

Business plan for keeping the Directory Schema Registry alive

TERENA Project Directory Schema Registry, Deliverable J

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1 Status of this document

This is deliverable J of the TERENA project Directory Schema Registry (DSR), which is co-funded by TERENA, JISC (Joint Information Systems Committee, UK), REDIRIS (Spanish National Research Network), CESNET (Czech National Research Network), POZMAN SUPERCOMPUTING (Poznan Supercomputing and Networking Center, Poland) and DAASI International and performed by DAASI International. Together with four other deliverables [RegIntro], [RegPolicy], [RegSchema], [RegArchitecture] and the bibliography [RegBib] it forms the documentation of this project.

This version 0.92 reflects the status in August 2003 and is the first public version. A final version 1 will be published after all other project documents have been completed.

In some parts of this text, some details not relevant for the currently planned registry are discussed which points to a possible future broadening of the functionality of the registry after the end of this project. A version 2 of this document is planned for the time after the end of the project. For this future version comments and additions to the current document are welcomed. Please send them to the email address of the author.

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2 Introduction

The Open Group once in the frame of an "Internet Directory Consortium" (IDC) attempted to set up a Schema Registry that complies to the specifications of the IETF schema WG, which has been discussed in [RegIntro] and [RegPolicy]. In a posting to the WG mailing list, Chris Harding from The Open Group made the following statement about how to fund such a registry:

"The Schema Registry is something that the Internet Directory Consortium wants to do. But the funding model for a registry of this kind is difficult. It costs, not a lot, but something, to set up and run. The costs are unlikely to be recovered through operating the registry - if there is a big (or any?) charge to use it, people probably won't. So the best way is through a consortium of some kind, funded by companies that want to see it established because it will help their business. The position right now is that we don't have the level of commitment that would

enable us to set it up and run a registry." (<http://www.imc.org/ietf-schema-reg/mail-archive/msg00187.html>)

The Open Group didn't manage to set up such a funding board. Another prior attempt of a commercial company didn't find enough support from the IETF community. This document wants to discuss this approach as well as alternative strategies to make a continuous operation of the DSR possible.

3 Requirements

This section lists the activities that are required for operating the DSR and for doing additional development work to enhance its usability and functionality.

3.1 Operational requirements

To run a service as specified in [RegPolicy] and [RegArchitecture] it takes some amount of time which has to regularly be spent. In summary following work has to be done by DSR operator:

- operate at least three LDAP servers:
 - 1.) The server for the pending non-public entries, 2.) a master server for the public entries and 3.) at least one slave that is to be queried by the registry users. As soon as DSR gets more and more popular, more slave servers will have to be added.
 - To operate a server means to see that the server is running, survey the log files to find unusual behaviour, create and evaluate usage statistics, from time to time use the service to evaluate the performance. This can only partly be done by automated scripts.
 - In addition, the replication process has to be surveyed, by checking the replication log file and the logged replication errors.
- Operate at least one Web-to-LDAP gateway for web access
 - To operate a gateway means to see that the gateway is running, survey the log files to find unusual behaviour, create and evaluate usage statistics, from time to time use the gateway to evaluate the performance. This can only partly be done by automated scripts.
 - As soon as DSR gets more and more popular, an additional web-gateway will have to be set up for each additional slave server.
- Operate a mailing list
 - in addition survey the mailing list (read all postings) and act accordingly (post when required)
- For each new registry-request a number of activities have to be done:
 - read the log file of the automated MIME-processor, and act on reported errors
 - have a close look at the keywords and align them to the key-words already used in the DSR
 - check the syntax of the schema element definitions, using dedicated scripts
 - check the validity of the OIDs
 - initiate a discussion on the mailing list
 - call for consensus
 - move the respective LDAP entries from the pending server to the public server
- For each schema update request (including formal comments)

