IBM Graphical Data Mapper

Prototype for generating IBM GDM Maps From IBM WTX Maps

Version 0.1

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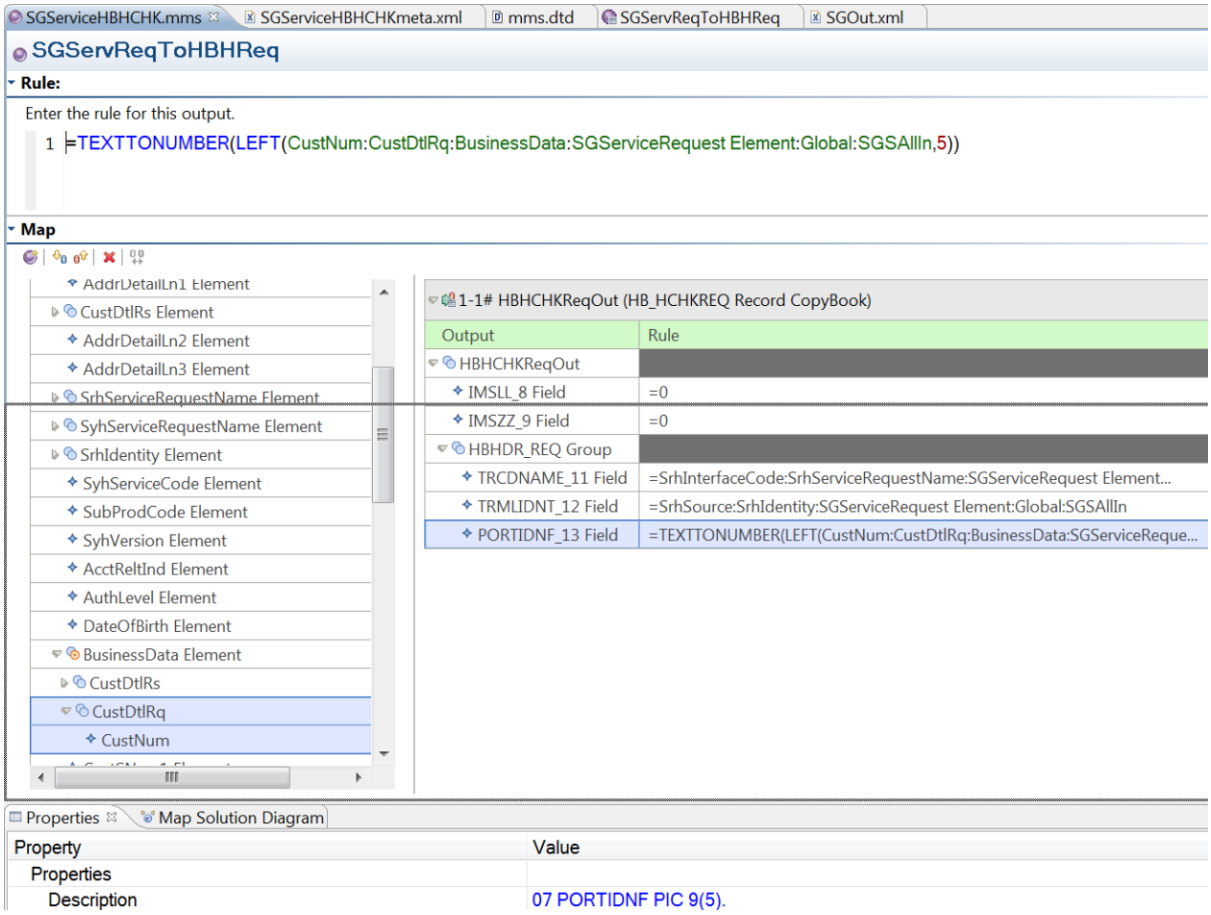
Source WTX Map

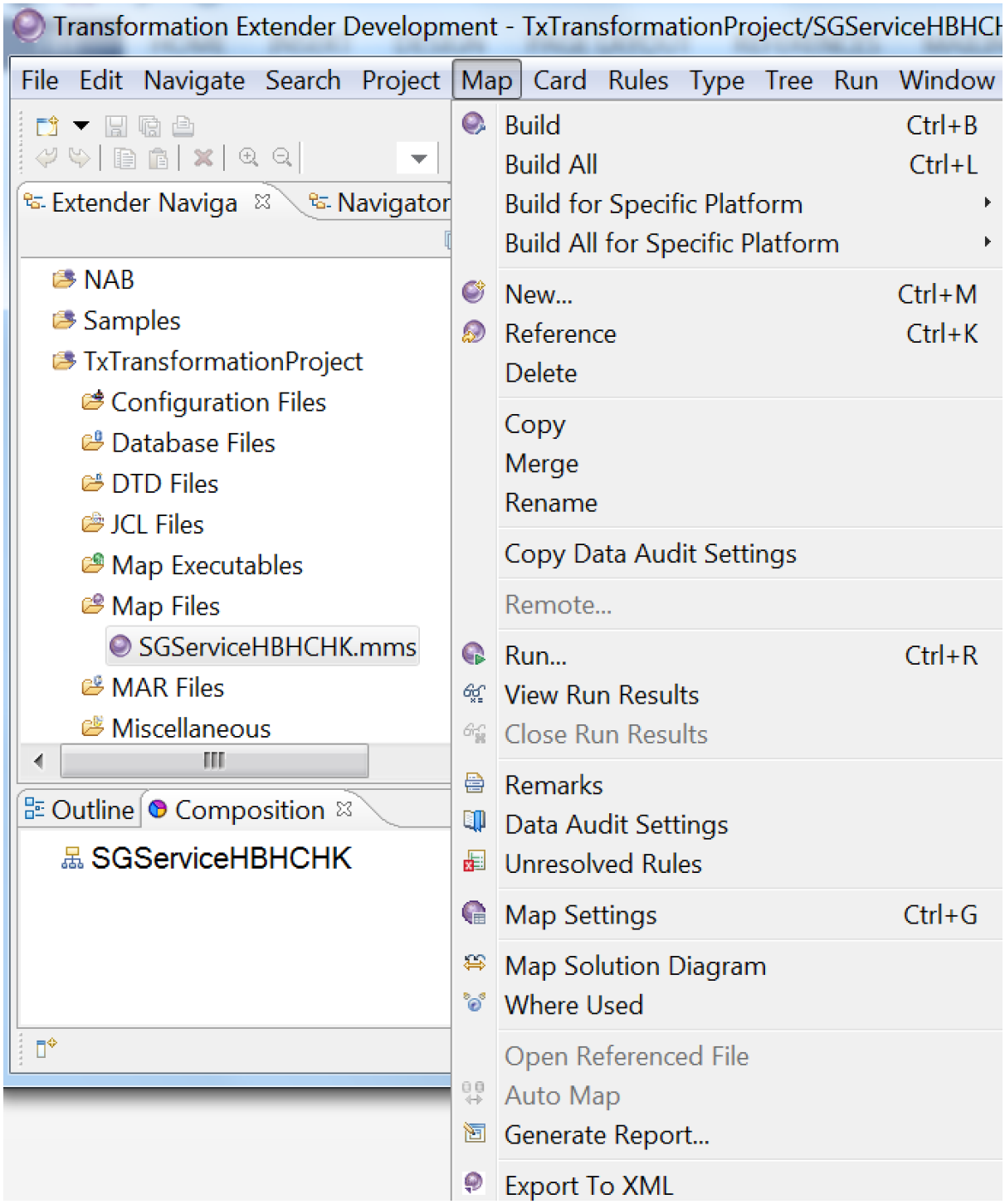
The WTX sample map is XML to Fixed Format.

