The Single Security Initiative Conference
Hosted by: Fannie Mae and Freddie Mac
May 14, 2018
Intercontinental Hotel-Times Square
New York City
# Infrastructure Update

**Richard Sorkin**  
SVP, Securitization – Capital Markets  
Fannie Mae

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Acevedo</td>
<td>Director of Product Management Technology &amp; Operations</td>
</tr>
<tr>
<td>Aanchal Arora</td>
<td>Aladdin Product Manager</td>
</tr>
<tr>
<td>Larry Gioia</td>
<td>President</td>
</tr>
<tr>
<td>Jackie Jozefek</td>
<td>Business Manager</td>
</tr>
<tr>
<td>Barry Pavel</td>
<td>Director, North America Client Relationships and Product Dev.</td>
</tr>
<tr>
<td>Courtney Van Fechtmann</td>
<td>Director, Rates Client Strategy Group</td>
</tr>
</tbody>
</table>
Single Security 2019: *Will You Be Ready?*

Broadridge Financial Solutions

Mike Acevedo
The Broadridge Solution

In 2016, Broadridge started working with various industry participants such as FNMA, FHLMC, SIFMA, eMBS, to arrive at a solution for our diverse client base

- Created a client working group to identify scope of this far reaching industry initiative
- As things progressed, addressed with the larger client community
  - Fannie Mae & Freddie Mac participated in this kick off meeting
- Timeline:
  - Q3 2018 - Development Complete
  - Q4 2018/Q1 2019 – Testing
  - Q2 2019 – Production Ready
Broadridge Changes

- Process new aligned Disclosure files
- Display new data from agency disclosures across application
- Release control on clearance for client exchanges
- Support of float compensation
- Updates to product code descriptions (relabeling)
- Load and process daily and cumulative exchanges files
- Reporting – New and updates to existing Report Suite
Single Security Initiative in Aladdin

Under the direction of FHFA, BlackRock market practitioners and Aladdin experts have been actively engaged with Fannie Mae, Freddie Mac and SIFMA

- This involvement has enabled us to design an Aladdin solution that incorporates our in-depth knowledge of the mortgage market evolution and expertise in mortgage analytics and trading.
- Our solution reflects both practitioner insight and feedback gathered from our Aladdin clients – a community of 80+ industry leading organizations.
- It allows an end-to-end TBA Life Cycle Support for Uniform Mortgage-Backed Security.

### Aladdin’s Single Security solution

#### Mortgage Data and Analytics
- Consumption of new single security disclosure data and data conversion
- Expanded product scope for Analytics, MBS Relative Value Package and Risk Reporting
- One set of CUSIPS-based benchmarks and pricing data from external vendors

#### Trading Capabilities
- New uniform single security UMBS trading ticker to be used for trading and operations workflows
- Ability to capture exchange of Legacy 45-day Freddie PCs into 55 – day PCs in the transaction workflow
- Mechanism to facilitate adoption of changes in investment guidelines or constraints

#### Mortgage Operations
- Allow both FNMA and FHLMC issued Uniform MBS and exchanged FRE mirror securities deliverable into Single TBA contract
- Connectivity with FICC Services for EPN and Novation Services
- Support of end-to-end post trade workflows for UMBS

#### Best Execution
- Account for client specific workflows
- Data Reporting for transactions, positions, security indicative data and many more
- Enhanced interfaces to support new data points, extracts and downstream workflows
Single Security 2019: *Will You Be Ready?*

Road to Readiness

Larry Gioia
Changes to support the Single Security Initiative: Overview

- Support Freddie Mirror Securities
- Support Fannie move to aligned formats, including convert-back to current formats
- Modify eMBS Database to support UMBS
Freddie Mac Mirror Support Freddie formats and eMBS DB

- Exchange Mapping
- Daily and Cumulative Exchange Activity
- Float Compensation Data
- Add fields for convert-back clients: Prefix, Factor, and Balance on DNI, Prefix on Factor
Fannie Mae Aligned-Format Support

- Receive and Provide test files
- Modify eMBS Distribution and Validations
- Run through eMBS systems & compare
- Provide feedback to Fannie Mae on results
- Provide test data in eMBS Database format
- Convert-back Fannie Data to current and earlier formats
eMBS Database Changes

- Add new Freddie UMBS Prefixes (CL, CI, CT, CN,…) and Products
- Populate new mirror securities beginning in August (CollType 'POOL")
- New Mirror exchange tables (daily activity, cumulative, float comp)
- Populate collateral (IssColl) rows for mirror securities and update daily
- Add prepay aggregations of 55-day Freddie loan-backed UMBS
- Summarize available supply of UMBS (Freddie & Fannie)
- Change Fannie TBA Agency designation from FNM to UMB
- Modify TBA->Pool association for UMBS TBAs to reflect that Fannie and Freddie 55-day pools are eligible
- SUPER Summary: new table by SUPER showing % Fannie and % Freddie by current balance. Also display on eMBS screens
**Single Security Initiative Implementation Schedule**

