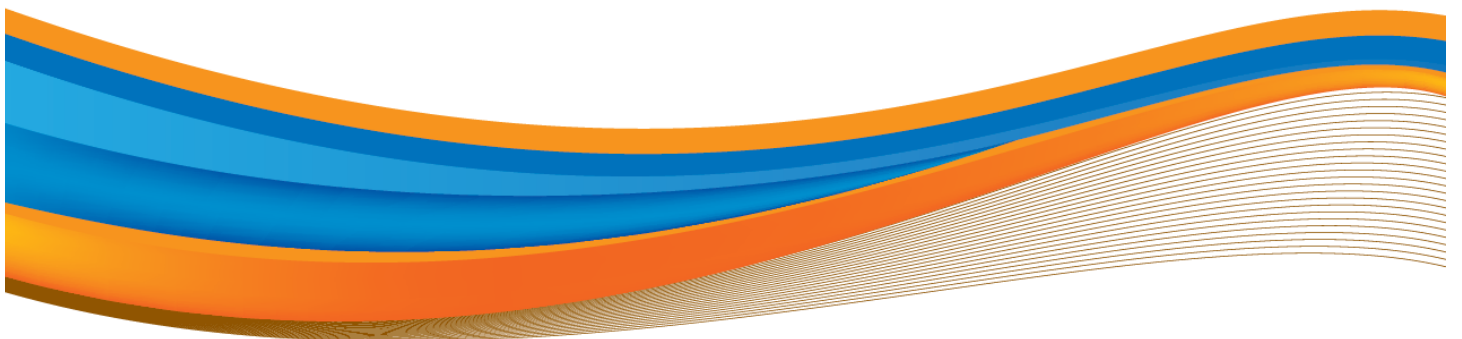




# axiUm API

User Guide for **axiUm CE 7.04** and above

Last reviewed: December 19, 2018



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# Part 1: axiUm API

## 1 Overview

The Promoting Interoperability (formerly Meaningful Use) APIs allows 3<sup>rd</sup> parties to securely access clinical information about patients. The API will allow users to access patient data on your data base.

This guides outlines how to securely give 3<sup>rd</sup> parties access to the API. As well as information on how to call the APIs and a description of each API. It is designed for users that manage axiUm CONNECT installation and set-up.

This document can be accessed online at: [https://www.exansoftware.com/wp-content/uploads/2018/12/axiUm\\_API.pdf](https://www.exansoftware.com/wp-content/uploads/2018/12/axiUm_API.pdf)

## 2 API Pre-requirements

In order to access axiUm API, a vendor needs to be granted access to the API by our customer. They need to receive credentials and the end points from the customer who can enable access to patient's data. The customer can also limit access to specific patients.

## 3 API Authentication

The axiUm API provides Basic Authentication for all its endpoints. Authentication for the axiUm Interoperability API can be done using the Basic Authentication protocol in accordance with the Basic Authentication spec.

With Basic Authentication, the user ID and password are passed over the network with every request in its header (it is base64 encoded). HTTPS should be used in conjunction with basic authentication.

### How to Create and Encode Basic Authentication Signature

---

#### Adding a new User to the Connect Web Config File

Find the following values:

```
<add key="TestKey1" value="" />
<add key="TestKey2" value="" />
<add key="TestKey3" value="" />
```

Fill out Key and Values. For example:

```
<add key="vendor_UserName" value="true" />
<add key="vendor_UserName_password" value="123456789" />
<add key="vendor_UserName_controllers" value="MUVendor" />
```

In the above example:

- Id = UserName
- Password = 123456789
- Controller = MUVendor

**Note:** *UserName, Password can be changed for each user/vendor*

You will need to provide the Id, Password and Controller to the 3<sup>rd</sup> Party.

#### Creating the Authentication Signature

Say Id: "Vendor1" and Controller: "MUVendor" and Password: "password" then the signature will have to be generated like this:

1. Concatenate controller(lower case), Id, Password and UtcTime(in yyyyMMdd format)
2. Hash it to SHA256
3. Encode it to Base64 string

Basic 9e//TopxctkHmMAD9kmvb+yCfr8mAiyg7AHnNWgfVYI

Basic Authentication Request Header (example):

```
Authorization: Basic  
TVVWZW5kb3IxOk53Z0NoeVU0aWRyL2JFalJmM2ZLaWdmdTFsKzBTaUh2dEdRNGx6  
SjBENm89
```

## 4 API Syntax

### Patient Chart API

---

This API can be used to get the chart# of a patient from their demographic information.

