

IVI Foundation

Meeting Summaries

June, 2010

Munich, Germany

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Chapter 1 Meeting Attendees

Present	Organization Name	Name
X	Agilent Technologies	Joe Mueller
X	Agilent Technologies	Ives Maumary
X	Agilent Technologies	John Harvey
X	IVI Foundation	Bob Helsel
X	Keithley Instruments	John Ryland
X	National Instruments	Jon Bellin
X	National Instruments	Arun Veermani
X	Pacific MindWorks, Inc.	Kirk Fertitta
X	National Instruments	David Rohacek
X	National Instruments	Evan Cone
X	Rohde & Schwarz	Jochen Wolle
X	Rockwell Collins	Jason Schares
X	Tektronix	Santanu Pradhan
X	Tektronix	Anshul Arora
	Teradyne, Inc.	Teresa Lopes
X	The MathWorks, Inc.	Rob Purser
X	Rohde & Schwarz	Johannes Ganzert
X	Rohde & Schwarz	Jürgen Straub

Chapter 2 .NET Working Group

General Meeting Info:

Date of Meeting: June 7-8, 2010

Location: Munich, Germany

Chairperson: Joe Mueller

Minutes Prepared By: John Harvey

Meeting Attendees:

Name	Company	Email
John Ryland	Keithley Instruments	jryland@keithley.com
Joe Mueller	Agilent Technologies	joe_mueller@agilent.com
John Harvey	Agilent Technologies	john_harvey@agilent.com
Rob Purser	The Mathworks	rob.purser@mathworks.com
Kirk Fertitta	Pacific Mindworks	kirk@pacificmindworks.com
David Rohacek	National Instruments	david.rohacek@ni.com
Jon Bellin	National Instruments	jon.bellin@ni.com
Bob Hesel	IVI Foundation	bob.hesel@ivifoundation.org
Jason Schares	Rockwell Collins	jrschare@rockwellcollins.com
Jochen Wolle	Rohde & Schwarz	jochen.wolle@rohde-schwarz.com
Johannes Ganzert	Rohde & Schwarz	johannes.ganzert@rohde-schwarz.com
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Evan Cone	National Instruments	evan.cone@ni.com
Santanu Kumar Pradhan	Tektronix	santanu@tek.com
Anshul Arora	Tektronix	anshul@tek.com

Arun Veeramani	National Instruments	arun.veeramani@ni.com
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Agenda:

- Monday, June 7
 - Review action items
 - Summarize progress.
 - Review spec change document.
 - Review Counter & SpecAn comments.
 - Prototype review, plug fest, and unit test.
 - Retire early to a beer garden.
- Tuesday, June 8
 - IVI-COM Counter & Digitizer changes.
 - ACPwr.
 - Assembly state and schedule.
 - Marketing ideas.
- Technical Committee
 - Vote on specifications
 - Other ??

Review Action Items

<i>Date Added</i>	<i>Description</i>	<i>Assigned To / Updates</i>	<i>Target Date</i>
2009-11-10	Followup on C wrapper functions for .NET	David Rohacek 2010-02-12 – DONE – Jon & David agreed that they weren't needed. See 1.10.15 in 2010-02 minutes.	DONE
2010-02-10	Correct the location in the hierarchy of the Create Spectrum and CreateWaveform methods in the SpecAn and Scope specs (not in an RC interface). Check other specs.	John Harvey 2010-03-08 – DONE – In Scope, moved from Channel Measurement to Measurement. In SpecAn, moved to Trace collection (w/ Abort()).	DONE
2010-02-10	Revise IVI-3.17 per discussion and send to John Harvey by end of February.	David Rohacek 2010-03-03 – DONE – John posted on 3/8.	DONE
2010-02-10	Add the IviDriver session factory to IVI-3.1 and IVI-3.2, so that the session factory spec can be eliminated. (See	John Harvey 2010-02-17 - DONE	DONE

	1.10.3 above.)		
2010-02-10	Add a Calibration interface to the Downconverter for .NET only, w/o adding async capabilities.	John Harvey 2010-02-17 - DONE	DONE
2010-02-10	Change the Downconverter Reference Oscillator Source to a string.	John Harvey 2010-02-17 - DONE	DONE
2010-02-10	Create boilerplate for the exceptions tag in IntelliSense, along with a sample of what an explicit exception might look like, for WG review.	John Harvey 2010-03-08 – DONE – See Scope & Counter IntelliSense.	DONE
(1) Waveform / Spectrum Changes		(#1 priority for prototyping)	Large
	IWaveform/ISpectrum are ready to go (??) Waveform collection proposal needs to be refined & approved.	Working Group Approval	March 16
2010-02-10	Make changes to IVI-3.18 related to first valid point and waveform and spectrum collections.	Joe Mueller 2010-03-09 – DONE	March 17
2010-02-10	Add ISpectrumCollection and IWaveformCollection to the .NET Assemblies.	John Harvey & Kirk Fertitta 2010-03-16 – DONE – The WG agreed not to handle this in IVI-3.18. There will be an IviDigitizer solution for now.	March 17
2009-11-17	Finish Implementing the Waveform and Spectrum Classes.	Rob Purser 2010-03-30 – Is the current implementation good enough, until it can be tested against memory waveform use cases? What is the state of the unit tests?	March 24
2010-02-10	Added implementations of Waveform and Spectrum collections.	John Harvey 2010-03-16 – DONE – The WG agreed not to do implementation.	March 24

	Integrate new files and exception directories into .NET assemblies.	John Harvey & Kirk Fertitta 2010-03-30 - DONE	March 24
2010-02-10	Finish multi-record modifications to the IviDigitizer spec.	John Harvey 2010-02-17 – DONE per Dallas meeting – 2010-03-16 – Need to revisit. Waveform collections will be defined for the Digitizer spec only. 2010-04-06 – DONE.	?? March 26
	Create unit tests.		May 31
(2) Exception Related Changes		(#2 priority for prototyping)	Large
	Approve proposal to change exception documentation and implementation.	Working Group Approval 2010-03-23 – DONE – Kirk, John, & David agreed in principle on 3/19, ran by WG on 3/23. Still need to OK document changes.	March 16
	Modify Ivi-3.2 & Ivi-3.18 from existing Exceptions document.	John Harvey 2010-03-31 - DONE	March 17
	Expand documentation of class-defined exceptions in class specifications.	John Harvey 2010-03-31 - DONE	March 19
	Check in IviDriver changes	John Harvey 2010-03-23 - DONE	March 17
	Modify the implementation of class-defined exceptions in class assemblies.	John Harvey 2010-03-23 - DONE	March 19
	Integrate new files and exception directories into .NET assemblies.	John Harvey & Kirk Fertitta 2010-03-25 - DONE	March 24
	Create exception unit tests – can be done anytime before June.	John Harvey 2010-03-23 - DONE	May 31

(3) Auto/Slope Enumeration Changes		(#3 priority for prototyping)	Medium
	Make the choice...	Working Group Approval	ASAP
	In specs, move Slope and Auto enumerations from IVI-3.2 to the class specs that use them.	John Harvey 2010-03-31 - DONE	April 1
	In assemblies, move Slope and Auto enumerations from IviDriver to class assemblies.	John Harvey 2010-03-31 - DONE	April 1
	Integrate file changes into .NET assemblies.	John Harvey & Kirk Fertitta 2010-05-17 - DONE	April 30
(4) Resolve Int32 Indexer Issue		(#4 priority for prototyping)	Medium
	Resolve the issue of whether to keep them.	WG, based on prototyping. 2010-04-12 - DONE	April 1
	Make necessary changes to the IVI.NET assemblies.	John Harvey 2010-04-14 - DONE	April 1
	Integrate new files and exception directories into .NET assemblies.	John Harvey & Kirk Fertitta 2010-05-17 - DONE	April 30
(5) Add IviDriver.Create()		(minimal prototyping impact)	Small
	Add session factorymethod to IviDriver.	John Harvey or Kirk Fertitta 2010-03-25 - DONE	March 17
(6) Installation Related Changes		(minimal prototyping impact)	Medium
2010-02-10	Come up with a precise, crisp definition of Assembly Qualified Class Name	Kirk Fertitta 2010-03-23 - DONE	March 19
2010-02-10	Work the definition of Assembly Qualified Class Name into IVI-3.5	John Harvey 2010-03-27 - DONE	March 25
2010-02-10	Work the definition of the IVI.NET Software Module Name into IVI-3.1	John Harvey 2010-03-08 – Emailed Kirk and David	March 19

	(5.17.12), IVI-3.5, and other specs as needed.	with a proposal. 2010-03-27 - DONE	
2010-02-10	Add to IVI-3.17 Remove references to a session factory DLL.	David Rohacek 2010-04-14 - DONE	April 1
(7) PrecisionTime Changes		(minimal prototyping impact)	M-L
2010-02-10	Investigate using two doubles in the implementation of PrecisionTimeSpan.	John Harvey – Changes made, unit tests created. 2010-05-17 - DONE	April 15
(8) Improve IntelliSense Help		(minimal prototyping impact)	Large
	Review scope and counter and approve changing all classes.	Working Group Approval	April 20
	Improve IntelliSense help: <ul style="list-style-type: none"> • Add remarks boilerplate r.e. exceptions. • Document specific exceptions. • Replace references to attributes and functions with properties and methods. • In general, make sure help is .NET-ized. • Cross-reference parameters to properties using cref tags. 	John Harvey 2010-03-09 – First pass through scope and counter – do we need to review? 2010-06-07 – DONE – See minutes below for resolution.	May 31
(9) New Attributes		(minimal prototyping impact)	Medium
2010-02-10	Make a proposal for adding new attributes to the assemblies that contain supported instrument models and/or specific driver base classes.	Rob Purser	April 6
	Add new attributes to specs.	John Harvey	April 9
(10) Post Specs		(minimal prototyping impact)	Medium
	All known changes to specs have been made. WG reviews situation at April 15 WG meeting and agrees that specs are	John Harvey / WG 4/21/2010 - DONE	April 15

	ready to post in principle.		
	Working Group reviews changes in the specs to make sure they are ready to post. (Use MS Word compare feature to compare latest version of specs to originals and to the latest reviewed copies. Review changes made since reviews in the spec revision table.)	WG 4/23/2010 – minimal additional WG input related to locking.	April 20
	Post Specs & send out review email.	John Harvey 4/23/2010 - DONE	April 23

Summarize Progress.

Reflected in the review of the action items.

Review Spec Change Document.

We reviewed specifications that included changes made since the IVI.NET specifications were posted for review on April 23. Modifications were made to some documents, especially to IVI-3.18, during the meeting.

John Harvey will post all documents with changes made since April 23 to the IVI.NET working group web page before the vote to accept the IVI.NET changes on June 9.

IVI-COM Counter & Digitizer changes.

There is one driver that claims to be an IviDigitizer driver.

Jon knows that there are IVI-C counters, but doesn't know if they would be affected by the counter issue.

Jon suggested that we vote to start work on fixing these specs, as a major change, at the technical committee meeting.

The exact issues are listed below. We will revisit in the Data Conversion WG before the technical committee meeting.

The issues are:

1. Several IviDigitizer properties are read/write, but should be read only:
 - AcquisitionStatus.IsIdle
 - AcquisitionStatus.IsMeasuring
 - AcquisitionStatus.IsWaitingForArm

- AcquisitionStatus.IsWaitingForTrigger
2. For IviDigitizer, the Source parameter of the SampleClock Configure method is of type IviDigitizerReferenceOscillatorSourceEnum. It should be of type IviDigitizerSampleClockSourceEnum
 3. The IviDigitizer TimeOut enumeration is not used in the class.
 4. In the IviCounter API, the Measurements interface has Fetch and Read methods that both have two out parameters. It appears that both are supposed to be the return value.

Adding ACPwr.

Kirk reported that he and Scott Rust have been monitoring the AC Power WG activities. They have completed the spec and are currently doing final edits at the typo level. Kirk has done the type library and header file work. They have been doing prototyping.

Jon suggested that we tell them to go ahead and get approval on the C/COM spec.

John had some concerns about trying to run the entire approval process in two months (now until end of August, when the spec would have to be posted). In addition to initial work on the API and specs, there are subsequent reviews and assembly verification that need to be done.

People did not indicate that they had the time in the next 2 months to participate in this work.

John will notify Kevin Lam and Ray Martin to go ahead with getting approval for the C/COM spec.

Review Counter & Spec Comments.

John showed the help changes that he made. There were several categories of changes:

- Changing IVI terminology to .NET terminology. For example, change “attribute” to “property”.
- In parameter help, refer to corresponding properties where applicable.
- Kirk proposed using cref tags for enum types, so that we could jump from parameters and properties to the corresponding enumeration / values.
- Add an indication that a method or property is class compliant.
- Add exception boilerplate that refers to IVI-3.2.
- Add references to specific exceptions noted in the spec.
- Add cref tags.

The consensus was that the first item is necessary, since some of the IVI terminology is just wrong in a .NET context.

The next two would be useful, but not necessary.

The last four items are not useful, and will not be done.

Rob suggested that we make a list of specs and assign people to do the work on the documentation. The list of people who will do this work is:

Class API	Redactor
IviDriver	Rob
IviScope	Santanu
IviDmm	David
IviDcPwr	Rob
IviFgen	John
IviPwrMeter	John
IviLxiSync	Rob
IviSpecAn	Johannes
IviRFSigGen	Johannes
IviCounter	John
IviUpconverter	John
IviDownconverter	Joe
IviDigitizer	Yves
IviSwtch	Jason

The target date for completion is July 15, 2010.

John will send out suggestions for what needs to be done to the redactors by June 25, and we will review on the 29th. Changes will be complete and delivered to Kirk by July 15, 2010.

IVI.NET Shared Components State and Schedule.

Remaining Components Work.

- One bug in the SpecAn class – the SpecAn is called a Scope.

- The SpecAn assembly includes a trace Size, but the spec says that the property is not defined for .NET. (IIVI_SpecAnTrace)
- Rob noted that Visual Studio 2010 Add Reference dialog defaults to showing .NET 4.0 client side components only. This means our 2.0 components do not show up. We need to investigate what this means in more detail. Kirk, David and Rob will follow up on this one. Johannes did not see this problem.
- Current Waveform and Spectrum classes are not complete – missing several constructors. They also need to be made more robust, documentation needs to be examined, and the classes need to have unit tests.
- Enhanced XML documentation.

Dealing with flaws in the specs and the shared components?

- Several people noted that there is a high potential for some errors in both the specs and the shared components. Some shared component changes could be breaking changes.
- The specs will be voted on June 9. Jon wondered if they should be approved provisionally, or as a beta. Joe felt that people would not take them seriously if they were not approved.
- The problem is limited somewhat by the fact that the IVI.NET Shared Components will not be released for a while.
- We could add a restriction to IVI-3.1 that would require people to register drivers with the IVI Foundation before releasing them until the specs stabilize.
- Kirk noted that we need to do some work on the IVI driver registration page to accommodate .NET drivers.
- Jon made a proposal that we allow all IVI.NET changes to be editorial changes until the IVI.NET Shared Components are released publicly. The rationale for this is that no change is a breaking change until a driver has been released.
- Rob suggested that for class assemblies, we stage the release by drivers that are publicly available. Kirk thought this might result in a large number of versions publicly available.
- Rob made a motion that we amend IVI-3.1 to say that the registration of all IVI.NET drivers released before 9 June, 2011 requires the approval of the IVI.NET working group. The IVI.NET working group will treat all changes to IVI.NET material in the specs and IVI.NET shared components as editorial changes until the registration of the first driver that implements that particular set of IVI.NET interfaces. The motion passed by consensus.
- John made the change to reflect the above decision in IVI-3.1. He will post to the IVI web page this evening.

Schedule

There are two development items that still need to be completed – Waveform/Spectrum classes and enhanced documentation.

- Rob will commit that the Waveform and Spectrum classes will be complete by July 9.
- Enhanced documentation. People responsible for enhancing documentation will get the changes to the source code by July 15, and will send the source code files to Kirk.
- We will have a new version of the installer with the above two changes ready by July 31.

The other category of changes is defects, both known and to be discovered.

We can't release before July 31, 2010.

Rob made the suggestion that we not publically release until the first driver is approved for release.

Kirk proposed that we create version 1.0.0.0 of the IVI.NET Shared Component installer as an internal release candidate by September 1, 2010.

- This would be considered a reviewed and qualified release candidate available to IVI Foundation members only.
- Between the time that version 1.0.0.0 is released until the first driver is released, the specifications and shared components may be changed, and changes will be considered to be editorial changes. The version will be changed appropriately during this period.
- The components would be released when the first driver is released.
- After the first driver is released, the only changes that will be considered to be editorial are changes to class specifications and assemblies for which no released driver exists.

Ideas for Marketing.

- No public marketing until we are closer to releasing the IVI.NET Shared Components. We want to avoid creating an expectation until we can meet it.
- Rob suggested that we have collateral ready.
- Ideas:
 - Technology Preview – ready by Sept 1, gated by editorial calendars.
 - Cover the advantages of native IVI.NET over the IVI-COM .NET PIAs.
 - Talk about end-user expectations, etc.
 - Press release – ready by Sept 1, release with shared component release.
 - Some equivalent to the LXI multi-vendor demo.
 - Conferences
 - Update the Getting Started Guide
 - Individual Guides are more important than the combined guide.
 - Probably want to have the same driver used for all platforms, so that the comparison is clear (e.g. Agilent 34401 driver).
 - At least one company has been anxious to get IVI.NET drivers. Could we get them to contribute a user perspective?
 - Target a particular trade show and make it “The Year of IVI.NET” – perhaps AutoTestCon 2011.
 - Arun mentioned that we are operating on a shoe-string budget.
 - Things could be coordinated between member companies.
 - Perhaps we could do something to add to the plaques.
 - Perhaps we could do a half-day IVI track (lots of effort), or a series of IVI papers.
 - Arun noted that the marketing committee will need volunteers.

Meeting Schedule

Joe's suggestion is to schedule weekly meetings and be aggressive about cancelling. John will schedule meetings starting June 22. I will let people know whether a meeting is actually being held on the Monday before the meeting.

Native IVI.NET Configuration Server

- Is the contract the schema or the server API? – We don't prevent people from using the schema, but the contract is with the server API.
- Kirk mentioned that the performance of the .NET constructors could be significantly improved by improving the performance of the config server.
- The IVI.NET Configuration Server can be done independently.
- If you feel that you would like to contribute a native IVI.NET implementation of the Config Server, notify the IVI.NET WG so that we can facilitate spec changes and guiding acceptance of the component through the process.

Unit Testing Class APIs

- John asked if it was worth the effort to create unit tests for the class APIs.
- Unit tests would consist of a driver shell that implemented only the IVI APIs, with no behavior, and a client to exercise the driver.
- Consensus was that this kind of unit test is not practical until such time as the tools make the creation of them easy and quick.

Action Items

<i>Date Added</i>	<i>Description</i>	<i>Assigned To / Updates</i>	<i>Target Date</i>
General			
2010-06-07	Make sure that all changes to the specs approved by the WG in this meeting are posted to the .NET WG page before the technical committee vote on the IVI.NET changes.	John Harvey 6/9/2010 – DONE before the technical committee vote.	April 9
2010-06-08	Notify Kevin Lam and Ray Martin to go ahead with getting approval for the C/COM ACPwr spec.	John Harvey 6/8/2010 – DONE.	April 9
2010-06-08	Correct SpecAn Assembly properties to refer to "Scope" rather than "SpecAn"	Kirk Fertitta 6-15-2010	July 15
2010-06-08	Remove the trace "Size" property from the IVI.NET assemblies.	Kirk Fertitta	July 15

		6-15-2010	
2010-06-08	Determine whether .NET 2.0 assemblies will show up in the Visual Studio 2010 Add Reference dialog and under what circumstances. Make a recommendation.	Kirk, David, Rob	
2010-06-08	Change the specs to require the approval of the IVI.NET working group for the registration of all IVI.NET drivers released before 9 June, 2011.	John 2010-06-08 – DONE.	June 9
2010-06-08	Create a new version (v. 1.0.0.0) of the shared components installer with complete Waveform and Spectrum classes, documentation changes, and other known misc. changes	Kirk (assembly DLLs) David (installer)	July 31
2010-06-08	Schedule weekly IVI.NET WG meetings starting June 22.	John	June 21
Waveform / Spectrum Changes			
2010-06-08	Finish Implementing the Waveform and Spectrum Classes.	Rob Purser	July 9
2010-06-08	Create unit tests.	Rob Purser	July 9
(11) Improve IntelliSense Help		(minimal prototyping impact)	Large
2010-06-08	<p>Improve IntelliSense help with the following:</p> <ul style="list-style-type: none"> • MANDATORY: Change IVI terminology to .NET terminology. For example, change “attribute” to “property”. • ENCOURAGED: In parameter help, refer to corresponding properties where applicable. • ENCOURAGED: Use cref tags for enum types, so that we could jump from parameters and properties to the corresponding enumeration / 	See list of responsible editors in list below.	July 15

	values.		
	Get instructions to everyone on what needs to be done	John (By June 25)	
	IviDriver, IviDcPwr, IviLxiSync	Rob	
	IviScope	Santanu	
	IviDmm	David	
	IviFgen, IviPwrMeter, IviCounter, IviUpconverter	John	
	IviSpecAn, IviRFSigGen	Johannes	
	IviDownconverter	Joe	
	IviDigitizer	Yves	
	IviSwtch	Jason	
(12) New Attributes		(minimal prototyping impact)	Medium
2010-02-10	Make a proposal for adding new attributes to the assemblies that contain supported instrument models and/or specific driver base classes.	Rob Purser	April 6
	Add new attributes to specs.	John Harvey	April 9

Chapter 3 IVI Marketing Committee Meeting Minutes

General Meeting Info:

Date of Meeting: Feb 12, 2010
Location: Dallas
Chairperson: Arun Veeramani
Minutes Prepared By: Arun Veeramani

Meeting Attendees:

Name	Company	Attended
Joe Mueller	Agilent	Y
Scott Rust	NI	Y
Arun Veeramani	NI	Y
Jon Bellin	NI	Y
Bob Helsel	IVI Foundation	Y
Jochen Wolle	Rohde & Schwarz	Y
Kirk Fertitta	Pacific MindWorks	Y
Paul Nelson	Tektronix	Y
Rob Purser	The Mathworks	Y
John Ryland	Keithley	N
Don Eisner	DRS	Y
Jason Schares	Rockwell	Y
Teresa Lopes	Teradyne	Y
John Harvey	Agilent	Y
Yves Maumary	Agilent	Y
Deoborah Homan	Agilent	Y
Evan Cone	NI	Y

Discussion Topics:

- *Roll Call*
- *Review of action items from previous meeting*
- *Marketing activities review for 2010*
- *New Business*
- *Discuss upcoming meetings*

Record of Discussions:

Review action items from previous meeting

Owner	Action Item	Deadline	Status
Arun V	Draft a press release for Windows 7 support	Feb 2009	Complete
Bob H	Draft a press release for four new instrument classes	Dec 2009	Complete
Kirk F	Send out the white paper for final review to the marketing group	Nov 2009	Discuss
Bob H	Create a "letterhead"/masthead for white papers written on behalf of IVI Foundation	Dec 2009	In Progress
Arun/Bob H	Create a project plan/timeline for 2009/2010 marketing plan created during this meeting	Dec 2009	In progress
Bob H	Send out slides on camtasia	Dec 2009	In progress
Arun V	Press release on availability of camtasia videos	Q1 2010	Open
Bob H	Press release on HiSLIP	Q2 2010	Open
John H	Press release on .NET support	Summer 2010	Open

Notes on actions:

- The windows 7 press release is in review. Once all the feedback is in, the release will be wired out.
Action item: Arun V – Reconcile the edits and send it to Bob for wiring
- The instrument classes press release is in review.
Action item: Bob H – Reconcile the edits and wire it
- What is the order of the press release? It was decided that instrument classes press release should go out first as it is reviewed and ready to go. Windows 7 will follow that a month later.
- With the impending release of IVI.NET, should we release the white paper and re-edit it in a short period.
 - Specs of IVI.NET expected to be voted on June, but shared components will come later.

- Should we talk about .NET technology before we have drivers? We should talk about technology and prime the market
- Will be nice to have something for AutoTestCon so have a press release as well.
- Do we have the resources for individual papers on IVI in general and IVI.NET? Not really, we go forward with Kirk's white paper that will also talk about IVI.NET.

Action Item: Kirk F - Have a general IVI paper that also talks about IVI.NET and it should be ready by September 2010

- We are still working on the marketing plan. We will send it out before the end of February.

Action item: Arun to send out the marketing plan by Feb 28

- Masthead to be pushed out to align with the paper release.

- Bob H – slides for camtasia video

- The videos should use the most current software and does not have to sync with the existing getting started guide.
- We should also update the getting started guide. We should consider updating the getting started guide right away instead of waiting until IVI.NET.
- The MathWorks and NI would like to update their chapters but how long do we let chapters referencing older software to linger?

Bob H – Clarify owners for individual chapters.

Bob H – report back on what is outdated and what is not based on which a decision will be made at the June meeting

- Discuss more in next meeting on outdated content
- Modify website to focus on the guide and GSG link on lower right to new webpage with just getting started resources.

Bob H will own updating the GSG. With a modest quote.

Bob H – work on camtasia videos in parallel with updating GSG

Marketing Chair – to approve individual chapters

- Don't have to wait for IVI.NET

- Drop Google groups and move back to venues similar to other working groups. Use the money spent on Google groups (\$600/year) to use it on other marketing activities like updating GSG.

New Business

- Consider press releases for HiSLIP, USB TMC driver and the others already discussed(IVI.NET and camtasia videos)
- HiSLIP to be voted in June. We should work in parallel on the press release and it should be ready to go for June.

Action Item: Bob H – write the press release with Joe M as the content expert

- Should we do a session, a paper or a standard seminar that is sponsored by Bode
 - We will continue to have the standard seminar on IVI
 - A technical session does not get good attendance so a session might not be a good idea.
 - The session outline could be what is IVI, benefits of IVI, and talk about new technologies.
 - We can do webcasts on new technologies such as HiSLIP and IVI.NET
Action Item: Bob H – to get a place for the IVI standard seminar
 - Push out webcast discussion to next marketing meeting.
- T&MW is offering a free slot for virtual tradeshow. But we need to prepare documents and staff the virtual booth.
 - We have some collateral but it is quite a bit of work.
 - Figure out what is the work that needs to be done on papers, staffing etc?
 - Should we give the IVI material to LXI and they can talk about IVI. But IVI is open to all platforms.
 - Final decision is to focus on AutoTestCon as we have limited marketing resources.

Summary of New Action Items:

Owner	Action Item	Deadline	Status
Bob H	Reconcile the edits and wire Instrument Classes new release	Feb 2009	Open
Arun V	Reconcile the edits and send Windows 7 PR to Bob for wiring	Feb 2009	Open
Bob H	Wire Windows 7 Press release	March 1, 2010	In Progress
Kirk F	Send out the white paper for final review to the marketing group	July 2010	In Progress
Bob H	Create a "letterhead"/masthead for white papers written on behalf of IVI Foundation	Aug 2010	In Progress
Arun/Bob H	Create a project plan/timeline for 2009/2010 marketing plan created during this meeting	Feb 2010	In progress
Bob H	Get a seminar place at AutoTestCon for standard IVI session (part of Bode sponsorship)	March 2010	Open
Bob H	Send out email clarifying individual owners of each Getting Started Guide (GSG) chapters	March 2010	Open

Owner	Action Item	Deadline	Status
Bob H	Report on what chapters are out of date and chapters that do not need updates in GSG	June 2010	Open
Arun	Approve individual chapters as they come up	Dec 2010	Open
Arun V	Press release on availability of camtasia videos	Q2 2010	Open
Bob H	Press release on HiSLIP	Q2 2010	Open
John H	Press release on .NET support	Summer 2010	Open

Chapter 4 IVI Data Conversion Working Group – Meeting Minutes

General Meeting Info:

Date of Meeting: June 8th, 2010
Location: Munich
Chairperson: Yves Maumary
Minutes Prepared By: Yves Maumary

Meeting Attendees:

Name	Company	Phone	Email
Yves Maumary	Agilent Technologies	+41 22 884 3221	yves_maumary@agilent.com
Evan Cone	National Instruments		evan.cone@ni.com
Kirk Fertitta	Pacific MindWorks		kirk.fertitta@pacificmindworks.com
Jon Bellin	National Instruments		jon.bellin@ni.com
John Harvey	Agilent Technologies		John_harvey@agilent.com

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 **Membership → IVI 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.

- Nothing new.

Last Meeting Minutes

The minutes from the previous meeting (April 28th, 2010) are approved (thanks Evan).

Meetings on May 12th and 26th were cancelled.

Topics To Be Discussed

- IviDigitizer: Defects have been found in the released specification and components.
- IviFgen Arb extensions.
 - Review section 3.3 (Evan)
 - Review remaining new extensions: Triggers (Stop, Hold, Resume, Advance), EventMarkers and SparseMarkers (Yves)
 - Review rest of changes in draft → goal is to accept all changes.
- Schedule planning.
 - Bring the draft to the TC to check for compatibility issues between version 4.0 and 5.0 of IviFgen
 - Need a 'recipe' document for upgrading existing IviFgen 3.0/4.0 driver to version 5.0.
 - Prototyping: scope, who, schedule.
 - Aim is version 5.0 to be ready for review at the October IVI Meeting.

Review Action Items from Previous Meeting

Owner	Action Item	Status
Yves	Draft description for the new CreateWaveform & CreateWaveformCollection .NET functions used to instantiate Waveform & WaveformCollection objects. The Fetch/Read functions could also mention these functions for .NET.	(17/03/10) There was a discussion in the .NET WG about which .NET collection class to use for multi-record fetch/read. See discussion in minutes from previous meeting (March 17 th , 2010). (14/04/10) John Harvey has taken over this action item and will complete it for April 23 rd . (23/04/10) Completed – IviDigitizer draft posted for .NET review period.
Yves	Issue with Sparse Markers and Agilent AWG (marker and waveform data must be provided together): can we do it with Data Markers instead? If not, can we make another suggestion for the Sparse Markers? Get feedback from AWG specialists in Agilent.	(03/03/10) Add a CreateChannelWaveformInt32 so we can use Data Markers also for 16-bit AWGs.
Evan	Draft the new IviFgen 3.3 section.	(03/06/10) Done.
Yves & Evan	Check with existing AWGs about the trigger delay. Can we specify a delay? Is it absolute or cumulative with the intrinsic delay of the AWG?	(03/03/10) It's cumulative, but the resolution is much coarser than intrinsic delays anyway. It appears that values used for such delays are much larger and the error due to any intrinsic delays is negligible.

Owner	Action Item	Status
Yves	Ask John Harvey about COM prototyping for the new IviFgen extensions.	(03/03/10) This was apparently a misunderstanding. We therefore need to find a volunteer for an IVI-COM prototype.
Yves	Finish editing the draft and send it to the WG.	(07/06/10) Done.
John	The Fetch/Read functions could also mention these (Create) functions for .NET.	(23/04/10) Completed – IviDigitizer draft posted for .NET review period.
John	Correct the allowed null value to 'null' object for the waveform(s) parameter of the fetch/read calls.	(23/04/10) Completed – IviDigitizer draft posted for .NET review period.
Yves	Add recommendation in description of ArbSeq extension group about drivers implementing ArbSeq also implementing ArbSeqDepth.	(08/06/10) Done.
Evan	Add recommendation in IviFgen 3.3 section about drivers implementing ArbSeq also implementing ArbSeqDepth.	(08/06/10) Done. Decided not to require ArbSeqDepth if ArbSeq supported.

Record of Discussions:

Preliminary Note (concerning the work status of the IVI Data Conversion WG):

- IviDigitizer Version 1.0 has been updated with the .NET API (Version 2.0, current spec owner: J. Harvey, Agilent).
- IviFgen Version 3.0 has been updated with the .NET API (Version 4.0, current spec owner: J. Harvey, Agilent).

The IviFgen draft (current owner Y. Maumary, Agilent) to include the SIWG extensions (or Arb extensions) currently in work is based on the Version 3.0 specification (i.e. there are now 2 'branches' of this specification). The new extensions will be merged into Version 4.0, once the latter is approved, to yield a Version 5.0.

- **IviDigitizer:** Defects have been found in the released components.

The issues are:

- Several IviDigitizer properties are read/write in the components, but should be read only (as in the specification document):
 - AcquisitionStatus.IsIdle
 - AcquisitionStatus.IsMeasuring
 - AcquisitionStatus.IsWaitingForArm
 - AcquisitionStatus.IsWaitingForTrigger

There is only 1 known IviDigitizer driver that has been published to date, and it is an IVI-C driver. This is a breaking change only for IVI-COM, not IVI-C.

