



Cboe Global Markets

Technology Integration
Customer Conference Call

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CORPORATE PARTICIPANTS

Gary Compton – *Director of Corporate Communications*

Chris Isaacson – *Executive Vice President and Chief Information Officer*

Andy Lowenthal – *Executive Vice President and Co-Head, Markets Division*

Eric Crampton – *Senior Vice President, Global Head of Software Engineering*

Troy Yeazel – *Senior Vice President, U.S. Operations*

Anthony Montesano – *Vice President, Derivatives Market Structure and Functionality*

PRESENTATION

Operator

Good morning, everyone, and welcome to the fifth Cboe Global Markets technology integration customer conference call. All participants will be in a listen-only mode. Should you need assistance, please signal a conference specialist by pressing the star key followed by zero. After today's presentation, there will be an opportunity to ask questions. The Q&A is intended for customers only. To ask a question, you may press star and then 1 on your touchtone phones. To withdraw your questions, you may press star and 2.

Those listening through the webcast may submit questions throughout the event by typing your question in the "Submit Question" box on your screen. Questions will be addressed after the prepared remarks have ended. Please note today's event is being recorded.

Now, I would like to turn the conference call over to Gary Compton, Director of Corporate Communications at Cboe Global Markets. Please go ahead.

Gary Compton

Thank you, operator. Good morning everyone and thank you for your time. Joining us for today's call are Chris Isaacson, Executive Vice President and Chief Information Officer, and Andy Lowenthal, Executive Vice President and Co-Head, Markets Division. Following their prepared remarks, we will hold a Q&A session for customers only.

Also joining us for the Q&A will be Eric Crampton, Senior Vice President, Global Head of Software Engineering; Troy Yeazel, Senior Vice President, U.S. Operations and Anthony Montesano, Vice President, Derivatives Market Structure and Functionality. Customers on the phone can queue up for questions by following the operator instructions at the end of today's remarks. If you are online, you may submit a question via the box and "Submit Question" button on the right-hand side of your screen. If you are a journalist or analyst, please reach out to our Corporate Communications and Investor Relations teams and they will address any questions you may have separately.

As a preliminary note, you should be aware that this presentation contains forward-looking statements which involve some risks and uncertainties. Actual results may vary. Additionally, the delivery and rollout dates are tentative and subject to change. Please refer to our filings with the SEC for more detailed information about the risks and uncertainties.

Now, I'd like to turn the call over to Chris Isaacson.

Chris Isaacson

Thank you, Gary. Good morning everyone and thank you all for joining us today for our fifth technology integration customer conference call. I'm pleased to report that we're making terrific progress on our multi-year, multi-exchange technology integration. While the successful CFE migration to Bats technology in February was a major achievement and critical milestone, there are more technology enhancements and exchange migrations to come.

When completed, the migrations of Cboe Options, C2 Options and CFE to Bats technology will deliver a better trading experience for all of you, our valued customers, by offering a common, world-class trading platform across all our equities, options and futures markets.

Throughout this process, our team remains focused on executing a seamless technical and operational integration, and we are committed to ensuring you continue to enjoy the same great trading experience and customer service you've always had with Cboe Global Markets. As we work through the integration, your feedback remains critical, so please continue to share your opinions, ideas and questions with the entire Cboe team.

On today's call, Andy will provide a Cboe business update and I'll discuss final preparations for the migration of the C2 Options Exchange, which is planned for May 14th. We'll also announce the anticipated schedule for the migration of the Cboe Options Exchange, aka C1, to Bats technology. But, before we dive into those updates, I wanted to take a moment to recap the CFE migration on February 25th.

After nearly a year's worth of planning and preparation, CFE's switchover to Bats technology on Sunday, February 25th, was a great success. It was a tremendous joint effort between the entire Cboe team and you, our valued customers. We are fully aware that it was a big ask of you and recognize the additional work we required of you and your firms. The feedback you shared with us along the way, your support throughout the certification and testing phases and your diligent preparations leading up to the launch, helped make this a smooth and successful migration, and we thank you again.

We couldn't have been more pleased with the initial participation on CFE's migration day, and, by the end of the trading session on Monday, the 26th, 98 trading firms had accessed the new platform, which was actually more than the number of firms that were trading on CFE on the Friday prior, the last day of the retired platform.

Although CFE is now live on Bats technology, our work on CFE will not stop. This Sunday, April 8th, we are planning to launch a new crypto market data feed delivered from the same new environment that serves CFE.

