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NISO SUSHI Protocol: COUNTER-SUSHI Implementation Profile

2nd edition

*A Recommended Practice of the
National Information Standards Organization*

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Abstract: Defines a practical implementation structure to be used in the creation of reports and services related to harvesting COUNTER reports using the NISO SUSHI Protocol.

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Foreword

About this Implementation Profile

The need to provide information professionals with accurate and timely usage statistics is no longer a matter of debate. The SUSHI protocol was developed out of a need to simplify and automate the harvesting of COUNTER usage reports from the growing number of information providers that librarians and others in the information community work with.

The creators of the SUSHI standard and the COUNTER XML schema were forward looking; developing products that could handle future needs without requiring them to be rewritten. Developing schemas, such as those used by SUSHI and COUNTER, to accommodate future growth requires building in a level of abstraction and flexibility. As a result, the flexibility and abstraction introduce choices that implementers need to make. These choices can be as simple as what value to use for the *Type* element of the item identifier; or more complex, such as the inclusion of totals in the XML or how to respond when usage is not available.

Without proper guidance on the implementation choices, developers may easily create solutions that are not completely interoperable. Lack of interoperability between SUSHI server implementations requires either the SUSHI client developers to customize their implementation for each variant SUSHI server, or it requires the SUSHI server developers to have to re-work their solution—adding time and expense. All of this adds up to a barrier to widespread implementation of SUSHI and added expense and difficulty for the community it is intended to serve. This was the state of SUSHI and COUNTER XML implementations that led this committee to develop this Implementation Profile.

This Implementation Profile has been developed to improve the consistency and interoperability of SUSHI Client and Server implementation. This profile offers guidance to developers of SUSHI server and client applications by setting out detailed expectations for how the SUSHI protocol and COUNTER XML reports are to be implemented so that they effectively meet the needs of the information community that relies on these reports to provide consistent, credible, and comparable usage statistics. This profile was also developed with the intention that it be used by COUNTER auditors as a means to verify compliance of a content provider's SUSHI server.

Revision History

The original Recommended Practice was published in August 10, 2012.

This 2nd edition is a minor maintenance revision to address an issue with the *PubYr* value when the publication year is unknown (see section 3.4.7). The previous required value would not validate to the COUNTER schema and had to be changed. This edition also corrects how the COUNTER report Names appear in various tables throughout the document; the short report names should not include any spaces.

Instructions for Submittal of Proposed Change to this Implementation Profile

If a provision of the standard is proposed to be added or deleted, the text of the provision must be submitted in writing. Comments or proposals for revisions to any part of the standard may be submitted to NISO any time. Submissions must be accompanied by the submitter's name, affiliation, telephone number, and e-mail address.

Written comments are to be sent to:

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Comments may also be submitted to NISO online at www.niso.org/contact.

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NISO's Business Information (BI) Topic Committee had the following members at the time it approved this Implementation Profile / Recommended Practice:

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This implementation profile was developed under the guidance of the NISO SUSHI Standing Committee. At the time NISO approved this Implementation Profile / Recommended Practice, the following individuals were members.

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Part 1: Introduction

1.1 Purpose

This Implementation Profile has been developed to improve the consistency and interoperability of SUSHI client and server implementations. This profile offers guidance to developers of SUSHI server and client applications by setting out detailed expectations for how the SUSHI protocol and COUNTER XML reports are to be implemented so that they effectively meet the needs of the information community that relies on these reports to provide consistent, credible, and comparable usage statistics. This profile was also developed with the intention that it be used by COUNTER auditors as a means to verify compliance of a content provider's SUSHI server.

1.2 Scope

This Implementation Profile addresses the choices and expectations for successfully implementing a compliant and effective SUSHI service delivering consistent and comparable COUNTER XML reports compliant with Release 4 of the COUNTER *Code of Practice*. This document focuses on the use of the various XML schemas that provide for the delivery of COUNTER reports via SUSHI. Specifically:

sushi1_6.xsd	The XML schema that describes the SUSHI Request and Response messages. The Response message includes the COUNTER XML report.
counter4_0.xsd	The XML schema that describes the XML version of a COUNTER report. The COUNTER XML is embedded in the SUSHI Response message.
counterElements4_0.xsd	The XML schema that contains the enumerated list of allowed values for certain COUNTER data elements, such as <code>Identifier</code> type, report item <code>dataType</code> , usage <code>Category</code> , and <code>MetricType</code> .
counter_sushi4_0.xsd	The XML schema that describes the overall SUSHI service and binds the COUNTER report to the SUSHI Response.

