Life Sciences Research

Request for Information

(CORBAmed RFI 4)

Submissions Due: March 9, 1998

OMG Document # corbamed/97-09-16
25 September 1997

1. Introduction

This Request for Information (RFI) solicits information about requirements, projects, and products that will provide guidance for life sciences research related object system interoperability. The Object Management Group (OMG) and, specifically, the Life Sciences Research Domain Special Interest Group (LSR-DSIG), will use this information to begin the technology adoption process for OMG-compliant interfaces for systems used in life sciences research. The mission of the Life Sciences Research DSIG is:

- To improve the quality and utility of software and information systems used in Life Sciences Research through use of the Common Object Request Broker Architecture (CORBA) and the Object Management Architecture (OMA).
- To encourage the development of interoperable software tools and services in Life Sciences Research.
- To prepare to use the Object Management Group (OMG) technology adoption process to standardize interfaces for software tools, services, frameworks, and components in Life Sciences Research.
- To communicate the requirements of the Life Sciences Research domain to the Platform Technical Committee.
- To coordinate with OMG Task Forces and Special Interest Groups, and other standards organizations and information providers to ensure common standards.

The OMG encourages users, consultants, systems integrators, and developers of life sciences research related devices, instruments, applications, databases, and systems to become involved with this process by responding to this RFI. OMG members and non-members may submit responses. Current compliance with OMG specifications is not a prerequisite for response to this RFI. The RFI response can consist of pre-existing product documentation, but should preferably be organized and presented in accordance with this RFI.

NOTE: According to OMG rules, SIGs may not issue RFIs. Therefore, this RFI is being issued by the CORBAmed Task Force on behalf of the Life Sciences Research DSIG. Responses to this RFI will be reviewed by LSR-DSIG.

Context and Scope

OMG's central mission is to establish an architecture and set of specifications to enable distributed integrated applications. Primary goals are the reusability, portability and interoperability of object-oriented software components in distributed heterogeneous computing environments. Much of OMG's effort to date has been focused on establishing an enabling infrastructure based on open and standard interface definitions. More recently the OMG has started the process of standardizing common interfaces in vertical application domains.

Life Sciences Research is one of these vertical domains and includes, but is not limited to, the following subdomains:
- genomics
- bioinformatics
- genetics
- cheminformatics
- structural biology
- computational chemistry
- computational molecular biology

Objectives

This RFI seeks information to help LSR-DSIG make useful and efficient decisions in the life sciences research technology adoption process. As the first steps in this process, LSR-DSIG will develop an architecture description, a schedule for issuing additional RFIs and RFPs (a technology road map), and one or more RFPs soliciting OMG IDL interfaces and corresponding semantic descriptions. Therefore, this RFI requests information on architectures, interoperability, object and data models, interfaces, existing systems, standards, legal issues, and their priorities.

2. Information Being Requested

This RFI is seeking information in the categories described below. Respondents are asked to address areas in which they have expertise and/or interest. Please consider the purpose of this RFI when responding so your time is spent on issues that will be helpful to reviewers. Respondents may consider areas not explicitly asked for if they feel the information provides useful guidance for LSR-DSIG. In addition, we are requesting descriptions of trends that LSR-DSIG should be aware of as we prepare for the technology adoption process.

Architecture

We request information listing and prioritizing issues relevant to information architectures that address the needs of life sciences research. Examples of such issues include:

- Query formulation and evaluation on domain data.
- Interoperability among domain components
- Requirements of sub-domain users and managers
- Data flow through sub-domains
- Collection of data from instrumentation
- Access to analysis tools and applications
- Security and privacy
- Relationship to the Object Management Architecture (OMA)

This RFI also solicits architectures that address these issues.

Interoperability

We request information on requirements for interoperability among life sciences research information systems, devices, instruments, applications, and data resources. These requirements should reflect areas in which there is a strong current or projected need.

Object and Data Models

We request information on data and object models relevant to life sciences research. This will provide LSR-DSIG with insights about how domain experts view the complex requirements on and relationships within life sciences information systems.

