

# **Payment Page Details Requirements (For Review)**

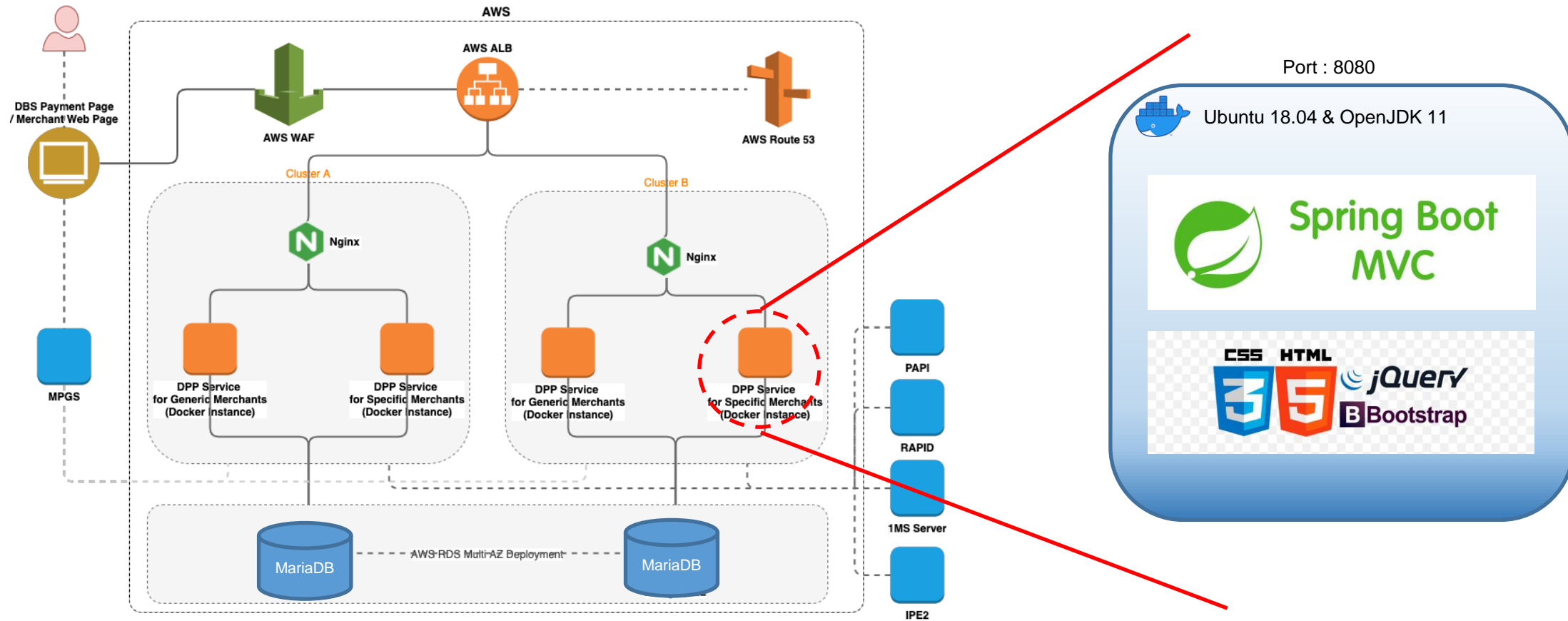
6 July 2021



# Application/DB



# Framework



## Note:

Ideally, DBS has to provide 1 of items below, if TechCreate does not receive it, jquery & bootstrap will be used:

1. web security guideline
2. create project skeleton from DBS prod system which is currently in use



## API List

S/N	Name	Module	Payload/Spec	Resource Path	
1	Token Generation	Rapid → DPP	DBS_Payment_Page_2021-0702	/api/v1/genToken	POST
2	Profile Validation	DPP → 1MS	DBS_Payment_Page_2021-0702		POST
3	Inward Credit Notification	IPE2 → DPP	Instant_Credit_Notification_message_spec_20210509	/api/v1/icn	POST
4	Txn Confirmation	DPP → 1MS	DBS_Payment_Page_2021-0702		POST
5	Credit Notification	DPP → Rapid	DBS_Payment_Page_2021-0702		POST
6	Timeout Confirmation*	DPP → 1MS	DBS_Payment_Page_2021-0702		
7	Paylah Payment*	DPP → PAPI	Paylah_APIs Partners V4.1.3_20210308	/api/sg/paylah/v4/payment/webcheckout	POST
8	Paylah Txn Inquiry*	DPP → PAPI	Paylah_APIs Partners V4.1.3_20210308	/api/sg/paylah/v4/enquiry/transactionstatus	POST
9	Paylah Txn Confirmation	PAPI → DPP	DBS_Payment_Page_2021-0702	/api/v1/txnConfirmation	POST
10	Create Session	DPP → MPGS	<a href="https://ap-gateway.mastercard.com/api/documentation/apiDocumentation/rest-json/version/latest/operation/Session%3a%20Create%20Session.html?locale=en_US">https://ap-gateway.mastercard.com/api/documentation/apiDocumentation/rest-json/version/latest/operation/Session%3a%20Create%20Session.html?locale=en_US</a>		POST
11	Payment Request	DPP → MPGS	<a href="https://ap-gateway.mastercard.com/api/documentation/apiDocumentation/rest-json/version/latest/operation/Transaction%3a%20%20Pay.html?locale=en_US">https://ap-gateway.mastercard.com/api/documentation/apiDocumentation/rest-json/version/latest/operation/Transaction%3a%20%20Pay.html?locale=en_US</a>		POST

question:

1. Item6: Spec of "Timeout Confirmation"?
2. Item7: Paylah Payment API: Web Checkout / EC Setup Payment Message Specification
3. Item8: Inquiry API: Purchase Enquiry Message Specification



## Web Page List

S/N	Name	Module	Resource Path	
1	Payment Options	Merchant → DPP	/page/v1/paymentOptions	POST
2*	PayNow QR Code	End-User → DPP	/page/v1/paymentQR	GET
3	Payment Confirmation	DPP → End-User	/page/v1/confirmPayment	
4	Card Payment Input	DPP → End-User	/page/v1/cardPaymentInput	POST
5				
6				
7	Error Page	It happens if DPP/BE system has errors	/page/v1/errors	

### Note:

1. DBS provides library to generat QR code



## Error Code

S/N	Name	Scenario	Error Code	Error Description
1	API Timeout	DPP call external API	G001	\${BE API} Timeout
2	Data validation Error	Input Json contains invalid data	G002	Input Data Validation Error
3	Token Timeout	Scheduler Invalid Txn Token	G003	Token Timeout
4	Invalid Merchant ID	Wrong merchant ID/Mobile No, verified by PayLah	PL001	Invalid Merchant Id/Mobile
5	PNDG/RJCT	PAPI rejects txn or txn is pending	PL002	Txn Status: \${txnStatus}
6				
7				

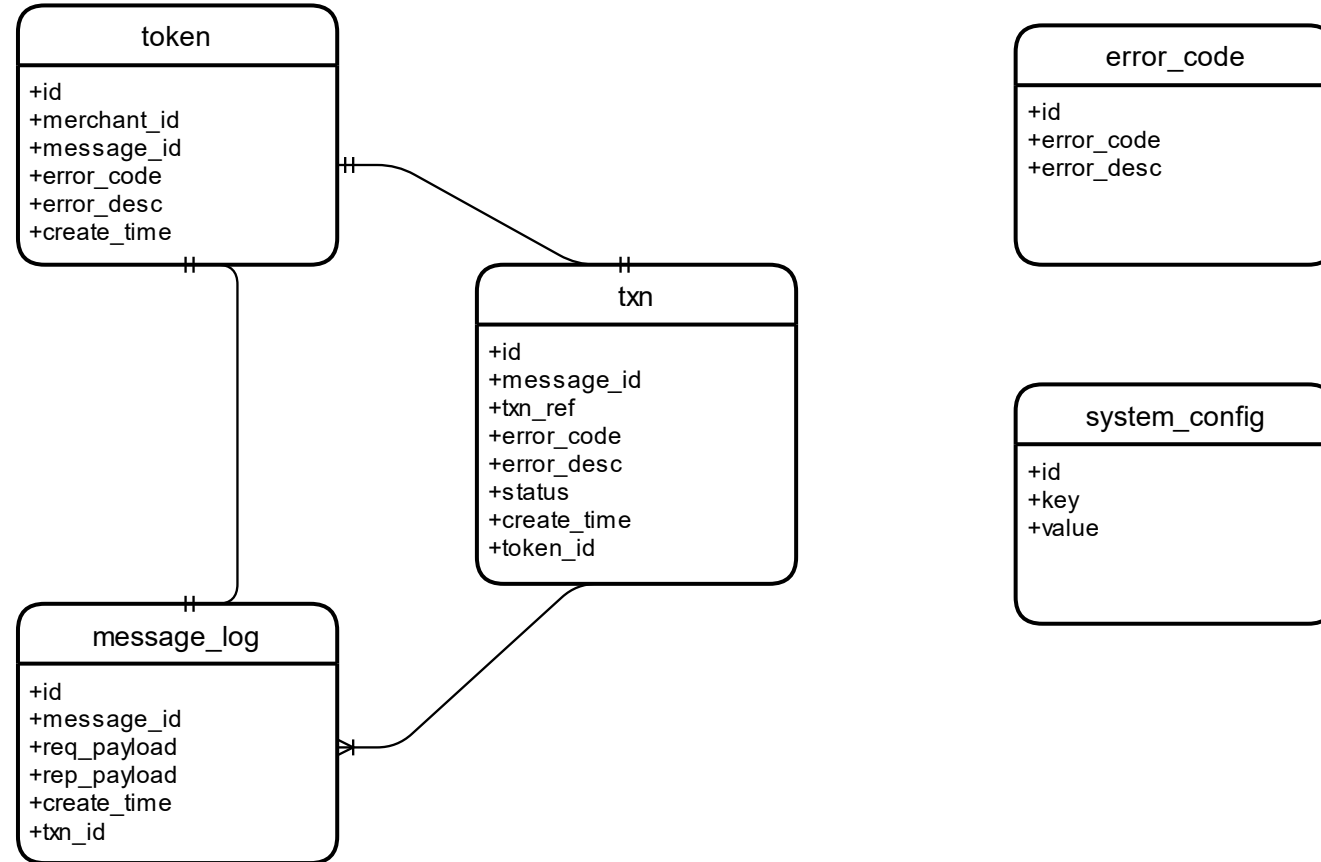


## Scheduler

S/N	Name	Purpose	Triggered after X secs (Configurable)
1	Txn Monitor	Start to count down time-out, it occurs when system redirects end-user to payment option page	30
2			
3			
4			
5			
6			
7			