Input is XSD output is Type Tree generated from COBOL copybook

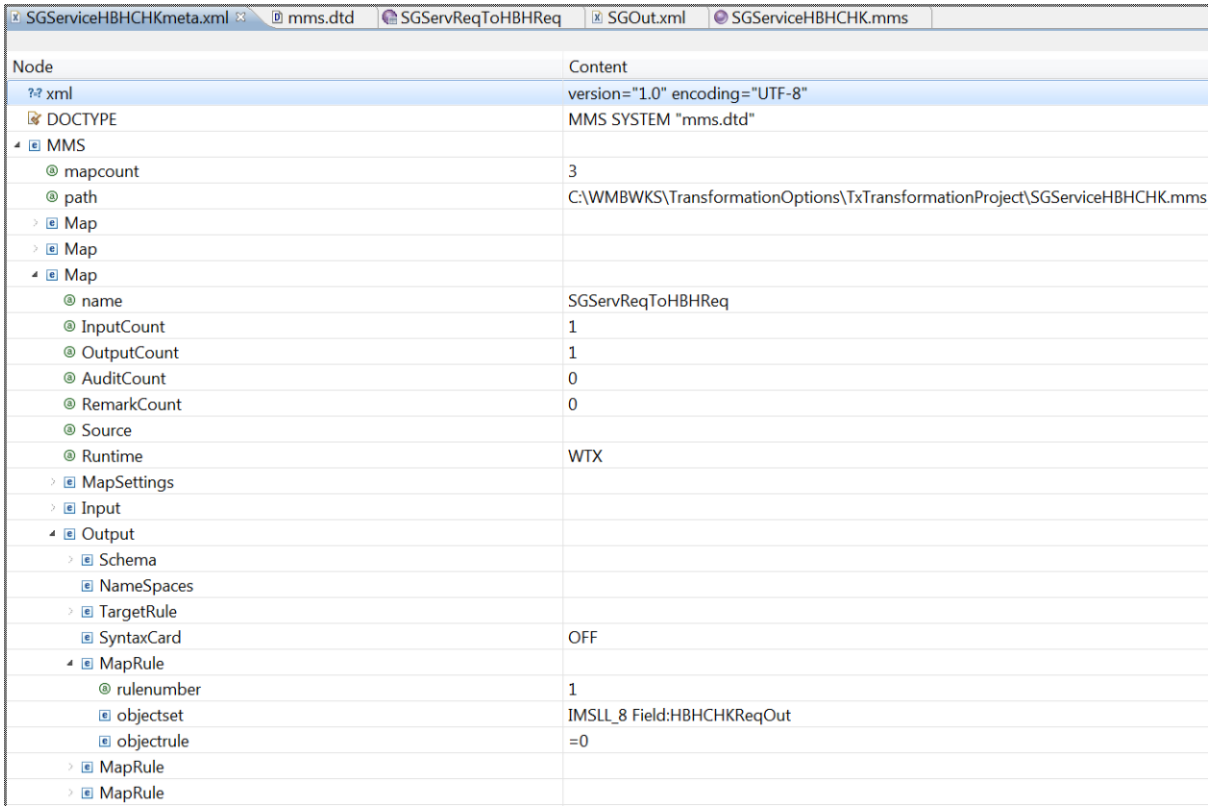
Map is set up to read an XML file and write a Fixed Format file to the file system for test purposes.



Export the Map as XML



This generates an XML file



SGServiceHBHCHKmeta.xml | mms.dtd | SGServReqToHBHReq | SGOut.xml | SGServiceHBHCHK.mms

Node	Content
xml	version="1.0" encoding="UTF-8"
DOCTYPE	MMS SYSTEM "mms.dtd"
MMS	
mapcount	3
path	C:\WMBWKS\TransformationOptions\TxTransformationProject\SGServiceHBHCHK.mms
Map	
Map	
Map	
name	SGServReqToHBHReq
InputCount	1
OutputCount	1
AuditCount	0
RemarkCount	0
Source	
Runtime	WTX
MapSettings	
Input	
Output	
Schema	
NameSpaces	
TargetRule	
SyntaxCard	OFF
MapRule	
rulenumber	1
objectset	IMSLL_8 Field:HBHCHKReqOut
objectrule	=0
MapRule	
MapRule	

This XML output map meta data is described describes a WTX map as XML. This is based on the WTX mms.dtd file shipped with WTX

IBM GDM Generator for WTX Maps

How does it work

The GDM Generator for WTX map prototype is written as a standalone Java application.

