During the T+3 workshops conducted earlier in the year, the key theme throughout these workshops was ‘AUTOMATION’.

We discussed and presented to members a phased approach should a decision be made to implement T+3 into BDA.

The overall scope of implementing T+3 on BDA was broken up into 3 Phases and 1 parallel phase.

Parallel phase only impacts BDA and no other integration is required.
Scope for Phase 1

- Split Of Brokers Proprietary and Controlled Client settlements
- Client Pledge
- SLB Swift Message Automation
- Corporate Action Swift Message Automation
- FTP Automation
Today’s session is really to focus the last scope item in phase 1 – FTP Automation

Two key objectives of the FTP Automation

- We want to expand the existing upload offering based on member feedback from the previous workshops
- Want to improve the current FTP process that requires manual intervention by users
Expanding the current service offering by adding:

- A mechanism that allows members to automate the loading of Client data into BDA i.e. CLMNT.
- Provide a mechanism that allows members to update client instructions for elective Corporate Action (CA) events. CA elective events that will be covered:
  - Scrip Dividend
  - Take-Up
  - Odd Lot
  - Drip
Priority of expanding the existing service offering:

- 1st - CA Elective events
- 2nd - CLMNT

Plan to have these 2 additional service offerings implemented by May 2013.
Before we can start with the development of adding the additional service offerings, we must 1st agree how we want to improve or change the existing FTP process

- Option 1
  - Improve the current process to be more automated

- Option 2
  - Implement a BDA Web-service interface
Option 1 - Improved FTP Process

Member
System

Interface
Create FTP File
FTP Error File
PCOMPR

BDA
Upload
TRIGGER
Batch
FTP process and layouts unchanged
System validation and processing unchanged
RPROC step replaced by an automated watcher
New output file created containing error details
No changes to member systems for uploads
  Changes necessary to process the error file
Based on filename will be processed online or during evening batch, i.e. have two datasets that must be used as per current FINONL
Option 2 - Proposed Web Service Process

Member → Interface → BDA

System → XML → Web Service

XML

FINONL

CLMNT

ALLOC

CA Elec
BDA FTP Automation

- Standardised Web Services Architecture
- HTTPS (user\pass not x509)
- Synchronous and asynchronous model
- Immediate return of error messages
- Existing FTP model unchanged and will remain as is
Not designed for large batches at end of day

- Not a replacement for large EOD batch uploads
- Smaller intraday timeous batches

Functions to be included initially:

- FINONL
- CLMNT
- ALLOUP
- New Corporate Actions Elective events
Functionality and Validation will remain unchanged
- Enhancements will mainly be for XML processing and the Web Service approach only

Interface layout largely unchanged (XML versus fixed format)
- Will use proper data types: integer, string all constrained as per existing layout. (i.e. using length, maxLength, minInclusive attributes)
- New fields may be added for feedback and status information

Object interface and not a message interface
- Response object will be of the same type as the request object
<table>
<thead>
<tr>
<th>FTP Layout</th>
<th>XML Layout (xsd)</th>
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<tbody>
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<tr>
<td></td>
<td><code>&lt;/xs:element&gt;</code></td>
</tr>
</tbody>
</table>
Bandwidth used will increase by an estimated 6 times over the FTP format (Send and Receive)

- If you send 100MB of FTP file during the day it is likely that you will end up sending 600MB of XML messages using the Web Service approach

Interface layout largely unchanged (XML versus fixed format)

- Will use proper data types: integer, string all constrained as per existing layout. (i.e. using length, maxLength, minInclusive etc attributes)
- A function header will be created to add messaging parameters such as tracking GUID and timestamp
- New fields will be added where necessary to accommodate error information
The Web Services Model will make use of HTTPS transport protocol between the client and the JSE.

- Make use of the current JSE SSL certificate on their web farm
- Encrypt traffic between endpoints

There will be a double user/password pair to ensure that the message envelope reaches the destination unchanged and that no unauthorised access is made.

- Each participant will be issued with a set of mainframe as well as JSE Active Directory user/passwords for each member that they send messages on behalf of.
BDA FTP Automation

- Development costs for members if Web Services is implemented
- May have additional bandwidth costs (volume dependant)
- No additional hardware should be required
JSE Costs

If it is decided that Web Service is the solution, a subscription fee per service will be charged based on same fee as per the current upload subscription fee.
Feedback from Brokers that could not make it

- UBS
  - View that a web-service will not add real value to them
  - Worried about cost implications

- Computershare – Does back office admin for 34 brokers
  - Feel Web-service does not add any additional efficiencies
  - Current FTP mechanism works and will support additional changes to improve the process
  - Also feels FTP for CA elective events will be a lot simpler than a message based solution