## Schema



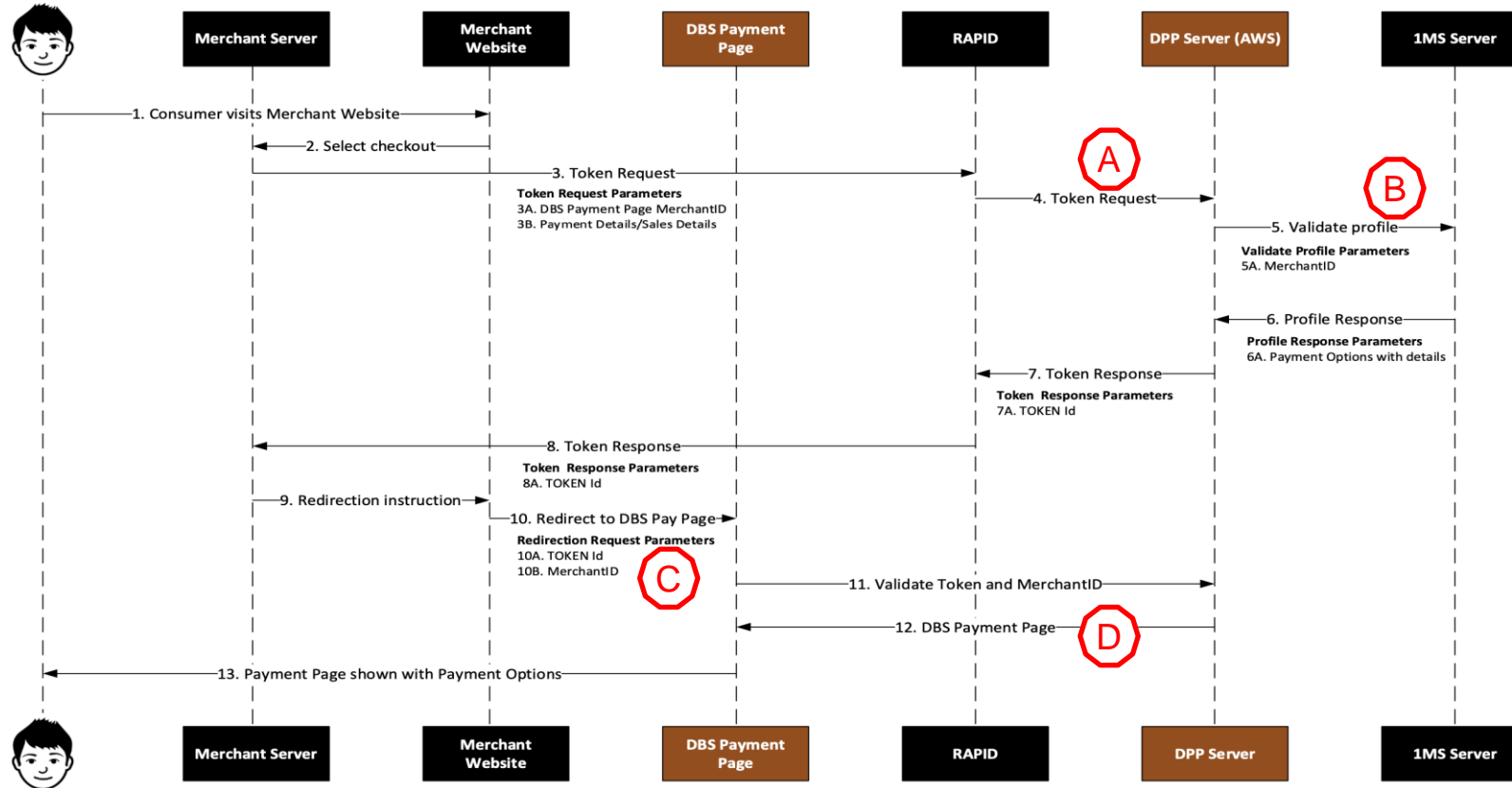


# Token Flow



## Scenario 1: Success

### Token Flow for DBS Payment Page (Success)



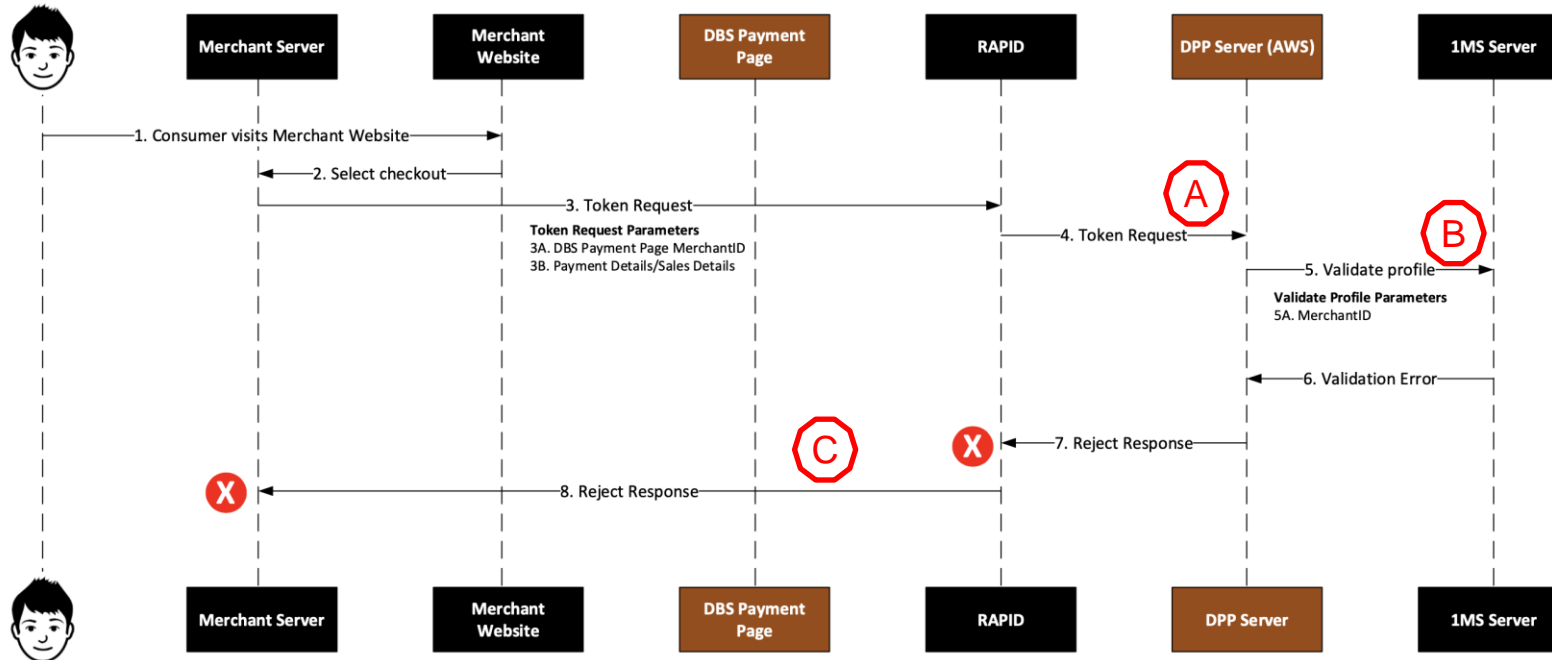
- A. Refer to Page 4, Item 1
- B. Refer to Page 4, Item 2
- C. Refer to Page 5, Item 1
- D. Scheduler starts, calculate time-out for incoming transaction (Page 7, Item 1)

Question:

1. Payload path: txnResponse -> txnStatus, What is the status/code for successful profile validation?
2. How long token can continue before it expires? (timespan of token is configurable)

## Scenario 2: Invalid Merchant

### Token Flow for DBS Payment Page (Invalid Merchant)



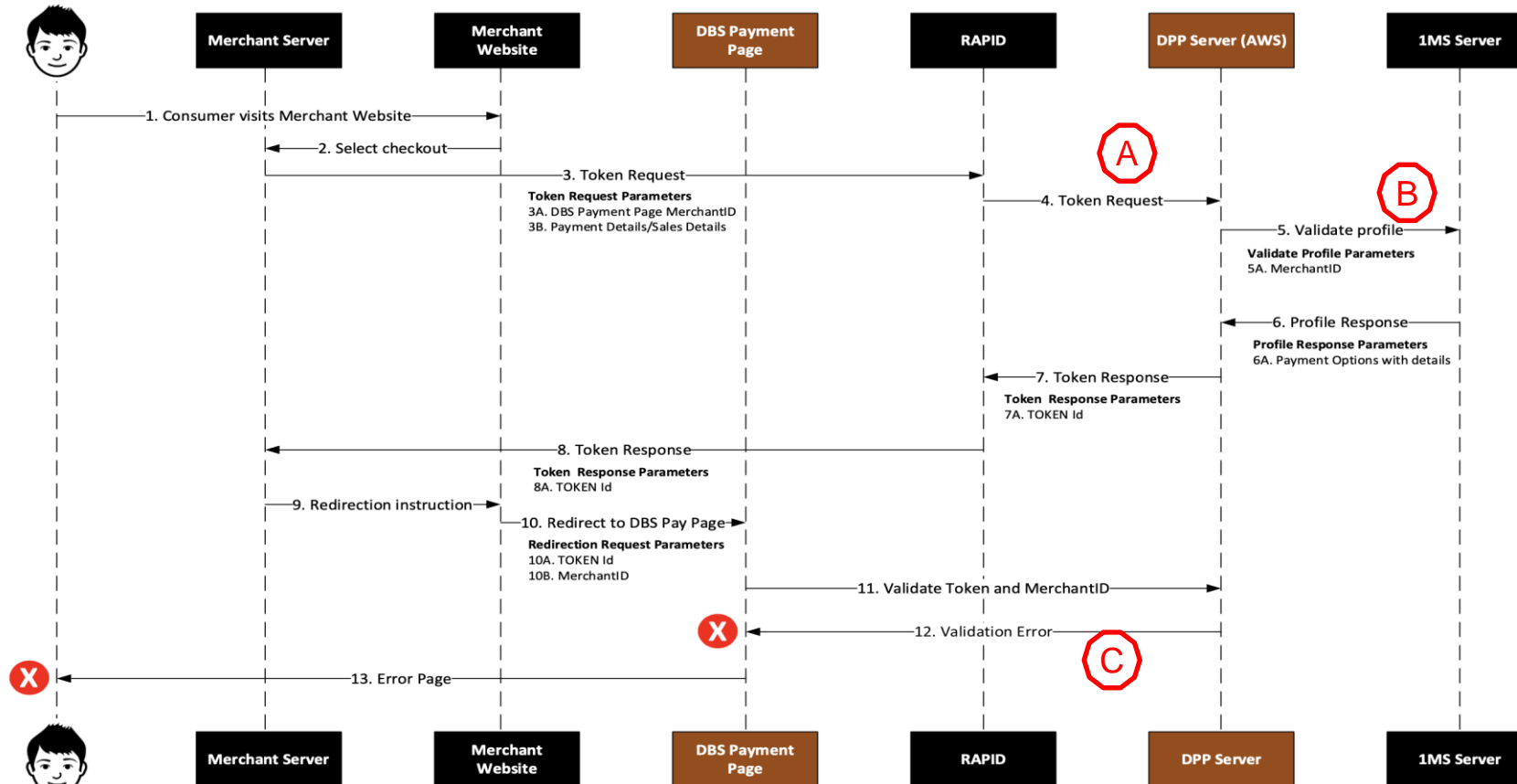
- A. Refer to Page 4, Item 1
- B. Refer to Page 4, Item 2
- C. Refer to Page 5, Item 7, rejection response is injected into error page

Question:

1. Payload path: txnResponse -> txnStatus, What is the rejection code from 1MS?

## Scenario 3: Invalid Token

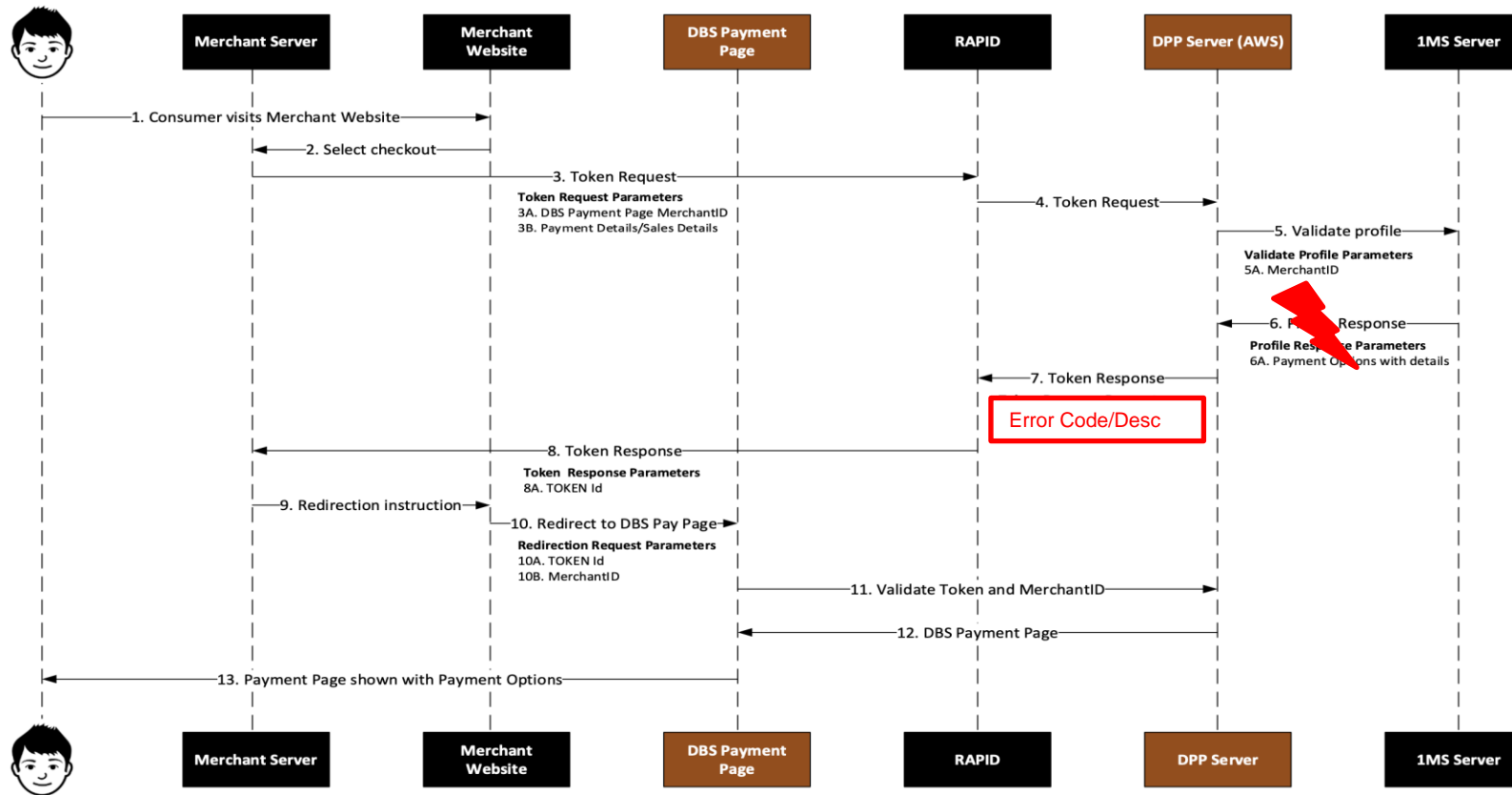
### Token Flow for DBS Payment Page (Invalid Token)



- A. Refer to Page 4, Item 1
- B. Refer to Page 4, Item 2
- C. Refer to Page 5, Item 7, rejection response is injected into error page

## Scenario 4: API Timeout

### Token Flow for DBS Payment Page (Timeout)



Proposed Error Code/Desc:  
G001/{BE API} Timeout

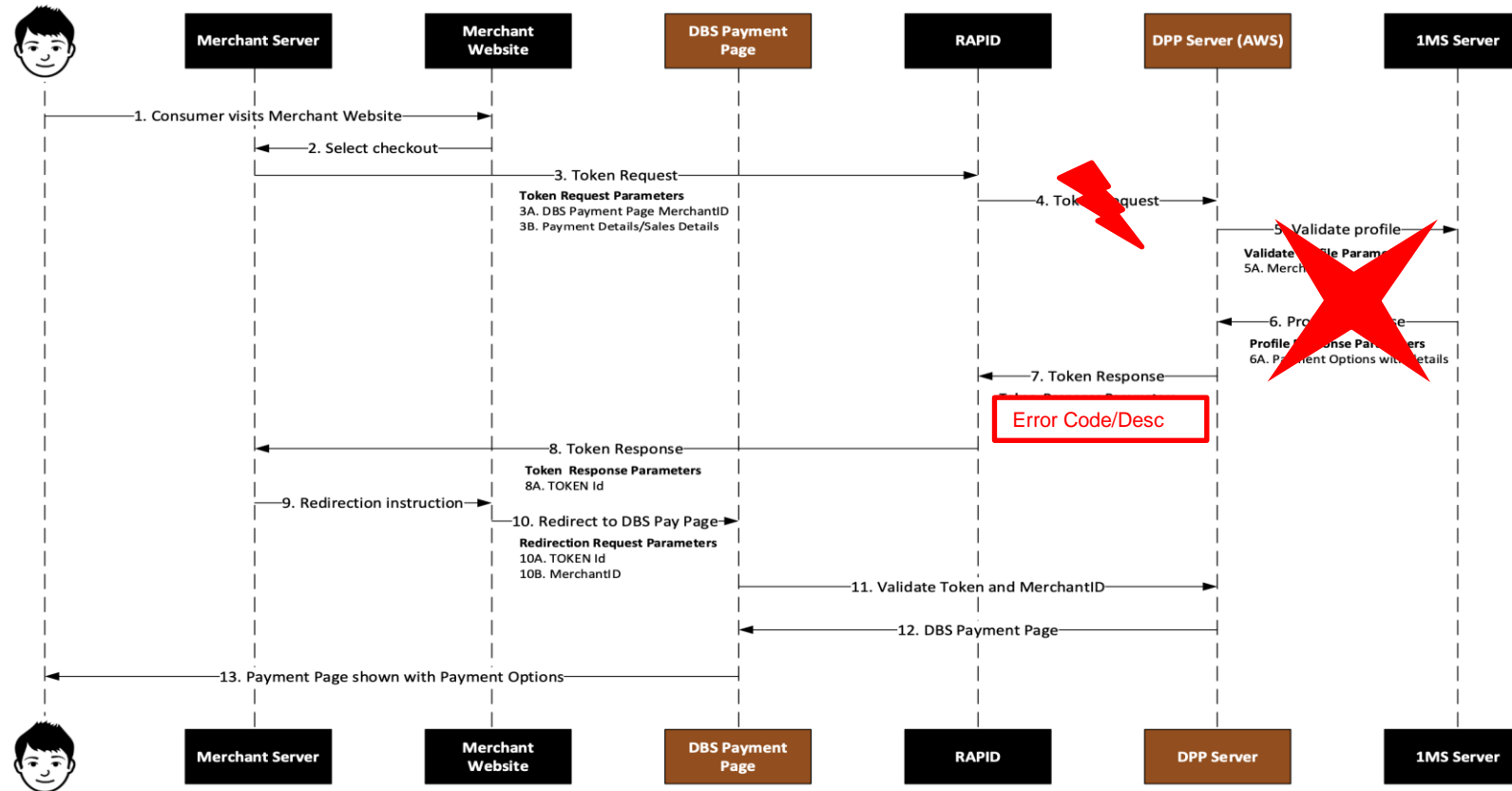
Note:

1. DPP does not re-try 1MS validation API if no response happens caused by network interrupt or timeout



## Scenario 5: Data Validation Error

### Token Flow for DBS Payment Page (Data Error)



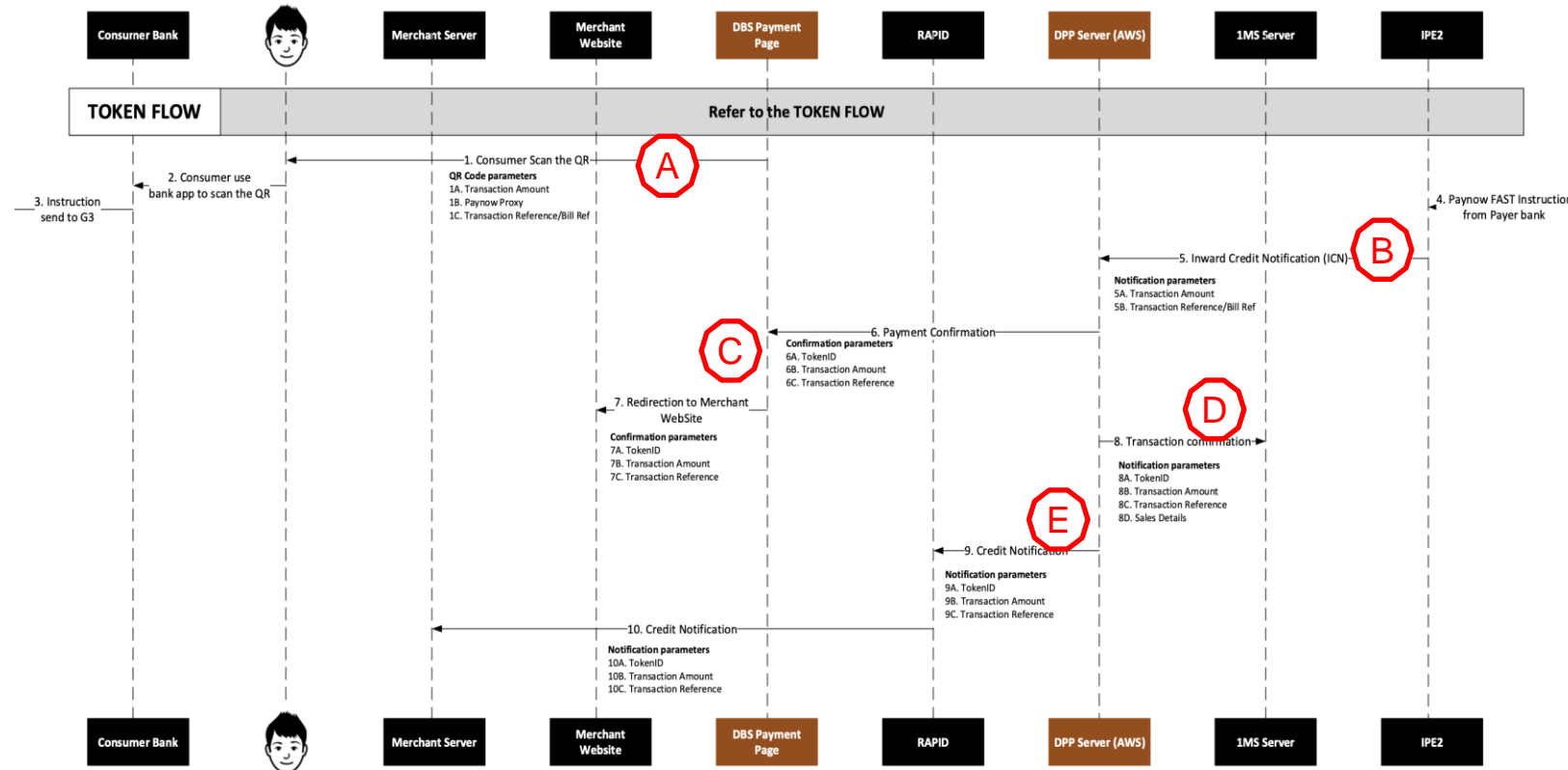
- Proposed Error Code/Desc: G002/Input Data Validation Error
- Step 5 & 6 are not executed