HTTPS Method: POST

The endpoint URL for this API is - <https://baseaddress/api/MUVendor/PatientChart>

**Note:** This URL is an example URL and is not connected to an API you will have to replace <https://baseaddress> with the web address that points to your axiUm Connect Installation.

This endpoint uses the criteria passed in to search for and return a list of matching patient chart Ids. If more than one patients match the criteria given, all matching patient charts are returned. If no patients match the criteria given, an error will be returned with a message.

#### Parameters:

Parameters	Description	Type	Max Length	Required
FirstName	First Name of patient	String	30 Chars.	No
MiddleName	Middle Name of patient	String	15 Chars.	No
LastName	Last Name of patient	String	25 Chars.	No
DateOfBirth	Date of Birth of the patient	Date (Must comply the format - {dd-mmm-yyyy} )	-	No
Id	Reference Id of the patient	String	15 Chars.	No
Gender	Gender of the patient	String (Limited to values - Unknown, Male, Female,	-	No

---

Transgender,  
GenderX, Other)

---

**Request:**

These parameter values must be sent in json format.

**Example:**

```
{ "FirstName": "John", "MiddleName": "Dave", "LastName": "Smith",  
  "Id": "63453454", "DateOfBirth": "19-NOV-1980", "Gender":  
  "Male" }
```

If any parameter is left out or passed in without a value then all records for that parameter is returned with an "AND" to the other parameter values. If any of the parameter values is empty("") along with other non-empty parameters then that parameter will be ignored. If the only parameter is empty then an error will be returned with a message.

**Response:**

The response format will be XML.

**Example:**

```
<PatientChartIds>  
  <PatientChartId>10743</PatientChartId>  
</PatientChartIds>
```

**Errors:**

Error	Code	Message
Parameter keys are not correct	ERR_INVALID_SEARCH	The request contains unexpected parameter
Parameter values are not found.	ERR_NOT_FOUND	Patient chart cannot be found
Nothing is passed	ERR_INVALID_SEARCH	The request must have at least one parameter

---

## Patient specific data API

---

This API can be used to get detailed Patient data for a single patient chart.

HTTPS Method: POST

The endpoint URL for this API is - <https://baseaddress/api/MUVendor/PatientData>

**Note:** This URL is an example URL and is not connected to an API you will have to replace <https://baseaddress> with the web address that points to your axiUm Connect Installation.

This endpoint uses the criteria passed in to search for and returns detailed patient details against one patient chart. If no patients match the filter(s) passed, an error will be returned with a message.

**Parameters:**

Parameters	Description	Type	Max Length	Required
PatientChartId	Patient Chart Id	String	30 Chars	Yes
FromDate	From Date	Date (Must comply the format - {dd-mmm-yyyy} )	-	No
ToDate	To Date	Date (Must comply the format - {dd-mmm-yyyy} )	-	No
Sections	Sections (one or multiple section value(s) separated by comma can be passed)	String (Limited to the Sections Names Below)	-	No

**Sections:**

Section Name*	Description
ALLERGIES	Patient Medication Allergies
ENCOUNTER	List of Patient Appointments
FUNCTIONALSTATUS	Patient Functional Status
IMMUNIZATIONS	Patient Immunization Information
MEDICALEQUIPMENT	Information about the Patient's Implantable Device(s)
MEDICATIONS	Patient Medications
ASSESSMENT	Patient assessment
PLANOFTREATMENT	Plan of Treatments
PROBLEMS	Patient Medical Problems



PROCEDURES	Patient Procedures
RESULTS	Patient Lab Orders and Lab Values/Results
SOCIALHISTORY	Patient Smoking Status
VITALSIGNS	Patient Vital Signs
GOALS	Patient Goals
HEALTH CONCERNS	Patient Health Concerns
DEMOGRAPHICS	Patient Name, Sex, Date of Birth, Race, Ethnicity, Preferred Language and Care Team members

**\*Note:** All sections also include Patient Demographic/Provider information (Patient Name, Sex, Date of Birth, Race, Ethnicity, Preferred Language and Care Team members)

**Request:**

These parameter values must be sent in json format.

