

**NWX-US DEPT OF COMMERCE (US)**

**Moderator: Michael Monroe**  
**August 3, 2018**  
**11:30 am CT**

Al Fontenot: Good afternoon and I'd like to welcome all of you who are here in our auditorium at Census Headquarters and those of you who are joining us online to our 2020 Census Program Management Review.

As you know I am Al Fontenot, the Associate Director of Decennial Census Programs and we look forward today to sharing the progress on our program with you over the next few hours but first I'd like to cover a few housekeeping items. Please remember our program management review is Webcast live so consider all mics live at all times. At the end of each presentation we'll have a Question and Answer period. When asking a question please share your name affiliation and speak directly into the mic so our friends online will be able to hear you as well.

(Kyle Wilcoxin) from our Telecommunications area will address your use of the iPad and guest wireless access. (Kyle).

(Kyle Wilcoxin): Thank you. All right good afternoon everyone my name is (Kyle Wilcoxin). I'm going to give you a brief demo on how to use your iPads and on connecting to the guest Wi-Fi. So if you can bring your iPads to the Home

screen by selecting the Home button which is located on the side of the iPad on the right side in the middle. Okay so the first application you'll see on the bottom is (MAS360). And this application is used to view the Agenda and presentations for today's PMR.

(All right) the documents will be on the left side of the screen and when you select a presentation it'll appear on the right. If you want to expand the view there's an X in the top middle of the screen so if you just tap that it'll expand the view. And when you're ready to go back to the presentations you'll hit Docs in the top left corner. And if you go back to the Home screen the next application is Safari and this will allow you to browse the Web for anything you may need.

All right in front of you you have ten cards that are displaying the guest wireless credentials. So to connect your personal device to the guest wireless to go to your Wi-Fi settings and connect to the System 10 account and once you're connected you'll go to your preferred Web browser and access any Web site and when you do that it'll prompt you to enter your – the credentials that are on the ten cards. So once you enter the credentials and it accepts it you'll have Internet access.

All right if you need – if you have any questions throughout the PMR in regards to the iPads or the guest Wi-Fi myself and other colleagues will be here to assist. Thank you.

Al Fontenot: Thank you (Kyle). If you're joining us online and you have a question send an email to 2020 Census 2020.census.pmr@census.gov that's the numerals 2020.census.pmr@census.gov. Molly Shae, our Assistant Division Chief of Acquisitions will now say a few words to remind staff of the legal obligations when speaking with contractors. Molly.

Molly Shae: Thank you Al. I'm Molly Shae, Assistant Division Chief of Census Acquisitions. Today there are a lot of contractor government and program representatives in this room. I wanted to take this opportunity to remind everyone that everything that is said today is publicly available information. However please exercise due diligence during breaks and when having discussions outside of the briefing to only discuss what is publicly available.

For example if you are a contractor please do not comment about another contractor's performance to another contractor things like that. Or if you are a government representative do not share (procurements) – procurement sensitive information or comment on a contractor's performance. Anything that is publicly available including anything that is talked about in the briefings today again anything that is already out in the public you may talk about.

But anything that is sensitive including information related to an acquisition that is ongoing or related to performance under a contract please do not discuss. Thank you very much.

Al Fontenot: Thank you Molly. If you are here from the media we welcome you. We've asked that you sign in and hope you've done so. There is a designated area for you to sit with staff from the Census Bureau's Public Information Office. They are here to help you if you have questions or would like to (interview) your 2020 Census leadership and staff. Michael Cook, Chief of our Public Information Office is with us this afternoon. Michael wave to us so we can identify. May I ask you and your staff also to stand so you can be easily identified. If your staff would stand please? Thank you very much.

A last few reminders. The location of the restrooms is outside the elevator down the hallway and next – outside the auditorium – excuse me – down the hallway and next to the Green elevators.

And lastly in case of an emergency please listen to the PA system and if required we'll exit the building using the emergency exits that you see around this room.

As we've said in every PMR the success of the Census Bureau and of the 2020 Census really rests on the collective talents of the team working on the program both within the Decennial directorate and across the Census Bureau.

