

Minutes of meeting 9 January, 2001, at Mercury Computer Systems, Boston, MA

1. Attendance

1.1 *Forum Attendees*

- Ed Baranoski MIT/LL
- Gary Boudreaux MPI Software Technology
- Dan Campbell GTRI
- Robert Graybill DARPA
- Rob Ginn Navy
- Bill Harrod SGI
- Randy Janka Cadence
- Randy Judd Navy
- Jamie Kenny Mercury
- James Lebak MIT/LL
- Don Orofino The Mathworks
- Steve Paavola SKY
- Rick Pancoast Lockheed Martin
- Mark Richards GTRI
- Joe Schaff Navy
- Tony Skjellum Mississippi State U.
- Win Smith DNA Enterprises

1.2 *Other Guests*

- Jim Waggett CSPI
- Bob Bond MIT/LL
- Janice McMahon MIT/LL
- Jeremy Kepner MIT/LL

2. Next Meeting – San Diego, March 27-28 nominally

2.1 *Issues for 1.0.1 discussed*

- 2.1.1 Various minor, uncontentious fixes
- 2.1.2 Randy Judd reviewed changes from previous meeting
- 2.1.3 Cumsum functions moved to Matrix & Vector Unary operations chapter by acclamantion
- 2.1.4 Ckron – arguments changed to cscalars

3. Action Items from last meeting

3.1 *Items updated or changed:*

- 3.1.1 Rand
- 3.1.2 Getattr
- 3.1.3 Putattr
- 3.1.4 Matrix view function names
- 3.1.5 Ttransview_p
- 3.1.6 Fcreate argument error
- 3.1.7 Data ownership ambiguity
- 3.1.8 SVD consistency

a) Many small issues/changes – no complaints

3.2 *Forum should review submitted changes and updates and vote on 1.0.1 next meeting*

4. VSIPL 1.1 Issues

4.1 *Image Processing*

- 4.1.1 Tabled unless something motivates further work
- 4.1.2 However, Win Smith of DNA Enterprises will look at this further; see ¶9.

4.2 *Input/Output*

- 4.2.1 Should there be an ID code to validate object compatibility? How will registration of that be handled?
- 4.2.2 Judd reviews his proposal for how to accomplish I/O (import/export/size)
- 4.2.3 Much discussion ensued, resulting in the following proposed paradigm, by acclamation:

- a) `Obj *B = import (Obj *A, null *data);`
 - (1) **B = new object**
 - (2) **A = object to be overwritten (or NULL for no object)**
 - (3) **Data = pointer to memory image of object – which memory is “owned” by VSIPL until B is destroyed**

- b) `Size_t size_used = export (Obj* A, null *memory, size_t N)`
 - (1) **Size_used = amount of memory used for export**
 - (2) **A = object to export**
 - (3) **Memory = pointer to memory space for export**
 - (4) **N = maximum amount of space to use for export**

- c) `Null *data = find (Obj *A)`
 - (1) **Data = pointer to the memory space for imported object A (or NULL if A is not an imported object)**
 - (2) **A = object for which to find the memory image**

- d) `Size_t N = size (Obj* A)`
 - (1) **N = size required to hold memory image of object A**
 - (2) **A = object for which memory size query is being made**

4.3 SVD

4.3.1 Harrod will look into SVD and propose some appropriate functionality

4.4 JOD Review

4.4.1 Error messages – Ginn has looked at it but has not had the time to make a formal proposal

4.5 Iter/free views

4.5.1 Tabled for now

5. Test Suite

5.1 *Campbell reviewed status*

5.1.1 Version 1.0 released

5.1.2 Some feedback from Judd regarding documentation, will be implemented

5.1.3 Awaiting further feedback from the field

5.2 *Current plans regarding moving on to Core, and/or adding additional functions to the Test Suite are undetermined*

6. Presentations

6.1 *Ed Baranoski, MIT/LL*

6.1.1 Described the High Performance Embedded Computing (HPEC) Software Initiative begun by MIT/LL and MITRE

a) Project to reinvigorate development and integration of embedded middleware standards

6.2 *Bob Graybill, DARPA*

6.2.1 Provided an overview of DARPA embedded systems projects, and specifically the new Polymorphous Computing Architectures effort.