Example:

```
{"PatientChartId": 10526, "FromDate": "14-Jan-2012", "ToDate": "31-Jul-2018", "Sections": "MEDICALEQUIPMENT"}
```

If any parameter is left out or passed in without a value then all records for that parameter is returned with an "AND" to the other parameter values. If any of the parameter values is empty("") along with other non-empty parameters then that parameter will be ignored. If the only parameter is empty then an error will be returned with a message.

**Response:**

The response format will be in a C-CDA format

**Notes:**

- Format Specification: Continuity of Care (CCD) document template in accordance with the standard specified in § 170.205(a)(4), HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes, DSTU, Release 2.1
- The data will be limited to the sections you have specified in the call and Patient Demographic/Provider information (Patient Name, Sex, Date of Birth, Race, Ethnicity, Preferred Language and Care Team members).
- Calling just the DEMOGRAPHICS section will just return Patient Name, Sex, Date of Birth, Race, Ethnicity, Preferred Language and Care Team members and no other sections.
- To get all patient data just omit the Section Parameter from your call
- Date Filtering:
  - The following sections are filtered based on the entry date
    - ALLERGIES
    - FUNCTIONALSTATUS
    - IMMUNIZATIONS
    - MEDICATIONS
    - ASSESSMENT
    - PROBLEMS
    - PROCEDURES
    - SOCIALHISTORY
    - GOALS
    - HEALTH CONCERNS
  - The following sections are filtered based on the clinical date
    - MEDICALEQUIPMENT
    - ENCOUNTER
    - RESULTS
    - VITALSIGNS
  - The following section is not filtered
    - DEMOGRAPHICS
    - PLANOFTREATMENT

## Example:

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="CDA.xsl"?>
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:hl7-org:v3 ../.././CDA%20R2/cda-schemas-and-
samples/infrastructure/cda/CDA.xsd" xmlns="urn:hl7-org:v3" xmlns:cda="urn:hl7-
org:v3" xmlns:sdtc="urn:hl7-org:sdtc">
  <realmCode code="US" />
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040" />
  <!-- US General Header Template -->
  <!-- CONF 5252 -->
  <templateId root="2.16.840.1.113883.10.20.22.1.15" extension="2016-11-29" />
  <!-- CONF:1198-5363 - This id *SHALL* be a globally unique identifier for
the document. -->
  <id root="2.16.840.1.113883.3.1496" />
  <!-- CONF 5253 "CCD document" -->
  <code codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" code="34133-
9" displayName="Summarization of Episode Note" />
  <!-- CONF 5254 -->
  <title>Transition of Care Summary</title>
  <!-- CONF 5256 -->
  <effectiveTime value="20180822" />
  <!-- 5259 -->
  <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25" />
  <!-- 5372 -->
  <languageCode code="en-US" />
  <recordTarget>
    <patientRole>
      <!-- CONF 5268-->
      <id root="2.16.840.1.113883.4.1" extension="23442" />
      <addr use="HP">
        <streetAddressLine nullFlavor="UNK" />
        <city nullFlavor="UNK" />
        <state nullFlavor="UNK" />
        <postalCode nullFlavor="UNK" />
        <country>US</country>
      </addr>
      <telecom use="HP" nullFlavor="UNK" />
      <patient>
        <name use="L">
          <given>Smith</given>
          <family>John</family>
        </name>
        <administrativeGenderCode code="M" displayName="Male"
codeSystem="2.16.840.1.113883.5.1" codeSystemName="AdministrativeGender" />
        <birthTime value="19500101" />
        <maritalStatusCode code="S" displayName="Never Married"
codeSystem="2.16.840.1.113883.5.2" codeSystemName="MaritalStatusCode" />
        <raceCode nullFlavor="UNK" />
        <ethnicGroupCode nullFlavor="UNK" />
        <languageCommunication>
          <languageCode nullFlavor="UNK" />
        </languageCommunication>
      </patient>
    </patientRole>
  </recordTarget>
  <author>
    <time value="20180822" />
    <assignedAuthor>
      <id root="2.16.840.1.113883.4.6" extension="UNK" />
      <addr use="WP">
        <streetAddressLine>1515 Broadway Street</streetAddressLine>
        <streetAddressLine>Suite 101</streetAddressLine>
        <city>Detroit</city>
        <state>MI</state>
        <postalCode>48205</postalCode>
        <country>US</country>
      </addr>
      <telecom use="WP" value="604-456-8787" />
    </assignedPerson>
  </author>
</ClinicalDocument>
```

