Housing Inventory Chart and Point-In-Time Count Reporting with *HMIS XML v.3.0*

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HMIS XML CUMULATIVE PACKAGE OVERVIEW

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I. Introduction and Scope

HUD now supports Continua of Care's ability to transmit standard HMIS reports in a simple data exchange format. Historically, most table shell type reports have been distributed as digital spreadsheets or static printouts. These formats have proven difficult to uniformly generate and process by sending and receiving information systems, so HUD employs the more commonly accepted data exchange formats of eXtensible Markup Language (XML) and Comma-separated Values (CSV). In 2008, the AHAR XML reporting format[1] was released, which was successfully implemented by numerous Continua.

Now, version 3.0 of the HUD HMIS XML Schema data format acquires the capability to transmit both HUD Housing Inventory Chart (HIC)[2] and HUD Point-in-time (PIT) Count[3] in XML format[4] to the HUD Homelessness Data Exchange (HDX). This document describes how to accomplish HIC and PIT reporting to the HDX with HMIS XML, version 3.0. Equivalent documentation for the version 3 of the HUD HMIS CSV format is also available[5]. This document assumes a basic understanding of XML Schema[6] and the HUD HMIS XML Schema[7].

This document only contains information on how to create XML valid for HIC and PIT submission to the HDX. It does not describe elements in the HMIS XML Schema not related to the HIC or PIT. It also does not provide other instructions for HDX submission such as the accessible web location, credentials, or necessary agency specific identifiers to be assigned by the HDX administrators.

II. Overview

The basic structure of the Housing Inventory Chart and Point-In-Time aggregate reporting contained within the HMIS XML Schema 3.0 is illustrated in *Figure 1*. Since HIC and PIT reporting is embedded within the standard HMIS XML structure, most information is conveyed in terms of *agencies*, *sites*, and *services,* as modeled by the Alliance of Information and Referral Services XML Schema (AIRS XML)[8]. An *agency* (not shown in the figure) is a 501c3 or public

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1   see http://www.hmis.info/Resources/1090/AHAR-XSD-v.1.0.2.aspx

2   some basic information on the HIC is at http://hmis.info/Resources/7511/2009-eHIC-Q--A.aspx

3   see http://www.hudhre.info/documents/counting_unsheltered.pdf for a description and explanation of the Point-In-Time Count

4   Version 3.0 of the HMIS Comma-separated Value (CSV) format also provides the ability to transmit HIC and PIT aggregate data.

5   see http://www.hmis.info/Resources/7527/HMIS-Comma-Separated-Value-%28CSV%29-Format-V.-3.0-%28Based-on-March-2010-Data-Standards%29.aspx

6   see http://en.wikipedia.org/wiki/XML_Schema_%28W3C%29

7   see http://www.hmis.info/schema/3_0/HUD_HMIS.xsd

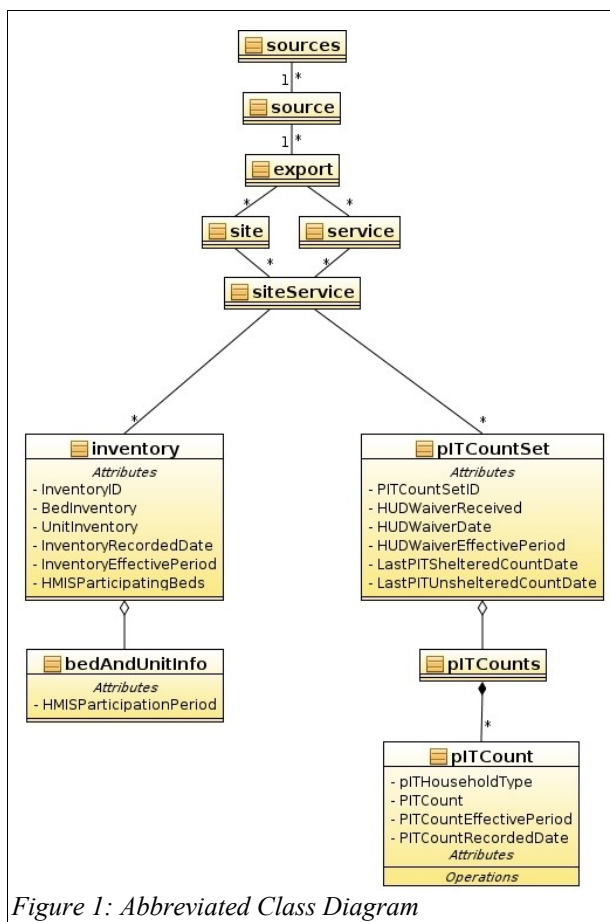8   see http://www.airs.org/i4a/pages/index.cfm?pageid=3363

