SWIFT gpi API v5 Enhancements

July 2021

A strategic channel for the SWIFT community

2bn+
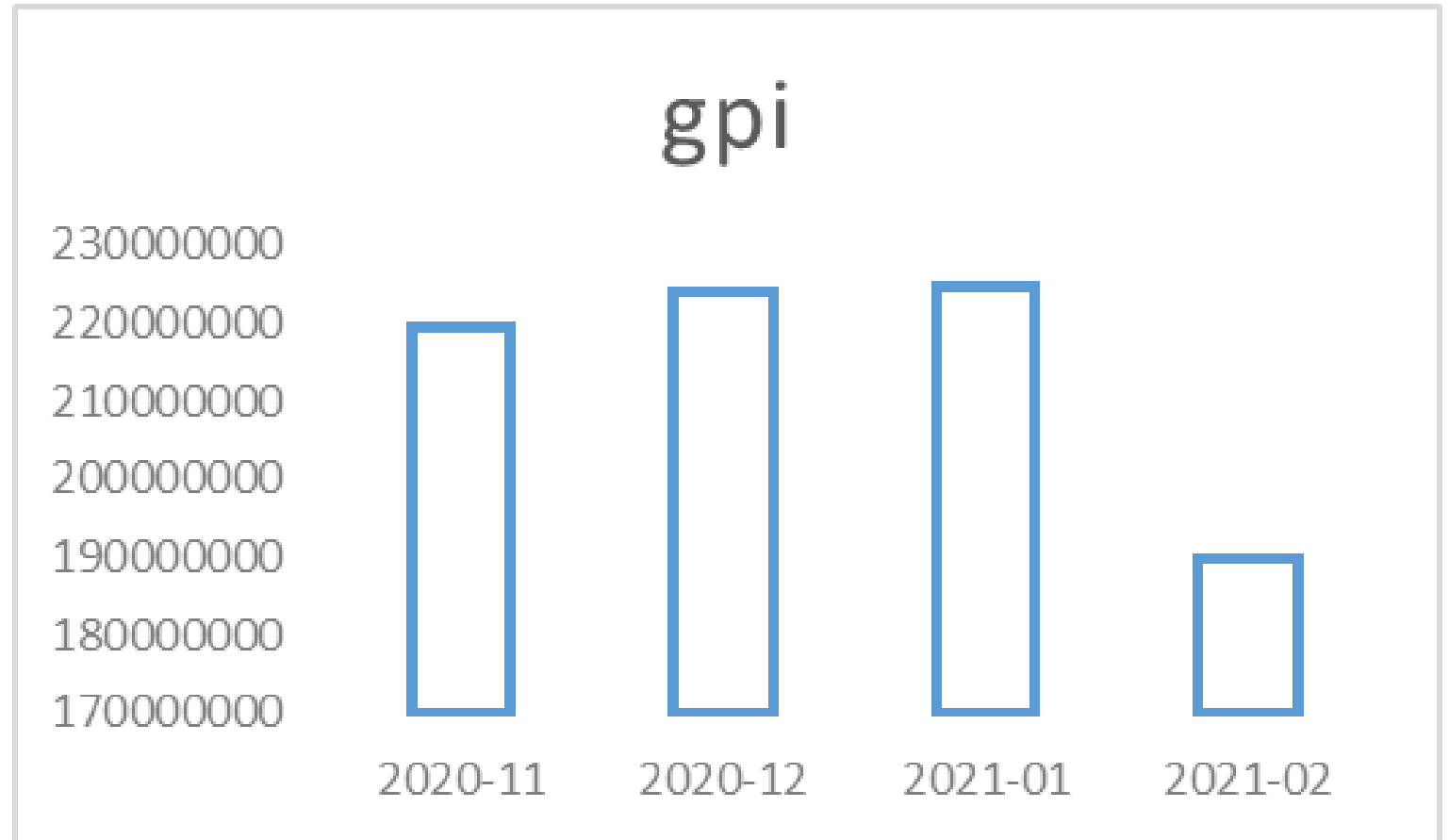
Cumulative API calls in 2020

~175m

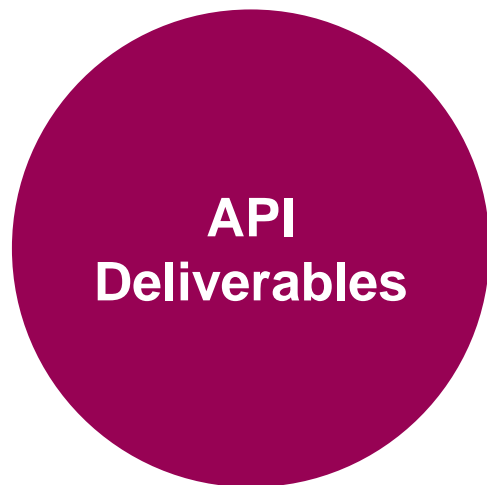**API calls made a month**

400+

API institutional consumers

gpi

230000000	
220000000	
210000000	
200000000	
190000000	
180000000	
170000000	

2020-11   2020-12   2021-01   2021-02

gpi API v5 availability

1. API specifications, schemas and documentation available on SWIFT developer portal:
   https://developer.swift.com

2. **gpi APIs version 3, enters maintenance mode when v5 becomes available in Live in November 2021**
   (end of support on 30 April 2022)

3. **Switching from gpi connector to SDK & Microgateway to consume gpi API v5**

4. Questions and feedback related to the API specifications can be sent to your API onboarding consultant (if subscribed to this service), standard swift.com support channel or developer-support@swift.com

API Deliverables	Q1 2021	June 2021	25 July 2021	21 Nov 2021
	Data Modelling and API Specification	API Specifications published	Pilot	Live
	Done	In progress		

Why choose APIv5?

Payment status update APIs specific to the gpi service level

- Improved data modelling based on the gpi service
- Less cross-service constraints
- Easier maintenance (changes will apply only to the service with new business features, the other APIs are unchanged)
- GET APIs share the same datamodel in all API responses (like in v3/v4)

gpi ISO Readiness (advantages in API v5)

- Alignment of datatypes with ISO 20022 (interoperability)
- Alignment with gpi ISO rulebook
- Alignment with CBPR+/PMI Usage Guidelines (common denominator)
- Alignment of the API with the trck datamodel (interoperability API/messaging)

New features (not available in API v3/4)

- Increased reject return reason code list
- Forwarded To Agent identifiable with national clearing code
- Partial credit confirmation functionality
- Amount inconsistency flag in GET