This implementation profile will also touch on some practical topics of implementation including security and SUSHI client authentication, as well as making information about the SUSHI Server easily available for those that would implement it.

1.3 Principles

This implementation profile is intended to support a widespread implementation and adoption of the SUSHI protocol for the purpose of harvesting COUNTER XML reports. The committee recognized that successful adoption comes with compatibility and consistency in the implementation of both the SUSHI protocol and the COUNTER XML reports delivered by that protocol. Both the SUSHI protocol and the COUNTER schema (which defines the reports delivered by the SUSHI protocol) are flexible by nature and, as a result, the committee's work was about making the many implementation decisions necessary to enforce consistency. This work involved judgment calls that were made based on the committee's understanding of the needs of the librarians that use these statistics and COUNTER's goal of providing reports that are consistent, comparable, and credible.

1.4 Normative References

ANSI/NISO Z39.84-2005 (R2010), *Syntax for the Digital Object Identifier*. Available at:
<http://www.niso.org/standards/z39-84-2005/>

ANSI/NISO Z39.93-2013, *The Standardized Usage Statistics Harvesting Initiative (SUSHI) Protocol*. Available at:
<http://www.niso.org/standards/z39-93-2013/>

The COUNTER Code of Practice for e-Resources, Release 4. April 2012. Available at:
http://www.projectcounter.org/code_practice.html

ISO 2108:2005, *Information and documentation – International standard book number (ISBN)*. Available from:
http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=36563

ISO 3297:2007, *Information and documentation – International standard serial number (ISSN)*. Available from:
http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=39601

SOAP Version 1.2. W3C Recommendation (Second Edition), April 27, 2007 Available at:
<http://www.w3.org/TR/soap/>

The Unicode Standard, Version 7.0.0. Mountain View, CA: The Unicode Consortium, 2014.
 ISBN 978-1-936213-09-2. Available at: <http://www.unicode.org/versions/Unicode7.0.0/>

The `sushi`, `counter`, `counterElements`, and `counter_sushi` schemas are specified in 1.2.

1.5 Definitions

<u>Term</u>	<u>Context</u>	<u>Definition</u>
journal	<code>ItemDataType</code>	Any publication published in a serial manner, such as a journal, magazine, newspaper, newsletter, conference proceeding, etc.
book	<code>ItemDataType</code>	A publication that is a monograph and is textual in nature. Includes books and e-books.
collection	<code>ItemDataType</code>	A grouping of multimedia content items. Includes audio, video, images, etc.
database	<code>ItemDataType</code>	A collection of content items, such as citations and/or full-text, that is accessed as a unit.
platform	<code>ItemDataType</code>	A content host from which content is accessed. Examples include EBSCOhost, ScienceDirect, Informaworld, etc.
multimedia	<code>ItemDataType</code>	Any non-textual content item. Examples include audio, video, images, etc.
proprietary	<code>ItemIdentifier type</code>	A unique identifier for a report item that is assigned by the content provider.
ISSN	<code>ItemIdentifier type</code>	International Standard Serial Number. A standard identifier assigned to a title that is published serially. In the current version of the ISSN standard (ISO 3297), an ISSN is 9 character spaces long and consists of four numbers, a dash, three numbers and a number or capital “X”.
ISBN	<code>ItemIdentifier type</code>	International Standard Book Number. A standard identifier, assigned to a title that is a monograph. In the current version of the ISBN standard (ISO 2108), an ISBN is 13 character positions long; the first 12 positions can be numbers or dashes with the 13th position being a number or capital “X”.
DOI	<code>ItemIdentifier type</code>	Digital Object Identifier. An identifier of a report item that is assigned according to the DOI standard (ANSI/NISO Z39.84) and registered with an authorized Registration Agency, e.g., CrossRef.

<u>Term</u>	<u>Context</u>	<u>Definition</u>
counterElements schema	COUNTER XML Report elements	The counterElements schema (counterElements4_0.xsd) is linked to the counter schema (counter4_0.xsd) and includes valid values for many of the enumerated data elements.

1.6 Notational Conventions

The terms “must”, “must not”, “required”, “should”, “should not”, “recommended”, “may”, and “optional” in this Recommended Practice are to be interpreted as described in IETF RFC 2119.

Part 2: SUSHI Implementation

This section of the Implementation Profile addresses specific implementation questions related to the SUSHI protocol as it is used in defining the SUSHI Request and SUSHI Response messages when used to retrieve COUNTER reports.

