**Notes on HealthShare’s VA Terminology Translation modifications and implementation**

The VA Terminology Translation modifications offer a hybrid mechanism retrieving translation values from VETS/STS as needed and caching the retrieved values in order to minimize response time while keeping the translation values reasonably up to date. On initialization, none of the translation values are cached in HealthShare and each new value must be retrieved from the VETS/STS terminology application. Once retrieved, that new translation value is cached within the HealthShare translation tables for a defined period of time (default = 15 days) so that it may be utilized without re-querying VETS/STS, thereby improving efficiency and minimizing response time. Terminology code does not require a new SOAP Operation defined in Access Gateway Production for communication to VETS/STS. The connectivity occurs directly from the classes. This was advisable due to the high volume of translation look ups in an effort to reduce logging.

Cache Classes for the VA Terminology Translation modifications should be loaded into the HSCUSTOM namespace for each of the servers/instances being utilized in a HealthShare solution. For example, in a snow globe solution, wherein all HealthShare productions are located on the same server, the Terminology code only needs to be loaded once into the HSCUSTOM namespace; however, in a larger solution wherein Access Gateways and Edge Gateways are located on servers different from the Registry/Hub, then the classes need to be loaded into the HSCUSTOM production on each of the HealthShare servers.

All cache classes for the Terminology Translation are currently found in the HS.Local.VA.Terminology package. Moving these classes to another package will require modification to each class, some of which are generated through the SOAP Wizard using the WSDL and are not editable and would therefore need to be regenerated.

Description of Notable Classes:

HS.Local.VA.Terminology.stsPort class extends %SOAP.WebClient for communicating with the VETS/STS Terminology application

NOTE: The target URL for the VETS/STS connection is hard-coded within the stsPort class.

Any change to that target URL would need to be modified within the class and recompiled

(e.g. when moving from DEV or TST to QA or PROD environments)

HS.Local.VA.Terminology.CustomTranslationProfile class that does the bulk of the Translation processing. The Map() method reads the inbound parameters,

calls STS/VETS, retrieves the translated values, and uses the SaveTranslationMap() method to notify the

HUB with the updated translation which subsequently pushes the translation out to the Access & Edge

productions.

HS.Local.VA.Terminology.CTTMap New Map Class used to store the date stamp along with the translation values so that they can be

purged on a regular basis, thereby keeping the translation entries relatively up to date

HS.Local.VA.Terminology.WebServices extends %SOAP.WebService for receiving communications from the HUB (when translations are synced)

HS.Local.VA.Terminology.WebServicesSOAP extends %SOAP.WebClient for communications to the HUB when sending new translation information

HS.Local.VA.Terminology.CTTMapPurgeTask extends %SYS.Task.Definition so that parameters are displayed/definable through the Task Scheduler.

Reviews the CTTMap entries (translations with date stamp) and purges old entries.

**Implementation Steps**

0. Confirm SDA Extensions are in place; Import Schema XML into HSCUSTOM using Studio if necessary

1. Load Custom Classes onto HSCUSTOM for each HealthShare instance/server

(e.g. only load once if snow globe environment; load onto each Access/Edge/Registry if located on separate servers. )

\*NOTE: Hard coded URL for VETS/STS connection is defined in

HS.Local.VA.Terminology.VETS.Client.stsPort.cls under LOCATION parameter

This location would need to be updated/modified when moving code between environments,

unless all use same PROD VETS/STS URL

2. Update Terminology settings on REGISTRY:

Registry -> Terminology Mgmt -> Code Registry

a) Delete/Clear out all of the ‘Out of the Box’ entries if already loaded. Code Registry should be empty before custom load to avoid confusion.

b) Add VUID/Code Sets to Code Registry

Enter the code & description listed from the upper table for each of the Code System, Source, and Target entries found in the lower table (upper table is super group of everything contained in VETS; lower table is just what we’re referencing)

See Image 1: [Entries for Code Registry](#_Hlk529890574) below for detail of entries made;

Note: Description in Code Registry includes suffix following “^” to identify the CodeSet for output; e.g. “xxxx^CodeSetIdentifier”

Logic within the CustomTranslationProfile class will strip this literal from the Description and use it for output to id the code set

