

MEMORANDUM

To: Liquidity Risk Management Programs Proposal File

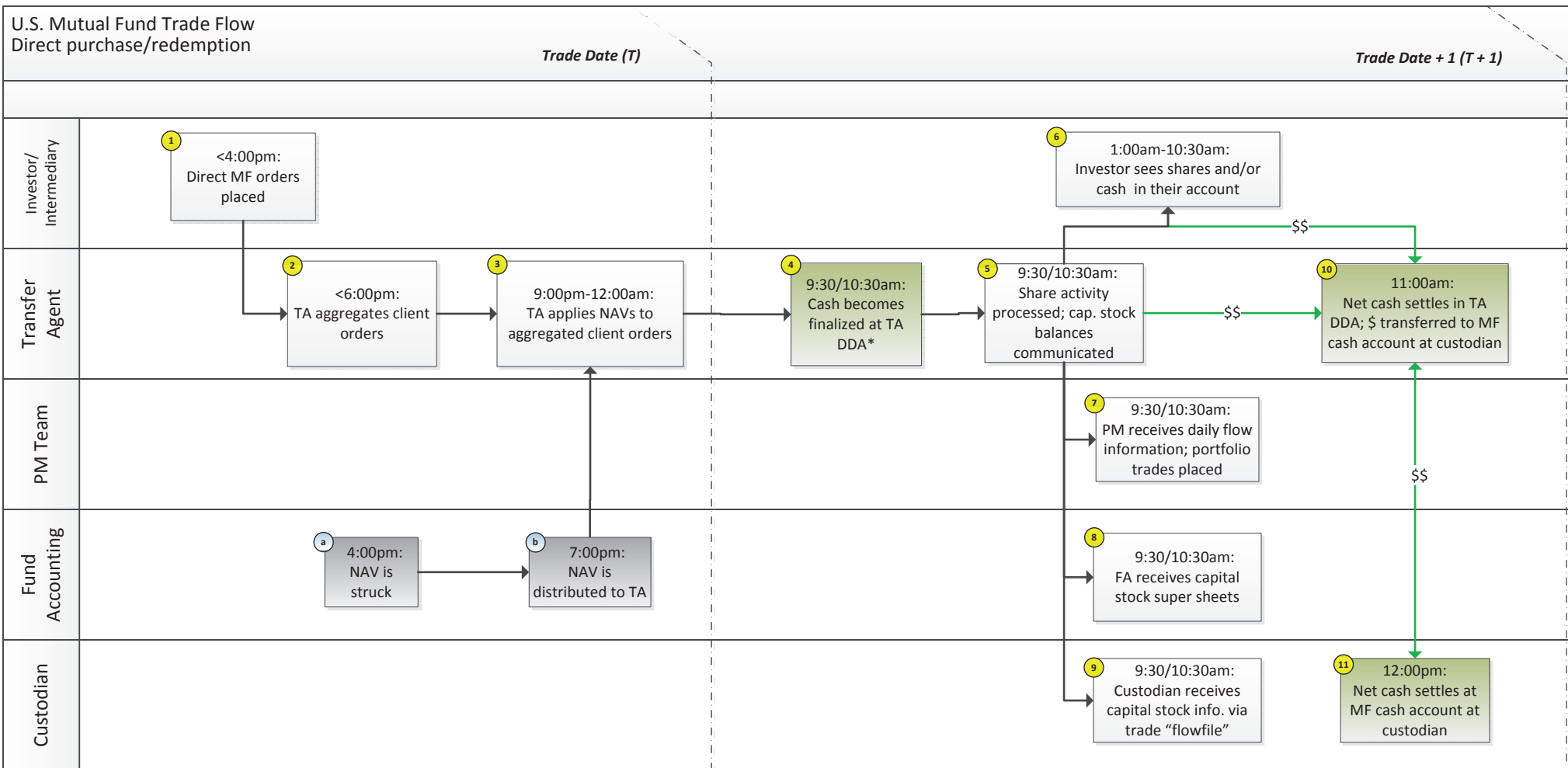
From: John Foley
Senior Counsel, Division of Investment Management

Date: May 9, 2016

Re: Receipt of SIFMA Documentation Relating to the Timing of Mutual Fund Trade Flow Data in the United States and Europe

On April 26, 2016, the Division of Investment Management received several schematics from the Securities Industry and Financial Markets Association (“SIFMA”) relating to the timing of mutual fund trade flow data in the United States and Europe.

