Business Plan and Convener’s Report

ISO/IEC/JTC 1/SC 22/WG 23 (Programming Language Vulnerabilities)

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**1. MANAGEMENT SUMMARY**

* 1.1.  JTC 1/SC 22/WG 23  Guidance to Avoiding Vulnerabilities in Programming Languages through Language Selection and Use

1.2.  PROJECT REPORT

1.2.1. COMPLETED PROJECTS

 ISO/IEC TR 24772:2012, *Guidance to Avoiding Vulnerabilities in Programming Languages through Language Selection*. This is a Technical Report.

1.2.2. PROJECTS UNDERWAY

 JTC 1 NP 24772, *Guidance to Avoiding Vulnerabilities in Programming Languages through Language Selection*. This is the 3rd edition.

 JTC 1 NP 17960, *Code Signing for Source Code.* This project is to produce an International Standard, and currently is in DIS ballot.

 1.2.3. CANCELLED PROJECTS

None over this time period.

1.2.4. COOPERATION and COMPETITION

Where appropriate, WG 23 has established active liaisons with other SC22 working groups, other JTC 1 subcommittee working groups (such as SC 27/WG 3 and SC 7 WG19) and other standards organizations, such as Ecma International. See the table in 2.3 for a list of liaisons.

There is no apparent direct competition with any other current SC22 working group or JTC 1 subcommittee.

**2. PERIOD REVIEW**

2.1. MARKET REQUIREMENTS

WG 23 is responding to the needs of the programming language community by inclusion. WG 23 will accept input and liaison by any and all appropriate organizations.

The marketplace demands robust, secure software. Vulnerabilities are the antithesis of robust, secure software. Many of the attacks on software-based systems succeed because the computer language used did not prevent the attack vector, and did not warn the developer that the code being produced contained flaws that could be used to generate attacks.

WG 23 has produced 2 editions of TR 24772, but there are vulnerabilities that still need to be identified, and programming languages that still need to be documented with regards to vulnerabilities.

2.2. ACHIEVEMENTS

WG 23 has published the second edition of TR 24772, and started work on the third edition.

WG 23 worked on the 17960 project, a second CD ballot, and a DIS ballot which concluded with unanimous approval without comments, see SC 22 N4981.

2.3. RESOURCES

Five national bodies are currently participating in the most recent teleconference meeting: Canada, Italy, Japan, Spain, UK, and the USA, as well as several liaisons.

Over the last several years WG 23 has made Web conferencing capabilities available for those that are finding it difficult to travel. WG 23 would like to thank ISO for the Web conferencing support.

Liaison with five SC22 Language groups, and four groups outside of SC22 has been established. Liaisons fill a valuable role in that they identify the vulnerabilities that exist (and do not exist) in their language, produce the primary documentation of those vulnerabilities and turn them into the relevant language-dependent part in conjunction with the core team through the liaison individual.

Current WG 23 liaisons are:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group |  | Name/Type |  | Person assigned |
| SC 22/WG4 |  | Cobol |  | Robert Karlin,  Chris Tandy |
|  |  |  |  |  |
| SC 22/WG5 |  | Fortran |  | Dan Nagle |
|  |  |  |  |  |
| SC 22/WG9 |  | Ada |  | Erhard Ploedereder |
| SC 22/ WG14 |  | C |  | Clive Pygott |
|  |  |  |  |  |
| SC 22/ WG 21 |  | C++ |  | Group |
| SC 7/WG 19 |  | Open Distributed Processing and Modeling Languages |  | Cesar Gonzalez-Perez |
| SC 27/WG 3 |  | Security evaluation, testing and specification |  | Tatsuaki Takebe |
| ECMA TC39/TG2 |  | C# |  | Nomination pending |
| JSR-282/JSR-302 |  | Real-Time/Safety-Critical-Java |  | Ben Brosgol |
| Linux Foundation |  | Linux |  | Nick Stoughton |
| MDC |  | MUMPS |  | Ed de Moel |

**3. FOCUS NEXT WORK PERIOD**

* 3.1.  DELIVERABLES
  + - 1. None for this time period.
* 3.2.  STRATEGIES
* WG 23 has decided that a core document and seven language-specific annexes, with at least two or three more in planning, creates a maintenance burden that makes it difficult to keep all portions of the document up to date in a single document.
* WG 23 has therefore decided to split TR 24772 into a series of parts, as follows (see also clause 4.1 for the official request for SC 22 action):

TR24772-1 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Language Independent View

TR24772-2 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Ada

TR24772-3 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for C

TR24772-4 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Python

TR24772-5 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Ruby

TR24772-6 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Spark

TR24772-7 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for PHP

TR24772-8 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Fortran

TR24772-9 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for COBOL

3.3.  RISKS

The loss of the previous convenor/editor created a significant loss of expertise and resource for the group, as the remaining members are volunteers instead of funded to do the work. WG 23 has responded by separating the role of convenor and editor for TR 24772, and will assigned different editors to each language-specific part as maintenance to it is initiated.