```

        <name>
            <given>Roger</given>
            <family>Cox</family>
        </name>
    </assignedPerson>
</assignedAuthor>
</author>
<dataEnterer>
    <assignedEntity>
        <id root="2.16.840.1.113883.4.6" extension="111111154" />
        <addr use="WP">
            <streetAddressLine>1515 Broadway Street</streetAddressLine>
            <streetAddressLine>Suite 101</streetAddressLine>
            <city>Detroit</city>
            <state>MI</state>
            <postalCode>48205</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="123-456-7890" />
    </assignedPerson>
    <name>
        <given>Roger</given>
        <family>Cox</family>
    </name>
    </assignedPerson>
</assignedEntity>
</dataEnterer>
<custodian>
    <assignedCustodian>
        <representedCustodianOrganization>
            <id root="2.16.840.1.113883.4.6" extension="NPI FPrac" />
            <name>HA Beta 7.00 - Faculty Practice</name>
            <telecom use="WP" value="604-456-8787" />
            <addr use="WP">
                <streetAddressLine>1515 Broadway Street</streetAddressLine>
                <streetAddressLine>Suite 101</streetAddressLine>
                <city>Detroit</city>
                <state>MI</state>
                <postalCode>48205</postalCode>
                <country>US</country>
            </addr>
        </representedCustodianOrganization>
    </assignedCustodian>
</custodian>
<legalAuthenticator>
    <time value="20180822" />
    <signatureCode code="S" />
    <assignedEntity>
        <id root="2.16.840.1.113883.4.6" extension="UNK" />
        <addr use="WP">
            <streetAddressLine>1515 Broadway Street</streetAddressLine>
            <streetAddressLine>Suite 101</streetAddressLine>
            <city>Detroit</city>
            <state>MI</state>
            <postalCode>48205</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="604-456-8787" />
    </assignedPerson>
    <name>
        <given>Roger</given>
        <family>Cox</family>
    </name>
    </assignedPerson>
</assignedEntity>
</legalAuthenticator>
<documentationOf typeCode="DOC">
    <serviceEvent classCode="PCPR" moodCode="EVN">
        <effectiveTime nullFlavor="UNK">
            <low nullFlavor="UNK" />
            <high nullFlavor="UNK" />
        </effectiveTime>
    </serviceEvent>
</documentationOf>

```