So before I dive into the agenda I would like to take a moment to say thank you to a few of the members from the Decennial leadership team who are growing in their careers in the Census Bureau but no longer as part of the Decennial directorate Tasha Boone. Tasha are you in the room? Please stand.

Former Deputy Chief of the Decennial Census Management Division is now serving a key role as a Senior Advisor to the Office of the Director. Tasha is bringing her experience in our communications program our partnerships program our Decennial program all together to be able to be an excellent asset to the organization to help us move into 2020 with coordinated efforts between Decennial planning (field) and our communications directorate. Thank you Tasha.

Kimberly Higginbotham. Kimberly are you – are you here today? Okay I don't see Kimberly. She's also formerly with DCMD. She's now serving as the Assistant Division Chief for Property and Document Services in the Administrative and Customer Services division.

And Anthony Tersine, Jr. formerly with the Decennial Statistical Studies Division is now the Division Chief for the Demographic Statistical Methods Division. Anthony are you in the room? Okay he's not in the room thank you.

Thank you Tasha, Kim and Anthony for your service within the Decennial directorate. We really really really wish you all of the best in your new roles here at Census. You will be a value to the Bureau and also to the Decennial program working in your new roles.

We also have some recent promotions that took place within Decennial. (Jeremy Weedleman) who previously worked in the Economic Management Division is now a Program Manager for the Integration of Operations and Systems in the Decennial Census Management Division. (Jeremy) are you here today? Wave thank you (Jeremy).

(Brian Duvoss) is now also a Program Manager for the Integration of Operations and Systems in DCMD. (Brian). (Brian's).

Man 1: He's not here today.

Al Fontenot: He's not here today okay. And (Jennifer Lens) has also been promoted to a new role. She's now an IT Specialist with a technical integrator staff. Congratulations to (Jeremy), (Brian) and (Jennifer) for your new roles within the directorate.

Joining the Decennial directorate from other areas in the Bureau are (Suzanne Fortino) who happens to be on leave who has been selected as the new Deputy Chief for the Decennial Census Management Division working with Deb Stempowksi. Most recently she served in the field and demographic

directorate in the Office of Survey and Census Analytics to provide tools for data collection and field performance monitoring and management.

And lastly Joan Hill is returning to the Decennial Statistical Studies Division as the Assistant Division Chief for Experiments and Evaluations. Most recently Joan served as Assistant Chief of the Survey Analytics in the Office of Survey and Census Analytics. She is also a former member of the Decennial team coming back to the Decennial team. We want to welcome (Suzanne) and Joan to the team at this time.

We have a lot of information to share today and I will begin by discussing some of our high-level program updates and I'll touch on some of our hot issues. As you look at the agenda for this afternoon you'll see we are continuing to focus on the key elements that will ensure that we'll be able to conduct a full and accurate census in 2020. We'll open the PMR agenda with a discussion on one of the core values and guiding principles of the Census Bureau. You can trust that your information is safe.

This has been a fundamental part of the census DNA and it's dictated by law in Title 13 and forced by decades of internal census cultural practices training and behavior. Kevin Smith is going to discuss this principle in the context of the current cyber environment and the practices and processes we have adopted to ensure that the data the public shares with us is secure and that we maintain the public trust because your information is safe with the Census Bureau. Kevin is our CIO and the Associate Director for our IT directorate.

Second as we approach the closing days of the 2018 end to end census test I am reminded of a statement made of the previous program management review by Assistant Division Chief Maryann Chapin as we were ready to launch into the end of end test. As a quick aside Maryann is a 32-year veteran

of the Census Bureau. She was a key player in the 2010 Census and since 2011 she's been a key participant in the research planning and development of the design of the 2020 Census.

Maryann stand up so you can be recognized please. And only PMR Maryann said, "I would like to remind everyone why we conduct census tests. The conduct with Decennial census is a major undertaking with many moving parts.

"And as we plan the operational design of the 2020 Census along with the tried and true procedures we are developing new methods new procedures new systems and new solutions such that we are leveraging new technologies and considering methodological innovations and remaining cognizant at the same time of the constantly changing world around us both from a social and an economic perspective. Though we want our census test to run smoothly we expect to learn from the test. We will discover what aspects of our potential solutions work well along with things that do not work well.