If you have any ideas or feedback, please continue to share them with us. As we said in our letter following the migration, we believe better technology makes for better markets, and our aim is to keep providing you the most efficient trading experience we can.

With the CFE migration completed, we now turn our attention to C2 and Cboe, or C1, but before I touch on all the key dates and what you need to do to ensure you're ready for those migrations, let me turn it over to Andy to share our Cboe Global Markets business update.

Andy Lowenthal

Thank you Chris, and welcome to everybody on the call today. I'm pleased to join you all once again. I want to echo Chris' sentiments and acknowledge all of your hard work in making the CFE migration a success. I would also like to commend Chris and his team for their commitment to hitting our target date on schedule and executing a seamless migration, and my team for the excellent job they did working so closely with all of you to make sure you were getting the information and assistance you needed leading up to CFE's migration. The successful CFE migration was a team effort and my sincere thanks to all of you on a job well done.

As you hopefully saw in yesterday's press release and customer letter, Bryan Harkins and I announced the creation of a new Markets Division at Cboe Global Markets. The new Markets Division, which Bryan and I are co-heading, unifies our sales, business development and account personnel across our company's U.S. equities, global derivatives and FX product lines and ETP

listings business. And each of these product lines will be supported by multi-asset resource teams.

Our combined company is much larger now and our value proposition has increased to an expanded suite of products. As one unified and cohesive group, we can better coordinate our strategic and technical approaches to this broader suite of asset classes and business lines, pool our resources more efficiently and prioritize our projects -- all aimed at better serving you and your experience working with Cboe.

Significantly, we've eliminated the product silos that, under our previous structure, may have caused you to speak with multiple Cboe representatives depending on the asset class. That will no longer be the case. In time, every customer will have a single point of contact within the Markets Division.

In creating this new division, we seek to leverage the collective talent, experience and strength of our combined teams, which includes professionals who have been in the global derivatives, FX and U.S. equities industries for 10, 20 or in some cases, 30 years. We are just beginning to roll out our new division and you'll be hearing much more from us in the weeks and months to come.

Underlying our new Markets Division, our focus remains the same -- to power your potential through cutting-edge trading technology, superior customer service, advanced trading solutions and innovative products. Our entire team is hard at work delivering on this mission each and every day. We look forward to continuing to engage with you throughout the integration process. I encourage you to reach out to Bryan, Chris, or myself, your business or operation liaisons, or to e-mail integration@cboe.com.

On a final note, this month marks the 25th anniversary of the Cboe Volatility Index[®], which Cboe began disseminating in April 1993. This week, we kicked off a social media campaign to celebrate everyone's favorite fear gauge turning 25. Throughout the month, we'll be sharing special content and stories on our social media pages -- from the creation of the Index to the development and growth of VIX options and futures which, combined, traded over 255 million contracts last year. You can follow **#VIX25** on Twitter or visit cboe.com/blogs/VIX to see the anniversary materials.

In addition to the social campaign, other highlights during our VIX anniversary celebration this month will include the release of a definitive new white paper on the VIX Index, the launch of a new VIX webpage and other VIX-related news and surprises.

With that, I'll be happy to take any questions at the conclusion of this presentation, but for now, I'll hand it back to you, Chris.

Chris Isaacson

Thanks, Andy. We're excited about the new Markets Division and how it will help us better serve you going forward, as well as celebrating the 25th anniversary of the VIX.

While we were preparing for the CFE's migration, we were also working on C2's migration, which, as you know, is planned for Monday, May 14th. This migration is right around the corner, so let's cover the final preparations you need to make to be ready for C2's migration.

Firms must establish physical connectivity to the new C2 latency equalized network infrastructure within either the NY5 or NY4 data center or by using their existing connectivity, albeit at a slight latency disadvantage. Please note, C2 access to the new platform from existing physical

connectivity to the legacy platform will be decommissioned on June 30th. Going forward, C2 will share outside customer connectivity infrastructure with the legacy Bats markets in NY4 and NY5 so that customers can use their existing physical connectivity to legacy Bats markets to access C2.

As previously noted -- and was also the case with CFE -- all existing C2 certification logical sessions are being decommissioned and cannot be used to certify to the new trading platform. There will be no automatic transfer of certification sessions from the legacy platform to the new. Firms may request new certification sessions for C2 via the Logical Port Request form within the Customer Web Portal.

All firms are required to certify for basic functionality, including establishing and maintaining connectivity, order entry, disconnect recovery, quote risk management and linkage. TPHs are expected to certify for all functionality they intend to use in production.

