

# Plan for Ada Application Program Interfaces (API) Management

## Draft, dated 1 October 2002

*[Note: This draft has circulated a couple of times through the SIGAda EC. We are awaiting the first set of comments from Ada-Europe. It is by no means complete and should still be treated as a draft. Further, we have not reached any consensus yet. However, the draft is ready for your input, which it will need before it can become locked into Jell-O. Clyde Roby has graciously volunteered to serve as the Acting Chair of the APIWG and is already coordinating its first Workshop for SIGAda 2002 on Wednesday, 11 December in Houston at Clear Lake. Please look over this draft plan and provide comments to Mr. Clyde Roby at <roby@ida.org> and <colket@acm.org>. Updates will be posted on the SIGAda 2002 Conference Home Page in association with the Workshop announcement at the <http://www.acm.org/sigada/conf/sigada2002/> URL. If you have an API to Register or are interested in serving as an officer for an API, please contact Mr. Clyde Roby.]*

- I. **Purpose** – The purpose of this document is to identify a mechanism to provide management for Application Program Interfaces (APIs) for the Ada Programming Language. APIs fall into three categories: **Standardized APIs**, **Registered APIs**, and **Unregistered APIs**. The focus of this document is the Registered APIs.
- II. **Background** – Currently the vast majority of Ada bindings to APIs are unmanaged. These Ada bindings are frequently hard to find. Once found there is frequently little information concerning how to best use the API nor information on lessons learned from its use. When they get updated, (if they get updated) there is no announcement to the Ada community on the availability of the updated API. Frequently these bindings do not evolve with updates to the base API, needed maintenance, or Ada language changes. ISO/IEC JTC1/SC22 WG9 has requested that SIGAda and Ada-Europe propose a mechanism for managing Ada Bindings that are not covered already via formal standards. These Ada Bindings can then be recommended by ISO/IEC JTC1/SC22 WG9 as **de facto** standards for use in Ada application development. This plan provides a lightweight process to manage Ada Bindings available to the Ada community without the formalism required by an ISO standard. The intent is that Ada-Europe, SIGAda, and WG9 can work together to provide a valuable service to the Ada community for managing Ada bindings to APIs.
- III. **Overview** – Registered APIs will be publicly available via an Ada API Home Page. This Home Page will provide a compilable Ada API along with valuable artifacts, such as examples, tutorials, known problems, lessons learned, etc. Procedures are established to make it extremely easy to Register an API. An API Working Group (APIWG) Chair will be responsible for the registration of APIs and their public availability. Links may be provided for APIs depending on intellectual property right issues. In addition to Registering APIs, it is sometimes valuable to establish a group to maintain/evolve the API. Interested SIGAda and Ada-Europe volunteers can form an APIWG Sub Group with the approval of the SIGAda Executive Committee. This APIWG Sub Group will be responsible for the management and evolution of this Registered API.
- IV. **Definitions** – The following definitions are used within this document:
  1. **ACM SIGAda** – SIGAda is the Special Interest Group of the Association for Computing Machinery (ACM) for the Ada Programming language. ACM is one of the world's premier technical professional organizations related to computing. SIGAda is one of the world's largest organizations serving the needs of professionals interested in the Ada language. SIGAda is a powerful resource for the software community's ongoing technical and scientific activities concerning the usage, education, standardization, and implementations of the Ada language and related Ada technologies. SIGAda operates under a set of Bylaws approved by its membership and by ACM. The SIGAda Bylaws are located at the [http://www.acm.org/sigs/bylaws/ada\\_bylaws.html](http://www.acm.org/sigs/bylaws/ada_bylaws.html)

URL. ACM SIGAda is not a standardization body. Any artifacts developed by the APIWG or its SGs are done so as a valuable service to the Ada community.

