Minutes of Meeting 139

X3J3 ANSI Fortran Standards Committee

November 11-15, 1996

Las Vegas, Nevada

X3J3/96-180

Accredited Standards Committee* X3,
Information Technology

Larry Rolison
Cray Research, Inc.
655F Lone Oak Drive
Eagan, MN 55121

(612) 683-5807
`lrr@cray.com`

NOTICE: X3J3 Meeting Number 139
Meeting Attendance Open to All Interested Persons

TIME: November 11-15, 1996, 8:30-5:00 each day
Draft agenda accompanies this Notice

PLACE/HOTEL: Sunrise Suites
4575 Boulder Highway
Las Vegas, NV 89121

Phone: (800) 362-4040
(702) 434-0848
FAX: (702) 434-2513

HOST: Mallory North (acting)

MEETING FEE: None

Use the keyword "X3J3" when making your reservation. If you have any difficulties making the reservation with the hotel, ask to speak with the Sales Manager, Valerie Troisi. The group rates are $40 per night single or double occupancy plus 8% tax. If you are in need of further information regarding the meeting, you may contact Larry Rolison (phone/address info given above) or Jerry Wagener (X3J3 Chair; `jwagener@ionet.net`).

Note that **NO** X3J3 standing documents will be available at the meeting. Please bring them with you to the meeting.

*Operating under the procedures of the American National Standards Institute (ANSI)

Meeting 139 Minutes

Note: The numbering provided in the minutes follows the agenda for sections 1 and 5 and parts of some other sections. All technical work performed during the meeting is contained in section 2.

1.1 Opening Business

Meeting #139 of the X3J3 ANSI Fortran Standards Committee was held at the Sunrise Suites Hotel in Las Vegas, NV, November 11 through 15, 1996. Jerry Wagener was the Chair; Larry Rolison as vice-chair led certain discussions; Stan Whitlock took the minutes.

1.2 Meeting objectives (work plan) and Chair's report

Objectives for the meeting were the items listed in the X3J3 work plan, paper X3J3/96-115r6, plus making arrangements for the February, 1997, joint meeting of X3J3 and WG5. Miles Ellis, convener of the WG5 ISO Fortran working group, was present.

1.3 Adoption of agenda

Motion (Moved by C. Dedo; seconded by L. Meissner): adopt amended agenda. Passed: unanimous consent.

1.4 Review Meeting 138 action items

- o S. Whitlock to communicate to J. Martin the questions X3J3 had about paper X3J3/96-121. Action: done.

1.5 Secretarial arrangements

The secretary for this meeting is S. Whitlock, who volunteered. The secretary for meeting #140 (joint with WG5) will be L. Meissner, who volunteered. The secretaries for meetings starting with #141 will be on a rotating basis, using a selection algorithm from L. Rolison. He has chosen to go alphabetically through the membership list so the secretary for meeting #141 is K. Bierman.

The minimum contents for the minutes are who presided, who was the secretary, and all formal actions taken. Anyone can request to have something placed in the minutes; details of discussions will be in the minutes if and only if a scribe is appointed for that discussion.

1.6 X3/OMC report

Brief report provided by J. Wagener.

1.7 WG5 report

M. Ellis reported on ISO and WG5 business:

- o SC22 approved the Conditional Compilation proposal as Part 3 of ISO 1539 (David Epstein project editor)

- o ISO has always claimed the copyright on Draft International Standards documents. Now it claims the copyright on all Working Group documents. SC22 is opposed to this since it limits document transmission outside the Working Group.

- ISO is considering electronic distribution in 3 steps: diskette, plus email, and then plus server. SC22 opposes the use of diskette and already uses email. The copyright issue above may limit the usefulness of servers.

- ISO has removed generic Postscript as a distribution format;
  ASCII and PDF are allowed.

- The "old" rules for processing DIS ballots were to allow some "editorial" changes to the passed DIS. The Fortran 95 DIS is being processed under these rules.

  The "new" rules will not allow any changes (maybe extremely minor typographical fixes) or the DIS is rejected and must start again as a Committee Draft (CD). This means that the procedure will be to have 2 or more CD ballots with the last CD ballot clearly identified as the last chance to make changes.

- The Fortran 95 DIS ballot period is 26-Sep-1996 to 26-Jan-1997.

- WG5 has the following work items:

  - Fortran Standard part 1 - Fortran 2000
  - Exception Handling Technical Report (TR) - Proposed Draft Technical Report (PDTR) ballot has not yet started
  - Data Type Enhancements TR - PDTR ballot has not yet started
  - Interoperability with C TR - should have a document by the end of 1996 so a PDTR ballot could start in Spring, 1997
  - Fortran Standard part 2 - Varying String Module
  - Fortran Standard part 3 - Conditional Compilation

- The schedule for Fortran 2000 is:

  - Technical work completed by Feb-1998
  - Integration work completed by Feb-1999
  - 2 CD ballots
  - 1 DIS ballot

1.8 Treasurer's report

Brief report provided by M. North.

1.9 Beginning membership report

There are 19 members present. Walt Brainerd (who had missed 2 of the last 3 meetings and thus whose membership was in danger) was present. David Levine has left HP; the new principal representative is Reva Sacks; Rich Bleikamp will remain the alternate. Visitor: Miles Ellis (WG5 Convener).

1.10 Local arrangements

1.11 Comments from members

Edits for the Minor Technical Enhancements (abbreviated MTE), as listed in paper X3J3/96-115r7, can either be deferred until the Fortran 95 DIS is passed or can be created against document X3J3/96-007r1. In any case, the editor will not be updating the F95 document for F2000 until sometime after F95 passes.

1.12 Subgroup organization

- o JOR: S. Whitlock (head), C. Dedo, L. Rolison, B. Runyan
- o I/O: R. Bleikamp (head), W. Brainerd, L. Meissner, J. Adams
- o HPC (formerly NUM): D. Hendrickson {head}, K. Bierman, B. Kearfott, T. Warnock
- o DATA: J. Cuthbertson (head), D. Epstein, K. Hirchert, R. Maine, J. Martin, M. Ellis

2.0 Technical Work

2.1 F2000 Requirement R.1 Derived-Type I/O - paper X3J3/96-177

Straw vote: Should the user be allowed to define derived-type I/O in unformatted I/O?
Yes=11, No=0, Undecided=5

Motion: (R. Bleikamp/S. Whitlock) Accept paper X3J3/96-177 as the functional spec for Derived-Type I/O.
Passed: unanimous consent.

The I/O subgroup will consider extending derived-type I/O to intrinsic types (list-directed and NAMELIST I/O could be a problem). The subgroup will consider at a later time whether all I/O within the derived-type I/O definition should be non-advancing.

2.2 F2000 Requirement R.2 Asynchronous I/O - papers X3J3/96-158, r1, r2, X3J3/96-164

The I/O subgroup will roll option #2 of paper X3J3/96-164 into the revision of paper X3J3/96-158.

Straw vote: Spell out ASYNCHRONOUS? Yes=4, No=7, Undecided=4
Straw vote: Use HANDLE= / use ID= / undecided. 1 / 10 / 6
Straw vote: Add an ASYNC statement? Yes=6, No=0, Undecided=10
Straw vote: Now that we understand what the ASYNC statement is, add an ASYNC statement?
Yes=15, No=0, Undecided=1

Motion: (R. Bleikamp/J. Adams) Accept paper X3J3/96-158r2 as syntax for async I/O.

Straw vote: Spell out ASYNCHRONOUS / abbreviate as ASYNC / undecided. 9 / 7 / 1
Straw vote: Should all variables in the I/O list be protected? Yes=4, No=3, Undecided=11
Straw vote: Allow only PURE functions in any part of I/O list? Yes=9, No=2, Undecided=6

Vote on original motion: Passed: unanimous consent.