6.2.2 Mentioned an interest in supporting non-DoD market, with graphics as an example

7. Chair Elections

7.1 *Voting institutions:*

- GTRI
- SGI
- NAWL
- SPAWAR
- Mercury
- MIT/LL
- Sky
- Lockheed/Martin

- CSPI
- MSTI

7.2 *Mark Richards, James Lebak, and Rick Pancoast elected by acclamation after discussion of number of co-chairs and types of institutions from which chairs should be drawn*

7.3 *The Forum thanks outgoing co-chair Randy Janka for his efforts*

8. Vendor Reports

8.1 Mercury

8.1.1 Core Lite is in place. They have expanded into matrix functionality somewhat

a) For example, need some matrix functionality to implement a corner turn

b) Customers have not yet requested matrix

8.1.2 Lots of inquiries about expanded functionality, but not many customers willing to pay for it yet

8.2 DNA

8.2.1 Developing optimized VSIPL Core for PPC boards

8.2.2 Have seen large interest in VSIPL in US

8.2.3 Have seen about 50% interest in VSIPL in Europe

8.2.4 Customers have mixed opinions about extensions

a) Example: some want FFT with attached windowing

8.3 Sky

8.3.1 Shipping VSIPL for 10 months now

a) More than one precision available

8.3.2 Sky code is derivative of TASP code

8.3.3 VSIPL is part of the standard OS release, so no specific customer counts are available

a) **Janka suggests asking their customers directly.**

8.4 Compaq

8.4.1 Compaq does not yet see customer demand for; suspect situation is similar at Sun, maybe HP.

8.5 MSTI/MPI Software

8.5.1 Been shipping Core Lite for a long time now

8.5.2 Large G4 deployments

8.5.3 Lynx/OS for other OEMs

8.5.4 VxWorks is late with G4 C++ support, which is delaying deployment

8.5.5 Core version for several platforms is optimized

8.5.6 Lots of OEM interest in Europe, US, Japan

8.5.7 Mac/OS, Linux versions in place, but weak demand

8.5.8 Pentium/SSE optimized version by end of summer

8.5.9 Second release of Core by end of '01

8.5.10 MSTI implementation has a lot of C++ under the hood, favorable for supporting a C++ binding

8.5.11 Investigating/making a Java version of VSIPL

9. Invited Comments from new attendee DNA

9.1 *Will mail some Image Processing (IP) ideas/comments to the forum mailing list soon*

9.1.1 IP could take over the Forum if we aren't careful

9.1.2 Jamie Kenny mentions need for binary types and operations

9.2 *Recommends investigation of joint time/frequency space functions*

10. Users Group

10.1 *Much discussion of purpose,, content, intended audience, and marketing*

10.2 *Initial Target:*

10.2.1 2 day, conference style

10.2.2 In Atlanta

10.2.3 Early June target if Richards is available for organizing and hosting, else October

10.3 *Goals/plans for UG meeting*

10.3.1 History of the forum and status of VSIPL

10.3.2 Where to get info

10.3.3 Tutorials

a) General, intro

b) Specific, advanced techniques, proper VSIPL, correctness

10.3.4 Performance/Price info

10.3.5 Example applications

10.3.6 Show how it relates to other standards

10.3.7 Products/Feedback

10.4 *Marketing*

10.4.1 Approach Linux/Free software folks for publicity

10.4.2 Advertise at COTSCon

11. Revisit Next Meeting plan

11.1 *Late march, San Diego*

11.1.1 Editor's note: subsequently scheduled for Tuesday, 27 March

11.2 *Finalize 1.0.1*

11.3 *Approve I/O*