- …

gpi API v5 – technical highlights

What changes should I expect to make?

	v4	v5
Update Status of Payment Transaction	Single API for: • gCCT, gCOV, gFIT to update transaction status • Status reads for gCCT, gCOV, gFIT, gSRP (status), gCASE • Cancellations (gSRP)	Implement the API for each of gCCT, gCOV, gFIT as required
Get transaction status / Get changed transactions		Implement new API (single API for all status reads and cancellations)
Request cancellation / update status of cancelled transaction		
Connecting to / Consuming the APIs	SWIFT SDK and Microgateway (small number of gpiConnector exceptions)	Install Microgateway or implement SDK Implement back-office API consumption via Microgateway or SDK

gpi API v5

API Consumption remains unchanged for gpi API v5

SWIFT Microgateway Generic self-service API concentrator	**SWIFT Software Developer Kit (SDK)** Zero-footprint API library
From 1 to 6 months effort per API service deployed	From 2 weeks to 3 months, irrespective of the no. of services deployed
Consume any API service on SWIFT	Consume any API service on SWIFT
Shields applications from API security & session protocol	Simplify API technical integration effort
Standalone or embeddable	Multi-tenancy – business flow segregation
Any programming language application	Java based application environment only
Live	**Live**

APIv3/4 vs APIv5 – splitting of Payment Status Request API

	v3	v4		v5					
	Payment Status Request (single API all services)	Payment Status Request (single API all services)	gpi SLVP Payment Status Request	gCCT Payment Status Request	gCOV Payment Status Request	gFIT Payment Status Request	UC Payment Status Request	gCCTINST Payment Status Request	gSLVP Payment Status Request
gCCT	✓	✓		✓					
gCOV	✓	✓			✓				
gFIT		✓				✓			
UC	✓	✓					✓		
gCCT Instant	✓	✓						✓	
gpi SLVP (simple)			✓						✓
ISO MX channel	N/A	N/A	N/A	trck UG gCCT	trck UG gCOV	trck UG gFIT	trck UG UC	trck UG gCCTINST	trck UG gSLVP