Motion: (L. Rolison/C. Dedo) X3J3 communicates its work on async I/O to HPF and ask them to cease development of async I/O. Failed: Yes=3, No=11

Motion: (K. Bierman/L. Meissner) J. Wagener to communicate to HPF our actions on async I/O.
Passed: unanimous consent.

J. Wagener circulated a draft of the message he would send to HPF.

2.3 F2000 Requirement R.3 Procedure Pointers - paper X3J3/96-174

Straw vote: Like the concept of a named INTERFACE block? Yes=13, No=0, Undecided=3

DATA subgroup will reconsider whether to add a requirement that procedure pointers should require an explicit interface; the current proposal has no such requirement.

2.4 F2000 Requirement R.4 Interval Arithmetic

Paper X3J3/96-156 describes interval arithmetic in more detail. Paper X3J3/96-065 was the preliminary specification.

Paper X3J3/96-166 describes I/O of intervals.

Paper X3J3/96-171 gives reasons why interval arithmetic should not be implemented as a module.

Paper X3J3/96-173 describes how to make interval arithmetic optional.

Straw vote: Pursue interval arithmetic as an intrinsic data type where the processor may provide 0 or more interval KINDs? Yes=6, No=7, Undecided=4

Paper X3J3/96-175 addresses intervals in mixed-mode arithmetic

Straw vote: Allow mixed-mode arithmetic of intervals with other numeric data types? Yes=10, No=4, Undecided=3

2.5 F2000 Requirement R.5 Parameterized Derived-Types - paper X3J3/96-176

Paper X3J3/96-141r1 passed at meeting #138 as specs.

Motion: (K. Hirchert/R. Maine) Accept X3J3/96-176 plus X3J3/96-141r1 as syntax for Parameterized Derived-Types.

Straw vote: Retain restriction that parameters must be declared in order of appearance? Yes=5, No=5, Undecided=7

Vote on original motion: Passed: Yes=13, No=2

2.6 MTE M.4 Specifying Pointer Lower Bounds - paper X3J3/96-154

Motion: (J. Martin/R. Maine) Accept paper X3J3/96-154 as the edits for MTE M.4.
Passed: unanimous consent.

2.7 MTE M.6 Extended Initialization Expressions - paper X3J3/96-165

Straw vote: Option #3 (plus all conversion intrinsics)? Yes=15, No=0, Undecided=1
Straw vote: Option #4 (plus all elemental intrinsics except math)? Yes=10, No=2, Undecided=3
Straw vote: Option #5 (include all elemental intrinsics)? Yes=6, No=7, Undecided=3

Motion: (L. Meissner/J. Adams) Do option #4 as specs for MTE M.6. Passed: unanimous consent.

Note: Option #4 means that MTE M.6 will subsume MTE M.9 (allow MERGE in constant expressions)

Straw vote: Create a MTE to allow a named constant as part of a COMPLEX constant?
Yes=10, No=3, Undecided=3

Motion: (L. Rolison/S. Whitlock) Create MTE M.17 to allow named constants in complex constants.
Passed: Yes=9, No=2. L. Rolison is the champion.

2.8 MTE M.10 Named Scratch Files - paper X3J3/96-169r1

Motion: (C. Dedo/S. Whitlock) Accept paper X3J3/96-169r1 as specs and syntax for MTE M.10.
Passed: Yes=7, No=5

2.9 WG5/Miscellaneous list of Fortran 2000 Requirements - papers X3J3/96-168 and X3J3/96-178

Paper X3J3/96-178 records the straw votes taken on the requirements in X3J3/paper 96-168 that will be communicated to Christian Weber and the WG5/misc subgroup.

2.10 Interoperability with C - paper X3J3/96-153

J. Wagener exchanged mail with M. Hennecke during the meeting, reporting that X3J3 suggests that the fewest restrictions be placed on the argument types. M. Hennecke explained that "assignment of a variable argument list makes a true copy" meant that a copy of each of the args is made so after VB=VA, a callee can modify any of the args in its actual argument VB without affecting the args in the original VA.

2.11 Object-Oriented Fortran

Tutorial by J. Cuthbertson - based on paper X3J3/96-114

Paper X3J3/96-172 describes a minimal proposal for OOF.

Straw vote: X3J3 wants J. Cuthbertson to send paper X3J3/96-172 to the WG5/DATA reflector?
Yes=13, No=1, Undecided=2
Straw vote: X3J3 wants to keep run-time resolution of pointers in OOF? Yes=6, No=6, Undecided=4

2.12 Conditional Compilation - paper X3J3/96-162r1

Papers X3J3/96-160, X3J3/96-161, and X3J3/96-163 contain comments and responses on the CoCo spec. David Epstein received input from X3J3 on the CoCo spec.

3.0 Scribe notes for strategic direction discussion - paper X3J3/96-155

Scribe Notes by L. Meissner

Cuthbertson: What is meant by: "We should consider canonizing compiler flags ..." ?
A (Bierman): At present, with each new version users have to change their makefiles or equivalent that specify compiler options.
Cuthberston: Then how can portability be achieved?
A: Use POSIX as a model. Establish a set of flags that others may eventually adopt.
===
J. Adams: Content of the Fortran standard language should NOT be frozen after F2000. New ideas will emerge that should be incorporated.
A: That is not being proposed.
===

R. Maine: Some additional objectives, besides those listed in 96-155, may be even more important:

1. Expressive power of the language. Some data abstraction improvements can be made that will improve this area.

2. Evolution - obsolescence issues: "never remove anything" vs. "clean it up as fast as possible". An approach rejected a few years ago should perhaps be reconsidered: standardize a subset language. Such reconsideration should not necessarily be influenced by the current unstandardized subsets, whose objectives do not emphasize language evolution.

J. Martin: Agree that the objectives in 96-155 are too restrictive; expressiveness should be added. We are now at a threshold regarding parallelism; Fortran's response must be as bold as its response in the 1950s to the assembly language crisis. Fortran must look to the future.

R. Hendrickson: Don't standardize a subset now. There is still heavy use of legacy features, so they would have to be accommodated somehow in any subset implementation. A standard without legacy features would be difficult to construct: During construction of such a standard, we would still need to consider how actual implementations of the subset will treat legacy features.

===

K. Bierman: The list in 96-155 was intentionally short to emphasize which objectives are most important. Is innovation the business of a standards committee? Certainly not the *central* business. Agree that innovation in parallelism is justified to spread costs.

The focus should be on customer requirements as currently recognized. Ultimately we are going to have the same interoperability issues that we face today with C. That is, system interfaces will be defined and we will want to bind to them.

8 years ago, had we been trying to add OOF, the logical contender would have been Smalltalk.
5 years ago it would probably have been objective C and C++ (perhaps eiffel, but I didn't say it).
2 years ago it would clearly have been C++. Today it's probably C++ and Java.

Had we been faster off the mark, we could have seen ourselves free to invent an object model. But today is both too late, and too soon. It's too late to be innovative, and too soon to recognize the sure winner.

Efforts such as CORBA to bridge the gaps result in hideous interfaces that, to date, customers have largely avoided.

===

J. Adams: What ever happened to the "Core Plus Modules" model of the early 1980s?

M. Ellis: We have conflicting requirements: preservation of legacy codes vs. developing new tools to support new paradigms; meanwhile, a language can't keep growing forever. Two possibilities that have been suggested are obsolescence and subsetting. Or a totally new language, as once proposed?

L. Meissner: Perhaps Fortran *can* continue to grow. Some vendors seem committed to continue support of old standard features as well as old vendor extensions. Computers are getting larger and faster; word processors and other common software products keep growing at a faster rate than Fortran.