<table>
<thead>
<tr>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr</td>
<td>May</td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

- **eMBS DB changes to support Mirror**
  - FHLMC provides mapping document
  - Design/Development
  - Communicate changes to clients
  - UAT
  - Go-live for Mirror Pools 8/7/18

- **FNMA releases mapping documents**
  - FNMA provides test files
  - Design/Development
  - FNMA’s UAT
  - Communicate changes to clients
  - UAT with clients
  - Go-live UMBS Forward Trading Begins Q1 2019
  - Go-live UMBS Settlement and New Issuance begins Q2 2019

- **FNMA Agency File Convert-backs**
  - Design/Development
  - Communicate changes to clients
  - UAT
  - * Parallel testing for Single Security (CSP provided files)
  - Go-live for Single Security using CSP Platform (6/3/19)

- **OPEN**
- Complete

* Assumption is that during parallel testing, files will be produced by the CSP.
Bloomberg Preparation for UMBS
Jackie Jozefek
Bloomberg Mortgage Cashflow Structured Products

The Uniform MBS initiative will impact Bloomberg syntax, screen applications, and other ancillary businesses throughout Bloomberg including:

- Pools
- Generics
- TBAs and Electronic Trading
- Analytics
- Excel API and Enterprise Products
- Indices
Bloomberg Mortgage Cashflow Structured Products

Existing 45 Day Freddie Mac pool example:

<table>
<thead>
<tr>
<th>Pool</th>
<th>FG Q35354</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>(Q3) Conventional Conv 30 years</td>
</tr>
<tr>
<td>Traits</td>
<td>30/360</td>
</tr>
<tr>
<td>Seller</td>
<td>Firstbank</td>
</tr>
</tbody>
</table>

Pool Information:
- Coupon: 3.500%
- WAC: 4.140%
- WAAR: 4.326%
- WAAL: 4.360%

Collateral Information:
- WAOLTV: 86
- WAOLTV-HPI: 78
- WAOLTV-CMV: 86
- WAOLTV-CMV: 575
- WAOLTV-CMV: 67

# Loans: 67
Delay: 44

TRACE Eligible
- Paydown Information

Source: Bloomberg Finance L.P.
### Bloomberg Mortgage Cashflow Structured Products

#### Legacy and Mirror pool changes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Legacy Pool (45 day)</th>
<th>Mirror (55 day)</th>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pool Number</td>
<td>FGQ35354</td>
<td>FNZJ1234</td>
<td>- New 55 day pool prefix – FN(TBA) / FR(NonTBA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Mirror Pool #s to be assigned</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Legacy pool link on Mirror DES page</td>
</tr>
<tr>
<td>CUSIP</td>
<td>3132QR5Q9</td>
<td>123456789</td>
<td>New CUSIP to be assigned</td>
</tr>
<tr>
<td>Pool Type</td>
<td>Q3</td>
<td>CL</td>
<td>Adopt Fannie TBA Pool Types. New codes for Non TBA</td>
</tr>
<tr>
<td>Issue Date</td>
<td>8/1/2015</td>
<td>8/1/2018</td>
<td>New Issue Date to be assigned</td>
</tr>
<tr>
<td>Delay Days</td>
<td>45</td>
<td>55</td>
<td>Delay to match Fannie Mae</td>
</tr>
<tr>
<td>Servicer</td>
<td>Firstbank</td>
<td>SCR Mirror</td>
<td>“SCR Mirror” will display for all Mirrors</td>
</tr>
<tr>
<td>Generic</td>
<td>FGLMC</td>
<td>FNCL</td>
<td>TBA eligible Mirror pools will migrate to the FNCL generics as exchanges occur</td>
</tr>
</tbody>
</table>
**Bloomberg Mortgage Cashflow Structured Products**

**Fictitious Sample Mirror Pool:**

<table>
<thead>
<tr>
<th>Pool</th>
<th>FN ZJ1234 Mtge</th>
<th>Type</th>
<th>(CL) Conventional Conv 30 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traits</td>
<td>30/360</td>
<td>Seller</td>
<td>SCR Mirror</td>
</tr>
</tbody>
</table>

**Pool Information**

<table>
<thead>
<tr>
<th>Coupon</th>
<th>WAC</th>
<th>Orig WAC</th>
<th>WARM</th>
<th>Orig WAM</th>
<th>WALA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.500</td>
<td></td>
<td>4.140</td>
<td>326</td>
<td>360</td>
<td>30</td>
</tr>
</tbody>
</table>

