Date: 13 November 1998  
To: J3  
From: Van Snyder  
Subject: Minutes for regularly scheduled meeting 147 of NCITS/J3

1 Monday, November 9, 1998

1.1 Opening business

Meeting called to order at 8:30 AM, November 9, 1998, at the AmeriSuites hotel in Las Vegas, NV USA, by Tony Warnock (J3 chair).

1.1.1 Members present

Keith Bierman, Richard Bleikamp, Malcolm Cohen, Craig Dedo, Dick Hendrickson, Kurt Hirchert, Mallory North (treasurer / librarian), Van Snyder (acting secretary), Matthijs van Waveren, Tony Warnock (chair), Stan Whitlock, Henry Zongaro.

1.1.2 Alternates present

Richard Maine (for Malcolm Cohen), Jeanne Martin (for Brian Smith).

1.1.3 Remarks from the chair

None that require recording.

1.1.4 Adoption of agenda

Change item 2.4 of draft agenda from “Tutorials” to “Discussion of LIA2.” Schedule Malcolm Cohen’s tutorial on type-bound procedures as agenda item 3.4, “Tutorials.” Change item 4.4 of draft agenda from “Tutorials” to “Discussion of integration process.”

Accept agenda as amended: Whitlock / Hendrickson – unanimous. Motion

1.1.5 Approval of meeting 146 minutes

Correction to minutes: Change paper 98-188 in list of papers to 98-188r1.

Accept minutes as amended: Whitlock / Hendrickson – unanimous. Motion

1.1.6 Secretarial arrangements

The post of Secretary is a revolving post. The secretary for this meeting is Van Snyder. The secretary for meeting 148 is Henry Zongaro.
1.1.7 NCITS/OMC report

Tony Warnock attended NCITS meeting. NCITS objects to official distributions to non-members. “Unofficial observers” will be removed from official distribution lists (the yearly report is the only official distribution).

LISP committee is to reconvene.

NCITS asked “Will Fortran survive?” A member responded that the extent of use of Fortran is increasing, but the “market share” is decreasing.

NCITS will publish C and C++ standards electronically. J3 hopes the experiment is a success, and looks forward to being able to publish the next revision of the Fortran standard electronically.

1.1.8 ISO/WG5 report

Nothing has been officially reported to J3, including the change in the meeting date of the summer 1999 meeting in Chateau de Cadarache, France.

1.1.9 Treasurer’s report

Expenses to date have been paid. Balance as of 31 October 1998 is $1476.63. The meeting fee is $100. This meeting will cost $238. The meeting room will be free.

1.1.10 Beginning membership report

Matthijs van Waveren has joined officially. 15 members, 12 present, 13 voting. Brian Smith is absent but represented by Jeanne Martin. Jon Steidel is absent. Loren Meissner is absent; his membership will expire at the end of meeting 147. Quorum is 5.

1.1.11 Comments from members

None that require recording.

1.2 Subgroup Organization


/numeric Warnock (head). Inactive for this meeting.

/interop Zongaro (head), Bieman, van Waveren. Specifications and syntax for Aliasing and Enumerations. Edits for previously approved specifications and syntax.

/data Cohen (head), Hirschert, Snyder, Martin. Process remarks on recently completed edits to produce 98-007r3 (papers 98-206, 98-207), Explicitly typed allocations, initial and final procedures, papers by Werner Schulz.

/interop Whitlock (head), Zongaro. Action will depend on time permitting.

The plenary meeting was recessed until 4:30 PM for subgroup meetings.
1.3 Subgroup reports

/jor: Stream I/O based on 98-209 – allow formatted and unformatted I/O on same unit so long as opened with ACCESS='STREAM'; define file storage units. Draft 3-word edit to description of DATE_AND_TIME intrinsic subroutine (for Y2K compliance) – paper 98-224 for vote on Tuesday. Look at unresolved issues in 98-011r1.
/data: Papers for repairs for SELECT TYPE and type-bound procedures edits, explicitly typed allocations, public and private components, initial and final procedures, generic type-bound procedures, constants for opaque types (work item R.4f), review of paper 98-180 (procedure pointers).
/interop: No papers. Working on consolidated paper for syntax previously spread across three papers. New papers for enumerations, “stdargs” (varying number of arguments), aliasing (based on 98-197), C-calling-Fortran, edits.
Meeting was recessed until 8:30 AM Tuesday.

