

IVI Foundation

Meeting Summaries

Oct. 17-19, 2011

Austin, TX

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Chapter 1 Meeting Attendees

Last name	First name	Company	Email
Kruger	Adri	National Instruments	adri.kruger@ni.com
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Bellin	Jon	National Instruments	jon.bellin@ni.com
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Essner	Don	DRS - Sustainment Systems	dessner@drs-ssi.com
Fay	Tom	Agilent	tom_fay@agilent.com
Fertitta	Kirk	Pacific MindWorks	kirk@pacificmindworks.com
Gorringe	Chris	EADS	Chris.Gorringe@eads-ts.com
Gray	Damien	National Instruments	damien.gray@ni.com
Harvey	John	Agilent	john_harvey@agilent.com
Helsel	Bob	Bode Enterprises, LLC	ExecDir@lxistandard.org
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Lopes	Teresa	Teradyne, Inc.	teresa.lopes@teradyne.com
Mueller	Joe	Agilent Technologies	joe_mueller@agilent.com
Purser	Rob	MathWorks	Rob.Purser@mathworks.com
Rohacek	David	National Instruments	david.rohacek@ni.com
Ryland	John	Keithley Instruments	jryland@keithley.com
Woodring	Mike	Pacific MindWorks	mike@pacificmindworks.com

Chapter 2 VISA.NET Working Group

General Meeting Info:

Date of Meeting: October 17, 2011
Location: Austin, TX
Chairperson: John Harvey
Minutes Prepared By: John Harvey

Meeting Attendees:

Name	Company	Email
John Harvey	Agilent Technologies	john_harvey@agilent.com
Kirk Fertitta	Pacific Mindworks	kirk@pacificmindworks.com
Mike Woodring	Pacific Mindworks	mike@pacificmindworks.com
David Rohacek	National Instruments	david.rohacek@ni.com
Dan Mondrik	National Instruments	dan.mondrik@ni.com

Agenda:

Agenda, Monday, Oct. 17

- 08:30 - 08:45: Review action items from May meeting.
- 08:45 - 09:30: Review issues list in the phone meeting minutes.
- 09:30 - 10:30: Access to pre-release components.
- 10:30 - 12:30: Discuss Resource Manager / Conflict resolution issues.
 - Rules related to .NET and C APIs.
 - Single data store for C, COM, and .ENT.
 - What does the implementation look like?
- 01:30 - 02:30: Discuss Resource Manager / Conflict resolution issues (cont.).
- 02:30 - 04:30: Formatted I/O implementation.
 - Validate the interface.

Implementation of arrays w/ indexes and counts.

Read/Write delegations to Printf & Scanf.

Exceptions.

04:30 - 05:30: Interface definition (continuing effort)

Review Action Items

<i>Date Added</i>	<i>Description</i>	<i>Assigned To / Updates</i>	<i>Target Date</i>
General			
2011-05-18	Send out current drafts of documents to VISA.NET WG and post to VISA.NET WG page. <ul style="list-style-type: none">• VISA.NET spec.• Session Interfaces slide.• Conflict Resolution slides.• Interface Issues list.	John Harvey 2011-10-17 - DONE	2011-05-27
2011-05-19	Investigate & determine the exact behavior of VISA regarding sending END to instruments when buffers are exactly full – does a flush automatically occur just because of the buffer being full (even if another character has not been sent to the buffer), and is an END appended? We need to know this to define the VISA.NET behavior on WriteLine and FlushWrite, and we may need to look at the implementation of VISA.	Pete Stone Dan Mondrik 2011-05-19 INITIAL LOOK – Both VISAs flush the buffer as soon as the buffer is full. 2011-10-17 - Dan will present this issue to the VISA WG – should done after 10-18	2011-05-26

Review action items from May meeting.

Review issues list in the phone meeting minutes.

Discussion log:

- First issue (from 11/11) – do we include async I/O? The NI code uses ISynchronizeCallbacks and ISupportSynchronous. The PMW code uses a stream pattern.
 - The only synchronous patterns used in the PMW code are this stream pattern and standard events.
 - 2011-10-17 – We are supporting async. We also agreed on supporting the method model (BeginRead, etc.). We will come back to the exact mechanism for the stream/event model.
- Second issue (from 11/11) – how do we support vendor specific properties (attributes). This seems to be the only use case for the set and get attribute methods.
 - NI use case – In some cases, there may be a vendor-specific attribute that a vendor does not want to expose generally.
 - Consensus is that we need them for the undocumented attribute use case.
 - Consider making the get/set attribute methods invisible from IntelliSense.
 - We need to validate that an enum is needed for attributes.
 - Do we need to be able to cast from enum value to Int32? – Yes...
 - 2011-10-17 – Casting to vendor specific interfaces does not cover the case where vendors target attributes for limited use (e.g. a specific customer).
 - 2011-10-17 – No progress.
- Third issue (from 11/18) – Consider the need for a standard .NET event in IVisaSession for the callback mechanism, or do we
 - Dan noted that using the base event doesn't distinguish event types.
 - We are leaning against having it, due to the potential for having to register for a large number of events to get the small number that you care about.
 - Resolved – will not have the standard event type.
 - 2011-10-17 – We need to continue discussing whether the EnableEvent et al methods handle this.
- Fourth issue (from 12/2) – Consider the need for an IntPtr Handle to the underlying C interface, and the VisaStatusCode Last Status.
 - Dan will consult with David to see why NI has it.
 - 12/9 – We are leaning toward keeping it, but will keep until use cases are better fleshed out.
 - 2011-10-17 – We are leaning toward removing it because it is a leaky abstraction. David suggested using a GetServiceProvider pattern.
 - The use case is a user library that needs the VISA session for their library.
 - Kirk suggested providing a separate IVisaNativeSession that could be used for this.
- Fifth issue (from 12/9) – How do we deal with the need to extend enums for vendor-specific values.
 - 2011-10-17 – We still don't know...
- Sixth Issue (from 1/13) – There are some NI additions to ISerialSession that NI would be OK to have in the overall VISA spec. Dan thought we would have to open the VISA spec anyway.