SIFMA’s schematics are attached to this memo.



1 Investor / Intermediary places trade directly with Asset Manager or with TA platform before 4:00PM. Orders placed after 4:00PM are processed the next day (Note: Orders can be received by the TA after 4:00pm, but they must be time stamped prior to 4:00pm). Examples of direct orders include those placed through mail, phone, or internet

2 TA aggregates orders as they are received. The last batch of orders is usually received by 6pm – later batches can still be processed if necessary but this will delay the nightly process

a All Fund inputs and outputs are booked to Fund's general ledger; NAV is calculated

b Fund Accountant disseminates final NAVs to various stakeholders, including TA, Treasury Oversight, PM, Custodian, exchanges, other data sources

3 TA receives NAVs from Fund Accounting and applies them to aggregated orders. Values and/or share amounts are assigned to all MF orders placed on T.

4 Final/final cash settlement amounts are calculated; the amounts indicate how much cash will be settling in the MFs on T+1. International funds are calculated at 9:30am; US funds at 10:30am.

*Note: The TA DDA (demand deposit account) is an account held at the custodian in the name of the TA for the benefit of processing cash related to MF capital stock activity

5 Cash and shares settling on T+1 are reported by the TA to Fund Accounting, Custodian, and PM (9:30am Intl. Funds/10:30am Domestic Funds)

6 Investors receive settlement of MF shares from subscriptions or cash from redemptions; shares settle in client accounts

7 Portfolio Manager receives daily flow information at 9:30am/10:30am and is made aware of incoming subscriptions/redemptions. Portfolio trades are made based on incoming/outgoing cash for that day.

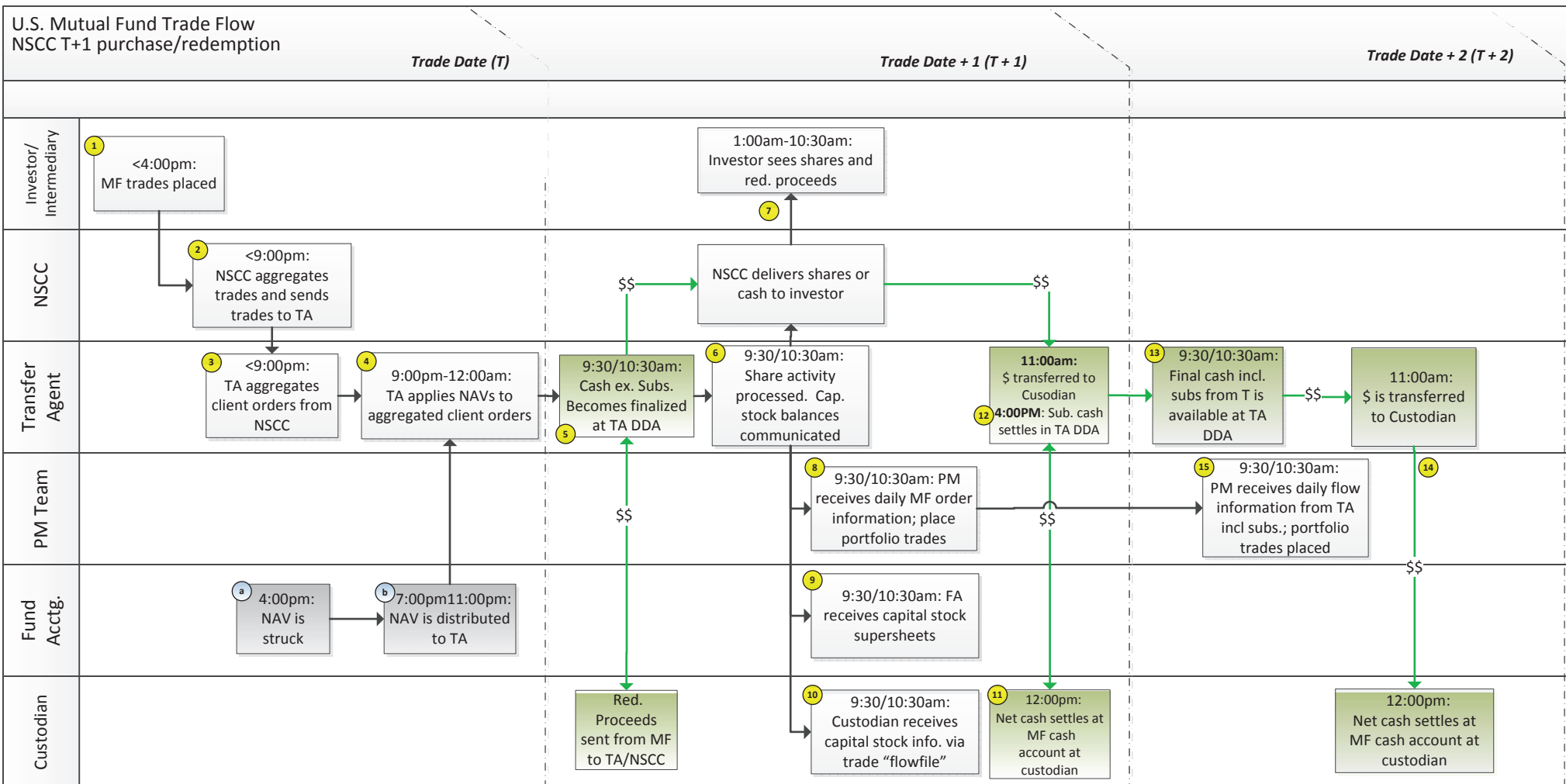
8 FA receives capital stock activity from TA; capital stock activity is booked into T+1 NAV

9 Custodian receives daily trade flow file and is made aware of incoming/outgoing cash from capital stock subscriptions/redemptions

10 Net cash from incoming subscriptions/outgoing redemptions is transferred from TA DDA to MF cash account at the custodian

11 Custodian reconciles cash account vs. trade order flow file, then cash becomes available to respective funds

T+2: Corrective Processing occurs if necessary

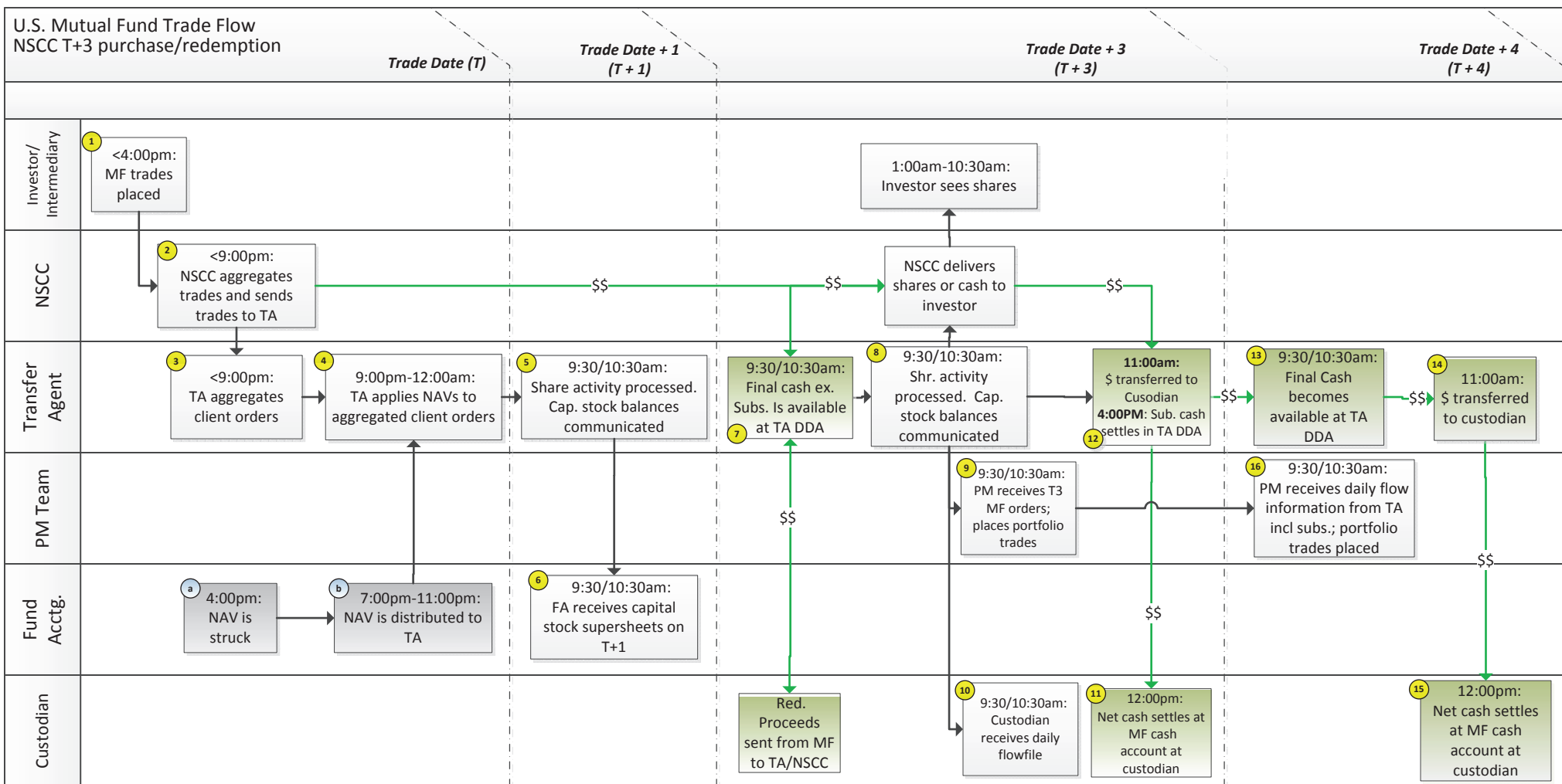


- 1 Investor / Intermediary places via NSCC before 4:00PM. Orders placed after 4:00PM are processed the next day (Note: the order can be received by the TA after 4:00pm, but it must be time stamped prior to 4:00pm)
- 2 NSCC sends multiple MF order files throughout the day to TA; last order file sent by NSCC is at 9:00pm. Final settlement file is sent later at night
- 3 TA aggregates orders as they are received. Later batches can still be processed if necessary, which will push back the nightly process
- a All Fund inputs and outputs are booked to Fund's general ledger; NAV is calculated
- b Fund Accountant disseminates final NAVs to various stakeholders, including TA, FA, Treasury Oversight, PM, Custodian, exchanges, data sources
- 4 TA receives NAVs from Fund Accounting and applies them to aggregated orders. Values and/or share amounts are assigned to all MF orders placed on T.
- 5 Final/final cash settlement amounts are calculated; the amounts are **inclusive of redemptions but not subscriptions** settling on T+1. International funds calculated at 9:30am, US funds at 10:30am.
