

Meeting notes for February 23, 2004 I++ DME implementer's conference call

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Name	Organization	Present
Ray Admire	Lockheed Martin	
Manfred Becker	Zeiss	
Perluigi Borgogno	Wilcox Associates	✓
Joe Falco	NIST	
Swen Haubold	Mitutoyo	
John Horst	NIST	✓
René Keller	Metromec	✓
Tom Kramer	NIST	✓
Chuck Leckenby	Tecnomatix	✓
Mike Martini	General Electric Transportation	✓
Günter Moritz	Messtechnik Wetzlar	
Michel Penlae	Wilcox Associates	✓
Chiratana Pot	Tecnomatix	
Walter Punegam	Zeiss	
Josef Resch	Zeiss	✓
Bill Rippey	NIST	✓
John Rosser	Renishaw	
Ken Sheehan	Entelegence	
Dave Smith	LK	✓
Rob Stewart	Daimler-Chrysler	
Keith Stouffer	NIST	
Tim Taylor	General Electric Transportation	✓
Mark Vinson	Boeing	
Bob Waite	Daimler-Chrysler	
Betsy Weddendorf	General Electric Transportation	✓
Martin Wimmer	Zeiss	✓

1 Discussion on action items

1. *Implementers will send to Josef open dates on their calendars for two consecutive days during the weeks of 29th March and 19th April for the planned Stuttgart meeting.*

Based on feedback from a few of us and in order not to conflict with certain DMIS meetings and the Easter holiday, Josef said it was decided that the meetings will be held on the 20th and 21st of April. However, he suggested that we not book flights yet until Gerd Becker sends out the official invitation. Josef added that if there is another person in our organizations interested in attending to please send their name to Gerd or Josef.

2. *Swen (and Michel) will send to NIST a brief summary of options as to how client and server can communicate over the Internet and through firewalls*

Michel made a test behind a NAT (firewall) with Perluigi's server. Since his computer initiates the connection, the client could remain behind the firewall. Designing a server connection is probably the more difficult problem.

3. *NIST will study the problem of communicating over the Internet and through firewalls and will present a summary document of suggested methods and steps.*

John reported that NIST has been unable to devote any time to this task, but he encouraged everyone not to wait for generic solutions doc from NIST, but develop their own solution with their IT departments and share it with the group (like what Perluigi has done). We don't have to be interoperable with these connections, they can be completely unique for each pair of connections. Might this be the easiest and quickest thing to do? (We really need to get moving on this). If so, John asked if we should develop a schedule to define the precise pair-wise interactions needed between all possible pairs of client and server implementations?

At the previous conference call, Perluigi offered Internet contact options with the Wilcox server implementation. Josef said he talked with Zeiss' IT folks and discovered that connecting behind the firewall would be hard. They have another solution: Partners that want to communicate with Zeiss can connect via modem outside.

Since we cannot start performing interoperability tests until we can connect remotely, NIST promised to generate a schedule for developing internet connections between client and server implementations.

4. *NIST will place the version 2.1 test suite on the web*

This task is now complete.

5. *Josef will send out an agenda for the pair of meetings planned in Stuttgart.*

The agenda will come with the meeting invitation from Gerd Becker. The 2nd day planned to discuss DMIS and DME compatibility and to look at particular use cases. Josef wants us to send both him and Gerd Becker our particular use cases, and we will use these use cases as the basis for discussion at the meeting.

6. *Josef will ask the I++ group for their willingness to allow the I++ DME spec to go to an international standard (e.g., ISO) after completion of work on the I++ DME spec.*

Josef suggested that we all discuss this issue at the Stuttgart meeting.

7. *NIST will send out a spreadsheet of preliminary interoperability testing metrics to the group.*

Not done yet.

8. *Implementors will continue to send comments and use cases relating to the spec to NIST and the I++ spec writers.*

See action item 5.

9. *NIST will work on and send out a new interoperability testing schedule to the group.*

Needs to be delayed until we can resolve the Internet connections issues.

2 I++ DME interoperability demo issues

John asked if anyone has committed to participate in the IMTS show in Chicago, Sept. 2004. It would be a repeat of the interoperability tests that by then we hope to have performed already over remote connections. Michel and Josef said their companies are both interested in participating.

3 Status and update on I++ DME implementations

Michel said the Wilcox implementation of the server is in good shape, but is needing a few tweaks on the client side.

Tim asked about the need for calibration and sensor data on the interface. Josef responded that position of the I++ DME spec writers is that DME server is responsible for accuracy of machine and tool and the calibration must be done by the server. However, the client can give a command to the server to perform a re-qualification of [any or all] tools. In DMIS there is the possibility to generate nominal data for sensors (where the client must know sensor details), but the I++ DME will only allow the client to command a re-qualification. Dave said that the data obtained after the calibration is required by DMIS. We agreed that this should be an issue for discussion in Stuttgart.

4 Status and update on I++ DME test suite

Michel used version 2.1 of the NIST test suite internally, and over the Internet with Perluigi's server, and said that it works nicely. However, SetCsyTransformation tests, depending on the origins of the machine, may not move without crash to the machine. This is a caution about the specification of machine origin. Tom said that, for example, Zeiss uses negative Z-values and Mitutoyo uses positive Z-values and, therefore, the intersecting space is empty. Michel said that we have in the script some offset values for the GoTo command, but the client software has to have knowledge. Tom said that the current test file file-format specification is very simple and will not allow interaction with the client. Michel suggested that we expand the client-side utility so that it actually builds test files dynamically with appropriate coordinate system limits. It would also be good if the client-side utility would compare actual output to the expected output by applying appropriate metrics.

Michel suggested another improvement, namely, add another layer of text file that could be used to automate the execution of test cases. Tom suggested using a free utility called Expect (written by Don Libes of NIST) that is used to automate the execution of tests.

Michel suggested a small improvement. The client-side test utility is now preset to send ClearAll. It would be nice to have a small subset of windows like this but with commands preset to (at a minimum) other commands such as, StopSession, EndSession and Rewind (rewind the particular test case in use, that is), and Stop. He said it is generally burdensome to have to type these additional commands into the windows as they are needed.

Michel noted that he sometimes gets a "Timer error" message when using the test suite. He doesn't think it is coming from the server. He asked NIST to find out what are the conditions that trigger the timer error message.

NIST staff held a meeting recently to determine the tasks needed to produce the next version of the test suite (probably version 3.0). This will take some time, mostly to design more test cases, particularly on the server-side.

Tom generated two DMIS 4.0 programs for inspecting the simple I++ test artifact. The two files offer two different alignment methods. Tom asked if people are using 3.0 as well as 4.0. Dave said it would be OK to switch to 4.0, but he said he would discuss this and get back to the group at the next conference call.

Michel asked Josef, What happens to the server when we call the base tool? Can we assume that the "base tool" is always the current one on the server or is it a particular tool? Tom said base tool is a logical tool but don't know that it maps to a physical tool. Josef said it is like a base class in object-oriented programming and so is a virtual tool. Michel said then that we should call default tool, Tom said that there is no default tool in the spec. "Reference tool" has a special meaning (has (0,0,0) offset). Michel asked what tool should the test suite use. Tom said that we have a tool defined on the server-side utility, but use "base tool" in the client-side test cases, since most of what we do assumes no real physical tool. However, for the few test cases that do assume a physical tool, Tom agreed that it would be good to have a real tool defined. Michel wants us to document a particular name of the tool. In which case will one use the base tool. Josef said he didn't know precisely what "base tool" means, but will get back to us on it. Rene said that had the same problem [as Michel].

5 Action items

- NIST will find out what the conditions are that trigger the timer error message in the test suite version 2.1 and report back to the group.
- NIST plans to generate a schedule for developing Internet connections between client and server implementations.
- NIST will discuss the improvements to the spec suggested by Michel at this meeting.
- Implementors will send use cases on the incompatibility and harmonization issues between DMIS and I++ DME to Gerd or Josef, for inclusion in the 2nd day of meetings planned for April 20th and 21st in Stuttgart.
- NIST will work on and send out a new interoperability testing schedule to the group.
- NIST will send out a spreadsheet of preliminary interoperability testing metrics to the group.
- We will discuss (in Stuttgart) plans of the I++ group to allow the I++ DME spec to go to an international standard (e.g., ISO) after completion of their work.

Next meeting planned for March 8, 2004.