3.4.  OPPORTUNITIES

No special opportunities arise during the next year.

3.5.  WORK PROGRAM PRIORITIES

 See 4.1.

**4. OTHER ITEMS**

4.1. POSSIBLE ACTION REQUESTS AT FORTHCOMING PLENARY

WG 23 requests that SC 22 approve a program split of 22.24772 into projects as specified in clause 3.2.

22.24772-1 Language independent,

22.24772-2 Ada,

22.24772-3 C,

22.24772-4 Python,

22.24772-5 Ruby,

22.24772-6 PHP,

22.24772-7 Spark,

22.24772-8 Fortran, and

22.24772-9 COBOL

WG 23 requests that SC 22 commence the conversion of TR 24772 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages through language selection and use – Language Independent View, as project 22.24772-1 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Language Independent View. This project will be a project of 36 months with expected publication September 2018 and will consist of a revision of TR24772 main document plus annexes A and B. The editor will be Larry Wagoner and Clive Pygott.

WG 23 requests that SC 22 commence the conversion of TR 24772 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages through language selection and use –Annex C Ada, as project 22.24772-2 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Ada. This project will be a project of 36 months with expected publication September 2018. The editor will be Erhard Ploedereder.

WG 23 requests that SC 22 commence the conversion of TR 24772 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages through language selection and use –Annex F Python, as project 22.24772-2 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Python. This project will be a project of 36 months with expected publication September 2018. The editor will be Erhard Ploedereder.

WG 23 requests that SC 22 commence the development of project 22.24772-8 Information Technology — Programming languages — Guidance to avoiding vulnerabilities in programming languages – Programming language specific guidance for Fortran. This project will be a project of 36 months with expected publication September 2018. The editor will be Erhard Ploedereder.

4.2.  PROJECT EDITOR  The following individuals have been appointed project editors and backup project editors:

* + JTC 1 NP 24772-1, Guidance to Avoiding Vulnerabilities in Programming Languages through Language Selection.  (Project Editor Larry Wagoner, backup Project Editor Clive Pygott)
  + JTC 1 NP 17960, Code Signing for Source Code.  Larry Wagoner (Project Editor), backup Project Editor vacant

4.3.  ELECTRONIC DOCUMENT DISTRIBUTION

WG 23 has conducted some of its detailed technical discussion using the email reflector maintained by Keld Simonsen. WG 23 also has an ftp and Web site at http://open-std.org/sc22/wg23.  WG 23 is providing all the appropriate committee documents on the Committee Web site, eliminating the need for paper mailings.

4.4. RECENT MEETINGS

|  |  |  |  |
| --- | --- | --- | --- |
| No | Date | Place | Host |
| 20 | 14-16 Dec 2011 | Washington, DC, US | INCITS |
| 21 | 28-30 Mar 2012 | Ottawa, Ontario, CA | SCC |
| 22 | 20-22 Jun 2012 | Stuttgart, DE USA | Universität Stuttgart |
| 23 | 12-14 Sep 2012 | Geneva, CH | IEC |
| 24 | 12-14 Dec 2012 | Teleconference | ISO |
| 25 | 13-15 Mar 2013 | New York, NY | ANSI/INCITS & Blue Pilot |
| 26 | 08-10 Jun 2013 | Berlin, DE | Ada Europe |
| 27 | 18-21 Sep 2013 | Tokyo, Japan | ITSCJ |
| 28 | 08 Jul 2014 | Teleconference | ISO |
| 29 | 20 Oct 2014 | Teleconference | ISO |
| 30 | 10 Nov 2014 | Teleconference | ISO |
| 31 | 26-27 Jan 2015 | Kemah, Tx, USA | Maurya Software Inc |
| 32 | 26 Feb 2015 | Teleconference | ISO |
| 33 | 30 March 2015 | Teleconference | ISO |
| 34 | 27 April 2015 | Teleconference (cancelled) | ISO |
| *35* | 25 May 2015 | Teleconference | ISO |
| 36 | 26-27 Jun 2015 | Madrid, Spain | Ada Europe |

4.5. FUTURE MEETINGS

#37 Washington, DC 21 September 2015

#38 New Delhi, India 27-29 October 2015 with SC 27

#39 Teleconference 23 November 2015

#40 Teleconference 14 December 2015

#41 Teleconference 25 January 2015

#42 Teleconference 22 February 2015

#43 London, UK 15-16 April 2015 with WG 14

#44 TBD June 2016

#45 TBD September 2016 with SC 22

#46 Teleconference October 2016

#47 Teleconference November 2016