Title: - Using Automate Script to generate specific XSD’s

Prerequisites:-

1. Python 3 platform
2. conf.txt
3. Data Dictionary Mapping file.
4. generateXSDFiles.py
5. printXSDToFile.py
6. Liquid XML Studio

How to run:-

1. Open conf.txt and populate the parameters mentioned below
2. DataDictionary :- Path were mapping excel sheet resides

Eg DataDictionary="C:\Users\jrathod\Desktop\WorkDocs\XMLProjectDocs\ExcelWork\NewRDData.xlsx"

1. SheetToProcess=Data dictionary sheet that has mapping data

eg:- “Sheet6”

1. XSDDirectory :- Path where xsd’s needs to be generated

E.g :- XSDDirectory="C:\Users\jrathod\Desktop"

1. AllDevices :- List of devices which are in mapping sheet and for whom xsd schema needs to be generated

E.g. AllDevices="AG\_VP\_MC\_22,AG\_SP\_MC\_22,AG\_SP\_MC\_22,AG\_SP\_PCA\_30,AG\_SP\_PCA\_31"

1. Open command line terminal
2. Navigate to Path where conf.txt, generateXSDFiles.py and printXSDToFile.py are present.

(Note: - Make sure all three files conf.txt, generateXSDFiles.py and printXSDToFile.py are in same folder)

1. Execute Python script on command line as show below

>python generateXSDFiles.py

1. Script will run and used DataDictionary mentioned in conf.txt and process the sheet as mapped to SheetToProcess parameter in conf.txt and create XSD’s for all the devices mentioned in “AllDevices” list in the folder indicated by XSDDirectory parameter in conf.txt. Along with All Device specific XSD’s Zones.xsd is also created which encompasses all zones,pars,subpars etc (will overwrite in case multiple exists for same ID) and this can be used as a reference schema.
2. Once all specific device schemas are created open them up using Liquid XML studio and validate it by hitting “F7”. If there are errors work toward correcting them in Excel or Python Scripts

Exceptions:-

Exception will occur if below situations are encountered

1. In case the DataDictionary is not present at the path mentioned
2. If the SheetToProcess mentioned in Conf.txt is not available.
3. If the Data in the DataDictionary is not in correct format to build the structure mentioned below.

Logic :-

There are 2 python files used to create Device specific xsd’s and that is driven by Device list mentioned in variable “AllDevices” in conf.txt

1. generateXSDFiles.py :- This file holds the logic of creating the structure as show below depending on existence of Subpars

Zones ->

Zone ->

Par->

SubPars ->

Params ->

Flags(bits)

**Or**

Zones ->

Zone ->

Par->

Params ->

Flags(bits)

For debugging printZoneTree function could be enabled to see the actual structure formed.

To build this kind of structure Python Dictionaries are used recursively.

1. printXSDToFile.py :- This file holds the logic of generating XSD based on the structure created in generateXSDFiles.py and the files are created at path specified by XSDDirectory in conf.txt
2. If required field value is “No” then cardinality of minOccurs=0 and maxOccurs =1 is used.
3. For Zone 31 par 3 and Zone 30 par 3 cardinality of minOccurs=0 and maxOccurs-200 is used.

Requirements for mapping sheet:-

1. Zones and Zone Id needs to be merged cell for all pars that belongs to it
2. Pars and Par id needs to be merged cell for all pars that belongs to it
3. Devices Types need to appear for each row.
4. Required field needs to be present for each row or default value “No” is used.
5. RD\_ID field needs to be present if not than “RD\_0000” is used as default value.