ITU-T The leader on OID Standards

Basic "OID Registration"

X.660 – General procedures and top arcs

X.662 – Registration beneath joint-iso-itu-t

X.666 – Joint registration of international organizations

X.667 – Registration of Universally Unique Identifiers (UUIDs)

X.668 – Registration for tag-based identification

X.669 – Registration of Identified Organizations

NOTE : "These Recommendations are freely available at http://www.itu.int/rec/T-REC-X/en"

The Object Resolution System (ORS)

X.672 – Object Identification Resolution

For more information on OIDs:

The OID Handbook
(Object identifiers (OIDs) and their registration authorities).
Available in six languages at URL http://www.itu.int/pub/T-HDB-LNG.4-2010

Introduction to the ASN.1 & OID Project
http://www.itu.int/ITU-T/asn1/index.html

OID repository
http://www.oid-info.com

Presentation on OIDs
http://www.oid-info.com/doc/introduction%20to%20object%20identifiers%20(OIDs).pdf

Examples of OID uses

- Objects defined in ITU-T Recommendations
  (see http://www.oid-info.com/get/0.0)

- Objects defined in ISO/IEC International Standards
  (see http://www.oid-info.com/get/1.0)

- Countries and public and private organizations within countries

- Rec. ITU-T X.500 certificate policies
  (see http://www.oid-info.com/get/2.5.29.32)

- Encryption algorithms
  (for example SHA1 http://www.oid-info.com/get/1.3.14.3.2.26
  or RSA (PKCS #1 v1.5) key transport algorithm
  http://www.oid-info.com/get/1.2.840.113549.1.1.1

- Emergency message identification
  (see http://www.oid-info.com/get/2.49)

- Identification schemes for tag-based applications
  (see http://www.oid-info.com/get/2.27)

- Rec. ITU-T X.509 distinguished name attributes

- ASN.1 modules
  (for example the BioAPI (Biometrics) Interworking Protocol
  (see http://www.oid-info.com/get/2.41.0.1)

- ASN.1 Encoding Rules
  (for example the Basic Encoding Rules http://www.oid-info.com/get/2.1.1)

- MIBs for SNMP management work
  (for example, the SNMP Notification MIB http://www.oid-info.com/get/1.3.6.1.6.3.13)

- E-health
  (for example, HL7 international) tree of allocations with over 40,000 allocated OIDs, used by many hundreds of e-health applications, see http://www.oid-info.com/get/1.3.6.1.6.3.13)

- ASN.1 information objects for many applications
  (see http://www.itu.int/rec/T-REC-X.681/en)

- Cybersecurity information exchange
  http://www.oid-info.com/get/2.48

www.itu.int/itu-t/studygroups

International Telecommunication Union

OID
Object Identifiers
&
their registration
authorities

Your Solution to Identification

ITU-T

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ITU

The Power of International Standards

OIDs – Flexible, Open-ended, Hierarchically Structured, Internationalized Identification of any Object or set of Objects

Extensibility:

The Registration Authority for any node can allocate arbitrary many sub-arcs to child nodes, to any depth

Flexibility:

The identification of an arc can consist of an integer value plus arbitrarily many names in any language

Scalability:

Each branch can be as small or as large as is desired. Several exceed many thousands of nodes in the branch

Support by standards:

The OID tree is fully defined in ITU-T Recommendations and ISO/IEC International Standards, which have established Registration Authority for all the top-level arcs

OIDs

and their Registration Scheme
Flexible Open-ended Identification

Easy Registration:

Registration Authority operate independently, allocate arcs for child nodes

Efficiency:

Compact encoding using the integer values of an arc, with the ability to identify some arcs at level 3 directly from the root

Canonicalization:

Given any identification of a node using a path from the root to the node that is defined using either valid integer values or any available natural language names (or a mixture), a look-up system is available (using DNS) to obtain the canonical form of identification using integer values only

Information distribution:

Information (in the form of machine-readable documents) can be associated with a node and recovered for that node by DNS look-up. This is particularly important for tag-based applications

Meeting user needs:

In use since 1988 and continues to adapt to meet current and future industry, standardisation and government needs

Object Identifiers are an identification scheme for physical or virtual entities based on a tree structure of identification components (called the "Internationalized Object Identifier Tree"). The tree consists of a series of nodes, starting from a root node. From every node there are arbitrarily many arcs, each leading to a unique child node at the next level. There is no limit to the number of levels in the tree.

Each arc has both a numerical and a natural language name (no size or language limit) either of which may be used as a unique identifier. Each node is associated with an object and possibly additional arcs below it. The node and its object are identified by the set of arc names leading from the root to the node.

Each node has an associated Registration Authority (RA) assigned by its parent node and responsible for allocation of arcs (and hence child node RAs) from that node. The RAs for the tree are therefore highly decentralized.

The OID identification scheme is widely used in industry sectors, standards bodies and by national governments (for allocation in a country) where a flexible identification scheme is needed.

Examples of the OID notation are:
   – {itu-t(0) recommendation(0) x(24) cap(1303)}
   – 0.0.24.1303
   – /ITU-T/Recommendation/24/1303

Work on OID is carried out by ITU-T Study Group 17.
For more detailed information, see http://www.itu.int/ITUT/studygroups/com17.