K. Bierman: In the long term, the problem is irreconcilable. Some other languages have split into two separate standards. The worst approach is to bury the problem with a compromise that satisfies nobody. Two separate languages would be better than that.

T. Warnock: The needs of some users change very little. Emphasis should be on satisfying the current needs of users, in ways that they can use to get good answers quickly. Elegance is only a means to an end, and should not interfere with solving real user problems.

W. Brainerd: Keeping extra old features is not cost-free; may be partly responsible for the high current cost of Fortran compilers. But removing a few little features every 5 years solves nothing and merely irritates users. Maybe it would be better to start a new effort with new people.

B. Runyan: Why keep obsolescent features in standard? Remove them and let vendors supply them as extensions.

A (Warnock): There are legal reasons to keep them in.

A (Bierman): The question is how old features interact with new ones. These interactions need to be standardized.

R. Maine: Agree that a bigger language imposes costs. Even if it is obvious that vendors will keep old features, we should not keep adding. Keeping features in a standard is more expensive than permitting them as extensions. Agree that deleting a few at a time is annoying and gains little. Maybe a split is warranted, but would have to be done very carefully, and would need to be done by a knowledgeable group, such as two halves of current committee.

A (Bierman): That would not work.

R. Hendrickson: Agree that deleting everything on current obsolescent lists would not significantly reduce the size of the language.

Recent creations of X3J3 have worked well - X3J3 should not be restricted to "canonizing" existing vendor extensions. Early language innovation came from vendors, but vendors are now creative only in areas such as command line flags; only X3J3 is looking at the broad language design picture.

M. Ellis: Current standards bodies have the momentum and long range perspective required for a continuing process. The current "major - minor revision" model seems to require action too often: we feel impelled to do *something* every four or five years.

C. Dedo: We should keep in mind where we really want Fortran to go in the long run. What should be our time frame? I believe that it is the years 2001-2012. What will the world be like then? What features will users want?

Please remember that the Fortran user community is large and diverse. The users are not solely or even primarily those who create high-powered numeric applications. There are many other application areas. Some user groups would strongly disagree with the priorities listed in 96-155.

We need to put much more emphasis on human productivity. What is cheap? Disk space is cheap, RAM is cheap, even compute cycles are cheap. What is expensive? People's time is expensive. Mistakes are horribly expensive. So is ill will from customers. Therefore, anything that we can do to make people more productive, i.e., allow them to create their applications with less effort and fewer mistakes is well worth doing.

A (Bierman): Other languages emphasize productivity; this should not be a major criterion for Fortran.

L. Meissner: A major advantage of Fortran is the available safety features. We should make them easier to enforce.

T. Warnock: For large users, our ambition always grows faster than our hardware. Waiting for answers is not productive.

J. Cuthbertson: Our experience agrees with Bierman: run-time performance and compiler speed are important. Old features are wanted and must be supported, regardless of their standardization status.

B. Kearfott: Productivity has various aspects.

Straw vote: Remove the concept of "obsolescent/deleted" features in Fortran 2000.
Yes=7, No=4, Undecided=5

Paper X3J3/96-167 was available after this discussion took place.

4.4 Reaffirm/withdraw Fortran 90 (X3J3/96-152, 96-157)

Paper X3J3/96-157 points out that FORTRAN 77 is not a subset of Fortran 95 so Fortran 90 should remain a standard so FORTRAN 77 programs will be standard-conforming.

Motion: (S. Whitlock/L. Meissner) X3J3 recommends to X3 to reaffirm Fortran 90. A roll call vote is required.

Move to table until May-1997: (L. Meissner/R. Maine). Passed: Yes=12, No=3

5.5 Approval of meeting 137 minutes

The minutes of meeting #137 (paper X3J3/96-088r1) were checked and some typos fixed.

5.6 Approval of meeting 138 minutes

Motion: (C. Dedo/S. Whitlock) Approve paper X3J3/96-151 as the minutes of meeting #138 as amended. Passed: unanimous consent.

5.7 Closing business

Paper X3J3/96-170r1 describes the agenda and process for the February 1997 joint meeting of ANSI/X3J3 and ISO/IEC JTC1/SC22/WG5.

All documents at meeting #140 will be X3J3 documents; M. Ellis will choose which ones become WG5 documents. The first documents for #140 will start with:

97-101 = Derived-Type I/O (paper X3J3/96-177 or successor - R. Bleikamp responsible)
97-102 = Asynchronous I/O (paper X3J3/96-158r2 or successor - R. Bleikamp responsible)
97-103 = Procedure Pointers (papers X3J3/96-142, 96-146, 96-174 or successor - R. Maine/ K. Hirchert responsible)
97-104 = Parameterized Derived-Types (papers X3J3/96-141r1, 96-176 or successor - R. Maine/ K. Hirchert responsible)
97-105 = Interval Arithmetic (paper X3J3/96-156 or successor - B. Kearfott responsible)

97-106 = Minimum Object Oriented Fortran (paper X3J3/96-172 or successor - J. Cuthbertson responsible)
97-010 = X3J3 Work Plan (paper X3J3/96-115r7 or successor - J. Wagener responsible)

Papers must be on the server by Monday, January 27, 1997 so all papers must be to M. North by Thursday, January 23, 1997.

5.8 Future Meetings

Motion: (C. Dedo/M. North) February, 1998, meeting will be held in Lafayette, LA; B. Kearfott to make arrangements.

Straw vote: Hold February 1998 meeting in Lafayette / in New Orleans / undecided: 13 - 3 - 0

Vote on original motion: Passed: unanimous consent.

Straw vote: M. North to host May, 1998, meeting around Terre Haute, IN, abutting Memorial Day. There was no objection.
Motion: (C. Dedo/M. North) M. North to contract with Sunrise Suites in Las Vegas for 12-16-Aug-1997 and November 11-15, 1997 meetings. Passed: unanimous consent.

#140 February 10-14, 1997 in Las Vegas, NV (joint meeting with WG5)
#141 May 12-16, 1997 in Las vegas, NV
#142 Aug 11-15, 1997 - we have a contract for Las Vegas; L. Rolison looking at Minnesota or Colorado

Motion: (C. Dedo/L. Meissner) X3J3 gives permission to M. North and L. Rolison to contract the August 1997 meeting somewhere other than Las Vegas. Passed: unanimous consent.

#143 November 10-14, 1997 in Las Vegas, NV
#144 February 16-20, 1998 in Lafayette, LA (B. Kearfott host; proposed joint meeting with WG5)
#145 May, 1998 in/around Terre Haute, IN (M. North host)

5.9 Review of action items

L. Meissner — Provide scribe notes for "strategic directions" discussion for the minutes (done on 17-Nov-1996)

J. Cuthbertson — Send paper X3J3/96-172 to the WG5 /DATA subgroup reflector.

J. Wagener — Send mail to HPF about X3J3's progress on asynchronous I/O (include paper X3J3/96-158r2)

R. Bleikamp, C. Dedo, S. Whitlock — Send electronic versions of papers to M. North for post-meeting distribution to X3J3 repository (NCSA ftp site).

5.10 Closing membership report

W. Brainerd having missed two of the last three meetings is still in danger of losing membership.

J. Cuthberston has exchanged membership positions with G. Barber such that Cuthbertson is now the principal member from EPC and Barber is the alternate. See also Appendix E for more information on committee membership in general.

5.11 Treasurer's Report - paper X3J3/96-179

Motion: (L. Meissner/D. Hendrickson) Waive the meeting fee for meeting #141.
Passed: unanimous consent.

5.12 Next meeting agenda

See X3J3/96-170r1.

5.13 Comments from members

- o W. Brainerd reported that F and ELF will be in the next issue of "Fortran Journal" and that issue will be the last paper issue.