Working with the WTX Map XML export DTD

The mms.dtd file was converted to an XSD, mms.xsd. The DTD and XSD were simplified by removing the embedded adapter.dtd “sub-files” and renamed mmsNoAdpaters.xsd

Unmarshalling a WTX Map exported XML file to Java Objects - Input

JaxB Objects were generated from the WTX map export mmsNoAdapters.XSD

JaxB Java unmarshaller loads up the Java Objects using the WTX Map exported XML , SGServiceHBHCHKmeta.xml as source.

Marshalling an IBM GDM Map set of JaxB Java Objects to a .map file - Output

JaxB Objects were generated from the IIB GDM Map Specification Language published schema XSD.

JaxB Java will marshall Java Objects to XML and serialize to file.

A .map file will be created containing Map Specification Language XML

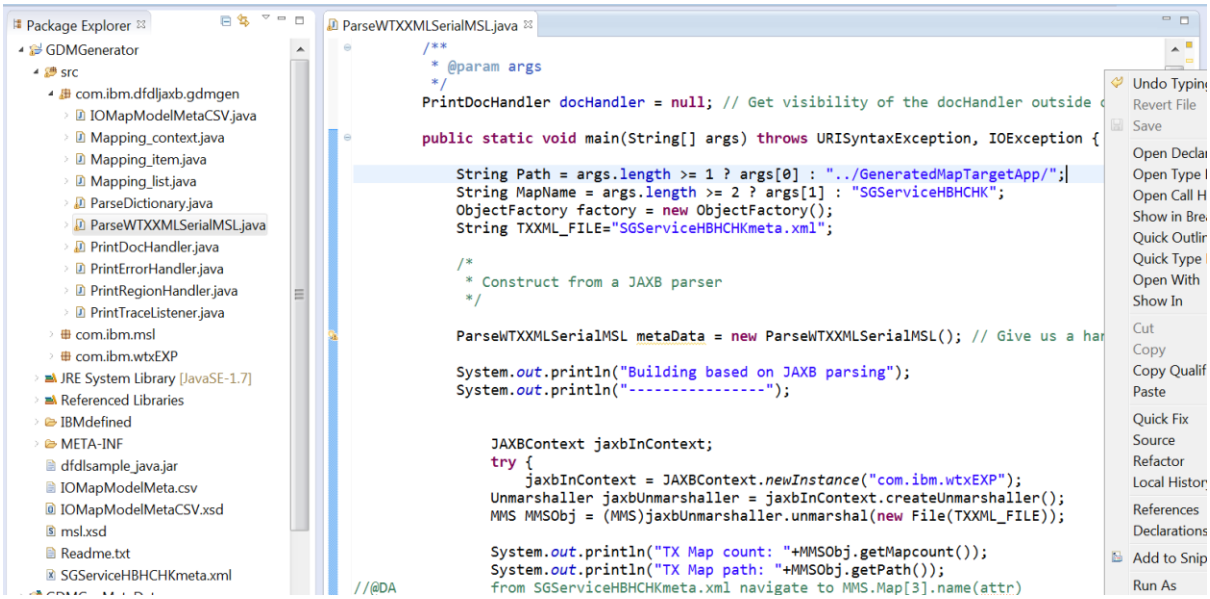
Translation from WTX Java Objects to GDM Java Objects

With the WTX Source Map and GDM target map represented as Java Objects the prototype “simply” gets from the source Objects and sets the target Objects to build out an IBM GDM Map.

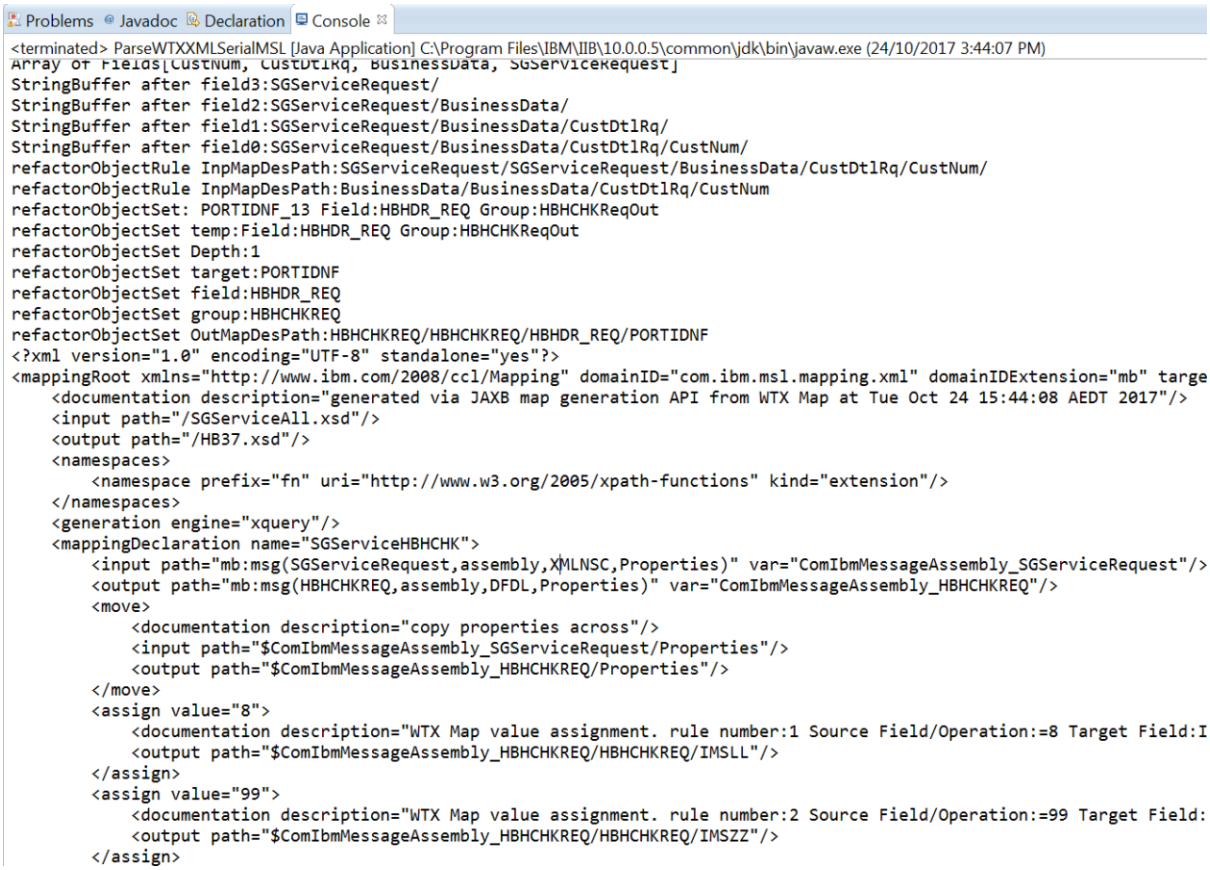
The marshaller described above serializes to an XML file, which is written to a directory structure in an IIB Toolkit workspace.

