Architect corner for Business/technical improvement :

designing Basic architecture with the help of other input.@indranil banerjee

> Obicetive:
>
> to deliver robost design while suppose for real time .

Reporting

- madapi-servicenow-incident-ng-system
- madapi-mtn-callerfeel-signature-ng-system
- customer-plans-air-system
- madapi-mtn-order-fulfillment-offer-provision-system-service

Code Plugins

- Scheduler Spring For Crowd Twist

Business Process Improvement

- XML input and output formatter
- SPRINT RETRO
  - ARCHITECT CORNER
    - Retrospective: AC Sprint 1

Testing Process Improvement

- Sink between prepod and prod in case of MQ load testing.
- Cucumber Automation Test
- Create Test Mock Server:
- Burp suit.

Coding Standers:

- Checkstyle

Security for mad API

- Apijee TLS/SSL
- JWT

API Definition

- Channel Payment API:
  - Callback API Definition:
- Automated Swagger file Generation Customer transfer :
- Crowed Twist Sample YAML:

Process Enhancement:

- Coding Process:
  - Auto generating Source Code from open API Specification
  - Swagger OpenAPI

    - Liquibase for database connectivity
    - Auto generated Swagger file from Code base:
    - Passing Source Ip Through APIGEE
    - Apigee local development
    - Apigee with plugin development:
- Deployment Process:
    - Local repo Creation:
    - Remote Repo Creation:
    - Maven and Spring Profile Connectivity
    - CI pipeline using Github Action Docker
    - CD action through Docker Action Kubernetes
- Monitoring Process:
    - ELK
    - dynatrace:
    - Logback
    - JsonAppenderConsole logger
    - Log back custom logger
- Code Review Process:
- Performance enhancement:
    - Jfrog
    - jmeter
    - actuator
    - Reactive Programing using webFlux:
    - Radis cache for duplicate transaction
    - Call back through reactive stream.

Architecture Enhancement:

- legacy Versioning auto generated code:
- Retry Event on top of auto-generated code.
- Dynamic validation for the input type
- Three Layer to Two layer System connector Process layer:
- Spring Batch Processing CrowedTwist:
- Notification System
- URL Shorting By using Redis
- Rule Engine For Channel selection
- Integrating of micro Services with kafka
- MQ configuration

Architecture of Different Module:

- Channel Payment:
    - Callback Architecture:
        - HLD Call back
        - LLD Callback
    - HLD for channel payment
- Reward Management
    - Cashout Cashback
- CrowdTwist:
    - Spring Batch CrowdTwist:
- Air Time:
    - Airtime architecture:

1. Business Requirements

2. Assumptions

- *API call shall be synchronous*
- *All information is presented in JSON format*
- *This service is for an internal system*