- copy the public entry to the pending server
- make requested changes
- check the syntax of the new schema element definitions
- check the validity of the new OIDs
- initiate a discussion on the mailing list
- call for consensus
- move the respective LDAP entries from the pending server to the public server
- For each informal comment made about a node in the DSR
 - evaluate the seriousness of the comment (being rather tolerant)
 - if to be published move the comment from pending to the public server
- Maintain the project web site, including a news section to report about current activities
- Create usage statistics and publish them on the web site
- Write an annual report
- Do public relations for the DSR
 - give presentations at conferences
 - catch media attendance
 - write news articles for the DSR web site

The provided service level should guarantee operational service on working days during day time. Serious service interruptions, which cannot be resolved by automated scripts, would, if happening on week ends or at night, only be fixed during the next working day. Reaction time to non essential requests like an informal comment should be dealt with within two working days.

For this operational work on the described service level it is estimated that the amount of time needed per year is half a person year (technical staff).

3.2 Development requirements

Besides these operational activities, further development activities are necessary to keep the service up to date. Following developments could be done in the future:

- Enhance the web interface for:
 - complex searches
 - optimise the automatic link creation to prevent search result lists when following inter-DSR links
 - enrich the information in the OID tree
 - context sensitive help
 - graphical tree browsing interface
- Software for additional services like a notification service for newly submitted schema, which should be personalisable, so the users only get notified about schema they are specifically interested in.
- Broaden the scope of the registry for XML schema and RDF schema
- Provide conversion tools to e.g. convert XML schema to LDAP schema

- Any other new features required by the users and/or the members of the funding board

The effort for additional development activities cannot be exactly estimated, but another half person year (technical staff) for the first year could enhance the DSR functionality considerably.

In Germany a half person year (technical staff) will cost about € 20.000. So on the long term, this amount would be required per year for operating the DSR. Additional € 20.000 would be desirable for at least the first year of the production service for additional development work.

4 Possible business strategies

An infrastructural service like the operation of the DSR is always difficult to finance. There are at least three interested parties:

- The standardization bodies that have interest in disseminating their schema standards
- The users (LDAP developers and implementors) that have interest in finding existing schema, which is much cheaper than developing schema themselves
- The LDAP server vendors that have specified proprietary schema that they want to have disseminated
- Application vendors that want to have their schema used by other vendors to increase interoperability

Any business strategy will have to take these interests into consideration.

The following sections deal with business strategies already existing for the same or similar services.

4.1 The advertisement model

A strategy for funding is already hinted at by the schema WG in [SchemaProc], where it says:

"Currently, the ability to advertise products and services on the repository web site to recoup monies used in operating the service is allowed. At any time, the review committee may make a policy decision on the appropriateness of ads on the repository pages."

Advertisement had been the solution for many funding issues in the Internet during the boom of the new economy. After its collapse and general economical decrees, the advertisement business also decreased dramatically. It is thus currently not wise to rely on such a funding solution.

4.2 The funding board model

The Open Group thought of a funding board, the members of which were to pay a yearly membership fee. It is unknown to the author which organizations had been approached and what amounts were planned for the fee.

Anyway possibly interested organizations could be standardization boards, LDAP server vendors and LDAP application vendors. There could be different fees for commercial and non-commercial organizations. Since the board would also be deciding about future developments, other interested parties, like NRNs or organizations of NRNs might also be willing to become members of such a board.

As written in [RegIntro], the following standardization boards have specified LDAP schema and thus may be interested in being member of a DSR funding board:

- IETF, represented by ISOC, IESG or IANA
- DMTF
- The Open Group
- Internet2

- GGF

Representatives of Internet2 already indicated, that they might be willing to co-fund the DSR.

The European National Research Networks named at the beginning of this document have been funding the design and development of the DSR. Thus these kinds of organisations might also be willing to join the DFB.

A number of Open Source Projects have defined LDAP schema and thus might be interested in DSR (OpenLDAP, sendmail, OpenGroupware, samba, etc.). In General such projects don't have funding means at their disposal, only a small or no membership fee could be asked for from such projects.