Running the IBM GDM Generator for WTX Maps

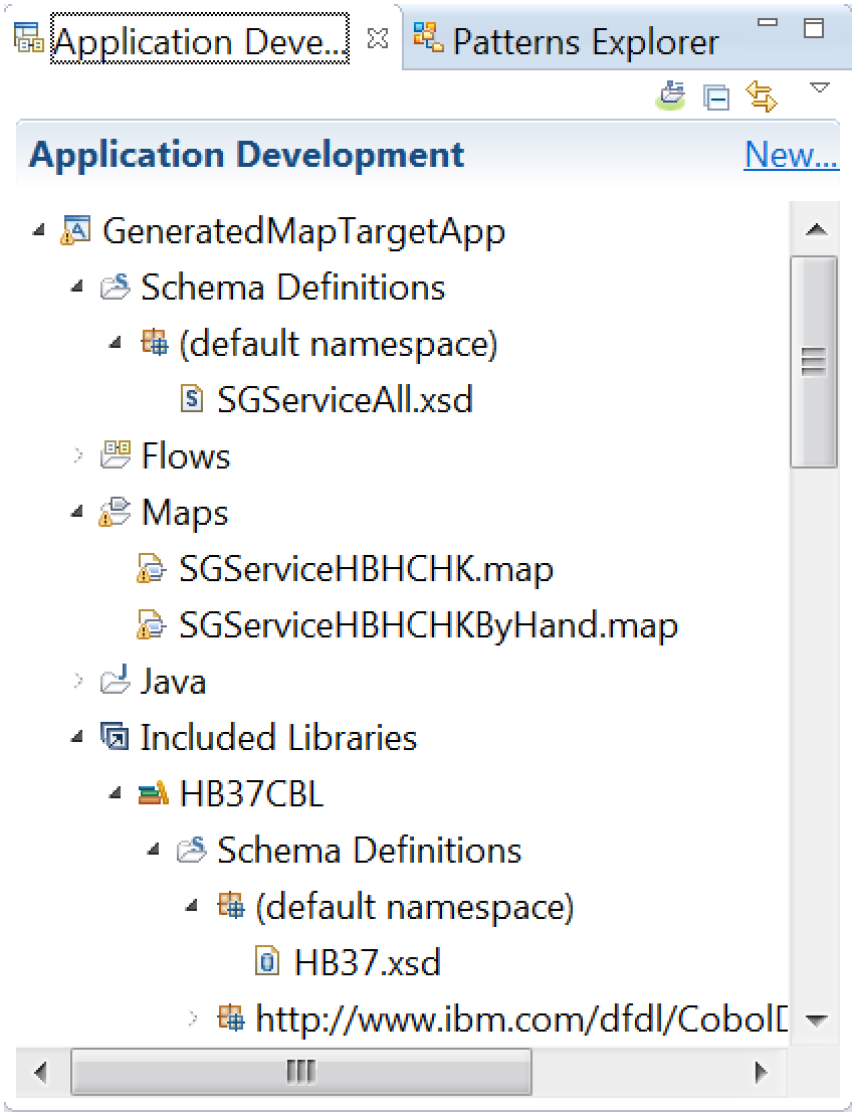
Execute Run As->Java Application in the Eclipse Toolkit for ParseWTXXMLSerializeMSL.java



The Console will include detailed tracing plus a dump of the final Map Specification Language (MSL) XML based .map file



The map will be created in an IIB Project



GDM Generator Mapping support

Source to Target Field association – Move

Target set to static value – Assign

Source to Target Field association with casting (NumberToText) – Convert

Placeholder for functional maps – Custom (creates a Java Class placeholder)

Using the generated IBM GDM Map

IIB Workspace and Application Project preparation

The IIB Application Project – GeneratedMapTargetApp has been “prepared” to receive this map in the following way.

