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Entwurf**Schnittsstelle für einfache Suchanfragen;
Englische Fassung prEN 16426**

Simple Query Interface;
English version prEN 16426

Anwendungswarnvermerk

Dieser Norm-Entwurf mit Erscheinungsdatum 2012-05-07 wird der Öffentlichkeit zur Prüfung und Stellungnahme vorgelegt.

Weil die beabsichtigte Norm von der vorliegenden Fassung abweichen kann, ist die Anwendung dieses Entwurfes besonders zu vereinbaren.

Stellungnahmen werden erbeten

- vorzugsweise als Datei per E-Mail an nia@din.de in Form einer Tabelle. Die Vorlage dieser Tabelle kann im Internet unter www.din.de/stellungnahme oder für Stellungnahmen zu Norm-Entwürfen der DKE unter www.dke.de/stellungnahme abgerufen werden;
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Nationales Vorwort

Dieses Dokument (prEN 16426:2012) wurde vom Technischen Komitee CEN/TC 353 „Informations- und Kommunikationstechnologien für Lernen, Ausbildung und Weiterbildung“ erarbeitet, dessen Sekretariat vom UNI (Italien) gehalten wird.

Gemäß den Kriterien des DINs für den Verzicht auf die Erstellung einer deutschen Sprachfassung wurde auf eine deutsche Fassung verzichtet; DIN EN 16426 enthält somit den englischen Originaltext.

DIN EN 16426 spezifiziert eine Anwendungsschnittstelle für die Abfrage von Repositorien für Lernobjekte (Simple Query Interface — SQI).

Ein wesentliches Ziel von DIN EN 16426 ist es, die Implementierung dieser Schnittstelle so einfach zu gestalten wie irgend möglich. Über ein Simple Query Interface in Verbindung miteinander stehende Repositorien können höchst heterogener Natur sein. Daher macht SQI bezüglich des Formats der Suchergebnisse und was die verwendeten Abfragesprachen angeht keine Voraussetzungen. SQI kann in synchronen (Abfrage durch die Quelle und unmittelbare Rückmeldung des Abfrageergebnisses durch das Ziel) und asynchronen Szenarien (Ziel „unterrichtet“ Quelle dann, wenn zutreffende Abfrageergebnisse vorliegen) angewendet werden.

April 2012

ICS

English Version

Simple Query Interface

Schnittsstelle für einfache Suchanfragen (Simple Query Interface - SQI)

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 353.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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Foreword

This document (prEN 16426:2012) has been prepared by Technical Committee CEN/TC 353 “Information and Communication Technologies for Learning, Education and Training”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

This document presents an Application Programmer Interface (API) for querying learning object repositories. The core is an abstract API; bindings to web services, Java and PHP have also been developed. Since one major design objective is to keep the specification simple and easy to implement, the interface is labelled Simple Query Interface (SQI).

In the context of this document, learning object repositories are defined as collections of educational material, courses, and learning objects with associated descriptions (referred to as “metadata”). Examples of repositories for learning are educational brokers, knowledge pools, streaming video servers, etc.

1 Requirements and Design Principles

This paper presents an Application Program Interface (API) for querying learning objects repositories. Since one major design objective is to keep the specification simple and easy to implement, the interface is labelled Simple Query Interface (SQI). The collaborative effort of combining highly heterogeneous repositories has led to the following requirements:

- SQI is neutral in terms of results format and query languages: The repositories connecting via SQI can be of highly heterogeneous nature: therefore, SQI makes no assumptions about the query language or results format;
- SQI supports Synchronous and Asynchronous Queries in order to allow application of the SQI specification in heterogeneous use cases;
- SQI supports, both, a stateful and a stateless implementation; and
- SQI is based on a session management concept in order to separate authentication issues from query management.

The design of the API itself is based on the following design principles:

- Command-Query Separation Principle and
- Simple Command Set and Extensibility.

The following sub-sections will describe each of the above mentioned items in more detail.

1.1 Query Language and Results Format

In order to make use of SQI to implement full query functionality, SQI needs to be complemented with agreements about:

- The set of attributes and vocabularies that can be used in the query,
- The query language and its representation,
- The representation of list of learning objects that satisfy the query, and
- The representation of individual metadata instances on learning objects.

SQI is agnostic on these issues: Any agreement between two or more repositories is valid for SQI. Such agreements can, for example, be expressed by XML schemas or RDF schemas.

Although SQI does not directly contribute to overcome the differences of the various paradigms in metadata management (Z39.50, XML-based approaches, RDF community), it aims to become an independent specification for all open educational repositories.

1.2 Synchronous and Asynchronous Query Mode

SQI can be deployed in two different scenarios.

1. In the *synchronous* scenario (Figure 1), a target returns query results to a source. Results retrieval is therefore initiated by the source through the submission of the query and through other methods allowing the source to access the query results.

2. In the *asynchronous* scenario (Figure 2), results retrieval is target-initiated. Whenever a significant amount of matching results is found, these results are forwarded to the source by the target. To support this communication the source must implement a results listener. The source must be able to uniquely identify a query sent to a particular target (even if the same query is sent to multiple targets). Otherwise the source is not able to distinguish the search results retrieved from various targets and/or queries previously submitted to a target.

Please note that the asynchronous query mode does not require an asynchronous handling on the messaging layer. It can also be implemented by two synchronous functions at the source and the target, respectively.

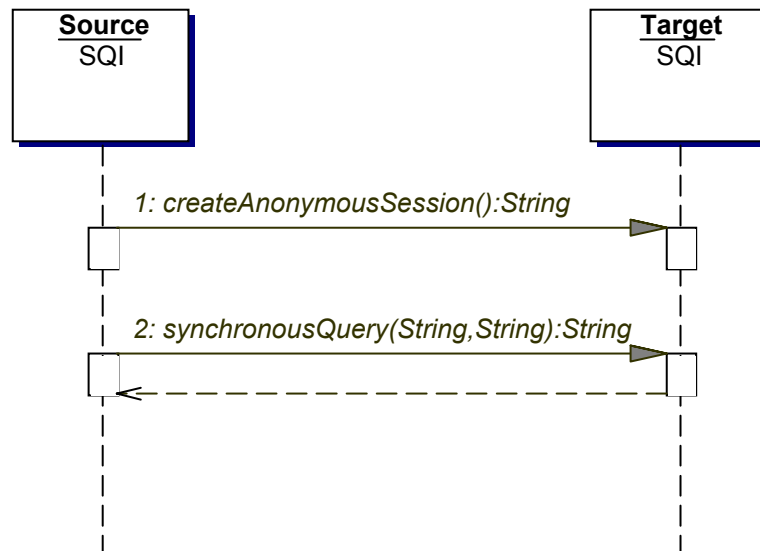


Figure 1 — Synchronous Query Mode used for querying a single Repository.