2. **ACM SIGAda Committees** – Article 9 of the SIGAda Bylaws provide for the capability of the SIGAda Executive Council to approve a Committee to facilitate the management of activities in a subspecialty of Ada. Committee meetings are required to be open to all members of SIGAda. Traditionally these Committees are called Working Groups and their meetings are open to all interested parties.
3. **Ada** – The Ada Programming Language, as defined by ISO/IEC 8652.
4. **Ada-Europe** – Ada-Europe is an international organization, set up to promote the use of Ada. It aims to spread the use and the knowledge of Ada and to promote its introduction into academic and research establishments. Above all, Ada-Europe intends to represent European interests in Ada and Ada-related matters. Ada-Europe was established in 1988 according to Belgian Law. Currently, the member organizations are Ada-Belgium, Ada-Denmark, Ada-Deutschland, Ada-France, Ada-Spain, Ada in Sweden, Ada in Switzerland and Ada UK.
5. **Ada Binding** – An Ada Binding is a compilable API written in the Ada programming language.
6. **API** – An Application Program Interface (API) is an interface that allows an application to communicate with an operating system or another application. APIs are further classified as:
  - a. **Standardized APIs** are those provided in the Ada Language Reference Manual or through secondary ISO Standards (e.g., Ada Semantic Interface Specification (ASIS)).
  - b. **Registered APIs** are those Ada Bindings/APIs made publicly available via an API Home Page. An individual or organization is responsible for each Registered API.
    - (1) **Registered APIs** – The APIWG Chair is responsible for the upkeep of Registered APIs where the API is developed and/or maintained by a third party. Any developer of an Ada API can submit it to the APIWG Chair to make it publicly available to the Ada Community on the APIWG Home Page. It is done with permission from the developer as a convenience to the Ada community. Additional useful artifacts will be provided, when available (e.g., lessons learned, tutorials).
    - (2) **Registered and Managed APIs** – An APIWG Sub Group is responsible for the upkeep of a **Registered and Managed API**. Here a dedicated team takes on the responsibility for the maintenance (and possibly development) of the API. The API along with a tutorial, examples, and associated information is maintained on an API Home Page. Changes to the API are controlled via a consensus-based process. The APIWG Sub Group is responsible for baselining and versioning of the API. Each Subgroup will have a SIGAda EC approved Charter and a approved Chair.
    - (3) **Registered APIs are not Standards** – Registered APIs are not considered to be standards. Neither SIGAda nor ACM has a standardization authority. They should be viewed as potentially valuable artifacts to the Ada community. The user takes full responsibility for fitness for use.
  - c. **Unregistered APIs** are APIs that are neither standardized nor registered as defined above. Links to useful Unregistered APIs may be provided on the API Home Page.
7. **API Home Page** – The API Home Page provides a compilable Ada API for each Registered API. The Home Page also includes valuable artifacts such as examples, tutorials, useful tips, known problems, and lessons learned. The API Home Page is a subdirectory on the SIGAda Home Page. The API Home Page may also contain links to Unregistered APIs. This subdirectory may be mirrored on the Ada-Europe Home Page as well as on the Home Pages for Ada Member Organizations.
8. **Application Program Interface Working Group (APIWG)** – The APIWG is chartered under ACM SIGAda to manage Registered APIs. The Chair of the APIWG is responsible for updating the API Home Page for all Registered APIs. The Chair of the APIWG is responsible for coordinating the work of all APIWG Sub Groups. The SIGAda EC approves the Chair of the APIWG. This document will serve as the Charter for the APIWG.

9. **APIWG Sub Group (SG)** – A SG will be established for each *Registered and Managed API*. Each SG Chair is responsible to the Chair of the SIGAda APIWG for the maintenance and evolution of that *Registered and Managed API*. An interested volunteer may request to be the SG Chair for a Registered API or Unregistered API. The APIWG Chair will facilitate the SIGAda EC approval process to establish the SG. Per Article 9 of the SIGAda Bylaws, each SIGAda Committee must have a Charter approved by the SIGAda EC. Ideally each SG will have a SIGAda Chair and an Ada-Europe Vice Chair. The SG is responsible for evolving the API with the consensus of all members of that SG. This evolution includes the baselining of the API, versioning of new releases, and identifying associated artifacts (e.g., tutorials, lessons learned).
10. **ISO/IEC JTC1/SC22 WG9** – In 1987, ISO and IEC formed a Joint Technical Committee, JTC1, to deal with all international standardization in the scope of information technology. JTC1 deals with its large scope of work by subdividing the responsibility among a number of Subcommittees. SC22 is the one that deals with "programming languages, their environments and system software interfaces". In turn, SC22 subdivides its scope of work among several Working Groups. WG9 is the one given responsibility for "development of ISO standards for the programming language Ada." SC22 and JTC1 must approve WG9 proposed standards.