2.1 XML Schema and Character Representation

The SUSHI Server must operate successfully using the official `sushi` and `counter` schemas as they appear on the NISO SUSHI website (www.niso.org/schemas/sushi/).

Unicode must be supported with the SUSHI Request and Response messages encoded as UTF-8.

The SUSHI Response and the embedded COUNTER report returned by the SUSHI Server must validate against the official `counter_sushi`, `sushi`, `counter`, and `counterElements` schemas as they appear on the NISO SUSHI website (www.niso.org/schemas/sushi/).

2.2 Authentication and SOAP and other Extensions

The SUSHI Server may use any combination of the following to authenticate clients:

- IP Address of client;
- a value in the `RequestorID` elements; and/or
- a value in the `CustomerReferenceID` elements.

The SUSHI Server may require the SUSHI Client to connect using a secure SSL connection (https).

The SUSHI Server must be accessible to clients with a standard implementation of SOAP and the `sushi` and `counter` schemas. Specifically, the SUSHI Server must not require the SUSHI Client to use any of the following to harvest the reports:

- SOAP extensions;
- any extensions to the `sushi` or `counter` schema; or
- customized versions of the `sushi` or `counter` schemas.

2.3 Data Element Values

2.3.1 Report Names

For the `ReportDefinition/Name` elements of the SUSHI Request the SUSHI Server must accept:

- a value that matches the “Name” column in the SUSHI Reports Registry¹;
- the case sensitivity of the value exactly matching the letter-casing as found in the SUSHI Reports Registry; and
- a valid report name.

Examples of valid report names:

- JR1
- JR1a

¹ Available at: <http://www.niso.org/workrooms/sushi/reports/#Counter>

Examples of invalid report names:

- Jr1
- Journal Report 1
- JR1A

For the **ReportDefinition/Release** elements of the SUSHI request, the SUSHI Server must accept a whole number representing the supported version of the report.

The SUSHI Server must return an **Exception** element in the Response if the report name or version is not supported. (See Table 17 in the SUSHI Protocol standard, ANSI/NISO Z39.93, for a complete list of Exceptions and the numbers to return.) Specifically:

- If the requested report is not supported, the value of the exception Number is 3000.
- If the requested report is supported but the requested version is not, the value of the exception Number is 3010.

2.3.2 Date Ranges

For the **Begin** and **End** elements under **ReportDefinition/Filters/Usage** in the SUSHI Request:

- Both the **Begin** and **End** elements must be included in the request.
- The format must be a valid date formatted as “yyyy-mm-dd”.
- The “dd” value of the **Begin** element must be the first date of the month for the requested reporting period.
- The “dd” value of the **End** element must be the last data day of the month of the requested reporting period.
- The date value of the **End** element must be greater than the date value of the **Begin** element.

2.3.3 SUSHI Exceptions

The SUSHI Server must support the standard error conditions as listed in Table 17 of the SUSHI Protocol standard, ANSI/NISO Z39.93.

The SUSHI Server must report standard error conditions using the **Exception** element in the SUSHI Response and the **Exception/Number** value must be set to a value listed in Table 17 in the SUSHI Protocol standard, ANSI/NISO Z39.93.

2.4 SUSHI Report Registry and Accessibility of Information

The SUSHI Server must be registered on the SUSHI Server Registry² with the details accurately represented.

The content provider must provide a clear set of instructions to librarians to enable them to activate their SUSHI clients. Those instructions may be detailed on the SUSHI Server Registry or they may be provided in the system documentation at the content provider’s site.

² Available at: <http://www.niso.org/workrooms/sushi/registry/>.

Part 3: COUNTER Report Implementation

This section of the Implementation Profile deals with the COUNTER XML report format and provides guidance on the contents of the XML file.

3.1 XML Schema and Character Representation

The contents of the COUNTER report are dictated by the official counter schema as found on the NISO SUSHI website.

Unicode must be supported with data encoded as UTF-8.

3.2 Reports Supported

The SUSHI Server must support all the COUNTER reports marked as available for the particular vendor on the COUNTER vendor registry.³

3.3 Data to Return

This section deals with the extent of data to return and the behavior of the server when data is not available for certain data elements.

3.3.1 Requested Usage Date Range Determines Data to Return.

The COUNTER report must not include usage outside the date range specified in the SUSHI Request.