```

        </effectiveTime>
        <performer typeCode="PRF">
            <templateId root="2.16.840.1.113883.3.88.11.83.4" />
            <templateId root="1.3.6.1.4.1.19376.1.5.3.1.2.3" />
            <functionCode code="PP" displayName="Primary Care Provider"
codeSystem="2.16.840.1.113883.12.443" codeSystemName="Provider Role" />
            <time nullFlavor="UNK">
                <low nullFlavor="UNK" />
                <high nullFlavor="UNK" />
            </time>
            <assignedEntity>
                <id root="2.16.840.1.113883.4.6" extension="UNK" />
                <addr nullFlavor="UNK" />
                <telecom use="WP" nullFlavor="UNK" />
                <assignedPerson classCode="PSN" determinerCode="INSTANCE">
                    <name nullFlavor="UNK" />
                </assignedPerson>
            </assignedEntity>
        </performer>
    </serviceEvent>
</documentationOf>
<component>
    <structuredBody>
        <component>
            <section>
                <!-- Medical Equipment Section (V2) template -->
                <templateId root="2.16.840.1.113883.10.20.22.2.23" />
                <templateId root="2.16.840.1.113883.10.20.22.2.23"
extension="2014-06-09" />
                <code code="46264-8" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Medical Equipment" />
                <title>Medical Equipment</title>
                <text>Patient has no history of implantable devices.</text>
            </section>
        </component>
    </structuredBody>
</component>
</ClinicalDocument>

```

#### Errors:

Error	Code	Message
Parameter keys are not correct	ERR_INVALID_SEARCH	The request contains unexpected parameter
Nothing is passed	ERR_INVALID_SEARCH	The request must have at least one parameter
Parameter Patient Chart is not found	ERR_NOT_FOUND	Patient chart cannot be found
From date is later than current date	ERR_NOT_FOUND	Start date cannot be later than current date
From date is later than end date	ERR_NOT_FOUND	Start Date cannot be later than End Date
One or more parameter value(s) are invalid	ERR_NOT_FOUND	Parameter value is invalid

## 5 Using the API

To use the API a user will need to know their Id, Password and Controller.

With that information a user will have to create their own Authentication Signature for each call. (See section 3 API Authentication)

The user will then need to know the end points below

**The endpoint URL for this API is - <https://baseaddress/api/MUVendor/PatientData>**

**The endpoint URL for this API is - <https://baseaddress/api/MUVendor/PatientChart>**

**Note:** These URL are an examples and is not connected to an API you will have to replace <https://baseaddress> with the web address that points to your axiUm Connect Installation.

Using the parameters outlined in section 4 API syntax a user will be able to make HTTP POST calls to get a Patient Chart # or Patient Data.

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These Axium API Terms of Use are between Exan Enterprises, Inc. and You. For the purposes of these Terms of Use, you are referred to as the “Developer” under this Agreement. By clicking the box, signing, or otherwise accepting these terms of use, Developer agrees that you are either (1) accepting these terms in your own capacity if you register as an individual; or (2) accepting these terms on behalf of the organization listed as part of your registration. To the extent that you are accepting these links on behalf of the organization listed on the registration, you represent and warrant that: 1) you are an authorized signer on behalf of your organization; and 2) Henry Schein, Inc., and its subsidiaries and affiliates, including but not limited to Exan Enterprises, Inc. and Henry Schein, LLC have no reason to believe that you are not an authorized signer for your organization. These Terms of Use shall be Effective as of the date they have been accepted by the Developer through the click through or other terms of acceptance on the website.

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5. **Third Party Developers.** If Developer seeks to engage any third party to access, use, and otherwise develop an integration using the Axium API, such third party developer must register for the Axium API separate and independent. Any sharing of information with the third party developer shall automatically terminate this agreement, unless such third party developer has separately registered to obtain access to the Axium API.
6. **Availability.** Developer acknowledges and agrees that (i) EXAN makes no guarantees with respect to the availability or uptime of the Software Developer Kit; (ii) EXAN may conduct maintenance on or stop providing certain



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- 10. Developer Application Disclaimer.** Developer shall include as part of the "About Screen", along with any websites promoting or advertising the Interface, the following language: "[INSERT Developer Name/Developer Application]" is not affiliated with or sponsored by Henry Schein, Inc. or its affiliates. This software application utilizes the Exan Enterprises API Software Development Kit; all rights reserved".
- 11. Term.** This Agreement shall begin from when you click or accept these terms until otherwise terminated by the Parties. You may terminate these terms at any time by providing notice to Exan's Customer Support. Exan may terminate these terms at any time by emailing your account used for registration. Exan may, in lieu of termination, otherwise disable your account from accessing the Axiom API, at any time for any reason, including but not limited to as may be necessary to prevent intellectual property infringement, to protect user information, or as may be otherwise determined in the sole discretion of Exan.

12. **Effect of Termination.** Except as otherwise provided herein, upon termination of this Agreement: (a) all rights and licenses granted hereunder shall immediately cease; (b) Developer shall cease all use of the Software Developer Kit, EXAN API, EXAN Software or EXAN Software Content and EXAN Trademarks and shall remove the EXAN API from the Developer Applications and (c) each party shall, upon written request of the other party, return or destroy all copies of any Confidential Information (as defined herein) in its possession of which it is aware and to which it has access and is reasonably able to destroy or delete. Upon request of EXAN, a duly authorized officer of Developer shall certify that these steps have been taken. If Developer has End Users who are leveraging such interface, Developer may continue to support those users for a period of no longer than ninety (90) days.
13. **Confidentiality.** All information, including but not limited to business, technical, financial or any other information disclosed by EXAN to Developer pursuant to this Agreement, regardless of whether it is marked as such, is the confidential information of EXAN (“**Confidential Information**”). Developer shall not use the Confidential Information for any purpose not expressly permitted by this Agreement, and Developer shall hold in confidence and shall not disclose to any third party such Confidential Information or the material terms of this Agreement, and shall similarly bind Developer’s personnel in writing. Developer shall not be obligated under this Section 5.1 with respect to information (that Developer can document) that: (a) is or has become readily publicly available without restriction through no fault of Developer or Developer’s personnel; (b) is received, without restriction, from a third party lawfully in possession of such information and lawfully empowered to disclose such information; or (c) was rightfully in Developer’s possession without restriction prior to its disclosure by EXAN.
14. **Representations and Warranties.** Each party represents and warrants to the other that it has full authority to enter into this Agreement and that the performance of its obligations hereunder will not constitute a breach or default of any other agreement to which it is a party. Developer represents and warrants that:
- a. it and all of its directors, officers, employees and agents will comply with all applicable laws, rules, regulations, ordinances, decisions and guidelines, including, without limitation, federal and state anti-kickback laws, applicable export laws and regulations, privacy and data security laws and best practices (including maintaining industry standard data protection practices with respect to the treatment and protection of personal information), Health Insurance Portability and Accountability Act of 1996 Pub. Law 104-191 (Aug. 21, 1996), its implementing regulations, the Health Information Technology for Economic and Clinical Health Act (“HITECH”) and its implementing regulations (collectively “HIPAA”) including meeting all obligations of a Business Associate as defined under HIPAA, and any similar obligations under any applicable laws, all as amended from time to time;

- b. the Developer Application, the Interface and all other interfaces with the EXAN API and EXAN's databases, will not infringe on any Intellectual Property Rights of any third party;
  - c. Developer will take all reasonable actions and precautions to prevent the introduction of any software routine, code, instruction, time-limiting routine, back door, time bomb, Trojan horse, worm, drop dead device, logic bomb, virus or combination of the above that is designed to, or permits unauthorized access to EXAN Software and EXAN Software Content; and
  - d. that the Developer Application are not used to provide patient care, diagnosis, treatment, or prevention of a health care disease or condition, nor regulated by the Food and Drug Administration, and shall immediately notify EXAN if at any time such status changes.
15. **DISCLAIMER.** EXAN DOES NOT WARRANT, GUARANTEE OR MAKE ANY REPRESENTATION REGARDING THE USE, AVAILABILITY, UPTIME OR THE RESULTS OF THE USE OF THE SOFTWARE DEVELOPER KIT, OR REGARDING THE FUNCTIONALITY, RELIABILITY, MERCHANTABILITY OR PERFORMANCE OF THE SOFTWARE DEVELOPER KIT, OR THAT THE OPERATION OF THE SOFTWARE DEVELOPER KIT WILL BE WITHOUT INTERRUPTION OR ERROR-FREE. ALL PRODUCTS, SERVICES AND RIGHTS PROVIDED BY EXAN HEREUNDER ARE PROVIDED "AS IS" AND "AS AVAILABLE." EXAN DOES NOT ASSUME ANY RESPONSIBILITY FOR DEVELOPER APPLICATION OR THE USE OR MISUSE OF ANY INFORMATION TRANSMITTED, UPLOADED, OR STORED USING EXAN API. DEVELOPER ACKNOWLEDGES THAT IT HAS NOT ENTERED INTO THIS AGREEMENT IN RELIANCE UPON ANY WARRANTY OR REPRESENTATION EXCEPT THOSE SPECIFICALLY SET FORTH HEREIN. DEVELOPER ACKNOWLEDGES THAT IT HAS NOT ENTERED INTO THIS AGREEMENT IN RELIANCE UPON ANY WARRANTY OR REPRESENTATION EXCEPT THOSE SPECIFICALLY SET FORTH HEREIN.