- o L. Meissner reported that he is working on a book about F and ELF called "Essential Fortran".

Adjournment

The meeting was adjourned on Friday, November 15, at 11:25am by unanimous consent.

Appendix A
Agenda for X3J3 Meeting 139
(as adopted)

1. Monday, November 11, 1996 8:30 am	
1.1 Opening business	J. Wagener
1.2 Meeting objectives (work plan) and Chair's report	J. Wagener
1.3 Adoption of agenda	J. Wagener
1.4 Review Meeting 138 action items (if any)	C. Dedo
1.5 Secretarial arrangements	J. Wagener
1.6 X3/OMC report (if any)	J. Wagener
1.7 WG5 report	M. Ellis
1.8 Treasurer's report	M. North
1.9 Beginning membership report	L. Rolison
1.10 Local arrangements	M. North
1.11 Comments from members	
1.12 Subgroup organization	J. Wagener
1.13 Subgroup meetings	
1.14 Subgroup reports (4:30 pm)	
2. Tuesday, November 12, 1996 8:30 am	
2.1 General subgroup reports and processing	Subgroup heads
2.2 F2000 requirements processing	Subgroup heads/ Champs
2.3 Minor technical enhancements processing	Subgroup heads/Champs
2.4 Interoperability presentation (96-153)	(M. Hennecke)
2.5 Strategic direction for Fortran (96-155)	K. Bierman
2.6 Subgroup meetings	
2.7 Subgroup reports (4:30 pm)	
3. Wednesday, November 13, 1996 8:30 am	
3.1 February joint meeting update	L. Rolison
3.2 Subgroup reports and processing	Subgroup heads
3.3 Minor technical enhancements processing	Subgroup heads/Champs
3.4 F2000 requirements processing	Subgroup heads/Champs
3.5 Interval arithmetic tutorial	B. Kearfott
3.6 DATA subgroup update	J. Cuthbertson
3.7 Subgroup meetings	
3.8 Subgroup reports (3:30 pm)	Subgroup heads
3.9 TAG meeting (4:00 pm)	J. Wagener (acting IR)
4. Thursday, November 14, 1996 8:30 am	
4.1 General subgroup reports	Subgroup heads
4.2 F2000 requirements processing	Subgroup heads/Champs
4.3 Minor technical enhancements processing	Subgroup heads/ Champs
4.4 Reaffirm/withdraw Fortran 90 (96-152, 96-157)	J. Wagener
4.5 Subgroup meetings	
4.6 Conditional compilation (96-162r1.1)	D. Epstein
4.5 Subgroup reports (4:30 pm)	Subgroup heads
5. Friday, November 15, 1996 8:30 am	
5.1 General subgroup reports	Subgroup heads
5.2 Minor technical enhancements processing	Subgroup heads/Champs
5.3 F2000 requirements processing	Subgroup heads/Champs

5.4	Conditional compilation (96-162r1.1)	D. Epstein
5.5	Approval of meeting 137 minutes	J. Wagener
5.6	Approval of meeting 138 minutes	J. Wagener
5.7	Closing business	J. Wagener
5.8	Future meetings	L. Rolison/J. Wagener
5.9	Review of action items	S. Whitlock
5.10	Closing membership report	L. Rolison
5.11	Treasurer's report	M. North
5.12	Next meeting agenda	L. Rolison
5.13	Comments from members	
	Adjournment	

Appendix B
X3J3 Register of Documents of 1996

Standing Documents

Paper Number	Title
X3J3/96-000	Register of Documents
X3J3/96-001	Membership List
X3J3/96-002	(Unused)
X3J3/96-003	X3J3 Member References
X3J3/96-004	Journal of Development
X3J3/96-005r1	X3J3 Resolutions and Responses to WG5 Resolutions
X3J3/96-006	Defect Report
X3J3/96-007	Draft Revision to Fortran 95
X3J3/96-008	Editorial Considerations for 9X Draft Revision
X3J3/96-009	Technical Proposals for Future Revisions
X3J3/96-010	(Unused)

1996 Papers

Paper Number	Submitter	Date	Title
X3J3/96-021	Shepherd	951127	006 Post-Meeting 135 Letter Ballot
X3J3/96-022	Maine	951130	Edits Incorporated in X3J3/95-007r2
X3J3/96-023	Dedo	960110	Interpretation 202, Evaluation of Intrinsic Procedures
X3J3/96-024	Shepherd	960109	Results of the Post Meeting 135 006 Letter Ballot
X3J3/96-025	Shepherd	960119	RFI on EXTERNAL submitted by M. Hennecke
X3J3/96-026	Shepherd	960119	96-006 Status
X3J3/96-027	Epstein	960119	What is a CoCo Module?
X3J3/96-028	Kearfott	960123	Interval Arithmetic in Fortran - Some Specifics
X3J3/96-029	Kearfott	960123	Supplementary Notes - Interval Arithmetic in Fortran
X3J3/96-030	Maine	960129	Edits made to X3J3/95-007r2
X3J3/96-031	Epstein	960205	CoCo Straw Definition
X3J3/96-032	Rolison	960205	Informal National Letter Ballot on WG5 N1166
X3J3/96-033	Martin	960205	Proposal to Add Asynchronous Input/Output (114-JTM-6, 11/20/89)
X3J3/96-034	Reid	960205	UK Substantive Point 5
X3J3/96-035	Epstein	960205	CoCo Straw 2
X3J3/96-036	Munroe	960206	Questions About Command Line Arguments in Fortran 2000
X3J3/96-037	Maine	960206	Suggested Minor Edits to Corrigendum 3
X3J3/96-038	Maine	960206	Response to Editorial Comments on N1166
X3J3/96-039r1	Hendrickson	960206	Liaison Report on C Interoperability TR
X3J3/96-040r1	/JOR	960206	Asynchronous I/O: Requirements for F2000
X3J3/96-041	Reid	960206	(SC22WG5.1031) Exceptions Technical Report
X3J3/96-042	Meissner	960207	Five Proposed JOR Items
X3J3/96-043r1	Bierman	960207	Floating Point Exception Handling Liaison Report
X3J3/96-044r1	Bierman	960207	Three Proposed JOR Items
X3J3/96-045r1	/Parallel	960207	Liaison Report on Allocatable Components TR
X3J3/96-046	/JOR	960207	Proposed JOR Item on Generic Pointers
X3J3/96-047	/OOF	960208	Liaison Report on Parameterized Derived Types
X3J3/96-048r2	/OOF	960208	Liaison Report on Conditional Compilation
X3J3/96-049	Dedo	960208	Four JOR Items
X3J3/96-050	/OOF	960208	Resolution of UK Substantive Point 5
X3J3/96-051	Dedo	960208	Lower Case and Mixed Case Syntax Elements
X3J3/96-052	North	960222	Meeting 136 Treasurer's Report
X3J3/96-053	Dedo		Meeting 136 Minutes
X3J3/96-054	Dedo	960213	Evaluation of Intrinsic Procedures
X3J3/96-055r1	Dedo	960213	Lower Case and Mixed Case Syntax Elements
X3J3/96-056	Dedo	960213	SYSTEM_CLOCK Fixup
X3J3/96-057	Martin	960216	User Control of Pointer Bounds
X3J3/96-058	Martin	960216	Proposal A - User Control of Pointer Bounds
X3J3/96-059	Martin	960216	Proposal B - User Control of Pointer Bounds
X3J3/96-060	Clodius	960311	Comments on Sets and Their Inclusion in Fortran
X3J3/96-061	Bleikamp	960403	Derived Type I/O
X3J3/96-062r1	Bleikamp	960403	Proposal for Remaining F Defect Items
X3J3/96-063	Bierman	960403	A Fortran Preprocessor
X3J3/96-064	Martin	960403	More About Controlling Pointer Bounds
X3J3/96-065	Kearfott	960405	A Specific Proposal for Interval Arithmetic in Fortran
X3J3/96-066	Wagener	960405	1995 X3J3 Annual Report

X3J3/96-067	Epstein	960405	CoCo "Short Version"
X3J3/96-068	Epstein	960405	The Full CoCo Definition
X3J3/96-069	Hennecke	960405	Interoperability of Fortran and C
X3J3/96-070	Dedo	960417	JOR Items on Deleting Archaic Features
X3J3/96-071	Dedo	960424	Variable Format Expressions
X3J3/96-072	Epstein	960424	The Rest of the Full CoCo Definition
X3J3/96-073	Dedo	960425	JOR Items on Minor I/O Enhancements
X3J3/96-074	Dedo	960426	JOR Items on Various Subjects
X3J3/96-075	Hirchert	960429	JOR Items to be Considered for Inclusion in Fortran 2000
X3J3/96-076	Hirchert	960429	JOR Item 110-In-Line Procedures
X3J3/96-077	Hirchert	960429	JOR Item 111-Local Declaration Block
X3J3/96-078	Hirchert	960429	JOR Item 112-"Clean Up" Conformance Rules
X3J3/96-079	Hirchert	960429	JOR Item 113-Allow Merge in Constant Expressions
X3J3/96-080	Hirchert	960429	JOR Item 114-Extend ALLOCATE to Specify Non-KIND Type Parameters
X3J3/96-081	Hirchert	960429	JOR Item 115-Mixed Function/Subroutine Generics
X3J3/96-082	Hirchert	960429	JOR Item 116-"Simultaneous" Assignment
X3J3/96-083r1	Levine	960506	VFE - A Simplifying Proposal
X3J3/96-084	Cohen	960429	Allocatable Components Technical Report
X3J3/96-085	Whitlock	960509	JOR Status
X3J3/96-086	Hirchert	960510	Object-Oriented Programming and Fortran
X3J3/96-087	North	960517	Meeting 137 Treasurer's Report
X3J3/96-088	Dedo	960517	Meeting 137 Minutes
X3J3/96-089	Hirchert	960510	An Alternative to Variable Format Expressions
X3J3/96-090r1	Reid	960513	Draft TR for Floating Point Exception Handling
X3J3/96-091	Dedo	960513	VFE - Rebuttal to David Levine's Proposal
X3J3/96-092	Dedo	960513	Proposal for a Standing Document on Action Items
X3J3/96-093	Dedo	960513	Action Item List - Meeting 137
X3J3/96-094r1	Meissner	960513	Extend Max,Min, etc., to Character Data Type
X3J3/96-095	Meissner	960513	Extend Initialization of Complex Variables
X3J3/96-096	Morgan	960513	Parameterized Derived Types Rationale
X3J3/96-097	Morgan	960513	Parameterized Derived Types TR
X3J3/96-098r1	Maine	960514	Intent for Pointer Arguments
X3J3/96-099	Maine	960514	Edits Made to X3J3/95-007r2
X3J3/96-100	Bierman	960514	MMAP Files
X3J3/96-101	Kearfott	960514	Interval Computations: Introduction, Uses, and Resources
X3J3/96-102	/CoCo	960514	Replies to X3J3/96-063 and X3J3/96-068
X3J3/96-103r2	/JOR	960514	Recommendations for Fortran 2000 Passed by X3J3
X3J3/96-104	/IO	960514	Stream I/O
X3J3/96-105	Bierman	960514	Response to X3J3/96-102
X3J3/96-106r1	/Interop	960514	Liaison Report: Interoperability of Fortran and C
X3J3/96-107r3	Bierman	960515	Exception Handling TR Liaison Report
X3J3/96-108	Levine	960516	Derived Type I/O Tutorial
X3J3/96-109r1	Maine	960516	Liaison Report on Parameterized Derived Types
X3J3/96-110	Levine	960516	Tutorial on Asynchronous I/O
X3J3/96-111	Hendrickson	960516	Liaison Report on Allocatable Components TR
X3J3/96-112r1	Wagener	960516	FORTRAN 77
X3J3/96-113	Rolison	960516	Liaison Report on CoCo
X3J3/96-114	Cuthbertson	960517	OOF Terminology Tutorial
X3J3/96-115r5	Wagener	960517	F2000 Development Plan
X3J3/96-116r1	Dedo	960520	SYSTEM_CLOCK Fixup
X3J3/96-117	Dedo	960520	Evaluation of Intrinsic Procedures
X3J3/96-118	Hennecke	960603	Response to X3J3's TR-C Liaison Report
X3J3/96-119	Hennecke	960528	Discussion of MAP_TO and BIND Interoperability
X3J3/96-120	Maine	960610	Edits made to X3J3/96-007
X3J3/96-121	Martin	960710	User Control of Pointer Bounds
X3J3/96-122	Wagener	960729	Requirements for Fortran 2000
X3J3/96-123	Wagener	960729	Resolutions of the WG5 Meeting on 22 to 26 July 1996, in Dresden, Germany (WG5-N1215)
X3J3/96-124	Wagener	960729	US National Activity Report (WG5-N1203)
X3J3/96-125 (WG5-N1207)	Wagener	960729	Parameterized Derived Types and Related Papers
X3J3/96-126	Wagener	960729	FPP (WG5-N1208)
X3J3/96-127	Wagener	960729	A Specific Proposal for Interval Arithmetic in Fortran (WG5-N1209)
X3J3/96-128	Wagener	960729	A Fortran 90 Interface to MPI Version 1.1
X3J3/96-129	Cohen	960801	Enhance Derived Type Facilities in Fortran (WG5-N1196)
X3J3/96-130	Cohen	960801	Replacement for Page 6 of X3J3/96-129 (WG5-N1212)
X3J3/96-131r1	Meissner	960812	Extend Character Intrinsics
X3J3/96-132r1	Meissner	960812	Type Conversions in Initialization Expressions
X3J3/96-133	Wagener	960812	Problems with Proposed Change to 1539-2
X3J3/96-134	Wagener	960812	TR-C Subgroup Report

X3J3/96-135	Wagener	960812	POSIX Binding to Fortran
X3J3/96-136	Wagener	960812	Basic Interval Module (WG5-N1210) (D20 + D18)
X3J3/96-137	Wagener	960812	X3J3 Responses to WG5 Dresden Resolutions
X3J3/96-138	Rolison	960812	Increased Statement Length
X3J3/96-139	Zongaro	960812	Straw Poll on Asynchronous I/O Alternatives
X3J3/96-140r1	North	960813	Guidelines for Submitting Papers for Consideration by X3J3
X3J3/96-141r1	Maine	960813	Specs for R.5, PDTs
X3J3/96-142	Hirchert	960813	Draft Procedure Pointers Specification
X3J3/96-143	Kearfott	960814	Specifying Default Precision
X3J3/96-144	Hirchert	960814	Minor Technical Enhancement M11
X3J3/96-145	Zongaro	960814	Dresden Resolution D6 (Interoperability)
X3J3/96-146	Hirchert	960814	Procedure Pointer Examples
X3J3/96-147	Bleikamp	960814	Asynchronous I/O Functional specification
X3J3/96-148	Bleikamp	960814	Preliminary Functional specification for derived-type I/O
X3J3/96-149		960814	Effective Object Orientation: Discussion Paper
X3J3/96-150	North	960816	Meeting 138 Treasurer's Report
X3J3/96-151	Dedo	960816	Meeting 138 Minutes
X3J3/96-152	Wagener	960828	1997 Maintenance of X3J3 Standards
X3J3/96-153	Hennecke	960917	Support for C Varying Argument Lists
X3J3/96-154	Martin	960925	M.4 Specifying Pointer Lower Bounds
X3J3/96-155	Bierman	961003	Strategic Direction of the Language
X3J3/96-156	Kearfott	961012	Interval Arithmetic - The Data Type and Low-Level Operations
X3J3/96-157	Zongaro	961016	Maintenance of the Fortran 90 Standard
X3J3/96-158	Bleikamp	961025	Syntax and Edits for Async I/O (tentative)
X3J3/96-159	Wagener	961011	FYI: Advance Transmittal for ISO/IEC DIS 1539-1
X3J3/96-160	Epstein	961025	Replies to N1192 Ballot Comments
X3J3/96-161	Epstein	961025	Replies to Henry Zongaro Comments
X3J3/96-162	Epstein	961025	N1192r1 Based on Ballot Comments
X3J3/96-163	Epstein	961108	Replies to Henry Zongaro Comments on X3J3/96-161
X3J3/96-164	Bleikamp	961111	ASYNC I/O and INQUIRE
X3J3/96-165	Meissner	961111	Minor Technical Enhancement M6: Revisited
X3J3/96-166	Kearfott	961112	Interval I/O Summary
X3J3/96-167	Dedo	961112	Strategic Planning Assumptions for Fortran 2000
X3J3/96-168	Weber	961112	F2000 Miscellaneous Requirements
X3J3/96-169	Dedo	961112	Named Scratch Files
X3J3/96-170	Ellis/Wagener	961112	Revised Draft Agenda for WG5/X3J3 Joint Meeting
X3J3/96-171	Kearfott	961112	Some Reasons Why Interval Arithmetic Cannot be a Module
X3J3/96-172	Cuthbertson	961113	A Proposal for OO Features in Fortran
X3J3/96-173	/HPC	961113	Nature of Interval Arithmetic
X3J3/96-174	Maine	961113	Syntax for R.3, Procedure Pointers
X3J3/96-175	Kearfott	961113	Choices for Interval Mixed Mode
X3J3/96-176	/DATA	961114	Syntax for Parameterized Derived Types (R.5)
X3J3/96-177	Bleikamp/I/O	961114	Functional Specification for Derived Type I/O
X3J3/96-178	Whitlock/JOR	961114	X3J3 Votes on WG5/misc. F2000 Requirements
X3J3/96-179	North	961115	Meeting 139 Treasurer's Report
X3J3/96-180	Whitlock	961115	Meeting 139 Minutes

Appendix C
Future Meetings and Distribution Assignments

Meeting conventions:
- 4 meetings per year
- attempt to schedule second full week of month
- attempt to schedule meeting back to back with WG5 annual meeting

Future meeting schedule:

140 February 10-14, 1997 - Las Vegas, NV
Pre-meeting distribution deadline: January 6
Pre-meeting distribution: Electronic
Post-meeting distribution: Electronic (S. Whitlock, if needed)
Acting secretary: L. Meissner

141 May 12-16, 1997 - Las Vegas, NV
Pre-meeting distribution deadline: April 7, 1997
Pre-meeting distribution: Electronic
Post-meeting distribution: Electronic (J. Cuthbertson, if needed)
Acting secretary: K. Bierman

142 Aug 11-15, 1997 - Las Vegas; L. Rolison looking at Minnesota or Colorado
Pre-meeting distribution deadline: April 7, 1997
Pre-meeting distribution: Electronic
Post-meeting distribution: Electronic (K. Bierman, if needed)
Acting secretary: W. Brainerd

143 November 10-14, 1997 in Las Vegas, NV
Pre-meeting distribution deadline: October 6, 1997
Pre-meeting distribution: Electronic
Post-meeting distribution: Electronic (K. Hirchert, if needed)
Acting secretary: J. Cuthbertson

144 February 16-20, 1998 in Lafayette, LA {B. Kearfott host; proposed joint meeting with WG5}
Pre-meeting distribution deadline: January 12, 1998
Pre-meeting distribution: Electronic
Post-meeting distribution: Electronic (R. Maine, if needed)
Acting secretary: D. Epstein

145 May, 1998 in/around Terre Haute, IN (M. North host)
Pre-meeting distribution deadline: April ??, 1998
Pre-meeting distribution: Electronic
Post-meeting distribution: Electronic (L. Rolison, if needed)
Acting secretary: D. Hendrickson

Committee materials availability:

Agenda and meeting notice available at the X3J3 ftp site. Sent individually to other interested parties that specifically request to be sent the material either via surface mail or email.
REQUIREMENT: Distribution 4 Weeks prior to meeting (SD-2 4.3.3)

Pre and post meeting distribution available at the X3J3 ftp site. Sent individually to other interested parties that specifically request to be sent the material either via surface mail or email.
REQUIREMENT: Distribution of Pre-Meeting 2 Weeks before meeting

(documents for action - two week rule: SD-2 4.3.4:1)

Minutes available at the X3J3 ftp site.
REQUIREMENT: Distribution 4 Weeks Following Meeting Adjournment (SD-2 4.2.5, 4.3.6)

Appendix D
Committee Organization

D.1 Officers

Chair	J. Wagener
Vice Chair	L. Rolison
International Rep	D. Hendrickson (resigned at end of TAG meeting)
Secretary	Open (rotating)
Treasurer	M. North
Librarian	M. North
Editor	R. Maine
Maintenance	R. Bleikamp
Vocabulary Rep.	K. Hirchert

D.2 Subgroups

Due the changing nature of work that needs to be accomplished as the committee moves into development of the Fortran 2000 standard, work groups generally vary from meeting to meeting as the work load dictates. The Chair suggests work groups prior to each meeting and then the membership and responsibilities of each work group are fine-tuned (usually dependent on the actual attendance) the morning of the first meeting day. For this meeting, the work groups were:

JOR:	Responsible for the development and maintenance of the Journal of Development (standing document 004) C. Dedo, L. Rolison, B. Runyan, S. Whitlock (Head)
HPC:	Responsible for numerical computing topics; in particular, high performance computing K. Bierman, D. Hendrickson (Head), B. Kearfott, T. Warnock
Data	Responsible for language design topics related to data and data structures such as procedure variables and parameterized derived types J. Cuthbertson (Head), M. Ellis, D. Epstein, K. Hirchert, R. Maine, J. Martin
I/O:	R. Bleikamp (Head), W. Brainerd, L. Meissner, J. Adams

Appendix E
Membership Summary

X3J3 Meeting Attendance (Principal Members)

Meeting #		28	29	30	31	32	33	34	35	36	37	38	39
Location		CA	NV	ED	MA	TX	HI	CO	CA	NV	NV	NV	NV
Date		02	05	08	11	01	04	08	11	02	05	08	11
		94	94	94	94	95	95	95	95	96	96	96	96
Name	Affiliation												
Bierman, Keith	Sun	V	V	V	V	V	V	V	V	V	V	V	V
Brainerd, Walt	Unicomp	R	V	R	A	V	R	V	V	V	A	A**	V**
Cuthbertson, John	EPC	A	RP	RP	RP	A	RP	A**	RP	V	V	A	V
Dedo, Craig	self	V	V	A	V	V	V	V	V	V	V	V	V
Epstein, David	self					P	V	V	V	V	V	V	V
Hendrickson, Dick	self	V	V	V	A	V	A**	V	V	V	V	V	V
Hirchert, Kurt	U. of Illinois	V	V	V	V	V	V	V	V	V	V	V	V
Kearfott, R. Baker	self									P	V	V	V
Maine, Richard	NASA	V	V	A	V	V	V	V	V	V	V	V	V
Meissner, Loren	self									P	V	V	V
North, Mallory	Rose-Hulman	V	V	V	V	V	V	V	V	V	V	V	V
Rolison, Larry	SGI/CR	V	V	R	V	V	V	V	V	V	V	V	V
Runyan, Bob	Lahey	RP	RP	A	RP	A**	R	A**	RP	R	V	A	V
Sacks, Reva	HP	RP	RP	A	RP	RP	A	RP	A**	R	RP	R	R
Smith, Brian	UNM	R	R	A	R	R	V	A	A**	R**	R	A	R
Wagener, Jerry	Zvyvogs	V	V	V	V	V	V	V	V	V	V	V	V
Warnock, Tony	LANL				P	V	A	V	V	A	V	V	V
Whitlock, Stan	DEC	V	V	A	V	V	V	V	V	V	V	V	V
Zongaro, Henry	IBM	RP	RP	RP	RP	RP	V	RP	RP	A	V	V	A

V present and voting
R absent but represented
RP represented by a previous member from the same organization
A absent and not represented
P present but not voting
E excused
Q resigned
** missed 2 of last 3 meetings
*** LOST membership

Total Membership at beginning of Meeting: 19
One over Half: 11
Quorum: 7
Total Membership at end of Meeting: 19
Total Members Attended or Represented: 18
Total Attendees: 19

Changes since Meeting 138:

Lost Membership:

New Members:

Other Changes:
Graham Barber and John Cuthbertson exchanged principal and alternate memberships.
Reva Sacks replaced David Levine as the principal member from HP.
Jerry Wagener changed affiliation from Amoco to Zvyvogs.

Alternates representing principals at meeting:
Richard Bleikamp (Reva Sacks)
Jeanne Martin (for Brian Smith)

Visitors at Meeting:
Miles Ellis

Non-voting alternates present:
J. Adams

Prospective members (observer meeting):

Appendix F
X3J3 Membership

PRINCIPALS

Keith H. Bierman
Sun Microsystems, Inc.
SunSoft Developer Products
2550 Garcia
UMPK16-304
Mountain View CA 94043

Email: keith.bierman@sun.com

Phone: (415) 786-9296
Fax: (415) 786-9551

Alternate: Michael Ingrassia

Walter S. Brainerd
Unicomp Inc.
1874 San Bernardino Ave NE
Albuquerque NM 87122

Email: walt@fortran.com

Phone: (505) 275-0800
Fax: (505) 856-1501

Alternate: Jeanne Adams, Charles Ritz

John S. Cuthbertson
Edinburgh Portable Compilers, Ltd.
17 Alva Street
Edinburgh EH2 4PH
SCOTLAND

Email: johnc@epc.co.uk

Phone: 011 44 131 225 6262
Fax: 011 44 131 225 6644

Alternate: Graham Barber

Craig T. Dedo
17130 W. Burleigh Place
Brookfield WI 53005

Email: Craig.Dedo@mixcom.com

Phone: (414) 783-5869

David Epstein
Imagine1
P.O. Box 250
Sweet Home OR 97386

Email: david@imagine1.com

Phone: (541) 383-4846

[Conditional Compilation]

Richard A. Hendrickson
50 Melbourne Ave SE
Minneapolis MN 55414

Email: rah@ssesco.com

Phone: (612) 378-9694

Kurt W. Hirchert
University of Illinois
152 Computing Applications Bldg.
605 East Springfield Avenue
Champaign IL 61820

Email: hirchert@ncsa.uiuc.edu

Phone: (217) 333-8093
Fax: (217) 244-2909

Alternate: Murray Freeman

R. Baker Kearfott
Department of Mathematics
University of Southwestern Louisiana
U.S.L. Box 4-1010
Lafayette LA 70504-1010

Email: rbk@usl.edu

Phone: (318) 482-5270
Fax: (318) 482-5346

Richard Maine
NASA Dryden
M/S D-2033
P.O. Box 273
Edwards CA 93523

Email: maine@altair.dfrc.nasa.gov

Phone: (805) 258-3316
Fax: (805) 258-3567

Alternate: Bruce Martin

Loren P. Meissner
2 Kerr Avenue
Kensington CA 94707

Email: lpmeissner@msn.com

Phone: (510) 524-5227

Dr. C. Mallory North, Jr.
Professor of Mechanical Engineering
Rose-Hulman Institute of Technology
5500 Wabash Ave.
Campus Box 150
Terre Haute IN 47803

Email:
Charles.M.North@Rose-Hulman.edu

Phone: (812) 877-8216
Fax: (812) 877-3198

Alternate: Patricia Brackin

Larry Rolison
SGI/Cray Research
655F Lone Oak Dr.
Eagan MN 55121

Email: lrr@cray.com

Phone: (612) 683-5807
Fax: (612) 683-5307

Alternate: Jon Steidel

Bob Runyan
Lahey Computer Systems Inc.
865 Tahoe Blvd
Suite 204
P. O. Box 6091
Incline Village NV 89450-6091

Email: bruny@lahey.com

Phone: (702) 831-2500 x422
Fax: (702) 831-8123

Alternate: Tom Lahey

Reva Sacks
Hewlett-Packard Company
Massachusetts Language Lab.
300 Apollo Drive

Chelmsford MA 01824

Email: sacks@apollo.hp.com

Phone: (508) 436-5920
Fax: (508) 436-5135

Alternate: Richard Bleikamp

Brian T. Smith
University of New Mexico
Computer Science Dept.
339 Farris Engineering Center
Albuquerque NM 87131

Email: smith@unmvax.cs.unm.edu

Phone: (505) 277-5500
Fax: (505) 277-0813

Alternate: Jeanne T. Martin

Jerrold L. Wagener
Zvyvogs
6 East 5th
Suite 308
Tulsa OK 74103

Email: jwagener@ionet.net

Phone: (918) 592-3023
Fax: (918) 592-3023

Alternate: Rex Page

Tony Warnock
Los Alamos National Lab.
MS B265
CIC-3
P.O. Box 1663
Los Alamos NM 87545

Email: ttw@lanl.gov

Phone: (505) 667-2225

Stan Whitlock
Digital Equipment Corp.
ZK02-3/N30
110 Spit Brook Road
Nashua NH 03062

Email: whitlock@tle.enet.dec.com

Phone: (603) 881-2011
Fax: (603) 881-0120

Alternate: Keith Kimball

Henry Zongaro
IBM Canada Ltd.
3T/123/1150/TOR
1150 Eglinton Avenue East
North York Ontario M3C 1H7
CANADA

Email: zongaro@vnet.ibm.com

Phone: (416) 448-6044
Fax: (416) 448-6057

ALTERNATES

Jeanne C. Adams
NCAR
Scientific Computing Division
P.O. Box 3000
Boulder CO 80307

Email: jeanne@ncar.ucar.edu

Phone: (303) 497-1275
Fax: (303) 497-1137

Alternate to: Walt Brainerd

Richard Bleikamp
Convex Technology Center of
Hewlett-Packard Company
3000 Waterview Parkway
P. O. Box 833851
Richardson TX 75083-3851

Email: bleikamp@convex.com

Phone: (214) 497-4133
Fax: (214) 497-4500

Alternate to: Reva Sacks

Dr. Patricia Brackin
Rose-Hulman Institute of Technology
Dept. of Mechanical Engineering
5500 Wabash Ave.
Campus Box 165
Terre Haute IN 47803

Email: Patricia.Brackin@Rose-Hulman.edu

Phone: (812) 877-8106
Fax: (812) 877-3198

Alternate to: C. Mallory North

Graham Barber
Edinburgh Portable Compilers, Ltd.
17 Alva Street
Edinburgh EH2 4PH
SCOTLAND