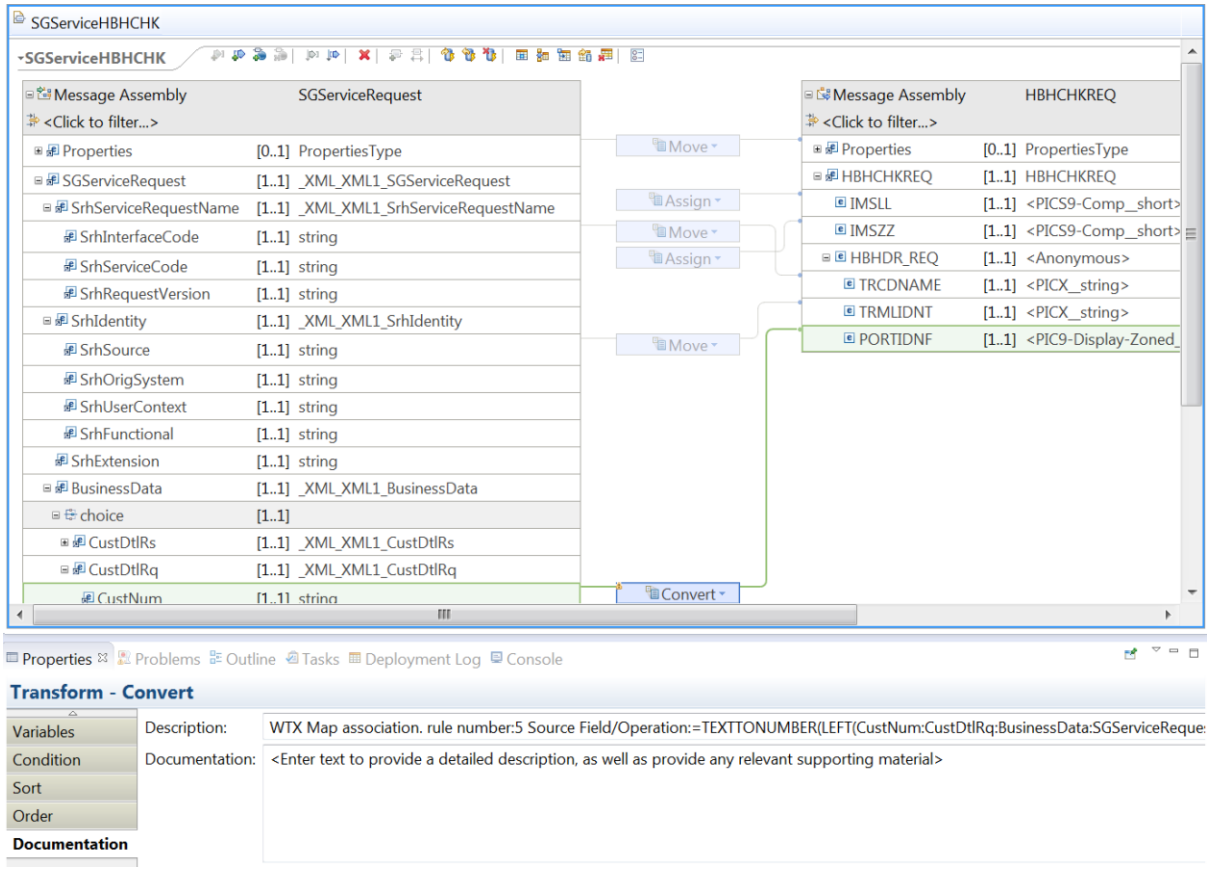
1) The SGServiceAll.xsd which is the Meta-data for the input XML data has been imported from the WTX project. This was the WTX Input Card meta-data
2) The COBOL copybook used to create the Type Tree (mtt) for the WTX Output Card has been imported to the IIB toolkit and a DFDL model (schema) has been created based up on it as an IIB Static Library referenced by the IIB Application Project – GeneratedMapTargetApp.

Open the IIB GDM Map in the IIB Toolkit

Once the ParseWTXXMLSerializeMSL.java has been run you must first

Right Click on the GeneratedMapTargetApp and select Refresh

You can then open the generate MAP



Input and Output Field relationships are constructed, Assigns are used where the output is set to a static value and Convert is used to =NUMBERTOTEXT or =TEXTTONUMBER etc.

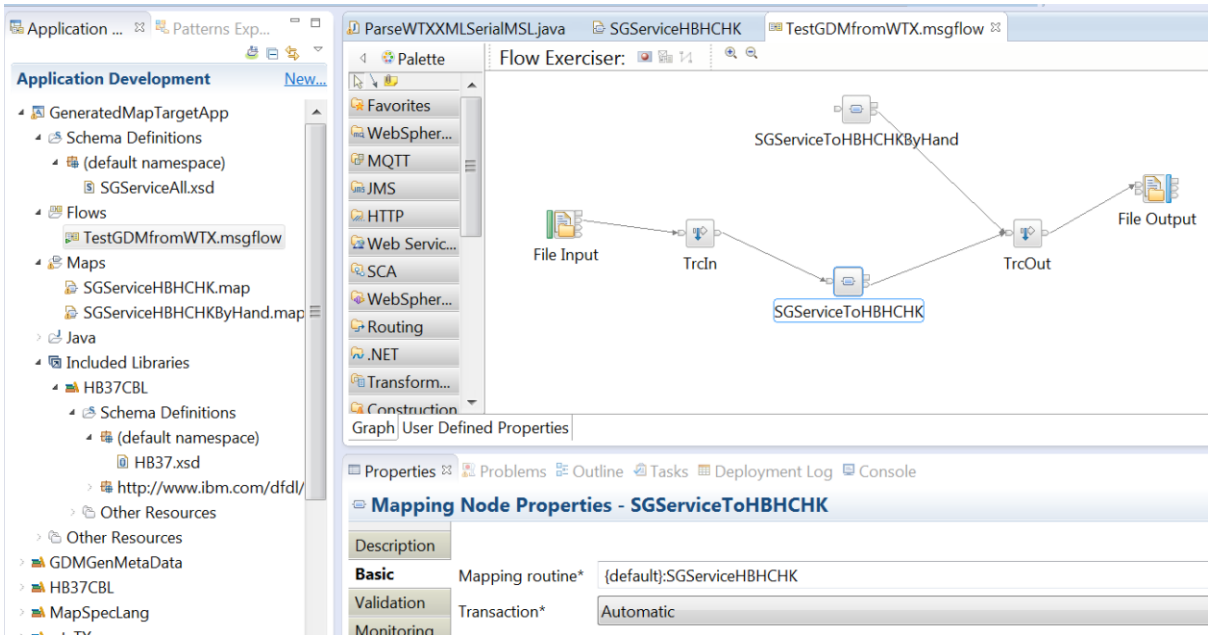
In all cases the original WTX Map operation is copied into the Documentation->Description field so the developer can determine where additional manual work is required to complete the conversion to GDM.