Commercial server vendors (Microsoft, Novell, SUN, Maxware, etc.) might also be interested in being member of a DSR funding board. A web page containing logos and links to the web sites of the members could have a wanted advertisement effect.

4.3 The sponsor model

The XML schema registry operated by the OASIS standardization board is funded by sponsors, the logos of which appear prominently on the web site. The listed sponsors are isogen international¹, Global eXchange Service², SAP³ and Bea dev2dev⁴. This funding model lies somewhere in between the advertisement model and the funding board model, as described in the above two sections.

4.4 The grass root model

The already existing LDAP schema viewer service (see section 5.5. of [RegIntrod]) was started as a grass roots approach, initially not asking for funding at all. By now the maintainer of that service asks for donations from the users. Especially companies that want to deploy directories can save considerable amounts, if they find established and well thought through reusable schema instead of specifying schema themselves with all the workload and possible rat holes. Such companies might be willing to donate even considerable amounts, if they know that the service valuable to them can be kept alive with such donations. This could be a possible approach for the DSR as well, but most probably will not suffice for funding the whole effort needed for the DSR.

4.5 The usage fee model

Another funding possibility is to charge for retrieving schema from the registry. Such a strategy would foil the motivation of the DSR to further re-usage of schema though, by hindering people not willing to pay for schema retrieval to use it. Normal usage of the DSR should be free of charge, only then it will be able to establish as a well accepted service.

Additional advanced services could on the other hand well be chargeable, as long as the basic service which makes all registered schemas retrievable is free of charge. Such advanced services could be:

- a personalized notification services that sends information via email about newly registered schema, in the categories the user is interested in
- a general newsletter, informing about important new schema, with additional information and background not retrievable via the registry

¹ <http://www.isogen.com/index.htm>

² <http://www.gxs.com/>

³ <http://www.sap.com>

⁴ <http://dev2dev.bea.com/index.jsp>

- a brokering service, for finding appropriate schema in the registry, based on requirements specified by the customer

Since such services only minimize the effort to get to know about schema they would not interfere with the common free of charge usage of the registry.

4.6 The registration fee model

Novell seems to charge a registration fee, for the registration of an OID with an name prefix of 8 alphanumeric characters. The only mentioning of such fees could be found at <http://developer.novell.com/devres/vresource/oid.html> where it says: "All registration fees are to recapture administrative costs only". The funding model is thus a fee which is charged per registered item. With such a strategy, the DSR would most probably be used by commercial organizations, but not by non-commercial activities like Open Source Projects. Additionally either the fee would have to be rather high to ensure enough funding, which would endanger the willingness of the schema specification organizations to take part. Thus this solution does not seem to be ideal for the DSR.

4.7 Summary and evaluation of possibilities

All above funding models have been evaluated with respect of their applicability in the frame of DSR funding. The most promising strategies seem to be:

- The funding board model
- The grass root model
- The usage fee model for advanced services, as described in 4.5.

5 Proposal for a business plan

The following sections describe a way to go forward to ensure the operation of the DSR.

5.1 Sketch of by-laws of a DSR Funding Board

The following is a mere sketch of how by-laws of a DSR funding board could look like. The first act after establishing a board of organizations, interested in being members of a funding board, will be to finalize and publish such by-laws.

5.1.1 Article 1: Purpose of the DSR Funding Board (DFB)

The purpose of the DFB is:

- to further the operation of the DSR and its aims, namely to publish well specified directory schema and thus further schema re-usage
- to oversee that the DSR operator acts in accordance with the specified duties
- to oversee that the overall policy specified for the DSR is fully implemented
- control the whole process of schema registration
- if needed change the policy of the DSR
- appoint experts for review
- reassign responsibility for a schema
- decide about schema inclusion and classification of its status
- decide about membership fees

5.1.2 Article 2: Members of the DFB

Member of the DFB can be any organization which is active in Directory Schema specification in any way. Although only organizations are member, they have to be represented by a specified person of the organization. These representatives act on behalf of their organization.