3. Add/Update Translation Profile

Registry -> Terminology Mgmt -> Translation Profile

1. Add Profile To Add new profile to be referenced when building CDA documents

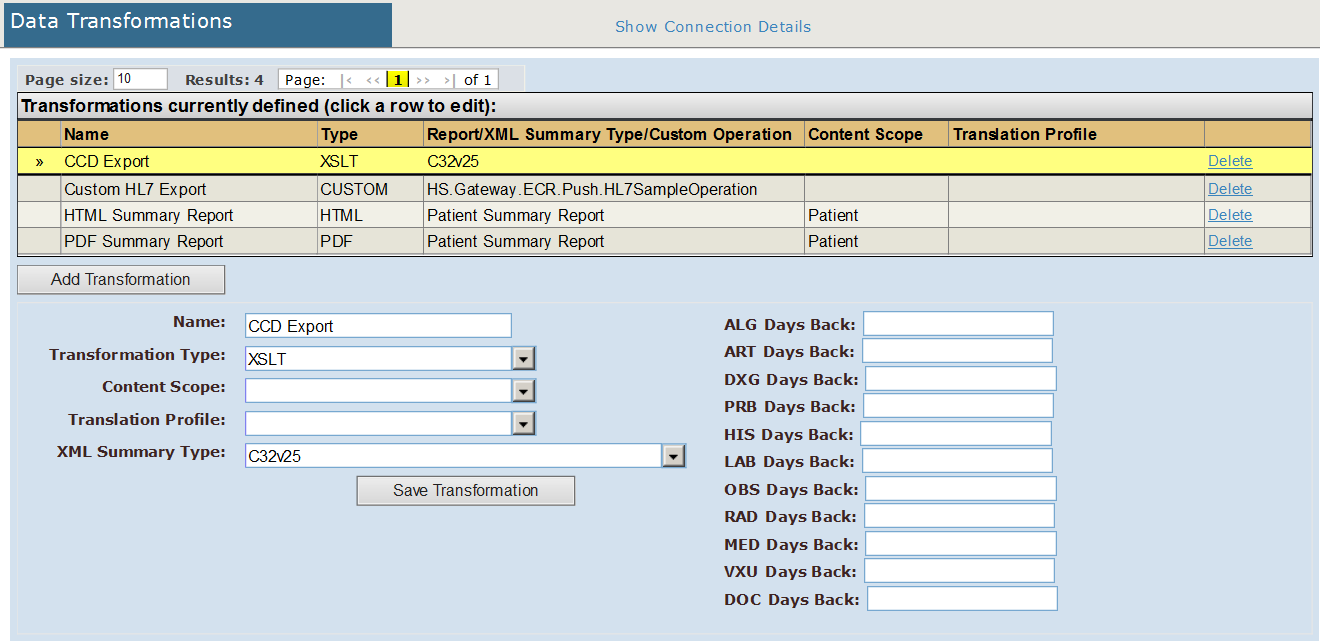
Code: VA-VHIE this code will be referenced in the **CDA custom classes**

Name: Translation Profile for VA VHIE CCDA

Custom Class: HS.Local.VA.CustomTranslationProfile Reference to the custom class being utilized

\*\* To Associate the Translation Profile with the CDA Custom Class

Registry -> Delivery Management -> Data Transformation



1. Add Code Table and Code System Rows

Reference image 2: [Entries for Terminology Translation Profile](#_Hlk529891154) below for detail of examples

Entries are taken from the second table in the specifications with one entry for each Code Table (e.g. Diagnosis) and the relevant Code System (e.g. “5324547 – VETS NLM ICD-9^SNOMED DT”)

4a. Add/Update Purge Task code through Studio

Creates: HS.Local.VA.Terminology.CTTMapPurgeTask.cls

4b. Add Task to Scheduler (properties show up because class extends %SYS.Task.Definition)

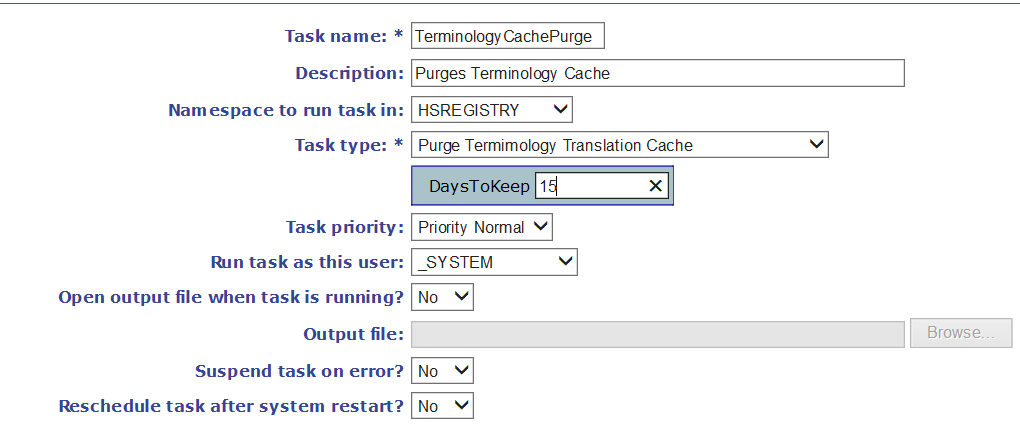
System Operation -> Task Mgr -> New Task

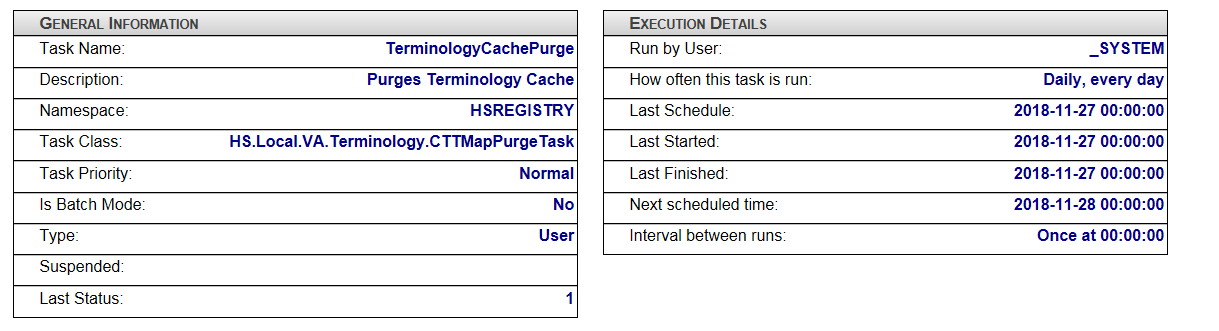
\*\* Task Name: TerminologyCachePurge

\*\* Namespace to Run Task in: HSREGISTRY

\*\*Task Type Purge Terminology Translation Cache (defined as Property within Class)

\*\*DaysToKeep 15 (default) (defined as Property within Class)





**Notes on Exporting/Importing Code System & Translation Profile entries:**

On initial implementation, it is possible to populate the Code System and Translation Profile entries by exporting globals from one environment into another. This method, however, cannot be used for subsequent updates. For that reason, although code may be exported and imported from one environ to another, it is necessary to update the Code System and Translation Profile entries manually through the User Interface as described above.

For that initial implementation, if desired, the following procedure can be used in order to export the globals from on environ and import them into another:

Table entries can be reviewed through System Explorer -> SQL by querying the following tables:

HS\_Registry.CodeSystem (contains Code Systems defined)

HS\_Registry.Codes (should be empty)

HS\_Registry.TranslationProfile (contains Translation Profile info)

The following data Globals (name ends in “D”, name ending in “I” indicates Index global) can be viewed and exported

(use Sequential file rather than Block format and save with .go filename instead of .gof filename).

HS.Registry.CodeSystemD Code Systems

HS.Registry.CodesD -should be empty

HS.Registry.TranslationC4E3D Translation Profile

**Notes on relocating code package:**

Current code is all placed under HS.Local.VA.Terminology package. Relocating the code to another package would require modifying existing code to reference the new package location and also regenerating numerous classes within the WebServices, WebServicesSoap, and stsPort classes/packages which were autogenerated by the SOAP wizard using the WSDL file. This would be a substantial task and cause reimplementation and revalidation of the Translation code.

**Notes on Testing/Validation/Troubleshooting**

Diagnostic code has been added to HS.Local.VA.Terminology.CustomTranslationProfile.cls which can be uncommented in order to generate output in order to assist in diagnosting and validating transactions. This diagnostic code can then be commented out before promoting to a production environment.

The CustomTranslationProfile can be called manually from the HSACCESS production in order to mimic the correct operating environment by submitting the following:

do ##class(HS.Local.VA.Terminology.CustomTranslationProfile).Map(pTable, pFromCS, pFromCode, pFromDesc, pToCS, pToCode, pToDesc)

e.g. do ##class(HS.Local.VA.Terminology.CustomTranslationProfile).Map("BodyPart","ICD-9-CM","786.2","COUGH","5324547")

wherein “BodyPart” represents the Code Table (pTable in the class method), “ICD-9-CM” represents the Source (pFromCS in the class method), “786.2” represents the ICD-9 code value to be translated (pFromCode in the class method), “COUGH” represents the ICD-9 Description associated with that code (pFromDesc in the class method), and “5324547” represents the Code System/VUID (pToCS in the class method).