- 6 Shares and cash are reported to Fund Accounting, Custodian, and PM at 10:30 AM (international funds, 9:30AM). **Numbers include redemption proceeds but not subscription proceeds for orders placed on T.** Shares are issued to client accounts via NSCC.

- 7 NSCC delivers shares for subscriptions or cash for redemptions to investors; shares and/or cash settle in client accounts
- 8 Portfolio Manager receives daily flow information at 9:30am/10:30am and is made aware of incoming net cash **which includes redemptions proceeds but not subscription proceeds from T.** Portfolio trades are made based on incoming/outgoing cash for that day.
- 9 FA receives all capital stock activity from TA; capital stock activity is booked into T+1 NAV
- 10 Custodian receives daily flow file and is made aware of incoming/outgoing cash from capital stock orders; **this file does not include subscription proceeds from T**
- 11 Net cash settles in TA DDA; **this figure does not include subscription proceeds from T.** Custodian reconciles cash account vs trade order flow file, then cash becomes available to respective funds
- 12 Subscription cash from orders placed on T settles in TA DDA – since 4:00pm is past the daily close of the funds, the cash does not become available to the PMs until the next day, **T+2**
- 13 Final/final cash settlement amounts are calculated; **this figure includes subscription settlements from T**
- 14 Net cash **including that from subscriptions placed on T** is transferred from TA DDA to MF cash account at the custodian; custodian reconciles cash account vs trade order file, then cash becomes available to respective funds
- 15 Portfolio trades are placed after receiving MF trade order information inclusive of subscriptions from T