Email: gra@epc.co.uk

Phone: 44 131 225 6262
Fax: 44 131 225 6644

Alternate to: John S. Cuthbertson

Murray F. Freeman
FOSI Limited
P.O. Box 184
Paupack PA 18451-0184

Email: x3t2mf@delphi.com

Phone: (717) 857-0658
Fax: (717) 857-1378

Alternate to: Kurt Hirchert

Michael Ingrassia
Sun Microsystems, Inc.
SunSoft Developer Products
2550 Garcia
UMPK16-304
Mountain View CA 94043

Email: michael.ingrassia@sun.com

Phone: (415) 786-8998
Fax: (415) 786-9551

Alternate to: Keith Bierman

Keith Kimball
Digital Equipment Corp.
ZK02-3/N30
110 Spit Brook Road
Nashua NH 03062

Email: kimball@tle.enet.dec.com

Phone: (603) 881-0120
Fax: (603) 881-0120

Alternate to: Stan Whitlock

Tom Lahey
Lahey Computer Systems Inc.
865 Tahoe Blvd
Suite 204
P. O. Box 6091
Incline Village NV 89450-6091

Email: tlahe@lahey.com

Phone: (702) 831-2500

Fax: (702) 831-8323

Alternate to: Bob Runyan

Bruce A. Martin
Relativistic Heavy Ion Collider
Build 911-C
Brookhaven National Laboratory
Upton NY 11973

Email: bam@bnl.gov

Phone: (516) 282-5647

Alternate to: Richard Maine

Jeanne T. Martin
Lawrence Livermore Natl. Lab.
7000 East Avenue
P. O. Box 808
L-561
Livermore CA 94550

Email: jtm@llnl.gov

Phone: (510) 422-3753
Fax: (510) 423-8704

Alternate to: Brian Smith

Rex L. Page
School of Computer Science
University of Oklahoma
200 Felgar Street - Room 114
Norman OK 73109

Email: rlpage@cs.uoknor.edu

Phone: (405) 325-4397
Fax: (405) 325-4044

Alternate to: Jerry Wagener

Charles Ritz
Fortran Journal
P.O. Box 4201
Fullerton CA 92634

Phone: (714) 441-2022

Alternate to: Walt Brainerd

Jon Steidel
SGI/Cray Research
655F Lone Oak Drive
Eagan MN 55121

Email: jls@cray.com

Phone: (612) 683-5734
Fax: (612) 683-5307

Alternate to: Larry Rolison

OBSERVERS

Bor Chan
NERSC
Lawrence Livermore National Lab.
University of California
P. O. Box 5509
L-560
Livermore CA 94550

Email: chan1@llnl.gov

Phone: (415) 422-4017

L. M. Delves
N.A. Software Ltd.
Roscoe House
62 Roscoe Street
Liverpool L1 9DW
ENGLAND

Email: l.delves@liverpool.ac.uk

David Mattoon
1547 North Sheridan Road
Lake Forest IL 60045

Email: dmattoon@ix.netcom.com

Phone: (312) 567-4716

Ivor R. Philips
The Boeing Company
P.O. Box 3707
#MS 7l_22
Seattle WA 98124-2207

Email: ivor.r.philips@boeing.com

Phone: (206) 865-3522

Hideo Wada
Research and Planning Division
IT Strategy and Planning Group
Fujitsu Limited
1015 Kamikodanaka
Nakahara-ku Kawasaki 211
JAPAN

Email: wada@lp.nm.fujitsu.co.jp

Phone: 81 44-754-3200
Fax: 81 44-751-9220

OMC Secretary
ITIC
Suite 200
1250 Eye Street NW
Washington D.C. 20005

Email: x3sec@itic.nw.dc.us

Phone: (202) 626-5740
Fax: (202) 628-2829

LIAISONS

Malcolm Cohen
The Numerical Algorithms Group Ltd
Wilkinson House
Oxford OX2 8DR
ENGLAND

Email: malcolm@nag.co.uk

Phone: 44 (1865) 51 1245
Fax: 44 (1865) 31 0139

[Allocatable Components]

Miles Ellis
Director:
Educational Technology Resources Ctr.
University of Oxford
37-41 Wellington Square
Oxford OX1 2JF
ENGLAND

Email: Miles.Ellis@etrc.ox.ac.uk

Phone: +44 1865 270528
Fax: +44 1865 270527

[WG5 Convenor]

Jeffrey Fried
Informix, Inc.
4100 Bohannon Drive
Menlo Park CA 94025

Email: jfried@informix.com

Phone: (415) 926-6893

Liaison from: X3H2 Database

Michael Hennecke
University of Karlsruhe
Computing Center (G20.21 R210)
Zirkel 2
P.O. Box 69 80
Karlsruhe D-76128

GERMANY

Email: hennecke@
rz.uni-karlsruhe.de

Phone: 49 721 608-4862
Fax: 49 721 32550

[C Interoperability]

Rochelle Lauer
Director, High Energy Physics
Computing Facility
Yale University, Physics Dept.
512 Gibbs Lab
260 Whitney Avenue
P. O. Box 208121
New Haven CT 06520-8121

Email: lauer@
yalph2.physics.yale.edu

Phone: (203) 432-3366
Fax: (203) 432-6125

Liaison from: DECUS

Hiroshi Matsuo
Software Works
Hitachi Ltd.
5030 Totsuka-cho Totsuka-ku
Yokohama-shi 244
JAPAN

Phone: 011 81 45 824-2311

Liaison from: WG5/Japan

J. Steve Morgan
The University of Liverpool
P.O. Box 147
Liverpool L69 3BX
ENGLAND

Email: j.s.morgan@liverpool.ac.uk

Phone: 44 (151) 794-3746
Fax: 44 (151) 794-3759

[Parameterized Derived Types]

David T. Muxworthy
EUCS
JCMB
King's Buildings
Edinburgh EH9 3JZ
SCOTLAND

Email: d.muxworthy@ed.ac.uk

Phone: 44 (131) 650-3305
Fax: 44 (131) 650-6552

Liaison from: BSI

Karl-Heinz Rotthaeuser
GMD/18
Postfach 1316
Forschungszentrum
Informationstechnik
Schloss Birlinghoven
D-53754
St. Augustin
GERMANY

Email: rotthaeuser@gmd.de

Phone: 49 (2241) 14-3228
Fax: 49 (2241) 14-3003

Liaison from: WG5/Germany

Ron Silletti
IBM Corporation
500 Columbus Avenue
Thornwood NY 10594

Email: rsilletti@vnet.ibm.com

Liaison from: OMC

UNOFFICIAL OBSERVERS

Joanne Brixius
SGI/Cray Research
655F Lone Oak Dr.
Eagan MN 55121

Email: jbrixius@cray.com

Phone: (612) 683-5873

James T. Himer
16 Shawfield Way S.W.
Calgary Alberta T2Y 2X9
CANADA

Email: himerj@cuug.ab.ca

Phone: (403) 237-4215
Fax: (403) 232-5730

David R. Levine
Hewlett-Packard Company
MS CHR-02-DC
Massachusetts Language Lab.
300 Apollo Drive
Chelmsford MA 01824

Email: drlevine@apollo.hp.com

Phone: (508) 436-4015
Fax: (508) 436-5135

Linda O'Gara
Microsoft
One Microsoft Way
Redmond WA 98052

Email: lindaog@microsoft.com

Phone: (206) 936-6575
Fax: (206) 936-7329

John K. Reid
Atlas Centre
Rutherford Appleton Laboratory
Oxon OX11 0QX
ENGLAND

Email: jkr@letterbox.rl.ac.uk

Phone: 44 (1235) 44 6493
Fax: 44 (1235) 44 6626

[Exception Handling]

Janice Shepherd
IBM
T. J. Watson Research Center
P.O. Box 218
Yorktown Heights NY 10598

Email: janshep@watson.ibm.com

Phone: (914) 945-4366