Interfaces

We request information identifying specific objects or groups of objects that require interface standards to facilitate interoperability between devices, instruments, applications, and systems. These could be objects found in a single application domain or a set of domains or objects that are needed horizontally by all or most users. If a response lists a significant number of objects or object groups, they should be prioritized. Finally, to the extent possible, responses should describe dependencies of life sciences research objects upon any current or planned OMG specifications.

Existing Implementations

We request information on availability, maturity, and importance of existing object-oriented and/or legacy implementations that are being applied to life sciences research problems.

Standards

We request information on relevant information technology standards and life sciences research specific standards, both *de facto* and *de jure*. Where multiple standards for an entity are important, respondents are asked to compare significant differences among them. It is also important to identify problems with current standards that prevent their acceptance or cause problems in their implementation. This RFI also requests information on standards bodies with which LSR-DSIG could cooperate productively.

Legal Issues

We request information on significant laws or regulations that could have an impact upon the technology being adopted for standardization in life sciences research. These include contractual and licensing agreements, as well as specific laws and regulations.

3.   Instructions for Responding to this RFI

Companies responding to this RFI shall designate a single contact within that company for receipt of all subsequent information regarding this RFI and the forthcoming series of RFPs. The name of this contact will be made available to all OMG members.

Responses to this RFI must be received at OMG no later than 5:00 PM US Eastern Time (22:00 GMT) March 9, 1998. (See below for more details on receipt dates and addresses). However, earlier responses are encouraged. Responses received on or before January 19, 1998 will be considered at the February meeting of the LSR-DSIG (to be held in Salt Lake City, UT, USA). Responses received after that date, but prior to the March receipt deadline will be considered at the April meeting of the LSR-DSIG (Manchester, UK). Respondants who plan to submit responses for consideration at the April meeting are strongly encouraged to notify the LSR-DSIG of the areas they plan to address in their response in a brief e-mail sent to lifesciences@omg.org before February 7, 1998. Documentation submitted in response to this RFI will be available to all OMG members.

Format of RFI Responses

The following outline is offered to assist in the development of your response. You should include:

- A cover letter -- the cover letter should include a brief summary of your response such as indicating which areas you are responding to and indicate if supporting documentation is included in your response.
- Your response to any or all of the areas of information requested by this RFI.
- If required, a glossary which maps terminology used in your response to OMG standard terminology. (See the Appendices to the OMA Guide and the CORBA Specification for OMG's standard terminology.)

Although the OMG does not limit the size of responses, you are asked to consider that the OMG will rely upon volunteer resources with limited time availability to review these responses. In order to assure that your response receives the attention it deserves, you are asked to consider limiting the size of your response (not counting any supporting documentation) to approximately 25 pages. If you consider supporting documentation to be necessary, please indicate which portions of the supporting documentation are relevant to this RFI.

NOTE: According to the Policies and Procedures of the OMG Technical Committee, proprietary and confidential material may not be included in any response to the OMG. Responses become public documents of the OMG. If copyrighted, a statement waiving that copyright for use by the OMG is required and a limited waiver of copyright that allows OMG members to make up to at least twenty-five copies for review purposes is required.

How to Submit

20 paper copies of the response and any supporting documentation should be sent to the site of the OMG Technical Committee Meeting at which the response will be considered. One copy in IBM PC machine-readable format of these documents (typically ASCII, MS Word, or WordPerfect format) should be sent to the Life Sciences Research Technical Desk email address below. One confirming paper copy of all documents should be sent to the OMG postal address below. Other communication regarding this RFI should also be sent to the email address below.

Meeting site information for the April 1998 meeting of the OMG Technical Committee and the LSR-DSIG has not yet been finalized. Information on this and other future OMG Technical Committee meetings can be found at: http://www.omg.org/library/tcmtgs.htm

February Meeting Site:
Life Sciences Research DSIG Technology Desk
Object Management Group Technical Meeting
c/o The Wyndham Hotel
215 W. South Temple
Salt Lake City, UT 84101
USA

April Meeting Site:
Manchester, UK
for mailing address of meeting site consult: http://www.omg.org/library/tcmtgs.htm

OMG:
Life Sciences Research DSIG Technology Desk
Object Management Group Ind.
Framingham Corporate Center
492 Old Connecticut Path
Framingham, MA 01701-4568
USA

Phone: +1-508-820 4300
Fax: +1-508-820 4303
Email: lifesciences-td@omg.org

Email responses to this RFI must be received at OMG no later than 5:00 PM US Eastern Time (22:00 GMT) March 9, 1998 and the confirming paper copy must arrive at OMG shortly thereafter. Paper copies of responses should arrive at the meeting site (Salt Lake City, UT, USA) by February 6, 1998 or (Manchester UK) by March 27, 1998. The outside of packages/envelopes containing submissions or any other communication regarding this RFI should be clearly marked "Life Sciences Research RFI RESPONSE".