If the SUSHI Server has not processed any usage data for the selected date range, no COUNTER report is generated and an Exception with an exception number of 3030 must be returned in the SUSHI response.

If the SUSHI Server is able to provide usage data for only some of the months of the date range, the server must create a COUNTER report representing only those months for which the usage data has been processed. When partial usage data is returned, an Exception with an exception number of 3040 must be returned in the SUSHI response.

3.3.2 Item Data Types Appropriate to the Report

The COUNTER report must only contain the item data types appropriate to the COUNTER report. A list of valid item data types appears in [Table 1](#). Refer to section [1.5](#) of this document for a definition of the nature of content represented by these data types.

Table 1: Valid item data types for COUNTER report

Report Name	Report Description	ItemDataType Supported
BR1	Number of Successful Title Requests by Month and Title	Book
BR2	Number of Successful Section Requests by Month and Title	Book
BR3	Access Denied to Content Items by Month, Title, and Category	Book
BR4	Access Denied to Content Items by Month, Platform, and Category	Platform

³ Available at: <http://www.projectcounter.org/compliantvendors.html>

Report Name	Report Description	ItemDataType Supported
BR5	Total Searches by Month and Title	Book
CR1	Number of Successful Full-Text Journal Article or Book Chapter Requests by Month	Book, Journal
CR2	Total Searches by Month and Database	Database
CR3	Number of Successful Multimedia Full Content Unit Requests by Month and Collection	Collection
DB1	Total Searches, Result Clicks, and Record Views by Month and Database	Database
DB2	Access Denied by Month, Database, and Category	Database
JR1	Number of Successful Full-Text Article Requests by Month and Journal	Journal
JR1GOA	Number of Successful Gold Open Access Full-Text Article Requests by Month and Journal	Journal
JR1a	Number of Successful Full-Text Article Requests from an Archive by Month and Journal	Journal
JR2	Access Denied to Full-Text Articles by Month, Journal, and Category	Journal
JR3	Number of Successful Item Requests and Turnaways by Month, Journal, and Page-Type	Journal
JR3mobile	Number of Successful Item Requests by Month, Journal and Page-Type for usage on a mobile device	Journal
JR4	Total Searches Run by Month and Service	Platform
JR5	Number of Successful Full-Text Article Requests by Year-of-Publication (YOP) and Journal	Journal
MR1	Number of Successful Multimedia Full Content Unit Requests by Month and Collection	Collection
MR2	Number of Successful Multimedia Full Content Unit Requests by Month, Collection, and Item Type	Collection
PR1	Total Searches, Result Clicks, and Record Views by Month and Platform	Platform
TR1	Number of Successful Requests for Journal Full-Text Articles and Book Sections by Month and Title	Book, Journal
TR1mobile	Number of Successful Requests for Journal Full-Text Articles and Book Sections by Month and Title (formatted for normal browsers/delivered to mobile devices AND formatted for mobile devices/delivered to mobile devices)	Book, Journal
TR2	Access Denied to Full-Text Items by Month, Title, and Category	Book, Journal
TR3	Number of Successful Item Requests by Month, Title, and Page Type	Book, Journal

Report Name	Report Description	ItemDataType Supported
TR3mobile	Number of Successful Item Requests by Month, Title and Page-Type (formatted for normal browsers/delivered to mobile devices AND formatted for mobile devices/delivered to mobile devices)	Book, Journal

3.3.3 Totals in the COUNTER XML

Each **ItemPerformance** element returned in the COUNTER XML report must represent a time period of exactly one month.

The COUNTER XML report must only include statistics for each report item. The report must not include totals representing the sum of usage for all report items for the reporting period.

3.4 Data Element Requirements

This section provides information about specific data elements to include in the COUNTER report.

3.4.1 Customer Identification

A **Customer** element occurrence in the COUNTER XML report must include one customer ID as represented in the **Customer/ID** element of the report. The value for the customer ID is the identifier used by the content provider to identify the customer.

The **Customer** element occurrence may contain one or more standard institutional identifiers as represented in the optional **Customer/InstitutionalIdentifier** element.

- The **Type** element for the institutional identifier must match one of the values enumerated in the **counterElements** schema.
- The **Value** element for the institutional identifier must be formatted according to the accepted rules for that identifier type.