# PayNow Flow



## Scenario 1: Success

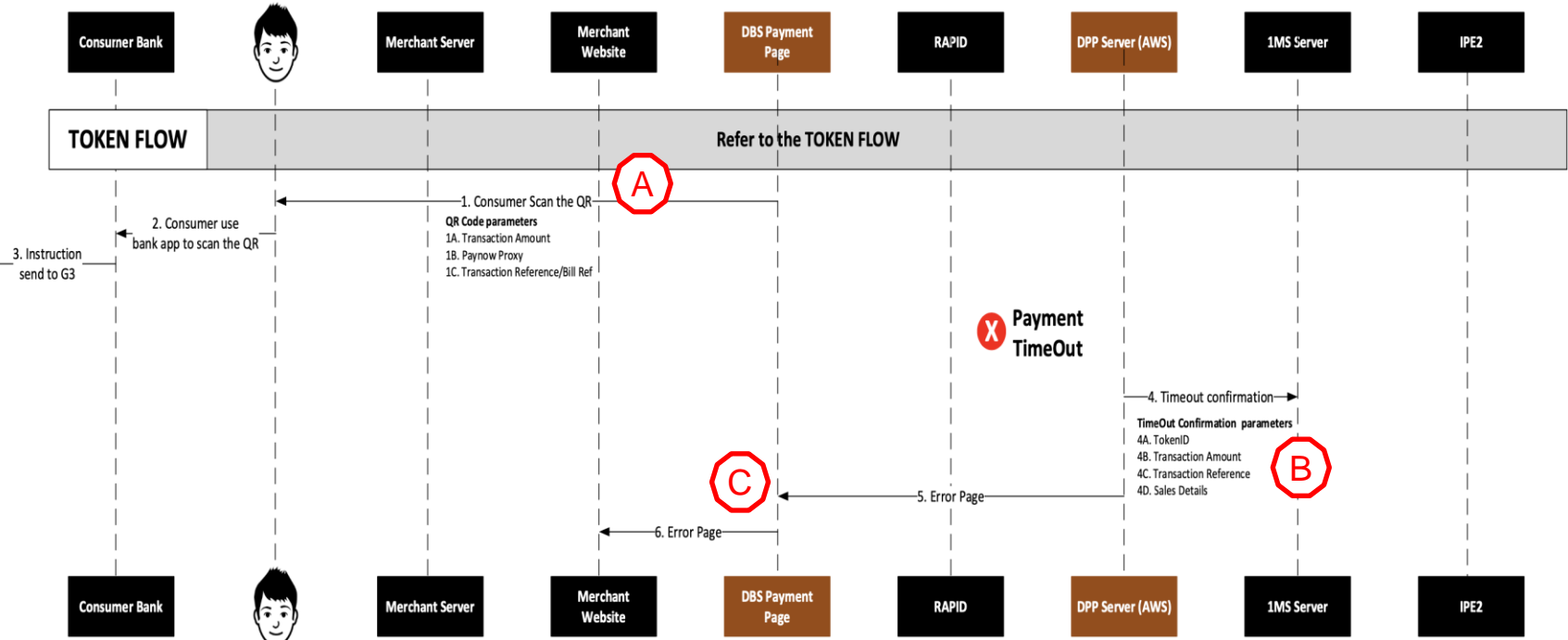
### Paynow Collection for DBS Payment Page (Success)



- A. DPP return it after user choose 'PayNow' in Payment-Options Page (Page 5, Item 2).
- B. Refer to Page 4, Item 3
- C. Display payment details, then jump to merchant web, (Page 5, Item 3)
- D. Refer to Page 4, Item 4
- E. Refer to Page 4, Item 5



Paynow Collection for DBS Payment Page (Timeout)

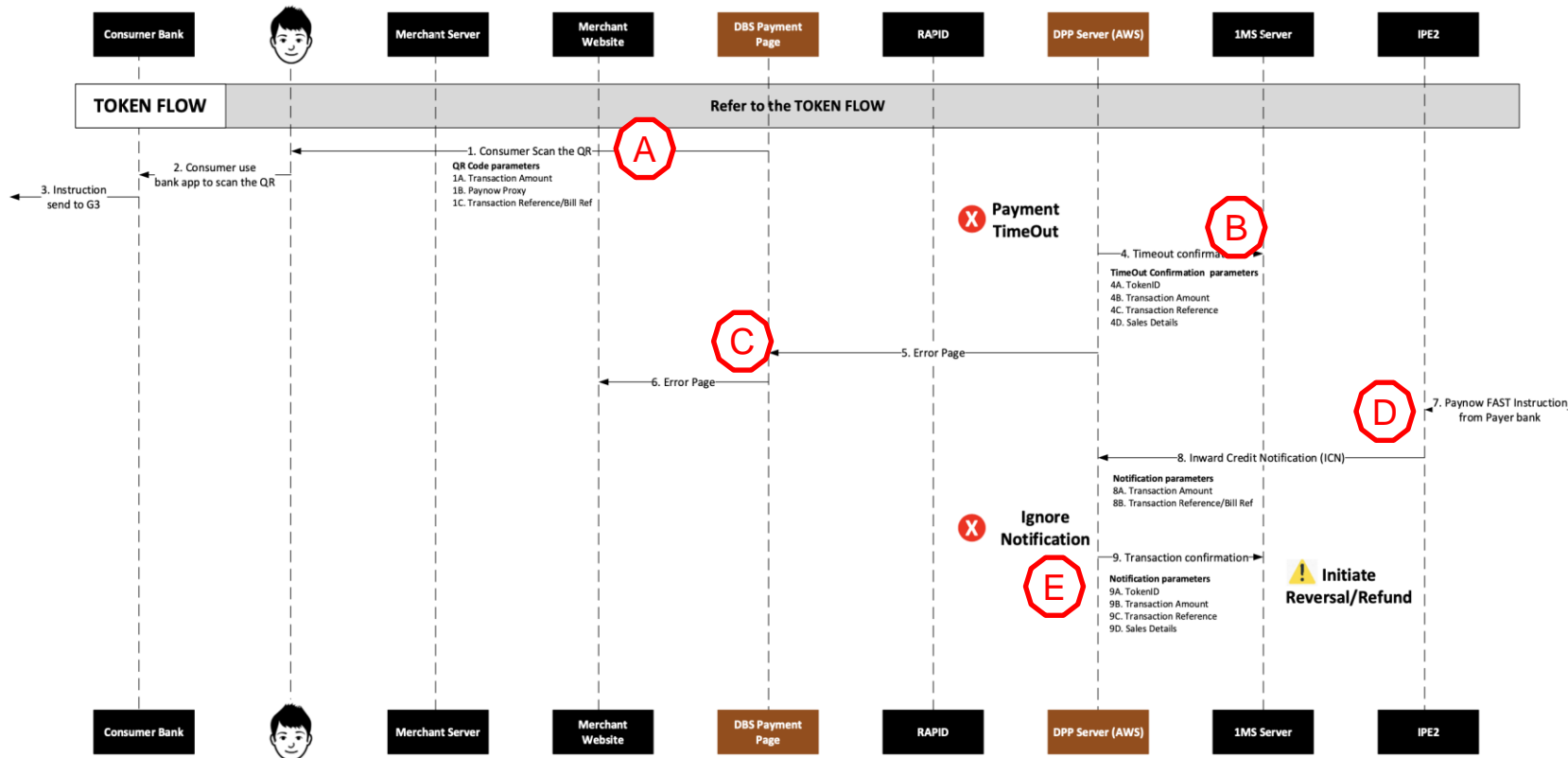


- A. DPP return it after user choose 'PayNow' in Payment-Options Page (Page 5, Item 2)
- B. Txn Monitor (Page 7, Item 1) marks this txn time-out, and send timeout confirmation (Page 4, Item 6)
- C. Refer to Page 5, Item 7



## Scenario 3: Timeout (late confirmation)

### Paynow Collection for DBS Payment Page (Timeout with confirmation)

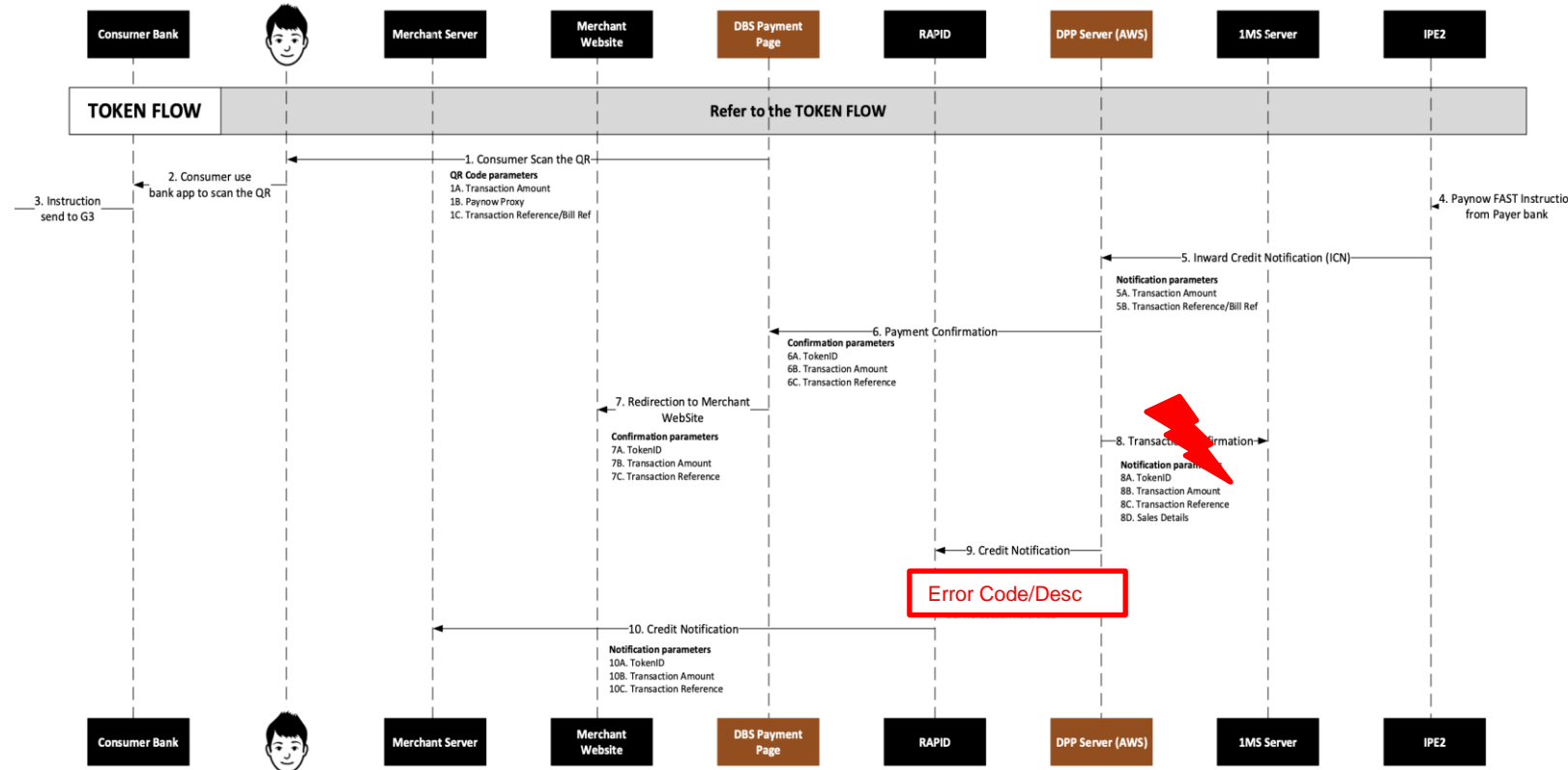


- A. DPP return it after user choose 'PayNow' in Payment-Options Page (Page 5, Item 2)
- B. Txn Monitor (Page 7, Item 1) marks this txn time-out, and send timeout confirmation (Page 4, Item 6)
- C. Refer to Page 5, Item 7
- D. Refer to Page 4, Item 3
- E. Refer to Page 4, Item 4