NOTE: Your organization should be prepared to handle requests for additional copies of your response and supporting documentation.

Reimbursements

The OMG will not reimburse submitters for any costs in conjunction with their responses to this RFI.

4.   Response Review Process and Schedule

Process

RFIs such as this one are issued with the intent to survey the industry to obtain information that provides guidance which will be used in the preparation of RFPs. The OMG membership, specifically the Life Sciences Research DSIG, will review responses to this RFI. Based on those responses, LSR-DSIG will prepare a domain architecture, a corresponding roadmap, and one or more RFPs. In accordance with the OMG technology adoption process, each issued RFP will ultimately result in the specification of a portion of the architecture. See below for a brief description of the OMG technology adoption process and consult the OMA Guide for a complete description of the OMG's requirements, policies, and procedures for technology submissions.

Clarification of Responses

To fully comprehend the information contained within a response to this RFI, the reviewing group may seek further clarification on that response. This clarification may be requested in the form of brief verbal communication by telephone; written communication; electronic communication; or a presentation of the response to a meeting of LSR-DSIG. Therefore, LSR-DSIG requests that submitters attend the LSR-DSIG meeting at which their response will be considered prepared to present and clarify their responses.

Schedule

The schedule for responding to this RFI is as follows. Please note that early responses are encouraged.

TF recommends issuing the RFI	25 September 1997
RFI issued	26 September 1997
RFI responses due	
(for consideration at the February '98 LSR-DSIG meeting)	19 January 1998
(for consideration at the April '98 LSR-DSIG meeting)	09 March 1998

The tentative schedule for the RFI evaluation process and subsequent RFPs is:

Review of RFI responses	09 February and 30 March 1998
TF recommends issuing the initial RFP	31 July 1998
Initial RFP issued	31 July 1998

NOTE: This schedule is subject to change based on the number of RFI responses received and the information acquired from the responses.

5.   References

Richard Soley (ed.), *Object Management Architecture Guide* (OMA Guide), Third Edition, Wiley. June 1995.
Common Object Request Broker: Architecture and Specification (CORBA), Revision 2.0,
http://www.omg.org/corba/corbaiiop.htm
CORBAservices: Common Object Services Specification, Revised Edition, http://www.omg.org/corba/sectran1.htm.
CORBAfacilities Architecture, Revision 4.0. November 1995

 More information about the Object Management Group can be found at: **http://www.omg.org/**

The OMG also provides a document server. Send e-mail to **server@omg.org** with a message body:

```
help
get docs/doclist.txt
```

Appendix: The OMG Technology Adoption Process

OMG adopts specifications for interfaces, based on existing technology, by explicit vote on a technology-by-technology basis. The specifications selected each fill in a portion of the OMA Reference Model. OMG bases its decisions on both business and technical merit. The OMG Technical Committee (TC) provides technical guidance to the OMG in making decisions about specifications. The TC is composed of representatives of all OMG member companies. The TC is operated by a Vice President of Technology, working full-time for the OMG itself (as opposed to being an employee of a member company).

The TC operates in a Request for Proposal mode, requesting technology to fill open portions of the Reference Model from international industry. The responses to such a proposal, taken within the specific RFP response period, are evaluated by a Task Force of the TC with the full TC then voting on a recommendation to the Board for approval of a specific addition to the set of OMA specifications. Once a specification (a technology, not source or product) has been adopted by the OMG Board, it is promulgated to the industry through a variety of distribution channels.

NOTE: The OMG process is modified from time to time. Any RFPs issued as a result of this RFI will use the process defined at the time of issuance.