"We will uncover things both expected and unexpected. We expect to leverage the census test environment to explore aspects of an operational design that may require refinement or may not make the final cut. We expect to take advantage of being in a test environment and to add new dimensions to a test as opportunities arise. We learn as much if not more from the unexpected and bumps along the way than from the things that run smoothly." Thank you Maryann that is very true.

Earlier in the test we successfully deployed our address canvassing systems in various geographic and typographical conditions demonstrating the capability to work both online and offline what we call the disconnected state. We saw increases above the planned and the 2010 productivity in the addresses for our

in the field listing operations and we were able to validate the effectiveness of our in-office address canvassing operations which will enable us to continue to canvass 100% of the addresses in the nation while only needing to do approximately 30% of the addresses by deploying listers on the street.

In March we tested the most important innovation of the 2020 census plan the ability to allow respondents to respond to the census electronically on the Internet. Over 60% of our response to the census will come from self-response. In 2010 the only way to respond was by filling out and mailing a paper questionnaire. In 2020 we are expecting the largest percentage of our self-response to come through the Internet. The test in Providence showed over 60% of our self-response came through the Internet which met our expectation.

Most importantly to us people were able to successfully navigate and use our Internet self-response applications. Prior to the public release of the application we encountered several small design and functional bugs which were quickly addressed without impacting the ability of people to respond to the census. That was another learning having a team standing by and ready who can respond very quickly to any challenges that you may incur. We had a tiger team.

Michael Thieme worked very closely leading the tiger team and thank you Michael for the work you and the team did to address issues that make sure that did not impact any of our ability to collect data from our respondents.

We successfully were able to establish a census questionnaire assistance capability to assist answering questions and assisting people who needed help responding and wanted to actually complete their census over the phone. Seven and half percent of the self-responders shows to complete their census

interview over the phone and 31% completed and mailed back a paper census questionnaire. We were effectively able to manage and ingest all three modes of response with all of our systems performing as planned.

As we wind down the non-response follow-up phase of our test our early assessment tells us we're able to celebrate a number of successes and apply a number of things we've learned along the way. The primary objective of the test was to evaluate and prove out the new technology to specifically to test and validate the 2020 Census operations procedures systems and field infrastructure to ensure proper integration and conformance with functional and non-functional requirements.

And if all of that sounds like a quote from a document it is. It's a document posted out on our Web site that indicates our objectives of the test. Earlier tests give us evidence of improved efficiency. This test continued that trend. We've clearly observed greater productivity. Preliminary results show productivity in the 2018 tests was approximately 1.56 cases per hour. The final rate in the 2010 Census was 1.05 cases per hour and we know that substantial increase in productivity.

Must – (mulch) – most of that we can attribute to the automation in the optimizer in directing better routings and better planning into the census enumerator's daily activity. There were really three things. The optimizer was a considerable advantage over having people guess the best route themselves.

The second thing is we eliminated the requirement to come and pick up your paper assignments from your crew leader physically once a day and turn in the work that you've accomplished and we eliminated the requirement to come and bring your paper payroll and turn that into your crew leader once a day

which were all requirements of 2010. What we did was we electronically downloaded their assignments every night through their iPhone 7 and we uploaded the work as it was accomplished. So no work rested on the device.

As they finished the enumeration it was uploaded to our own internal systems at the census and new work was given to them each night. Their payroll was submitted every night on their iPhone 7 also. So we automated that process and one thing that's not even mentioned here was we eliminated the requirement of clerks to key in the payroll everyday which was a huge operation in 2010 which required offices to be open 24/7 during the starts of (NOFO) just to be able to manage the payroll.

That won't be required because we've eliminated the requirement for manual payroll for 99% of the people.

As we noted before in prior PMRs we were unable to hire our planned number of enumerators in Providence which had a 4% unemployment level which matches the nation and so that rises an instant concern in our mind in terms of how we manage in a low unemployment environment to still get adequately staffed. We deployed to the field of approximately 67% of the planned staffing levels for a non-response follow-up operation. We had a planned need of 1,049 enumerators we've deployed 735 to the field. This clearly underscored an important need in 2020.