## Scenario 4: API Timeout

### Paynow Collection for DBS Payment Page (Timeout)

Proposed Error Code/Desc:  
G001/{BE API} Timeout



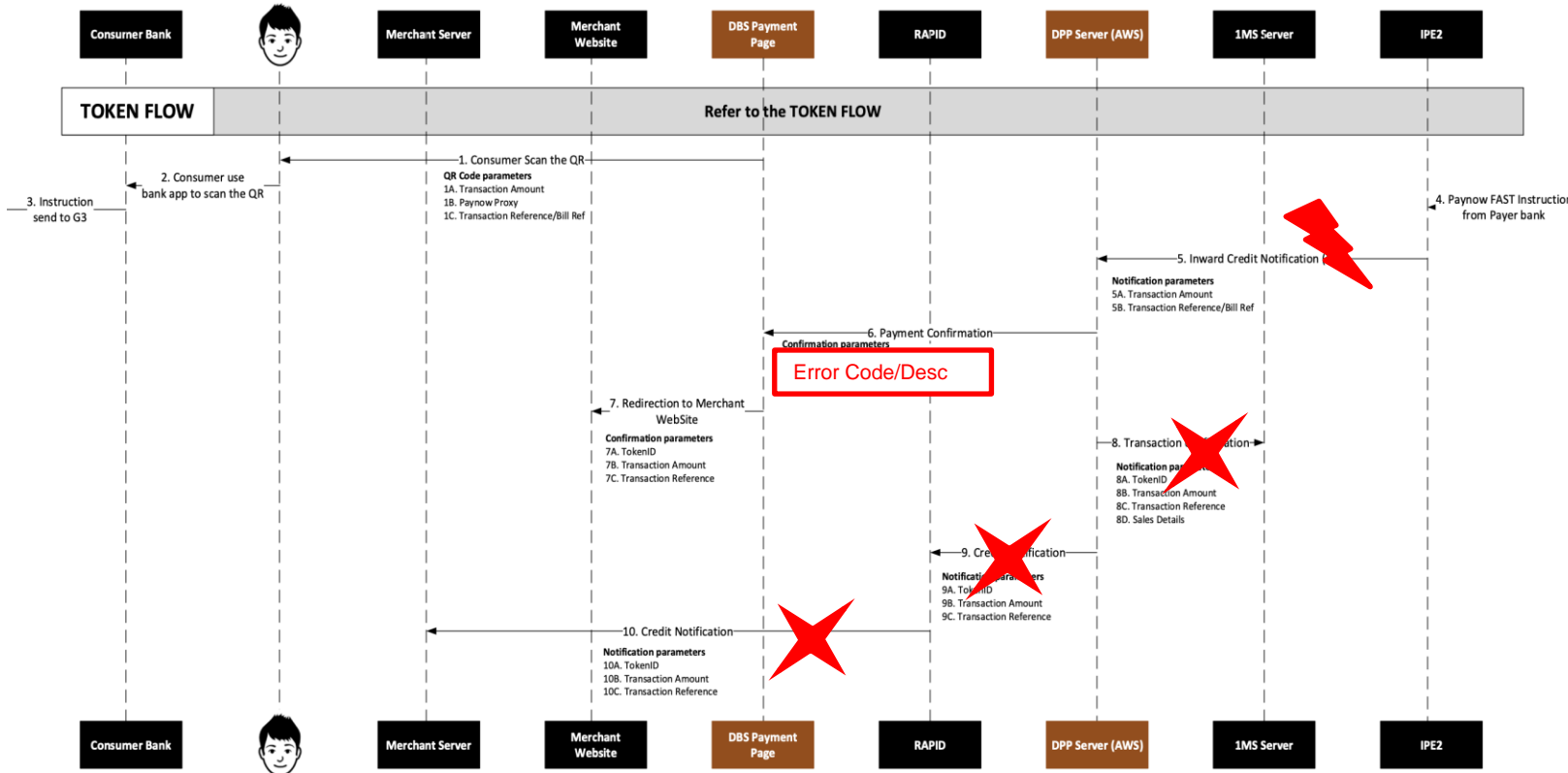
Note:

1. DPP does not re-try 1MS validation API if no response happens caused by network interrupt or timeout



## Scenario 5: Data Validation Error

## Paynow Collection for DBS Payment Page (Success)



- E.g. Duplicate Data Error
- Proposed Error Code/Desc:  
PN001/IPE2 Invalid Response
- Step 8, 9 and 10 are not executed

Note:

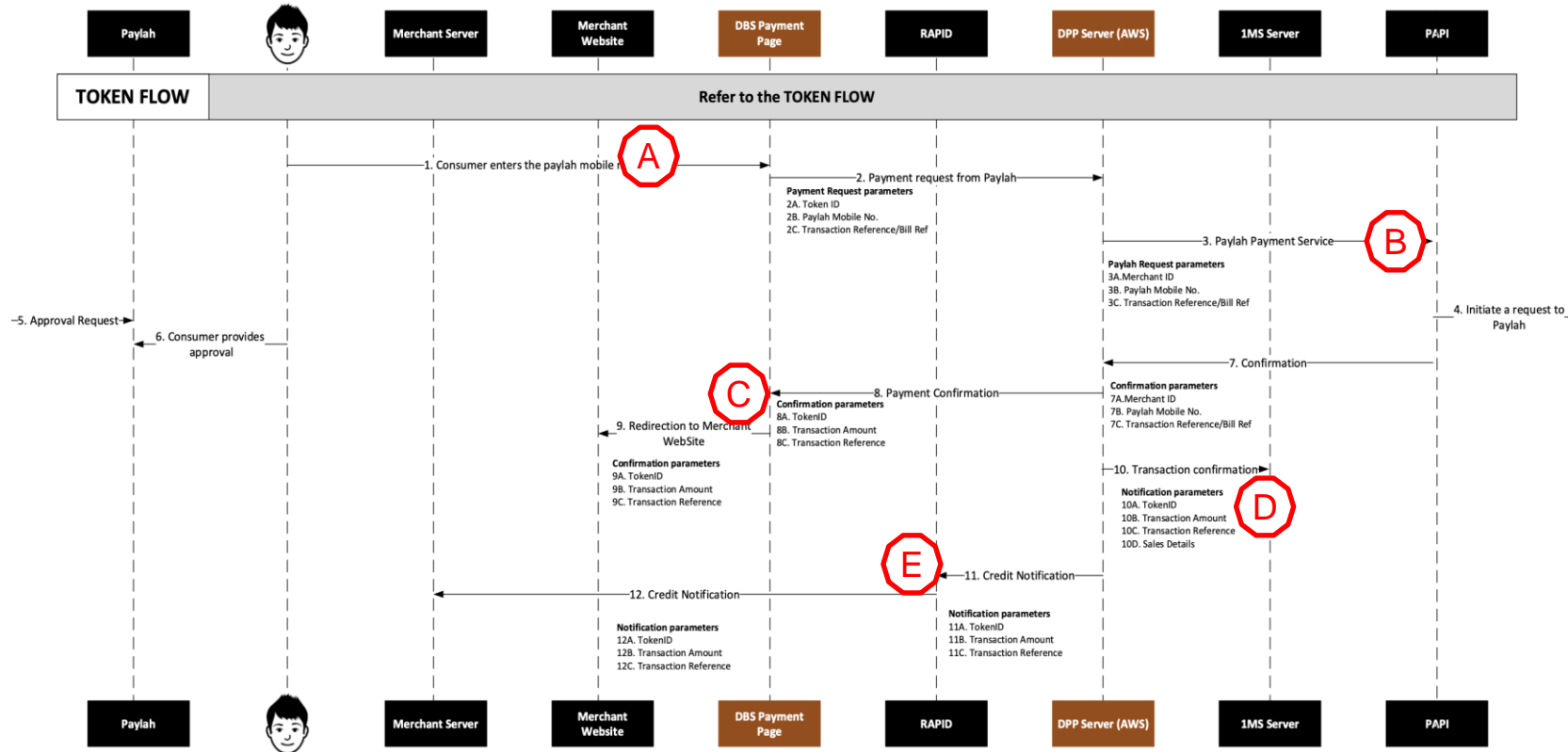
1. Does DPP have to verify data from IPE2?

# Paylah Flow



## Scenario 1: Success

### Paylah Collection for DBS Payment Page (Success)

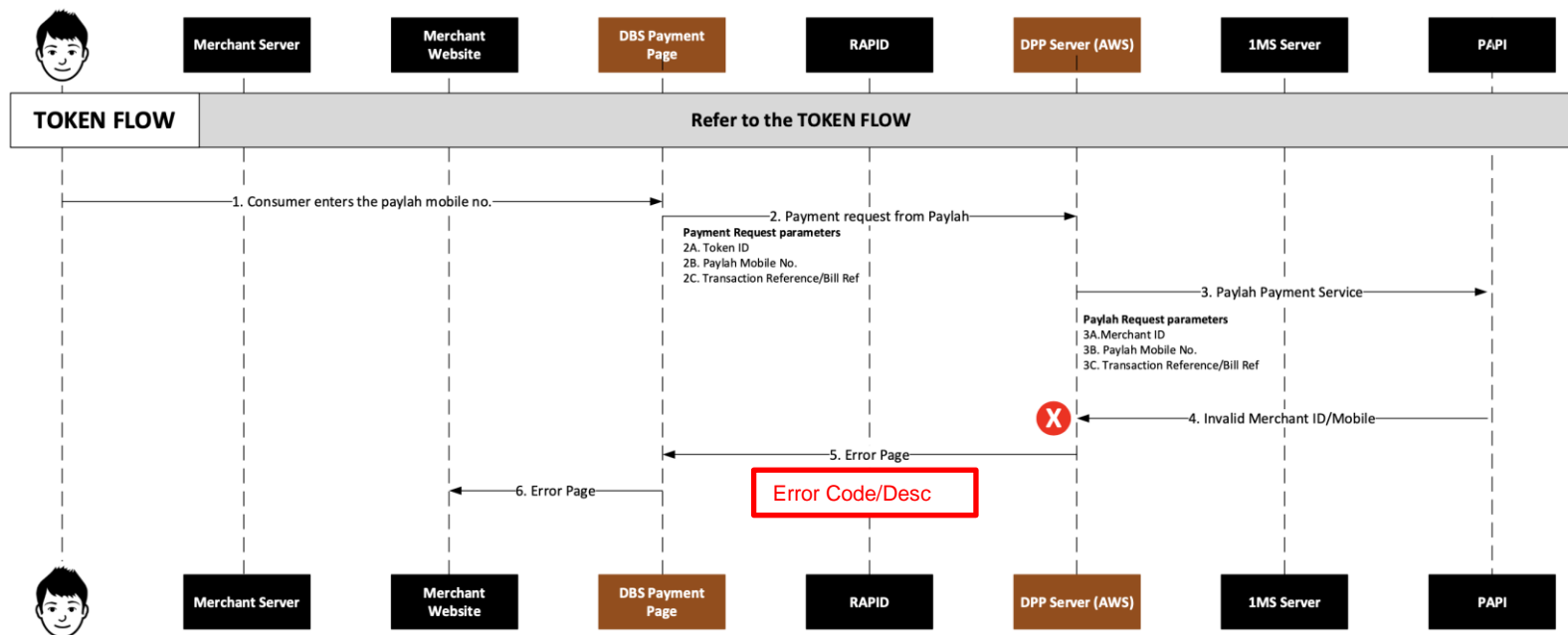


- A. DPP enable 'mobile number' input field after user choose 'PayLah' in Payment-Options Page (Page 5, Item 2). Web Page have basic data check
- B. Refer to Page 4, Item 7
- C. Display payment details, then jump to merchant web, (Page 5, Item 3)
- D. Refer to Page 4, Item 4
- E. Refer to Page 4, Item 5

