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APR 0 6 2005

OFFICE OF THE SECRETARY

April 1, 2005

Mr. Robert Plaze Associate Director Division of Investment Management Securities and Exchange Commission 450 Fifth Street, N.W. Washington, DC 20549

57-27-03

Re: The SPARK Solution

Dear Bob:

Enclosed are the materials we discussed relating to the SPARK Solution. Please note that these materials are a work in progress and do not reflect certain modifications and enhancements that may be made, including those referred to herein.

On March 23, 2005, representatives of The SPARK Institute met with representatives of the five of the largest mutual fund company members of The Depository Trust & Clearing Corporation ("DTCC"). This meeting was arranged and hosted by the DTCC and also included representatives from the Investment Company Institute ("ICI").

The purpose of the meeting was for The SPARK Institute to explain the SPARK Solution to the fund companies, to seek input from the fund companies regarding possible modifications of the trading aspects of the SPARK Solution that impact the fund companies, and to determine whether the fund companies will accept trades delivered to them by intermediaries that adopt the principles of the SPARK Solution. The meeting was extremely productive and we identified a few areas where some additional detail and fine-tuning will be beneficial. The SPARK Institute will work with the fund companies to make the needed adjustments.

Additionally, in our meeting the fund companies identified certain issues that will likely require clarification by the SEC in order for the SPARK Solution to be effective. We would like to discuss those issues with you at your earliest convenience. We believe that with the additional operational detail and the clarification from the SEC noted above, the fund companies would support the SPARK Solution and allow intermediaries that use their funds to submit trades under the principles and procedures of the SPARK Solution.

Mr. Robert Plaze April 1, 2005 Page 2

If you have any questions regarding the enclosed materials or any of the matters discussed in this letter, please feel free to contact me.

Sincerely,

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Robert G. Wuelfing President (860) 658-5058

CC: Ann E. Bergin Larry H. Goldbrum



### The SPARK Solution

Appendices

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# Appendix A

### The SPARK Solution Overview



- Allows retirement plan service providers to continue to do after hours processing of trade instructions received prior to market close
- Avoids adverse impacts to participants of "4 p.m. hard close"
- Establishes standardized industry controls that leverage:
  - Existing practices and procedures
  - Technology solutions



### **Trade Processing Requirements**

- All critical trade information (excluding fund prices) must be captured and electronically time stamped by the service provider before the market closing time
- All orders submitted to the funds by the service provider must be based on instructions time stamped before the market closing time
- All instructions received by the service provider for the trading day must be processed
- No instructions are added or deleted after the market closing time
- Any modification or cancellation of an instruction is treated as a new instruction



### **"Tamper Proof" or "Tamper Evident" verifiable electronic time stamping**

- Electronic time stamps must be applied by a third party, or by using third party systems and technology
- Every instruction must be assigned a unique sequential identification number ("TSN")
- Time stamp technology must incorporate instruction information as part of the verification features ("Hashing Codes" or "Electronic Fingerprints")



# "Tamper Proof" or "Tamper Evident" verifiable electronic time stamping (continued)

- All time stamp, TSN and Electronic Fingerprint information must be unalterable
- will be reported daily to the fund companies or transfer agents in a Certain time stamp, TSN and Electronic Fingerprint information secure "Time Stamp Packet"
- Data must be stored and available for inspection



# **Additional Features**

- System generated real-time "red-flag" reporting will identify Changes to or deletion of any trade after market close Inclusion of a trade received after market close Changes to a time stamp
- All trade instructions must be traceable and auditable from receipt by the service provider to submission to the mutual fund
- Standards for error correction after hours
- Standards for trade processing during system failures
- TPAs can:

Time stamp instructions and process orders after market close, or Utilize Intermediary service provider trading systems and time stamping functionality prior to market close



# Appendix B

# **Retirement Services Industry Flow of Mutual Fund Trades**

With Trade Instruction Verification

SPARK Institute, Inc.					5.0 Executes Orders
al Fund Trades				0 s Orders, ates ip Packet	
ry Flow of Mutu			S S	4.1 Processes Valid Timestam	
ervices Industr		2.0 Processes Instructions, Prepare Order	3.0 Provides Timestamps Verifies Post Close Instructio		
Retirement So	1.0 Send Instructions				
	Plan Participants/ Plan Sponsor	Intermediary	3 <sup>rd</sup> Party Timestamp/ Verification Service	Trading Agent	Mutual Fund Company

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Figure 1



### **Figure 1 Notes**

3rd Party Timestamp & Verification Service	Independent 3 <sup>rd</sup> Third Party Time-Stamping Service time stamps instructions and verifies the Intermediary's daily instructions for after-hours processing. The service includes assigning Transaction Sequence Numbers (TSN) for each instruction, and creating and transmitting a special "Timestamp Packet" that will be used by a trading agent to identify potential irregularities.	
Trading Agent	The entity that receives mutual fund orders (e.g., NSCC or mutual fund transfer agent) from the Intermediary and passes them on to the mutual fund for execution. The Trading Agent also verifies the data in the Timestamp Packet for potential irregularities.	