V. **Approach for Registered APIs** – Registered APIs are made available to the Ada community via the API Home Page. The goal is to provide a valuable set of APIs for Ada application development using a streamlined light-weight process. The process is different for Registered APIs versus those that are Registered and Managed APIs:

1. **Registered APIs** – The goal of Registered APIs is to provide a current set of developed APIs on the API Home Page. The API is provided unchanged from that originally developed. This could be the best option for a contributor who has developed an API and desires a mechanism to make it more publicly available. A developer can simply provide the API and associated artifacts to the APIWG Chair. The APIWG Chair is responsible for placing requested APIs onto the API Home Page. If the submitter is not the developer, the APIWG Chair will seek permission from the owner/originator to place the API now and forever into the public domain. If permission is granted, the source code for the API and all available artifacts are added to the API Home Page. When a new API is added to the API Home Page, the API Manager will make an announcement to SIGAda Announce, the WG9 email list, and the Ada-Europe email list (no more than once a month). Once an API is added to the API Home Page, volunteers may provide other useful data to the APIWG Chair for posting with the API. (e.g., tutorials, examples, known problems, lessons learned).
2. **Registered and Managed APIs** – The goal of *Registered and Managed APIs* is to provide an Ada binding to an API that evolves as the API evolves. In other words, to maintain a living API. APIWG Sub Groups are established within the SIGAda APIWG are responsible for the maintenance and evolution of each *Registered and Managed API*. A SIGAda Member may volunteer to be the Chair of an APIWG Sub Group by requesting approval of the APIWG Chair. The request will be accompanied with a Charter and the initial list of officers. Ideally, the organization will have a Chair (a SIGAda and ACM member) and an Ada-Europe Vice Chair. Other officers may be identified, as desired. Upon approval, the APIWG SG is provided access to a Page dedicated to that API and an electronic mail list. This page can be used to document the API, examples, tutorials, as well as the consensus process used to evolve the API. The mail list will be used to conduct the business of the API SG, coordinate the consensus process, and notify interested parties of major API Binding events. The maillist will be archived on the ACM Home Page to maintain a record of the consensus process and provide a historical context to new members of the SG. [For an example, see the archive of Team-Ada, at: <http://www.listserv.acm.org/archives/team-ada.html>]. The APIWG SG will remain active as long as there are officers effectively serving in the positions. Otherwise, the APIWG Chair will dissolve the SG and request SIGAda EC identify the disposition of potentially useful artifacts developed by the SG.

