
Information technology — JPSearch —
Part 3:
Query format

Technologies de l'information — JPSearch —
Partie 3: Format d'interrogation

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2010

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	v
Introduction.....	vi
1 Scope	1
2 Normative references	1
3 Terms, definitions, abbreviated terms and conventions.....	1
3.1 Terms and definitions	1
3.2 Abbreviated terms	3
3.3 Conventions	3
4 Structure and data model	3
4.1 Structure.....	3
4.2 Data model	5
5 Root Element	6
5.1 Introduction.....	6
5.2 Syntax	6
5.3 Semantics.....	7
5.4 Example	7
6 Datatypes.....	8
6.1 mimeType	8
6.2 MediaLocatorType.....	9
7 Tools of Input Query Format	9
7.1 Introduction.....	9
7.2 Syntax	10
7.3 Semantics.....	10
8 Expression Types	10
8.1 Introduction.....	10
8.2 Tools for Expression.....	11
9 Query Types	11
9.1 Introduction.....	11
9.2 Supported Query Types.....	12
10 Query By Media	12
10.1 Introduction.....	12
10.2 Syntax	12
10.3 Semantics.....	13
11 Query By ROI	13
11.1 Introduction.....	13
11.2 Syntax	14
11.3 Semantics.....	15
12 JoinType	15
12.1 Introduction.....	15
12.2 Syntax	15
12.3 Semantics.....	16
13 Tools of Output Result Format	16
14 Query Management Tools.....	16
14.1 Introduction.....	16
14.2 Syntax	16

14.3 Semantics17

15 Conformance17

Annex A (normative) System Messages18

A.1 Status messages18

A.2 Warning messages18

A.3 Exception messages18

Annex B (normative) Classification Scheme19

B.1 Introduction19

B.2 ServiceCapabilityCS19

B.3 SpatialRelationCS22

B.4 BaseRelationCS22

B.5 ScoringfunctionCS23

B.6 DistancefunctionCS23

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 24800-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 24800 consists of the following parts, under the general title *Information technology — JPSearch*:

- *Part 1: System framework and components*
- *Part 2: Registration, identification and management of schema and ontology*
- *Part 3: Query format*
- *Part 4: File format for metadata embedded in image data (JPEG and JPEG 2000)*

The following part is under preparation:

- *Part 5: Data interchange format between image repositories*

Reference software will form the subject of a future Part 6.

Introduction

ISO/IEC 24800 aims to provide a standard for interoperability for still image search and retrieval systems. There are many systems which provide image search and retrieval functionality on computer desktops, on the World Wide Web (i.e., websearch), on imaging devices, and in other consumer and professional applications. Existing systems are implemented in a way that tightly couples many components of the search process. ISO/IEC 24800 provides an abstract framework search architecture that decouples the components of image search and provides a standard interface between these components.

Aligning image search system design to this standard framework facilitates the use and reuse of metadata; the use and reuse of profiles and ontologies to provide a common context for searching; and the provision of a common query language to easily search across multiple repositories with the same search semantics. It allows image repositories to be independent of particular system implementations; and allows users to easily move or upgrade their image management applications or to move to a different device or upgrade to a new computer.

This part of ISO/IEC 24800 contains the tools of the JPEG Query Format (JPQF) as an adaptation for the still images domain of ISO/IEC 15938-12:2008. It addresses the normative aspects of the Query Format and also illustrates some non-normative examples.

Information technology — JPSearch —

Part 3: Query format

1 Scope

This part of ISO/IEC 24800, also known as “JPSearch Query Format (JPQF)”, provides a standardized interface for image search and retrieval systems in three aspects: Input Query Format, Output Result Format, and Query Management. The Input Query Format provides users/systems with a set of precise input parameters to describe their search criteria in addition to a set of preferred output parameters to depict the return result sets. The Output Result Format provides users/systems with a set of output parameters to describe the aggregated return result sets for user presentation or machine consumption. The Query Management provides a means for selecting services (e.g., MPEG-7 database) or aggregated services (e.g., service provider that administers a set of different services) based on service properties (e.g., supported query format). The goal is to define a query language that provides the industry with a standardized format to accept and respond to user/system specification for image searches.

2 Normative references

The following referenced documents are indispensable to the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 15938-12, *Information technology — Multimedia content description interface — Part 12: Query format*

XQuery 1.0 and XPath 2.0 Data Model (XDM). W3C Recommendation, 23 January 2007. <http://www.w3.org/TR/xpath-datamodel/>

XML Path Language (XPath) 2.0. W3C Recommendation, 23 January 2007. <http://www.w3.org/TR/xpath20/>