Trading of test symbols and series in the new C2 production environment has been available since March 5th on a daily basis and we have two upcoming weekend test opportunities in the new C2 production environment -- the first, Saturday, April 14th, and a final readiness test on Saturday, May 12th. We strongly encourage customers to use these daily and weekend tests to ensure their preparedness for the C2 migration.

On Saturday, April 14th, all symbols supported on the current trading platform will be made available for test trading. Beginning at 7:30 a.m. central, you'll be able to connect to the C2 Options production environment and the pre-open queueing session will begin. The regular market session will open at 8:30 a.m. central and will run until 11:00 a.m. central.

TPHs and ISVs that have certified to the new C2 trading platform will be allowed to connect, submit orders and receive market data for the duration of the test. The Cboe Trade Desk and NOC will be available as support for the duration of the Saturday test as well as each business day during normal business hours leading up to the switch-over.

Additionally and importantly, OCC will be participating in the Saturday, April 14th, test. Customers will not be able to obtain any real-time clearing records on Saturday from the OCC, but if you wish to obtain DDS records for April 14th activity, you may submit a testing request with the OCC. The test trades will be executed in OCC's EXT 5 external test environment and DDS test records will have a business date of Monday, April 16th.

The C2 certification trading platform will be submitting real-time clearing data to the OCC's EXT 3 external test environment every day, Monday through Friday, until Friday, May 11th. Firms interested in accessing test clearing records based on C2 certification environment activity during this time, may also submit an OCC testing request.

The OCC supports a minimum one-week lead time for all testing requests in order to confirm system and resource availability as well as to complete any pre-test verifications. Submitted testing requests will be responded to within two business days of receipt. The OCC's Technical Certification and Documentation Services group will then initiate the process of confirming the scope, timeline and needed inputs and outputs for the test, including test connectivity.

So as we head into the home stretch of the C2 migration, here's a checklist of steps that most firms should have completed or should be nearing completion of:

- performing their certification/UAT environment;
- receiving from Cboe their completed certification script;
- requesting and connecting to production FIX, or finite order entry, or BOE sessions created in NY 4 or the NY 5 data center, with the certified functionality enabled;
- specifying any desired non-default port settings for new production sessions;
- establishing new logical order entry ports on the new production trading platform;
- requesting that unnecessary logical ports be deleted within the new production environment to avoid unwanted fees;
- auditing production sessions to ensure you have a desirable number prior to migration;
- establishing the appropriate risk setting levels;
- testing through any and all ISVs that are used for trading, if in fact they use an ISV to trade;
- and finally, successfully trading test symbols in production in the new C2 NY 5 production environment.

You may complete your certification by using the conformance app that is available in the Customer Web Portal or by scheduling certification testing with the Cboe Trade Desk. You can also refer to the integration website where you can find all the resources related to C2's migration, including the timeline and FAQ and other materials. You can find the website at batsintegration.cboe.com/c2.

We're about a month away from switch-over, so now is the time to certify and test in production to ensure you're 100 percent ready to go. Also, you should plan to participate in the April 14th Saturday test if you haven't participated in a Saturday test thus far.

As a reminder, there will be no parallel period -- Monday, May 14th is a hard cutover and the legacy platform will be shut off. Our team will continue to reach out in advance of C2's migration and stands ready to assist in your preparations to be able to begin trading on day one.

Finally, turning to Cboe Options Exchange, we're pleased to announce that the migration of the Cboe Options Exchange to Bats technology is planned for October 7, 2019.

It goes without saying that this will be our largest migration, requiring the most preparation. Internally, this migration will involve every part of our organization and there will be numerous Cboe liaisons working with you and your firms in the lead-up to October 7, 2019.

While the migration date is more than a year away, and may seem like a long way off, this is actually a very aggressive timeline, with numerous milestones along the way that will require your attention. Feedback from market participants is critical and we will continue to work closely with you to ensure we deliver a robust trading platform that meets your evolving needs.

With the migration of Cboe Options Exchange, we look forward to providing a better trading experience with proven, world-class technology that seamlessly integrates electronic and open outcry trading. As was the case with the successful CFE migration and is the case with C2, our team will remain focused on executing seamless technical and operational integration throughout this pivotal process.

In addition to the ultimate migration date, I did want to share with you three additional key dates that you should be aware of.

- First, by November 16, 2018, so this year in November, we plan to make available the technical specifications for C1's migration.
- February 1st of 2019, we will begin accepting new physical connections to the new C1 platform. It's worth noting that C1 will have dedicated network infrastructure and customer connections separate from our other U.S. equity and options exchanges.
- And March 1, 2019 is when we expect to begin the certification period for customer testing, allowing many months of customer testing in the lead-up to the October 7th migration.