→ We decide by consensus that we are going to correct the COM components and document it in the readme, and re-release (Kirk).

- For IviDigitizer, the Source parameter of the Configure SampleClock method is of type IviDigitizerReferenceOscillatorSourceEnum. It should be of type IviDigitizerSampleClockSourceEnum. Note that the parameter table is wrong also: it says ViString instead of ViInt32.

There is only 1 known IviDigitizer driver that has been published to date, and it is an IVI-C driver. This is a breaking change only for IVI-COM, not IVI-C.

→ We decide by consensus that we are going to correct the COM components and document it in the readme, and re-release (Kirk). The IviDigitizer.NET draft must also be corrected (Yves).

- The IviDigitizerTimeout enumeration is not used in the class.

This enum is not mentioned in the specification document, but exists in the components because that is the way to define constants in COM. It is needed to define the 2 special values used for `MaxTimeMilliseconds` parameter of the `ReadWaveformX` and `WaitForAcquisitionComplete` methods: `IviDigitizerTimeoutImmediate` and `IviDigitizerTimeoutInfinite`.

This is a non-issue and can be left as is.

Jon wants to get Scott's opinion about how to handle this, i.e. whether we can consider these as editorial changes. Kirk could have the corrected COM components by June 15th. NI will then do the installer, and there is a 2 weeks review period required before release.

It will be brought up tomorrow in the Technical Committee meeting.

- **IviFgen Extensions:**

We will vote on IVI.NET specifications at the Munich TC meeting.

We shall vote on the IviFgen **version 4.0** specification, which adds the .NET API, but we shall NOT release a .NET component for that specification. In other words, the .NET shared components due to be released in the fall will NOT include the IviFgen API.

IviFgen version 5.0 will have .NET definitions ONLY according to the IIviFgen2 interface. Even though that is a breaking change, since the .NET WG will NOT allow the release of an IviFgen IVI.NET driver, it will be considered an editorial change only. This will avoid having to support the (deprecated) IIviFgen interface for .NET going forward.

- **Schedule planning:**

- Compatibility issues between version 4.0 and 5.0 of IviFgen: done. Issues have been reviewed today – there is no need to bring this to the TC meeting.
- Need a 'recipe' document for upgrading existing IviFgen 3.0/4.0 driver to version 5.0: done (Section 3.3).

- Prototyping: scope, who, schedule. NI does plan to do prototyping for an IVI-C driver. We expect the WG internal review of the new extensions to be completed by August, but prototyping will take around 2 months → likely won't be completed by the October meeting. *TBD*

Action Items Created:

Owner	Action Item	Status
Kirk	Correct the R/W properties AcquisitionStatus.IsXxx to be R/O.	
Kirk	Correct Source parameter of the Configure SampleClock method: correct type is IviDigitizerSampleClockSourceEnum.	
Yves	Modify the IviDigitizer specification to use the correct enum (should be IviDigitizerSampleClockSourceEnum), or make sure John Harvey does it.	

Next Meeting

June 23rd. Yves will send out a reminder.

Chapter 5 Technical Committee

General Meeting Info:

Date of Meeting: June 9th, 2010
Location: Munich, Germany
Chairperson: Jon Bellin (for Scott Rust)
Minutes Prepared By: Evan Cone

Topics To Be Discussed:

- Review Agenda
- Review Voting Members In Attendance
- Patent Call
- Approve minutes from the February 2010 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.NET Specification Changes
 - Vote on IVI-6.1: IVI High-Speed LAN Instrument Protocol
 - Vote on VISA Updates for Shared USBTMC kernel, HiSLIP, 64-bit VISA format specifiers, & 64-bit VISA-COM updates
 - Vote on IVI-3.4: Updates to allow array sizes VIInt64
 - Vote on IVI-3.1: Updates to allow arrays of viByte
 - Discuss creating a VISA.NET working group
- Discuss Upcoming Meetings

Voting Members In Attendance

Present	Organization Name	Name
	Aeroflex Corporation	Marv Rozner
X	Agilent Technologies	Joe Mueller
	Ametek Programmable Power	Kevin Lam
	BAE Systems	Wade Lowdermilk
	DRS-SSI	Don Essner

Present	Organization Name	Name
X	Keithley Instruments	John Ryland
X	National Instruments	Jon Bellin
	Nokia	Torben Christensen
X	Pacific MindWorks, Inc.	Kirk Fertitta
	Pacific Power Source, Inc.	Eric J. Lord
	Phase Matrix	Michael Granieri
X	Rohde & Schwarz	Jochen Wolle
X	Rockwell Collins	Jason Schares
X	Tektronix	Santanu Pradhan
	Teradyne, Inc.	Teresa Lopes
X	The MathWorks, Inc.	Rob Purser
	TYX/EADS	Chris Gorringer
	VTI Instruments	Steven Ross

There are 8 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 17 Voting Members.)

Patent Call

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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.

Approve minutes from the February 2010 Technical Committee Meetings

The minutes from the February 2010 Technical Committee Meetings are posted on the IVI Foundation web site.

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

Review outcome of recent IPR Declarations, eVotes, and Reviews

IVI-6.1: IVI High-Speed LAN Instrument Protocol Review

The IVI HiSLIP Specification Review started on March 30. The email below summarizes the review. The review period concluded; modifications were made based on feedback. The working group recommends the committee vote to approve the specification.

From: MUELLER,JOE (A-Loveland,ex1)
Sent: Tuesday, June 08, 2010 15:40
To: 'ivi-foundation-members-1@ivifoundation.org'
Cc: 'christian.hoelzl@rohde-schwarz.com'; 'dan.mondrik@ni.com'; 'FAY,TOM (A-Loveland,ex1)'; 'guido.kiener@rohde-schwarz.com'; 'guido@kiener-muenchen.de'; 'jim.piotrowski@ni.com'; 'jjurack@vtiinstruments.com'; 'jochen.wolle@rohde-schwarz.com'; 'jryland@keithley.com'; 'keith.d.rule@tektronix.com'; 'Kevin.Lam@ametek.com'; 'kirk@pacificmindworks.com'; 'MAUMARY,YVES (A-Switzerland,ex1)'; 'MUELLER,JOE (A-Loveland,ex1)'; 'paul.n.nelson@tektronix.com'; 'santanu.kumar.pradhan@tektronix.com'; 'santanu@tek.com'; 'SGaikwad@vtiinstruments.com'; 'thayes@keithley.com'; 'Trent.Jarvi@Mathworks.com'; 'wvyonkers@gmail.com'
Subject: RE: HiSLIP Specification Review

Sorry to all, I had been sending the HiSLIP messages to list@ivifoundation.org. The correct address was ivi-foundation-members-1@ivifoundation.org.

This message summarizes the last couple of updates as well as changes made today in the face-face meeting.

The IVI HiSLIP Specification Review, which started on March 30, has concluded.

On April 23, we had a minor update, which was included in draft 0.92 (regarding moving the maximum message size to the asynchronous channel). Posted here.

On June 3, we did a minor clarification. The issue had to do with the necessity for the client to choose a MessageID after device clear and initialization but before the server has provided a

MessageID in a message. Since servers are required to set the initial MessageID to ffffff00, the appropriate value for the client to use is fffffefe (two less than the value the server initializes to). I added this clarification to the relevant sections. Posted here.

Today at the face-face meeting (June 8) we:

- corrected a typographical issue in the command summary table
- added an additional IVI-defined fatal error to be used by devices during the initialization sequence when the server cannot provide additional connections.

The proposed specification is posted here:

http://www.ivifoundation.org/membership/committees/HSLANInstrProtocol/SpecDrafts/IVI-61_HiSLIP-Draft-2010-06-08.docx

No other review issues have been brought to my attention. Therefore the HiSLIP working group is proposing the following motion to the IVI Technical committee:

"The HiSLIP working group recommends that the IVI TC adopt the HiSLIP specification draft 0.94, dated June 8,2010, posted here:

http://www.ivifoundation.org/membership/committees/HSLANInstrProtocol/SpecDrafts/IVI-61_HiSLIP-Draft-2010-06-08.docx "

Thanks,

Joe Mueller

IVI-6.1: IVI High-Speed LAN Instrument Protocol IPR Declaration

On March 31, 2010, Scott Rust initiated an IPR Declaration period to coincide with the spec review period for IVI-6.1: IVI High-Speed LAN Instrument Protocol spec. The IPR Declaration period concluded on May 14th. The responses to the IPR Declaration are shown below.

Company	Voting Member Representative	Option 3A	Option 3B
Aeroflex	Mark Meldrum		
Agilent	Joe Mueller		<input checked="" type="checkbox"/>

AMETEK	Kevin Lam	<input checked="" type="checkbox"/>	
BAE Systems	Wade Lowdermilk		
DRS Sustainment Systems	Don Essner	<input checked="" type="checkbox"/>	
EADS/TYX	Chris Gorrige		<input checked="" type="checkbox"/>
Keithley	John Ryland		<input checked="" type="checkbox"/>
(The) MathWorks, Inc.	Rob Purser		<input checked="" type="checkbox"/>
National Instruments	Scott Rust		<input checked="" type="checkbox"/>
Nokia	Torben Christensen		
Pacific MindWorks, Inc.	Kirt Fertita	<input checked="" type="checkbox"/>	
Pacific Power	Eric Lord	<input checked="" type="checkbox"/>	
Rockwell Collins	Jason Schares	<input checked="" type="checkbox"/>	
Rohde & Schwarz	Jochen Wolle		<input checked="" type="checkbox"/>
Tektronix	Paul Nelson	<input checked="" type="checkbox"/>	
Teradyne	Teresa Lopes	<input checked="" type="checkbox"/>	
VTI Instruments	Michael Upchurch		

No IPR declarations were received from Aeroflex, BAE Systems, Nokia, VTI.

IVI.NET Final Review Period

On 4/23/10, John Harvey sent out the following email regarding the final review for the IVI.NET changes. The review period concluded; modifications were made based on feedback. Additional changes were made during the working group session at this meeting. The working group recommends the committee vote to approve the specification

From: <john_harvey@agilent.com>
To: <list@ivifoundation.org>
Date: 04/23/2010 03:31 PM
Subject: IVI.NET Specification Review April 23 - June 7

The IVI.NET Working Group has incorporated IVI.NET architecture and APIs into the IVI specifications and posted these changes for review from April 23, 2010 through June 7, 2010.

This is a very extensive set of changes, adding an entirely new type of API to the specifications.

The revised documents are posted on the IVI.NET working group web page, <http://www.ivifoundation.org/membership/committees/DotNET/Default.aspx>, under the heading **.NET Architecture Updates to the IVI Standards:**

Note that the following additional resources are available if needed:

1. A list of changes made to each specification since the working group “first-pass” review of the spec held between June 2009 and February 2010. You can find this document in the same section as the current review documents.
2. The version of each specification that incorporates feedback from the working group “first-pass” review of the spec held between June 2009 and February 2010, immediately after the review. These are posted after the review copies of the specs, about halfway down the page, under the heading “IVI.NET Specification After First-Pass Review:”.
3. Detailed working group meeting minutes from face-to-face IVI meetings and conference calls.
4. A Visual Studio 2005 solution containing IVI.NET Shared Component projects. Note that the currently posted code is about a month old, and differs in some very slight ways from the posted versions of the specs, but will be updated soon to reflect what is posted.
5. Likewise, the latest pre-release version of the IVI.NET Shared Components installer is posted for reference. Note that the currently posted code is about a month old, and differs in some very slight ways from the posted versions of the specs, but will be updated soon to reflect what is posted. These installers are **not for distribution outside of the IVI Foundation**, and if you should install them, we recommend installing them on test PCs.

We are excited to continue our progress towards IVI.NET instrument drivers, and look forward to your comments. If you have questions or wish to report issues or errors in the specs, please contact john.harvey@agilent.com.

Regards,

John Harvey

On June 1st John Harvey sent out the following status info regarding the .NET Final Review period

From: <john.harvey@agilent.com>
To: <IVI-Foundation-Members-1@ivifoundation.org>
Date: 06/01/2010 01:20 PM
Subject: IVI.NET Specification Review

This is a reminder that the end of the IVI.NET Specification Review, which started on April 21, 2010, is approaching fast. The last day to send input to the working group is June 6, 2010.

During the review period, the IVI.NET WG reviewed several issues with the IVI.NET specifications, and has decided to address the following items in the specs:

- 1) **API Spelling Changes:** The working group converted the IVI.NET Shared Components source code to Visual Studio 2010, and ran the new version of FXCop against the source. This version of FXCop generated new warnings related to the spelling of methods, properties, and parameters. While the working group decided not to fix most of these warnings, it did decide to fix several where the API used language keywords (e.g. "Double" and "Event"), where abbreviations were used without a reason (e.g. "Gnd" should be "Ground"), where there was incorrect casing (e.g. "PowerLine" should be "Powerline"), and a couple of misc. spelling corrections. This affects several instrument class specs.
- 2) **Process-wide Locking:** Locking is defined in the posted specs for a driver instance. Based on feedback, the working group decided to extend locks so that they could lock a single driver instance, all

driver instances in a process, or all driver instances on a single PC. A .NET shared component has been created to support these locking options. IVI-3.1, 2, and 18 will be changed accordingly.

3) ***PrecisionTimeSpan Internal Representation:*** The IVI.NET PrecisionTimeSpan class has used a Decimal to represent the time span internally. Due to (1) inaccuracies in the Microsoft routines that convert from Decimal to Double and (2) the potential need for finer than Femtosecond resolution, the working group decided to change the internal representation to two Doubles. This affects discussions of PrecisionTimeSpan resolution in IVI-3.18.

4) ***PrecisionTimeSpan.TotalMilliseconds:*** The IVI.NET PrecisionTimeSpan class originally did not define a TotalMilliseconds property, with the intent that users could convert PrecisionTimeSpan objects to System.TimeSpan objects and use the TotalMilliseconds property associated with TimeSpan. It turns out there is a very common use case for Total Milliseconds, so the working group decided to add it to PrecisionTimeSpan. We are also adding TotalDays, TotalHours, TotalMinutes, and TotalSeconds so that the PrecisionTimeSpan implementation is parallel to the TimeSpan implementation. These methods will be added to IVI-3.18.

The working group believes that these changes do not represent a fundamental or serious change to the specifications as posted, and recommends that all changes be accepted as part of the vote on the posted IVI.NET specification changes to held during the IVI.NET technical working group meeting in Munich on June 9. The details of the specification changes needed to reflect the above items will be reviewed at the IVI.NET working group meeting in Munich on June 7-8.

Regards,

John Harvey

In addition, at the meeting, the working group made some editorial corrections to cross-references to IVI-3.18. In IVI-3.1, the group added a requirement that for the first year, all IVI.NET drivers require approval by the IVI.NET working group before being registered. In IVI-3.18, the working group made minor changes to the PrecisionDateTime and PrecisionTimeSpan classes. All revisions have been posted to the IVI.NET working group web page.

IVI-6.1: IVI.NET IPR Declaration

On April 23, 2010, Scott Rust initiated an IPR Declaration period to coincide with the spec review period for the .NET Architecture Update to the IVI standards. The IPR Declaration period concluded on June 7th. The responses to the IPR Declaration are shown below.

Company	Voting Member Representative	Option 3A	Option 3B
Aeroflex	Mark Meldrum	<input type="checkbox"/>	<input type="checkbox"/>
Agilent	Joe Mueller	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AMETEK	Kevin Lam	<input type="checkbox"/>	<input type="checkbox"/>
BAE Systems	Wade Lowdermilk	<input type="checkbox"/>	<input type="checkbox"/>
DRS Sustainment Systems	Don Essner	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EADS/TYX	Chris Gorringer	<input type="checkbox"/>	<input type="checkbox"/>
Keithley	John Ryland		<input checked="" type="checkbox"/>
(The) MathWorks, Inc.	Rob Purser	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Instruments	Scott Rust	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Nokia	Torben Christensen		
Pacific MindWorks, Inc.	Kirt Fertita	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pacific Power	Eric Lord	<input type="checkbox"/>	<input type="checkbox"/>
Rockwell Collins	Jason Schares	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rohde & Schwarz	Jochen Wolle	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tektronix	Paul Nelson	<input type="checkbox"/>	<input type="checkbox"/>
Teradyne	Teresa Lopes	<input checked="" type="checkbox"/>	<input type="checkbox"/>
VTI Instruments	Michael Upchurch	<input type="checkbox"/>	<input type="checkbox"/>

No IPR declarations were received from Aeroflex, AMETEK, BAE Systems, EADS/TYX, Nokia, Pacific Power, Tektronix, VTI Instruments

Review of VISA Updates for Shared USBTMC kernel, HiSLIP, 64-bit VISA format specifiers, & 64-bit VISA-COM updates

On 6/8/2010, Jim Piotrowski sent out the following email regarding the final review for the VISA Updates changes. The review period concluded; modifications were made based on feedback. The working group recommends the committee vote to approve the specification

Hello all,

The VISA 5.0 specification changes have been under review for the last 45 days. The one piece of feedback I received was that the attribute VI_ATTR_RSRC_SPEC_VERSION should be revised to 00500000h to match the new spec version. This change has been made in VPP 4.3. The spec versions and dates in the header files in VPP 4.3.2 have also been updated to reflect version 5.0.