agency, *sites* are nothing more than physical locations, and *services* are general programs that may have zero to many sites.   The nexus of a site (location) with a service (program) is represented by the *site service* element. Most of the HIC and PIT reporting elements are located within a *site service* element, since both location and program type are important for both reports.

III. Basic Structure

A. Common Elements and Program/Location Dependencies

The HIC report requires organization names and identifiers, which are located in the *hmis:Agency* data element. Any of the general program data elements which are not site specific, such as *CoC Code, Target Population A,* and *Direct Service Code* are located in *hmis:Service*. The purely site-specific data element *Site Address* is located in the *hmis:Site* data type. All of the bed and unit inventory counts are both location and program dependent, so inventories are located in *hmis:SiteService*. It is possible to describe location independent inventory using *hmis:Service.Inventory*, but the HIC report requires site-specific inventories, so only *hmis:SiteService.Inventory* is used for HIC reporting. Likewise, PIT reporting is site specific, so the *hmis:PITCountSet* data element is a child of *hmis:SiteService*.

To submit an HIC XML report for submission to the HUD Homelessness Data Exchange, the *hmis:Sources.Source* and *hmis:Sources.Source.Export* data elements must be transmitted with identifiers assigned by the HDX administrators (in the case of *hmis:Source.SourceID*), or incremented from the previous submission (in the case of *hmis:Source.Export.ExportID*). *hmis:Site* and *hmis:Service* elements must be transmitted to the HDX, and thereafter, *hmis:SiteService* elements can reference these two parent elements by their IDs. In addition to identifiers which distinguish Continuum programs and sites, *hmis:Site* and *hmis:Service* convey data elements used by the HIC and PIT. They are enumerated in sections V and VI.

Figure 1: Abbreviated Class Diagram

Additionally, Table 1 in Appendix A summarizes the HIC and PIT elements in version 3 of the HMIS XML Schema.

B. HIC Sections

Within *hmis:SiteService*, HIC inventories can be transmitted for that SiteService (*aka* Program Site). Each inventory can contain either bed inventory counts, or unit inventory counts, along with an index and metadata for the count.

C. PIT Count Sections

Within *hmis:SiteService*, PIT Counts can be transmitted for that SiteService (aka Program Site). Each PIT Count can contain the count value, along with an index and metadata for the count.

IV. Example HIC/PIT XML Report

```xml
<?xml version="1.0" encoding="UTF-8"?>
<hmis:Sources xmlns:airs="http://www.hmis.info/schema/3_0/AIRS_3_0_mod.xsd"
xmlns:hmis="http://www.hmis.info/schema/3_0/HUD_HMIS_3_0.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
hmis:version="3.0">
  <hmis:Source>
    <hmis:SourceID>
      <hmis:IDNum>936994023</hmis:IDNum>
    </hmis:SourceID>
    <hmis:SoftwareVendor>Some Vendor</hmis:SoftwareVendor>
    <hmis:SoftwareVersion>2.437</hmis:SoftwareVersion>
    <hmis:SourceContactEmail>somebody@someplace.com</hmis:SourceContactEmail>
    <hmis:SourceContactExtension>7555</hmis:SourceContactExtension>
    <hmis:SourceContactFirst>John</hmis:SourceContactFirst>
    <hmis:SourceContactLast>Doe</hmis:SourceContactLast>
    <hmis:SourceContactPhone>7802679812</hmis:SourceContactPhone>
    <hmis:SourceName>Community Agency A</hmis:SourceName>
    <hmis:Export>
      <hmis:ExportID>
        <hmis:IDStr>U8bAJX18nBZhoPfyzBSP40yjddYE2tzC</hmis:IDStr>
      </hmis:ExportID>
      <hmis:ExportDate>2009-03-01T15:46:31</hmis:ExportDate>
      <hmis:ExportPeriod>
        <hmis:StartDate>2009-01-01T15:46:31</hmis:StartDate>
        <hmis:EndDate>2009-02-28T15:46:31</hmis:EndDate>
      </hmis:ExportPeriod>
      <hmis:Agency>
        <airs:Key>1453503650</airs:Key>
        <airs:Name>Community Agency A</airs:Name>
      </hmis:Agency>
      <hmis:Service>
        <airs:Key>1007372603</airs:Key>
        <airs:AgencyKey>1195637652</airs:AgencyKey>
        <airs:Name>Anytown Transitional Housing Program</airs:Name>
        <hmis:COCCode>J500</hmis:COCCode>
        <hmis:FundingSources>
          <hmis:FundingSource>
            <hmis:FundingSourceID>
```

```xml
          <hmis:IDStr>ipYMBwlamM6i0</hmis:IDStr>
        </hmis:FundingSourceID>
        <hmis:ReceivesMcKinneyFunding>0</hmis:ReceivesMcKinneyFunding>
      </hmis:FundingSource>
    </hmis:FundingSources>
    <hmis:IndividualFamilyCode>3</hmis:IndividualFamilyCode>
    <hmis:ServiceType>3</hmis:ServiceType>
    <hmis:ServiceEffectivePeriod>
      <hmis:StartDate>2007-01-12T15:46:31</hmis:StartDate>
    </hmis:ServiceEffectivePeriod>
    <hmis:ServiceRecordedDate>2008-01-01T15:46:31</hmis:ServiceRecordedDate>
    <hmis:TargetPopulationA>8</hmis:TargetPopulationA>
    <hmis:TargetPopulationB>1</hmis:TargetPopulationB>
  </hmis:Service>
  <hmis:Site>
    <airs:Key>1140297079</airs:Key>
    <airs:Name>4th Street Service Center</airs:Name>
    <hmis:AgencyKey>1453503650</hmis:AgencyKey>
  </hmis:Site>
  <hmis:SiteService>
    <airs:Name>iJhWSpJU5f</airs:Name>
    <airs:Key>523520566</airs:Key>
    <hmis:ServiceID>1007372603</hmis:ServiceID>
    <hmis:SiteID>1140297079</hmis:SiteID>
    <hmis:GeographicCode hmis:dateCollected="2010-11-13T15:46:31" hmis:dateEffective="2007-01-12T15:46:31">447325</hmis:GeographicCode>
      <hmis:Inventory>
        <hmis:HMISParticipationPeriod>
          <hmis:StartDate>2007-01-12T15:46:31</hmis:StartDate>
        </hmis:HMISParticipationPeriod>
        <hmis:InventoryID>
          <hmis:IDNum>387728108</hmis:IDNum>
        </hmis:InventoryID>
        <hmis:BedInventory hmis:bedAvailability="2" hmis:bedType="3" hmis:chronicHomelessBed="0" hmis:householdType="2">18</hmis:BedInventory>
        <hmis:UnitInventory>7</hmis:UnitInventory>
        <hmis:InventoryRecordedDate>2009-12-15T15:46:31</hmis:InventoryRecordedDate>
        <hmis:InventoryEffectivePeriod>
          <hmis:StartDate>2007-01-12T15:46:31</hmis:StartDate>
          <hmis:EndDate>2009-12-15T15:46:31</hmis:EndDate>
        </hmis:InventoryEffectivePeriod>
        <hmis:HMISParticipatingBeds>16</hmis:HMISParticipatingBeds>
      </hmis:Inventory>
      <hmis:Principal>0</hmis:Principal>
      <hmis:PITCountSet>
        <hmis:PITCountSetID>
          <hmis:IDNum>6768</hmis:IDNum>
        </hmis:PITCountSetID>
        <hmis:HUDWaiverDate>2009-09-09</hmis:HUDWaiverDate>
        <hmis:HUDWaiverEffectivePeriod>
          <hmis:StartDate>2009-10-09T15:46:31</hmis:StartDate>
```

```
                <hmis:EndDate>2010-10-09T15:46:31</hmis:EndDate>
            </hmis:HUDWaiverEffectivePeriod>
            <hmis:LastPITShelteredCountDate>2009-09-09</hmis:LastPITShelteredCountDate>
            <hmis:LastPITUnshelteredCountDate>2009-09-09</hmis:LastPITUnshelteredCountDate>
            <hmis:PITCounts>
                <hmis:PITCount hmis:pITHouseholdType="1">
                    <hmis:PITCount>876</hmis:PITCount>
                    <hmis:PITCountEffectivePeriod>
                        <hmis:StartDate>2009-09-09T15:46:31</hmis:StartDate>
                        <hmis:EndDate>2009-09-09T15:46:31</hmis:EndDate>
                    </hmis:PITCountEffectivePeriod>
                    <hmis:PITCountRecordedDate>2009-09-09</hmis:PITCountRecordedDate>
                </hmis:PITCount>
            </hmis:PITCounts>
        </hmis:PITCountSet>
        <hmis:SiteServiceEffectivePeriod>
            <hmis:StartDate>2007-01-12T15:46:31</hmis:StartDate>
        </hmis:SiteServiceEffectivePeriod>
        <hmis:SiteServiceRecordedDate>2010-03-21T15:46:31</hmis:SiteServiceRecordedDate>
    </hmis:SiteService>
  </hmis:Export>
 </hmis:Source>
</hmis:Sources>
```