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T+3: Corrective Processing occurs if necessary

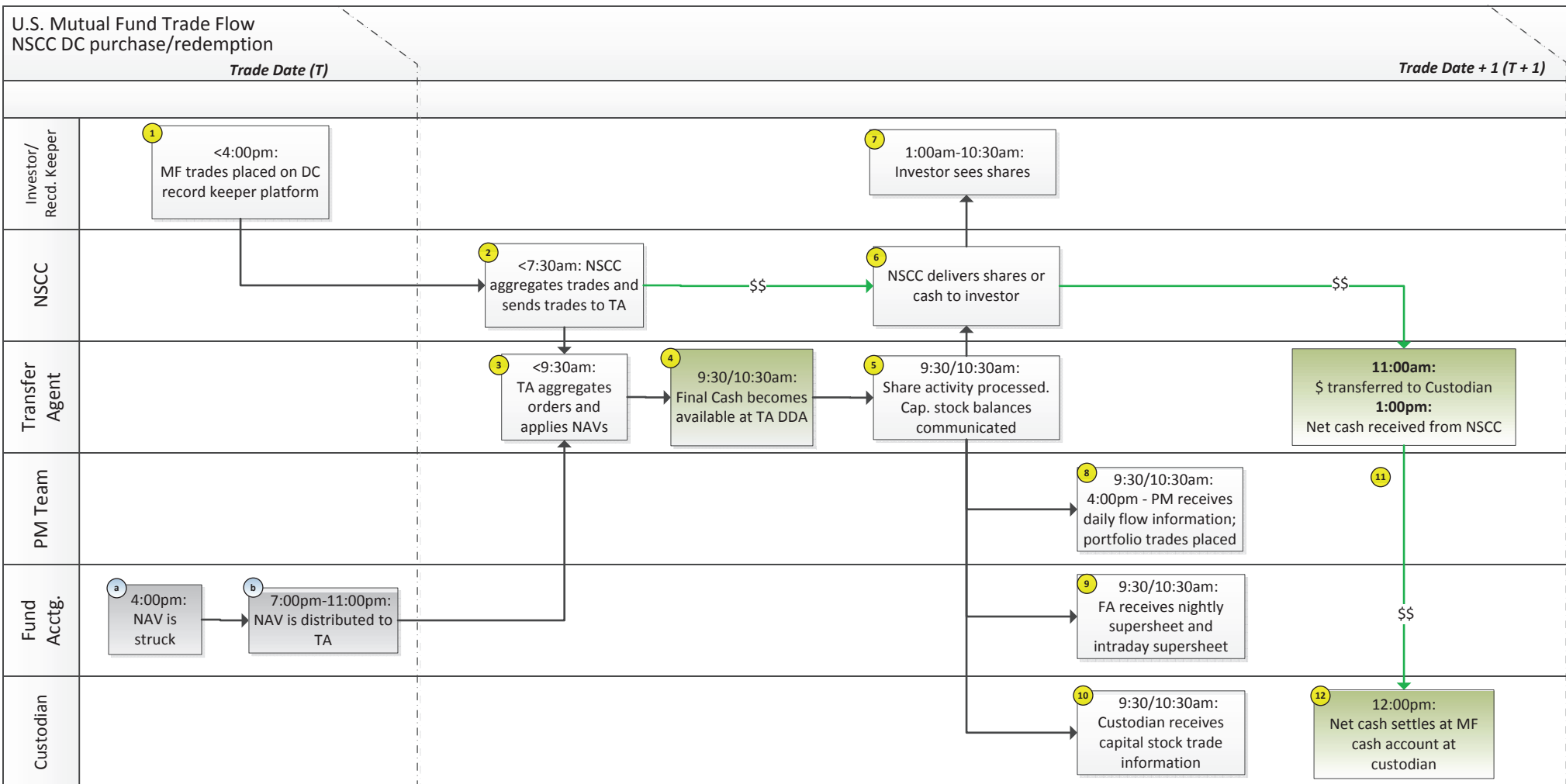


- 1 Investor / Intermediary places via NSCC before 4:00PM. Orders placed after 4:00PM are processed the next day (Note: the order can be received by the TA after 4:00pm, but it must be time stamped prior to 4:00pm)
- 2 NSCC sends multiple MF order files throughout the day to TA; last order file sent by NSCC is at 9:00pm. Final settlement file is sent later at night
- 3 TA aggregates orders as they are received. Later batches can still be processed if necessary, which will delay the nightly process
- a All Fund inputs and outputs are booked to Fund's general ledger, and NAV is calculated
- b Fund Accountant disseminates final NAVs to various stakeholders, including TA, FA, T&O, PM, custodian, exchanges, data sources
- 4 TA receives NAVs from Fund Accounting and applies them to aggregated orders. Values and/or share amounts are assigned to all MF orders placed on T.
- 5 Shares and cash for MF orders placed on T are reported to Fund Accounting for inclusion in T+1 NAV
- 6 FA calculates NAV including all MF order activity from T
- 7 Final/final cash settlement amounts **inclusive of redemptions but not subscriptions** settling on T+3 are finalized at TA DDA and communicated with other cash settling that day

- 8 MF orders **inclusive of redemptions but not subscriptions** are included in final/final cash figures and communicated to PM Team and Custody
- 9 PM team receives cash figures **inclusive of MF redemption orders** settling on T3; places portfolio trades
- 10 Custodian receives daily flow file inclusive of **MF redemption orders** settling on T3
- 11 Net cash settles in TA DDA; **this figure does not include subscription proceeds from T**. Custodian reconciles cash account vs trade order flow file, then cash becomes available to respective funds
- 12 Subscription cash settles in TA DDA – since 4:00pm is past the daily close of the funds, the cash does not become available to the PMs until the next day, **T+4**
- 13 Final/final cash settlement amounts are calculated; **this figure includes subscription settlements from T**
- 14 Net cash settles in TA DDA; **this figure includes subscription proceeds from T**. Custodian reconciles cash account vs trade order flow file, then cash becomes available to respective funds
- 15 Custodian reconciles cash account vs trade order file, then cash becomes available to respective funds
- 16 Portfolio trades are placed after receiving MF trade order information inclusive of subscriptions from T