And that's a strong recruiting campaign as a part of our media efforts and the full engagement of our partnership staff and our partners and our communities to help recruit more field workers. As an action already taken in planning partially influenced by our need for increased engagement with communities during the recruiting phase but really engaged by our need for overall

engagement in the communities we have increased our partnership staff from 1,000 partnership specialists to 15 hundred partnership specialists.

We have done that in a context without increasing the cost of the partnership specialists by looking at the optimal time to bring them on board and the optimal time to release them and by closing in those ends we're able to bring in 15 hundred at the same cost of 1,000 at a time when they were less effective on the end tails of the operation.

With fewer number of enumerators in the test we focused early in the test on a series of areas including but not exclusively limited to the effectiveness of using a mixture of online and classroom training to prepare field workers to use the enumeration device and to deal with the challenges of engaging respondents.

Second we looked at ensuring that the optimizer effectively managed the released assignments and routed field staff.

Thirdly we looked at testing and proving the effectiveness of the automated payroll and administrative personnel systems.

Fourth we looked at testing the capabilities and functionality of the hand-held enumeration device both when connected to the Internet and when in a disconnected mode. And we also tested and ensured the secure transmission of all data from the enumerator devices to our operational control systems and into the Census Data Lake and the back-end processing systems which we call the Decennial Response Processing activities.

This focused in addition to higher productivity which where it gave the operational strong start and helped us thoroughly work out the system's

integration both from system to system and from human to system. As we entered the final weeks of (NOFO) we normally expect the staff attrition and we received the attrition that we had expected.

It gave us fewer staff than we had hoped to have at that stage of the operation and we wanted to determine the most effective use of that staff to maximize our learning and ensure all operational areas were being tested appropriately. Accordingly we chose to devote them to tasks that assist us in evaluating ways to ensure that we can get quality data using our technology. This was a very productive decision. We gained tremendous insights and we observed positive results which we will incorporate in our plans moving forward.

As a few examples we re-contacted non-responding addresses that were missing information. We selected areas that reflected in a verse mix of neighborhoods of living arrangements and we were able to collect more usable information from a substantial number of these addresses with this blitz technique. This assisted us in the development of an earlier implementation of a recontact strategy when we roll into 2020. When do we want to turn on or have a recontact strategy?

Similarly we made changes in the way work was assigned and we extended the number of contact attempts in neighborhoods where there was no response. As a result our enumerators were very effective in successfully collecting data in these areas. Our preliminary lessons will lead us to develop a variable contact strategy and change the business rules and the optimizer to enable this capability. We access the size of the geographic units that we use to determine assignments in late stage operations although they were more manageable for focused assignments.

This strong focus on developing key lessons learned and operational tweaks enables us to continue to maintain the advantages of an automated operation all at the same time enabling easily implemented customization to meet specific on the ground situations. We'll continue this work to ensure that we deliver a thorough high-quality census count in 2020.

After Deb the team and her team provides a detailed update on the 2018 Census Atri Kalluri, our Chief of Decennial Census Information Technology Division will provide an update on systems readiness the status on systems that have been tested the remaining systems to be tested and a look at the performance and scalability test plan between now and Census Day.

Finally Jim Treat will kick off the Program Management portion which will include a presentation on the 2020 integrated management schedule as well as a presentation on 2020 Census Risk Management.

Now on to our timeline slide which shows how close we are to Census Day. We are actually 606 days to Census Day but we're only 535 days to the first enumeration of the 2020 Census which will take place as it traditionally does in a village in remote Alaska. In addition to the 2018 test that I've been talking about I can also report some additional key developments. We currently have leases awarded to all 40 of our Wave 1 ACOs and 75 of the 208 Wave 2 ACOs.

Wave 1 offices are scheduled to open in January 2019 and Wave 2 is scheduled to open between June and September of 2019. As the communications research is being completed this summer we're working with our contractor and our contracting team to begin development of our media plans and our messaging and creative treatments that lie at the heart of our

advertising and promotional program. This will allow us to hit the ground running in October of 2018.

We're actively recruiting partnership specialists now so that we can increase our level to over 100 partnership specialists by the end of September. And as I had mentioned earlier we planned to ramp up to 15 hundred partnership specialists over the next year. This is nearly twice as many partnership specialists as we had last decade and we will take steps to ensure that we further improve their work by ensuring that we have the skill sets we need across the country.