- All of the events are NI specific.
- For other properties & methods, see the source code.
- 2011-10-17 – Completed – this will not be part of the spec.
- Seventh Issue (from 1/20) – .
 - Agilent and NI will work on Ren Mode naming and potentially removing unneeded values.
 - 2011-10-17 – Completed – this will be part of the spec – we split it into three different enums, each of which has appropriate values.
- Eighth Issue (from 2/24 & 3/3) – Discussion related to flushing buffers in the formatted I/O API.
 - Option 1: Add a `Printf` overload that has the following as the first parameter:

```
enum WriteBufferMode
{
    FlushIfNewlineOrBufferFull,
    FlushAlways
}
```

- Option 2: Change `scanf` semantics to automatically flush write buffer if not empty.
 - - Could be applied to C or .NET separately.
- Option 3: Do both Option 1 and Option 2.
- Option 4: Have a property similar to the C buffer operation mode that would control `printf` flushing.
 - i. Kirk – It's out of band with the `printf` code, it requires extra code, and it introduces confusion in the Write/WriteLine paradigm – which takes precedence?
- Agreement that `WriteString`, `WriteNumber`, etc are useful and probably want to keep.
- Agreement that `WriteNumber/String/List` should have flush parameter explicit in an overload.
- Open issue of what the default for flush parameter should be.
- **3/3/2011.**
- David – NI VISA.NET has write and writeline methods, with an explicit flush method as well. Write methods don't do flushes automatically, writeline does.
- Dan noted a slight semantic difference between `printf` and the write methods – the `printf` semantics allow for more flexibility in specifying what characters go to the instrument. For example, `WriteDouble` will only send a double to the instrument.
- There was agreement that option 2 is not sufficient for a solution. There was some concern that option 2 violated the principle of least surprise – don't want `scanf` to flush the buffer. There was consensus that we should not implement Option 2.
- NI proposed two complete solutions
 - i. `Printf + PrintfAndFlush` (or whatever name is good) and `Write(X) + WriteLine(X)`.
 - 1) There is an issue of what to do if the `printf format string` includes a new line. The answer is that newline in the format string causes a flush. This is consistent with VISA C.
 - 2) Kirk noted that there is no way to create a `PrintfAndNeverFlush`.
 - 3) Joe noted that flushing is so important that there should be an explicit (in the API) way to do it.
 - 4) John thought that accurate Intellisense would be useful.

- 5) We clarified that there is a Write and WriteLine methods that use .NET format strings. Dan is OK with making the behavior consistent with the Printf behavior.
 - ii. Consistently use a WriteBufferMode parameter on Printf and Write, no PrintfAndFlush or WriteLine.
 - The tentative consensus is (i) above. We'll sit on that for a week and see if people can do thought experiments that invalidate it.
 - **3/10/2011.**
 - (i) is the consensus solution moving forward.
 - We looked at Write/WriteLine methods. We decided to keep overloads with offset and count. We decided to omit overloads with separator.
 - 2011-10-17 – All of the API related issues have been resolved.
- Ninth Issue (from 3/3) – Side-by-side installation or not issues...
 - Kirk and John discussed allowing side-by-side versions of the VISA.NET standard APIs, but that individual vendors would not be allowed to install side-by-side.
 - There is some precedent in IVI.NET, but it is not totally applicable to the VISA.NET case.
 - One of the issues was whether there would be side-by-side versions of the SRMs. John and Kirk thought perhaps not, David's recollection was that there could be. NI has implemented side-by-side for specific sessions, and feels it's important to allow it. It allows NI to support multiple versions of the .NET Framework.
 - Dan noted that it could have an impact on the conflict manager – Kirk agreed, but neither were absolutely sure that it must.
 - Consensus was that we need to support side-by-side.
 - Given that, we will need to address issues with the conflict manager.
 - 2011-10-17 – Still need to work out the details in the resource manager.
- Issue #10 (from 3/10) – How to type lists for WriteList methods.
 - WriteList and WriteLineList take input arrays in both the current PMW and NI APIs. Perhaps we should use IEnumerable or array segment instead. We will investigate whether to use array types, IEnumerable, or array segments at some future time.
 - 2011-10-17 – Arrays are just too familiar – we will use arrays.
- Issue #11 (from 3/17) – Will one TriggerEventArgs do for VXI, PXI, and AXIe, or do we need a separate one for each interface type?
 - This affects the TriggerLine enum, which may be common across interfaces.
 - 2011-10-17 – What we currently have will be augmented by the current VISA WG work on PXI.
- Issue #12 (from 3/31) – At what level do we expose formatted I/O vs. "low-level" I/O?
 - One alternative is to expose formatted I/O on the session, the other is to expose it from an object or interface referenced from the session.
 - **4/14/2011.**
 - David has a concern that the Write associated with the session in NI-VISA means unformatted I/O, while the alternative that exposes formatted I/O would change the meaning of Write to formatted I/O. NI thinks that this would be very confusing to existing customers.
 - NI proposed that the session have two pointers, one to an unformatted I/O interface and another to a formatted I/O interface, so that the type of I/O would be unambiguous.
 - At the end of 4/14 meeting, we agreed that:

- i. It's a good idea to ask the user to be explicit about doing either raw or formatted IO.
- ii. "Formatted IO" sufficiently communicates buffering to the user.
- iii. We can avoid publically exposing MessageBasedReader and MessageBasedWriter interfaces/classes (though it can be/is the way it is implemented).
- iv. There will just be one level of hierarchy from message based I/O to the low level and formatted I/O interfaces, i.e. the user only types one dot to get from the session to the correct IO interface.

```
Session.FormattedIO.WriteString()
```

```
Session.RawIO.Write()
```

Rather than

```
Session.IO.Formatted.WriteString()
```

```
Session.IO.Raw.Write()
```

- Moving, we need to agree:
 - i. On the exact names for the interface reference properties for low level and formatted I/O interfaces.
 - ii. Finish the interface details for IMessageBasedSession and ILowLevelIO.
 - iii. That will get us back to the point where we can continue discussing IFormattedIO.
- **4/21/2011.** Agreed on above items.
- **4/28/2011.** Agreed on Formatted I/O Write and WriteLine methods. Additional discussion needed on writing binary, numeric arrays.
- Issue #13 (from 5/5)
 - **5/12/2011** Between 5/5 and 5/12, extensive discussion of the WriteBinary methods. We looked at multiple alternatives for representing buffer flushing behaviors. Alternative at the end of the discussion are listed below. We will make a decision at the IVI Foundation meeting in San Diego.
 - Option 3: This model is analogous to the meaning of Write vs WriteLine in the VISA I/O world; where WriteLine sends the additional char & flushes. The spec would need to define a default for WriteBinary behavior re flushing. The consensus on the call is that it would not flush.

```
session.FormattedIO.WriteBinary(data);
```

```
session.FormattedIO.WriteBinary(data);
```

```
session.FormattedIO.WriteBinaryAndFlush(data);
```

Option 4b: Compared to using a boolean, this option allows complete set of behavior flags to be spec'd: (1) no flush, (2) flush with end, and (3) flush without

end. General consensus is a preference for enum over Boolean. What should the spec say the default for WriteBufferMode is if not set by the user? – Consensus on the call is that default should be NoFlush (i.e., buffered)

```
session.FormattedIO.WriteBufferMode = BufferMode.NoFlush;  
session.FormattedIO.WriteBinary(data);  
session.FormattedIO.WriteBinary(data);  
session.FormattedIO.WriteBinary(data, BufferMode.Flush);
```

For both options, the following method would be added:

```
session.FormattedIO.FlushWrite();
```

- **May 18-19 IVI Meeting (San Diego).**

In discussing how buffers are flushed, both NI and Agilent verified that their VISAs flush the buffer as soon as the buffer is full.

We raised the question of whether the buffer flushing behavior of VISA and VISA.NET needed to match. The consensus was that they did not need to match.

Problem – If the user intends an END to be sent with the last byte of data, and the last byte is not a line feed, they could run into the following: If by chance the last byte of data happens to just fill up the buffer, then the data would be flushed automatically, without END being sent. If the next operation is an explicit flush, there would be no data in the buffer to attach the END to, and the END would never be sent. The correct approach is to make sure that the END is always specified in the same method call as the character that should have the END attached.