V. Listing of Common HIC and PIT Reporting Elements

A. Agency

This data element captures the organization names and identifiers needed for the report. These are conveyed by Sources.Source.Export.Agency.Name[9] and Agency.Key. hmis:Agency is used by both HIC and PIT reports. hmis:Agency is extended from airs:tAgency.

B. Service

Services are siteless and correspond to a "Program" in HUD parlance. A Service is given locus by placing an hmis:Site linkage within an hmis:SiteService. An hmis:Service contains the program name (hmis:Name), program type code (hmis:ServiceType), Continuum of Care number (hmis:COCCode), and Target Population A and B (hmis:TargetPopulationA/B). Attributes of a program that are site-specific are located in hmis:SiteService. An hmis:Service optionally contains one or more hmis:FundingSource elements within hmis:FundingSource. The hmis:ReceivesMcKinneyFunding flag is the only non-identifier within hmis:FundingSource that is of importance to the HDX.

C. SiteService

A SiteService is a "Program Site"; a location where a program operates. To back-reference an hmis:SiteService to its parent Site and Service, an hmis:SiteID and hmis:ServiceID exists. A

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[9]   henceforth in this document, element name references will omit the Sources.Source.Export parent elements

SiteService contains hmis:Inventory elements and the hmis:GeographicCode to capture the "Geocode" data element.

Note: SiteServices can be optionally grouped into regions, for arbitrary regional reporting. To do this, link the SiteServiceIDs to a common Source.Export.Region element. For HIC purposes, the region should always be "0 = HUD CoC".

VI. HIC Reporting Elements

A. BedInventory

hmis:BedInventory is a bed inventory count, expressed as an integer, as defined by the HIC chart guidelines. Attached to this count element are numerous attributes: hmis:bedAvailability, hmis:bedIndividualFamilyType, hmis:bedType, hmis:chronicHomelessBed, hmis:domesticViolenceShelterBed, hmis:householdType. All of these attributes are associated with numeric data values constrained by the schema. These numeric values correspond to categorizations defined by the Housing Inventory Chart guidelines.

B. HMISParticipatingBeds

This data element is an integer that tracks the total number of beds participating in HMIS as of the HMIS participation start date recorded in 2.9J of the Revised HMIS Data Standards.

C. HMISParticipationPeriod

This is the date when the HMIS participating bed information first applies (i.e., the date when a change in the number of HMIS participating beds occurs for a program's Bed and Unit Inventory Record). StartDate/EndDates are tracked to demarcate the period of time.

D. Inventory

Each inventory count requires a new hmis:Inventory element with an unique InventoryID. hmis:Inventory can track bed and/or unit inventories, depending on whether the hmis:UnitInventory and/or hmis:BedInventory element is placed within this element. If both are placed within the same hmis:Inventory element, they must have identical values for the sibling elements within the hmis:Inventory tag (e.g. the same hmis:InventoryRecordedDate, hmis:InventoryEffectivePeriod, hmis:HMISParticipationPeriod, etc.). An exception to this need for conformity is hmis:HMISParticipatingBeds, which applies only to beds and not units.