We're building our plans to hire a media specialist language specialist congressional liaisons and people with specific skills in digital media and Web. This is in addition to experts and on the ground partnership that we've hired in all the prior decades. It reflects a much more sophisticated approach to our work of partnership.

In one of the areas that's significantly impacted by partnership I want to mention the progress we've made in complete count committees and complete count commissions. Those are a organization that is put together by a community or a government entity to develop and implement 2020 Census awareness campaign based on their own knowledge of their local community to encourage a response.

As of this week 39 states of state equivalence meaning DC and Puerto Rico have formed 2020 complete count committees and an additional 11 states are considering forming the committees right now they're in the process of evaluating. Several of the states have commissions that have been set up and authorized by legislation in our state legislators. Several have some that are thereby the governor's decree and others are just pulling them together as a

active part of their focus on making sure that they have a complete and accurate census count in their states.

I just wanted to digress for a second. I spoke to the US conference and mayors on complete count committees in the city and one of the mayors from a Northern state asked if he could stand up and say something. And I said certainly. And he said in 2000 his city was in the bottom fourth of the state in terms of their response rate for the census. In 2010 they put in a complete count committee.

He said he spent \$10,000 and this is a small town of a city's money on signs at subdivisions on education campaigns within the city and found that the reason people didn't respond to the census was they didn't understand that it meant something for them. They looked at it as a government program some place and it didn't mean that community center on the corner those streets in your neighborhood are funded by some of the money generated from the counts of the census.

He said once he educated them to that he was in the top 25% of all the cities and the states in 2010 and it generated him \$1 million in additional revenue to the city per year since the census started. And he turned to the other mayors and said who wouldn't want to invest \$10,000 for a \$1 million a year? And he was my best testimony at that entire meeting because he lived it he saw the results. We are really encouraging municipalities counties states social organizations community organizations to develop complete count committees.

We look at that as a forced multiplier on whatever message we may be putting out. Whatever work we are doing out from government funding they're able

to amplify what we're doing because number one they are trusted voices in that community and people trust them and look to them for leadership.

You've seen this slide before. Next slide. This slide shows our major contracts that we had in place in support of the 2020 Census. Right now all but one of our major contracts are awarded and in the contract administration phase. These contracts are monitored and corrected when necessary to ensure contracts are meeting – contractors are meeting their performance objectives for the 2018 end to end test and for the 2020 Census.

As I just mentioned the one contract that is not in place is the 2020 printing and mailing contract which was formerly awarded by the government publishing office to Cenveo Incorporated who subsequently file a petition for bankruptcy under provision of Chapter XI. Following the Cenveo filing its petition for bankruptcy Cenveo and the United States engaged in discussions regarding Cenveo's restructuring process including its projected liquidity any impacts it would have with respect to the 2020 printing and mailing contracts.

The United States concluded that because of the constitutional mandate to conduct the 2020 Census it was in the public interest to terminate Cenveo's contract. After several rounds of good faith aggressive arm's length negotiations the parties reach a settlement to settle the matter for \$5.5 million. On July 26 the Bankruptcy Court approved the settlement agreement and by and among the debtors and the United States allowing the termination of the contract with a \$5.5 million payment to Cenveo.

Cenveo remains obligated to destroy and sanitize all Title 13 at no additional cost. They'll receive separate payment for the work already performed accepted but not invoiced on the 2018 end to end test. I will say Cenveo provided the print material that was used in the 2018 test. The complete terms

of the settlement have been entered by order of the court and are publicly available if people want to look at them.

The government publishing office is in the process of putting out a new solicitation and tends to award the replacement printing and mailing contract by November which will ensure that there is no negative impact on the 2020 printing mailing operation or the overall 2020 Census schedule.

On August 1 census awarded the field IT deployment contract to Unisys Corporation. This contract we call the FITd contract is responsible for providing staging provisioning packaging shipping installing testing and tracking equipment and providing technical support for all the equipment for our 248 area census offices for our two paper data capture centers for the Puerto Rico area office the Five Island area office and for 15 hundred remote workers basically partnership staff.