16. **LIMITATION OF LIABILITY.** IN NO EVENT WILL EXAN BE LIABLE TO DEVELOPER OR ANY THIRD PARTY UNDER ANY CIRCUMSTANCES FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH DEVELOPER APPLICATION OR THE USE OR INABILITY TO USE THE SOFTWARE DEVELOPER KIT, THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, OR OTHERWISE IN CONNECTION WITH THIS AGREEMENT (INCLUDING BUT NOT LIMITED TO SOFTWARE DEVELOPER KIT, EXAN API, EXAN SOFTWARE OR EXAN SOFTWARE CONTENT) EVEN IF EXAN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL EXAN'S TOTAL LIABILITY FOR ANY DAMAGES, ARISING IN CONNECTION WITH THIS AGREEMENT EXCEED \$100, REGARDLESS OF WHETHER SUCH LIABILITY ARISES FROM ANY CLAIM BASED UPON CONTRACT, BREACH OF WARRANTY, TORT OR OTHERWISE. IN NO EVNT SHALL EXAN BE HELD LIABLE FOR ANY DAMAGES RESULTING FROM THE DEVELOPER APPLICATION OR THE USE OR MISUSE OF INFORMATION PROVIDED THROUGH THE INTERFACE, INCLUDING BUT NOT LIMITED TO PROTECTED HEALTH INFORMATION.
17. **Indemnification.** Developer will indemnify, defend and hold Henry Schein, Inc. and each of its affiliates and subsidiaries ("HSI") and customers harmless for and

against any and all liabilities, losses, damages (including, actual, punitive and exemplary damages), claims, costs and expenses, interest, awards, judgments and penalties (including attorney's and consultants' fees and expenses) suffered or incurred by HSI or its customers arising or resulting from any: (a) claim of trademark, trade dress, trade secret, copyright, patent or other intellectual property infringement relating to Developer's Application (whether alone or in combination with other products); (b) product liability claim; (c) breach by Developer of any obligation to EXAN or any inaccuracy of any written representation made by Developer to EXAN; (d) negligent or willful action or omission of Developer or any of its agents, employees, representatives, successors or assigns in connection with the manufacture, development, sale or distribution of the Developer Application; (e) action for recall or seizure of the Developer Application; (f) Developer's Application and use of the Software Developer Kit, EXAN API, EXAN Software or EXAN Software Content; and (g) Developer's use or misuse of: (i) personal information or (ii) protected health information as defined by HIPAA.

18. **Insurance.** To the extent that Developer is an organization or other corporate entity, Developer shall maintain during the term of this agreement (and if any policy is on a claims-made and reported form, for three years thereafter): (i) comprehensive "occurrence" general liability insurance, including "occurrence" product liability, contractual liability insurance and advertising injury coverage, and (ii) technology errors and omissions insurance, with minimum limits of \$3,000,000 per claim and annual aggregate.
19. **Survival.** The provisions of Sections 22 (Definitions), 4 (Prohibitions), 12 (Effect of Termination), 19 (Survival), 13 (Confidentiality), 7 (Ownership by Exan), 8 (Ownership by Developer) 14 (Representations and Warranties), 15 (Disclaimer), 16 (Limitation of Liability), 17 (Indemnification), and 20 (Miscellaneous) shall survive expiration or termination of this Agreement.
20. **Miscellaneous.**
  - a. **Notices.** Except as otherwise provided, all notices given under this Agreement shall be in writing and shall be deemed to have been duly given upon receipt if delivered by hand or facsimile transmission with receipt confirmed, three days after mailing by certified or registered mail, and one day after sending by overnight courier, to the parties' respective address indicated on the signature page of this Agreement or such other address as a party specifies in writing to the other party. All notices given to EXAN under this Agreement shall be sent to 1930 Village Center Circle, #3-1305, Las Vegas, Nevada 89134, Attn: Vice President of Operations, Fax (604) 468-6850, with a copy to Henry Schein, Inc., 135 Duryea Road, Melville, New York 11747, Attn: General Counsel, Fax (631) 843- 5660.
  - b. **Assignment.** Developer may not assign this Agreement without EXAN's prior written consent.
  - c. **Independent Contractors; No Third Party Beneficiaries.** The parties are independent contractors, and this Agreement does not create an agency,

partnership or joint venture relationship of any kind between the parties. There are no third-party beneficiaries to this Agreement.