E. InventoryEffectivePeriod

InventoryEffectivePeriod establishes the start and end dates for an inventory. The hmis:InventoryEffectivePeriod.StartDate and the report's applicable/effective date are used to determine the HIC report's bed status as follows:

Bed Status	Criteria
Current	Inventory start date is 1 year or more before report applicable date
New	Inventory start date is less than 1 year before the report applicable date
Under Development	Inventory start date is after the report applicable date

These statuses are calculated from the inventory dates provided, so there is no need to transmit these statuses in the HMIS XML instance.

F. InventoryID

A unique ID for the hmis:Inventory set. This can be used to reference updates to that data set.

G. InventoryRecordedDate

InventoryRecordedDate is the date the hmis:Inventory set of data values was stored in the source system.

H. ReceivesMcKinneyFunding

ReceivesMcKinneyFunding is a yes/no boolean flag that indicates whether the program receives HUD McKinney-Vento funding.

I. UnitInventory

UnitInventory is an integer that tracks the total number of units available for occupancy as of the inventory start date recorded in 2.1.9G of the Revised HMIS Data Standards.

VII. Point in Time (PIT) Reporting Elements

A. HUDWaiverDate

For the Point In Time Chart, the HUDWaiverDate element references the period during which HUD granted a waiver for PIT reporting. The period is constrained by hmis:StartDate and hmis:EndDate child elements.

B. LastPITShelteredCountDate

The LastPITShelteredCountDate data element represents the date of the last point in time sheltered count.

C. LastPITUnshelteredCountDate

The LastPITUnshelteredCountDate data element represents the date of the last point in time unsheltered count.

D. PITCount

The PITCount data element contains a set of child elements, which comprise a PIT Count reporting submission. Child elements are PITCountValue, PITCountEffectivePeriod, and PITCountRecordedDate. PITCount has the attribute pITHouseholdType, which differentiates between households without children, households with at least one adult and one child, and households with only children.

E. PITCounts

PITCounts contains one or more PITCount elements.

F. PITCountEffectivePeriod

PITCountEffectivePeriod contains two date range elements, StartDate and EndDate, to demarcate the PIT Count's effective period.

G. PITCountRecordedDate

PITCountRecordedDate simply captures the date the PIT Count was collected by the source database.

H. PITCountSetID

Establishes a unique ID for the PITCountSet element sequence.

I. PITCountSet

A PITCountSet encapsulates a whole PIT report; the actual counts and some metadata elements. PITCountSet contains the following child elements: PITCountSetIDHUDWaiverReceived, HUDWaiverDate, HUDWaiverEffectivePeriod, LastPITShelteredCountDate, LastPITUnshelteredCountDate, and PITCounts.

J. PITCountValue

The PITCountValue data elements records the PIT Count as an integer.

VIII. Appendix A

Revised Standards Data Element	Revised Standards Data Element Name	Response Categories	HIC	PIT	XML Upload Sections - Revised
2.1	Organization Identifier	No specified format	X	X	Agency.Key
2.2	Organization Name	Alpha	X	X	Agency.Name
2.3	Program Identifier	No specified format	X	X	Service.Key
2.4	Program Name	Alpha	X	X	Service.Name
2.6	Site Information		X	X	Site
2.6C	Geocode	Numeric geocode format	X	X	SiteService.GeographicCode
2.7	Continuum of Care Number	HUD-assigned CoC Number - Alpha and Numeric	X		Service.COCCode
2.8	Program Type Code	1 = Emergency Shelter	X		Service.ServiceType
		2 = Transitional Housing	X		Service.ServiceType
		3 = Permanent Supportive Housing	X		Service.ServiceType
		4 = Homeless Outreach			Service.ServiceType
		5 = Homelessness Prevention and Rapid Re-Housing	X		Service.ServiceType
		6 = Services Only program			Service.ServiceType
		7 = Other			Service.ServiceType
		8 = Safe Haven	X		Service.ServiceType
		9 = Permanent Housing (e.g., Mod Rehab SRO, subsidized housing without services)			Service.ServiceType
2.9	Bed and Unit Inventory Information		X		SiteService.Inventory.BedInventory
2.9A	Household Type	1 = Households without children	X		SiteService.Inventory.BedInventory.householdType
		2 = Households with children	X		SiteService.Inventory.BedInventory.householdType
2.9B	Bed Type	1 = Facility-based	X		SiteService.Inventory.BedInventory.bedType
		2 = Voucher	X		SiteService.Inventory.BedInventory.bedType
		3 = Other	X		Service.Inventory.BedInventory.bedType
2.9C	Availability	1 = Year-round	X		SiteService.Inventory.BedInventory.bedAvailability
		2 = Seasonal	X		SiteService.Inventory.BedInventory.bedAvailability
		3 = Overflow	X		SiteService.Inventory.BedInventory.bedAvailability
2.9D	Bed Inventory	Integer	X		SiteService.Inventory.BedInventory
2.9E	CH Bed Inventory (PSH Only)	Integer	X		SiteService.Inventory.BedInventory.chronicHomelessBed
2.9F	Unit Inventory	Integer	X		SiteService.Inventory.UnitInventory
2.9G	Inventory Start Date	Date	X		SiteService.Inventory.InventoryEffectivePeriod.StartDate
2.9H	Inventory End Date	Date	X		SiteService.Inventory.InventoryEffectivePeriod.EndDate
2.9I	HMIS Participating Beds	Date	X		SiteService.Inventory.HMISParticipatingBeds
2.9J	HMIS Participation Start Date	Date	X		SiteService.Inventory.HMISParticipationPeriod.StartDate
2.9K	HMIS Participation End Date	Date	X		SiteService.Inventory.HMISParticipationPeriod.EndDate
2.10	Target Population A		X		Service.TargetPopulationA
		1 = Single Males (18 years and older)	X		Service.TargetPopulationA
		2 = Single Females (18 years and older)	X		Service.TargetPopulationA
		3 = Single Males and Females (18 years and older)	X		Service.TargetPopulationA
		4 = Couples Only, No Children	X		Service.TargetPopulationA
		5 = Single Males and Households with Children	X		Service.TargetPopulationA
		6 = Single Females and Households with Children	X		Service.TargetPopulationA
		7 = Households with Children	X		Service.TargetPopulationA
		8 = Unaccompanied Young Males (under 18)	X		Service.TargetPopulationA
		9 = Unaccompanied Young Females (under 18)	X		Service.TargetPopulationA
		10 = Unaccompanied Young Males and Females (under 18)	X		Service.TargetPopulationA
		11 = Single Male and Female and Households with Children	X		Service.TargetPopulationA
2.11	Target Population B		X		
		1 = DV: Domestic Violence victims	X		Service.TargetPopulationB
		2 = VET: Veterans	X		Service.TargetPopulationB
		3 = HIV: Persons with HIV/AIDS	X		Service.TargetPopulationB
		4 = NA: Not Applicable	X		Service.TargetPopulationB
NA	Receives McKinney Funding?	0 = No	X		Service.FundingSources.FundingSource.ReceivesMcKinneyFunding
		1 = Yes	X		Service.FundingSources.FundingSource.ReceivesMcKinneyFunding
NA	HUDWaiverDate	Date		X	SiteService.Inventory.PITCountSet.HUDWaiverDate
NA	HUD Waiver Effective Period Start Date	Date		X	SiteService.Inventory.PITCountSet.HUDWaiverEffectivePeriod.StartDate
NA	HUD Waiver Effective Period End Date	Date		X	SiteService.Inventory.PITCountSet.HUDWaiverEffectivePeriod.EndDate
NA	Last PIT Sheltered Count Date	Date		X	SiteService.Inventory.PITCountSet.LastPITShelteredCountDate
NA	Last PIT Unsheltered Count Date	Date		X	SiteService.Inventory.PITCountSet.LastPITUnshelteredCountDate
NA	PIT Count	Non-negative integer		X	SiteService.Inventory.PITCountSet.PITCounts.PITCount.PITCountValue
NA	PIT Count Effective Period Start Date	Date		X	SiteService.Inventory.PITCountSet.PITCounts.PITCount.PITCountEffectivePeriod.StartDate
NA	PIT Count Effective Period End Date	Date		X	SiteService.Inventory.PITCountSet.PITCounts.PITCount.PITCountEffectivePeriod.EndDate
NA	PIT Count Recorded Date	Date		X	SiteService.Inventory.PITCountSet.PITCounts.PITCount.PITCountRecordedDate

Table 1