The FITd contract is also responsible for providing on site personnel for help desk services and for onsite system and administration support for all the equipment and software at our two paper data capture centers and at our regional census centers.

And finally the FITd contract is responsible for the decommissioning deinstalling sanitizing collecting and returning all the equipment to all sites. That concludes my overview. Now I'll pause right now to ask if there are any questions?

Being no questions let's turn to Kevin Smith for an update on cybersecurity.

Kevin Smith: Good afternoon. So I was here last PMR in April and we said it was very important to have a follow-up with cybersecurity. So I'm going to have a complement to the previous presentation and go in a little bit more detail.

There has been some conversations in the public about security and what the census is doing to secure data and I want to stress that protection of the data we collect is the census's highest priority and I'm going to describe that it's not just the technology but it's the people and the processes we also use within our culture that we go through to help make sure everyone's aware of the importance of the data and takes action to protect it. And I'm then going to go into and describe a little bit more about what we're doing in cybersecurity.

So on the first slide from data stewardship it's our formal process to basically protect data. This is not just something within technology this is something within every one of the employees who comes to work for the census and contractors. We realize our ability to store and save and protect the data as a team effort. And this has to do with information security protecting the confidential and privacy and continually doing that and validating with each of us how to go through and do those things.

And it's not just words there's a comprehensive framework behind it that we follow when we practice on a daily basis.

On the next slide about our overall approach. You know, and as I said the census culture values data security and so within this – within Phase 1 we continually are creating and reinforcing our culture. We continually educate our staff of what our obligations are to protect data. We check and we validate this and we enforce it and there are laws and policies around this that we follow as census employees and contractors to move through the cycle.

And we look at implementing a system and I'm going to go into some of the details.

But we have collaborated across the federal government with partnership in the government as well as within the industry to make sure we're putting the best things forward to secure the data from a technology aspect. We're also coordinating across the federal government and industry using the standard cybersecurity framework. This is about how you properly identify issues and security you protect against them.

You continually review with solutions to detect if any issues are happening and ultimately how you respond and recover as quickly as possible for those events with the least amount of risks to the data. We follow these processes and this is something I described in the last PMR that takes a lot of coordination across the government but it's something we do and we test and we continually go through the process to make sure we're engaged in the right fashion to facilitate that.

The two places I'm going to talk about really in more depth today is about what have we done to design solutions that are helping us contain cyber threats as soon as they're detected sustain the services. It ultimately maintains the public trust we're looking for from the census aspect. This is something key that I taught at a high level about in the last PRM but I did not go into more detail.

The other piece is from the monitoring aspect. What are the standard and best practices we're implementing within solutions that continually detect when threats occur and what are we doing to protect against them. This is another area I'm going to describe a little bit more in detail. But ultimately what we're also doing is in face here when we're securing the data and collection.

This is something that's been said for many years. We were absolutely using data security for encryption everywhere we're collecting the data.

So we're encrypting data in transit as it's going from your computer as a respondent into the census and we're encrypting it within the census as the data that rests on all the places we store it. This is something that doesn't just rely on perimeter defenses in networking it relies on protecting the data and I'm assuring you that the data is encrypted.

Moving through as well which I'm going to describe quickly is that we don't just encrypt the data and protect it we're using a strategy to isolate the data away from the public Internet as quickly as possible once the data is submitted. This is key in the design for what the enumeration devices do as well as for Internet self-response does.

As we go through as well we're continuing going through processes after we securely receive the data get it isolated to validate it and we're validating that with people and processes and technology that looks at all the transactions and goes through that validation process which is something the census has been doing for years now. And we also go through an aspect as we're going to go through the process of gathering the data. We're going to also go through and protect your confidentiality using concepts such as differential privacy.

And as Phase 4 talks about ultimately we have to continually monitor and respond what we're doing. We have to always test and monitor what we're doing and it's not just the technology it's the processes we follow. And we also have to make sure we're continually having the right level of communication with the public about what we're doing through our communications campaign. These are the things we are doing overall from a

stewardship aspect of data to protect it with not just technology but people and communications and processes going forward.