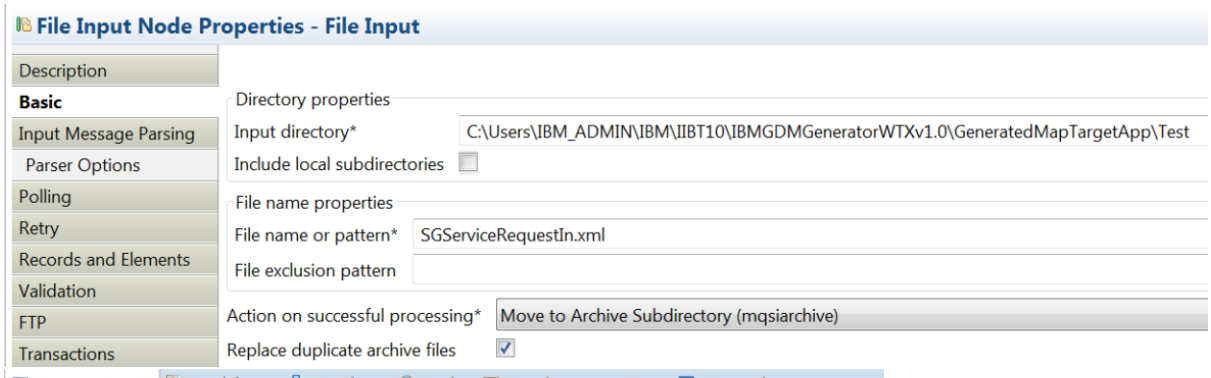
Deployment in an IIB Message flow

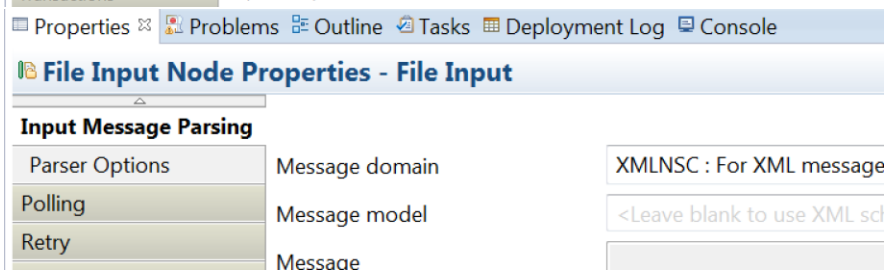
The sample message flow TestGDMFromWTX can be used to test the converted mapping.

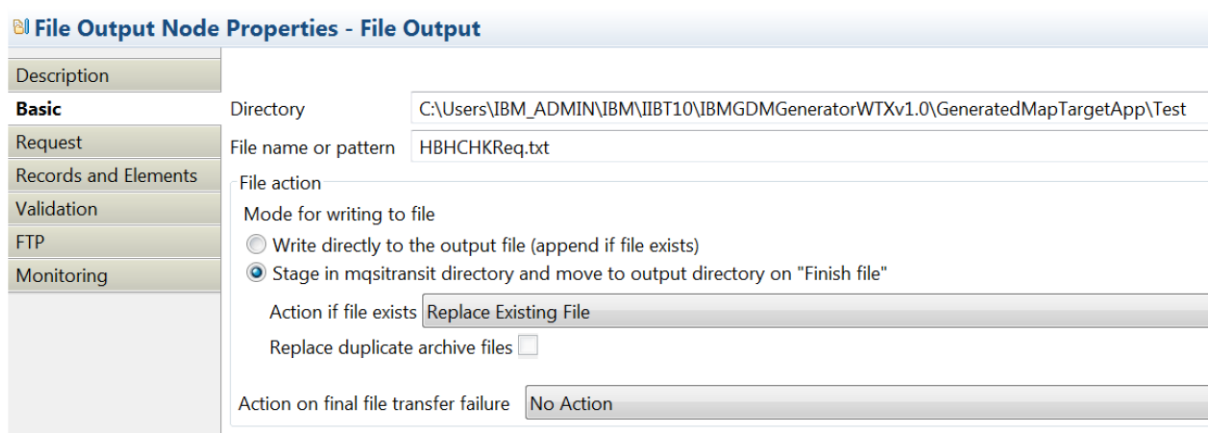
All test files and tracing are in the GeneratedMapTargetApp project directory structure. Therefore, you may need to make changes to the directory paths in the properties on the FileInput, FileOutput and trace nodes.

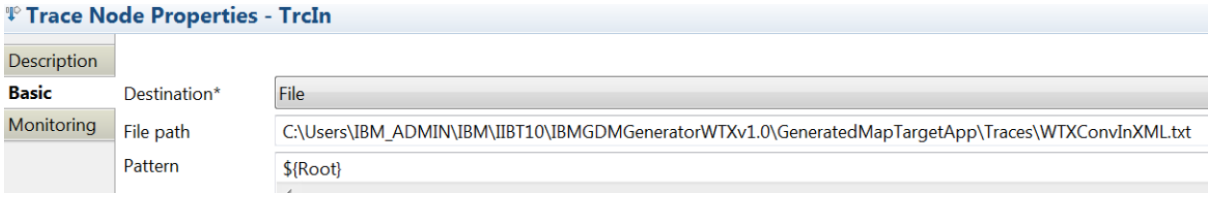
The message flow container an unwired Mapping Node that is associated with SGServiceHBHCHKByHand.map. This map was created by hand to match the original WTX Map and can be used for comparison purposes against the tooling generated map SGServiceHBHCHK.map

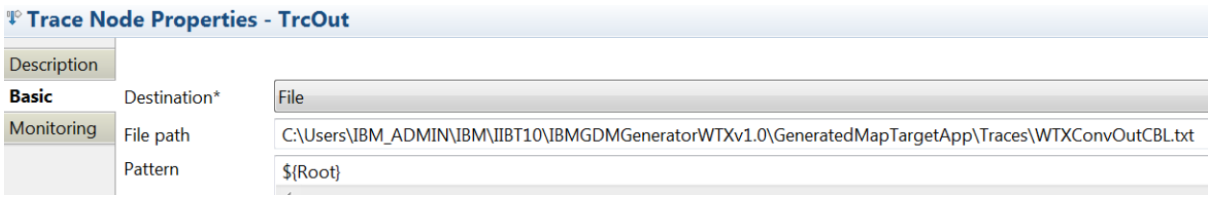

Application ...
Patterns Exp...
Application Development
New...
GeneratedMapTargetApp
Schema Definitions
(default namespace)
SGServiceAll.xsd
Flows
TestGDMfromWTX.msgflow
Maps
SGServiceHBHCHK.map
SGServiceHBHCHKByHand.map
Java
Included Libraries
HB37CBL
Schema Definitions
(default namespace)
HB37.xsd
http://www.ibm.com/dfdl/
Other Resources
Other Resources
GDMGenMetaData
HB37CBL
MapSpecLang
ParseWTXXMLSerialMSL.java
SGServiceHBHCHK
TestGDMfromWTX.msgflow
Palette
Favorites
WebSpher...
MQTT
JMS
HTTP
Web Servic...
SCA
WebSpher...
Routing
.NET
Transform...
Flow Exerciser:
SGServiceToHBHCHKByHand
File Input
TrcIn
TrcOut
File Output
SGServiceToHBHCHK
Graph
User Defined Properties
Properties
Problems
Outline
Tasks
Deployment Log
Console
Mapping Node Properties - SGServiceToHBHCHK
Description
Basic
Validation
Mapping routine*
{default}:SGServiceHBHCHK
Transaction*
Automatic