Change to make in v5 • Implement separate API per service

APIv3/4 vs APIv5 – no splitting of other APIs

V3 & V4 & V5	gCCT	gCOV	gFIT	UC	gCCTINST	gSLVP
GET Transactions Details (UETR-search)	✓	✓	✓	✓	✓	✓**
GET Changed Transactions (time-range)	✓	✓	✓	✓	✓	✓**
PUT Request Cancellation (gSRP)	✓		✓*		✓	✓
PUT Update Status Cancelled Transaction (gSRP)	✓		✓*		✓	✓

*only v5
**In V3, Service Level G009 is converted to G001

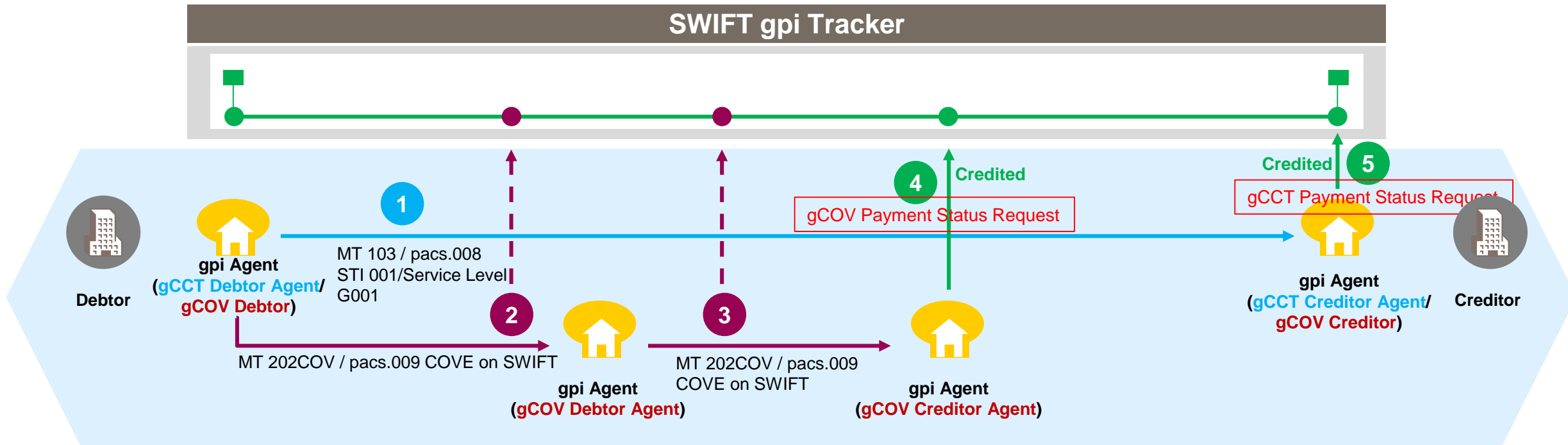**Change to make in v5** • Implement new version of APIs
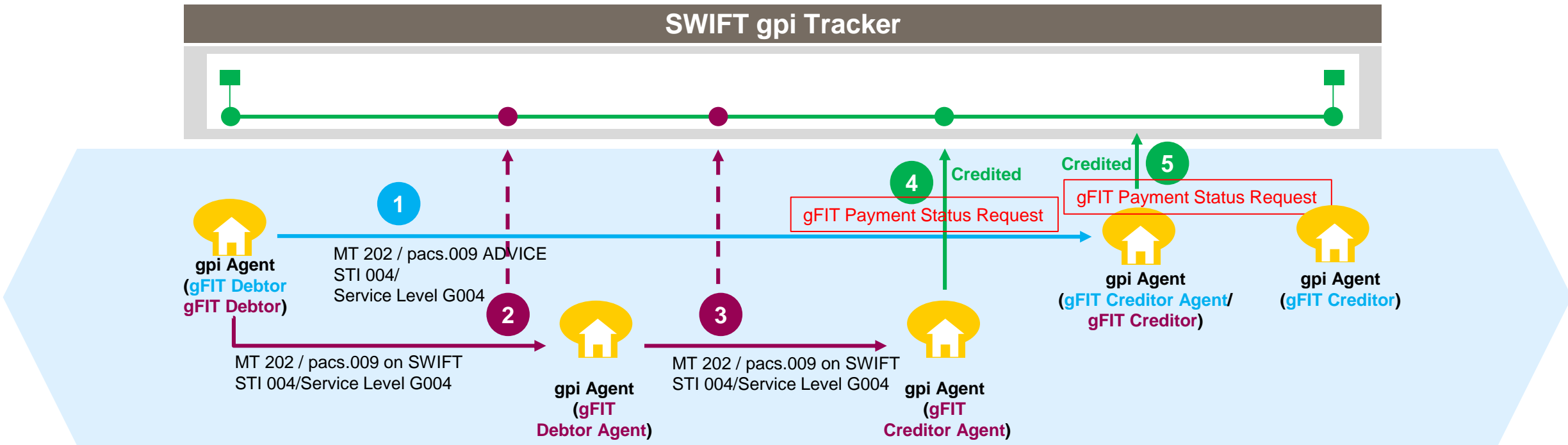
Split Payment Status Request APIs – gCCT/gCOV