3

T+5: Corrective Processing if necessary

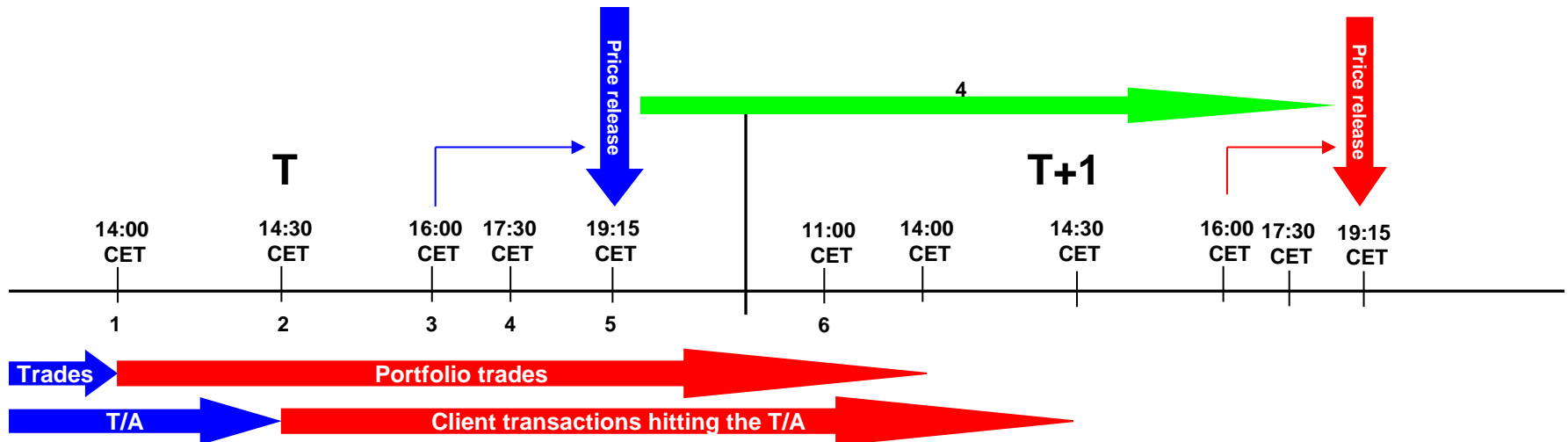


- 1 Investor places trade on DC record keeper platform before 4:00PM. Orders placed after 4:00PM are processed the next day
- a All Fund inputs and outputs are booked to Fund's general ledger, and NAV is calculated
- b Fund Accountant disseminates final NAVs to various stakeholders, including TA, FA, Treasury Oversight, PM, Custodian, exchanges, data sources
- 2 Recordkeeper sends trade orders via NSCC to TA via file format; orders are inclusive of all trades from T. Two files are sent – one at 6:30am, the second at 8:30am. (Occasionally there is a third file)
- 3 TA receives NAVs from Fund Accounting on the morning of T+1 and applies them to aggregated orders. Values and/or share amounts are assigned to all MF orders placed on T.
- 4 Final/final cash settlement amounts are calculated; the amounts are **inclusive of redemptions and subscriptions** settling on T+1. International funds calculated at 9:30am, US funds at 10:30am.
- 5 Cash and shares are reported to Fund Accounting, Custodian, and PM at 9:30am/10:30am
- 6 NSCC delivers shares for subscriptions or cash for redemptions to investors; shares and/or cash settle in client accounts

- 7 Shares settle in client accounts; clients are able to view net mutual fund transactions in their accounts
- 8 Portfolio Manager receives daily flow information at 9:30am/10:30am and is made aware of incoming net cash **which includes both redemptions proceeds and subscription proceeds from T**. Portfolio trades are made based on incoming/outgoing cash for that day including **subs from T**.
- 9 FA receives all capital stock activity from TA; capital stock activity is booked into T+1 NAV
- 10 Custodian receives daily flow file and is made aware of incoming/outgoing cash from capital stock subscriptions/redemptions; **inclusive of both redemptions and subscriptions**
- 11 Net cash transferred from TA to custodian. Figure is inclusive of both **subscriptions and redemptions from T**. settles in Custodian reconciles cash account vs trade order flow file, then cash becomes available to respective funds
- 12 Net cash from NSCC received by TA; net cash is **inclusive of both subscriptions and redemptions from T**. Note: For Retirement transactions, TA forwards net cash to custodian prior to receipt from NSCC. This is due to guarantee of receipt from NSCC.

Lux funds T/A flows

The 'time stamp' is where the client trade hit the T/A



1. **14:00 CET** – deadline for portfolio trade to be received by Fund accounting and recorded in the T NAV. All trades received after 14:00 CET will be recorded in the NAV calculated on T+1
2. **14:30 CET** – deadline for T/A activities. All deals received by the T/A until 14:30 CET will be valued using the T NAV released at 19:15 CET and will be recorded in the NAV calculated on T+1 – two exceptions: 2 distributors act on 'agency basis' and send their order received prior to cut-off by 16:00 CET (and not 14:30 CET)
3. **Valuation point** – time at which portfolio prices are snapped
4. **17:30 CET** – Initial cash flow projection released (basis for swing decision)
5. **19:15 CET** – Release of the T NAV
6. **11:00 CET (T+1)** – Sub/red activity priced using tonight's NAV are accounted for in T+1 NAV books and records