For VISA.NET, the consensus on behavior is:

- Multiple calls to FlushWrite – If there is anything in the buffer, the first flush empties the buffer and subsequent flush calls do nothing.
- If the user sends an END, the buffer should be flushed.
- WriteBinaryAndFlush – Make sure that an END is always sent, even if the number of bytes in the buffer exactly matches the size of the buffer. With the previous item, this means that this always flushes the buffer.
- FlushWrite (if we keep it) does not have an End parameter, and never sends END. It performs a flush, and if the End property is set, it disables it before flushing, and then re-enables it. Note that we are currently in favor of deleting it, but Dan would like to investigate the possible implications before finalizing this decision. We will delete it unless NI sees a specific reason to keep it.

- Delete FlushRead and replace with SkipUntilEnd. Skip expresses better than Flush, since Skip is not just a buffer operation – it is also consuming data from the instrument.
 - There is a setting in VISA C that allows discarding read buffer data without pulling from the instrument. Do we need to include a similar capability in the VISA.NET API? The NI .NET API has a DiscardUnreadData method – it is not clear what this does.
 - 2011-10-17 – We will have some detailed discussion in the VISA WG on one detail related to flushing – what happens when the buffer is exactly full.
- Issue #14 (from 6/2) – What is the behavior of the various ReadLine and ReadUntil methods with regard to (1) removing the term char or matched character from the buffer, and (2) including the term char in the string returned.
 - It was agreed that ReadLine (or ReadLineString or ReadUntilLineFeed) should remove the line feed from the buffer, but not include it in the string returned.
 - There were several suggestions related to other ReadUntil and ReadLine<Type>. David, Dan, and Kirk all had action items (recorded as TODO's in the source) to investigate these issues.
 - 2011-10-17 – This is resolved and there are notes in the code that describe the correct behavior. See code for details.
- Issue #15 (from 7/28) – Revisit “count” parameters for consistency. The consensus is that count parameters should be Int64. There may be exceptions – for example, if an Int32 count is needed for StringBuilder.
 - 2011-10-17 – All counts are Int64, except for StringBuilder counts.
- Issue #16 (from 8/11) – NI noted that the changes between their formatted I/O methods and properties and the current VISA.NET API on the table are significant enough that they would not be able to provide an implementation for the read/write API for a while. PMW offered to provide an implementation, based on the belief that the read/write API and the scanf/printf API should be implemented together. The PMW implementation would call other VISA.NET (as opposed to using VISA or VISA-COM interop) operations to do its work. This was agreed on moving forward.
 - 2011-10-17 – Resolved.
- Issue #17 (from 9/22) – There was quite a bit of discussion about the correct operation of the resource manager. Discussion included:
 - General agreement that it would be desirable to have a single metadata store that houses VISA.NET conflict resolution data in addition to classic VISA so that we could just extend the existing conflict resolution manager. This is intended to be analogous to what IVI.NET did in extending the IVI Config Store.
 - While it would be nice if a call to one vendor's VISA.NET always invoked that same vendor's VISA-C, this cannot be enforced in the general case because the resource manager needs to select VISA-C DLLs based on resource type, and that happens after the VISA.NET assembly has been loaded. This means that from a user's perspective, VISA "operations" in their program will follow a "hybrid" path.
 - If a vendor provides both VISA.NET and VISA-C, should that vendor's VISA.NET attempt to invoke their own VISA-C ??
 - Note that the VISA router (VISA-C conflict resolution) only exists today for 64-bit VISA.
 - How to support vendors that supply only a VISA.NET (e.g. no VISA-C or VISA-COM)?
 - 2011-10-17 – To be discussed later in this meeting..
- How track in the future?
 - John is finding this way of managing the issues list unwieldy
 - John will add issues to the IVI FogBUGZ – Kirk will add a new VISA.NET project.

Access to pre-release components.

- PMW would like to be able to ship a pre-release version of the VISA.NET components. This is to allow use of VISA.NET in Nimbus before the VISA standard is complete.
- PMW would create an installer that would do the pre-release delivery, and then coordinate a hand-off to NI after the spec is complete.
- Needs to be the real IVI assembly signed with the real IVI public/private key.
- The working group agreed that PMW could do this. The following issues need to be worked out.
 - What happens if there are minor changes to the API – for example, what if we decide to remove ReadUntilEnd after PMW publishes the pre-release version, but before the official release?
 - PMW thought that static analysis warnings might be put on items that wouldn't be key to driver use.
 - NI and Agilent both require beta customers to explicitly uninstall the previous version of a beta product before installing the released version. PMW will consider how this might work for a pre-release version of VISA.NET.
 - Installation Issues – PMW will coordinate the update scenario with NI.
 - Does the VISA.NET code have dependencies on the VISA Shared Components installer?
 - PMW believes and is moving forward based on the assumption that all of the IVI created VISA.NET code should be in one assembly.
 - Pro – Different pieces are never out of sync with each other.
 - Pro – End user only has to declare one reference.
 - Con – Bug fixes in one assembly require a new version for all of VISA.NET.
 - PMW will have a preliminary VISA.NET installer available for the PMW implementation on Dec. 1.
 - PMW will provide a list of items that they need to have sign off on by Feb. 1. A partial list includes
 - IMessageBasedSession (derives from IVisaSession), IMessageBasedRawIO (with the exception of asynchronous I/O), and IMessageBasedFormattedIO, with the exception of Read and Write methods.
 - It is important to PMW for the TC to formally approve the behavior of Printf and Scanf methods and the raw I/O simple methods for reading and writing.
 - NI is nervous about formally approving the formatted I/O Read/Write methods, and would like to keep them open to change if necessary.
 - Associated enumerations, events, and exceptions.
 - Limited resource manager implementation.
 - We would like a TC committee agreement that it is OK to use the IVI key and the IVI VISA.NET name for this pre-release component.
 - Jon would like a detailed motion to present to the TC, including the level of detail specified in the first three points.
 - Include the version number (less than 1).
 - The component will be subject to the normal review cycle.
 - John Harvey will present the motion to the TC.

Discuss Resource Manager / Conflict resolution issues.

- If a vendor provides both VISA-C and VISA.NET, and the vendor's VISA.NET delegates to VISA-C, we recommend that the vendor's VISA.NET delegate to their VISA-C.