File Input Node Properties - File Input
Description
Basic
Input Message Parsing
Parser Options
Polling
Retry
Records and Elements
Validation
FTP
Transactions
Directory properties
Input directory*
C:\Users\IBM_ADMIN\IBM\IIBT10\IBMGDMGeneratorWTXv1.0\GeneratedMapTargetApp\Test
Include local subdirectories
File name properties
File name or pattern*
SGServiceRequestIn.xml
File exclusion pattern
Action on successful processing*
Move to Archive Subdirectory (mqsiarchive)
Replace duplicate archive files


Properties
Problems
Outline
Tasks
Deployment Log
Console
File Input Node Properties - File Input
Input Message Parsing
Parser Options
Polling
Retry
Message domain
XMLNSC : For XML message
Message model
<Leave blank to use XML sch
Message

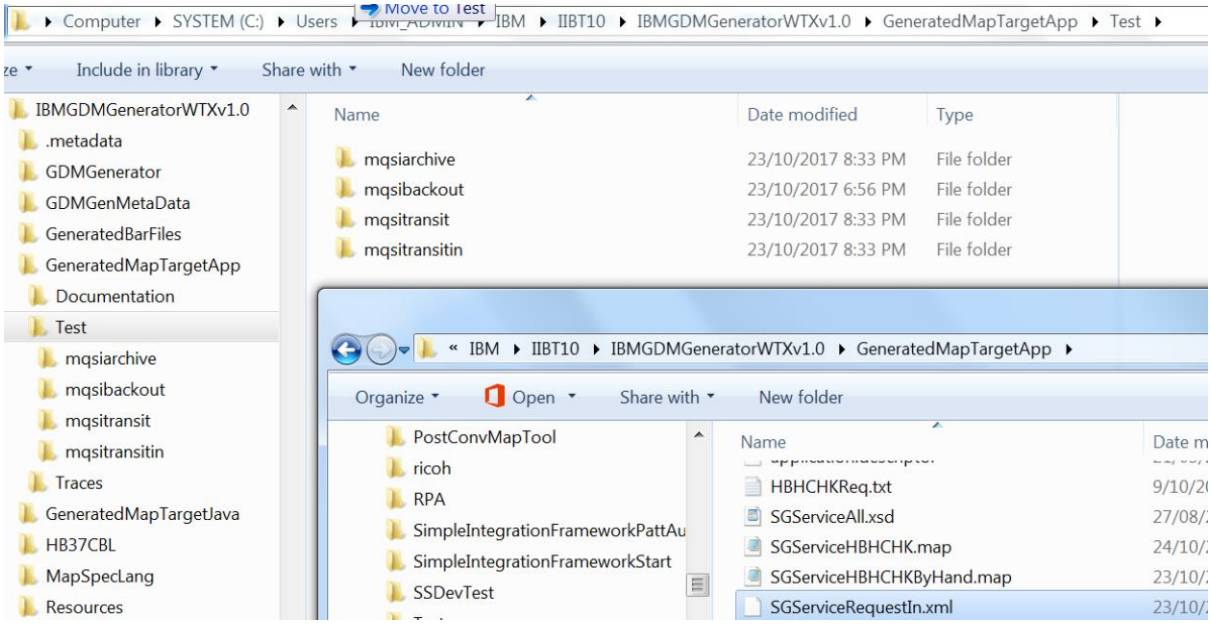

File Output Node Properties - File Output
Description
Basic
Request
Records and Elements
Validation
FTP
Monitoring
Directory
C:\Users\IBM_ADMIN\IBM\IIBT10\IBMGDMGeneratorWTXv1.0\GeneratedMapTargetApp\Test
File name or pattern
HBHCHKReq.txt
File action
Mode for writing to file
Write directly to the output file (append if file exists)
Stage in mqsitransit directory and move to output directory on "Finish file"
Action if file exists
Replace Existing File
Replace duplicate archive files
Action on final file transfer failure
No Action





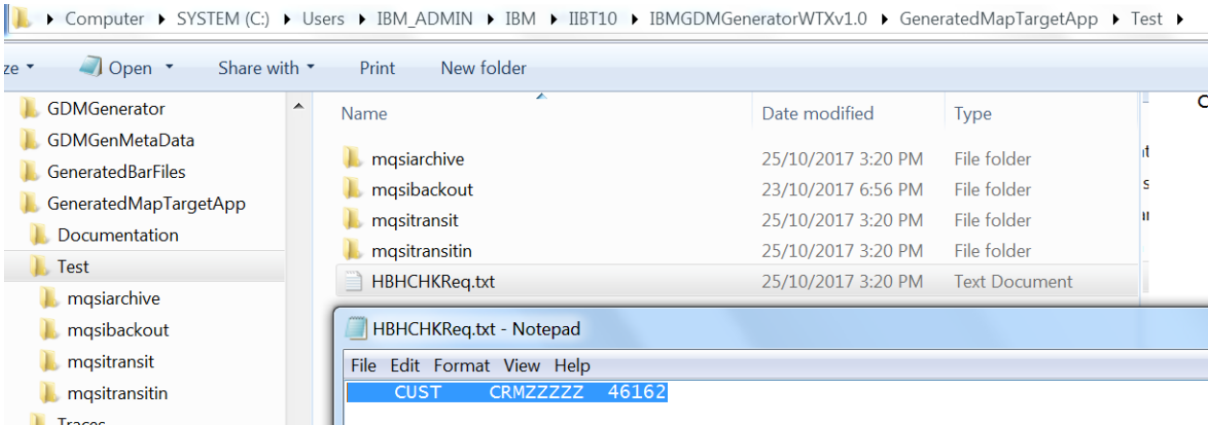
Testing in an IIB Message flow

Copy the SGServiceREquestIn.xml from the GeneratedMapTargetApp directory to the Test directory