On Slide Four on Slide Four – Slide 13 this is something I talked about at the last PRM. I've also so we're aware I have been speaking at the Census National Advisory Committees I've been speaking at the Census Scientific Advisory Committees gathering feedback working with our partners in those groups as we share data. Also within the engagement of a lot of this data as we go through from the partnerships to understand and managed threats. At a public level it's standard to only share what we're doing and describe that.

It is not standard or best practice in security to share things like what are your solutions? What are the protocols you're following? What exactly are you using for technology? That's kind of putting the playbook out there when you don't want people to see the playbook. I want to assure the team that the playbook is shared within the federal government. The playbook is shared within the federal intelligence community that we work with in the federal government.

It's been shared with the federal CIO staff within OMB. It's been shared with oversight committees assisting us and guiding us through moving things forward to ensure the protection of your data. And it's also shared with our industry partners that we work with on a daily basis to ensure their protection. It is not necessarily something you describe in a public level but I'm going to do my best in describing some of these solutions as we go to help try to at least put some more context behind what we're doing.

Something that I want to put out and that's where the bullet is at the bottom the sharing detailed solutions and systems and processes. I mean we're engaged with the cyber experts across the federal government and private

industry to help us get there. And part of what I want to describe is something simple in security that is the 95% 5% conversation or kind of rule. The typical thing we say in security is if it's already happened and someone has already figured out how it's a cyber threat it's in the 95% of the known universe of things that can be affecting you.

Typically what happens is the industry solutions which we use know what those 95% of the threats are they already look for them they already detect them and they kind of block them before they happen. So once someone's already done it industry knows about it puts it into their product sets and we are then covered and protected from the known things people do. Not many things happen or get have a problem from protecting yourself against the known things. It's really that 5% of the cyber space that's unknown.

And I want to stress the importance of being within the federal government and a bureau within the federal government offers us an ability to tap into that 5% unknown space which is extremely valuable for us. The unknown space are things that are happening or things that might be suspected from other areas of the world. This is where the federal intelligence community comes in where they can proactively let us know what things are happening within their realm of tools and resources that typical industry does not know.

We are directly connected into tapping into this resource to proactively get in front of potential cyber threats that are not known in the general industry. This is a very very important concept to go through that's an extreme benefit to us from being in the federal government.

So on slide – the next slide I wanted to say that this is something that I broke into and stated at the last PMR as a summary. I used that opportunity to basically state there are many many different threats that we could face within

census and instead of the list of cyber threats being in the hundreds it's easier to talk about them in these seven high level category threat areas because they really do resolve back to this.

And in the last PMR I talked about the fact that with external threats from the end user perspective the respondent working into the census a lot of what we have to do is rely on the industry and other federal agencies to help provide services to help us resolve these threats because there's not a lot of things within the censuses direct control until you get into our Web site and respond to our information. I describe this at a high level. The next slides are going to go into some detail and descriptions that I will slow down on it.

But I wanted to make sure from this aspect just generally describe what each one of these are and then get into some of the descriptions and solutions. So compromising a respondent device. Every one of us is going to respond to the census and every one of us is going to use one of our personal devices possibly or you could use a government or a corporate device. But you're going to log into a Web site hopefully and you're going to basically respond to the census.

I as the census CIO am not able to protect your personal device. What I am able to do is make sure once you get to us in a Web site that that is protected. So I'll go through the descriptions of those. But there's a point where when you have your device we'll go through and try to educate you and this is where we talk about relying on industry and other federal agencies we'll try to go through an education program to inform you what to do to protect yourself. But we can assure you when you connect to us you're protected.

When you go through compromise and external network access that's talking about the telecommunications firms of the world who help route the Internet

in the US. We have to make sure that when you say you're going to the census you're getting to us.

Impersonation of the census talks about rogue Web sites and phishing attempts to try to get you as the public to go to the wrong Web site. There are things we're doing to take care of that and mitigate against that.

Invalid response is if someone's using the sites properly and the data we receive is secure what are we doing to make sure that the response is valid and the type of response we want. I'll go through some solutions in the next slides of what we're doing. All of those are external to the census. We can detect some of them but we can't directly respond to some of these as threats.