If successful, this method should return values for the translated Code System (updated pToCS in the class method), the translated code value (pToCode in the class method) and the translated description (pToDesc in the class method).

diagnostic returns: pFromCS,":",pFromCode,":",pFromDesc,"<-->",pToCS,":",pToCode,":",pToDesc

**Example of Successful Response:**

do ##class(HS.Local.VA.Terminology.CustomTranslationProfile).Map("BodyPart","ICD-9-CM","786.2","COUGH","5324547")

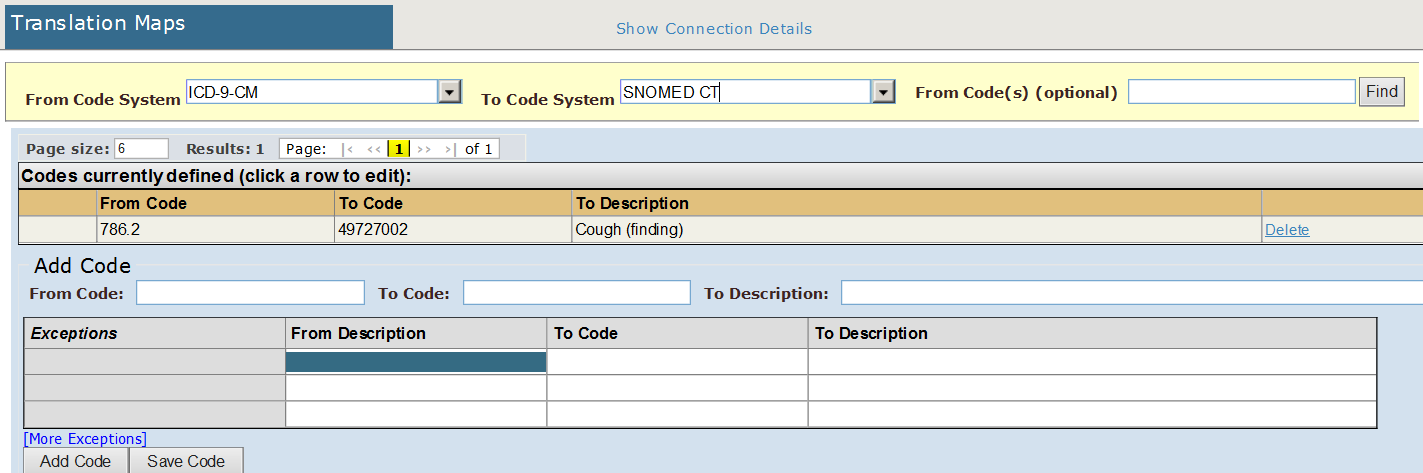
we are now calling VETS/STS  
 1 total number of records retrieved  
 we are in the SaveTranslationMap  
 1  
 ICD-9-CM:786.2:COUGH<-->SNOMED CT:49727002:Cough (finding)

to confirm that translation is being saved:

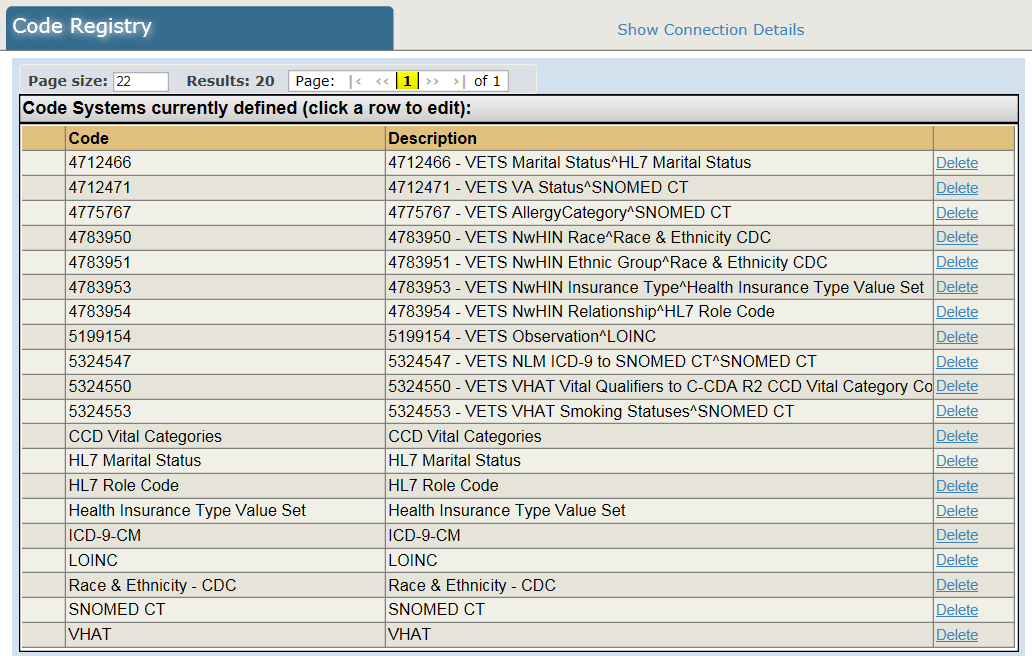
Registry -> Terminology Mapping -> Translation Maps