Type of operation	v3/v4	v5
Split APIs		
gpi Agent updates status of gCCT transaction (f.ex. Step 5)	Send PaymentStatusRequest API with UpdatePaymentScenario CCTR	Send gCCT PaymentStatusRequest API
gpi Agent updates status of gCOV transaction (f.ex. Step 4)	Send PaymentStatusRequest API with UpdatePaymentScenario COVE	Send gCOV PaymentStatusRequest API

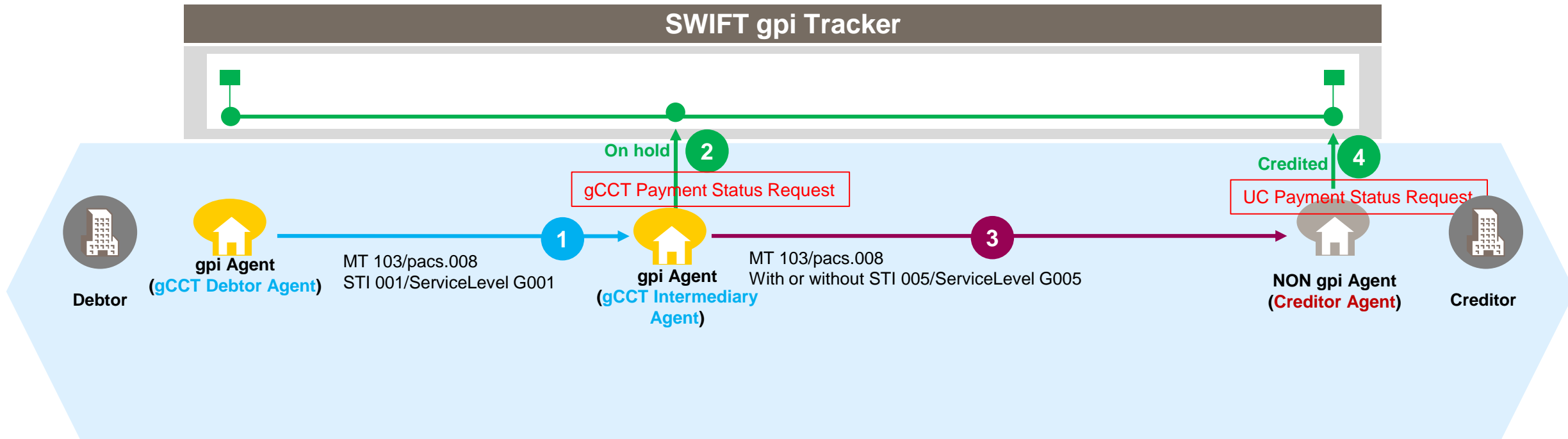# Split Payment Status Request APIs – gFIT & gFIT cover-like transaction

SWIFT gpi Tracker

1. MT 202 / pacs.009 ADVICE STI 004/ Service Level G004
2. MT 202 / pacs.009 on SWIFT STI 004/Service Level G004
3. MT 202 / pacs.009 on SWIFT STI 004/Service Level G004
4. Credited — gFIT Payment Status Request
5. Credited — gFIT Payment Status Request

gpi Agent (**gFIT Debtor** / **gFIT Debtor**)
gpi Agent (**gFIT Debtor Agent**)
gpi Agent (**gFIT Creditor Agent**)
gpi Agent (**gFIT Creditor Agent** / **gFIT Creditor**)
gpi Agent (**gFIT Creditor**)

Split APIs	Type of operation	v4 (v3 not applicable)	v5
	gpi Agent updates status of gFIT transaction (step 4 and 5)	Send PaymentStatusRequest API with UpdatePaymentScenario FCTR	Send gFIT PaymentStatusRequest API