3.4.2 Item Identifiers

The COUNTER reports allow for item identifier(s) to be associated with most items on the report. For COUNTER XML reports, the identifier types are controlled by the **counterElements** schema. Specifically, the COUNTER XML report:

- Must include item identifiers if they are available within the content provider's reporting system.
- Must match the **ItemIdentifier/Type** value to one of the values enumerated in the **counterElements** schema using a case-sensitive match.
- Must have an **ItemIdentifier/Type** field appropriate to the **ItemDataType** as shown in [Table 2](#).

Table 2: Valid types for ItemIdentifier for ItemDataType

ItemIdentifier Type	Valid for these ItemDataTypes
Online_ISSN	Journal, Book
Print_ISSN	Journal, Book
Online_ISBN	Book

ItemIdentifier Type	Valid for these ItemDataTypes
Print_ISBN	Book
DOI	Journal, Book
Proprietary	Any

- Must have an **ItemIdentifier/Value** that contains a valid value formatted according to accepted practice for that identifier type. Specifically:
 - An ISSN must be 9 characters with a dash in position 5, as specified in ISO 3297. If the ISSN ends in an “X” the “X” is uppercase. Example: 1234-567X
 - An ISBN must be 13 digits and include dashes as specified in ISO 2108.
 - The DOI must be formatted as specified in ANS/NISO Z39.84 and as registered with a DOI Registration Agency, e.g. CrossRef.
- Must exclude **ItemIdentifier** element for report items where no identifier is available.
- Must include only one identifier if multiple identifiers of the same type are available for the item (e.g., two print ISSNs).
- Must include all valid identifiers, if multiple identifiers of different types are available for the report item but no more than one identifier of each type, as specified in the previous bullet.

3.4.3 Platform

The COUNTER XML report must include the **ItemPlatform** element.

The value of the **ItemPlatform** element must be identical to the value supplied in the Platform column of the COUNTER spreadsheet reports.

3.4.4 Publisher

The COUNTER XML report must include an **ItemPublisher** element when a publisher name is available in the reporting system for the report item.

If a publisher name is not available for the report item, the **ItemPublisher** element must be omitted for that report item.

The value of the **ItemPublisher** element should be the accepted name for the publisher of the item.

3.4.5 Item Name (Title, Database Name, Etc.)

The COUNTER XML report must include one **ItemName** element for each report item.

The value of the **ItemName** element should be the accepted name of the item.

- For Journals, an acceptable version of the **ItemName** is the title as it appears in the ISSN registry.
- For Books, an acceptable version of the **ItemName** would be the title as it is registered with the appropriate ISBN registration agency.
- If the content provider generates KBART⁴ reports for knowledge base vendors, the **ItemName** on the COUNTER report should match the title on the KBART report.

⁴ KBART = Knowledge Base And Related Tools, a joint NISO/UKSG working group. For more information, including the KBART Recommended Practice, visit <http://www.niso.org/workrooms/kbart>.

3.4.6 ItemDataType

The COUNTER XML report must include one **ItemDataType** for each report item.

The **ItemDataType** value must match one of the values enumerated in the **counterElements** schema using a case-sensitive match. (For example, a value of “Journal” is valid; however, values of “JOURNAL” or “journal” are not valid.)

See [Table 1](#) for more details on the relationships between **ItemDataTypes** and the reports that they may be used with.

3.4.7 Publication Year

The publication year is only required for Journal Report 5 and appears as an attribute of the **ItemPerformance** element. The following applies only to Journal Report 5:

- An **ItemPerformance** element for a report item can represent usage for one of:
 - a single year of publication,
 - a range of years of publication,
 - articles in press (articles made available online ahead of print and not yet designated a year of publication), or
 - content items for which the year of publication is not known.
- The **PubYr** attribute must be used to represent a single year of publication, or to represent preprints or unknown years of publication. Specifically:
 - The value of the **PubYr** is the year of publication for the articles accessed in the format “yyyy”.
 - For usage of articles in press, the **PubYr** value must be “9999”.
 - For usage of articles where the year of publication is not known and is not an article in press, the **PubYr** value must be “0001” (three zeros and a one).
- The **PubYrFrom** and **PubYrTo** attributes must be used when the **ItemPerformance** element represents a range of years of publication. Specifically:
 - **PubYrFrom** and **PubYrTo** values must have a format of “yyyy”.
 - Values are inclusive.
 - The value of **PubYrFrom** must be numerically less than the value of **PubYrTo**.
 - If **PubYrFrom** is omitted, the **ItemPerformance** element represents usage for items with years of publication that are equal to or less than the value in **PubYrTo**.
 - The **PubYr** attribute and the **PubYrFrom** and **PubYrTo** set of attributes are mutually exclusive.