- Should we require this? It seems like the message is simpler this way. (This does not mean that another vendors code could not be in the stack below the VISA-C layer – e.g. passport, PXI plugins, etc.)
- We expect to be able to extend the current data store schema to accommodate VISA.NET conflict resolution data.
- We expect the VISA.NET resource manager to call the existing VISA-C conflict manager to do all of its work. This allows us to meet the goal of having C clients that can maintain all conflict resolution data.
- We need separate settings for VISA-C preferences and VISA.NET preferences. Note that these settings apply to the API called by the user.
 - VISA-C settings will also apply to VISA-COM (and the VISA-COM .NET interop assembly), as is the case currently.
- We expect to have to support different versions of .NET Frameworks with framework specific (side-by-side) installs.
 - If we supply multiple versions of VISA.NET that target the same version of the .NET Framework, we have to provide policy files if it is safe to upgrade. It may not always be safe to upgrade, in which case we would not provide policy files.
 - Open Issue: Do we extend the conflict resolution data to versions of the .NET framework. If so, we will need to have a GUID for each version of the .NET framework.
 - Open Issue: Will we need to have a GUID for each version of a VISA.NET install within a .NET framework version.
 - We need to mock up the data for a few scenarios.
- We will expect the vendor specific components to include the .NET Framework version, following the IVI.NET driver DLL naming standards.
- When a vendor implementation references an IVI VISA.NET assembly, the version of the IVI VISA.NET assembly loaded at runtime must resolve to the same version loaded by the vendor implementation at run-time.
- Kirk will see if there is a way for one assembly to detect that it cannot load an assembly when that shouldn't.
- John will work scenarios with required metadata and schema.

Formatted I/O implementation.

Pointers.

- When reading raw binary, how do we handle reading large buffers for which we don't know the exact size? For example, we could allocate a large buffer and try to read the whole thing, or we could read chunks and try to read that. The working group is OK with allocating any amount the user might have specified and letting it throw if needed, and take the performance hit if needed.

Stopping ReadString on Whitespace.

- NI VISA reads to the first whitespace rather than the end of the line. The consensus is that this is the right behavior. Users should be using ReadLine rather than ReadString if they are reading to the end of the line.

Should WriteLine Append a Newline?

- It should send an end and a new line.

Implementation of arrays w/ indexes and counts.

- All array manipulation is done with pointers. OK for all except async reads and writes. NI was concerned about ability of clients to manage pointers.

When to throw exceptions in read routines.

- When you have an error that bubbles up from the underlying code in `Read(Byte[] data ...)`, when to you throw the error? Immediately, or after processing what data can be processed. For example:

```
Read (data1...);
```

```
Read (data2...);
```

```
Read (data3...);
```

What happens when the error occurs during the first read, but in a part of the data that would not normally be processed until the third read. The first two read calls could complete successfully, and the error could be returned on the third call.

- The decision is not to use a special exception to return count, but will add a parameter to return `actualCount`.

Get/SetAttribute.

- Decided to add overloads to allow vendors to define vendor specific attributes and reference them with `Get/SetAttribute` methods. Overloads replace the `_AttributeType` enum parameter to an `Int32` parameter.
- NI will add the actual values from VISA to the `AttributeType` enum, so that the values match VISA.

Status Codes.

- These codes should be referenced by the `NativeVisaExceptions`.
- Decided to rename the enumeration `NativeStatusCode`.
- Added a `StatusCode` field, type `NativeStatusCode`, to the `NativeVisaExceptions`.
- Need to add code to handle `Serialization/Deserialization`.

Exceptions.

- Spent time eliminating `Success` and `Warning` codes. Were able to identify certain ones as not needed, and integrated some into status enumerations used with the specific methods to which they apply.
 - NI will review the need for the codes that we were not able to either eliminate or integrate into other features.

Read/Write delegations to `Printf & Scanf`.

- Did not get to this item.

Validate Interface.

- Did not get to this item.

Interface definition (continuing effort)

- There was some work on interfaces as a result of 2.3.

Meeting Schedule

The next phone meeting will be October 27, 2011. John will send out a reminder, and set up the meetings. The normal time is 9:00 Mountain time on Thursdays.

Action Items

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

Chapter 3 IVI Marketing Committee Meeting Minutes

General Meeting Info:

Date of Meeting: October 18, 2011

Location: Austin, TX

Chairperson: Jared Aho

Minutes Prepared By: Jared Aho

Meeting Attendees:

Name	Company	Attended
Jared Aho	National Instruments	Y
Kirk Fertitta	Pacific MindWorks	Y
Bob Hesel	IVI Foundation	Y
Jochen Wolle	Rohde & Schwarz	Y
Rob Purser	The Mathworks	Y
Joe Mueller	Agilent	Y
John Harvey	Agilent	Y
John Ryland	Keithley	Y
Jason Schares	Rockwell Collins	Y
Jon Bellin	National Instruments	Y
Vesna Jadric	National Instruments	Y
David Rohacek	National Instruments	N
Don Essner	DRS	Y
Mike Woodring	Pacific Mindworks	Y
Teresa Lopes	Teradyne	Y
Vinod Cherian	The Mathworks	Y
Eric Wetjen	The MathWorks	N
Tom Fay	Agilent	N
Eric Lord	Pacific Power Source	N
Kevin Lam	Ametek Programmable Power	N
Deborah Homan	Agilent	N
Anshul Arora	Tektronix	N
Adri Kruger	National Instruments	Y

Discussion Topics:

- Roll Call
- Review of action items from previous meeting

- New Business
- Summary of New Action Items
- Proposed Next Meeting: February 15-18, 2011

Previous Action Items:

Owner	Action Item	Deadline	Status
IVI GSG 2011 Marketing Initiative – Autotestcon September 2011 target release			
Jared A/Bob H	Circulate completed LabVIEW and LabWindows/CVI completed videos prior to June meeting	June 2011	Done
IVI GSG Content Owners	Send release candidate footage to Bob for final production	End of June 2011	Done
Bob H	Finish final production of videos and send for review	August 2011	Done
Jared A	Press release on availability of IVI GSG Videos	August 2011	Open
Bob H	Complete IVI GSG Video project by posting content and sending press release during Autotestcon	September 2011	Done
Bob H/ Joe M	Provide update on HiSLIP press release	August 2011	Open
Eric L/ Ray M	Circulate AC Power press release draft in time for review during in-person meeting	October 2011	Open
Jared A	Review schedule of press releases for 2011	October 2011	Open
Deborah H/ Bob H	Circulate IVI GSG videos for approval – Visual C++, C# and VB .NET (combined)	October 2011	Open
John H	Circulate IVI .NET press release, GSG, and updates to IVI WP prior to October meeting	October 2011	Open

Record of Discussions:

- Autotestcon 2011 Review
 - IVI Basics Seminar, Joe updated and presented
 - Panel, review of what's gone on in past year and what's coming

- Next year, recommended to consider covering how the standards are used in industry
- Adri Kruger new NI marketing contact for IVI consortium
- IVI Getting Started Guide Videos
 - Complete: LabVIEW, LabWindows/CVI, VEE, MATLAB, IVI YouTube Channel
 - Pending: Visual C++, C# and VB .NET (combined) – targeting end of November
- IVI Getting Started Guide press release
 - Content owner for this release is Jared A
 - Will coordinate circulation of draft along with completion of final videos – targeting January 2012
 - Bob to update the IVI GSG consolidated master document (~5k hits in Sep 2011, far and away most viewed GSG resource on website)
- HiSLIP press release
 - Content owners for this release are Joe M and Bob H
 - Purpose: We want to announce the availability of products, and as of May meeting, no known products shipping; still experiencing delays; expected to be 3-6 months until products available
 - Consider announcing in coordination with consortium members announcements; critical mass = 3 vendors (NI-VISA (Q3), Agilent IO Libraries support, and two hardware vendors)
 - Postponed discussion until February 2012 meeting
- AC Power press release
 - Content owners for this release are Eric Lord and Ray Martin
 - Purpose: We want to announce the release of a new specification
 - Transferring ownership to Bob H; Bob to contact Eric L and Peter A regarding content
 - Targeting November release
- IVI .NET content updates and press release
 - Content owner for this release is John H and Bob H
 - Purpose: We want to announce after availability of drivers, and as of now, not released
 - Includes press release, GSG video, updates to GSG white paper
 - Consider delaying announcement until critical mass of availability; when consortium members are announcing as well; when all classes have a driver
 - Per John H: Limited IVI .NET release; all instrument classes will be available in installer that's coming out; but only two assemblies will be unconditionally released; other instrument classes will be conditionally released (meaning they may be changed in ways that are not backwards compatible); until an IVI member releases a driver for a class, the class will remain in that state
 - Continue to monitor – postpone until February 2012 meeting