Split Payment Status Request APIs – gCCT/UC

Type of operation	v3/v4	v5
gpi Agent updates status of gCCT transaction (f.ex. step 2)	Send PaymentStatusRequest API with Service Level* 001 and UpdatePaymentScenario CCTR	Send gCCT PaymentStatusRequest API
NON gpi Agent updates status of transaction (f.ex. Step 4)	Send PaymentStatusRequest API without Service Level* and with UpdatePaymentScenario CCTR	Send UC PaymentStatusRequest API

Split APIs

*called BusinessService in v4 spec

Comparison between v4 and v5

Status Confirmations 1/2

This API is a status confirmation update to inform the Tracker about the updated status of a given payment.

| PUT /payments/{uetr}/status Status Confirmations. | No change | PUT /payments/{uetr}/status Status Confirmations. |

- Separate specifications by service level
- No change to path/URI from v4 to v5 (remains /payments/{uetr}/status)
- Consistent path across each API specification by service level

Data model changes for API request:
- Party Identification: replacement of AnyBIC with BICFI.
- BusinessService renamed into ServiceLevel and use of 4-character codes (f.ex. G001, G004, etc, …). ISO alignment
- UpdatePaymentScenario was simplified to PaymentScenario.
- Payment Scenario element changed logic: in v4 used to select type of update (CCTR or COVE or FCTR). In v5, no longer needed for this purpose as we have separate specifications by service level. In V5, element allows for update on normal payment transaction versus update on return transaction (future).
- All identifications are 35 characters (instruction identification & end to end identification). ISO alignment
- TransactionStatusReason element only used for reasons linked to status ACSP.
- New element RejectReturnReason to be used for reasons linked to status RJCT.
- Number of reject return reasons increased. ISO alignment
- Return boolean removed (returns for SR2022 => presence RejectReturnReason in combination with certain transaction statuses/transaction status reasons will indicate update on return transaction).

Status Confirmations 2/2

This API is a status confirmation update to inform the Tracker about the updated status of a given payment.

PUT `/payments/{uetr}/status` Status Confirmations.

No change

PUT `/payments/{uetr}/status` Status Confirmations.

Request (continued)

- FundsAvailable element renamed into ConfirmedDate.
- Confirmed Date only used for ACCC.
- New element TransactionStatusDate used for ACSP/G000 & G001 and RJCT.
- DateTime element allow only UTC/Zulu and local time with UTC offset.
- StatusOriginator renamed into TrackerInformingParty.
- ForwardedToAgent renamed into InstructedAgent. ISO alignment
- InstructedAgent can be identified with a ClearingSystemMemberIdentification (alternative to BIC). ISO alignment
- ChargesInformation now includes the identification of the Agent taking the charge (only applicable to gCCT/UC/gCCTINST/gSLVP) ISO alignment
- All amounts are 18 digits (excluding decimal dot) ISO alignment
- Foreign Exchange Details structure was flattened.
- New elements RemainingToBeConfirmedAmount and PreviouslyConfirmedAmount (only applicable to gCCT/gCCTINST/gSLVP)
- ConfirmedAmount only used for ACCC
- InterbankSettlementAmount introduced to be used for ACSP/G000&G001. Optionally for RJCT, ACSP/G002&G003&G004. ISO alignment

Response

- No change to response for gCCT, gCOV, gFIT, UC, gCCTINST
- gSLVP response may provide a warning message when request is invalid but accepted (e.g. when charge bearer not equal to 'SHAR')

Get Payment Transaction Details

Payment query to get detailed information regarding a given payment. It requires the UETR to be known

GET /payments/{uetr}/transactions

No change

GET /payments/{uetr}/transactions

Request
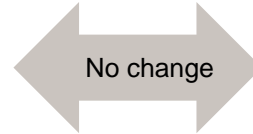
- No change to request.

Response

- All data model changes applicable to Status Confirmations (previous slide) also applicable to GET APIs
- Additional data model changes:
    - Datatype timestamps changed to UTC/Zulu (tracker by default delivers UTC/Zulu)
    - New element AmountInconsistency
    - New code SLEV in ChargeBearer element ISO alignment
    - Inclusion of new parties: ISO alignment
        o PreviousInstructingAgent1-2-3
        o IntermediaryAgent2-3
    - Network references increased to Max50Text.
    - Seven new Tracker Event Types:
        o Three codes for cancellation of FIT
        o Four codes for cover of a FIT
- Renaming of certain elements (f.ex. Sender Acknowledgement Receipt changed to Sender Acknowledgement Receipt Date Time)

Get Changed Payment Transactions

This API is a delta query to get all payment update information starting from a given date and time

GET /payments/changed/transactions

No change

GET /payments/changed/transactions

Request

- Query Parameter 'PaymentScenario' extended with 3 new values:
  - FCOV Cover Financial Institution Credit Transfer
  - CTCN Customer Credit Transfer Cancellation
  - FTCN Financial Institution Credit Transfer Cancellation

Response

- All data model changes applicable to Status Confirmations (previous slide) also applicable to GET APIs
- Additional data model changes:
  - Datatype timestamps changed to UTC/Zulu (tracker by default delivers UTC/Zulu)
  - New element AmountInconsistency
  - New code SLEV in ChargeBearer element
  - Inclusion of new parties:
    - o PreviousInstructingAgent1-2-3
    - o IntermediaryAgent2-3
  - Network references increased to Max50Text.
  - Seven new Tracker Event Types:
    - o Three codes for cancellation of FIT
    - o Four codes for cover of a FIT
  - Renaming of certain elements (f.ex. Sender Acknowledgement Receipt changed to Sender Acknowledgement Receipt Date Time)

Get Payment Transaction Details/Get Changed Payment Transactions

GET	/payments/{uetr}/transactions

GET	/payments/changed/transactions

Inclusion of new parties (detail): ISO alignment
- PreviousInstructingAgent1-2-3
- IntermediaryAgent2-3

V5

> Instructing Reimbursement Agent [0,1] : BICFIDec2014Identifier
> Previous Instructing Agent 1 [0,1] : BICFIDec2014Identifier
> Previous Instructing Agent 2 [0,1] : BICFIDec2014Identifier
> Previous Instructing Agent 3 [0,1] : BICFIDec2014Identifier
> Intermediary Agent 1 [0,1] : BICFIDec2014Identifier
> Intermediary Agent 2 [0,1] : BICFIDec2014Identifier
> Intermediary Agent 3 [0,1] : BICFIDec2014Identifier
> Debtor [0,1] : BICFIDec2014Identifier
> Debtor Agent [0,1] : BICFIDec2014Identifier
> Creditor Agent [0,1] : BICFIDec2014Identifier
> Creditor [0,1] : BICFIDec2014Identifier
> Creditor Account [0,1] : AccountIdentification47Choice
∨ Underlying Customer Credit Transfer [0,1] : CreditTransferTransaction40
  > Debtor Agent [0,1] : BICFIDec2014Identifier
  > Previous Instructing Agent 1 [0,1] : BICFIDec2014Identifier
  > Previous Instructing Agent 2 [0,1] : BICFIDec2014Identifier
  > Previous Instructing Agent 3 [0,1] : BICFIDec2014Identifier
  > Intermediary Agent 1 [0,1] : BICFIDec2014Identifier
  > Intermediary Agent 2 [0,1] : BICFIDec2014Identifier
  > Intermediary Agent 3 [0,1] : BICFIDec2014Identifier
  > Creditor Agent [0,1] : BICFIDec2014Identifier

V4

> Serial Parties [0,1] : CustomerCreditTransferTransactionParties3
  > Debtor [0,1] : AnyBICDec2014Identifier
  > Debtor Agent [0,1] : AnyBICDec2014Identifier
  > Intermediary Agent 1 [0,1] : AnyBICDec2014Identifier
  > Instructing Reimbursement Agent [0,1] : AnyBICDec2014Identifier
  > Creditor Agent [0,1] : AnyBICDec2014Identifier
  > Creditor [0,1] : AnyBICDec2014Identifier
  > Creditor Account [0,1] : AccountIdentification47Choice
> Cover Parties [0,1] : CreditTransferTransactionParties2
  > Debtor [0,1] : AnyBICDec2014Identifier
  > Debtor Agent [0,1] : AnyBICDec2014Identifier
  > Intermediary Agent 1 [0,1] : AnyBICDec2014Identifier
  > Creditor Agent [0,1] : AnyBICDec2014Identifier
  > Creditor [0,1] : AnyBICDec2014Identifier

Cancel Transaction

Requesting cancellation of a transaction.

Request

- BusinessService renamed into ServiceLevel with code G002 ISO alignment
- OriginalInstructionIdentification 35 char ISO alignment
- New element OriginalMessageNameIdentification with codeset:
  - pacs.008 -Identifies a customer credit transfer payment (MT 103, pacs.008, ...)
  - pacs.009 -Identifies a financial institution credit transfer payment (MT 202, MT 205, pacs.009 CORE, ...).

Response

- No change

Transaction Cancellation Status

Updating the status of a transaction cancellation.

PUT	/payments/{uetr}/cancellation/status

No change

PUT	/payments/{uetr}/cancellation/status

Request

- BusinessService renamed into ServiceLevel with code G002 ISO alignment
- StatusOriginator renamed into TrackerInformingParty
- ForwardedToAgent renamed into InstructedAgent ISO alignment

Response

- No change

Comparison between v3 and v5

Status Confirmations (1/3)

This API is a status confirmation update to inform the Tracker about the updated status of a given payment.

- Separate specifications by service level
- Change to path/URI from v3 to v5 (from "/payment/status" TO "/payments/{uetr}/status")
- In v5, consistent path across each API specification by service level

Request
- Party Identification: replacement of AnyBIC with BICFI.
- BusinessService renamed into ServiceLevel and use of 4-character codes (f.ex. G001, G004, etc, …).
- UpdatePaymentScenario was simplified to PaymentScenario.
- Payment Scenario element changed logic: in v3 used to select type of update (CCTR or COVE). In v5, no longer needed for this purpose as we have separate specifications by service level. In V5, element allows for update on normal payment transaction versus update on return transaction (future).
- UETR required in URI (as shown above) and removed from request body.
- New field added: end_to_end_identification (only gCOV/gFIT).
- All identifications are 35 characters (instruction identification & end to end identification).

Status Confirmations (2/3)

This API is a status confirmation update to inform the Tracker about the updated status of a given payment.

| PUT | /payments/status Status Confirmations. | → | PUT | /payments/{uetr}/status Status Confirmations. |

Request (continued)

- payment_status_request object wrapping the request parameters removed.
- payment_status object removed and inner attributes moved up one level.
- transaction_status object replaced with transaction_status and transaction_status_reason attributes.
- TransactionStatusReason element only used for reasons linked to status ACSP.
- New element RejectReturnReason to be used for reasons linked to status RJCT.
- Number of reject return reasons increased (16 to 51).
- Return boolean removed (returns for SR2022 => presence RejectReturnReason in combination with certain transaction statuses/transaction status reasons will indicate update on return transaction).
- FundsAvailable element renamed into ConfirmedDate.
- Confirmed Date only used for ACCC.
- New element TransactionStatusDate used for ACSP/G000 & G001 and RJCT.
- DateTime element allow only UTC/Zulu and local time with UTC offset.
- StatusOriginator renamed into TrackerInformingParty.
- ForwardedToAgent renamed into InstructedAgent.
- InstructedAgent can be identified with a ClearingSystemMemberIdentification (alternative to BIC).

Status Confirmations (3/3)

This API is a status confirmation update to inform the Tracker about the updated status of a given payment.

| PUT | /payments/status Status Confirmations. | ➡️ | PUT | /payments/{uetr}/status Status Confirmations. |

Request (continued)

- ChargesInformation now includes the identification of the Agent taking the charge (only applicable to gCCT/UC/gCCTINST/gSLVP)

- All amounts are 18 digits (excluding decimal dot)

- Foreign Exchange Details structure was flattened

- New elements RemainingToBeConfirmedAmount and PreviouslyConfirmedAmount (only applicable to gCCT/gCCTINST/gSLVP)

- ConfirmedAmount only used for ACCC

- InterbankSettlementAmount introduced to be used for ACSP/G000&G001. Optionally for RJCT, ACSP/G002&G003&G004.

Response

- The successful response body is removed. The API responds with 200 OK for successful tracker updates.

- gSLVP response may provide a warning message when request is invalid but accepted (e.g. when charge bearer not equal to 'SHAR')

Pdf specification – constraints

The v5 pdf specification of each PUT API includes an exhaustive overview of the cross-element complex rules that are validated by the application.

PUT **/payments/{uetr}/status** Status Confirmations.

Also available on the
Developer Portal

C4 **gCCT_ChargeBearer_CRED_ChargesInformation Rule**

If ChargeBearer is present, and if ChargeBearer is CRED, then ChargesInformation must be present (even if no deduct was taken).

```
On Condition
    /ChargeBearer is present
 And    /ChargeBearer is equal to value 'BorneByCreditor'
Following Must be True
    /ChargesInformation[*] Must be present
```

C5 **gCCT_ChargeBearer_DEBT_ChargesInformation Rule**

If ChargeBearer is present, and if ChargeBearer is DEBT, then ChargesInformation is not allowed.

```
On Condition
    /ChargeBearer is present
 And    /ChargeBearer is equal to value 'BorneByDebtor'
Following Must be True
    /ChargesInformation[*] Must be absent
```

C6 **gCCT_ChargeBearer_SHAR_ChargesInformation Rule**

If ChargeBearer is SHAR, then ChargesInformation may be present.