## Scenario 2: Invalid Merchant Id/Mobile

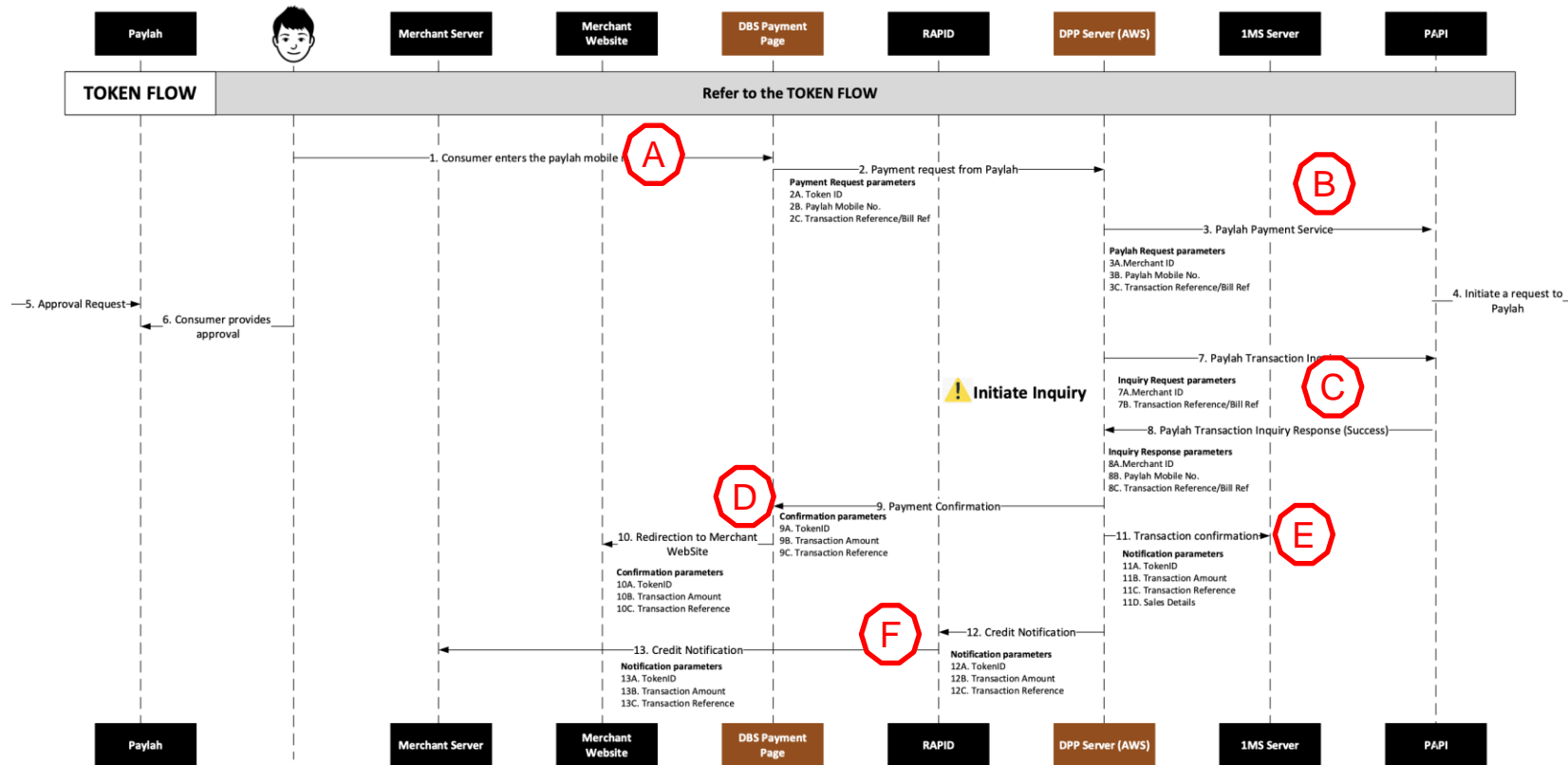
### Paylah Collection for DBS Payment Page (Invalid MerchantID/Mobile)

Proposed Error Code/Desc:  
PL001/Invalid Merchant Id/Mobile



## Scenario 3: Txn Inquiry Success

### Paylah Collection for DBS Payment Page (Txn Inquiry with Success)



- A. DPP enable 'mobile number' input field after user choose 'PayLah' in Payment-Options Page (Page 5, Item 2). Web Page have basic data check
- B. Refer to Page 4, Item 7
- C. Refer to Page 4, Item 8
- D. Display payment details, then jump to merchant web, (Page 5, Item 3)
- E. Refer to Page 4, Item 4
- F. Refer to Page 4, Item 5

Question:

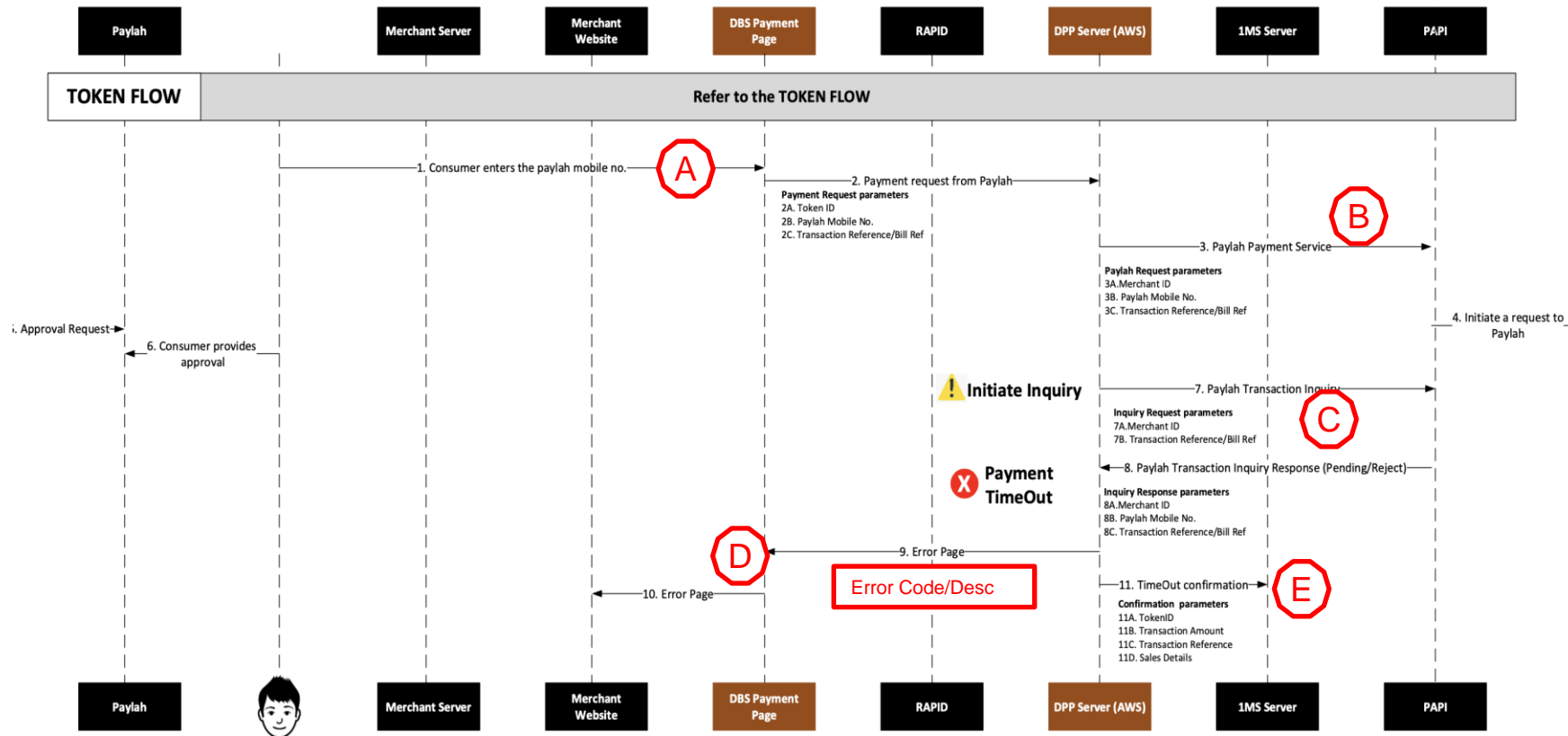
1. How does DPP know when to call PAPI txn inquiry API?





## Scenario 4: Txn Inquiry PNDG/RJCT

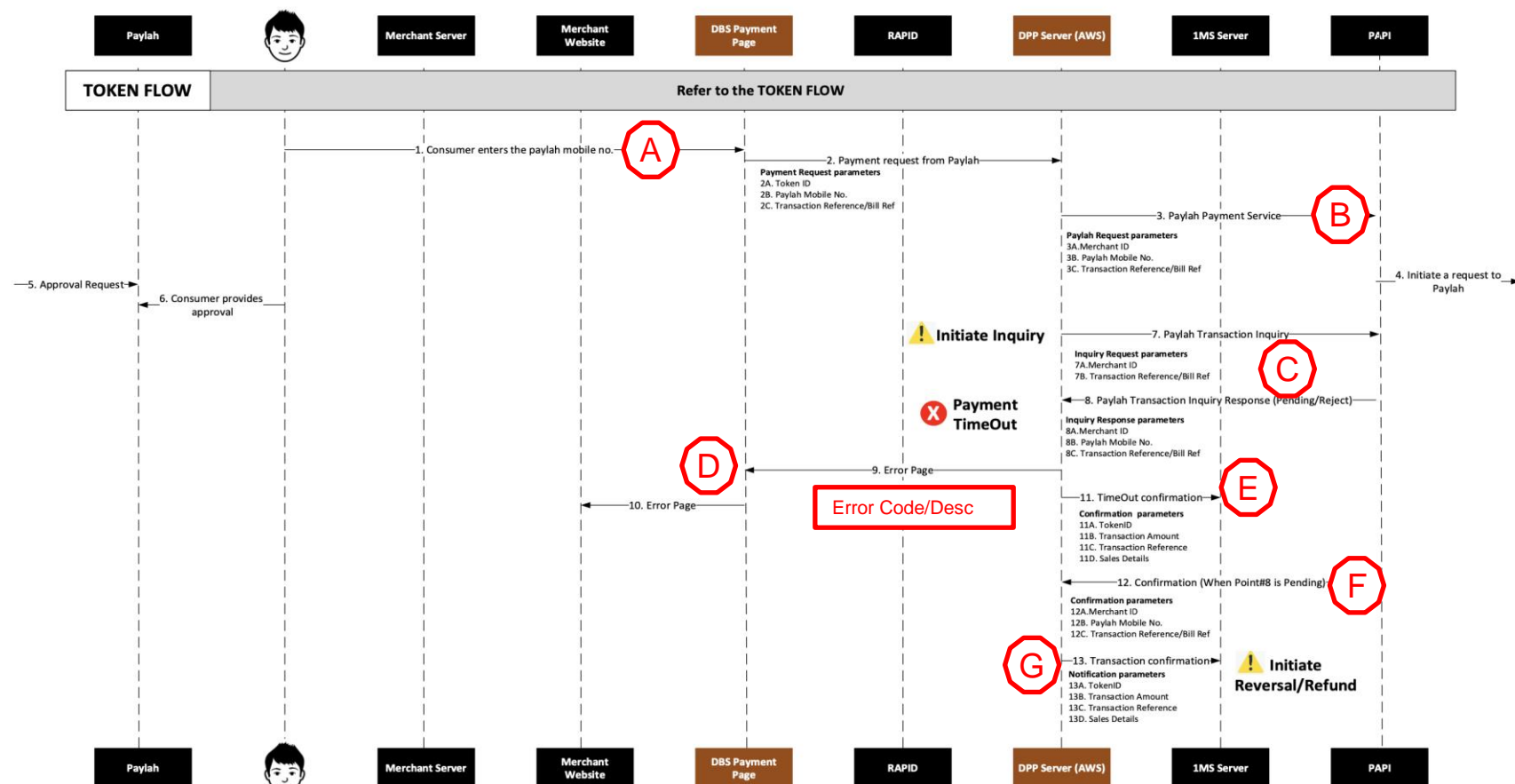
### Paylah Collection for DBS Payment Page (Txn Inquiry with PNDG/RJCT)