2 Tuesday, November 10, 1998

Meeting called to order at 8:30 AM, November 10, 1998, at the AmeriSuites hotel in Las Vegas, NV USA, by Tony Warnock (J3 chair).
Accept paper 98-224 as edits for DATE_AND_TIME intrinsic subroutine, for Y2K compliance: Motion Whitlock / Dedo – unanimous.

2.1 LIA2 report

ISO wants language development bodies to incorporate it. Remarks: “Not interesting.” “Does not solve any known problems in Fortran.” “Is this a chip makers’ problem? No, section 7 says it is a language development committee problem.” Keith Bierman will write a paper.
The plenary meeting was recessed until 4:30 PM for subgroup meetings.

2.2 Subgroup reports

Papers for action on Wednesday:

/jor:

98-209r1 Stream I/O (M.25) Discussion and Vote
98-213r1 Access to status error messages (M.23) Discussion and Straw Vote
98-234 Environment variables (M18b) Discussion and Vote

/data:

98-226 Repair edits for SELECT TYPE Discussion and vote
98-227 Repair edits for Type-bound procedures Discussion, vote Thursday (hopefully)
98-228 Public and private components Edits, vote Thursday (hopefully)
98-208r1 Explicitly typed allocations Discussion and vote
98-399 Initial and final procedures Not ready for Wednesday morning
3 Wednesday, November 11, 1998

Meeting called to order at 8:30 AM, November 10, 1998, at the AmeriSuites hotel in Las Vegas, NV USA, by Tony Warnock (J3 chair).

Accept paper 98-209r1 as Specs and syntax for M.25 Stream I/O: Whitlock / Dedo – unanimous.  **Motion**

**Discussion of 98-213r1** (M.23 Access to status error messages)

Straw vote concerning message arguments:
Allocatable only, Static only, Both, undecided? 2,4,4,2

Clarification straw votes:
Static message argument only acceptable; yes, no, undecided? 5,5,2
Both static and allocatable message arguments acceptable; yes, no, undecided? 10,0,2

**Discussion of 98-231** (Inter-line optimization) Straw vote: Do nothing, Compiler Option, Local control, undecided? 5,2,3,3

The plenary meeting was recessed until 4:30 PM for subgroup meetings.

3.1 Subgroup reports

/data
Accept paper 98-226r1 as edits to resolve issues raised in 98-205 and 98-206: Cohen / Hirchert – **Motion** unanimous.
Accept paper 98-208r1 as edits for explicitly typed allocations: Snyder / Cohen – unanimous.  **Motion**

98-227r1 Further edits for type-bound procedures  Vote

/jor

98-213r2 Access to status error messages  Vote
98-241 Renaming defined operators  Discussion and vote
98-234r1 Environment variables (M.18b) Updated to incorporate agreed amendments
Meeting was recessed until 8:30 AM Thursday.

4 Thursday, November 12, 1998

Meeting called to order at 8:30 AM, November 10, 1998, at the AmeriSuites hotel in Las Vegas, NV USA, by Tony Warnock (J3 chair).


Straw votes: STMT optional? 9-0-3; STMT 2 values? 10-1-1; 1 or 2 message arguments? 7-2-3; STMT absent or optional if STAT absent? 0,3,9

Accept 98-241 as amended as edits for M.7 Renaming defined operators: Whitlock / Hendricks – unanimous.

Accept 98-227r1 as amended as further edits for type-bound procedures: Cohen / Hirchert – unanimous.

Accept 98-238 as syntax for enumeration type aliases: Zongaro / Whitlock – withdrawn.

Accept 98-233r1 as specifications for “stdargs:” Zongaro / Bierman – withdrawn.

Straw vote: Varying and ellipsis, ellipsis only? 4, 7, 1.

Accept 98-240 as amended as partial edits for C interoperability: Zongaro / Whitlock – unanimous.


Papers for the afternoon session:

/interop  98-233r2  98-232r2  98-238r1
/jor     98-213r2  98-211r1  98-242
/data    98-228  98-229  98-230

The plenary meeting was recessed until 4:00 PM for subgroup meetings.

4.1 Subgroup reports

/data
unanimous.

/jor Nothing until Friday

/interop Accept 98-233r2 as specifications for “stdargs:” Bierman / Zongaro – unanimous.                Motion
Accept 98-238r1 as amended as syntax for enumeration type aliases: Zongaro / van Waveren – unanimous.  Motion
Straw vote: ENUM with neither BIND(C) nor kind-selector is default kind, processor dependent kind? 1, 11, 1.