Generally, members are obliged to pay a membership fee. The DFB may decide to provide free memberships to non-for-profit organizations if their membership is wanted by the DFB and if the organization is not able to afford to pay the fees.

Although all members have the same rights and all have one vote in decision processes, at least two member organizations will be elected to provide a chair and a secretary for the board. Additional co-chairs can be elected if wanted by the board.

The obligations of the chair are:

- mainly to represent the board in all legal and public aspects
- to set the agendas for the DFB meetings
- to moderate decision processes

The obligations of the secretary are:

- to coordinate the communication between the DSR Operator and the DFB
- to supervise the collection of the membership fees
- to pay the DSR Operator for his efforts, as specified in a contract between the DFB and the DSR Operator
- to write and publish notes of the meetings of the DFB containing all decisions made by the board
- to fulfil additional actions if required by the board

5.1.3 Article 3: Meetings of the DFB

It is desirable to have a face to face meeting of the DFB per year. Nonetheless there could be reasons for not having this. Thus the main forum for communication and decision making is a mailing list dedicated for the DFB members and virtual meetings, that could be video conferences or closed chat rooms.

On this virtual and non virtual meetings the agenda proposed by the DFB chair will be settled by the participating members. The chair moderates the meeting and decision processes. The DFB secretary takes notes.

5.1.4 Article 4: Membership fees

The DFB decides about the membership fees once a year. The aim of the fees is to:

- pay for the administrative activities of the DSR operator based on a contract between the operator and the DFB
- pay for additional development based on separate contracts with the DSR operator, in which the development work is specified in detail
- pay for the costs of face-to-face meetings of the DFB
- pay for any public relations activity to make the DSR better known in the public

The membership fees can be graded in different categories, e.g. according to the number of employees, or the annual turnover etc.

Non-profit organizations can be exempted from membership fees.

The membership fees should be settled in such a way that all the above listed payments can be done. The DFB is allowed to collect a reasonable surplus to ensure the future of the board. This surplus should not exceed the sum of one years obligations, and is only to be spent for the above mentioned reasons.

5.2 Process for establishing a funding board

This document should suffice for giving an insight into the problem space and should be seen as a proposal for establishing a funding board. It will be sent to representatives of the above named standardization boards as well as to other parties that could be interested.

Some personal communications have already indicated the willingness of some organizations to become members of such a funding board.

5.3 Other revenue activities in the frame of the DSR

Since the membership fees of the funding board are only intended to cover the actual administrative effort of the DSR operator, there should be more possibilities to gain revenue for the DSR operator to ensure its own existence. Thus the DSR operator will be allowed to do the following

- Provide additional advanced services as described above in 4.5., which go along with additional effort. This will be handled in individual contracts between the DSR operator and the customer and is not supervised by the DFB. Parties other than the DSR-Operator are allowed and encouraged to provide similar advanced services based on the DSR data.
- Provide the opportunity for feature-donations, meaning that users can make donations for the development of additional features not funded by the DFB. The DSR operator will specify a price for the development of a feature requested by a user. As soon as user donations dedicated for this feature development have reached the set price, the DSR operator will start developing the feature.

6 Conclusion

With the funding strategies proposed above in 5, it will be possible to run the DSR continuously, with a minimum of commitment of the members of the DFB. The additional revenue possibilities will provide a means for the DSR operator to ensure its existence. The general development will be supervised by the DFB. None the less additional features can be made possible by the "feature donation" mechanism. This may increase the popularity of the DSR and provides for a healthy progression of the DSR.

7 Pointer to references

[RegBib] Gietz, Peter, "Bibliography for the Directory Schema Registry Project", Version 1, Deliverable B of the TERENA project Directory Schema Registry, January 2003

[RegBib] contains all references of the project documents.

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