As we've done with CFE, C2, and the index platform migrations, we've launched a Cboe Options integration website which will contain over time a complete overview of the C1 migration, technical specifications, a detailed and comprehensive integration road map and all other relevant information related to the C1 migration. The website can be found at batsintegration.cboe.com/c1. This will be the most comprehensive resource for information and news related to C1's migration, so be sure to visit regularly for updates.

In preparation for the C1 migration, we're planning to implement two technology enhancements to the Cboe Options marketplace in 2018. First, the migration of SPX to Hybrid and second, the introduction of new floor terminals. I'll take a moment here to touch on both, beginning with SPX to Hybrid, which has a planned launch date of Monday, April 30th, 2018.

Although the Hybrid market model will be built into Bats technology, the current market model for the AM-settled SPX options, referred to as Hybrid 3.0, will not be replicated as part of that effort.

We're planning to retire the Hybrid 3.0 model and transition the AM-settled SPX options onto the Command system's Hybrid platform. What this means is that SPX market-makers will be able to stream their own electronically accessible quotes.

When the SPX conversion to Hybrid becomes effective on Monday, April 30th, some of the features will include:

- Electronic quotes in symbol SPX will be allowed from all Cboe Options market-makers with an SPX and SPXW appointment.
- Market-makers will be permitted to quote SPX, SPXW or both, with the continuous electronic quoting obligations independently applied to each symbol.
- Market-maker QRM risk protections will cause a user's quotes to be cancelled in both SPX and SPXW if the QRM limit is reached in either symbol.
- The electronic simple and complex order book, or COB, will be open to all participants, except that market-maker orders will not be permitted to rest in the COB after the opening rotation.
- Market-maker in-crowd requirements for interaction with the SPX simple order book, COB and electronic auctions will no longer apply.

- Electronic allocation on simple and complex orders will be pro-rata with no customer priority or market-maker participation entitlements.

A complete overview of all the new features regarding SPX Hybrid can be found in the “SPX Conversion to Hybrid Platform – Update” Trade Desk Update that was issued on March 23rd and is posted on the U.S. Options Trade Desk Update’s page on the website.

A couple of final notes on the SPX to Hybrid conversion before wrapping up:

- One, SPX market-makers that intend to stream quotes are required to certify for electronic quoting and to confirm their QRM settings in advance of this conversion.
- Two, this conversion applies only to SPX during the regular trading hours and not SPX during the global trading hour session, where SPX trades electronically only.
- And three, market-makers are reminded to manage their QRM and Q-Account settings for symbol SPX, as this will be the first time market-makers will be permitted to enter electronically-accessible quotes in that symbol.

Please be advised that TPHs are responsible for contacting the Cboe Operations Support Center at 866-728-2263 or via e-mail at helpdesk@cboe.com, if you have any operational questions or require updates to market-maker profile settings, Q-Account/clearing firm relationships, to adjust or set quoting bandwidth, to adjust risk protections or to adjust firm-specific order routing exceptions that may have been set for SPX and Cboe Options Order Handling System. Additional questions related to the SPX conversion to Hybrid can be directed to the Cboe Market Structure and Functionality team at msfmgt@cboe.com.

Our second technology enhancement to the Cboe Options market in advance of the full C1 migration will be in the introduction of redesigned PAR workstations, or PAR 2.0 as we are calling the new floor terminals. PAR 2.0 will initially interface with the legacy Command system and eventually connect to Bats technology once the full C1 migration is completed.

PAR functionality allows floor brokers to trade in open outcry with other in-crowd participants with simultaneous access to bids and offers contained in the electronic matching engine. As part of the migration effort, Bats technology is being modified to incorporate the concepts of a Hybrid market model, with floor bookers interfacing via PAR, and several new integrated and modernized features which will be available through our floor brokers.

The new PAR 2.0 will be rolled out in two phases. Phase One is planned to begin on November 5, 2018, and is expected to be completed by year-end. This phase will incorporate a new user experience and functionality to interact with the Cboe Options legacy system. Legacy PAR and PAR 2.0 will run in parallel until legacy PAR is decommissioned at the end of 2018.

New PAR user hardware to support the changes was deployed at the end of March and is ahead of schedule. We plan to offer live beta testing of PAR 2.0 in production beginning October 1, 2018.

