Reconciliation and Settlement Framework v2.0

Version Number: 2.0
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Version History

Revision Date	Version	Author	Description of Change
02/08/2024	draft- 2.0.0	Rishabh	RSF 2.0 framework documented covering the settlement process through the settlement agency
06/09/2024	draft-2.0.0	Rishabh	Updated the requirements to include Inter NP reconciliation process
20/12/2024	release-2.0.0	Rishabh	Updated the on_recon API specification to include settlement date Updated the recon flow (use case 2.1) Added example illustration for logistics transactions
25/03/2024	release-2.0.0	Rishabh	Added refund reversal flow (use case 3.1) with payload example flows in developer guide

1 Checklist

#	Requirements Considered	Requirement Status (Done, In Progress, NA)
1	BRD	Done
2	Sequence + Workflow Diag.	In progress
3	Taxonomy	TBD
4	Error codes	Done
5	TLC terms	NA
6	Enums for attributes (viz. order/ fulfilment state)	Done
7	Reporting and Analytics Requirements	TBD
8	Enums for IGM categories/ sub-categories	Done
9	Mock seller/ Sandbox/ Ref App(s) requirement	Done
10	Backward Compatibility - Behavior with older version NPs	NA
11	Scenarios/ flows for log submission	Done
12	Ops requirements	TBD

2 Project Charter

2.1 Scope Statement

The scope of this project is to create an end to end funds settlement framework for ONDC network participants to settle funds for the transactions executed between one another. The RSF 2.0 framework is an enhancement over the existing framework defined in the document - W ONDC API Contract for Reconciliation and Settlement.docx .

2.2 Business Requirement Document

RSF 2.0_Explainer & BRD_20.05.24

2.3 Business Rationale

2.3.1 Summary & Business Impact, Market Needs Addressed and Strategic Fit

Refer to the BRD above

2.3.2 Business Goals and Success Metrics

Metric	Baseline Measure	Target after Release
TBD		

2.4 Core Team

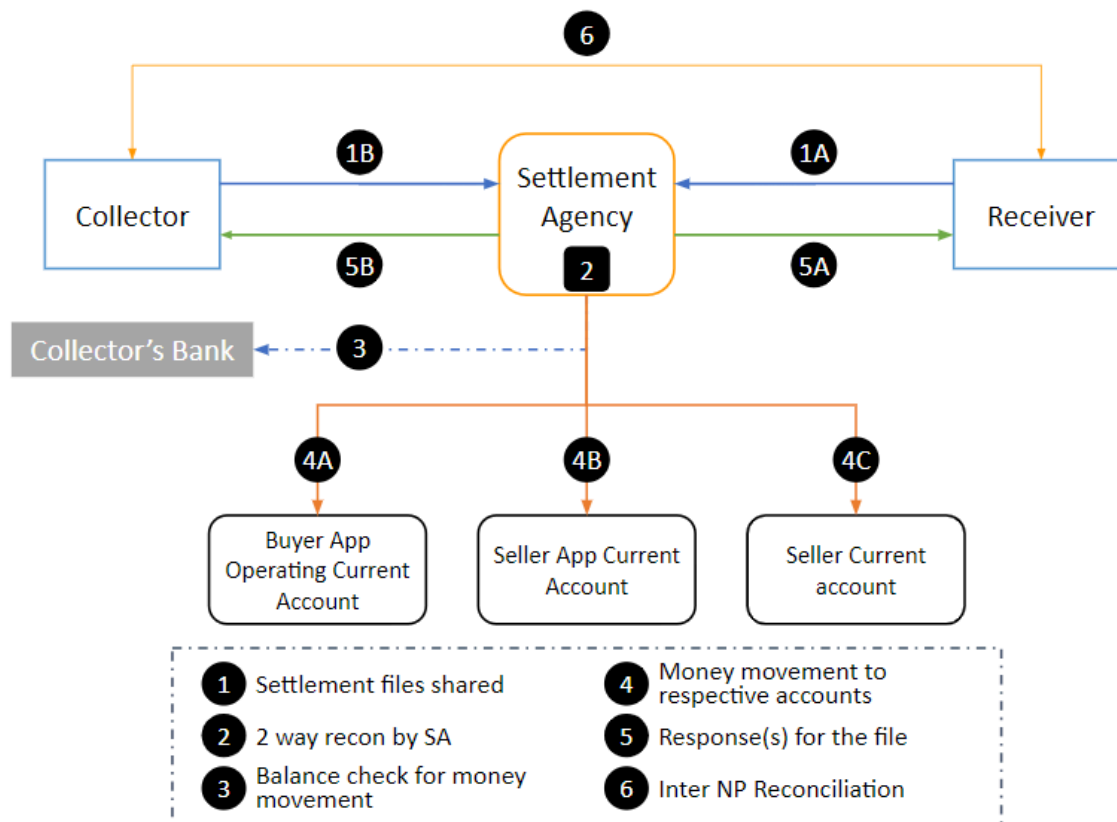| Team / role	Name
Product spoc	Rishabh
Business spoc	Ashish/ Anurodh/ Vaibhav/ Aakanksha/ Amit
Tech spoc	Sandeep
Ops spoc	Vaibhav/ Aakanksha/ Amit

