

## Meeting notes for August 9, 2004 I++ DME implementer's conference call

Meeting secretary: John Horst  
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Name	Organization	Present
Ray Admire	Lockheed Martin	
Manfred Becker	Zeiss	✓
Perluigi Borgogno	Wilcox Associates	
Andrew Cheetham	LK	✓
Dick Engel	GMPT	
Joe Falco	NIST	
Sandy Gill	Ford	
Swen Haubold	Mitutoyo	
Erhardt Heft	Zeiss	
John Horst	NIST	✓
René Keller	Metromec	✓
Tom Kramer	NIST	✓
Chuck Leckenby	Tecnomatix	
Jerry Lewis	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	
Harald Schmitt	Zeiss	✓
Ken Sheehan	Entelegence	
Dave Smith	LK	
Rob Stewart	Daimler-Chrysler	✓
Tim Taylor	General Electric Transportation	
Jose Torres	Zeiss	
Mark Vinson	Boeing	
Bob Waite	Daimler-Chrysler	
Betsy Weddendorf	General Electric Transportation	
Martin Wimmer	Zeiss	
Ron Wood	GMPT	
Ken Woodbine	Hexagon	
John Wootton	LK	✓

## 1 IMTS demo

John Horst reported on various items relating to the planned demonstration of I++ DME interoperability at the International Manufacturing Technology Show (IMTS) to be held in Chicago Sept 8-15, 2004. Dave Smith reported via email that LK conducted successful tests with the Wenzel (Rene Keller of Metromec) server using the NIST simple part. John Wootton added that LK has also tested their client on the Renishaw UCC server. John Wootton also said that issues relating to the CRADA with NIST should be cleared up soon, so that their client can be sent to the NIST testbed within a week or two.

NIST and Zeiss conducted successful tests between the PCDMIS client (at NIST) and the Zeiss server (at Zeiss in Germany), using the DCX part and the DMIS inspection plan. Congratulations go to Walter Punegam and Bill Rippey (and their supporters) for reaching this important milestone! Several other tests between other clients and servers have either already begun or are on the way, including test between eM-Inspector and the Zeiss server and between the Wenzel server and three clients (PCDMIS, eM-Inspector, and Metrosoft).

The issue of I++ DME spec version compatibility was discussed. It was mentioned that Tecnomatix targeted version 1.3. Bill mentioned that we will find out very soon what the version number issues are when tests are conducted between eM-Inspector and Zeiss and Wenzel, but he figured there would be only one or two items of importance. Jerry said Tecnomatix is committed to work these things out as soon as possible.

Josef mentioned that Zeiss intends to send their client to Jose Torres who work directly with Bill at NIST to get the software set up and working at the NIST testbed.

Tom argued for IMTS demo participants to follow a forked path of client/server implementation development, in which one path is an implementation version that continues to follow the latest version of the I++ DME spec (1.4.1) if they so desire, but the other path is frozen on version 1.4 and is targeted for the IMTS demonstration. There was no reply to this request, which silence NIST takes as a "yes!"

Commitments to IMTS participation have not changed since our last conference call:

Company	Node type
Zeiss	I++ DME Server
Hexagon (Sheffield)	I++ DME Server
Wenzel	I++ DME Server
Metrologic	I++ DME Client
Tecnomatix	I++ DME Client
Hexagon (Wilcox)	I++ DME Client
LK	I++ DME Client
Metromec	I++ DME Client
Zeiss	I++ DME Client
DCS	DML-interpreting SPC software
Delmia	Offline Programming

## 2 I++ DME specification

Tom raised the issue of the use of `GetProp(Tool.Radius())`. He mentioned that log files, resulting from the few interoperability tests performed at NIST, reveal that all of the client implementations are using the command `GetProp(Tool.Radius())` even though it is not in version 1.4 of spec (or any other version), and all of the server implementations are sending responses as though the command were legal. He also pointed out that the only tool radius data supported by the spec is that the client can put ER (effective radius) in an `OnPtMeasReport` or `OnScanReport` command, and then, whenever a touch point is reported, the effective radius for that touch point will be returned by the server.

Tom suggested that perhaps `GetProp(Tool.Radius())` should be allowed in the software used at the IMTS demo, even though it does not comply with the spec. John emphasized the desirability of not allowing deviations from the spec. A long discussion ensued about the issue of getting tool radius data, including nominal vs. actual radius data.

Rob argued that client software needs access to a good average actual radius value in order to do tasks such as searching for features. He pointed out that nominal data may be so different from actual data as to be unusable.

Jerry said that tool radius is needed to do mapping automatically, but they can manage a manual work-around.

Josef said that it is not the I++ DME philosophy to allow sensor technology related information on the interface, however, a probe compliment set of sensor related data (perhaps including tip radius and sensor geometry sufficient for collision avoidance) is under discussion. John Horst asked when they plan to make a decision on this and Josef replied that they have not yet set a date to make this decision, since they are focused on optical sensor functionality.

Tom then asked if the implementers would be willing to send [to NIST] a statement saying whether they must have tool radius. If they must have it, does it have to be actual, or can it be nominal? If they do not need tool radius, what has to be done with their code (for measurement procedure and setup) to allow for this loss of data? If they do need tool radius, why do they need it? Bill replied that if this effort will require substantial changes in existing code, we can have a major problem on our hands to make the IMTS demonstration deadline.

Since the last conference call meeting, Gerd Becker sent out a new version (1.4.1) of the specification, which incorporates changes made in response to comments received from implementers and NIST. He also sent out a spreadsheet listing each of these comments and the specific action taken by the I++ DME group in response to each comment.

After the meeting Tom mentioned that GetProp(Speed.Max) is also used in many of client and server implementations, but is not allowed in the version 1.4 spec. It was placed back in the 1.4.1 spec (correctly, NIST argues). John Horst suggests allowing this small departure from version 1.4 in the implementations.

### **3 I++ DME and DMIS harmonization**

John Horst reported that a meeting has been set up for the late afternoon of Sept. 14, 2004 at the IMTS show in Chicago to discuss I++ DME and DMIS harmonization. This is not an open meeting and Bob Waite should have sent out invitations already.

### **4 Metrology Interoperability Meeting**

John Horst reported that a meeting has been set up for Sept. 14, 2004 at the IMTS show in Chicago of the AIAG Metrology Interoperability Project Team to discuss progress and plans. CAD interface issues will be discussed, the interaction between DML and QML will also be examined, I++ status will be given by Gerd Becker, and DMIS conformance class progress will be looked at. This is an open meeting and all are invited.

### **5 Progress on the NIST I++ DME test suite**

John reported that NIST is nearing release of version 3.0 of the test suite and that NIST is testing the software and updating the users manual.

### **6 New and outstanding action items**

- Implementers will ensure that at least one version of their I++ DME implementations (whether server or client) will remain compliant to version 1.4 of the specification, and that version will be dedicated for the IMTS demonstration
- Implementers will please send a statement to NIST saying whether they must have tool radius. If they must have it, does it have to be actual, or can it be nominal? If they do not need tool radius, what has to be done with their code (for measurement procedure and setup) to allow for this loss of data? If they do need tool radius, why do they need it?

Our next meeting is planned for August 23, 2004. I look forward to speaking with you then!