3.4.8 Usage Period for ItemPerformance

The **Period** subelement for the **ItemPerformance** element represents that time period during which the usage for the report item took place. The time period is designated by **Begin** and **End** elements as follows:

- The **ItemPerformance** element must have one **Period** element.
- The **Period** element must have one **Begin** and one **End** element.
- The time period represented by the **Begin** and **End** elements must be a single month.
- The **Begin** and **End** elements are dates formatted as “yyyy-mm-dd”.
- The **Begin** element includes for “dd” the date for the first day of the month during which the usage occurred.

- The End element includes for “dd” the date for the last day of the month during which the usage occurred and must be a valid date for the month specified.

3.4.9 Usage Category for the ItemPerformance

The Category element for the ItemPerformance element represents the general category of usage that is being reported. Specific requirements are:

- The ItemPerformance element must have one Category element.
- The Category value must match one of the values enumerated in the counterElements schema using a case-sensitive match. (For example, a value of “Searches” is valid; however, a value of “SEARCHES” is not valid.)
- The Category value must be appropriate to the report being generated as indicated in [Table 3](#).

Table 3: Valid Category values

Report Name	Description	Category Supported
BR1	Number of Successful Title Requests by Month and Title	Requests
BR2	Number of Successful Section Requests by Month and Title	Requests
BR3	Access Denied to Content Items by Month, Title, and Category	Access_denied
BR4	Access Denied to Content Items by Month, Platform, and Category	Access_denied
BR5	Total Searches by Month and Title	Searches
CR1	Number of Successful Full-Text Journal Article or Book Chapter Requests by Month	Requests
CR2	Total Searches by Month and Database	Searches, Requests
CR3	Number of Successful Multimedia Full Content Unit Requests by Month and Collection	Requests
DB1	Total Searches, Result Clicks, and Record Views by Month and Database	Searches, Requests
DB2	Access Denied by Month, Database, and Category	Access_denied
JR1	Number of Successful Full-Text Article Requests by Month and Journal	Requests
JR1GOA	Number of Successful Gold Open Access Full-Text Article Requests by Month and Journal	Requests
JR1a	Number of Successful Full-Text Article Requests from an Archive by Month and Journal	Requests
JR2	Access Denied to Full-Text Articles by Month, Journal, and Category	Access_denied
JR3	Number of Successful Item Requests and Turnaways by Month, Journal, and Page-Type	Requests, Access_denied
JR3mobile	Number of Successful Item Requests by Month, Journal and Page-Type for usage on a mobile device	Requests, Access_denied
JR4	Total Searches Run by Month and Service	Searches

Report Name	Description	Category Supported
JR5	Number of Successful Full-Text Article Requests by Year-of-Publication (YOP) and Journal	Requests
MR1	Number of Successful Multimedia Full Content Unit Requests by Month and Collection	Requests
MR2	Number of Successful Full Multimedia Content Unit Requests by Month, Collection, and Item Type	Requests
PR1	Total Searches, Result Clicks, and Record Views by Month and Platform	Searches, Requests
TR1	Number of Successful Requests for Journal Full-Text Articles and Book Sections by Month and Title	Requests
TR1mobile	Number of Successful Requests for Journal Full-Text Articles and Book Sections by Month and Title (formatted for normal browsers/delivered to mobile devices AND formatted for mobile devices/delivered to mobile devices)	Requests
TR2	Access Denied to Full-Text Items by Month, Title, and Category	Access_denied
TR3	Number of Successful Item Requests by Month, Title, and Page Type	Requests, Access_denied
TR3mobile	Number of Successful Item Requests by Month, Title, and Page-Type (formatted for normal browsers/delivered to mobile devices AND formatted for mobile devices/delivered to mobile devices)	Requests, Access_denied

3.4.10 Usage Instances for an ItemPerformance Element

The actual usage data is represented in one or more `Instance` elements for an `ItemPerformance` element of the report item and must meet the following requirements:

- The `ItemPerformance` element must have at least one occurrence of an `Instance` element.
- Multiple `Instance` elements must be included for a given `ItemPerformance` element occurrence if the report item has usage for more than one `MetricType` of the same `Category` covered by the same time period.
- If there is no usage for a metric type, the `Instance` element for that `MetricType` may be omitted, provided there is at least one `Instance` element for the `ItemPerformance` element occurrence.
- For Journal and Book COUNTER reports from publisher platforms, all subscribed titles must be represented in the COUNTER report even if there is no usage for that title for the time period being reported. A report item must have at least one `ItemPerformance` element occurrence for each month covered by the report and that `ItemPerformance` element must have at least one `Instance` element occurrence.
- For Journal and Book COUNTER reports from full-text database aggregation platforms, the COUNTER report must only include titles with usage counts greater than zero. If an `ItemPerformance` element occurrence has no usage for any of the `MetricTypes`, the `ItemPerformance` element may be omitted. If a report item has no `ItemPerformance` element occurrences (i.e., no usage), the report item may be omitted.