3. Use cases

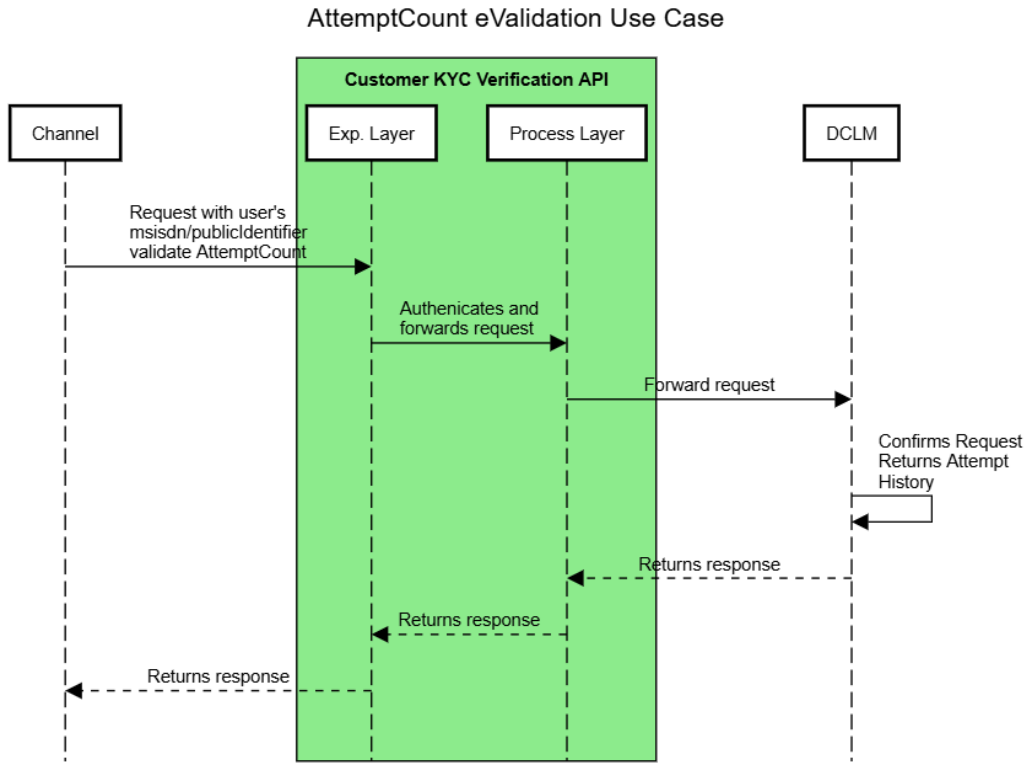
Complete the requirement table, High-level user stories, use cases, BDD Test Cases

#	Requirement	Use Case	Pre-Requisites	Expected Results	Importance	Jira Issue	Notes
1	*Ability for CLM to verify if a 3PP/user's MSISDN is eligible for e-Validator*	***As a/an*** *3PP/Channel* ***I want to*** *pass a user's phone number as an API request* ***So that*** *I can verify if the user's MSISDN hasn't passed it's number of failure attempt to partake in eValidator*	*User's number MUST be active on the network*	• *Verification status shall show if user is active or inactive* • *Partners shall know the attemptCount of the user's MSISDN if in case it has exceeded the number of allocated attempts for eValidator*	HIGH	*Link to Jira ticket*	*My Notes*

#	Requirement - User Story	BDD Test Case

1	***As a/an*** *3PP/Channel* ***I want to*** *pass a user's phone number as an API request* ***So that*** *I can verify if the user's MSISDN hasn't passed it's number of failure attempt to partake in eValidator*	**Scenario: Validate if MSISDN has exceeded failure attempts** **Given** the user's phone number (MSISDN) is provided, **And** the MSISDN is registered in the system, **And** there is a record of failed attempts associated with the MSISDN, **When** I send the MSISDN in an API request to the validation endpoint, **Then** the API should check the number of failure attempts for the MSISDN, **And** return a response indicating whether the MSISDN is eligible to partake in eValidator.

4. MADAPI Solution with Flow Diagram



5. What Type of API Update is This and Which Layers are Affected?

Specify the API as well as the change that you are presenting. This section stipulates which layers are impacted during this change.
PLEASE NOTE: Each layer's relevant YAMLs are updated to reflect these changes. API Swagger Standards.

Central Swagger Repository

PLEASE NOTE: A YAML file will need to be uploaded (**GitHub PR Request**) before the presentation to the MADAPI Forum — Swagger Approval/Upload Process. Deployment to the Developer Portal: How to Publish Products to the Developer Portal

API Name	Which Layers Are Affected?	New/Existing Swagger	Filename naming standards
API Name		*New/Existing?*	
☑ Reuse of API with New System/connector Layer	☐ Experience Layer	*Swagger needed. Paste the GitHub PR link of the new experience swagger here. If experience swagger is exactly the same as the process swagger, state "same as process". No need to duplicate repositories.*	• Experience Layer -
	☐ Process Layer	*Process Layer Swagger needed. Paste the GitHub PR link of the new process layer swagger here.*	• Process Layer -

7. New Repository?

New Repository?	Repository Layer?	Repository Name *New Repositories will be created by Group Representatives on the day of approval and the repository name will be updated here*	Link to GitHub Repository *New Repositories will be created by Group Representatives on the day of approval and the repository name and link will be updated here*
☐ **Yes**	☐ Experience Layer		
	☐ Process Layer		

8. API Consumer

This section will highlight systems that will be consuming or calling the API.

