Business Plan and Convener's Report

ISO/IEC JTC 1/SC 22/WG 14 (The Programming Language C)

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SUBMTTED BY:

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1. MANAGEMENT SUMMARY

1.1. JTC 1/SC 22/WG 14 STATEMENT OF SCOPE

Development and maintenance of ISO/IEC Standards related to the programming language C.

1.2. PROJECT REPORT

1.2.1. COMPLETED PROJECTS

JTC 1.22.20.01 – Programming Language C (Revision of ISO/IEC 9899:1999), this project was delivered by the publishing of ISO/IEC 9899:2011.

JTC 1 NP 18037, Extensions for the programming language C to support embedded processors. This is a Technical Report type II.

JTC 1 NP 19769, Specification for Additional Character Data Types to the Programming Language C. This is a Technical Report type II.

JTC 1 NP 24731, Extensions to the C Library, — Part I: Bounds-checking interfaces. This is a Technical Report type II.

JTC 1 NP 24731, Extensions to the C Library — Part 2: Dynamic Allocation Functions. This is a Technical Report type II.

JTC 1 NP 24732, Extensions for the programming language C to support decimal floating point arithmetic. This is a Technical Report type II.

JTC 1 NP 24747, Extensions for the C Standard Library to Support Mathematical Special Functions. This is an International standard.

JTC 1 NP 17961, *C Secure Coding Rules*. This is a Technical Specification.

JTC 1 NP 18661-1, *Floating-point extensions for C*. This is part one of a five part Technical Specification. (Actual published date 2014/07/15)

1.2.2. PROJECTS UNDERWAY

JTC 1 NP 18661-(2, 3, 4, and 5), *Floating-point extensions for C*.

1.2.3. CANCELLED PROJECTS

None over this period.

1.2.4. COOPERATION and COMPETITION

Where appropriate, WG 14 has established active liaisons with other SC 22 working groups. A category C liaison has been established with the MISRA C working group. There is no apparent direct competition with any other current SC 22 working group.

2. PERIOD REVIEW

2.1. MARKET REQUIREMENTS

WG 14 feels that the committee is responding to the C user community concerns and to the C implementers issues when the ISO/IEC 9899:1999 standard was updated ahead of published schedule, in 2011. WG 14 believes that the ISO/IEC 9899:2011 standard answered many concerns and keeps the International Standard for the C programming language current.

WG14 believes the publication of TS 17961 address important issues that benefit the entire C community.

WG14 is currently working on TS 18661 parts 2, 3, 4, and 5. A C binding to the new IEEE Floating-point, see SC 22 N4796.

WG 14 is currently studying how best to incorporate parallel programming into the C language.

WG 14 is currently working on how best to deal with the mandated ISO (Live Link/Open Text) e-committee package.

2.2. ACHIEVEMENTS

- WG 14 is currently working on 28 open defect reports logged against 9899:2011 and 1 open defect report on TS 17961.
- WG 14 published the Technical Specification 17961.
- WG 14 published the Technical Specification 18661 part I.
- WG 14 successfully moved Technical Specification 18661 part II to DTS ballot, see SC 22/N 4914.
- WG 14 successfully moved Technical Specification 18661 part III to PDTS ballot, see SC 22/N 4920.
- WG 14 successfully moved Technical Specification 18661 part IV to PDTS ballot, see SC 22/N 4921.
- WG 14 has started a study group to study approaches to adding parallel programming to the language.
- WG 14 has moved many documents to the ISO e-committee, and is trying to make this system work.[1]

2.3. RESOURCES

WG 14 meets two times per year in co-located technical sessions with the US Task Group INCITS PL22.11. Over the past several years, WG 14 has timed at least one of its yearly technical sessions to coincide with WG 21, allowing those technical experts that would like to attend both technical sessions the opportunity to do so without extra travel. The WG 14 Convener would like to thank the WG 21 Convener for the extended effort it takes to coordinate common meeting locations and liaison between the two working groups.

Over the last several years WG 14 has made Web conferencing capabilities available for those that are finding it difficult to travel. WG 14 would like to thank ISO for the Web conferencing support.

In the past years, fourteen countries participate by attending these meetings or by being involved in the technical discussions that take place over the e-mail reflector. The countries are: Australia, Canada, Denmark, France, Germany, Italy, Ireland, Japan, Netherlands, Norway, Russia, Sweden, UK, and the USA. However, with the new system forced upon us by ISO, only Canada, Denmark, Italy, Netherlands, UK and US will be able to participate.

WG14 has been monitoring the cross-language standards activities, and are using the ISO/IEC JTC 1/WG 20 guidelines on extended characters. WG 14 has also keeps appraised of the requirements of the LIA-1, 2 standards.

[1] The ISO Help Desk (Dorothée Stadler) actually did the copy operation, it seems this mandated system can only copy one file at a time, there is no drag/drop feature or manual copy feature.

WG14 liaison appointments are:

Group	Name/Type	Person(s) assigned
WG 21	C++	Group liaison assigned[2]
FSG	Free Standard Group	Nick Stoughton
WG 23	Vulnerabilities	Tom Plum
MISRA-C	Category-C Liaison	Clive Pygott

3. FOCUS NEXT WORK PERIOD

WG14 will focus on:

- Working on how to make the mandated ISO e-committee system (Live Link/Open Text) work for WG 14.
- Resolving defect reports for 9899:2011.
- Developing TS 18661 parts 2, 3, 4, and 5
- Studying parallel programming

The Committee has discussed several other possible new work items, and is currently studying the possibilities for a Technical Specification on parallel programming.

3.1. DELIVERABLES

None.

3.2. STRATEGIES

WG14 believes that routine handling will suffice to complete the progress desired.

3.3. RISKS

A decrease in participation due to being forced to comply with a mandate from ISO, see JTC 1/N 12032.

3.4. OPPORTUNITIES

None.

3.5. WORK PROGRAM PRIORITIES

WG 14 will respond to any Defect Reports logged for the current ISO/IEC 9899:2011 Standard and the four published Technical Reports TR 18037, TR 19769, TR 24731–1, TR 24731-2, TS 17961 and IS 24747. WG 14 will work on the development of the Technical Specification 18661.

4. OTHER ITEMS

4.1. POSSIBLE ACTION REQUESTS AT FORTHCOMING PLENARY

None.

[2] Intel, Oracle, Plum Hall, and Perennial.

4.2. PROJECT EDITORS

The following individuals have been appointed project editors and backup project editors:

JTC 1.22.20.01, *Programming Language C (Revision of ISO/IEC 9899:2011)*
Larry Jones (Project Editor)[3], David Keaton (Backup Project Editor).

JTC 1 NP 18037, *Extensions for the programming language C to support embedded processors*.
Willem Wakker (Project Editor), John Benito (Backup Project Editor)

JTC 1 NP 19769, *Specification for Additional Character Data Types to the Programming Language C*.
John Benito (Project Editor)

JTC 1 NP 24731, *Extensions to the C Library – Part I: Bounds-checking interfaces*
John Benito (Project Editor), P. J. Plauger (Backup Project Editor)

JTC 1 NP 24731, *Extensions to the C Library – Part 2: Dynamic Allocation Functions*.
John Benito (Project Editor)

JTC 1 NP 24732, *Extensions for the programming language C to support decimal floating point arithmetic*
Edison Kwok (Project Editor), P. J. Plauger (Backup Project Editor)

JTC 1 NP 24747, *Extensions for the Standard Library of the Programming Language C to Support Mathematical Special Functions*
John Benito (Project Editor), P. J. Plauger (Backup Project Editor)

JTC 1 NP 17961, *C Secure Coding Rules*
Robert Seacord (Project Editor), John Benito (Backup Project Editor)

JTC 1 NP 18661, *Floating-point extensions for C*
James Thomas (Project Editor)

4.3. ELECTRONIC DOCUMENT DISTRIBUTION

WG 14 has conducted some of its detailed technical discussion using email reflector provided by the Danish UNIX Users Group, Copenhagen University College of Engineering and Keld Simonsen.

WG 14 also has an ftp and Web site provided by courtesy of the Copenhagen University College of Engineering, Danish UNIX Users Group and Keld Simonsen. WG 14 has also started the move to the ISO mandated site.

[3] Currently not listed in the ISO global directory.

WG 14 uses a secure wiki setup and maintained by Keld Simonsen. This wiki is used for quick exchange of documents during and between meetings eliminating the need for paper during the meeting.

WG 14 is providing all the appropriate committee documents on the Committee Web site, eliminating the need for paper mailings.

WG 14 also now provides Web conference capabilities allowing technical experts that are not able to travel to participate.

4.4. RECENT MEETINGS

05-09	Feb 1996	Irvine, CA USA	ANSI
24-28	Jun 1996	Amsterdam, NL	NEN, ACE
21-15	Oct 1996	Toronto, Canada	SCC, IBM
23-27	Jun 1997	London, UK	BSI, Plum Hall Europe
20-24	Oct 1997	Menlo Park, CA USA	ANSI, Sun Microsystems
02-06	Feb 1998	Frisco, CO USA	ANSI, Keaton Consulting
23-27	Jun 1998	Copenhagen, Denmark	Danish Standards
05-09	Oct 1998	Santa Cruz, CA USA	ANSI, SGI/Cray
01-05	Feb 1999	Portland, OR USA	ANSI, Intel Corp
21-24	Jun 1999	London, UK	BSI
18-23	Oct 1999	Kona, HI USA	ANSI, Plum Hall
10-14	Apr 2000	Tokyo, Japan	ITSCJ, NEC
16-20	Oct 2000	Toronto, Canada	SCC, IBM
23-27	Apr 2001	Copenhagen, Denmark	Danish Standards
16-20	Oct 2001	Redmond, WA USA	ANSI, Microsoft
15-19	Apr 2002	Curacao, Netherlands Antilles	NNI, Netherlands
14-20	Oct 2002	Santa Cruz, CA USA	ANSI, Dinkumware
31-04	Mar/Apr 2003	Oxford, UK	BSI, ACCU
21-24	Oct 2003	Kona, HI USA	ANSI, Plum Hall
29-02	Mar/Apr 2004	Sydney, Australia	SA, Whitesmiths, Dinkumware
25-29	Oct 2004	Redmond, WA USA	ANSI, Microsoft
04-08	Apr 2005	Lillehammer, Norway	SN, RAP, Dinkumware
25-28	Sep 2005	Mt Tremblant, Canada	SCC
27-31	Mar 2006	Berlin, Germany	DIN, SAP
23-27	Oct 2006	Portland, OR USA	ANSI, Intel Corp
23-26	Apr 2007	London, UK	BSI
08-11	Oct 2007	Kona, HI USA	ANSI, Plum Hall
14-18	Apr 2008	Delft, Netherlands	NIN, ACE
08-12	Sept 2008	Santa Clara, CA USA	ANSI, Cisco Systems
30-04	Mar/Apr 2009	Toronto, Canada	SCC, IBM
26-30	Oct 2009	Santa Cruz, CA USA	ANSI, Plantronics
19-23	Apr 2010	Florence, Italy	Università Firenze
01-05	Nov 2010	Batavia, IL USA	ANSI, Fermi Lab.
14-18	Mar 2011	London, UK	BSI
24-28	Oct 2011	Washington DC, USA	ANSI, Blue Pilot
13-17	Feb 2012	Kona, HI USA	ANSI, Bloomberg LP

11-13	Jun 2012	Web Conference	ISO, Blue Pilot
22-26	Oct 2012	Portland, OR USA	ANSI, Intel
23-26	Apr 2013	Delft, NL	NIN, ACE
30-03	Sep/Oct 2013	Chicago, IL USA	ANSI, DRW Trading Group
07-11	April 2014	Parma, IT	UNINFO, University of Parma

4.5. FUTURE MEETINGS

27-30	Oct 2014	St. Louis, MO USA	ANSI, Seymour
13-17	April 2015	Lysaker, NO	SN, Cisco
26-30	Oct 2015	Kona HI, USA	ANSI, Plum Hall