- The **MetricType** value must match one of the values enumerated in the `counterElements` schema using a case-sensitive match. (For example, a value of “ft_total” is valid; however, a value of “FT-Total” or “Ft_total” is not valid.)
- The **MetricType** value must be appropriate to the **Category** element represented in the **ItemPerformance** element occurrence as indicated in [Table 4](#).

Table 4: MetricType by Category

MetricType	Description	Applicable Category
ft_ps	Postscript file full-text requests	Requests
ft_ps_mobile	Postscript file full-text requests	Requests
ft_pdf	PDF file full-text requests	Requests
ft_pdf_mobile	PDF file full-text requests	Requests
ft_html	HTML full-text requests	Requests
ft_html_mobile	HTML full-text requests	Requests
ft_epub	Full-text requests delivered in EPUB format	Requests
ft_total	Total full-text requests Note: This metric must be included for each month when format-specific metrics, such as ft_html and ft_pdf are included.	Requests
toc	Table of Contents requests	Requests
abstract	Requests for abstract view of article (detailed article metadata without full-text)	Requests
reference	Requests for number of views to bibliographic references pages associated with an article	Requests
data_set	Requests for supplementary data sets referenced in an article	Requests
audio	Requests for audio clips referenced in an article	Requests
video	Requests for video clips referenced in an article	Requests
image	Requests for images referenced in an article	Requests
podcast	Requests for podcasts referenced in an article	Requests
multimedia	Number of successful full-content requests for multimedia items (includes audio, video, image, podcast, and other non-textual content items)	Requests
record_view	Count of detailed record-views for a database	Requests
result_click	Count of clicks originating from a database search result list	Requests
search_reg	Regular searches as conducted by users (excludes searches attributed to automated search processes and federated searches)	Searches

MetricType	Description	Applicable Category
search_fed	Searches conducted by federated search or automated search processes	Searches
turnaway	Count of turnaways because the simultaneous user limit was exceeded	Access_denied
no_license	Number of times users were denied access because they were not licensed to access content	Access_denied
count	Simple count of usage (no breakdown) for the Category	DO NOT USE
other	All other MetricTypes that do not fit in one of the above types, as provided for within the counter schema.	Access_denied (Used only for reasons other than turnaway or no_license)

- For journal reports that include full-text requests, the ft_total metric must be included for each month in addition to applicable format-specific full-text metrics. (Since content providers may deliver full-text in formats other than the format-specific full-text metric types listed in [Table 4](#), the COUNTER *Code of Practice* makes no assumption that the sum of the format-specific metrics equals the total full-text requests.)

Appendix A: Summary of Data Element Usage by Report

[Table 5](#) summarizes the possible enumeration values that are allowed for each report.

Table 5: Data element usage by report

Report Name	Description	Identifier Type	ItemDataType	Category	MetricType
BR1	Number of Successful Title Requests by Month and Title	Online_ISBN Print_ISBN DOI Proprietary	Book	Requests	ft_ps ft_pdf ft_html ft_total
BR2	Number of Successful Section Requests by Month and Title	Online_ISBN Print_ISBN DOI Proprietary	Book	Requests	ft_ps ft_pdf ft_html ft_total
BR3	Access Denied to Content Items by Month, Title, and Category	Online_ISBN Print_ISBN DOI Proprietary	Book	Access_denied	turnaway no_license other
BR4	Access Denied to Content Items by Month, Platform, and Category	Proprietary	Platform	Access_denied	turnaway no_license other
BR5	Total Searches by Month and Title	Online_ISBN Print_ISBN DOI Proprietary	Book	Searches	ft_ps ft_pdf ft_html ft_total
CR1	Number of Successful Full-Text Journal Article or Book Chapter Requests by Month	Online_ISSN Print_ISSN Online_ISBN Print_ISBN DOI Proprietary	Book Journal	Requests	ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total
CR2	Total Searches by Month and Database	Proprietary	Database	Searches	searches_reg searches_fed
				----- Requests	----- result_clicks record_views