- A. DPP enable 'mobile number' input field after user choose 'PayLah' in Payment-Options Page (Page 5, Item 2). Web Page have basic data check
- B. Refer to Page 4, Item 7
- C. Refer to Page 4, Item 8
- D. Proposed Error Code/Desc: PL002/Txn Status: \${txnStatus}
- E. Refer to Page 4, Item 6

## Scenario 5: PAPI Callback After PNDG

### Paylah Collection for DBS Payment Page (Txn Inquiry followed by confirmation)

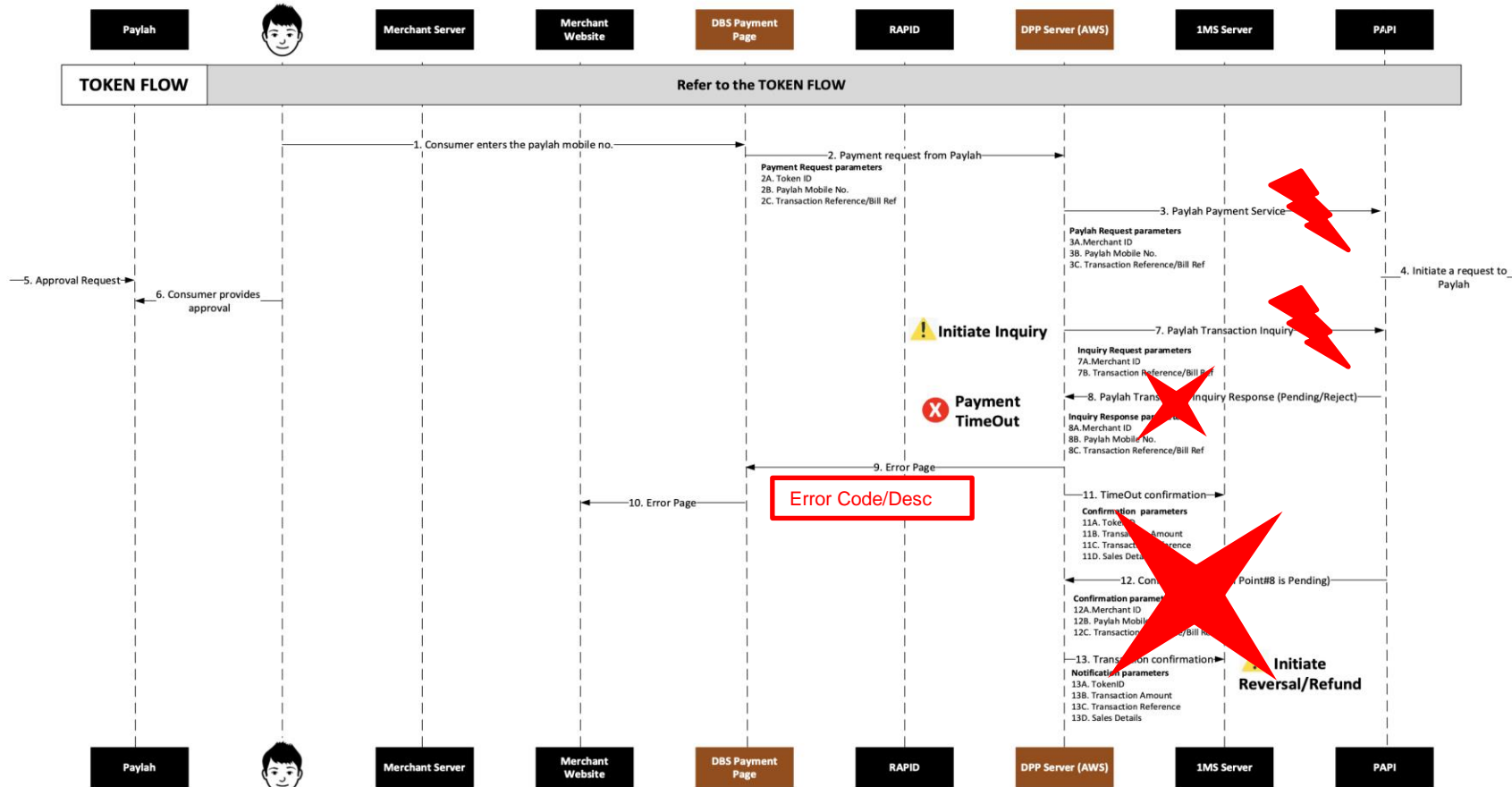


- A. DPP enable 'mobile number' input field after user choose 'PayLah' in Payment-Options Page (Page 5, Item 2). Web Page have basic data check
- B. Refer to Page 4, Item 7
- C. Refer to Page 4, Item 8
- D. Proposed Error Code/Desc: PL002/Txn Status: \${txnStatus}
- E. Refer to Page 4, Item 6
- F. Refer to Page 4, Item 9
- G. Refer to Page 4, Item 4



## Scenario 6: API Timeout

### Paylah Collection for DBS Payment Page (Timeout)



- Proposed Error Code/Desc:  
G001/\${BE API} Timeout
- Step 8, 11, 12 and 13 are not executed

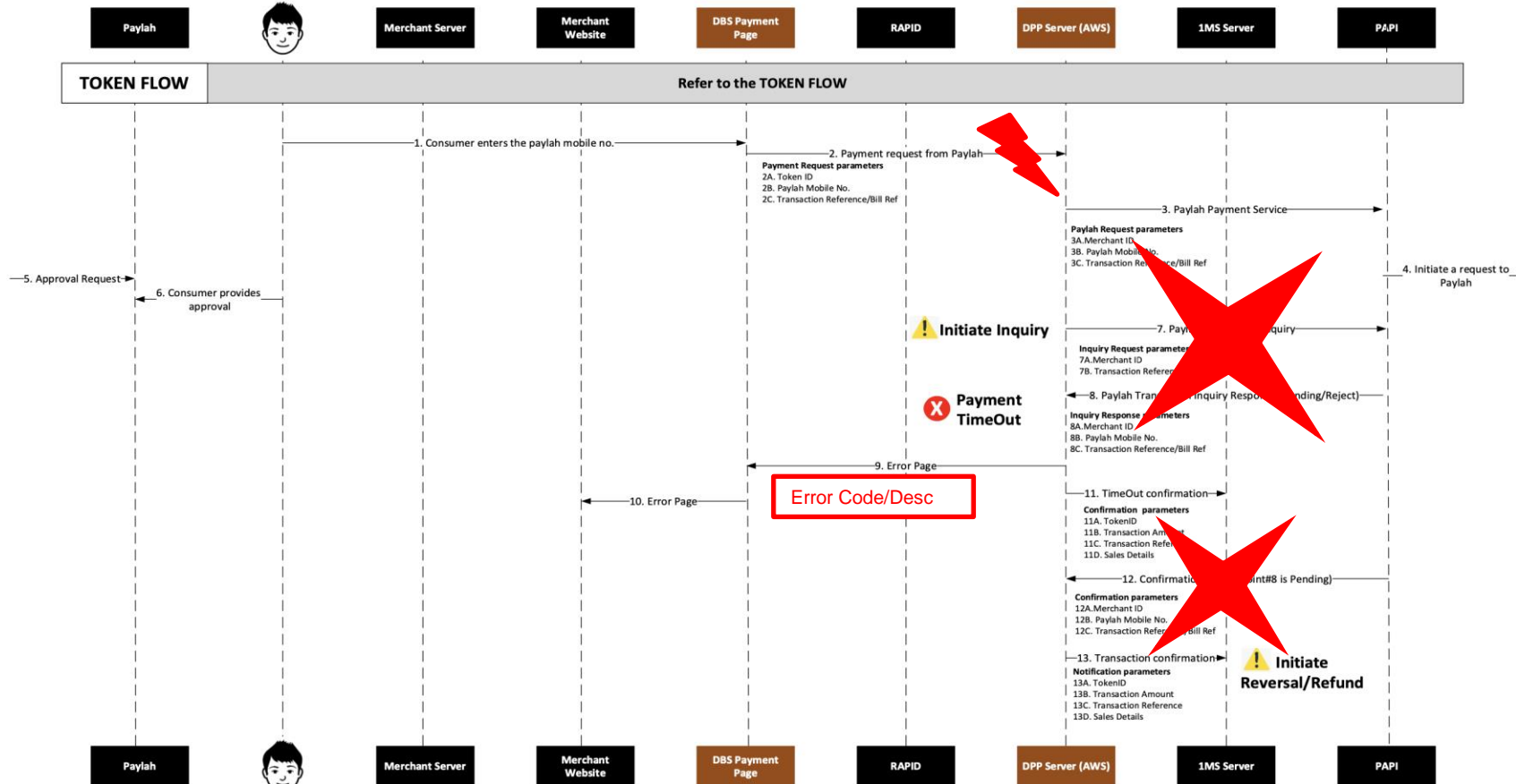
Note:

- DPP does not re-try 1MS validation API if no response happens caused by network interrupt or timeout



## Scenario 7: Data Validation Error

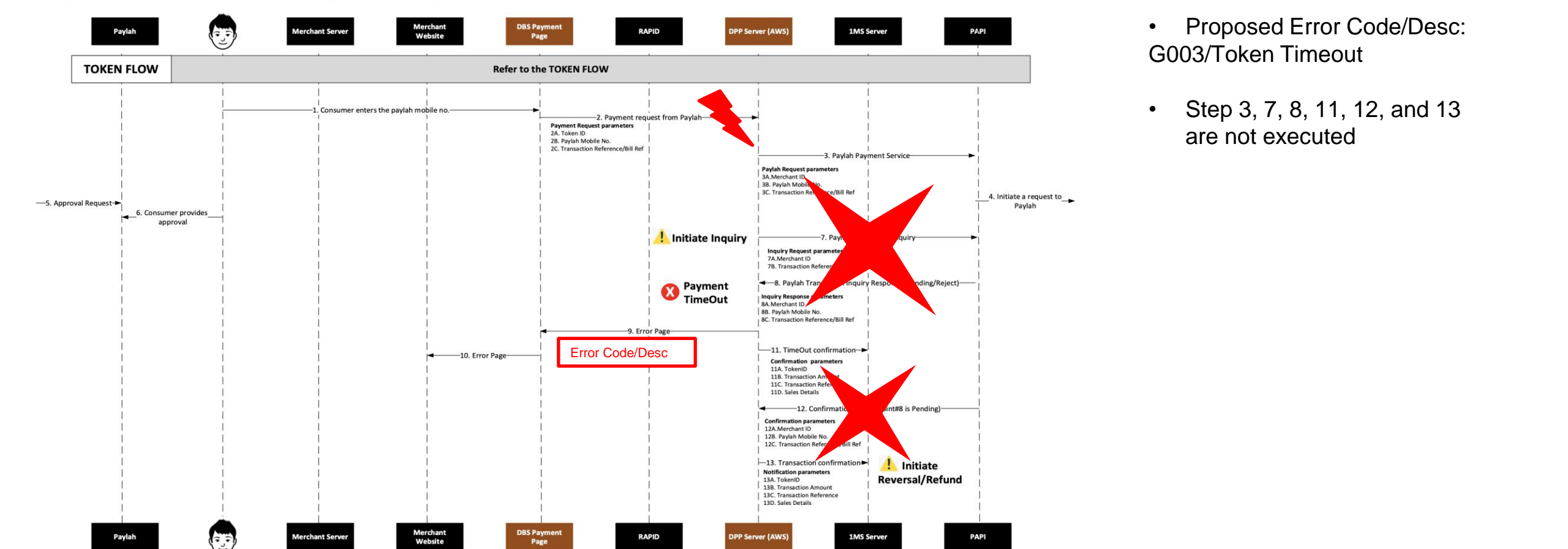
### Paylah Collection for DBS Payment Page (Data Error)