Get Payment Transaction Details

Payment query to get detailed information regarding a given payment. It requires the UETR to be known

`GET /payments/{uetr}/transactions` → `GET /payments/{uetr}/transactions`

Request
- No change to request

Response
- All data model changes applicable to Status Confirmations (previous slide) also applicable to GET APIs
- Additional data model changes:
  - Datatype timestamps changed to UTC/Zulu (tracker by default delivers UTC/Zulu)
  - New element AmountInconsistency
  - New code SLEV in ChargeBearer element
  - Inclusion of new parties:
    - PreviousInstructingAgent1-2-3
    - IntermediaryAgent2-3
  - Network references increased to Max50Text.
  - 14 new Tracker Event Types:
    - One code for FIT payment
    - Three codes for cancellation of FIT
    - Two codes for cover of a FIT
    - Eight codes for return
- Renaming of certain elements (f.ex. Sender Acknowledgement Receipt changed to Sender Acknowledgement Receipt Date Time)

Get Changed Payment Transactions

This API is a delta query to get all payment update information starting from a given date and time

`GET` `/payments/changed/transactions` → `GET` `/payments/changed/transactions`

Request

- Query Parameter 'PaymentScenario' extended with 3 new values:
    - FCOV Cover Financial Institution Credit Transfer
    - CTCN Customer Credit Transfer Cancellation
    - FTCN Financial Institution Credit Transfer Cancellation

Response

- All data model changes applicable to Status Confirmations (previous slide) also applicable to GET APIs
- Additional data model changes:
    - Datatype timestamps changed to UTC/Zulu (tracker by default delivers UTC/Zulu)
    - New element AmountInconsistency
    - New code SLEV in ChargeBearer element
    - Inclusion of new parties:
        o PreviousInstructingAgent1-2-3
        o IntermediaryAgent2-3
    - Network references increased to Max50Text.
    - 14 new Tracker Event Types:
        o One code for FIT payment
        o Three codes for cancellation of FIT
        o Two codes for cover of a FIT
        o Eight codes for return
    - Renaming of certain elements (f.ex. Sender Acknowledgement Receipt changed to Sender Acknowledgement Receipt Date Time)

Get Invalid Events

Query to get invalid events for payment transactions within a given time frame

GET /payments/events/invalid Get Invalid Events.

Get Invalid Events removed due to rare usage.

Cancel Transaction

Requesting cancellation of a transaction.

PUT `/payments/cancellation` Cancel Transaction.

➡

PUT `/payments/{uetr}/cancellation` Cancel Transaction.

Request

- UETR required in URI (as shown above) and removed from request body.
- cancel_transaction_request object wrapping the request removed.
- In From, AnyBIC replaced by BICFI.
- underlying_cancellation_details flattened; cancellation_reason_information attribute and indemnity_agreement attribute moved up to root object.
- BusinessService renamed into ServiceLevel with code G002
- OriginalInstructionIdentification 35 char
- New element OriginalMessageNameIdentification with codeset:
    - pacs.008 -Identifies a customer credit transfer payment (MT 103, pacs.008, ...)
    - pacs.009 -Identifies a financial institution credit transfer payment (MT 202, MT 205, pacs.009 CORE, ...).

Response

- The successful response body is removed. The API responds with 200 OK for successful tracker updates.

Transaction Cancellation Status

Updating the status of a transaction cancellation.

PUT	/payments/cancellation/status

➡️

PUT	/payments/{uetr}/cancellation/status

Request
- UETR required in URI (as shown above) and removed from request body.
- transaction_cancellation_status_request object wrapping the request removed.
- In From, AnyBIC replaced by BICFI.
- underlying_cancellation_details flattened; investigation_execution_status and investigation_execution_status_reason attributes moved up to root object.
- BusinessService renamed into ServiceLevel with code G002
- StatusOriginator renamed into TrackerInformingParty
- ForwardedToAgent renamed into InstructedAgent

Response
- The successful response body is removed. The API responds with 200 OK for successful tracker updates.