LIA 2
Accept 98-232r2 as amended as J3 response to NCITS request to review LIA2: Bierman / Dedo – unanimous.  Motion

Papers for the morning session:

/jor

98-213r3   M.23 Access to status error messages    Vote
98-211r2   Edits for Stream I/O                    Vote
98-242     Miscellaneous edits arising from 98-204 and 98-212      Vote

Meeting was recessed until 8:30 AM Friday.

5 Friday, November 13, 1998

Meeting called to order at 8:30 AM, November 10, 1998, at the AmeriSuites hotel in Las Vegas, NV USA, by Tony Warnock (J3 chair).
Accept 98-213r3 as edits for M.23 Access to status error messages: Whitlock / Snyder - amended to include edits only until and including the line “Class. Subroutine” with the remainder of discussion and development to be completed by e-mail, followed by two-week e-mail vote – unanimous.  Motion
Accept 98-242 Miscellaneous edits arising from 98-204 and 98-212: Whitlock / Bleikamp - amended – unanimous.  Motion

Accept 98-211r1 as edits for stream I/O: Whitlock / Maine - amended – unanimous.  Motion
Accept 98-229 as edits for Initial and Final procedures: Cohen / Hirchert - amended – unanimous.  Motion
Accept 98-230 as syntax for Additional arguments for Initial procedures: Cohen / Hirchert - Only the “Basic facility” part – unanimous.  Motion
Accept 98-243 as edits for Explicitly typed allocations: Maine / Hirchert - amended – unanimous.  Motion

5.1 Interpretation processing

None carried out
5.2 Review of action items

None pending

5.3 Future meetings

Meeting 148 will be 1-5 March 1999 in Maui, Hawaii. Brian Smith is host.
Meeting 149 will be 7-11 June 1999 in Oxford, England. Malcolm Cohen is host.
The 1999 ISO IEC/JTC1/SC22/WG5 meeting is 14-18 June in Chateau de Cadarache, France.
The French delegation is host.

5.4 Closing membership report

Loren Meissner’s membership has expired. Jon Steidel’s membership is in jeopardy and will expire if he does not attend meeting 148.

5.5 Closing business

Adjourn meeting 147: Whitlock / Dedo – Unanimous. Meeting 147 was adjourned at 12:07 Motion PM on 13 November 1998.

Appendix A: Agenda for J3 meeting 147

1. Monday, November 9, 1998 8:30 am
1.1 Opening business
   Remarks from the chair T. Warnock
   Adoption of agenda T. Warnock
   Approval of Meeting 146 minutes T. Warnock
   NCITS/OMC report (if any) T. Warnock
   ISO/WG5 report K. Bierman
   Treasurer’s report M. North
   Beginning membership report K. Hirchert
   Local arrangements M. North
   Comments from members T. Warnock

1.2 Subgroup organization
1.3 Subgroup meetings
1.4 Subgroup reports (4:30 pm)

2. Tuesday, November 10, 1998 8:30 am
2.1 F2000 R item processing (98-010) Subgroup heads
2.2 F2000 MTE item processing (98-010) S. Whitlock
2.3 F95 interpretation processing (98-006) S. Whitlock
2.4 Discussion of LIA-2
2.5 Subgroup meetings
2.6 Subgroup reports (4:30 pm)

3. Wednesday, November 11, 1998 8:30 am
3.1 F2000 R item processing Subgroup heads
Appendix B: Register of documents, J3/98-000

PAPERS SUBMITTED FOR J3 MEETING 147
LAS VEGAS, NEVADA, NOVEMBER 9 - 13, 1998

ftp site: ftp.ncsa.uiuc.edu/x3j3/doc/meeting/147
ftp mirror site: ftp.drfc.nasa.gov/pub/x3j3/ncsa/doc/meeting/147
J3 World Wide Web site URL: http://www.ionet.net/~jwagener/J3

<table>
<thead>
<tr>
<th>Paper Number</th>
<th>Date</th>
<th>Submitter</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>J3/98-204</td>
<td>981002</td>
<td>Maine</td>
<td>Edits Incorporated in 98-007r3</td>
</tr>
<tr>
<td>J3/98-205</td>
<td>981002</td>
<td>Maine</td>
<td>Additions to List of Unresolved Issues</td>
</tr>
<tr>
<td>J3/98-207</td>
<td>981014</td>
<td>Snyder</td>
<td>Comments on Richard Maine's Comments in 98-204 and 98-205 Concerning 98-184r2</td>
</tr>
</tbody>
</table>
Appendix C: Future meetings and distributions, secretarial assignments

Meeting Conventions:

- Four meetings per year
- Attempt to schedule second full week of the month
- Attempt to schedule meeting contiguous with WG5 annual meeting

Future meeting schedule:

148 March 1 - 5, 1999, in Maui, Hawaii, Brian Smith, local host
   Pre-meeting distribution deadline: February 15, 1999
   Pre-meeting distribution: electronic
   Post-meeting distribution: electronic
   Acting secretary: Henry Zongaro

   Pre-meeting distribution deadline: May 24, 1999
Post-meeting distribution: electronic
Acting secretary: Matthijs van Waveren

150 (Tentative) August 30 - September 3, 1999, in Las Vegas, NV, Mallory North, acting host
Pre-meeting distribution deadline: August 16, 1999
Pre-meeting distribution: electronic
Post-meeting distribution: electronic
Acting secretary: Kurt Hirschert

151 (150 if the meeting August 30 - September 3 is not held)
November 29 - December 3, 1999, in Las Vegas, NV, Mallory North, acting host
Pre-meeting distribution deadline: November 15, 1999
Pre-meeting distribution: electronic
Post-meeting distribution: electronic
Acting secretary: Jon Steidel (or Kurt Hirschert if meeting 150)

Committee materials availability:
Agenda and meeting notice available at the J3 web site and from the J3 ftp server.
Sent individually to other interested parties that specifically request to be sent the material either via surface mail or electronic mail.

REQUIREMENT: Distribution 4 weeks prior to meeting (SD-2 4.3.3)
Pre- and post-meeting distribution available at the J3 ftp and web sites.
Sent individually to other interested parties that specifically request to be sent the material either via surface mail or electronic mail.

REQUIREMENT: Distribution of premeeting 2 weeks prior to meeting. (documents for action - two week rule: SD-2 4.3.4:1)
Meeting minutes are available at the J3 web and ftp sites.

ftp site: ftp.ncsa.uiuc.edu/x3j3/doc/meeting/147
ftp mirror site: ftp.drfc.ncsa.gov/pub/x3j3/ncsa/doc/meeting/147

Appendix D: Committee organization

D.1 Officers and Management

Chair T. Warnock
International Rep. K. Bierman
Secretary Open (rotating; V. Snyder acting for this meeting)
Treasurer M. North
Librarian M. North
Editor R. Maine (WG5 appointment)
Maintenance S. Whitlock
Vocabulary Rep. K. Hirschert
D.2 Subgroups

**JOR:** Responsible for the maintenance of the Journal of Development (standing document 004) and managing the following Fortran 2000 requirements: R.1, R.2, R.8, and all MTE and B items.
S. Whitlock (head), R. Bleikamp, C. Dedo, D. Hendrickson, R. Maine

**DATA:** Responsible for language design topics related to data and data structures; manages the following Fortran 2000 requirements: R.3, R.5, R.6, and R.7.
M. Cohen (head), K. Hirschert, J. Martin, V. Snyder

**NUMERIC:** (title of this subgroup has changed from INTERVAL at this meeting) Responsible for R.4 (enabling technologies for interval arithmetic). Inactive at this meeting.
T. Warnock (head)

**INTEROP:** Responsible for R.9 (interoperability with C)
H. Zongaro (head), K. Bierman, M. van Waveren

**INTERP:** Responsible for evaluating interpretation requests, providing responses to such requests, and maintaining standing document 006. (The following core membership of this subgroup all have other subgroup assignments, and other members of the committee may be called upon to provide expertise for specific issues.)
S. Whitlock (head), R. Bleikamp, M. Cohen, J. Steidel, H. Zongaro

Appendix E: Membership summary

J3 Meeting Attendance (Principal Members)
van Waveren, Matthijs  Fujitsu       P  V
Warnock, Tony       LANL          V  V  V  V  V  V  V  V  V  V
Whitlock, Stan      DEC           V  V  V  V  V  V  V  V  V  V
Zongaro, Henry      IBM           V  V  A  V  V  V  V  V  V  V

V  present and voting
R  absent but represented
A  absent and not represented
P  present but not voting
RP represented by previous member
E  excused
Q  resigned
** missed two of last three meetings
*** lost membership

other voting attendees
J Martin represented B Smith
non-voting attendees
R Maine, alternate for M Cohen

Membership changes since last meeting: Matthijs van Waveren joined

Total Membership at beginning of Meeting 147  15
Majority  8
Quorum  5
Total Membership at end of Meeting 147  14
Total Members Attended or Represented at Meeting 147  13
Total Attendees at Meeting 147  14

Appendix F: Members, Alternates, Observers and Liaisons

PRINCIPALS

Keith H. Bierman
Sun Microsystems, Inc.
UMPK 16-304
901 San Antonio Road
Palo Alto CA 94043
Email: keith.bierman@sun.com
Phone: (650) 786-9296
Fax: (650) 786-9551
Alternate: Michael Ingrassia

Richard Bleikamp
Hewlett-Packard Company
3000 Waterview Parkway
Richmond, TX 77409
Email: bleikamp@rsm.hp.com
Phone: (972) 497-4133
Fax: (972) 497-4245

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
Alternate: Richard Maine

Craig T. Dedo
Texas Instruments, Inc.

John W. Enns

Robert L. Lattanzio

Carol A. McNally

Lucinda P. Parker

Scott D. Smith

Tim D. Stribling

Robert E. Teeters

Peter J. White
Brookfield WI 53005
Email: Craig.Dedov@mixcom.com
Phone: (414) 783-5869
Fax: (414) 783-5928

Richard A. Hendrickson
50 Melbourne Ave SE
Minneapolis MN 55414
Email: dick.hendrickson@worldnet.att.net
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

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) 877-8025
Alternate: Patricia Brackin

Brian T. Smith
University of New Mexico
Computer Science Dept.
339 Farris Engineering Center
Albuquerque NM 87131
Email: bsmith@arc.unm.edu
Phone: (505) 277-5500
Fax: (505) 277-0813
Alternate: Jeanne T. Martin

Van Snyder
Jet Propulsion Laboratory
4800 Oak Grove Drive
Mail Stop 300-323

Email: vsnyder@math.jpl.nasa.gov
Phone: (818) 354-6271
Fax: (818) 393-6720

Jon Steidel
Cray Research
A Silicon Graphics Company
655F Lone Oak Drive
Eagan MN 55121
Email: jls@cray.com
Phone: (612) 683-5734
Fax: (612) 683-5307
Alternate: David Phillimore

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
Alternate: Alex Marusak

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

Henry Zongaro
IBM Canada Ltd.
3T/123/1150/TOR
1150 Eglinton Avenue East
North York Ontario M3C 1H7
CANADA
Email: zongaro@ca.ibm.com
Phone: (416) 448-6044
Fax: (416) 448-6057
Alternate: Wai Ming Wong

ALTERNATES
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

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.  
UMPK 16-304  
901 San Antonio Road  
Palo Alto CA 94043  
Email: michael.ingrassia@sun.com  
Phone: (650) 786-8998  
Fax: (650) 786-9551  
Alternate to: Keith Bieman

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 to: Malcolm Cohen

Jeanne T. Martin  
11 Manti Terrace  
Alamo CA 94507  
Email: jtm@lnl.gov  
Phone: (925) 837-2691  
Fax: (925) 362-0144

David Phillimore  
1 Cabbot Road  
Hudson MA 01749  
Email: dphillim@boston.sgi.com  
Phone: (978) 562-4800  
Fax: (978) 562-4755  
Alternate to: Jon Steidel

Wai Ming Wong  
IBM Canada, Ltd.  
(3T/123)  
1150 Eglinton Ave. East  
North York Ontario M3C 1H7  
CANADA  
Email: wmwong@vnet.ibm.com  
Phone: (416) 448-3105  
Fax: (416) 448-4414  
Alternate to: Henry Zongaro

OBSERVERS

David Mattoon  
1547 North Sheridan Road  
Lake Forest IL 60045  
Email: dmattoon@ix.netcom.com  
Phone: (312) 567-4716

Ivor R. Phillips  
The Boeing Company  
P.O. Box 3707  
MS 7l-22  
Seattle WA 98124-2207  
Email: ivor.r.phillips@boeing.com  
Phone: (206) 865-3522

Michael Ross  
Intel Corp.  
JF3-363  
2111 NE 25th Ave  
Hillsboro OR 97124-7902  
Email: Michael_L_Ross@ccm.jf.intel.com  
Phone: (503) 264-0567  
Fax: (503) 264-7902

OMC Secretary:
LIAISONS

Miles Ellis
Director:
Educational Technology Resources Centre
University of Oxford
37-41 Wellington Square
Oxford OX1 2JF
ENGLAND
Email: Miles.Ellis@etrc.ox.ac.uk
Phone: +44 1865 270527
Fax: +44 1865 270528
(WG5 Convener)

David Epstein
Imagine
P.O. Box 250
Sweet Home OR 97386
Email: david@imagine1.com
Phone: (541) 383-4848
(Conditional Compilation)

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

Fax: 49 721 32550
(C Interoperability)

Rochelle Lauer
Director High Energy Physics Computing Facility
Yale University, Physics Department
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

Hirosi 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