Figure 3



### **Figure 3 Notes**

Institute, Inc.

2.1 Receive Instructions	The Intermediary's record keeping systems receives electronic instructions and performs initial processing.		
2.2 Batch Instructions	All instructions intended for same day pricing are batched together by plan, by the record keeping system. The aggregated instructions are stored in a database that will be accessed by the order processing system.		
3.1 Compute Hashes	Each instruction will be required to be hashed in a secure manner that can be reproduced in the future to verify that the instruction has not been altered.		
3.2 Assign Timestamp & TSN	Upon receiving a hash from an Intermediary, the Independent 3rd Party Time-Stamping Service will assign a timestamp with the current time and associate a TSN to each hash. The TSN will be an industry wide standardized alpha-numeric string currently formatted as follows: FFFFFSSSSYYYYsssssssssss where: FFFFF is a 5 digit ID for the institution originating the transaction, SSSS is a 4 digit system id within the institution, YYYY is the 4 digit year, sssssssss is a consecutive sequence number.		
3.3 Stores Hash, Timestamp & TSN	The Independent 3rd Party Time-Stamping Service will maintain a database of all hashes, timestamps and TSN numbers.		
3.4 Synchronizes Timestamp Servers	nchronizesThe Independent 3rd Party Time-Stamping Service maintains timestamp servers that are synchronized to the official time as maintained by NIST.		
3.5 Maintains Official Time	NIST maintains the official time for the United States.		



Figure 4



### **Figure 4 Notes**

The Intermediary pulls all pre-close instructions and submits them to the Independent 3<sup>rd</sup> **Intermediary Pulls Instructions** Party Time-Stamping Service for Verification. Only instructions that occur prior to the **Eligible for Same Day Pricing** same-day pricing time are eligible to become orders. All instructions time stamped after the pricing time are stored in the Instruction Database for next day processing. All valid instructions are then batched for order processing. The Intermediary notifies 2.3 Gather Instructions for the Independent 3<sup>rd</sup> Party Time-Stamping Service when the batching process is complete and the Independent 3rd Party Time-Stamping Service initiates the instruction Aggregation verification and Red Flag Report processes. All valid instructions are batched for order processing. 2.4 Aggregate Instructions 3.6 Validate Timestamps & Verifies that the timestamps are valid, that the associated hash matches the hash of the instruction, and that each TSN is present. **TSNs** Any insertions, deletions, or modifications are reported on Red Flag Reports that are 3.7 Generate Red Flag monitored by senior personnel at the Intermediary. Intermediary reviews red flag Reports reports and follows-up on potential irregularities. Other TPAs may submit files of their aggregated Instructions. This step only applies if 2.5 TPA submits Aggregated the Intermediary submits trades on behalf of other parties. Instructions. All valid instructions received prior to the pricing time are converted into trade orders. 2.7 Prepare Orders 3.8 Create Timestamp Packets The Independent 3<sup>rd</sup> Party Time-Stamping Service prepares a secure Timestamp Packet that includes the hash, timestamp and TSN for the first and last instruction in each batch. The timestamp packets are sent to the Intermediary. The time-stamping and instruction verification service for the TPA will compile and 2.6 TPA's Timestamp Packet submit a secure Timestamp Packet. When order processing is completed, the Intermediaries Trading System transmits the 2.8 Transmits Orders & Orders and Timestamp Packets to the Trading Agent.

**Timestamp** Packets







### **Figure 5 Notes**

4.1 Receives Orders & Timestamp Packets	The Trading Agent receives the files transmitted by the Intermediary's trading system.
4.2 Submits Orders for Execution	The Timestamp Packets are validated to determine if the first TSN for the current day is in order relative to the last TSN of the prior day. The timestamps are checked to determine if the last timestamp for the current day is before the pricing time. If there are no irregularities, the Trading Agent submits the orders for execution.
4.3 & 4.4 Notifies Intermediary	If the Trading Agent identifies a potential irregularity, the Trading Agent will, depending on the instructions from the Intermediary at the time the order file was submitted, either (a) reject the order file and notify the Intermediary (step 4.3), or (b) process the file anyway and notify the Intermediary and mutual fund of the irregularity (steps 4.4 and 4.6). When an order file is rejected the Intermediary can submit a corrected order file or resubmit the original file at any time for processing by the Intermediary that will resume at step 4.1.
4.5 Research & Correct Irregularity	The Intermediary must identify the irregularity, correct any error and make financial restitution to the funds, as needed.
4.6 Notifies Mutual Fund of Irregularity	The Trading Agent notifies the mutual fund of the potential irregularity.