- E.g. Duplicate Data Error
- Proposed Error Code/Desc: G002/Input Data Validation Error
- Step 3, 7, 8, 11, 12, and 13 are not executed

## Scenario 8: Token Timeout

Paylah Collection for DBS Payment Page (Token Timeout)



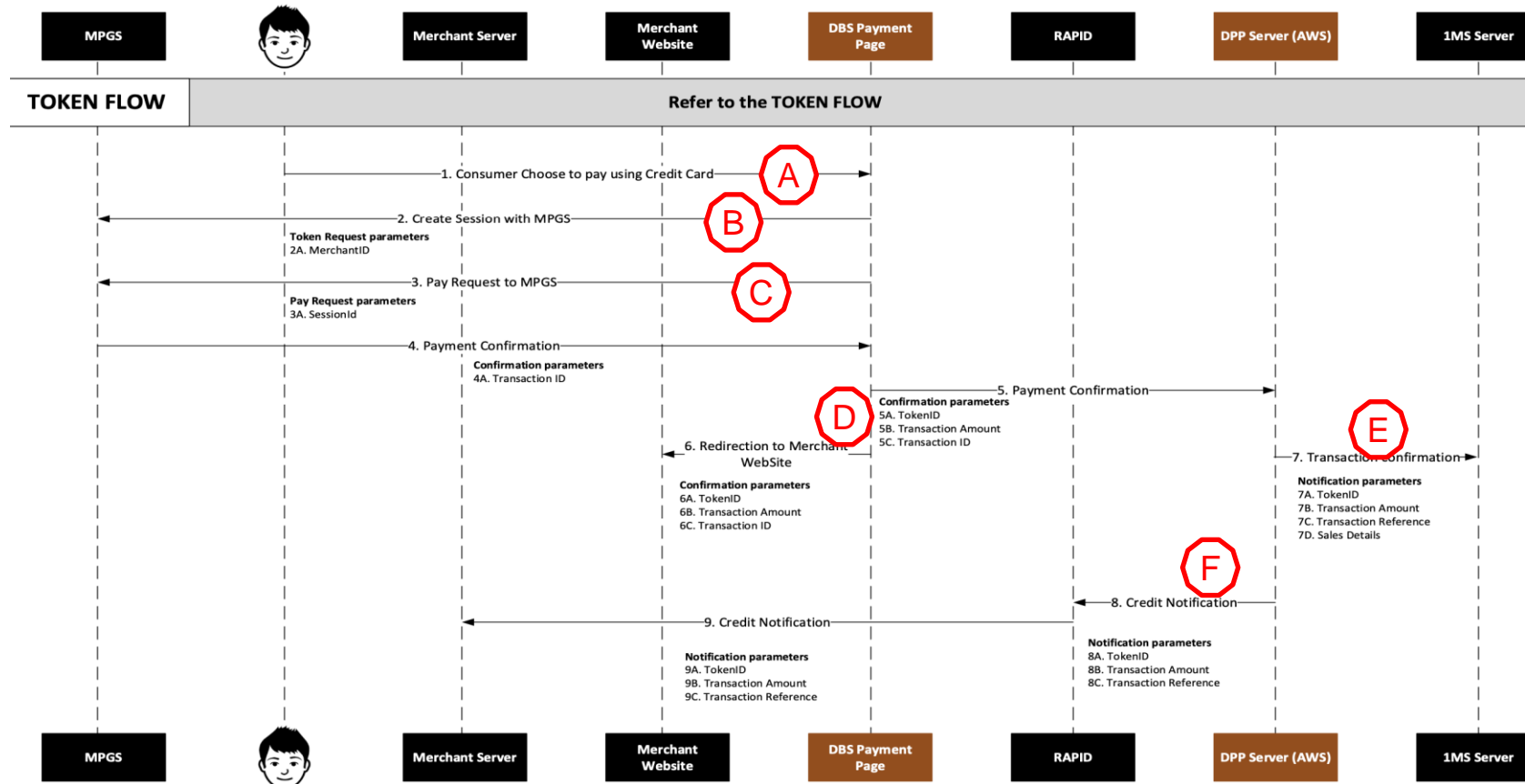
- Proposed Error Code/Desc:  
G003/Token Timeout
- Step 3, 7, 8, 11, 12, and 13  
are not executed

# Card Payment Flow



## Scenario 1: Success

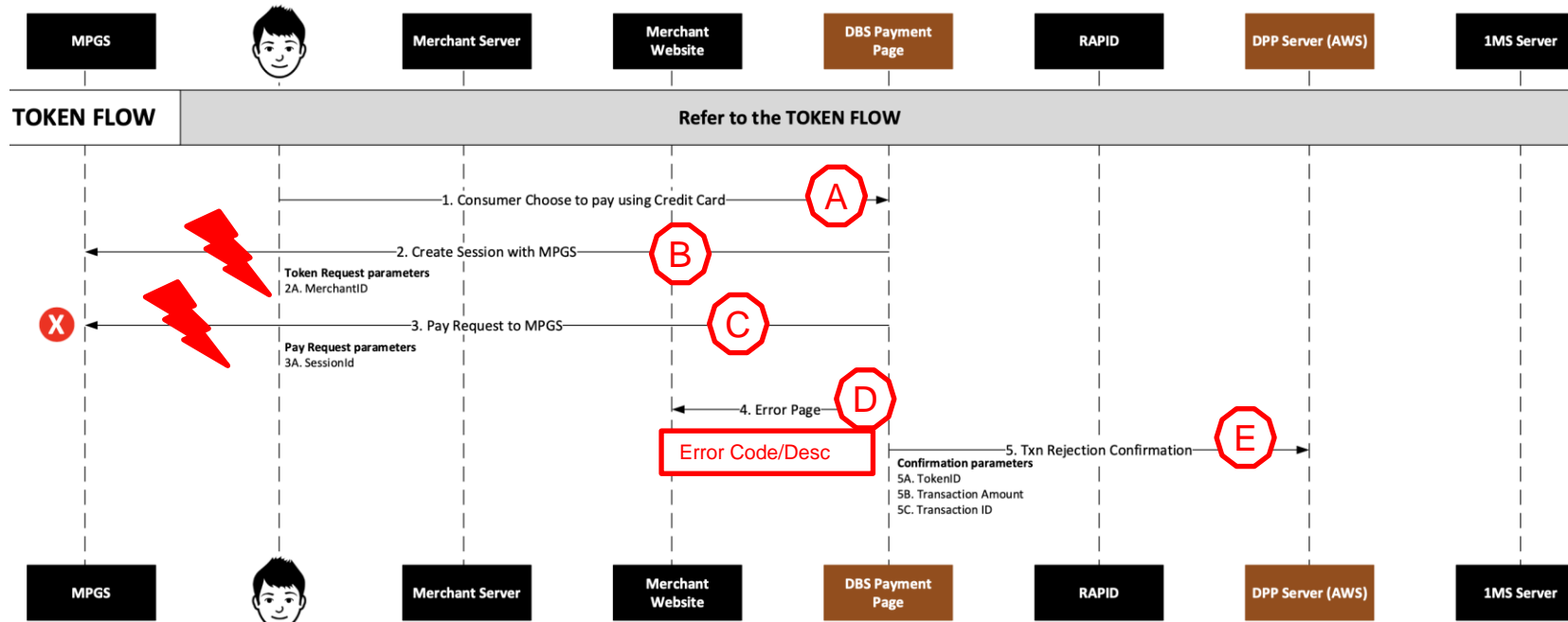
### Card Collection for DBS Payment Page (Success)



- A. DPP trigger MPGS API and enable new page after user choose 'Credit Card' in Payment-Options Page (Page 5, Item 4). Web Page have basic data check
- B. Refer to Page 4, Item 10
- C. Refer to Page 4, Item 11
- D. Display payment details, then jump to merchant web, (Page 5, Item 3)
- E. Refer to Page 5, Item 7
- F. Refer to Page 4, Item 5

## Scenario 2: Negative Response from MPGS

### Card Collection for DBS Payment Page (MPGS Negative Response)

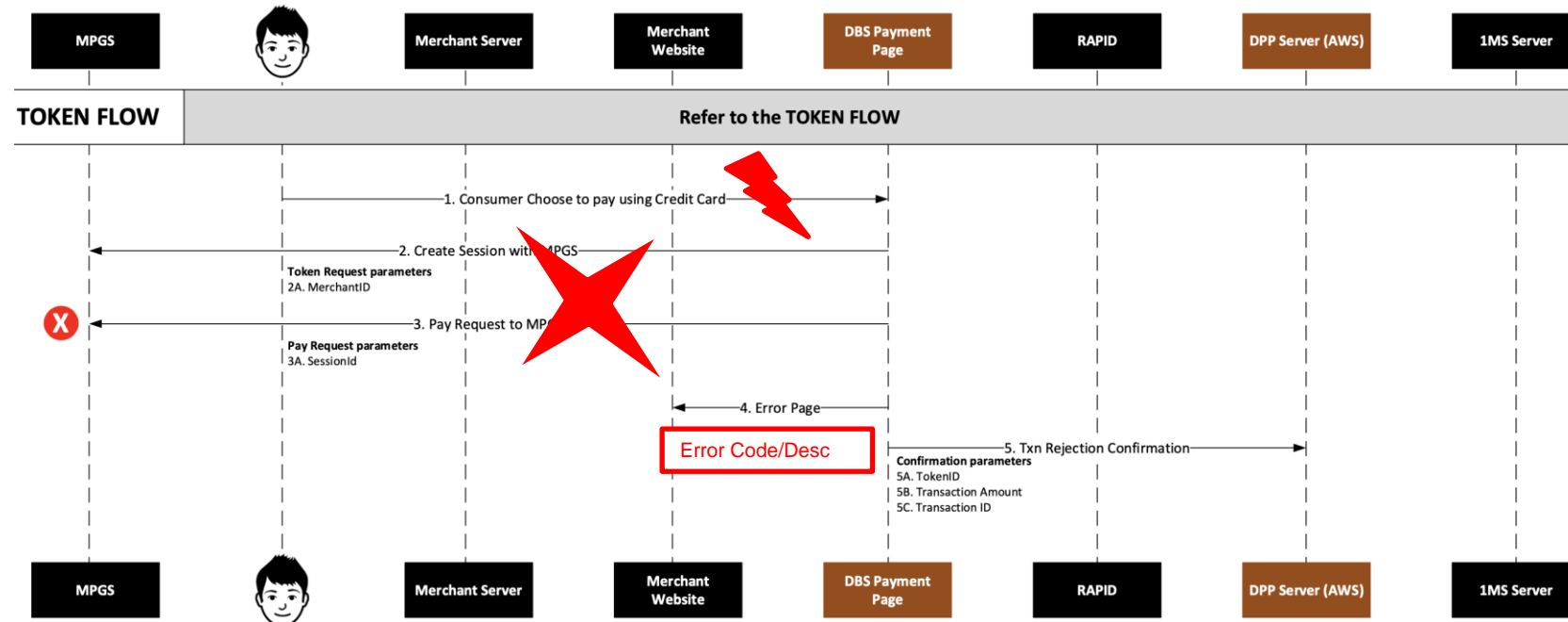


- A. DPP trigger MPGS API and enable new page after user choose 'Credit Card' in Payment-Options Page (Page 5, Item 2)
- B. Proposed Error Code/Desc: CP001/Txn Status: \${result} (Page 4, Item 10)
- C. Proposed Error Code/Desc: CP001/Txn Status: \${error} (Page 4, Item 11)
- D. Refer to Page 4, Item 4
- E. Internal API Call



## Scenario 3: Token Timeout

### Card Collection for DBS Payment Page (Token Timeout)



A. Proposed Error Code/Desc:  
G003/Token Timeout

B. Step 2, 3 and 5 are not executed