In addition, I removed a note following rule 3.2.10 in VPP 4.3 regarding the future addition of the WIN64 framework. This change has already been made, making the note superfluous.

These are the only issues that have come to my attention during the review period. Therefore, the VISA working group is proposing the following motion to the IVI Technical committee:

“The VISA working group recommends that the IVI TC adopt the VISA 5.0 specification drafts, dated June 8,2010, posted on the VISA working group web page (<http://ivifoundation.org/membership/committees/VISA/Default.aspx>).”

Jim Piotrowski

National Instruments - Driver Services

jim.piotrowski@ni.com

Review of IVI-3.4: Updates to allow array sizes of VInt64

Kirk posted the document for review from 2/7/10 to 2/28/10. The review period concluded with no comments.

Review of IVI-3.1: Updates to allow arrays of viByte

Kirk posted the document for review from 2/7/10 to 2/28/10. The review period concluded with no comments.

Review Action Items from February 2010 Meeting

Owner	Action Item	Status
Scott Rust	Scott Rust to get pulse of the AC Power WG and what it takes to finalize	Complete. The group believes that they will be ready to post the spec for final review shortly. They have been working with Kirk Fertitta to create final deliverables for shared components. Group to decide if they plan to vote on the spec prior to the October meeting or during the October meeting. The IVI .NET working group decided to postpone adding the IVI .NET interface for AC Power Supply until after the initial AC Power Supply spec is approved.
Rob Purser	Action Item: Rob to notify spec owners to make changes listed above [related to Windows 7] to the currently posted revisions of the specifications and notify the spec owners that they are responsible for making sure that these changes are incorporated in the spec changes that are currently in progress.	Complete. All spec owners have been notified, and all specs have been updated and posted (if not, then they are awaiting integration with other changes in progress). The one remaining item that is on Kirk Fertitta's plate is to update the requirements text files that are on the IVI web site associated with the Shared Components. Kirk said that he would complete it the week of May 24 th . Rob confirmed that it was completed as of 6/9/2010.

Review Spec Status Document

The group reviewed and edited the Spec Status Document.



Spec # Master
Document.xls

Action item assigned to Scott Rust to update the status of Utility Classes and Interfaces (see action item summary for full description)

Working Group Topics

Vote on IVI.NET Specification Changes

Note: A vote to approve the IVI.NET specs would normally take a 50% simple majority. However, we did not conduct a 2/3 supermajority vote to start the work in 2002. Therefore, approving the .NET specifications today requires a 2/3 super-majority vote. This has been previously recorded in the spec lifecycle spreadsheet.

At this meeting, the IviFgen class specification was modified with text to indicate that the IVI.NET assembly for IviFgen will not be available until the approval of version 5.0 of the IviFgen class specification. John Harvey read the new text to the technical committee in the meeting and has posted the new specification on the IVI.NET working group website.

As part of the vote on the IVI.NET specifications in this meeting, we will vote on the IviFgen 4.0 specification, which adds the .NET API, but the .NET shared components due to be released in the fall of 2010 will NOT include the IviFgen IVI.NET assembly. After version 5.0 of the IviFgen class specification is approved, the IVI.NET IviFgen assembly (based on version 5.0 of the specification) will be included in the IVI.NET shared components. This will avoid requiring IVI.NET IviFgen drivers to support a deprecated IviFgen interface based on version 4.0 of the specification.

Several minor defects were found in the existing IviDigitizer specification and shared components during the IVI.NET review. These defects were corrected in the IVI.NET portion of the new specification during the meeting and posted on the IVI.NET working group website. The Data Conversion working group recommends that we fix the remaining defects (i.e., the ones outside the IVI.NET portions of the specification) as soon as possible, but these changes are not part of the IVI.NET changes to the specification that we are voting on at this meeting.

Resolution (2010-06-09:#01): The .NET WG moves that the modifications to the IVI specifications as posted on April 21, 2010 related to adding IVI.NET as the third IVI supported API for instrument drivers

be accepted, along with all changes posted through June 9, 2010 at 1:46PM Munich time. No second is required. 7 YES votes. 0 NO votes. The resolution is approved!

Vote on IVI-6.1: IVI High-Speed LAN Instrument Protocol

A vote to approve the HiSLIP specification requires a simple majority.

Resolution (2010-06-09:#02): The HiSLIP working group recommends that the IVI TC adopt the HiSLIP specification draft 0.94, dated June 8, 2010, posted here:

http://www.ivifoundation.org/membership/committees/HSLANInstrProtocol/SpecDrafts/IVI-6_1_HiSLIP-Draft-2010-06-08.docx . No second is required. 7 YES votes. 0 NO votes. The resolution is approved.

Vote on VISA Updates for Shared USBTMC kernel, HiSLIP, 64-bit VISA format specifiers, & 64-bit VISA-COM updates

This vote requires a simple majority.

In preparation for this meeting, Scott Rust discovered that an IPR declaration is required for these changes. An IPR declaration has not been started at this time. Scott recommends that we provisionally approve these changes contingent upon a successful IPR declaration period.

Resolution (2010-06-09:#03): The VISA WG moves that the Technical Committee approve the changes to the following specifications for the VISA 5.0 change, contingent upon an IPR declaration which contains only responses of 3A, 3B, or default.

- VPP 4.3: The VISA Library
- VPP 4.3.2: VISA Implementation Specification for Textual Languages
- VPP 4.3.3: VISA Implementation Specification for the G Language
- VPP 4.3.4: VISA Implementation Specification for COM

- VPP 4.3.5: VISA Shared Components

No second is required. 7 YES votes. 0 NO votes. The resolution is approved.

These VISA working group changes are now ready for approval by the BoD.

Vote on IVI-3.4: Updates to allow array sizes of Vilnt64

This vote requires a 2/3 super-majority.

Resolution (2010-06-09:#04): Kirk Fertitta moves that we update IVI-3.4 according to the change document provided to allow array sizes of Vilnt64. No second is required. 7 YES votes. 0 NO votes. The resolution is approved.

Kirk will pass the changes to John Harvey, who will integrate them with the IVI.NET changes.

Vote on IVI-3.1: Updates to allow arrays of viByte

This vote requires a 2/3 super-majority.

Resolution (2010-06-09:#05): Kirk Fertitta moves that we update IVI-3.1 according to the change document provided to allow arrays of ViByte elements. No second is required. 7 YES votes. 0 NO votes. The resolution is approved.

Kirk will pass the changes to John Harvey, who will integrate them with the IVI.NET changes.

VISA.NET Charter

Resolution (2010-06-09:#06): Agilent moves that we create a VISA.NET working group with the following charter:

The purpose of the VISA.NET working group is to provide a set of common VISA.NET interfaces to be exposed by vendor-specific VISA.NET implementations, to provide a VISA.NET factory and conflict resolution component, and to provide for installation that is appropriate for the VISA.NET domain and .NET technology. The working group will leverage existing technology where it makes sense, to minimize (1) incremental effort needed to implement VISA.NET and (2) the impact on existing .NET implementations of VISA.NET.

Jon Bellin noted that NI offered a VISA.NET API to the foundation in 2002, and proceeded to implement it. **An action item was assigned to Jon Bellin to initiate a technology form submission of VisaNS.**

This vote requires a 2/3 super-majority.

Kirk Fertitta seconded the motion. 7 YES votes. 0 NO votes. The resolution is approved.

