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INTERNATIONAL STANDARD ISO/IEC 29168-2

ITU-T RECOMMENDATION X.673

Information technology –
Open Systems Interconnection –
Procedures for the Object Identifier Resolution System
Operational Agency

Summary

This Recommendation | International Standard specifies the activities to be undertaken by the ORS operational agency to support the Object Identifier Resolution System. It includes the specification of use of DNSSEC (NSEC3) and addresses issues of charging. It also specifies the mechanisms for the appointment of the operational agency as an ISO/IEC Registration Authority.

Keywords

Procedures, Operational Agency, Registration AuthorityObject Identifier Resolution System, Object Identifier, ORS, OID

CONTENTS

Introduction

An introduction to the OID Resolution System is provided in ITU-T X.672 | ISO/IEC 29168-1.

The DNS zone files for .oid-res.org are required to provide ORS support for the root of the International Object Identifier tree.

These procedures include the appointment (or re-appointment) of the ORS operational agency (the operational agency).

The procedures require the operational agency to provide DNS zone file support for .oid-res.org as well as for a specified set (see clause 6) of lower-level OID nodes (including DNSSEC (NSEC3) support for those zone files).

The operational agency is required to support specified procedures that enable the provision of ORS-support for OID nodes beneath those that it is required to support.

Charges for services provided by the operational agency are addressed.

Clause 5 specifies the approval mechanisms for the appointment of the operational agency and any necessary subsequent changes.

Clause 6 specifies the OID nodes to be supported by the operational agency.

Clause 7 specifies the nature of operational agency support.

Clause 8 addresses charging issues.

INTERNATIONAL STANDARD
ITU-T RECOMMENDATION

Information technology –
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Operational Agency

1 Scope

1.1 This Recommendation | International Standard specifies the mechanisms (and some criteria) that will be applied for selection and approval of the operational agency, for any future modification of the procedures and for any change of operational agency.

1.2 It lists the OID nodes for which the operational agency is required to provide ORS support.

1.3 It gives the required level of support for these nodes.

1.4 It gives the procedures by which lower level nodes can apply for ORS support (Category A, Category B, or Category C), and the role of the operational agency for these levels of support.

1.5 It determines the basis for charges that might be levied for these levels of support.

2 Normative reference

ITU-T X.672 | ISO/IEC 29168-1, *Information technology – Open Systems Interconnection – Object Identifier Resolution System*

3 Imported definitions

This Recommendation | International Standard uses the following terms defined in ITU-T X.672 | ISO/IEC 29168-1:

DNS zone file;

operational agency procedures (procedures);

ORS operational agency (the operational agency);

ORS-supported OID node.

4 Abbreviations

OID   Object Identifier

ORS   OID Resolution System

5 Appointment (and any subsequent change) of the operational agency

5.1 Formal appointment

The operational agency is formally appointed as an ISO/IEC Registration Authority under the ISO/IEC procedures for such appointments. The procedures commence with an ISO/IEC JTC 1/SC 6 resolution recommending to ISO/IEC JTC 1 that an organization be appointed, and (assuming approval at the various stages) result in a contract between ISO/IEC JTC 1 Information Technology Task Force (ITTF) and the appointed organization.

5.2   Nominating bodies

When there is a vacancy for the operational agency, nominations may be submitted by any ISO National Body, IEC National Committee or an ITU Member.

Nominations shall be sent to the ISO/IEC JTC 1/SC 6 Secretariat for the attention of the Expert Group (see 5.4).

5.3   Criteria for nominations

Those making a nomination should note the following:

a)   Eligible nominees are limited to national government agencies, private companies, charities, academic and research institutions within a country represented by an ISO National Body, IEC National Committee or ITU Member State;

b)   Nominations shall include a statement by the nominee (in free form) that (if appointed) they are prepared to operate under all of these approved procedures, and to cooperate in the resolution of any proposed subsequent changes to the procedures;

NOTE – When there is a new call for nominations, the nomination may make the appointment conditional on some change to these procedures, but that is likely to seriously delay approval of the nomination.

c)   Nominations shall include a statement (in free form) giving evidence of expertise in the management of DNS zone files, including use of DNSSEC (NSEC3).