**Collateral Information**

<table>
<thead>
<tr>
<th>WAOLT</th>
<th>AOLS</th>
<th>284,657</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAOLTV-HPI</td>
<td>WALS</td>
<td>303,220</td>
</tr>
<tr>
<td>WAOLTV</td>
<td>MAXLS</td>
<td>417,000</td>
</tr>
<tr>
<td>WAOCS</td>
<td>WAOLT</td>
<td>360</td>
</tr>
</tbody>
</table>

**# Loans**

- Delay: 54 (24)

**TRACE Eligible**

- Prepay History: Feb18, Jan, Dec, Nov, Oct, Sep, Aug, Jul, Jun, May, Apr, Mar, Feb17
- Value calculated by Bloomberg

**Source:** Bloomberg Finance L.P.
Bloomberg Mortgage Cashflow Structured Products

- For any additional questions regarding Single Security details on Bloomberg please contact:

  Jackie Jozefek
  joze@bloomberg.net
  212-617-6731
Single Security 2019: Will You Be Ready?

The Yield Book
by FTSE Russell

Barry Pavel
Director of North America Client Relationships and Product Development
212-816-7810 | Barry.Pavel@FTSERussell.com
Current TBA View

Fannie Mae June TBA

Freddie Mac June TBA

Source: FTSE Russell. For illustrative purposes only. – Disclaimer on slide 38
New UMBS TBA View

- UMBS will retain Fannie Mae Ticker andCUSIP
- Deliverable basket will be a mix of Fannie and Freddie
- Freddie TBA will be available as long as trading continues
Freddie Mirror Securities

- Freddie Pools will be assigned pool IDs beginning with Q-Z (Fannie A-I,M)
- 55 Day TBA eligible Mirror pools will have Fannie Prefixes (CT = 20 Year)
- Mirror pools will be linked to each other

Source: FTSE Russell. For illustrative purposes only. – Disclaimer on slide 38
Freddie 45 to 55 Exchange Values

- Modify pay date or delay for any bond
- Use OAS constant to calculate fair value
- Available on single bond or universe of bonds

Pools

CMO Cohorts

Source: FTSE Russell. For illustrative purposes only. – Disclaimer on slide 38
New Fannie Mae Disclosures

- Sample Fannie pool post go live
- Loaded Freddie Pool and disclosures and modified to Fannie
- Used for model testing as well as commingling
Co-Mingling

- Commingled Fannie and Freddie Remic
- Commingled Fannie and Freddie in Super
- Commingled Fannie and Freddie Super in Remic
- Other Combinations

Source: FTSE Russell. For illustrative purposes only. – Disclaimer on slide 38
Feedback & Support

- Testing ongoing as test files become available
- Living document going up on our website in June
- Table outside with Citi to answer questions
- Help Desk and Account Managers available through transition
TRADEWEB TIMELINE - 3 KEY DATES:

1. TESTING – November 2018
2. TRADING – March 2019
3. SETTLEMENT – June 2019

Source: Tradeweb. For illustrative purposes only. – Disclaimer on slide 38
**90 DAYS PRIOR TO FIRST SETTLEMENT DATE (JUNE 2019)**

FNMA, UMBS and PCGLD will show on Tradeweb:

<table>
<thead>
<tr>
<th></th>
<th><strong>FNMA / UMBS</strong></th>
<th><strong>PCGLD</strong></th>
<th><strong>GNMA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr</td>
<td>92 – 22 / 25</td>
<td>92 – 17+ / 22+</td>
<td>93 – 26 / 30</td>
</tr>
<tr>
<td>May</td>
<td>92 – 18+ / 21+</td>
<td>92 – 14 / 19+</td>
<td>93 – 23+ / 27+</td>
</tr>
<tr>
<td>Jun</td>
<td>92 – 18 / 19</td>
<td></td>
<td>93 – 24 / 26</td>
</tr>
<tr>
<td>Apr/May</td>
<td>032 / 042</td>
<td>027 / 044</td>
<td>031 / 032</td>
</tr>
<tr>
<td>May/Jun</td>
<td>03 / 043</td>
<td></td>
<td>025 / 026</td>
</tr>
</tbody>
</table>

Source: Tradeweb. For illustrative purposes only. – Disclaimer on slide 38
60 DAYS PRIOR TO FIRST SETTLEMENT DATE (JUNE 2019)
FNMA, UMBS and PCGLD will show on Tradeweb, with PCGLD transitioning off the main screen:

<table>
<thead>
<tr>
<th></th>
<th>FNMA / UMBS</th>
<th>PCGLD</th>
<th>GNMAI I</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>92 – 22 / 25</td>
<td>92 – 17+ / 22+</td>
<td>93 – 26 / 30</td>
</tr>
<tr>
<td>June</td>
<td>92 – 18+ / 21+</td>
<td>93 – 23+ / 27+</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>92 – 18 / 19</td>
<td>93 – 24 / 26</td>
<td></td>
</tr>
<tr>
<td>May/Jun</td>
<td>032 / 042</td>
<td>031 / 032</td>
<td></td>
</tr>
<tr>
<td>Jun/July</td>
<td>03 / 043</td>
<td>025 / 026</td>
<td></td>
</tr>
</tbody>
</table>

Source: Tradeweb. For illustrative purposes only. – Disclaimer on slide 38
30 DAYS PRIOR TO FIRST SETTLEMENT DATE (JUNE 2019).
FNMA and PCGLD disappear, just UMBS will show on Tradeweb:

<table>
<thead>
<tr>
<th></th>
<th>UMBS</th>
<th>GNMA/II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun</td>
<td>92 – 22 / 25</td>
<td>93 – 26 / 30</td>
</tr>
<tr>
<td>Jul</td>
<td>92 – 18+ / 21+</td>
<td>93 – 23+ / 27+</td>
</tr>
<tr>
<td>Aug</td>
<td>92 – 18 / 19</td>
<td>93 – 24 / 26</td>
</tr>
<tr>
<td>Jun/Jul</td>
<td>032 / 042</td>
<td>031 / 032</td>
</tr>
<tr>
<td>Jul/Aug</td>
<td>03 / 043</td>
<td>025 / 026</td>
</tr>
</tbody>
</table>

Source: Tradeweb. For illustrative purposes only. – Disclaimer on slide 38
### Tradeweb Mortgages 30 Year TBA MBS

| Source: Tradeweb. For illustrative purposes only. – Disclaimer on slide 38 |

<table>
<thead>
<tr>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Jun/Jul</th>
<th>Jul/Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>99-20+/23+</td>
<td>99-20+/23+</td>
<td>99-07+/10+</td>
<td>053/06</td>
<td>072/073</td>
</tr>
<tr>
<td>99-15 /18</td>
<td>99-15 /18</td>
<td>99-07+/10+</td>
<td>053/06</td>
<td>072/073</td>
</tr>
<tr>
<td>99-07+/10+</td>
<td>99-07+/10+</td>
<td>0-10+ / 16+</td>
<td>053/06</td>
<td>072/073</td>
</tr>
<tr>
<td>053/06</td>
<td>053/06</td>
<td>053/06</td>
<td>047 / 05</td>
<td>045 / 046</td>
</tr>
<tr>
<td>072/073</td>
<td>072/073</td>
<td>053/06</td>
<td>047 / 05</td>
<td>045 / 046</td>
</tr>
</tbody>
</table>

### Roll Analysis

<table>
<thead>
<tr>
<th>2 yr</th>
<th>3 yr</th>
<th>5 yr</th>
<th>7 yr</th>
<th>10 yr</th>
<th>30 yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>99-282/28+</td>
<td>-0-01+</td>
<td>0.811-807</td>
<td>-0-02</td>
<td>0.965-963</td>
<td>-0-01+</td>
</tr>
<tr>
<td>100-156/16</td>
<td>+0-002</td>
<td>1.551-549</td>
<td>1.748-746</td>
<td>2.578-577</td>
<td>0.810</td>
</tr>
<tr>
<td>100-15+/16</td>
<td>0-01+</td>
<td>1.748-746</td>
<td>0-01+</td>
<td>2.578-577</td>
<td>0-053</td>
</tr>
<tr>
<td>98-28 /28+</td>
<td>0-01+</td>
<td>1.748-746</td>
<td>0-01+</td>
<td>2.578-577</td>
<td>0-053</td>
</tr>
<tr>
<td>98-12 /12+</td>
<td>0-01+</td>
<td>2.578-577</td>
<td>0-01+</td>
<td>2.578-577</td>
<td>0-053</td>
</tr>
</tbody>
</table>

### Financing @ 0.81

- Cpn: 2.5
- CPR: 0.810
- Drop: 0-053
- B/E Drp: 0-046
- B/E Rt: 0.5
- B/E CPR: 47.3

- Cpn: 3.0
- CPR: 0.810
- Drop: 0-070
- B/E Drp: 0-05
- B/E Rt: 0.1
- B/E CPR: -18.8

- Cpn: 3.5
- CPR: 0.810
- Drop: 0-051
- B/E Drp: 0-05
- B/E Rt: 0.7
- B/E CPR: 14.5

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