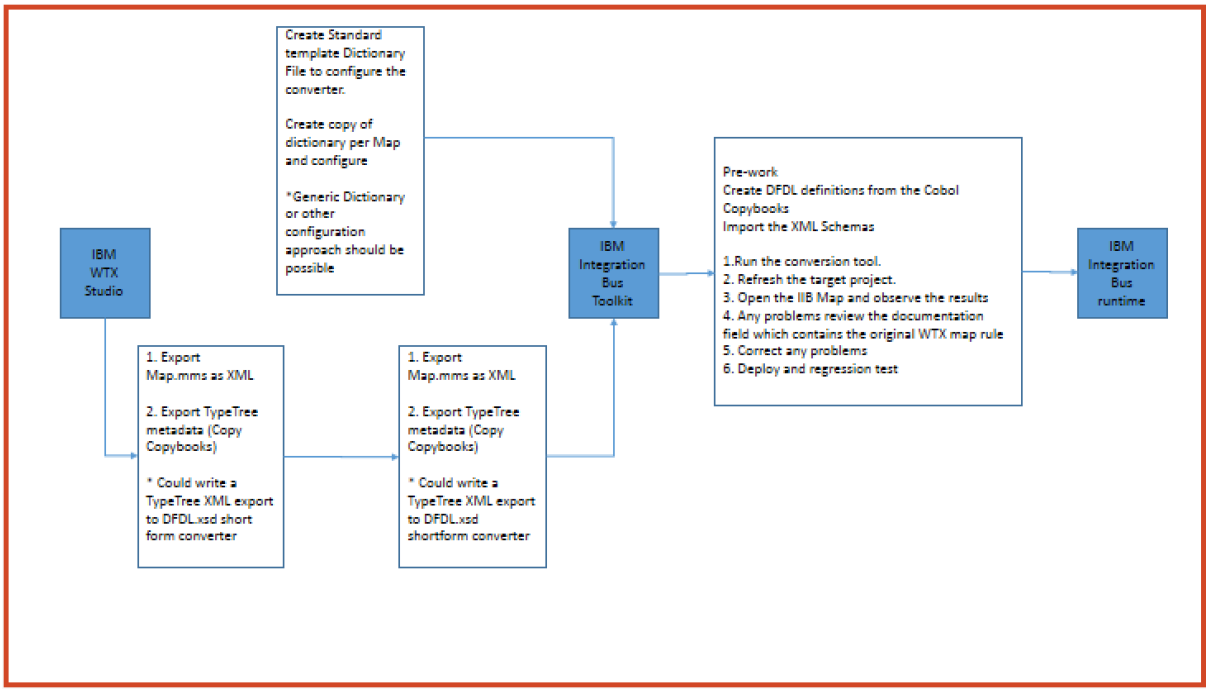
The FileInput node picks up the SGServiceREquestIn.xml

The Map transforms the XML input to fixed format and the FileOutput Node writes it out to the HBHCHKReq.txt file

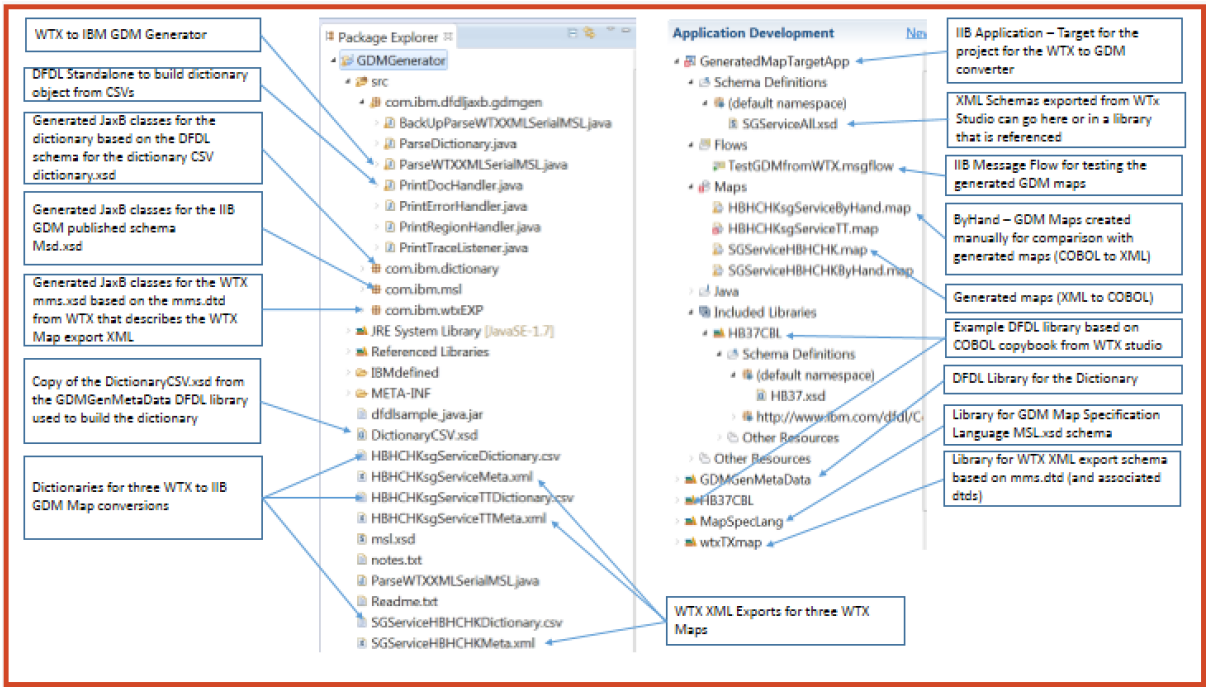


GDM Generator from WTX Maps – Diagrams

Conversion Process



Converter Files and Project Structure



Converter Classes and inputs