- VI. **Responsibilities – The following responsibilities are established to support this API Management Plan:**
1. **SIGAda Executive Committee (EC)** – The SIGAda Executive Committee consists of 6 internationally elected officers being the Chair, Vice Chair for Meetings and Conferences, Vice Chair for Liaison, Treasurer, Secretary, and Past Chair. The President of Ada-Europe is invited to participate with a vote as a long standing In-Cooperation-With (ICW) organization. Although the SIGAda EC conducts its business meeting on the Monday of the annual SIGAda Conference, email ballots are used to expedite business. The SIGAda EC is responsible for:
    - a. Approving the creation of the APIWG and appointing its Chair.
    - b. Approving the Charter of the APIWG Sub Group and appointing its Chair. This approval can take place via email ballot.
    - c. Ensuring the APIWG Chair and the APIWG SG Co-Chairs have full access to the SIGAda Home Page and *Ada Letters* to support their activities.
    - d. Assessing the Viability of the APIWG and each APIWG Sub Group on an annual basis.
    - e. Appointing the APIWG Chair and the each APIWG Sub Group Chair.
    - f. Dissolving ineffective APIWG SGs.
  2. **SIGAda APIWG Chair** – The SIGAda APIWG Chair is responsible for:
    - a. Maintaining current artifacts for all Registered APIs.
    - b. Securing approval to place an API on the API Home Page for an API with third party Intellectual Property Rights.
    - c. Facilitating the SIGAda EC approval of each APIWG SG.
    - d. Ensuring APIWG SGs are viable and maintain effective API Home Pages.
  3. **APIWG SG Co-Chairs** – The API WG Co-Chairs are responsible for:
    1. Developing, Maintaining, and Evolving the Ada Binding to the API using a consensus based approach.
    2. Maintaining the API and its artifacts on the API Home Page.
    3. Approving baselines and versions for the API.
    4. Recommending replacements when they are no longer able to perform their duties.
  5. **Members of the Ada Community** – Are responsible for:
    - a. Recommending APIs to be established as Registered APIs to the SIGAda APIWG Chair.
    - b. Recommending APIs to be established as Registered and Managed APIs to the SIGAda APIWG Chair.
    - c. Providing feedback to the APIWG Chair and API SG Chairs on ways to make the API information provided more valuable and usable to the Ada Community.
- VII. **APIWG Charter** – This document would serve as the charter for the APIWG. As such, the SIGAda EC must approve it.
- VIII. **APIWG Sub Group Charter** – Each APIWG SC would develop its own charter [similar in nature to that of the ASIS Working Group Charter at <http://www.acm.org/sigada/WG/asiswg/200109-ASISWG-Charter.txt>]. The charter would be submitted to the SIGAda Executive Committee via the APIWG Chair for approval resulting in the creation of the APIWG SC. The key criterion for the SIGAda EC to approve an APIWG SG Charter is the need for volunteers willing to take on the work. An additional criterion is the ownership of Intellectual Property Rights. There is nothing wrong with having multiple bindings for the same API. For years, there has been considerable debate over a light weight binding versus a heavy-weight binding. Hence SGs may be approved to work on both types of bindings to the same API. The Charter approval establishes the group with a commitment of SIGAda resources. These resources include a Home Page, a Maillist, and opportunities to publish in Ada Letters as an APIWG SG. The charter is extremely important as it

sets the ground rules (terms of reference) for the group. Charters are extremely important to organizations who are willing to support professional activities. The Charter would be posted on the API SG Home Page and updated through coordination with the SIGAda EC as necessary.

- IX. **Membership** – Membership in the APIWG SGs is open to any interested party. Members are responsible for their own expenses. The APIWG SC Chair must be a member of both ACM and SIGAda. Other officers must be either a SIGAda and ACM member *or* a member of Ada-Europe. Other members of the SG do not have to be members of ACM, SIGAda, or Ada-Europe.
- X. **Use of the API Home Page** – The API Home Page is intended to be a resource to the entire Ada community. Membership in any organization is not required to access the Home Page, nor will it be password controlled. In order to post artifacts to the API Home Page, one must be an ACM and SIGAda member. [This implies an Ada-Europe officer desiring to post artifacts to the APIWG SG Home Page must also be an ACM and SIGAda member].
- XI. **Use of the API Maillist** – An API Maillist will be established for each APIWG SG. The maillist will be open to any interested party, who will then be considered to be a member of that sub group. The API Maillist will be set up so those subscribed can freely post to the maillist. The maillist will be moderated so that the maillist moderator can control non-member postings, in particular, to filter out spam sent to the list. The maillist moderator must be an ACM and SIGAda member.
- XII. **Announcement of API Versions** – The API subgroup would be responsible for setting the current version of the API. Notification of the latest version should probably be posted to the web, announced through the quarterly *Ada Letters* publication, and announced through the API Maillist as needed. New versions would be added to the monthly announcement on the SIGAda Announce maillist to the SIGAda Membership. Similar announcements can be made to Ada-Europe maillists, Team-Ada, and the WG9 maillist.
- XIII. **Why SIGAda and Ada-Europe?** – It is most appropriate that SIGAda and Ada-Europe collaborate in this effort to support the Ada community instead of WG9. This plan establishes a very light weight process that can easily be carried out by volunteers. Many volunteers have been interested in a forum where their bindings to APIs can effectively be shared across the Ada community. This plan provides such a forum as well as a mechanism to evolve the APIs as needed. Major and Minor changes can be made without involving National Bodies, WG9, SC22, JTC1, or ISO. This process does not preclude the generation of a formal ISO Standard. A Registered and Managed API can always be transitioned to WG9 for formal standardization. The current requirements for ISO standardization include an approved New Work Item and the commitment of 5 National Bodies to work on the standardization.