP SURVEY 44
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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.

Resolutions passed by electronic means since last meeting

The following two motions were passed by the Board of Directors since the last face-face meeting.

None

Review Minutes of Previous Meeting

Been posted – no issues raised

Action Items from Previous Meeting

ITEM	OWNER	UPDATE
WRT revised voting rules, do items subject to the new voting rules needed to be on the agenda issues two before the meeting at which the vote is taken? Clarify.	Joe and Scott	Answer is that neither the by-laws or operating procedures set this as a specific requirement although properly called meetings do include a purpose which may not include this much detail. DONE
Send out 2008 Budget	Bob	DONE

Schedule marketing WG call within three week to discuss the first chapter of getting started guide.	Alex	DONE
Include budget discussion on the next marketing conference call	Alex	DONE

Report from Marketing group

Will create a single language version of the GSG as a prototype then consider creating single language versions of each language in the GSG. This may cost up to \$7000.

Alex moved that the BoD authorize the Marketing Committee to spend up to \$7000, on the set of single language versions of the Getting Started Guide. Seconded by Tom Gaudette.

Motion passes 7:0:0

The marketing group is progressing in producing an appropriate copyright notice for the GSG.

Web site

Marketing committee has initiated the changes recommended in Munich. Expenses were on the order of \$5.5K (\$4K for development and about \$1K for the license).

IP Discussion

Current web site does not have an adequate summary of outstanding licenses available from membership or provided by IVI. Need a clean summary for membership. This needs to include:

- the recent Agilent license related to the multivendor VISA router implementation
- the donations made by NI at the inception of the consortium (trademark and patents).
- Implementation of common components (Agilent, EADS, NI)
- Any other IP

Proposal is that the IVI website have a special page that summarizes all of the IVI licenses. Some discussion that any such notice should NOT be in the members area so that anyone can find it.

What is the IP Policy?

ACTION: Verify the IP Policy is current and available outside the membership area on the IVI website. (Joe can verify, Bob will help with web stuff if not appropriate).

What IP and licenses bear on the standard and what licenses are necessary with what parties to practice various aspects of IVI?

ACTION: Request the Agilent review the terms of the proposed VISA multi-vendor router implementation and investigate granting a transferrable license to IVI Foundation instead of license to companies that practice standard. (Joe investigate).

ACTION: Need to be clear under what conditions a license to the VISA multi-vendor router is needed. That is, if the invention were embedded in the shared components, would the foundation need a license to redistribute? Would companies distributing the components need a license? Would customers need a license to use it? (Joe will investigate and let Dan know what licenses are needed)

VISA group plans to complete this component and post in about 1 month.

Meet and discuss: Thursday October 23 – 7 Pacific, 8 Mountain, 9 Central, 4 CET.

Financial Report



IVI PL 2008 -
10-8-08.xls

Accepted

Web site information for subcommittees of the BoD

Impacted groups are:

- Marketing
- Operating Procedures
- Legal

BoD subcommittees chairs should provide:

Title,

Chairperson and contact information

Most recently superceded approved specification (marketing should have financials for the year).

Alex and Joe will meet and work this out.

Kirk moved to adjourn, seconded and passed.

