

Instructions to the Ada Rapporteur Group from SC 22/WG 9 for Preparation of Revisions to ISO/IEC 8652:2012

The ARG is instructed to prepare a working draft of a revision to ISO/IEC 8652. The main purpose of the revision is to make needed corrections to the language standard. A secondary purpose is to address identified problems in Ada that are interfering with Ada's usage or adoption, especially in its major applications areas (such as high-reliability, long-lived real-time and/or embedded applications and very large complex systems).

The resulting standard will be published as a Revision, rather than yet another separate document. However, this desire should not trump the desire for language stability (subclauses should continue to use their current numbering, for instance).

The ARG is requested to pay particular attention to the following two categories of improvements:

- A) Improvements that will maintain or improve Ada's advantages, especially in those user domains where safety and security are prime concerns;
- B) Improvements that will remedy shortcomings in Ada.

Improvements of special interest in these categories are:

- Improving the capabilities of Ada on multi-core and multi-threaded architectures;
- Improving the ability to write and enforce contracts for Ada entities (for instance, via preconditions);
- Improving the use and functionality of the predefined containers;
- Improving support for Unicode in the language and predefined libraries.

These are all examples of improvements in category A, except for the last which is an example of an improvement in category B.

In selecting features for inclusion in the revision, the ARG should consider the following factors:

- Implementability (vendors concerns). Can the proposed feature be implemented at reasonable cost?
- Need (users concerns). Does the proposed feature fulfill an actual user need?
- Language stability (users concerns). Would the proposed feature appear disturbing to current users?
- Competition and popularity. Does the proposed feature help improve the perception of Ada, and make it more competitive with other languages?
- Interoperability. Does the proposed feature ease problems of interfacing with other languages and systems?
- Language consistency: Is the provision of the feature syntactically and semantically consistent with the language's current structure and design philosophy?

In order to produce a technically superior result, it is permitted to minimally compromise backwards compatibility when the impact on users is judged to be acceptable.

The use of secondary standards should be minimized; secondary standards should be proposed only when they would include material so important as to require standardization but so voluminous as to preclude inclusion in the Ada language standard.

WG 9 targets the following schedule for the development of the revision:

- June 2015: WG 9 passes resolution 68-7 for development of an Amendment or Revision to Ada 2012.
- June 2017: WG 9 approves *Instructions to the ARG* for the development of the Revision.
- January 2018: Receipt of the final set of AIs from groups other than WG 9 or delegated bodies.
- June 2018: Receipt of the final set of AIs other than those to correct the Standard.
- October 2018: Receipt of the final set of AIs. Approval of the detailed scope of the Revision by WG 9.
- March-June 2019: Informal circulation of draft to National Bodies, receipt of comments and preparation of final

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- August-September 2019: Submission of draft, WG 9 e-mail ballot.
- Oct 2019-Feb 2020: SC 22 FPDIS ballot (will require prior arrangement with SC 22)
- Early 2020 JTC 1 FDIS ballot
- Late 2020: Publication (of a revision).