

Meeting Report: Plenary Meeting of ISO/IEC JTC1/SC22, 6-10 September 2004

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Although I did not attend this meeting, I provided a written contribution that was discussed and corresponded with the key participants. Some action was taken.

Background

In discussions related to the Software Assurance Initiative, there have been suggestions that we need language subsets, coding standards, or language usage guidelines to assist developers in constructing code that is more resistant to compromise. Noting that JTC1/SC22 is the international standards committee responsible for programming languages, I have initiated discussion in SC22 on this subject.

Agenda

The meeting schedule for the SC22 plenary meeting included a meeting of an Ad Hoc Group, to be chaired by Jonathan Hodgson (US), to discuss possible future work for SC22. The Ad Hoc held its meeting on Monday, 6 September. Mr. Hodgson opened with a presentation that included the following "charge" to the Ad Hoc Group: "choose some means for moving on to 'the next generation'." Among other ideas, he presented the group with some material from my written contribution:

High Integrity Applications

- A guide to selecting a programming language suitable to a high-integrity application
- A comparison of programming language characteristics suitable to high-integrity usage
- Standards for meta-language constructions e.g. assertions and other mechanisms for demonstrating correctness in a manner that is uniform or comparable across programming languages
- Standards for subsets, profiles, or dialects of programming languages suitable for high integrity application
- Guides for usage of programming languages in a manner suitable for high integrity application

The Meeting

The recording secretary published her notes of the meeting. They included the following:

... Mr. Hodgson began with a contribution from Mr. Moore, which suggested the creation of a new work group in SC 22, with the suggested scope of the development of language independent and cross-language guidance for the selection and use of programming languages in high-integrity systems. Mr. Moore's proposal outlined the following projects that could be considered by the WG:

- 1.) A guide to selecting a programming language suitable to a high-integrity usage.
- 2.) A comparison of programming language characteristics suitable to high integrity usage
- 3.) Standards for meta-language constructions-e.g. assertions and other mechanisms for demonstrating correctness in a manner that is uniform or comparable across programming languages.
- 4.) Standards for subsets, profiles of dialects of programming languages suitable for high-integrity applications
- 5.) Guidance for usage of programming languages in a manner suitable for high-integrity applications.

Members of the Ad Hoc looked favorably upon the idea of this new WG, but agreed that this step is at least a year away. The group must consider all other areas of future projects before proposing a new WG.

The Convener explained that his intention for the group was to come up with a list of topics that could be explored in the coming year before next year's SC 22 Plenary meeting. He anticipates that a meeting of this group could take place in six months time to explore any findings.

...

The Ad Hoc concluded with the following four topics that would be explored further, along with the Ad Hoc members who volunteered to explore them and create a report by 15 January 2004 on the risks and benefits of further exploration by SC 22 or it's Ad Hoc on Future Directions:

- 1.) High Integrity Systems-Jim Moore

...

The Ad Hoc Convener noted his willingness to host the next meeting of the participants, be it in one Ad Hoc or four Ad Hocs separated by topic, in Pennsylvania in February 2005. It was also noted that a call for contributions would be issued with a closing date two months prior to the meeting. Only topics that have a written contribution associated with them will be discussed at the meeting. If no such contributions are received, the meeting will be cancelled. This will assist in keeping the discussions focused and controlled.

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Results

The convener's report included the following: "The group identified a number of areas where SC22 might be able to take initiatives. The need to produce standards that will be useful to SC22's 'customer base' is a paramount consideration. It will be helpful to carry out some exploratory work to determine what kind of standards would be useful to this base. ... Mr. Moore had submitted a document ... proposing work in the area of support for High Integrity applications. The group discussed this at some length and adopted it as an area for further study. ... Mr. Hodgson will coordinate a meeting of the Ad Hoc group to be held in Philadelphia, PA in March 2005. This meeting will consider the written work [of] the subgroups charged to explore Opportunities and Risks for SC22 in each of the following areas: ... Support for High Integrity Applications. Mr. J. Moore ... Agenda time will be given only to those items for which documents are submitted."

Resolution

As a result of this report, SC22 approved the following resolution:

Resolution 04-13: Ad Hoc on the Future Directions for SC 22

JTC 1/SC 22 resolves that the Ad Hoc on the Future Directions for SC 22 be continued for a period of one year with Jonathan Hodgson as convener.

The Ad Hoc is charged to explore the following four areas agreed upon at the Ad Hoc Meeting on the Future of SC 22 held on 6 September 2004:

- Support for High Integrity Applications
- Libraries
- Industrial Consortia
- Standards Education

SC 22 instructs the convener to organize a meeting of the Ad Hoc in March 2005 to report on and prepare recommendations for the 18th SC 22 plenary, on future work directions for SC 22. SC 22 instructs that agenda time at the March meeting is to be given only to those items for which a written contribution is submitted by 15 January 2005. Should no written contributions be submitted for this meeting, the meeting shall be canceled.

Action Required

As you can see from the resolution, we have until 15 January to prepare a written contribution for a meeting which will occur at some time during March. Between now and then, we need to determine the outcome that we want to pursue. This would include answers to the following questions:

1. Which of the five projects (listed previously in this note) do we want to pursue?
2. Are we willing to accept some or all of the other four if SC22 does not agree with our first choice?

3. Are we willing to take a leadership position in a new working group?
4. Are we willing to offer additional resources, notably people, to accelerate the work?