2.5 Stakeholders/ NPs

Name	Organisation	Responsibility	Sign-off
		<Approver/Be Informed>	

3 Final Product Requirements

The reconciliation and settlement involves establishing a comprehensive framework to ensure accurate and timely funds settlements among participants on the network. This framework shall encompass mechanisms for processing funds movements, managing refund flows, and addressing discrepancies between settlement transactions. Key components include a robust digital ledger for recording all transactions on the participants side, automated reconciliation tools to create funds settlement transactions, and clear protocols for sharing the settlement instructions with the settlement agencies including disputes as required. The framework prioritizes transparency, security, and efficiency to build trust among users and support the scalable growth of the network.

The overall process flow is illustrated as per the diagram below, followed by the process steps:

Step 1: Settlement instructions shared by the receiver (1A) and collector (1B) shared with the settlement agency with order level information

Step 2: Settlement agency consumes the settlements shared and reconciles the settlement amounts shared from the receiver and the collector
    2.1: If the settlement amounts shared by both sides match, the settlement processing is initiated
    2.2: If the settlement amounts shared by both sides do not match, the settlement is rejected for those orders and step 5 is executed with the requisite error code

Step 3: The settlement agency/ bank checks availability of funds in the collector's bank through the balance check process.
    3.1: If the balance is available, fund movement based on the settlement amounts shared is initiated

3.2: If the balance is not available, fund movement fails and step 5 is executed with the requisite error code

Step 4: After balance check is successful, based on the amount shared for movement, funds are moved from the collector's non-operative account to the receiver's account (also in case of providers settlement for an NP, from the NP's account to the provider's account)

Step 5: Once the settlement is processed, the settlement is either successful or unsuccessful
 5.1: If the settlement is successful, order level settlement details are shared with the respective settlement reference number
 5.2: If the settlement is unsuccessful, order level error codes and messages are shared with the respective network participant

Step 6: In case the settlement is unsuccessful, the NPs reconcile within themselves to understand the discrepancy in the settlement instructions. This is facilitated through the recon/ on_recon APIs. Once agreed, the settlement instructions are provided in the next settlement cycle. In case there are further disputes, an IGM complaint would be initiated for handling agreement on the appropriate funds flow. Also, reconciliation as a flow can be leveraged even before settlement just to make sure calculations are matching on both sides.

3.1 In/Out of Scope

Status	Requirement #	Priority	Comment
In	1. Settlement of funds	1	
In	2. Orderbook Reconciliation among NPs	2	

3.2 List of Use Cases

S.No.	Description	Priority
1.1 *NP-NP*	**Inter Network Participant Settlements** **As an NP** responsible for facilitating transactions over the ONDC network for the end users **I am looking** for a reliable and transparent process that enables reconciliation and settlements, ensuring that the correct amounts are disbursed to the right receivers **So that** the receivers can receive their due settlements without delays or discrepancies	1

	When, after payments for orders are completed and settlement is due as per the settlement terms agreed as part of the transaction **Why,** To maintain the integrity and efficiency of the ONDC network orders, fostering trust among all participants by ensuring that settlements are handled accurately, timely and transparently	
1.2 *Misc*	**Miscellaneous Settlements for moving funds from the NP/ NOCA account to operative account** **As an NP** responsible for facilitating transactions over the ONDC network for the end users **I am looking** for an efficient and automated process that allows me to seamlessly extract and transfer my portion of the settlements from the total collected payments to my operating account **So that** I can receive funds timely and ensure my business operations are funded appropriately **When** settlements occur, and after verifying and reconciling the settlements, to swiftly move to operating account without explicit manual intervention **Why,** to streamline financial operations, reduce administrative overhead and supporting ongoing participation and growth within the ONDC ecosystem	**1**
1.3 *Nil*	**Nil settlement notifying no settlements required for the settlement cycle** **As an NP** responsible for facilitating transactions over the ONDC network for the end users **I am looking** for a notification framework that alerts the settlement agency when no transactions have been executed with any other network participants for the settlement cycle **So that** no funds are debited from my NOCA **When**, at the end of each settlement cycle, after reviewing the respective transaction logs	**1**

	Why, to ensure operational efficiency, inform about their network activity, and promptly identify potential anomalies in settlements requested for the day, thereby enhancing the reliability and trustworthiness of the ONDC network	
2.1 *Recon*	**Orderbook reconciliation among NPs** **As an NP** responsible for facilitating transactions over the ONDC network for the end users **I am looking** for counterparty's information on the order reconciliation details related to settlement instructions **So that** settlement funds can be agreed with counterparty, settlement instructions can be generated and settlement books can be closed for the respective order **When,** before or after settlement instructions created as per settlement terms **Why,** to make sure settlements with the respective counterparty NP is taking place appropriately and as per the settlement terms agreed while executing the transaction	1
3.1 *Refund reverse*	**Full flow for settlements handling order settlement and reverse settlement for refund-like scenarios** **As an NP** responsible for facilitating transactions over the ONDC network for the end users **I am looking** for a reliable and transparent process that enables reconciliation and settlements, ensuring that the correct amounts are disbursed to the right receivers and funds are moved back in case there are refunds/ returns **So that** the receivers and collectors can receive their due settlements or reverse settlements without delays or discrepancies **When,** after payments for orders are completed and settlement is due as per the settlement terms agreed as part of the transaction and when refunds/ returns are successfully processed **Why,** To maintain the integrity and efficiency of the ONDC network orders, fostering trust among all participants by	

	ensuring that settlements are handled accurately, timely and transparently	

3.3 Detailed Use Cases

Use Case 1.1	Collector NP settling with Receiver NP *(RSF NP-NP)*
Actors	**Collector NP,** an online ONDC enabled platform collecting the payments from the end user for an ONDC transaction conducted between the collector NP and the receiver NP **Receiver NP,** an online ONDC enabled platform that shall be the counterparty for the settlement post payment is collected from the end user for an ONDC transaction conducted between the collector NP and the receiver NP **Provider,** a seller providing products or services that are bought over the network purchased by a consumer and facilitated through the collector network participant and the receiver network participant

Main Path	1. **Review orders and settlement details**
	   a. The collector reviews various artifacts (viz. order book, pa/ pg report …) and prepares a settlement instructions for payables / receivables for every order transacted over the network for each receiver
	      i. Inter participant amount is what is to be settled from collector to receiver
	      ii. Collector amount is what collector keeps for themselves
	      iii. Self amount is the amount that is to be moved to the API caller's operating account
	      iv. Provider amount, if applicable, is the amount that is to be transferred to the provider's provided account information
	   b. The receiver reviews various artifacts (viz. order book, pa/ pg report …) and prepares a settlement instructions for payables / receivables for orders transacted over the network for each collector
	      i. Inter participant amount is what is to be settled from collector to receiver
	      ii. Collector amount is what collector keeps for themselves (inclusive of applicable GST)
	      iii. Self amount is the amount that is to be moved to the API caller's operating account
	      iv. Provider amount, if applicable, is the amount that is to be transferred to the provider's provided account information

2. **Illustrative breakup**
    a. For a retail order of 1050 Rupees collected by the retail buyer app, where the buyer app's applicable commission is 50 Rupees, the retail seller app's applicable commission is 200 Rupees, the respective settle payloads would be:
        i. Buyer app's settlement instruction
            1. inter participant - 1000 (matched for reconciliation)
            2. collector - 50 (matched for reconciliation)
            3. self - 50
        ii. Seller app's settlement instruction
            1. inter participant - 1000 (matched for reconciliation)
            2. collector - 50 (matched for reconciliation)
            3. self - 200
            4. provider - 800
    b. Refer below for more examples
3. **Collector initiating settlements for their payouts**
    a. The collector submits settlement instructions to the settlement agency with order(s) level information including amounts to be settled with the receiver and amount to be withheld by themselves. In this API call, the *collector acts as the bap* of the settlement instructions transaction API while the *settlement agency acts as the bpp* of the settlement instructions transaction.
    b. The instructions are shared for every receiver individually
4. **Receiver initiating settlements for their claims**
    a. The receiver submits settlement instructions to the settlement agency with order level information including amounts to be settled from the collector and amount to be withheld by themselves. In this API call, the *receiver acts as the bap* of the settlement instructions transaction API while the *settlement agency acts as the bpp* of the settlement instructions transaction.
    b. The instructions are shared for every collector individually
5. **Settlement Reconciliation**
    a. The settlement agency reconciles the settlement amounts and withheld amounts received from the collector and receiver for each order that matches from both sides.
    b. The amounts are matched to the closest rupee. Illustratively, if the amounts shared from the respective sides are ₹ 121.32 & ₹ 121.96, ₹ 121.32 (lower of the two) is settled. Similarly, if the amounts shared from the respective sides are ₹ 121.92 & ₹ 122.32, the settlement is not executed.
6. **Balance Check**

	a. The settlement agency checks the collector's account balance for requisite funds for settlements. If the balance is available funds are moved from the collector's non-operative account to the receiver's account and a settlement reference number is generated for the settlement **7. Settlement completion** a. The collector and receiver receive order level settlement details with respective settlement reference number(s).
Example Payload	Refer: Developer Guide - Flow UI - NP-NP

Alternate Path 1 -
Settlement/ withheld amount mismatched
	1. Review orders and settlement details
	2. Collector initiating settlements for their payouts
	    a. The collector submits settlement instructions to the settlement agency with order level information including amounts to be settled with the receiver and amount to be withheld by themselves
	    b. The instructions are shared for every receiver individually
	3. Receiver initiating settlements for their claims
	    a. The receiver submits settlement instructions to the settlement agency with order level information including amounts to be settled from the collector and amount to be withheld by themselves
	    b. The instructions are shared for every collector individually
	4. Settlement Reconciliation
	    a. The settlement agency reconciles the settlement amounts and withheld amounts received from the collector and receiver and finds mismatches in either or both of the amounts for certain orders
	5. Settlement instructions response
	    a. The collector and receiver receive order level settlement details with respective settlement reference number(s) and error codes for orders for which the settlement has not been conducted

Alternate Path 2 -
Order mismatched
	1. Review orders and settlement details
	2. Collector initiating settlements for their payouts
	    a. The collector submits settlement instructions to the settlement agency with order level information including amounts to be settled with the receiver and amount to be withheld by themselves
	    b. The instructions are shared for every receiver individually
	3. Receiver initiating settlements for their claims
	    a. The receiver submits settlement instructions to the settlement agency with order level information including

	amounts to be settled from the collector and amount to be withheld by themselves
	    b. The instructions are shared for every collector individually
	4. Settlement Reconciliation
	    a. The settlement agency reconciles the settlement amounts and withheld amounts received from the collector and receiver and finds mismatches certain orders missing from either of the NPs
	5. Balance Check
	    a. The settlement agency checks the collector's account balance for requisite funds (orders for which the amounts are matched) for settlements. If the balance is available funds are moved from the collector's non-operative account to the receiver's account and a settlement reference number is generated for the settlement
	6. Settlement instructions response
	    a. The collector and receiver receive order level settlement details with respective settlement reference number(s) and the respective NP receives error codes for orders for which the settlement has not been conducted

Alternate Path 3 - *Receiver settlement instruction unavailable*	**1. Review orders and settlement details**
	2. Collector initiating settlements
	    a. The collector submits settlement instructions to the settlement agency with order level information including amounts to be settled with the receiver and amount to be withheld by themselves
	    b. The instructions are shared for every receiver individually
	3. Settlement Reconciliation
	    a. The settlement agency is unable to reconcile the orders given no claim has been made from the receiver
	4. Settlement instructions response
	    a. The collector receives the respective error code for orders missing from the counterparty app

Alternate Path 4 - *Collector settlement instruction unavailable*	**1. Review orders and settlement details**
	2. Receiver initiating settlements for their claims
	    a. The receiver submits settlement instructions to the settlement agency with order level information including amounts to be settled from the collector and amount to be withheld by themselves
	    b. The instructions are shared for every collector individually
	3. Settlement initiation
	    a. The settlement agency checks for settlement instructions sent by the respective collector
	        i. **Use case 1:** In case ***no settlement instructions*** are shared by the collector for that settlement cycle

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(i.e., no settle API call), the settlement progresses based on the claims sent by the receiver proceeding to step 4

    ii. **Use case 2:** In case any of the following settlement instructions are shared by the respective collector based on scenarios below, the settlement instructions shared by the receiver are rejected:

        1. For other NPs/ receivers but not for this particular receiver

        2. 'Nil' settlement instruction

        3. Erroneous schema shared by the collector (also considered as a nil settlement instruction)

4. **Balance Check**

    a. In case the settlement progresses, the settlement agency checks the collector's account balance for requisite funds for settlements. If the balance is available funds are moved from the collector's non-operative account to the receiver's account and a settlement reference number is generated for the settlement

5. **Settlement instructions response**

    a. The receiver receive order level settlement details with respective settlement reference number(s) and the respective NP receives error codes for orders for which the settlement has not been conducted

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<td>Example payload</td>
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Refer:
Developer Guide - Flow UI - NP-NP
Error Codes - Error-UI for various error codes as applicable

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<td>Use Case 1.2</td>
<td>NP settling funds for themselves *(RSF MISC)*</td>
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<td>Actors</td>
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NP, an online ONDC enabled platform collecting the payments from the end user for an ONDC transaction conducted between the collector NP and the receiver NP

Provider, a seller providing products or services that are bought over the network purchased by a consumer and facilitated through the collector network participant and the receiver network participant

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<td>Main Path</td>
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1. **Review orders and settlement details**

    a. The NP reviews various artifacts (viz. order book, pa/ pg report …) and prepares a settlement instructions for their own receivables (including their users viz. retail seller apps may also include instructions for moving funds for their providers)

        i. Illustratively, if there is an excess amount of money in a collector's NOCA (viz. resultant from

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	pre funding the account), the collector can leverage the misc call to extract the funds from the account
	2. NP initiating settlements for their claims
	a. The NP submits settlement instructions to the settlement agency including amounts to be settled to do their operating account (including for their providers as applicable)
	3. Balance Check
	a. The settlement agency checks the account balance for requisite funds for settlements. If the balance is available funds are moved from the NP's non-operative account to the NP's operating account (& provider's account) and a settlement reference number is generated for the settlement
	4. Settlement completion
	a. The NP receives settlement details with respective settlement reference number(s).
Example payload	Refer: Developer Guide - Flow UI - MISC
Use Case 1.3	Collector NP notifying no transactions have taken place for the settlement cycle *(RSF NIL)*
Actors	**Collector NP,** an online ONDC enabled platform collecting the payments from the end user for an ONDC transaction conducted between the collector NP and the receiver NP
Main Path	**1. Review orders and settlement details**
	a. The NP reviews various artifacts (viz. order book, pa/ pg report …) and comes to a conclusion that there are no orders for the settlement cycle.
	b. NP prepares settlement instructions for declaring no settlements required
	2. NP initiating notification
	a. The NP submits the nill settlement instruction to the settlement agency
Example payload	Refer: Developer Guide - Flow UI - NIL
Use Case 1.4	NPs requesting for status update on the settlement instructions shared *(RSF REPORT)*
Actors	**NP,** an online ONDC enabled platform collecting the payments from the end user for an ONDC transaction conducted between the collector NP and the receiver NP
Main Path	**1. Review orders and settlement details**

	a. The NP reviews various artifacts (viz. order book, pa/ pg report …) along with the settlement details and comes to a conclusion that there is some missing information for a particular settlement instruction (identified by a transaction_id/ message_id). b. NP prepares report request for seeking status updates on the respective settlement instruction **2. Settlement instructions response** a. The NP receives respective settlement details with respective settlement status, reference number(s) or error codes as applicable
Example payload	Refer: Developer Guide - Flow UI - REPORT
Use Case 2.1	NPs trying to reconcile the orders *(example for settlements that were unsuccessful)* ***(RSF RECON)***
Actors	**Collector NP,** an online ONDC enabled platform collecting the payments from the end user for an ONDC transaction conducted between the collector NP and the receiver NP **Receiver NP,** an online ONDC enabled platform that shall be the counterparty for the settlement post payment is collected from the end user for an ONDC transaction conducted between the collector NP and the receiver NP *Note: RSF Recon flow is a bi-directional flow where either the collector or the receiver can initiate the reconciliation flow. Flow below illustrates flows where the receiver is initiating the flow. The context bap/bpp remains the same as the order flow, regardless of initiator of the API*

Main Path	**1. Settlement instructions response**
	    a. Settlement instructions received with an error code
	2. Receiver NP reconciliation
	    a. Receiver initiates re-reconciliation at their end to evaluate settlement amount for the respective orders
	    b. The receiver sends the reconciled information to the collector with the complete breakup of the order(s) in discrepancy. This includes:
	        i. total order amount *(orders.amount.value)*
	        ii. settlement amount for the respective order *(orders.settlements.amount.value)*
	        iii. commission amount agreed among the NPs, if any, as part of the transaction executed *(orders.settlements.commission.value)*
	        iv. withholding amount, if any, withheld by the collector *(orders.settlements.withholding.value)*

v. tax deductions (tcs/ tds), if any
   (orders.settlements.tcs.value,
   orders.settlements.tds.value)

3. **Collector NP reconciliation**
   a. Collector initiates re-reconciliation at their end to evaluate settlement amount for the respective orders shared by the receiver to match information provided by the receiver versus the information available internally
   b. ***Case 1:*** Collector agrees with the information provided by the receiver; shares the response with the accord flag as true along with the settlement date on which the settlement instruction shall be initiated. The settlement is then initiated in the settlement cycle when both NPs share the settlement instructions again
   c. ***Case 2:*** Collector disagrees with the information provided by the receiver; shares the response with the accord flag as *false* with the respective difference amount and the actual calculation for the respective amount for the respective line item in the breakup. Illustratively as follows:
      i. Amount sent by receiver - 100
      ii. Amount expected by collector - 90
      iii. Values to be sent by the collector in on_recon
         1. amount - 90
         2. diff_value - 10
   d. Consuming the response, the seller can follow one of the following:
      i. Case 2.1: Post reconciliation of the information provided by the collector, in case the seller app agrees to the new calculations, a new recon request is created following Step 2 and the settlement is initiated in the settlement cycle as agreed when both NPs share the settlement instructions again.
      ii. Case 2.2: Post reconciliation of the information provided by the collector, in case the seller app disagrees with the new calculations, a new recon request is created following Step 2 where the receiver updates the values and shares the same again.
      iii. The disagreement may be taken through the IGM route where the receiver raises a complaint for the discrepancy. Once the complaint is resolved, the recon request is raised again by the receiver with the agreed values. The collector responds with the on_recon and the respective settlement date when the instructions need to be initiated

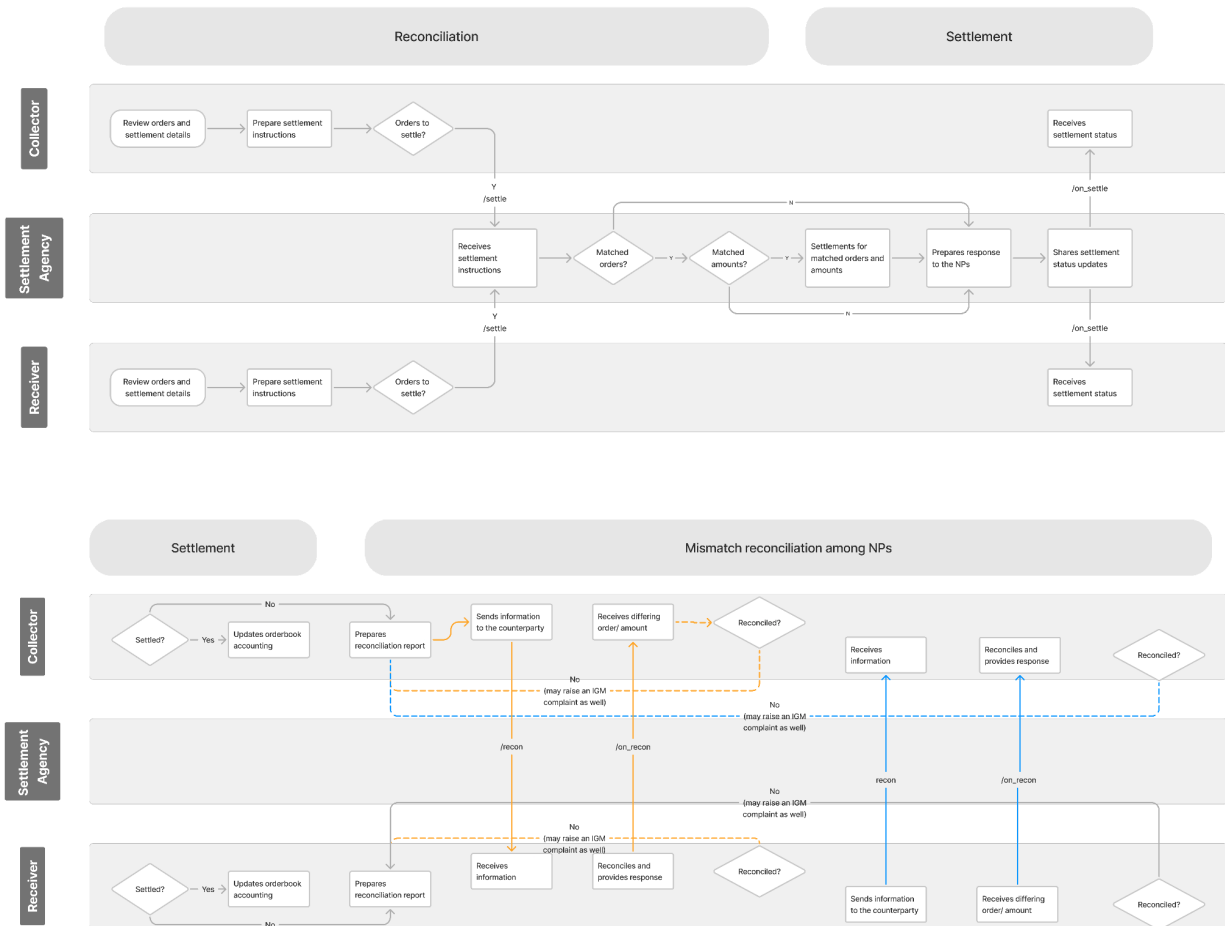|	e. Complete process flow is illustrated here.

Alternate Path 1 - *No response received from the collector*	**1. Settlement instructions response**
	   a. Settlement instructions received with an error code
	2. Receiver NP reconciliation
	   a. Receiver initiates re-reconciliation at their end to evaluate settlement amount for the respective orders
	   b. The receiver sends the reconciled information to the collector with the complete breakup of the order(s) in discrepancy. This includes:
	      i. order amount
	      ii. settlement amount
	      iii. commission amount agreed, if any, as part of the transaction executed
	      iv. withholding amount, if any, withheld by the collector
	      v. tax deductions (tcs/ tds), if any
	3. Collector NP reconciliation
	   a. No response (on_recon) received from the collector
	4. Receiver creates a complaint
	   a. After waiting for a settlement cycle, the receiver creates a reconciliation complaint to the collector for the specified order(s)

Alternate Path 2 - *Reconciliation of orderbook before creating the settlement instruction*	**1. Receiver NP reconciliation**
	   a. Receiver initiates reconciliation at their end to evaluate settlement amount for the respective orders
	   b. The receiver sends the reconciled information to the collector with the complete breakup of the order(s) in discrepancy. This includes:
	      i. order amount
	      ii. settlement amount
	      iii. commission amount agreed, if any, as part of the transaction executed
	      iv. withholding amount, if any, withheld by the collector
	      v. tax deductions (tcs/ tds), if any
	2. Collector NP reconciliation
	   a. Collector initiates reconciliation at their end to evaluate settlement amount for the respective orders shared by the receiver to match information provided by the receiver versus the information available internally
	   b. ***Case 1:*** Collector agrees with the information provided by the receiver; shares the response with the accord flag as true along with the settlement date on which the settlement instruction shall be initiated as agreed in the transaction level contract for that particular order. The

	settlement is then initiated in the settlement cycle when both NPs share the settlement instructions again
	
	c. ***Case 2:*** Collector disagrees with the information provided by the receiver; shares the response with the accord flag as *false* with the respective difference amount and the actual calculation for the respective amount for the respective line item in the breakup. Illustratively as follows:
	    i. Amount sent by receiver - 100
	    ii. Amount expected by collector - 90
	    iii. Values to be sent by the collector in on_recon
	        1. amount - 90
	        2. diff_value - 10
	
	d. Consuming the response, the seller can follow one of the following:
	    i. Case 2.1: Post reconciliation of the information provided by the collector, in case the seller app agrees to the new calculations, a new recon request is created following Step 2 and the settlement is initiated in the settlement cycle as agreed when both NPs share the settlement instructions again.
	    ii. Case 2.2: Post reconciliation of the information provided by the collector, in case the seller app disagrees with the new calculations, a new recon request is created following Step 1 where the receiver updates the values and shares the same again.
	    iii. The disagreement may be taken through the IGM route where the receiver raises a complaint for the discrepancy. Once the complaint is resolved, the recon request is raised again by the receiver with the agreed values. The collector responds with the on_recon and the respective settlement date when the instructions need to be initiated
	
	e. Complete process flow is illustrated <u>here</u>.

Example payload	Refer: Developer Guide - Flow UI - RECON
Use Case 3.1	Complete journey for a refund (forward and reverse fund movement)

	1. **Review orders and settlement details**
	    a. Settlement instructions to be shared when the order is fulfilled
	2. **Collector initiating settlements for their payouts**
	    a. The collector submits settlement instructions to the settlement agency with order level information including

amounts to be settled with the receiver and amount to be withheld by themselves

    b. The instructions are shared for every receiver individually

3. **Receiver initiating settlements for their claims**

    a. The receiver submits settlement instructions to the settlement agency with order level information including amounts to be settled from the collector and amount to be withheld by themselves

    b. The instructions are shared for every collector individually

4. **Settlement Reconciliation**

    a. The settlement agency reconciles the settlement amounts and withheld amounts received from the collector and receiver for each order that matches from both sides.

5. **Balance Check**

    a. The settlement agency checks the collector's account balance for requisite funds for settlements. If the balance is available funds are moved from the collector's non-operative account to the receiver's account and a settlement reference number is generated for the settlement

6. **Settlement completion**

    a. The collector and receiver receive order level settlement details with respective settlement reference number(s)

7. **Order Status Update**

    a. The buyer raises a refund/ return request for an order which is accepted by the seller app and the same is updated in the order object and the order quote along with the settlement amount for the order gets updated.

    b. A settlement therefore is required for the funds movement back from the collector to the receiver

    c. In this case, therefore, the receiver NP becomes the collector and the receiver NP becomes the collector to move the funds with respective to the new update to the order

8. **Reconciliation of the 'reverse settlement'**

    a. The, now, receiver shares the recon API similar to the process mentioned in the use case 2.1, comprising of an update settlement object for the order with the requisite calculation for the 'reverse settlement'

    b. The, now, collector responds with the recon_accord flag as true along with the due date for the respective settlement

9. **NPs re-initiating settlement instruction**

    a. The, now, collector submits a settlement instruction, on the due date, to the settlement agency with the respective order level information

| | b. The, now, receiver submits a settlement instruction, on the due date, to the settlement agency with the respective order level information

10. Settlement Reconciliation
    a. The settlement agency reconciles the settlement amount and withheld amount received from the collector and receiver for the order that matches from both sides

11. Balance Check
    a. The settlement agency checks the collector's account balance for requisite funds for settlements. If the balance is available funds are moved from the collector's non-operative account to the receiver's account and a settlement reference number is generated for the settlement

12. Settlement completion
    a. The collector and receiver receive order level settlement details with respective settlement reference number |
| | |

3.4 Detailed Requirements

1. Detailed flow

1.1. Flows available here.

2. Detailed Illustrative Examples for /settle API calls from respective NPs

2.1. Retail Transaction Prepaid - Buyer app is the Collector & Seller app is the Receiver

Total Order Value - 1050
Buyer app's commission - 50
Seller app's commission - 200
Provider's portion - 800

	Collector (/settle)	Receiver (/settle)
inter_participant	1000	1000
collector	50	50
self	50	200
provider	NA	800

2.2. Retail Transaction PoD - Buyer app is the Receiver & Seller app is the Collector

Total Order Value - 1050
Buyer app's commission - 50
Seller app's commission - 200
Provider's portion - 800

	Collector (/settle)	Receiver (/settle)
inter_participant	50	50
collector	1000	1000
self	200	50
provider	800	*NA*

2.3. Retail Transaction - Buyer app is the collector and Seller app (ISN) is the receiver

Total Order Value - 1050
Buyer app's commission - 50
Seller app's portion - 1000

	Collector (/settle)	Receiver (/settle)
inter_participant	1000	1000
collector	50	50
self	50	1000
provider	*NA*	*NA*