John Harvey volunteered to be the working group chair. The following people expressed interest in participating: Jon Bellin, David Rohacek, Dan Mondrik, Santanu Pradhan, Kirk Fertitta, Rob Purser, John Ryland, Johannes Ganzert, Jochen Wolle, Guido Kiener. John expects the first meeting to be in the second half of July 2010.

Discuss fixes to IviDigitizer specification and shared components

Several minor defects were found in the existing IviDigitizer specification and shared components during the IVI.NET review. These defects were corrected in the IVI.NET portion of the new specification during the meeting and posted on the IVI.NET working group website. The Data Conversion working group recommends that we fix the remaining defects (i.e., the ones outside the IVI.NET portions of the specification) as soon as possible, but these changes are not part of the IVI.NET changes to the specification that we are voting on at this meeting.

The TC decided this is an editorial change because it does not affect any existing drivers.

Resolution (2010-06-09:#07): Rob Purser moves that the Ivi Data Conversion WG submit a revision to the IviDigitizer class specification as an editorial change and that the Shared Components WG submit a revision to the shared components as a bug fix.

This vote requires a simple majority. Joe Mueller seconded the motion. 7 YES votes. 0 NO votes. The resolution is approved.

Action items assigned to Data Conversion and Shared Components working group.

Discuss fixes to IviCounter shared components

Two defects were found in the existing IviCounter shared components (Fetch and Read). The Shared Components working group recommends that we fix these defects as soon as possible. The TC agrees.

The TC believes these changes do not affect any existing drivers. A bug fix does not require a vote to initiate work.

Action item to Shared Components working group.

Other Working Group Topics as Needed

New Business

No other new business topics were raised.

Discuss Upcoming Meetings

- 10/13 – 10/15 – Boston (W-F)

Working Group	Time
IVI.NET (including interop)	1 day
HiSLIP (primarily interop) Schedule for late in the day.	½ day (plugfest)
Technical Committee Meeting and BoD and Annual Meeting	½ day
Marketing Committee and Camtasia review	½ day
Shared Components Management	¼ day
AC Power Supply	0
VISA	0 (pending discussion with Jim)

Working Group	Time
VISA.NET	½ day
Data Conversion – Fgen	1 day

VISA.NET should not conflict with IVI.NET. Shared Components Management should not conflict with VISA.NET, IVI.NET. HiSlip needs to be in the morning so that R&S can attend via teleconference.

Criteria for IVI meeting locations (from Feb 2010 TC meeting minutes):

For US meetings:

- Major airport hub that allows most members a non-stop flight (examples: Denver, Dallas, Orlando, Las Vegas, Chicago, St Louis, Los Angeles, Atlanta)
- Hotel journey is 20 minutes on Google maps.
- Sleeping room price should target \$100 but not exceed \$130. Willing to go higher on sleeping room price if it is walking distance to restaurants and avoids rental car.
- Internet bundled into the cost.

The group considered San Diego, Las Vegas, and Austin as the three sites for 2011. Las Vegas and Austin would not be very good for summer. So, Austin-San Diego-Las Vegas, or Las Vegas-San Diego-Austin.

The group expressed willingness to relax the major airport hub slightly to include cities that are still easy to get to, but not necessarily major airport hubs. This includes San Diego and Austin.

The meeting after the February 2011 meeting was tentatively scheduled for Austin or Las Vegas. The date is Feb 7-9, 2011.

The May/June 2011 meeting is tentatively scheduled for San Diego.

Summary of Action Items Created at the June 2010 Technical Committee Meeting

Owner	Action Item	Status
Scott Rust	Update the lifecycle document to indicate that Utility and Classes are in the same state as .NET WG and	

Owner	Action Item	Status
	that the spec has been reviewed as part of the .NET review. And the IPR declaration covers it.	
Jon Bellin and David Rohacek	Fill out technology form (Appendix A of the IPR policy, 2005-05-02) for VisaNS , and submit the form along with the VisaNS definition to Scott Rust, Joe Mueller, and John Harvey.	
Yves Maumary	Correct IviDigitizer specification and run review process	
Kirk Fertitta	Correct IviDigitizer and IviCounter shared components and send to NI for an installer update and run the review process	
Jon Bellin	Provide new shared components installer with IviDigitizer and IviCounter updates	

Adjourn

Meeting Adjourned.

Chapter 6 IVI BoD Meeting June 9, 2010

Called to order at: 15:42 CET 2010-06-09

Directors in attendance

Present	Director	Company
	Don Essner	DRS Sustainment Systems, inc
X	Rob Purser	MathWorks
X	Kirk Fertitta	Pacific MindWorks, Inc.
X	Jason Schares	Rockwell Collins
	Teresa Lopes	Teradyne
X	Joe Mueller	Agilent Technologies
X	Jon Bellin for Scott Rust	National Instruments
X	Jochen Wolle	Rohde & Schwarz

Quorum is a majority of directors. 6/8 satisfies the requirement.

Agenda Review

IVI BOD MEETING JUNE 9, 2010

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. REVIEW MINUTES OF PREVIOUS MEETING
 - 5.1 ACTION ITEMS FROM PREVIOUS MEETING
6. FINANCIAL REPORT
7. REPORT FROM MARKETING GROUP
8. RESOLUTION FROM THE TECHNICAL COMMITTEE REGARDING IVI .NET

9. **UPDATES TO OPERATING PROCEDURES BASED ON CHANGES FOR .NET**
10. **RESOLUTION FROM THE TECHNICAL COMMITTEE REGARDING HISLIP PROTOCOL (IVI 6.1)**
11. **RESOLUTION FROM THE TECHNICAL COMMITTEE REGARDING VISA UPDATES**
12. **RESOLUTION FROM THE TECHNICAL COMMITTEE REGARDING VISA UPDATE FOR VIBYTE**
13. **MEMBER USE OF FOUNDATION OWNED PROSE**
14. **OTHER NEW BUSINESS**

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

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

Review Minutes of Previous Meeting

Been posted – no issues raised

Action Items from Previous Meeting

ITEM	OWNER	UPDATE
ACTION: Bob will send the members a statement regarding the status of their payment for the 2010 dues.	Bob Hesel	Done, collected several additional payments 😊

Financial Report

Bob Hesel -- reported.

Kirk will describe work needed on the driver registration to Scott Butler (Tango), Scott will provide a quote to Bob, Arun will be the approver (as a marketing expense).

Resolution from the technical committee regarding IVI .NET

IVI TC moves that the BoD approve the IVI .NET specifications as documented in today's TC notes.

6 Yes, 0 No -- passes

Updates to Operating Procedures based on changes for .NET

The group edited the 1.5 revision of the operating procedure into a new 1.6 version that incorporates the additional deliverable of Visual Studio C# project for .NET and eliminates the obsolete requirement for .h files.

Rob Purser moves that we update our operating procedures to draft 1.6, seconded by Kirk.

6 Yes, 0 No – motion passes

Action: Joe to send the updated version to Bob to post on the website.

Resolution from the technical committee regarding HiSLIP protocol (IVI 6.1)

IVI TC Moves that the BoD approve the draft HiSLIP specifications as documented in today's TC notes.

5 Yes, 0 No – motion passes (Jochen out of the room)

Resolution from the technical committee regarding VISA updates

IVI TC Moves that the BoD approve the modifications to IVI 3.4 to permit 64-bit array indices.

5 yes, 0 No – motion passes

Resolution from the technical committee regarding VISA update for viByte

IVI TC Moves that the BoD approve the modifications to IVI-3.1 to permit arrays of viByte.

5 yes, 0 No – motion passes

Member use of Foundation owned documentation including prose and figures

Especially using API explanation in driver documentation.

Agilent would like to use the foundation prose describing APIs in the current specifications as part of the on-line documentation for Agilent instrument drivers.

Discussion – this seems to be a GOOD idea because it gives the customer a consistent explanation of APIs. Consensus that this is something that we want to do.

Need a way to indicate that the driver supplier is not the copyright owner. Probably something to the affect that “portions of this help document is copyright IVI Foundation”.

Some consideration regarding limiting the right-to-use to IVI member companies. This is likely awkward for tool suppliers. General consensus that we can make this right-to-use available to anyone.

ACTION: Joe make a recommendation and present to the BoD by July 15, for BoD e-mail discussion and action.

Other New business

Kirk moves we adjourn, seconded, passed

Adjourned 16:29 CET