- IVI Press Release Schedule

- IVI GSG – January 2012 announcement
- HiSLIP – Discuss in February
- AC Power - November 2011 announcement
- IVI .NET – Discuss in February

- New Business
 - Thoughts on marketing activities in 2012
 - Rob – study to better understand the awareness and perception of IVI in the market place (based on feedback from DoD)
 - BoD to discuss how much money being budgeted for marketing in 2012 to help facilitate marketing committee planning
 - Rob – white paper: how to optimize performance of system when using IVI drivers (based on feedback from DoD)
 - Marketing committee to discuss plans and report back to the consortium by February meeting

- Next Meeting
 - February 15-18 – Agenda to follow
 - To be held in LA, Atlanta, Dallas or Houston – Bob will be investigating which cities meet the criteria for a meeting location.

Summary of New Action Items:

Owner	Action Item	Deadline	Status
Bob H	Update IVI GSG Master document	November 2011	Open
Bob H/ Eric L/ Ray M	Circulate AC Power press release draft	November 2011	Open
Deborah H/ Bob H	Circulate IVI GSG videos for approval – Visual C++, C# and VB .NET (combined)	November 2011	Open
Adri K	Press release on availability of IVI GSG Videos	January 2012	Open
John H/ Bob H	Discuss plans/ status update for IVI .NET marketing activities	February 2012	Open
Bob H/ Joe M	Discuss plans for press release on HiSLIP	February 2012	Open

Chapter 4 ADDENDUM

IVI GSG VIDEO PROJECT MASTER

Guidelines and Consensus Points for All Videos

- Length: 10 minutes maximum (including open, body, close)
 - Opening: 1 minute
 - Body: 7-8:30 minutes
 - Closing: 15-30 seconds

- Format
 - Recording software: Camtasia
 - Volume control: We can try to edit this post-processing. Just make sure your voice is not clipping.
 - Microphone: Headset mic
 - OS: Microsoft Windows 7
 - Screen resolution: 1280 x 720, output to the full resolution in which it's recorded (720p)
 - Appearance: Have a clean desktop and Internet toolbar. Use standard Microsoft desktop background, and use standard Windows Blue menu bar and window color.
 - Video file format: AVI
 - Video hosting tool: TBD by Jared

- Opening Section
 - Set basic expectations – what's the point of the video, and then the outline to follow
 - Benefit statement
 - Accessing and installing the drivers
 - The IVI webpage – Resources page and all that's included

- Body Section
 - Use the Getting Started Guide as the GUIDE; model the body after what's already included and use consistent terminology
 - Focus on the driver and how to use the driver in the environment, but not the environment
 - Follow the outline that's in the GSG (this outline will be introduced during the Opening)

- Closing Section
 - Additional information on installing drivers
 - Additional information on advanced content

- General Points of Discussion
 - It takes about 2 days to record 8 minutes of quality content
 - Smooth, slow, tone of voice; speak precisely and avoid slang; avoid humor
 - Use a script, it will likely be reused

- No slides in the body
 - GSG Videos will not be created for environments that do not have GSG PDF document
 - Owners: your GSG PDF document must be updated, sent to Bob, and posted along with the videos
 - The same example you create or reference in the video should be made available to be posted online along with the PDF and video
- Things to Look Into Further
 - Convenient ways of including the verbal script along with the video/audio
 - Include an example or code snippet along with GSG document and video

IVI GSG Video Project Plan

Using IVI with...	Owner	Status or Due Date				
		GSG PDF Update	GSG Video v1	GSG Video v2	GSG Video Release Candidate	GSG Video Final (including opening / closing)
Opening and Closing Segments	Bob H	May 2011		Before April Meeting	April 2011	Included w/ others
Visual C++	John H	May 2011		May 2011	June 2011	August 2011
C#	Joe M	May 2011		May 2011	June 2011	August 2011
VB .NET	Joe M	May 2011		May 2011	June 2011	August 2011
LabVIEW	Jared A	Done	Done	Before April Meeting	April 2011	May 2011
LabWindows/CVI	Jared A	Done	Done	Done	April 2011	May 2011
MATLAB	Rob P	May 2011		May 2011	June 2011	August 2011

Measure Foundry	REMOVE					
PAWS	REMOVE					
Visual Basic 6.0	Joe M	May 2011		May 2011	June 2011	August 2011
VEE Pro	Deborah H	May 2011		May 2011	June 2011	August 2011
Deliverables		Send to Bob, Bob to post	Review with IVI MC	Review with IVI MC	Review with IVI MC, Send to Bob	Bob final production, Review with IVI MC, post to web, Press release for Autotestcon in September

Summary of ALL Action Items for IVI GSG Video Project:

Owner	Action Item	Deadline	Status
Jared A	Review NI's IVI GSG Video v2 at March conf call	March 2011	Done
Bob H	Review Opening and Closing segments at March conf call	March 2011	Done
Jared A/Bob H	Review Opening/Closing segmens, and LabVIEW and LabWindows/CVI release candidates	April 2011	Done
Jared A/Bob H	Complete LabVIEW and LabWindows/CVI IVI GSG Videos by May meeting	May 2011	Done
IVI GSG Content Owners	Send updated IVI GSG PDF documents to Bob	May 2011	Done
Bob H	Post completed IVI GSG chapters to the web	May 2011	Done

Owner	Action Item	Deadline	Status
IVI GSG Content Owners	All IVI GSG Videos v1/v2 to be reviewed during May meeting	May 2011	Done
IVI GSG Content Owners	All IVI GSG Videos release candidates to be reviewed	June 2011	Done
IVI GSG Content Owners	Send release candidate footage to Bob for final production	June 2011	Done
Bob H	Finish final production of videos and send for review	August 2011	Done
Jared A	Press release on availability of IVI GSG Videos	August 2011	Delayed
Bob H	Complete IVI GSG Video project by posting content and sending press release during Autotestcon	September 2011	Done

Chapter 5 Technical Committee

General Meeting Info:

Date of Meeting: October 19, 2011

Location: Austin, TX

Chairperson: Jon Bellin

Minutes Prepared By: Vesna Jadric

Topics To Be Discussed:

- Review Agenda
- Review Voting Members In Attendance
- Patent Call
- Approve minutes from the May 2011 Technical Committee Meeting
- Review outcome of recent eVotes, IPR Declarations, Editorial Changes, and Reviews
- Review Action Items from Previous Meeting
- Review Spec Status Document
- Review and discuss IVI feedback received from DoD ATS
- Working Group Topics
 - Data Conversion WG status update
 - Ambiguity Between Physical and Virtual Names
 - Flaw in VISA Formatted I/O Definition
- New Business
 - VISA.NET
- Discuss Upcoming Meetings
- New Action Items

Voting Members In Attendance

Present	Organization Name	Name
	Aeroflex Corporation	Mark Meldrum
X	Agilent Technologies	Joe Mueller

Present	Organization Name	Name
	Bustec Ltd.	Fred Bloennigen
X	DRS-SSI	Don Essner
X	EADS North America Test & Services	Fran Bennett/Chris Gorrige
X	Keithley Instruments	John Ryland
X	MathWorks, Inc.	Rob Purser
X	National Instruments	Jon Bellin
	Nokia	Torben Christensen
X	Pacific MindWorks, Inc.	Kirk Fertitta/Mike Woodring
	Pacific Power Source, Inc.	Eric J. Lord
X	Rockwell Collins	Jason Schares
X	Rohde & Schwarz	Jochen Wolle
	Tektronix	Santanu Pradhan
X	Teradyne, Inc.	Teresa Lopes
	VTI Instruments	Sangram Gaikwad

There are 10 voting members in attendance, which satisfies the requirements for a quorum of 4 Voting Members. (Quorum is 25% of Voting Members. There are currently 16 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 that is the subject of this meeting. You need not be the inventor of such patent or patent application in order to inform us of its existence, nor will you be held responsible for expressing a belief that turns out to be inaccurate.

Approve minutes from the February 2011 Technical Committee Meeting

The minutes from the May 2011 Technical Committee Meeting 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-3.1 Editorial Changes

On May 26th, Vesna Jadric announced IVI-3.1 editorial changes via the email below

From: <vesna.jadric@ni.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 05/26/2011 01:35 PM
Subject: Editorial Review: IVI-3.1 Spec Changes (6-day Review)

Greetings:

During the May IVI Foundation meeting in San Diego, National Instruments was tasked with updating IVI-3.1 specification, Section 4.3.2 to include Windows 7 in the list of operating systems (FogBugz case 21).

The change document is now posted to the [IVI-3.1 web site](#).

The review period for this editorial change is **May 27 - June 6, 2011**.

Please contact me with feedback.

Thanks,

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

Received and addressed a feedback regarding the OS bitness. There was no additional review feedback regarding the proposed changes. The Editorial Changes are accepted and have been made and posted.

IVI.NET Editorial Changes

On June 22nd, John Harvey announced IVI.NET editorial changes via the email below

From: <john_harvey@agilent.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 06/22/2011 10:37 AM
Subject: Editorial Review: IVI.NET Editorial Spec Changes

Greetings:

The IVI.NET Working Group is proposing several editorial changes to specifications. The specifications, along with a change document that explains each change, are posted at <http://www.ivifoundation.org/membership/committees/DotNET/Default.aspx> (look for the subsection titled "*Proposed Spec Editorial Changes (June, 2011)*").

The review period for this editorial change is **June 22 – June 30, 2011**.

Please contact me with feedback.

Cheers,

John Harvey
Agilent Technologies | 970-679-3535

There was no review feedback regarding the proposed changes. The Editorial Changes are accepted and have been made and posted.

IVI Shared Components 2.2.1

On May 31st, Kirk Fertitta sent out the following email regarding the final review for the IVI Shared Components version 2.2.1.

From: Kirk Fertitta <kirk@pacificmindworks.com>
To: IVI-Foundation-Members-1@ivifoundation.org
Date: 05/31/2011 03:43 PM

Subject: IVI Shared Components 2.2.1 review

The IVI Shared Components 2.2.1 is now available for review at the following URL:

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

This version of the IVI Shared Components fixes a performance issue with the IVI-C Shared Components on multi-core systems.

The review will continue until June 10th, 2011.

Kirk Fertitta

Chief Technical Officer

Pacific MindWorks, Inc.

Ph: 858-521-1382 x237

Fax: 858-521-1385

The review period concluded with no feedback. The 2.2.1 revision has been posted to the Shared Components web page.

IVI.NET Editorial Changes

On August 15th, John Harvey announced IVI.NET editorial changes via the email below

From: <john_harvey@agilent.com>

To: IVI-Foundation-Members-1@ivifoundation.org

Date: 08/15/2011 09:42 AM

Subject: Editorial Review: IVI.NET Editorial Spec Changes

Greetings:

The IVI.NET Working Group is proposing several editorial changes to specifications. The focus of this set of changes is modifications to the IVI.NET locking capability. The first change is to specify AppDomain-wide locking in place of the previously specified process-wide locking. The second change is to include factory methods with each class that include lockType and accessKey parameters. The specifications, along with a change document that explains each change, are posted at

<http://www.ivifoundation.org/membership/committees/DotNET/Default.aspx> (look for the subsection titled "*Proposed Spec Editorial Changes (August, 2011)*").

The review period for this editorial change is **August 15 – August 23, 2011**.

Please contact me with feedback.

Cheers,

John Harvey

Agilent Technologies | 970-679-3535

There was no review feedback regarding the proposed changes. The Editorial Changes are accepted and have been made and posted.

VISA Shared Components Installer 1.4.0 Review

On August 26th, Dan Mondrik sent out the following email regarding the review for the VISA Shared Components installer version 1.4.0:

To: <joe_mueller@agilent.com>, dsmith@vtiinstruments.com, peter_stone@agilent.com

From: Dan Mondrik/AUS/NIC

Date: 08/26/2011 04:32PM

Cc: "Greenberg, Charles" <charles.greenberg@ts.eads-na.com>, IVI-Foundation-Members-1@ivifoundation.org, Tom Sarfi <tsarfi@vtiinstruments.com>

Subject: VISA shared components installer 1.4 for 2-week review

Fixed from VISA shared components 1.3 to 1.4:

- 1) The header file visatype.h was not being installed into Win64\Include
- 2) A device that claimed to be compliant with USB-TMC but had an incorrect interrupt pipe configuration could cause ausbtmc.sys to blue-screen
- 3) Various fixes to viWaitOnEvent

(See attached file: VisaSharedComponents140-review.zip)

Please do some installation testing with the attached installers, on both 32-bit and 64-bit systems.

In going through my checklist, I discovered an action item that had slipped through the cracks regarding incorrect function signatures in the IRegister64 interface. Since we only rediscovered the issue today, and since it does not seem to affect anyone that we know of, John Harvey and I recommend deferring that fix to the next release in 2012.

Even though this is supposed to be only a 2-week review, I will extend it a couple of days to September 13 since this spans Labor Day weekend. If no issues are detected, we (NI) will build a final installer and do some basic sanity testing, and then publish it to the IVI web site.

Thanks,
Dan Mondrik
VISA TWG chairman

Received and addressed all the feedback. The VISA Shared Components installer was released on October 11, 2011 and posted to the Shared Components web page.