Report Name	Description	Identifier Type	ItemDataType	Category	MetricType
CR3	Number of Successful Multimedia Full Content Unit Requests by Month and Collection	Proprietary	Collection	Requests	multimedia
DB1	Total Searches, Result Clicks, and Record Views by Month and Database	Proprietary	Database	Searches	searches_reg searches_fed
				Requests	result_clicks record_views
DB2	Access Denied by Month, Database, and Category	Proprietary	Database	Access_denied	turnaway no_license other
JR1	Number of Successful Full-Text Article Requests by Month and Journal	Online_ISSN Print_ISSN DOI Proprietary	Journal	Requests	ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total
JR1GOA	Number of Successful Gold Open Access Full-Text Article Requests by Month and Journal	Online_ISSN Print_ISSN DOI Proprietary	Journal	Requests	ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total
JR1a	Number of Successful Full-Text Article Requests from an Archive by Month and Journal	Online_ISSN Print_ISSN DOI Proprietary	Journal	Requests	ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total
JR2	Access Denied to Full-Text Articles by Month, Journal, and Category	Online_ISSN Print_ISSN DOI Proprietary	Journal	Access_denied	turnaway no_license other

Report Name	Description	Identifier Type	ItemDataType	Category	MetricType
JR3	Number of Successful Item Requests and Turnaways by Month, Journal, and Page-Type	Online_ISSN Print_ISSN DOI Proprietary	Journal	Requests ----- Access_denied	ft_epub ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total abstract audio data_set image reference toc video ----- turnaway no_license other
JR3mobile	Number of Successful Item Requests by Month, Journal and Page-Type for usage on a mobile device	Online_ISSN Print_ISSN DOI Proprietary	Journal	Requests ----- Access_denied	ft_epub ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total abstract audio data_set image reference toc video ----- turnaway no_license other
JR4	Total Searches Run by Month and Service	Proprietary	Platform	Searches	search_reg search_fed

Report Name	Description	Identifier Type	ItemDataType	Category	MetricType
JR5	Number of Successful Full-Text Article Requests by Year-of-Publication (YOP) and Journal	Online_ISSN Print_ISSN DOI Proprietary	Journal	Requests	ft_total
MR1	Number of Successful Multimedia Full Content Unit Requests by Month and Collection	Proprietary	Collection	Requests	multimedia
MR2	Number of Successful Multimedia Full Content Unit Requests by Month, Collection and Item Type	Proprietary	Collection	Requests	audio video image other
PR1	Total Searches, Result Clicks, and Record Views by Month and Platform	Proprietary	Platform	Searches ----- Requests	searches_reg searches_fed ----- result_clicks record_views
TR1	Number of Successful Requests for Journal Full-Text Articles and Book Sections by Month and Title	Online_ISSN Print_ISSN Online_ISBN Print_ISBN DOI Proprietary	Book Journal	Requests	ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total

Report Name	Description	Identifier Type	ItemDataType	Category	MetricType	
TR1mobile	Number of Successful Requests for Journal Full-Text Articles and Book Sections by Month and Title (formatted for normal browsers/delivered to mobile devices AND formatted for mobile devices/delivered to mobile devices)	Online_ISSN Print_ISSN Online_ISBN Print_ISBN DOI Proprietary	Book Journal	Requests	ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total	
TR2	Access Denied to Full-Text Items by Month, Title, and Category	Online_ISSN Print_ISSN Online_ISBN Print_ISBN DOI Proprietary	Book Journal	Access_denied	turnaway no_license other	
TR3	Number of Successful Item Requests by Month, Title and Page-Type	Online_ISSN Print_ISSN Online_ISBN Print_ISBN DOI Proprietary	Book Journal	Requests	ft_epub ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total abstract audio data_set image reference toc video ----- Access_denied	----- turnaway no_license other

Report Name	Description	Identifier Type	ItemDataType	Category	MetricType
TR3mobile	Number of Successful Item Requests by Month, Title and Page-Type (formatted for normal browsers/delivered to mobile devices AND formatted for mobile devices/delivered to mobile devices)	Online_ISSN Print_ISSN Online_ISBN Print_ISBN DOI Proprietary	Book Journal	Requests ----- Access_denied	ft_epub ft_html ft_html_mobile ft_pdf ft_pdf_mobile ft_ps ft_ps_mobile ft_total abstract audio data_set image reference toc video ----- turnaway no_license other