Figure 6



### **Figure 6 Notes**

4.5.1 Id Ir Ft	dentifies Source of rregularity and Affected unds	The Intermediary researches the potential irregularity and determines which funds are affected, if any.
4.5.2 N M ar	lotifies Affected Funds, Iakes Trade Corrections nd Financial Restitution	If the mutual fund is affected then appropriate corrections and financial restitution is made.
4.5.3 N A Ir	otifies Funds Not ffected by the rregularity	The funds that are not affected are notified by the Intermediary that their funds were not affected.
4.5.4 Ev Ti	valuates Intermediary's rading Privileges	The mutual fund company will evaluate whether or not to modify or suspend the Intermediary's after hours trade processing privileges.



Figure 7



# Appendix C

# **Critical Trade Information Required for Hashing Retirement Services Industry**



Generally, instructions that result in trades/orders can be grouped into seven categories for the purpose of identifying data elements required for hashing. Two additional categories are necessary for the cancellation and modification of instructions, and for manual trades. All of the categories are listed below.

- . Exchange Investment to Investment
- 2. Exchange Multiple Investments
- 3. Participant Withdrawal
- 4. Plan Withdrawal
- 5. Single Participant Purchase
- 6. Aggregate Purchase
- 7. Rebalance
- Delete/Cancel

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9. Manual Trades

For each category, the list of required data elements, examples of transactions that fit into that category and any additional requirements are documented below.



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### **Critical Trade Information Required for Hashing**

### 1. Exchange - Investment to Investment

### **Example Transactions:**

- Exchange \$1,000 from Bond to Equity
- Exchange 100 shares from Equity to Money Market
- Exchange 10% from Money Market to Bond

- Transaction Type
- Plan ID
- Participant ID
- Dollar Amount, Number of Shares or Percent
- From Investment
- To Investment



#### 2. Exchange – Multiple Investments

### **Example Transactions:**

- Exchange
  - \$100 From Bond
  - \$1,000 From Equity
  - 20% to Money Market
  - 80% to International

### **Required Data Elements:**

- Transaction Type
- Plan ID
- Participant ID
- From Investment 1 (Dollar Amount, Number of Shares, Percentage)
- From Investment 2 (Dollar Amount, Number of Shares, Percentage)

• Exchange

- 30% from Money Market
- 100% from International
- 15% from Equity
- 100% to Bond

- From Investment n (Dollar Amount, Number of Shares, Percentage)
- To Investment 1 (Percentage)
- To Investment 2 (Percentage)
- To Investment n (Percentage)



# 3. Participant Withdrawal

### **Example Transactions:**

- Participant requests a \$5,000 loan
- Participant requests a \$15,000 in-service withdrawal
- Terminating Participant withdraws entire balance

- Transaction Type
- Plan ID
- Participant ID
- Dollar Amount, Number of Shares, Percentage



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### **Critical Trade Information Required for Hashing**

#### 4. Plan Withdrawal

#### **Example Transactions:**

• Plan Conversion to another provider (not in-kind)

- Transaction Type
- Plan ID
- Dollar amount, Number of Shares



# 5. Single Participant Purchase

### **Example Transactions:**

Participant submits rollover contribution of \$15,000

- Transaction Type
- Plan ID
- Participant ID
- Dollar amount



# 6. Aggregate Purchase

### **Example Transactions:**

- Plan submits a \$125,000 payroll deduction (contribution) for 100 participants
- Profit sharing allocation is received for \$15,000

- Transaction Type
- Plan ID
- Dollar amount



#### 7. Rebalance

#### **Example Transactions:**

- Automated periodic balance based on investment elections
- Rebalance Enrollment

- Transaction Type
- Plan ID
- Participant ID



8. Delete/Cancel

### **Example Transactions:**

and cancels the first transfer request and requests a new one. This category will prevent breaks in A participant calls in at 9:00 a.m. and requests a transfer. At 2:00 p.m. the participant calls back the TSN chain. .

- Transaction Type
- Plan ID
- Participant ID
- System Transaction ID or TSN of deleted transaction



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### **Critical Trade Information Required for Hashing**

### 9. <u>Manual Trades</u>

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#### **Example Transactions:**

• Manual buy or sell as needed for corrections.

- Transaction Type
- Plan ID
- Dollar amount, number of shares
- If exchange both the sale and buy