In preparation for Phase One, the Cboe Floor Support Team has begun offering users a look at the proposed PAR 2.0 user experience changes. Product demonstrations and opportunities to interact with PAR 2.0 will be available at the Reporting Desk at Post 10 throughout the roll-out period as new functionality is added.

Phase Two will interact with Bats technology and will incorporate exchange platform changes to enhance order handling and market data delivery to PAR 2.0. The expected completion date of Phase Two will be the ultimate C1 migration date of October 7, 2019.

Lastly, if you have any questions related to PAR 2.0, please reach out to the CBOE Trading Floor Operations Team at 312-786-8580 or floorops@cboe.com, the Market Structure and Functionality Team, or the Operations Support Center.

Once again, as always, we've covered a lot today, so while the operator prepares for questions, I'd like to recap some of the key dates and points.

The migration of C2 is on track and our planned May 14th migration is quickly approaching. All C2 customers are required to certify to the new platform and can do so immediately. Trading of test symbols and series in the new C2 production environment is currently available on a daily basis, and your next weekend test opportunity will be Saturday, April 14th. Please refer to the C2 migration microsite at batsintegration.cboe.com/c2 for more information.

As announced this morning, the migration of Cboe Options Exchange to Bats technology is planned for October 7, 2019. Technical specifications are expected to be made available by November 16, 2018, physical connectivity will be available on February 1, 2019 and we plan to begin the certification period for customer testing on March 1, 2019. Refer to the new C1 integration website at batsintegration.cboe.com/c1 for all information related to the C1 migration.

In advance of C1's October 2019 migration, we're planning to implement two technology enhancements to the C1 marketplace this year. First, the migration of SPX to Hybrid, which has a planned launch date of Monday, April 30th, 2018, and the introduction of PAR 2.0, our new floor terminals, which will be rolled out in two phases, with the first phase beginning November 5th, 2018.

While we are extremely pleased with the successful CFE migration in February, our team remains focused on executing a seamless technical and operational integration. We're very excited about C2 and C1 and the work we're doing -- together -- to deliver on these migrations in a very successful and seamless way for you. So thank you in advance for working with us. We stand ready to help you in any way possible. Please do not hesitate to contact our markets, technology or operations teams with any questions you may have on the integration or any of these key initiatives.

With that, I'll hand the call over to our operator to begin the Q&A session.

QUESTIONS AND ANSWERS

Operator

Ladies and gentlemen, we will now begin the question-and-answer session. To ask a question, you may press star and then 1 on a touchtone phones. If you are using a speakerphone, we do ask that you please pick up your handset before pressing the keys. To withdraw your questions, you may press star and 2. You can also submit questions through the webcast by typing your question in the "Submit Question" box on your screen. At this time, we will pause momentarily to assemble the roster.

And, once again, if you would like to ask a question, please press star and 1.

Chris Isaacson

Operator, I see three questions -- or a couple questions --online. Maybe I'll start there unless you have some on the phone.

Operator

That sounds good.

Chris Isaacson

Hearing none on the phone. So the first question comes from John at ABN. "Will clearing firms be able to get real-time drops from C2 on testing days?" The answer to that question is yes. If you have drop sessions, which is over FIX, you can receive those real-time drops either through the certification environment, where you have certification sessions set up, or if you've certified, you can get real-time drops from the production environment where we're trading test securities as well. And you should verify your configuration with the Cboe Trade Desk, as I've mentioned.

The next question comes from Jeremy at DRW. "Are changes coming for the DR Data Center at 400 South LaSalle, with C1 or the interim?" So for CFE and C2, the DR Data Center, Disaster Recovery Data Center, is in 400 South LaSalle. The Disaster Recovery Data Center for C1 is still to be determined. We plan to announce that in the coming months.

And operator, I don't see any other questions online. Any questions on the phone?

Operator

Once again, if you would like to ask a question on the phone, please press star and 1.

Sir, at this time, I'm showing no questions.

CONCLUSION**Chris Isaacson**

Likewise, I'm not showing any more questions online, so, operator, let's go ahead and wrap up the call.

Operator

Ladies and gentlemen that does conclude today's question-and-answer session. At this time, I'd like to turn the conference call back over to Chris Isaacson for any closing remarks.

Chris Isaacson

Thank you all for dialing into today's call. As with everything we do, your continued input and ideas are critical and we appreciate the opportunity to engage with you as we work through this critical integration. We have a lot of work ahead of us as we begin the C1 migration and we look forward to continuing to work with you and appreciate your support. With that, have a great rest of the day.

Operator

Ladies and gentlemen, that does conclude today's conference call. We do thank you for attending today's presentation. You may now disconnect your lines.