IVI.NET Shared Components 1.0.0 Review

On October 7th, Kirk Fertitta sent out the following email regarding the review for the IVI.NET Shared Components version 1.0.0.

From: Kirk Fertitta <kirk@pacificmindworks.com>

To: IVI-Foundation-Members-1@ivifoundation.org

Date: 10/07/2011 08:07 AM

Subject: IVI.NET Shared Components 1.0.0 review

The first release of the IVI.NET Shared Components is now available for review at the following URL:

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

The review will continue until October 21st, 2011, after which the components will be made publicly available on the IVI Foundation website alongside the standard IVI Shared Components.

Kirk Fertitta

Chief Technical Officer

Pacific MindWorks, Inc.

Ph: 858-521-1382 x237

Fax: 858-521-1385

The review period has not concluded yet.

Review Action Items from May 2011 Meeting

Owner	Action Item	Status
Vesna Jadric	Assign a spec # for VISA PXI Plug-in Specification. It should be in the form of IVI-6.?.	[06/01/2011] Complete. IVI-6.3.
Vesna Jadric	Add the IVI Digitizer Minor Change Specifications work (Resolution 2011-05-20:#02) to the In Progress tab of the Lifecycle Status spreadsheet.	[05/24/2011] Complete.
Vesna Jadric	Add the File Format working group (Resolution 2011-05-20:#05) to the In Progress tab of the Lifecycle Status spreadsheet.	[05/24/2011] Complete.
Jon Bellin	Set up first conference call (by June 30, 2011) on the IVI Virtual/Physical Identifier issue.	[05/31/2011] Complete.
Dan Mondrik	Initiate effort on VISA Automatic Flushing issue	Initiated within the VISA WG

Review Spec Status Document

The group reviewed and edited the Spec Status Document.



IVI_Spec_Lifecycle_S
tatus.xls

Review and Discuss IVI Feedback Received from DoD ATS

The group identified a high-level set of deficiencies.

- Quality of drivers
 - Bugs
 - Completeness (in terms of the instruments capabilities)
 - Completeness (in terms of the extension groups the driver claims to support)
 - Driver documentation (help)
- Customer education
 - Perception of IVI drivers
 - Benefits of IVI drivers
 - Best practices in using IVI drivers
 - Error query
 - Adding functionality to a driver
 - What IVI drivers are meant and not meant to provide in interchangeability
 - Relationship of IVI drivers with *VXIplug&play*
- Source code availability
- Prominent disclosure of driver capabilities in a standard way that is understandable to the target users
- Interoperability
 - Loading issues

Chris said we should have a preliminary response by the beginning of December.

We agreed to form a working group to come up with a plan to address these issues. Interested parties are Jon Bellin, Vesna Jadric, John Ryland, Vinod Cherian, Kirk Fertitta, John Harvey, Joe Mueller, Steve Schink, Jason Schares, Jochen Wolle, Teresa Lopes, Chris Gorringer, Adri Kruger

Action item: Vesna will organize the weekly meetings. Meeting time: 9:00 AM Austin time on Wednesdays, starting on Nov 2nd

Working Group Topics

Data Conversion WG status update

On October 13th, Yves Maumary provided the following update:

IviDigitizer Rev 2.2 minor specification change:

An editorial change in the description on setting up triggers (Section 4.1.4.1), as well as 2 minor changes were proposed by the Data Conversion WG.

The editorial change corrects a misleading paragraph. The first minor change concerns the addition of a new Ivi-C only Configure Active Trigger Source function to avoid the mandatory use of SetAttribute with the ATTR_ACTIVE_TRIGGER_SOURCE attribute. The second minor change adds new enum values for the Oscillator Reference Source attribute.

These are described in detail in the document 'IviDigitizer Rev 2.2 Specification Change.pdf'. The resulting changed pages (total 12) in the specification are gathered in the document 'IVI-4.15 IviDigitizer 2.2 20111014.pdf'. These files, as well as the complete modified specification (with tracking changes) are posted on the WG page of the Foundation web site

<http://www.ivifoundation.org/membership/committees/Data%20Conversion/Default.aspx>

According to the Ivi Foundation's voting requirements, the final review period is 3 weeks for a minor specification change (unless an IPR Declaration is required by the TC). This was approved at the last TC meeting.

The review period for this minor change is October 17 – November 7, 2011.

IviFgen Rev 5.0 specification change

The Data Conversion WG has been working on a major change to the IviFgen specification, aiming at introducing Arbitrary Waveform extensions. Because the new revision of the IviFgen specification was not ready at the time, the revision 4.0 adding the .NET interfaces was not released.

Further review was conducted at the end of 2010 and beginning of 2011 after the initial prototyping period.

As of today, a second round of prototyping of IVI-C was completed by NI. IVI.NET as well as IVI-COM prototyping was done by Agilent.

The new specification document is posted on the WG page of the Foundation web site <http://www.ivifoundation.org/membership/committees/Data%20Conversion/Default.aspx>

The review period for this major change is October 17 – December 1, 2011.

Ambiguity Between Physical and Virtual Names

Reviewed NI's proposal. In summary, NI's proposal included the following ideas:

- Adding requirements that drivers and the Configuration Server verify that no virtual identifiers map to physical identifiers that are the same as virtual identifiers in the same repeated capability.
- Adding support for an optional convention that uses "v_" to distinguish virtual identifiers, by reporting errors on physical identifiers that start with "v_".
- Adding documentation that customers should use virtual identifiers that are not likely to conflict with physical identifiers.

Jon Bellin pointed out that if all drivers obeyed the requirement in IVI-3.1, Section 5.9.2 to interpret virtual names only once per user call, this problem would not exist, but that drivers developed with NI's and PMW's tools don't obey the requirement and it would be impractical for them to start doing so now.

Kirk Fertitta and Joe Mueller both expressed dislike of the "v_" convention. Kirk doesn't want customers to have to think about such an odd restriction. Joe does not want to tell users that they can "choose anything you want, but it is a good idea to choose something that begins with v_".

John Harvey is concerned that the check described in the first bullet above will be tricky to implement. For example, how would it work with regard to ranges of physical identifiers?

The consensus was that we would add only the documentation requirement.

Resolution (2011-10-19:#01): Joe Mueller moves that we make the following minor changes to the IVI specifications:

- Change IVI-3.1, Section 5.9.2, to remove the fourth paragraph (which requires that drivers interpret virtual names only once per user call) and to add a statement that it is important for users to avoid the case where a virtual identifier is mapped to a physical identifier that is identical to a different virtual identifier in the same repeated capability.
- Add a requirement in IVI-3.1, Section 5.21, that driver documentation for the identifier parameters in class compliant interfaces shall explain that users who want to achieve interchangeability should use virtual identifiers and that virtual identifiers should be sufficiently specific to the test system such that they are unlikely to conflict with physical identifiers. Make this requirement apply only to drivers released after September 30, 2012.
- Add a recommendation in IVI-3.5, Section 27, that configuration utilities make it clear to the user that virtual identifiers should be sufficiently specific to the test system such that they are unlikely to conflict with physical identifiers.

