SIGAda’s Approach to the Management of Ada Bindings to Application Program Interfaces (APIs)

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Updated After Presentations to
SIGAda2002 Workshop (11 December 2002),
ISO/WG9 Meeting (13 December 2002),
DC SIGAda Meeting (9 January 2003), and
recent discussions
Outline of Discussion

• Purpose, Background, Overview, Definitions
• Approach for Registered Public APIs
• Responsibilities
• Charter, Membership, …
• Future – prioritizing
Purpose

- To provide a mechanism for the management of Ada Bindings to Application Program Interfaces (ABAPIs) for the Ada programming language
  - Standardized ABAPIs
  - Registered ABAPIs – focus of our discussion and SIGAda’s new Working Group (API WG)
  - Unregistered ABAPIs
Background

- Most Ada bindings to APIs are unmanaged
- Most Ada bindings are hard to find
- If found, little information is included with them
- No automatic announcement of updates (if any)
- Bindings do not evolve as Ada language evolves
- ISO/WG9 requested proposals from SIGAda and Ada-Europe
- ISO/WG9, Ada-Europe, and SIGAda will work together to manage Ada Bindings to APIs (ABAPIs)
Overview

- Registered ABAPIs will be publicly available
  - SIGAda API WG web page
  - Compilable Ada bindings to APIs (ABAPIs)
  - Artifacts (sources, examples, tutorials, known problems, lessons learned, rationale, etc.)
  - Procedures to easily Register ABAPIs
  - API WG responsible for registration and public availability (on web page or links) – ACM copyright with permission to copy – or perhaps other permission(s)?
  - API WG subgroups to develop/maintain/evolve ABAPI of interest to that particular subgroup
Definition of ABAPIs

- Standardized ABAPIs – provided in the Ada LRM (e.g., Annexes) or through secondary ISO standards (e.g., ASIS)
- Registered ABAPIs – ABAPIs made publicly available via the APIWG web page; individual or organization is responsible for each Registered (Private or Public) ABAPI
- Unregistered ABAPIs – neither of the above, but a link may be provided on the APIWG web page
Definition of Registered ABAPIs

- Registered Private ABAPIs – keeping up with who/where ABAPI is developed and/or maintained by a third party – *with their permission*
  - Registered Private ABAPIs are *NOT* standards
- Registered Public ABAPIs – API WG subgroup responsible for (possible development and) maintenance of ABAPI; changes are managed by the Subgroup; Subgroup performs baselining and versioning of their own ABAPI
ABAPI Home Web Page

- Includes valuable artifacts
  - Compilable Ada source code for Ada Binding (Specs) and Ada Bodies (freely available)
  - Rationale
  - Examples, tutorials, useful tips
  - Known problems, lessons learned, etc.
  - Licenses/Permissions (modification rights)
- On SIGAda’s web server (API WG web pages)
- May contain links to Unregistered ABAPIs
- May be mirrored elsewhere (e.g., Ada-Europe)
API Working Group (APIWG)

- ACM SIGAda chartered Working Group to manage Registered Private ABAPIs and Registered Public ABAPIs
- Chair’s responsibilities include:
  - Defining Charter for APIWG
  - Coordinating work of all Subgroups
  - Updating APIWG web site for all Registered (Private and Public) ABAPIs
API WG Subgroups

- Subgroup exists for each Registered Public ABAPI
- Subgroup chairs are responsible for the development, maintenance, and/or evolution of their particular Registered Public ABAPIs
- Subgroup is responsible for evolving Registered Public API, including baselining their own ABAPI, versioning of new releases, and identifying associated artifacts
Approach for Registered Private ABAPIs

- Provide current set of developed Registered Private ABAPIs on web page
- ABAPI is provided unchanged from originally developed ABAPI, with associated artifacts
- If requestor is not the ABAPI developer, APIWG Chair gets proper permission forms (including ACM’s forms) signed by submitter, to place ABAPI on APIWG website to make ABABI publicly available
- If permission is granted, all artifacts, including source code, are placed on APIWG web page; APIWG Chair announces it; others may also add artifacts (tutorials, examples, etc.)
- Otherwise – simply link to other website(s)
Approach for Registered Public APIs

- Ada Binding evolves as the API evolves
- Subgroups responsible for evolution and maintenance of each Registered Public API
- Web page identified and email list created
- Necessary artifacts can be placed on web site (Ada sources, rationale, documentation, tutorials, examples, etc.)
- Email list used for Subgroup discussions, Subgroup business, notification to others
Responsibilities of SIGAda EC

- Created API WG
- Appoints Chair (currently Acting Chair)
- Approves API WG Charter (currently Draft)
- Approves creation of API WG Subgroups and Chairs
- Provides necessary support to API WG and Chair, all Subgroups and Chairs
- Yearly assessment of Subgroup viability and possible dissolution
Responsibilities of API WG Chair

- Define WG-approved Procedures for Registered (Private and Public) ABAPIs (currently Draft)
- Maintain current artifacts for all such ABAPIs
- Secure approval to place third party ABAPIs (usually Registered Private) on API WG web page
- Facilitate SIGAda EC approval of each Subgroup
- Ensure Subgroups are viable and maintain effective web pages for their Registered Public API
Responsibilities of API Subgroup Chairs

- Develop, Maintain, Evolve the Ada Binding to their Registered Public API
- Maintain their API and its artifacts on their own API’s web page
- Approve baselines and versions of their own Registered Public API
- Recommend replacements of their own APIs when they are no longer viable
Members of the Ada Community