Consumer Type	Consumer Name
NA	*NA*

9. Backend Systems

List of Backend Systems (including contact information)

Backend System	Contact Person	Contact Details	Comment

DCLM	Gideon Aiyedatiwa Boluwatife Morawo	gideon.aiyedatiwa@mtn.com boluwatife.morawo@tecnotree.com	*My comment*

10. Backend Systems API Availability

Item	Description	Details
Credentials	*Relevant Credentials Obtained and linked here*	*My comment*
Public or Private?	Private	
Firewall Rules	NA	
Test Data	Yes	
Any other configuration needed		
Backend Endpoint		

11. Information Model and Mappings to Back-end System

Endpoint : GET /customers/{customerId}
Backend: DCLM

Request Madapi Mapping to Customer KYC	Type	M/O	Request Madapi Mapping to backend DCLM	Comment
customerId			publicIdentifer	
customerIdType			N/A	
countryCode			N/A	
			targetSystem	DCLM
Response				
statusCode	String	M	N/A	
idNumber	String	M	relatedParty[?role=Customer].id	ProductInventory
dateOfBirth	String	M	engagedParty.birthDate	Customer
gender	String	M	engagedParty.gender	Customer
firstName	String	M	engagedParty.givenName	Customer

middleName	String	M	engagedParty.middleName	Customer
lastName	String	M	engagedParty.familyName	Customer
nationality	String	M	engagedParty.nationality	Customer
phoneNumber	String	M	publicIdentifier	ProductInventory
alternativePhoneNumber	String	M	contactMedium[?medium.type=Mobile].number	
maritalStatus	String	M	engagedParty.maritalStatus	Customer
email	String	M	engagedParty.contactMedium[?type=EmailAddress].medium.emailAddress	Customer
registrationStatus	String	M	engagedParty.customFields.simReg.status	Customer | Need to map value between CLM and DCLM
contractType	String	M	businessType	ProductInventory | Need to map value between CLM and DCLM
profileType	String	M	customerType	Customer | UpperCase
stateOfOrigin	String	M	N/A	Need to expose in Customer/Individual
stateOfOriginDescription	String	M	N/A	MasterData
motherMaidenName	String	M	engagedParty.relatedParty[?role=mother].name	Customer
lgaOfOrigin	String	M	N/A	lga no longer in use
lgaOfOriginDesc	String	M	N/A	lga no longer in use
registrationCity	String	M	relatedParty[?role=SIMRegAgent].contactMedium.address.city	Customer
preferredLanguage	String	M	engagedParty.preferredLanguage	Customer | WIP:Need to Verify if preferredLanguage or communicationLanguage
hoaxCaller	String	M	N/A	
registrationStatusDesc	String	M	N/A	

notificationNumber	String	M	contactMedium[?medium.type=Mobile].number	Customer
alternativeMobileNumber	String	M	contactMedium[?medium.type=Mobile].number	Customer
registrationState	String	M	relatedParty[?role=SIMRegAgent].contactMedium[?type=Address].medium.city	Customer
registrationStateDesc	String	M	N/A	MasterData
registrationCityDesc	String	M	N/A	MasterData
additionalInformation	String	M	N/A	Redundant Information
ninDetails.statusDesc	String	M	"{{engagedParty.individualIdentification[0].type}} ******* {{engagedParty.individualIdentification[0].identificationId[-4:-1]}} is linked to your Number {{publicIdentifier}}"	Engaged party is gotten from Customer while public identifier from ProductInventory. NIN should onnly display last 4 digits. If no id is found then display: "NIN Submission is pending. Please submit a valid NIN to avoid disconnection."
ninDetails.firstName	String	M	engagedParty.givenName	Customer
ninDetails.middleName	String	M	engagedParty.middleName	Customer
ninDetails.lastName	String	M	engagedParty.familyName	Customer
ninDetails.dateOfBirth	String	M	engagedParty.birthDate	Customer
ninDetails.reference	String	M	engagedParty.customFields.nin.documentId	Customer
ninDetails.uploadChannel	String	M	relatedParty[?role=Customer].registeredChannel.name	ProductInventory
ninDetails.consentRequired	String	M	N/A	
ninDetails.userId	String	M	engagedParty.customFields.identification.userId	Customer