5.4   The Expert Group recommendation and approval of an operational agency

5.4.1   Once nominations have been received for a new operational agency, they will be initially reviewed by an Expert Group consisting of:

The ISO/IEC JTC 1/SC 6/WG 9 Convenor

The ITU-T SG 17 ASN.1 & OID Project Leader

The Editor of the ITU-T X.660 series | ISO/IEC 9834 multi-part standard

The Editor of ITU-T X.672 | ISO/IEC 29168-1

5.4.2   The Expert Group shall (in a timely manner after the closing date for nominations) consider the nominees and make (perhaps after further enquiry) a recommendation to ISO/IEC JTC 1/SC 6 for appointment of the operational agency.

5.4.3   The Expert Group will produce a report listing the nominations, their deliberations, and any recommendation(s) –with reasons – that they wish to make. The report will be discussed if necessary in an open session preceding the first available plenary for approval.

5.5   Term of appointment

5.5.1   It is expected that a nominee will normally agree to serve for a minimum period of three years.

5.5.2   All parties shall make best efforts to give twelve months notice of any termination. If there is no request by any of the parties for review or termination of the nomination, it shall continue without further formality.

NOTE – The use of the term "parties" means the operational agency, ISO/IEC JTC 1/SC 6 and ISO/IEC JTC 1 ITTF.

5.5.3   If there is a request by any of the parties to terminate the appointment, these procedures shall be invoked to determine a new operational agency.

5.6   Transfer of .oid-res.org

5.6.1   There is agreement that the owner of .oid-res.org will transfer that domain name free of charge to whatever organization is appointed as the first operational agency.

NOTE 1 – This may involve requesting `.org` to change its NS zone file record to point to a new server for the `.oid-res` zone files.

NOTE 2 – There may be a further charge (to be paid by the new operational agency) to `.org` to support the signing of a new public key to provide DNSSEC (NSEC3) support, as is required by ITU-T X.672 | ISO/IEC 29168-1.

5.6.2 It is a requirement that any appointed operational agency that is replaced as specified in clause 5 will also provide such a transfer of ownership of `.oid-res.org` free of charge.

6 OID nodes to be supported by the operational agency

Table 1 lists the OID nodes to be supported by the operational agency. There are long arcs and Unicode labels associated with some of these OID nodes. These can be determined from past ITU-T SG 17 and ISO/IEC JTC 1/SC 6 Resolutions, and from ITU-T X.660 | ISO/IEC 9834-1, and are not listed here. Only the canonical identification is given in Table 1.

OID-IRI	Comment on ORS support (see clause 7)
Root	Fully supported, for all current and new children (including current and new long arcs) and all Unicode labels to children. It is not expected that there will ever be nodes */n* for values of *n* above 2
/0	Fully supported.
/0/0	Fully supported.
/0/0/*n*	Fully supported for all current (n = 1 to 26, representing **a** to **z** series Recommendations) OID nodes and supported for new children (none expected). Support available for all subsequent child OID nodes under category C, B or A provision.
/0/1	Support not needed – obsolete.
/0/2	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/0/3	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/0/4	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/0/5	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/1	Fully supported.
/1/0	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/1/2	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/1/3	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/2	Fully supported. Support available for all subsequent child OID nodes under category C, B or A provision.
/2/*n*	Fully supported for all current *n* OID nodes and new children (expected about twice a year). Support available for all subsequent child OID nodes under category C, B or A provision.

7   The nature of operational agency support

7.1   Support for the OID nodes supported by the operational agency

7.1.1   The operational agency shall provide DNS zone files with appropriate NS, DNAME and NAPTR records for all the nodes listed in clause 6, in order to provide navigation and support of the services specified in the Annexes to ITU-T X.672 | ISO/IEC 29168-1.

7.1.2   It shall support long arcs to any of its supported nodes, and shall add, in a timely manner, any new Unicode labels on arcs to those nodes that are duly approved.

7.1.3   Additional nodes that are at the same level as those in clause 6 (and additional Unicode labels) shall be supported following ITU-T SG 17 and ISO/IEC JTC 1/SC 6 approval.

7.1.4   In particular, the COID service, the CINF service, and the RINF service shall be supported.

7.1.5   The XML file for the CINF service for any node that has any child OID node that is listed in clause 6 shall have an XML file that gives full disclosure of its children.

7.1.6   The XML file for the RINF service for any node that is listed in clause 6 is not required to provide contact information, but the operational agency may choose to do so subject to the requirements of ITU-T X.672 | ISO/IEC 29168-1.

7.1.7   If new ORS services are progressed for the addition of Annexes to ITU-T X.672 | ISO/IEC 29168-1, then discussions shall be held with the operational agency on the level of their support.

> NOTE – This clause also applies to services currently specified in Annex A to ITU-T X.672 | ISO/IEC 29168-1 and referred to another standard, as the requirements of these standards are not yet clear.

7.1.8   Security: All zone files for the nodes specified in clause 6 shall support the use of the DNSSEC (NSEC3) security flag specified in ITU-T X.672 | ISO/IEC 29168-1, clause 5

7.2   ORS-support for lower-layer nodes

7.2.1   There are three levels of support that are possible. Category A support, Category B support, and Category C support.

> NOTE – Charging for these levels of support is specified in clause 8.

7.2.2   Category C support shall be provided (on request from a subordinate OID node) without charge (see clause 8). Category C support requires only the addition of DNAME and NS records for the new ORS-supported child OID node. The child OID node is then responsible for maintenance of all zone files on the server referenced by the NS record (including any required XML files). With Category C support only, the child node will not be able to use DNSSEC (NSEC3) without establishing its own trust anchor.

7.2.3   Requests for category C support for a child OID node shall normally be responded to and the NAPTR and NS records updated within one month of receipt of the request.

7.2.4   Category B support involves the signing by the operational agency of certificates for use by the child OID node, so that the child OID node does not need its own trust anchor. It is expected that the operational agency will have a target of three months processing time for a category B support of a child OID node, to allow time for appropriate signing, but this will depend on the interactions with the child OID node.

7.2.5   Category A support is where the child OID node contractually agrees with the operational agency for that agency to fully maintain the zone files for its ORS support. There is no recommended limit on the duration of such negotiations.

> NOTE – In this case, if the operational agency is changed, there can be no guarantee that the new operational agency will take over such a contract.

7.3   Procedures for requesting support for lower layer nodes

7.3.1   A request for Category A, B or C support shall be submitted to the current operational agency, saying which category of support is required, and providing contact information.

> NOTE – A child OID node can obtain contact details for the operational agency from any member of the Expert Group or from the SC 6 Secretariat.

7.3.2 The operational agency shall attempt to respond within two weeks to initiate a dialogue in accordance with clause 8

7.3.3 Support shall be provided in a timely manner, but any problems shall be reported to the Expert Group for resolution.

8 Charging issues

NOTE – This clause is designed to ensure that the ORS can grow downwards without financial transactions, but also to ensure a potential revenue stream to the operational agency, both to cover costs of interactions with child nodes and to permit more commercial operations.

8.1 Initial category C support to a child OID node shall be free of charge, but there may be a reasonable charge (including a profit element) on a non-discriminatory basis for any changes to the initial NS record.

8.2 Initial category B support (provision for DNSSEC (NSEC3) use) shall be provided (on request from a child OID node) at a reasonable charge (including a profit element), on a non-discriminatory basis. Any subsequent requests for further signing can be charged at a normal negotiated commercial rate, without constraint.

8.3 Category C support shall be established by contract at a negotiated commercial rate, and can be refused.

8.4 Charging for child OID nodes beneath OID nodes that are not supported by the operational agency is not constrained, and is a matter for the parent and any child OID nodes to negotiate.

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