Specify FromCodeSystem and ToCodeSystem

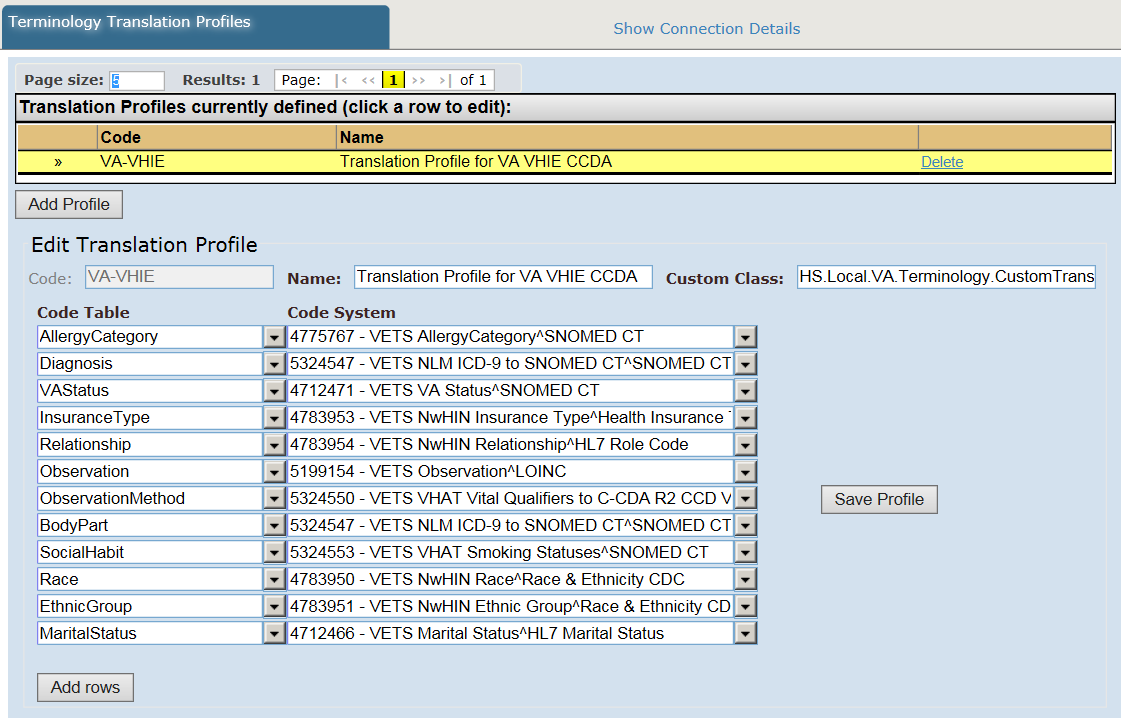
e.g.



**Entries for Code Registry:**



**Entries for Terminology Translation Profile**



**Original Terminology SetUp document:**

# HealthShare Hybrid Terminology Setup

***Prerequisites – Terminology translation will require v1.7 of SDA extensions and latest VPR code patch in addition to HealthShare adhoc #18482 for synchronization of code and map tables between the registry and gateway instances. It is recommended that existing sample code systems and profiles be deleted in order to reduce confusion of what is and isn’t used by the implementation.***

1. Load Terminology Integration package into HSCUSTOM on all VDIF servers
2. On HealthShare Registry, create the following code sets.

***Entries must be created for each possible source code system as well as each map set contained within the VETS system. Target code systems aren’t necessary as the actual VETS map set represents the target code system. The code must be as specified below, the description can be changed to better describe the code/map set.***  
HealthShare -> HSREGISTRY -> Terminology Management -> Code Registry

|  |  |
| --- | --- |
| Code | Description |
| 4501295 | Diagnosis Map Set |
| 4712465 | VETS Data Exchange with NHIN |
| 4712466 | 4712466 - VETS Marital Status^HL7 Marital Status |
| 4712469 | VETS Data Exchange with NHIN |
| 4712470 | VETS Data Exchange with NHIN |
| 4712471 | 4712471 - VETS VA Status^SNOMED CT |
| 4712472 | VETS Data Exchange with NHIN |
| 4775767 | 4775767 - VETS AllergyCategory^SNOMED CT |
| 4775785 | VETS Data Exchange with NHIN |
| 4776492 | VETS NwHIN translations |
| 4783950 | 4783950 - VETS NwHIN Race^Race & Ethnicity CDC |
| 4783951 | 4783951 - VETS NwHIN Ethnic Group^Race & Ethnicity CDC |
| 4783953 | 4783953 - VETS NwHIN Insurance Type^Health Insurance Type Value Set |
| 4783954 | 4783954 - VETS NwHIN Relationship^HL7 Role Code |
| 5199154 | 5199154 - VETS Observation^LOINC |
| 5324547 | 5324547 - VETS NLM ICD-9 to SNOMED CT^SNOMED CT |
| 5324550 | 5324550 - VETS VHAT Vital Qualifiers to C-CDA R2 CCD Vital Category Codes - ObservationMethod^CCD Vital Categories |
| 5324553 | 5324553 - VETS VHAT Smoking Statuses^SNOMED CT |
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1. On the HealthShare Registry, create the following translation profile

HealthShare -> HSREGISTRY -> Terminology Management -> Translation Profiles

Code: VA-VHIE

Description: Translation Profile for VA VHIE CCDA

Custom Class: HS.Local.VA.Terminology.CustomTranslationProfile

Add the following Code Table Translations

***Code Table*** *represents the HealthShare SDA3 CodeTableTranslated data type.*

***Code System*** *represents the VETS map VUID to use for translation.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Code Table (pTable) | Code System  (pToCS) | *SDA Container* | *SDA Element* | *Source*  (pFromCS) | *Target* |
| AllergyCategory | 4775767 | *Allergy* | *AllergyCategory* | *VHAT* | *SNOMED CT* |
| Diagnosis | 5324547 | *Diagnosis* | *Diagnosis* | *ICD-9-CM* | *SNOMED CT* |
| VAStatus | 4712471 | *Medication* | *Ext/VAStatus* | *VHAT* | *SNOMED CT* |
| InsuranceType | 4783953 | *MemberEnrollment* | *InsuranceTypeOrProductCode* | *VHAT* | *Health Insurance Type Value Set* |
| Relationship | 4783954 | *MemberEmrollment* | *Relationship* | *VHAT* | HL7 Role Code |
| Observation | 5199154 | *Observation* | *ObservationCode* | *VHAT* | *LOINC* |
| ObservationMethod | 5324550 | *Observation* | *ObservationMethods* | *VHAT* | *CCD Vital Categories* |
| BodyPart | 5324547 | *Problem* | *Problem* | *ICD-9-CM* | *SNOMED CT* |
| SocialHabit | 5324553 | *SocialHistory* | *SocialHabit* | *VHAT* | *SNOMED CT* |
| **Race** | **4783950** | ***Patient*** | ***Race*** | ***VHAT*** | **Race & Ethnicity - CDC** |
| **EthnicGroup** | **4783951** | ***Patient*** | ***EthnicGroup*** | ***VHAT*** | **Race & Ethnicity - CDC** |
| **MaritalStatus** | **4712466** | ***Patient*** | ***MaritalStatus*** | ***VHAT*** | **HL7 Marital Status** |

**Diagnostic Testing (From Terminal Prompt)**

do ##class(HS.Local.VA.Terminology.CustomTranslationProfile).Map("BodyPart","ICD-9-CM","786.2","COUGH","5324547")

Response:

ICD-9-CM:786.2:COUGH::5324547::

; no error code, so we believe we made a successful connection to VETS/STS

; empty fields at the end show that we received a response from VETS