- Recommend to the APIWG Chair those Ada Bindings to APIs to be established as REGISTERED PRIVATE ABAPIs
- Recommend to the APIWG Chair those ABAPIs to be established as REGISTERED PUBLIC ABAPIs
- Provide feedback to the APIWG Chair and Registered Public API Subgroup Chairs to make more (valuable and useful) information available to the Ada community
API WG Charter

- Created from discussions held at the Workshop at SIGAda 2002 and at the WG9 meeting held Friday morning immediately after SIGAda 2002 – and further email discussions since then

- As a strong recommendation from the SIGAda 2002 APIWG Workshop, there **WILL NOT** be separate Charters for each Subgroup
Membership

- Membership in the API WG or any of its Subgroups is open to any interested party.
- Members are responsible for their own expenses.
- SIGAda’s API WG Chair **must** be a member of both ACM and SIGAda.
- Other members are encouraged to be members of ACM, SIGAda, and/or Ada-Europe.
APIWG Home Page

- A resource to the entire Ada community
- Publicly accessible (no password)
- To upload the necessary artifacts to the APIWG web pages, one must have an account on the ACM server (this usually means that one must be a member of ACM and SIGAda)
APIWG Email Lists

- Each Subgroup will have their own email discussion list
- Anybody can be a member of that Subgroup’s email list
- Any member of the list can freely post
- Others’ posts must be approved by the list owner
- List owner must be a member of ACM and SIGAda
Announcement of Registered Public API Releases

- Each Registered Public API Subgroup is responsible for setting the current version of their own API
- Notification of the latest version should be
  - Posted on the web
  - Announced in Ada Letters
  - Announced through the Subgroup’s email list
  - New versions should be in the monthly announcements of the SIGAda-Announce list and comp.lang.ada, Team-Ada, and Ada-Europe – and other lists of related interests
Why SIGAda and Ada-Europe?

- Lightweight process carried out by volunteers to share Ada bindings to APIs among the Ada community
- Provides a forum and mechanism to evolve ABAPIs as needed so that changes can be made without involving ISO/WG9
- When ready ...
  - ABAPIs may result in an International Workshop Agreement (IWA) deliverable – most likely way
  - ABAPIs may be submitted to ISO/WG9 to be a Technical Report or even as International Standard
Candidates for possible APIs?

- Possible Subgroups for Registered Public APIs
  - Files/Directories – done (outside API WG)
  - Sockets – exists within GNAT
  - HTTP/CGI
  - Time zones
  - Environment variables
  - ODBC/JDBC or equivalent
  - XML
  - others…
Results of SIGAda 2002 Workshop

- 17 people attended SIGAda API Workshop
- APIWG created
- APIWG Web pages created
- APIWG Chair responsibilities defined
- Subgroups responsibilities defined
- First Subgroup created – XML
- First test example – CGI
- Approach to move forward
SIGAda 2002 Workshop Results: APIWG Created

- Draft Charter created
- Clyde Roby is **Acting Chair**
- “Stamp of Approval”
  - Provide necessary characteristics
  - No judgments
  - Supported and/or Maintained
  - Available
  - Does not change “frequently”
- Clear instructions to submit your favorite Ada Spec or ABAPI, including “dirty” ones – Draft Procedures created, but needs updated
SIGAda 2002 Workshop Results: APIWG Web Pages

- ABAPI should never disappear
- Latest version always available
- APIWG License to be with Registered Public APIs (e.g., GPL, GMGPL, BSD, etc.) – **ONE** license?
  Or, **one of several** licenses
- Sources – not links – as much as possible (no compression of sources)
- Link to appropriate web page for Ada 200Y
Announce to SIGAda-Announce, comp.lang.ada, etc. when Registered Public Subgroup artifact(s) ready

Place Subgroup artifacts on publicly available part of APIWG web page

Namespace reservation, e.g., Ada.API.xxx

Guidelines for all Subgroups to follow (including minimal coding standards)

Veto right over Subgroups ???
SIGAda 2002 Workshop Results: Responsibilities of Subgroups

- Obtain/develop a specification to an API
- Maybe provide/develop a (freely available) implementation
- If more than one Ada Spec exists, then
  - Negotiate among all submissions to CHOOSE one
  - Negotiate among all submissions to CREATE a single one
  - Define MULTIPLE Ada bindings
- Notify WG9 – ISO National Bodies contribute
  - Create ISO Technical Report(s)?
  - Create WG9 Rapporteur Group?
  - Change Ada language in future?
SIGAda 2002 Workshop Results: Miscellaneous

- XML Subgroup created
  - Robert Leif is Acting Chair
- CGI Subgroup created
- First test example – Ada bindings to CGI
  - AdaCGI by David A. Wheeler
  - Another one by Pascal Obry
  - Others?
SIGAda 2002 Workshop Results: Approach

1. Briefed ISO/WG9 for comment – most comments incorporated
2. Created the Draft “Concept of Operations”, incorporating WG9 comments – two documents: Charter, Procedures
3. Test the “concept” document with Ada CGI binding
4. Refine the “concept” document
5. Publicize on SIGAda, comp.lang.ada, Ada-Europe, WG9 discussion lists
6. Update the “concept” document
7. Present to SIGAda EC for approval
8. APIWG chair accepts ABAPIs for registration
9. Subgroups formed to develop/maintain Registered Public APIs
Questions / Discussion

- Better name for the Working Group?
- Pointers to candidates for Registered Private APIs?
- Pointers to candidates for Registered Public APIs?
- …