Seconded by Don Essner. 9 YES votes. 0 NO votes. The resolution is approved.

The TC recommends that the Board of Directors direct the Marketing Committee to change the IVI Getting Started Guide to explain that users who want to achieve interchangeability should use virtual identifiers and that virtual identifiers should be sufficiently specific to the test system such that they are unlikely to conflict with physical identifiers.

Kirk and Joe described a method by which they want to allow customers who have run into this problem to work around it. The approach is to allow the user to specify a set of physical identifier aliases in the Driver Setup Option String. This would be something that a driver supplier would add to a specific driver when needed, not a requirement for drivers in general. They wanted to know if anyone objected to this approach. There were no objections.

Flaw in VISA Formatted I/O Definition Summary

When automatic flushing is enabled, which it is by default, it is possible for customers to have formatted IO data that is expected to have an END indicator actually sent without the END indicator.

We will add text to the VISA spec that says an implementation should not let this happen.

New Business

1.10.1 VISA.NET

Pacific MindWorks is nearing completion of an implementation of the VISA.NET specification currently under development within the IVI Foundation. A large part of this implementation, specifically the formatted I/O portion, will be contributed to the IVI Foundation. Pacific MindWorks will be shipping its Nimbus 3 product in February and needs to ship its VISA.NET implementation along with a prerelease version of the VISA.NET interface definitions signed with the official IVI Foundation private key. Signing with the official private key provides a migration path for IVI.NET drivers to use the final VISA.NET assembly when it becomes available. It also enables Nimbus IVI.NET drivers to use other VISA vendors' VISA.NET implementations as those also become available.

Pacific MindWorks needs reasonable assurances that specific parts of the VISA.NET API on which its product specifically relies are not changed after February 1st, 2012.

Pacific MindWorks requests that the VISA.NET working group make a best effort attempt to finalize the signatures and semantics of the remainder of the IMessageBasedFormattedIO and the IVisaSession interface by February 1st, 2012. The members of the working group agreed to make a best effort.

To facilitate the above, Pacific MindWorks will commit to provide to the IVI Foundation a working implementation of the Pacific MindWorks VISA.NET Preview bits by December 1st, 2011. In addition, Pacific MindWorks will coordinate its installer development with National Instruments to ensure that the future release of the official IVI Foundation VISA.NET Shared Components Installer will be able to properly uninstall the Pacific MindWorks VISA.NET Preview. This work includes, but is not limited to, ascribing a version number less than 1.0.0 to both the .NET assemblies and the MSI installer itself.

Resolution (2011-10-19:#02): Mike Woodring moves that the Technical Committee grant Pacific MindWorks permission to ship, on or about February 1st, 2012, a preview version of the VISA.NET shared components signed with the official IVI Foundation private key.

Seconded by Rob Purser. 9 YES votes. 0 NO votes. The resolution is approved.

Resolution (2011-10-19:#03): Mike Woodring moves that the Technical Committee recognize the following specific VISA.NET interfaces, methods, and properties as being “approved” and “finalized” at the time Pacific MindWorks ships its Preview, which means that APIs be modified in a non-backwards compatible way only due to a “bug” or a fundamental limitation:

1. The following methods and properties in the IMessageBasedRawIO interface:
 - a. Read (all overloads)
 - b. ReadString (all overloads)
 - c. Write (all overloads)
2. The following methods and properties in the IMessageBasedFormattedIO interfaces:
 - a. Printf
 - b. PrintfAndFlush
 - c. PrintfArray
 - d. PrintfArrayAndFlush
 - e. Scanf
 - f. ScanfArray
 - g. ReadBufferSize
 - h. WriteBufferSize
 - i. BinaryEncoding
 - j. EnumFormatter
 - k. DiscardBuffers
 - l. FlushWrite
3. All members of the IMessageBasedSession interface.

Seconded by Joe Mueller. 9 YES votes. 0 NO votes. The resolution is approved.

Discuss Upcoming Meetings

The next meeting will be February 15-17 (Wednesday - Friday) in Atlanta, Los Angeles, or Houston.

Working Group	Time
IVI.NET	¼ day
DoD ATS Feedback	½ day
Technical Committee Meeting and BoD	½ day
Marketing Committee General	¼ day
Shared Components Management	2 hr
VISA	¼ day
VISA.NET	1 day

Working Group	Time
File Format	1 day

File format can conflict with VISA.NET

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.

Tentative cities for 2012:

May 7-9, 2012 – Munich

October 10-12, 2012 – Boston

Summary of Action Items Created at the October 2011 Technical Committee Meeting

Owner	Action Item	Status
Vesna Jadric	Add Resolutions to the In Progress tab of the Lifecycle Status spreadsheet.	
Vesna Jadric	Schedule weekly meetings to discuss IVI deficiencies (reported by DoD ATS)	

Adjourn

Meeting Adjourned.

Chapter 6 IVI BoD Meeting Oct 19, 2011

Called to order at: 11:42, 2011-10-19

Directors in attendance

Present	Director	Company
X	Don Essner	DRS Sustainment Systems, inc
X	Rob Purser	MathWorks
X	Mike Woodring (for Fertitta)	Pacific MindWorks, Inc.
X	Jason Schares	Rockwell Collins
X	John Ryland	Keithley
X	Joe Mueller	Agilent Technologies
X	Jon Bellin	National Instruments
X	Jochen Wolle	Rohde & Schwarz

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

Agenda Review

IVI BOD MEETING OCT 19, 2011

1. DIRECTORS IN ATTENDANCE
2. AGENDA REVIEW
3. REMINDER OF THE IP POLICY, ANTI-TRUST, AND DUTY OF TRUST OF DIRECTORS
4. RESOLUTIONS PASSED BY ELECTRONIC MEANS SINCE LAST MEETING
5. INPUTS REGARDING MINUTES OF PREVIOUS MEETING
 - 5.1 ACTION ITEMS FROM PREVIOUS MEETING
6. DISCUSS MARKETING COMMITTEE BUDGET
7. RECOMMENDATION FROM TC REGARDING UPDATE TO GSG

8. FINANCIAL REPORT

8.1 APPROVE DUES PLAN FOR 2012

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:

Inputs Regarding Minutes of Previous Meeting

None expressed

Action Items from Previous Meeting

ITEM	OWNER	UPDATE

Financial Report



IVI P&L thru
10-10-11.xls

Note recommendations and actions:

1. Will send letter to C&H indicating that they have 30 days to pay or be dropped from the role
2. Will send letter to Bustec reminding them that dues are due.
3. Search has been added to web page.

Approve dues plan for 2012

Sponsors \$7500

General \$1500

Associate \$750

Discuss Marketing Committee budget

Marketing expenses will depend on what we decide to do regarding the DoD needs.

Recommendation from TC regarding update to GSG

The TC recommends that the Board of Directors direct the Marketing Committee to change the IVI Getting Started Guide to explain that users who want to achieve interchangeability should use virtual identifiers and that virtual identifiers should be sufficiently specific to the test system such that they are unlikely to conflict with physical identifiers.

Rob Purser moved that the BoD so direct the marketing committee. Seconded by Don Essner.

Motion passed 7:0:0

Adjourn 12:02