ninDetails.virtualNin	String	M	engagedParty.customFields.identification.vnin	Customer
ninDetails.ninStatus	String	M	engagedParty.customFields.nin.status	Customer
binaryAttachment[]	String	M	N/A	
physicalAddress.*	String	M	N/A	
postalAddress.*	String	M	residentialAddress.*	Same as residentialAddress
businessAddress.*	String	M	N/A	WIP: Need Corporate Customer KYC Sample
residentialAddress.addressType	String	M	engagedParty.contactMedium[?type=Address].role	Customer
residentialAddress.addressOne	String	M	engagedParty.contactMedium[?type=Address].addressLine1	Customer
residentialAddress.addressTwo	String	M	engagedParty.contactMedium[?type=Address].addressLine2	Customer
residentialAddress.addressThree	String	M	engagedParty.contactMedium[?type=Address].addressLine3	Customer
residentialAddress.streetDesc	String	M	engagedParty.contactMedium[?type=Address].landmark	Customer
residentialAddress.poBox	String	M	engagedParty.contactMedium[?type=Address].postcode	Customer
residentialAddress.city	String	M	engagedParty.contactMedium[?type=Address].city	Customer
residentialAddress.cityDesc	String	M	N/A	MasterData
residentialAddress.district	String	M	engagedParty.contactMedium[?type=Address].stateOrProvince	Customer
residentialAddress.districtDesc	String	M	N/A	MasterData

residentialAddress.country	String	M	engagedParty.contactMedium[?type=Address].country	Customer
residentialAddress.countryDesc	String	M	N/A	MasterData
residentialAddress.countryState	String	M	engagedParty.contactMedium[?type=Address].stateOrProvince	Customer
residentialAddress.countryLga	String	M	engagedParty.contactMedium[?type=Address].addressLine3	
residentialAddress.countryPostal	String	M	engagedParty.contactMedium[?type=Address].postcode	Customer
residentialAddress.residencyStatus	String	M	engagedParty.contactMedium[?type=Address].verified	Customer | Need to map false to "N" and true to "Y"
subIdDclm	String	M	{{ businessType | Uppercase }}	
abilityReference	String	M	N/A	
subscriberCode	String	M	id	ProductInventory
accountCode	String	M	account[?@referredType=BillingAccount].id	Customer
validFor	String	M	N/A	
characteristic	String	M	N/A	

12. Load Test Requirements

If this API requires load testing, the following table must be populated

LoadTest Requirements	Example	Values

Does this API require LoadTesting? Yes/No	No	
Can the backend support the volumes and rates indicated?	NA	
Transactions per seconds		
Maximum expected number of concurrent users?	TBD	
Response times for x load?	TBD	
A number of concurrent users?	TBD	
Minimum Success % recorded required to move to Production	TBD	
Is this an Async API – Additional requirements for load tests?	No	

14. Security

- All passwords/secrets must be stored in the vault.
- All necessary validations must be done.

15. Test Collection

NA

16. Test cases

TBD by the Tester according to the Test Cases Documentation standard.

17. Related Documents

Backend Systems API specification and other relevant documentation

Doc Name	Attachment	URL for Backend Specifications	Comment
			My comment

18. Out of Scope

List the features discussed which are out of scope or might be revisited in a later release

- *Item 1*

Bellow of the pages for your reference

- Reporting
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    - Remote Repo Creation:
    - Maven and Spring Profile Connectivity
    - CI pipeline using Github Action Docker
    - CD action through Docker Action Kubernetes
  - Monitoring Process:
    - ELK
    - dynatrace:
    - Logback
    - JsonAppenderConsole logger

        - Log back custom logger
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        - Cashout Cashback
    - CrowdTwist:
        - Spring Batch CrowdTwist:
    - Air Time:
        - Airtime architecture: