

ISDA Operations Committee

Process Working Group

- Drive Process Efficiency
- Standardise Operational Practice
- Evolve 'Best Practice' Standards
- Influence Market Development / Technological Change

Cash flow Matching, Netting and Settlement

High Level Requirements and Guidelines for Strategic Processing Standards

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1 Objective

The objective of this ISDA Working Group is to define an agreed market standard for the pre-settlement matching of OTC Derivatives cash flows. This would lead to the next stage i.e. the netting of cash flows into a lower number of payments. A final stage may potentially be the implementation of a settlements clearing process. An essential part of the remit is to move towards a standard definition of cash flows that can be electronically messaged via FpML. The output of this Group should be an agreed process and definition for cash flow matching which can be made freely available to commercial vendors. Parties should ensure that the principles and recommendations contained in this paper are appropriate to their own commercial and operational circumstances.

It is not the intention of this Group to address directly static data issues, in particular the standardisation of Standard Settlement Instructions (“SSIs”) and methods of communicating them, but it is recognised that this issue is – together with cash flow matching - a major contributor in reducing nostro breaks. SSI processing is the subject of another ISDA Best Practice Statement.

2 Principles and Guidelines – Matching

Cash flows should be matched (not trades).

Settlement precision to be improved leading to reduced Nostro breaks.

Flexibility will ensure broad take up.

Matching should be achieved real-time, with overnight batch processing available to appeal to a broad cross-section of the marketplace.

The solution should be multi-product (but focus on Credit Default Swaps (“CDS”) as the first product).

Each cash flow leg forming part of a trade should be matched independently.

All counterparties should agree the process for amending cash flows that are partially matched in order to re-submit them for a full match.

The process should allow for trade events (amendments, novations, cancellations) that may ‘break’ previously matched flows.

It is envisaged that only fully matched items will be subject to netting.

The data fields will be categorised into either ‘Match’ or informational fields.

It is agreed that the counterparty’s data where it relates to partially matched items will be returned as part of the status in order to expedite the correction process.

A unique identifier for each matched cash flow is required for capture by both counterparties at trade level.

3 Boundaries - Matching

3.1 Timing

The ability is required for data to be delivered intra-day on a real-time basis using system-to-system FpML communication and to receive reports on the matching process by open of business on the next business day.

Within a 30-day window prior to any settlement date, intra-day real-time matching should be available for submitting data changes on an event-driven basis.

For other participants, the option should be available to deliver multiple format files as in 3.4 below for overnight batch processing. The timing of the delivery should be flexible. However this should allow European and US participants to submit data at their end of day and for participants in the Asia Pacific region to deliver intra-day for inclusion in the daily matching run. The cut off times may differ, depending on the currency involved.

3.2 Frequency

The delivery of data must be daily and be event-driven based upon Cash flow Event recognition as described in 3.13 below.

3.3 Window

The window for inclusion into the matching process is to be based on the next known cash flow date, subject to certain rules.

All Cash flow Events which triggers a known cash flow (eg rate refixes) should give rise to the ability to submit trade data for that settlement date. To avoid unnecessary administration caused by early unilateral submission of cash flow data, the exception reporting window should be limited to 90 calendar days in advance of the settlement date.

- Data may be submitted by participants at any time in relation to the next known cash flow for any given settlement date
- For periods more than 90 days from the settlement date, data should be recorded by the service but not subject to exception reporting
- During the window of 30 – 90 days pre-settlement, data should be matched overnight and subject to exception reporting by open of business on the next business day

Within 30 days of settlement, real-time matching and exception reporting should be available to participants.

These parameters should evolve over time as services develop to provide participants with availability of longer windows for exception reporting and real-time matching.

3.4 Delivery Mechanism and Medium

The strategic messaging medium should be FpML which is the clear standard being utilised in the OTC market. Service providers should expect to develop system platforms based on FpML messaging and accommodate different delivery mechanisms, for example MQ series, File Transfer, webservices etc.; to encourage maximum take up by a wide range of OTC participants.

3.5 Process Agreement

Only new trades, those for which a Match ID has not yet been assigned and those where a Cash flow Event has occurred will be submitted for daily matching.

A trade may comprise one or more cash flows, relating to the pay and receive legs. Each cash flow should be matched independently but a Match ID assigned only at trade level. Owing to different booking methodologies, there may be a requirement to aggregate trades and/or cash flows. This is discussed in 3.7 and 3.11 below.

3.6 Data Fields and Format

The data fields and format are to be agreed and fixed and are described in Section 4 below. The format of the data is to conform to FpML standards.

3.7 Match ID

A unique Match ID should be returned for each new match at trade level.

Amended cash flows arising from a Cash flow Event will automatically negate the previous match i.e. will be treated as a new cash flow for the purpose of the daily matching process. These items will therefore receive a new Match ID if successful.

Amendments to non-matching fields which do not alter the cash flows should retain the original Match ID. However, data for these trades should be submitted to the service for version comparison with changes notified to the counterparty.

Unmatched items will not receive a Match ID.

The ability to 'bundle' and record unique IDs at a bi-lateral group level will be required for aggregating legs booked differently but nevertheless part of the same trade structure. This could be provided through functionality designed to identify partial matches in 3.11 below.

3.8 Return Timing

Participants with system-to-system data transfer using FpML should receive returned data and exception reporting by open of business on the next working day. However, within the 30-day window prior to a settlement date, exception reporting should be available intra-day.

For overnight batch processing, the match status and required supporting data should be sent to the counterparty by 09:00 London time the following day.

3.9 Return Format

Message and reporting data is to be returned in the same format as submitted.

The capability is required for counterparties to view their data reports and download these internally via a web portal and GUI. Smaller participants should have the ability to view cash flow data alleged against them and agree to, or dispute, individual items through the GUI. The GUI should provide functionality to build bespoke data reports and download these if required.

3.10 Returned Data

Each counterparty's data will be returned in the above format with a matched status and if applicable a Match ID attached to each trade cash flow. Statuses will include:

Fully Matched: Submitted data plus at least Match ID, Counterparty's trade reference and Legal Entity identifier (vendor applied).

Partially Matched: Submitted data plus proposed match data

Unmatched: Submitted data. Both counterparties should have the ability to see all data for trades alleged against them.

Broken Matches: One counterparty has amended cash flow data that has subsequently caused a break in previously matched trade cash flows.

The service should be able to highlight data changes on returned data.

3.11 Suggested and Partial Matches

Matching reports should highlight suggested and partial matches based on key data fields without ascribing a Match ID. Users should be able to accept or reject suggested matches. Vendors are invited to propose weightings and fields for determining the nearest-matched cash flow.

Recognising that structured trades may be subject to different booking methodologies across the market, there should be a facility to record trade characteristics from previously matched cash flows. This should allow different trades to be manually linked by agreement of both counterparties, with a Link ID recorded by the system. Future cash flows in relation to these trades should be automatically identified by the system.

3.12 Un-matched Trades

Any cash flows remaining unmatched by the cut-off date for settlement will be left out of the netting process.

3.13 Cash flow Events

Any underlying trade events such as amendments, cancellations and novations, may give rise to revised or extinguished cash flows.

All Cash flow Events should result in the trade being resubmitted for matching if the trade has as a result changed.

Any Matching ID previously assigned should be cancelled upon a Cash flow Event.

A new Matching ID may need to be assigned if there is a revised cash flow.

4 Data Definition

Data Type	Required Data Field Y/N	Matching Field Y/N	Description	Rules	Tolerance/Type
Our (Party A) Trade ID	Y	N		Always send	Free format
Their Trade ID	N	N	When Match ID assigned, required to populate on subsequently returned data	Must match if available. Always send when available	Free format
Our Legal Entity identifier	Y	Y	Vendor-applied unique identifier		
Their (Party B) Legal Entity identifier	Y	Y	Vendor-applied unique identifier		
Common Trade Execution Identifier	N	N	Any vendor-assigned common trade identifiers		
Our Internal Cash flow Identifier	N	N	Information only for auto-processing data into own systems		Free format

Data Type	Required Data Field Y/N	Matching Field Y/N	Description	Rules	Tolerance/Type
Cash flow Net ID	Y	Y	Vendor-applied unique ID to bundle Matched Cash flows for a settlement date		
Cash flow Match ID	Y	Y	Vendor applied unique ID	Must send if available.	
Cash flow Event	Y	Y	New = New, A = Amend, C = Cancel, N = Novation	Always send	
We Pay / We Receive	Y	Y			
Cash flow Currency	Y	Y			ISO
Net Cash flow Amount	Y	Y			Standard by Currency
Cash flow Payment Date	Y	Y		Adjusted date (if applicable)	dd-mm-yyyy
Asset Class	Y	N	Rates, Equity, Credit, Commodity, FX		
Notional CCY	Y	Y			ISO
Notional Amount	Y	Y			Standard by Currency

Data Type	Required Data Field Y/N	Matching Field Y/N	Description	Rules	Tolerance/Type
Effective Date	Y	N	Warn but don't stop	Adjusted date (if applicable)	dd-mm-yyyy
Termination Date	Y	Y		Adjusted date (if applicable)	dd-mm-yyyy
Fixed Rate/Floating Rate / Strike Price	Y	N			5 decimal places, standard by FPML
Rate for Period	Y	N			
Fixed/Floating Rate Day Count Fraction	Y	N			
Accrual Period Start Date	Y	N		Actual start date of calculation period for which cash flow applies	dd-mm-yyyy
Accrual Period End Date	Y	N		Actual end date of calculation period for which cash flow applies	dd-mm-yyyy
Reference Credit	Y	N	ISIN/CUSIP and name of Reference		Free format

			Obligation		
Data Type	Required Data Field Y/N	Matching Field Y/N	Description	Rules	Tolerance/Type
Our SSIs	N	N	Participants to netting and clearing facilities		
Your SSIs	N	N	Participants to netting and clearing facilities		

5 Process Outline

5.1 Data Submission

All cash flows for a specific settlement date may be submitted daily to the matching service for processing. The vendor should supply functionality that compares daily submissions with data submitted by that counterparty on the previous business day.

New Cash flow

A new cash flow will be submitted conforming to the timing, frequency and window parameters described above. This will be submitted to the matching process, returning a matched status as described in the returned status table in Section 6 below.

Amended Cash flow

Amended cash flows will be treated for matching purposes as a new cash flow. If previously matched, the Match ID will be discarded and a new Match ID generated.

A change of state in a cash flow must trigger a re-send of the cash flow data including all Reference fields (as above) with the addition of the prior attached Match ID.

The onus is on the counterparties' systems to discard the previous version of the cash flow.

Cancelled Cash flow

A deleted cash flow will be submitted as an Amended Cash flow with any prior Match ID attached. In the case where one side is submitted when the other side has not been, this will be treated as an unmatched item.

5.2 Data Returned

The vendor service should provide a web portal and GUI, with the ability to sort and filter data, for investigating trade discrepancies. A download facility should be available. All submitted data should be returned to the sender daily as one of the following reports:

Matched Data

Where new cash flows can be matched, all input data should be returned to the sender with a vendor-applied Match ID assigned.

If amended cash flows can be matched, all data should be returned to the sender with the original Match ID discarded and a new Match ID assigned.

New and amended cash flows, where matched, should be returned with a **Matched** status attached.

Unmatched Data

All unmatched data should be returned to the sender with an **Unmatched** status attached.

Proposed Matches

The vendor service should propose the nearest equivalent match, based on a weighting score system of 80% of matching fields. The service should provide functionality, if both counterparties accept proposed matches, to assign and store a unique Link ID.

Broken Matches

If a Match ID has previously been assigned, and submission of amended data results in a change to a Matching field that cannot be matched, this will be treated as an unmatched item with the original Match ID discarded. The status should be flagged as a **Broken Match**. All trade details for both parties should be returned with the mismatched fields highlighted for investigation.

Alleged Trades

A report of any trades alleged against a participant should be sent daily with all data submitted by the sender and an **Alleged** status attached.

Cancelled Trades, Assigned Trades

All cancelled trades should be submitted to the service using a cancelled status. A **Cancelled** summary report should be available for participants. A cancelled trade submitted by only one participant will give rise to an **Alleged** status for the party concerned and an **Unmatched** status for its counterparty.

Treatment of assigned trades should be consistent with a cancellation for the original counterparties, and a new (re-instated) trade between the Transferee and the Remaining Party.

Amended Data – Required Data

The matching service should compare Matching fields daily. Where Matching fields and cash flows are unchanged, but a required Data field has changed from the previous day's submission, the change should be highlighted and returned with an ***Amended*** status attached. Both parties' data should be returned to assist investigation.

Reconciliation of Cash flow Populations

A facility to allow the full population of cash flows to be reconciled for any settlement date should be provided for participants. Services should develop rules requiring participants to ensure their view of cash flow populations are synchronised with those of their counterparties.

6 Returned Status

Matched Status	Description	Definition	Returned data
Fully Matched	The cash flow has been fully matched with the Counterparty's Cash flow	All data elements flagged as Match = Y	Match ID, Cprty Trade ID, Cprty BIC Code Vendor Participant ID, all our data.
Partial/Proposed Match	The cash flow cannot be matched certain data fields do match	Weighting Score = more than [to be proposed by vendor]	All our data and all cprty data & Trade ID
Unmatched	The cash flow submitted cannot be matched and no similar cash flows exist	Weighting Score = less than [to be proposed by vendor]	All our data
Alleged	Counterparty has submitted a cash flow		All counterparty's data
Cancelled	A cash flow with assigned Match ID is sent to the service with as a Cancellation message		All our data with Cancelled Status attached; or Unmatched or Alleged status where cancellation status unilaterally submitted
Broken Match	A cash flow with assigned Match ID is amended unilaterally by one party	Matching field no longer matches	All our data and all cpty's data + cpty Trade ID
Data Amendment	Cash flow remains unchanged but Required Data field has been amended	Matching fields have not changed; data version comparison with	All our data and all cpty's data + cpty trade ID

		previous day is different	
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7 Principles and Guidelines – Netting

7.1 Netting Rules

Only fully matched trades with a vendor-assigned Match ID should be included in the netting process.

The latest date for parties to agree cash flows relating to bundled trades in 3.7 and 3.11 and assigning Match IDs will need to be established by currency.

All cash flows with a Match ID should be taken into the netting process.

There should be the ability to establish bespoke bilateral netting rules. Netting arrangements based on product class, business unit or office location may be driven by SSI details where both parties agree the parameters to apply.

Netting rules would ideally be based on value date, cash flow currency and nostro. There will need to be flexibility to accommodate differing participant requirements:

- matching and gross settlement on a transaction-by-transaction basis
- matching and net settlement, deriving net cash flows on a flexible rules-driven basis
- matching, bilateral netting and settlement clearing (see section 8.0 below)

7.2 Window and Cut-Off

A daily rolling view of matched cash flows should be available at least 30 days out from any given value date.

The cut-off window for final agreement of net cash flow movements between any two legal entities should be established as near as possible to the value date. The cut-off window will depend upon currency and global time zone considerations. Differing liquidity levels and funding deadlines may also impact the cut-off point attainable for smaller clients.

General consensus is for the cut-off to the netting process to be based upon settlement date – 2 currency business days.

Certain product types (eg FRAs) and cash flow events (eg premia) will fall outside this window. There should be a facility for counterparties to continue to submit data outside the S–2 window to be matched by the service. Settlement of these cash flows would be by bilateral arrangement outside the netting capability offered by the service.

7.3 Establishing Net Cash flows

A Net ID attributable to groups of cash flows should be assigned by the service. Both parties should agree the net cash flow per currency before a Net ID is assigned.

The Net ID should be transmitted back to users in the same format as the data was submitted. It is a key requirement for users to be able to capture and apply the Net ID internally to manage workflow.

Any cash flow exceptions arising after a Net ID is been assigned should be resolved bilaterally. This may take place inside or outside the service. Once a Net ID is allocated, parties should be obliged to fulfil the agreed currency payment and resolve exceptions separately.

7.4 SSIs

Any vendor providing cash flow matching services which include bilateral netting and (where applicable) settlement clearing will need to address the question of differing bank account structures across participants. This will require a solution to the SSI data integrity issues in the OTC market.

7.5 Reconciliation

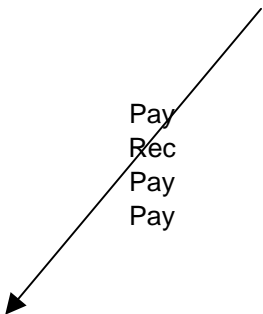
Participants should reconcile matched cash flows to net cash movements back within their own systems. An illustration is given in the following example:

NETTING

	Match ID	Net ID	BANK 1			BANK 2		
			From/To SSI	Pay/Rec	Amount	From/To SSI	Pay/Rec	Amount
GROSS FLOWS								
Cash flow 1	1000	AX	A	Pay	(100)	X	Rec	100
Cash flow 2	1001	AX	A	Rec	300	X	Pay	(300)
Cash flow 3	1002	AX	A	Pay	(1,000)	X	Rec	1,000
Cash flow 4	1003	AY	A	Rec	400	Y	Pay	(400)
Cash flow 5	1004	AY	A	Pay	(300)	Y	Rec	300
Cash flow 6	1005	AY	A	Rec	600	Y	Pay	(600)
Cash flow 7	1006	BY	B	Pay	(500)	Y	Rec	500
Cash flow 8	1007	BY	B	Rec	300	Y	Pay	(300)
Cash flow 9	1008	BZ	B	Pay	(200)	Z	Rec	200
Cash flow 10	1009	BZ	B	Rec	100	Z	Pay	(100)

NET FLOWS

Net 1	AX	Pay	(800)	Rec	800
Net 2	AY	Rec	700	Pay	(700)
Net 3	BY	Pay	(200)	Rec	200
Net 4	BZ	Pay	(100)	Rec	100



ACCOUNTING (Dr/(Cr))

	P&L	Cash
Cash flow 1	100	(100)
Cash flow 2	(300)	300
Cash flow 3	1,000	(1,000)
Cash flow 4	(400)	400



RECON

	G/L	Bank	Match
	(100)		1
	300		2
	(1,000)		3
	400		4
Bank Statement		800	5
Net Explosion	AX	(800)	5
1000		100	1
1001		(300)	2
1002		1,000	3
1003		(400)	4
	(400)	400	

8 Settlement Clearing

A centralised settlements clearing service should be available to participants in the bilateral cash flow matching facility. Subscription to this service should be optional.

Centralised settlement should be based upon the principle of each participant making one currency payment per day through the service. The preferred operational model is for participants to operate independent multicurrency accounts funded for each day's cash flow movements as notified by the service.

Settlements clearing would be based upon the vendor calculating net settlement amounts among counterparties in the pool of participants. Whenever participants are net payers or net receivers, the account would operate on the basis of one payment per currency per day. For vendors, the service should provide for one payment per currency per legal entity per day.

Settlement of net cash flows with participants remaining outside the Settlement Clearing service would be carried out on a bilateral basis in the ordinary course of business.

The vendor would have authority to instruct debit and credit transfers between member's accounts daily. Payments would be made directly between member's accounts and not through the settlements service.

It will be a member's responsibility to reconcile daily cash flows to their own systems. The onus should be on the receiver of funds to allocate these internally for product splits, business unit allocations and/or office locations.

9 Legal and Default Provisions

Participants entering into multi-transaction netting arrangements, either through a vendor service or through bilateral agreement, are reminded that any settlement netting provisions contained in the governing ISDA Master Agreement or other agreement may be relevant and should be amended as appropriate. With regard to the legal framework around identifying groups of transactions subject to netting through a market

service, vendors should provide for this as part of the terms of business which customers subscribe to.

The processes around netting and settlements clearing will need to react quickly and positively to any counterparty or potential counterparty default within the service. Vendors are expected to define an operational and legal approach to default of a counterparty using the service, at all stages of the operational lifecycle.

Similarly, the process around default of a security underlying an OTC transaction will need to be considered and agreed. In particular, this applies to CDS.