2.4. Mobility ride hailing transaction - Buyer app is the Receiver & Seller app is the Collector

Total Order Value - 1020
Buyer app's commission - 20
Seller app's commission - 0
Provider's portion - 1000

	Collector (/settle)	Receiver (/settle)
inter_participant	20	20
collector	1000	1000
self	0	20
provider	1000	*NA*

2.5. Metro Transaction - Buyer app is the Collector & Seller app is the Receiver

Total Order Value - 100
Buyer app's commission - 0
Seller app's commission - 0
Provider's (metro authority) portion - 100

	Collector (/settle)	Receiver (/settle)
inter_participant	100	100
collector	0	0
self	0	0
provider	*NA*	100

2.6. Logistics Transaction - Logistics Buyer App (Retail Seller App) is the Collector & Logistics Seller App (LSP) is the Receiver

Total Order Value - 105
Buyer app's commission - 5
Seller app's portion - 100

	Collector (/settle)	Receiver (/settle)
inter_participant	100	100
collector	5	5
self	5	100
provider	*NA*	*NA*

2.7. Logistics Transaction PoD - Logistics Buyer app is the Receiver & Logistics Seller app is the Collector

Total Order Value - 105
Logistics Buyer app's commission - 5
Logistics Seller app's commission - 100

	Collector (/settle)	Receiver (/settle)
inter_participant	5	5
collector	100	100
self	100	5

provider	<mark>NA</mark>	<mark>NA</mark>

3.5   Technical Specifications

The technical specifications for the use cases defined above are available here - Network Services Developer Guide *(version draft-RSF-2.0.0)*
- *Swagger-UI -* Comprises of the swagger specifications of the APIs
- *Flow-UI -* Comprises of the various flows covered in the framework
- *Attribute-UI -* Comprises of the details of the attributes and their usage in the specifications
- *Error-UI -* Comprises of the error codes for various scenarios

3.6   Taxonomy

<mark>NA</mark>

3.7   TLC & T&Cs

<mark>NA</mark>

3.8   Error Codes

Refer Error-UI in the Developer Guide

Code	From	Description	Event
70000	Any	Invalid Signature	NACK
70001	Any	Missing mandatory 'Authorization' header param	NACK
70002	Any	Invalid schema	NACK
70003	Any	Invalid bap id	OnSettle
70004	Any	Inactive bap id	OnSettle
70005	Any	Invalid bpp id	OnSettle
70006	Any	Duplicate transaction id	OnSettle
70007	Any	Duplicate message id	OnSettle
70008	Any	Duplicate settlement id	OnSettle
70009	Any	Bap id doesn't match collector app id or receiver app id	OnSettle
70010	Any	Collector account not available	OnSettle

70011	Any	Invalid collector app id	OnSettle
70012	Any	Inactive collector app id	OnSettle
70013	Any	Invalid receiver app id	OnSettle
70014	Any	Inactive receiver app id	OnSettle
70015	Any	Receiver app id same as Collector app id	OnSettle
70016	Any	Duplicate order id	OnSettle
70017	Any	Collector account inoperable	OnSettle
70018	Any	Receiver account inoperable	OnSettle
70019	Any	No response from bank for collector account	OnSettle
70020	Any	No response from bank for receiver account	OnSettle
70021	Any	No file shared by counterparty	OnSettle
70022	Any	Order id not shared by counterparty	OnSettle
70023	Any	Collector value mismatch	OnSettle
70024	Any	Interparticipant value mismatch	OnSettle
70025	Any	Insufficient balance in collector account	OnSettle
70026	Any	Collector NDC breach	OnSettle
70027	Any	Collector bank NDC breach	OnSettle
70028	Any	Invalid transaction_id	OnReport
70029	Any	Invalid message_id	OnReport
70030	Any	Invalid Order id	OnRecon
503	Any	Internal server error	https error

3.9 Mock Server for testing

Refer to the instructions and detailed steps provided here.

3.10 Network Observability Requirements

TBD

3.11 Project Dependencies/Operational Checklist

Team	Required	Description	Date
TBD			

3.12 Internal Reporting/Monitoring

NA

3.13 Future Features & International Expansion

Priority	Requirement	Comment
NA		

3.14 Requirements related to Rollout Strategy / Launch Requirements (optional)

1. Requirement 1

    1.1. xxx

3.15 Backward Compatibility - interaction with older version

1. Requirement 1

    1.1. xxx

4 Appendix

4.1 Supplemental Documents

Name	Description

4.2 Changelog

DATE	DESCRIPTION
06-09-2024	1. Included inter NP reconciliation in case settlement instruction is rejected by the settlement agency

	2. Updated error codes 3. Added example illustrations for settlement instructions across various domains
20-12-2024	1. Updated the on_recon API specification to include settlement date in case recon_accord is true 2. Updated the recon flow (use case 2.1) 3. Added example illustration for settlement instructions for logistics transactions