- d. **Force Majeure.** EXAN shall have no liability for delays, failure in performance or damages caused by factors beyond its reasonable control, including (without limitation) changes in government regulations, acts of God, Developer's (or a third party developer's or End User's) acts or omissions, labor shortages, strikes, slowdowns, or other combined action of workmen, fires, floods, earthquakes, severe weather, serious accidents, explosions, lightning, pest damage, power surges or failures, epidemics, quarantines, wars, insurrections or riots, acts of civil or military authorities, transportation embargoes, shortages or interruptions in delivery of components and materials, acts or omissions of communications carriers, Internet inaccessibility or failure and delays by EXAN's suppliers.
- e. **Non-Waiver; Severability.** No failure or delay by any party in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder. If any provision herein is otherwise held to be invalid or unenforceable for any reason, the remaining provisions will continue in full force without being impaired or invalidated in any way. The parties agree to replace any invalid provision with a valid provision that most closely approximates the intent and economic effect of the invalid provision.
- f. **Governing Law; Venue.** This Agreement shall be governed by the laws of the State of New York, without reference to conflict of laws principles. The parties irrevocably and exclusively submit to the jurisdiction of any state court located in the state and federal courts sitting in the Eastern and Southern Districts of New York or in the counties within those federal judicial districts for the purpose of any suit, action or proceeding arising out of this Agreement and hereby irrevocably waive the defense of an inconvenient forum to the maintenance of any such suit, action or proceeding.
- g. **Entire Agreement; Conflicts.** This Agreement supersedes any other prior or collateral agreements, whether oral or written, with respect to the subject matter hereof. This Agreement is the parties' entire agreement relating to its subject and supersedes any prior or contemporaneous agreements on that subject. The terms contained in this Agreement shall supersede any conflicting terms contained in any purchase order, invoice or other document used or submitted by either party in connection with the purchase of the Software Developer Kit covered by this Agreement and EXAN shall not be bound by any provisions of any purchase order, receipt, acceptance, confirmation, correspondence, or otherwise, unless EXAN specifically agrees to the provision in writing.
- h. **Counterparts; Headings.** The parties may execute this agreement in counterparts, including facsimile, PDF or other electronic copies, which

taken together will constitute one instrument. The headings and captions used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

- i. **Amendment.** EXAN may change the terms of this Agreement at any point in time with or without notice by making a new copy of these terms of use available to Developer. IF ANY MODIFICATION IS UNACCEPTABLE TO DEVELOPER, DEVELOPER'S SOLE RECOURSE IS TO TERMINATE THIS AGREEMENT BY NOTIFYING EXAN. NOTWITHSTANDING ANYTHING TO THE CONTRARY, DEVELOPER'S USE OF THE SOFTWARE DEVELOPER KIT OR EXAN API AFTER THE DATE ON WHICH CHANGES BECOME EFFECTIVE WILL CONSTITUTE DEVELOPER'S ACCEPTANCE OF SUCH CHANGES.

## 21. Definitions

- a. **"Exan API"** means the interfaces, documentation, protocols, and tools utilized to integrate with EXAN Software.
- b. **"Developer's Application"** means the software application, developed, owned or operated by Developer to interact with the Axiom API
- c. **"Developer Trademark(s)"** means all names, trade names, trademarks, service marks, domain names and logos owned by Developer and used by Developer in connection with Developer's products and services.
- d. **"End User"** means a clinic or site that uses the EXAN Software and that licenses Developer's Application.
- e. **"End User Data"** means the information (including but not limited to patient, clinical, scheduling and insurance information) that is loaded into the EXAN Software by End User.
- f. **"EXAN Software"** means the applicable EXAN Practice Management Software, which includes the machine readable software programs and associated files, whether in packaged form, or received electronically and any modified version, upgrades and other copies of such programs and files owned by EXAN.
- g. **"EXAN Software Content"** means all EXAN' information and procedures stored in and retrieved from EXAN Software databases (excluding End User Data and information that Developer obtains independent of the Software Developer Kit and the EXAN API).
- h. **"EXAN Trademark(s)"** means all names, trade names, trademarks, service marks, domain names and logos owned by EXAN and its affiliates and used in connection with this Agreement.
- i. **"Intellectual Property Rights"** means any and all intellectual property rights existing from time to time under any laws or regulations.
- j. **"Interface"** means a shared boundary across which the Developer's Application and the EXAN Software which interact and exchange information.

- k. **“Software Developer Kit”** means the Access Key (as defined above), sample code, API documentation and all other tools and information made available to Developer to assist in using the API.