The core that people typically talk about and these are the cores that are within the public conversations as well but what are we doing to make sure that no one's disrupting our Internet Self-Response Site or breaching the data taking it or changing it. There are things that happen the words out there generally are distributed denial of service attacks which is really computer-generated traffic to try to make the system break. Data breaches or people going through group force which means it's trying to plug through technically and break through as many holes as they can to get into the technology.

They also would use phishing. They also try to compromise insider threat to get the data and/or change the data. The other piece is compromising employee devices. So the general furnished equipment of the government the government furnished equipment are laptops are desktops as well as the devices we're giving enumerators or employees in the field. There are things that those could be compromised and so this is the general layout of from a respondent's view from the top how would they come into the census and the compromising employee devices is how we're gathering data on the back end.

That just generally describes the seven threat areas. On the next slide is going to be me describing what we're doing at each one. I'll try to – oh actually not yet sorry. So you can go to the next slide. The next slide is important I apologize. There are two things that have to happen here to make sure that we do this appropriately. And I'm going to say that it's not just technology and tools to see things and react it's also specific things you do and how you design a system.

And so we've designed our systems to contain threats and sustain the services in order to maintain public trust. And this is part of what we've been saying and I've been saying from the beginning the censuses designed its first focus on securing the data from you as a respondent. Second our second priority is making sure that the user experience your interaction with the census and Internet Self-Response doesn't suffer dramatically by doing security.

So to the left I describe this picture in general sense in the last PMR and what it basically stated in the last PMR was you can have an immense amount of security embedded with an application to protect the data but at the same time the user experience may suffer. These are opposing forces. It could become slower burdensome to use. I will say confidently that using the Cloud infrastructure to support our systems enables us to do some things that creates a better balance of security and end user performance based on our specific design criteria to basically contain issues and sustain services.

What this is doing is actually going back to some typical concepts if I had to describe it not state it. We're going back to what physical security is. And when everyone entered this building today there were some layers. There's a physical entry point with an appropriate level of security for you to gain access to this building. There were doors you had to go through and walls you

that are surrounding you to make sure you're going into the right place and you get in and you're in the right location first. The layers are the different gates and rooms you had to go through to get here.

It's a typical physical security practice. There are other places where possibly there are isolations where you separate different rooms. You basically have lines and guards in place to put some people in one room and next set of people in the next room and people are watching watching the lines guards are watching. And if they see something they don't like they contain that room and they close it off so the issue is isolated to one location. But everyone else who's in a different line or a different room is not affected by this.

Ultimately once your information is submitted to the census just like on the enumeration devices which I'll describe in a second is locked down behind closed doors. It is vaulted and it's put into a safe that is not accessible outside into the public and it's not even visible all right. So this is a standard practice in industry that they achieve and they strive for that we are a striving and achieving for the same thing because it's best practice design.

And I'll say that the way that it's being done is based on having the right visibility to see when an issue happens take immediate action to contain it and knowing that the design itself allows the Internet Self-Response or allows enumerations services technically to continue.

So on the next slide these are the words of description that I used as a voice over in the last PMR and I've used this as a voice over in the other forums I've been in. And as I've said too this data has been shared in depths. I did not go back to say this but so we have had I have as well in 2016 and 17 we've been through a federal cyber stats of the Federal CIO and their support staff. We go through the details of what we're trying to do. We've had

roundtables with industry and members of oversight to go through these – this information on an off public forum.

We've had hearings that have discussed some of these topics. This current year in the public domain we've discussed in both the National Advisory Committee and the Census Scientific Advisory Committee these topics gained feedback. And this is I did the PMR in April 2018 as well as today. But we're continuing these conversations in depth with all of our federal partners and industry. So these are things that there's much beneath this that is shared with the industry experts and federal experts to continue to make sure the right things are being done.

So from compromising respondent device we're storing minimal data on the device. What I mean by that is that the census is not storing any data on your respondent device your computer or your mobile phone to go collect data or to submit data to the Internet self-response tool. If you choose as a respondent on your device to store data locally or cache it there's not much I can do to stop you from caching that data. We will go through at a public campaign and we'll go through some communications to let you know the dangers of doing that in some of these responses.

But that's up to you with the way you use your Internet browser and how you want to connect to the rest of the Internet. I will say that once you connect to the Internet self-response site all of the communications between your device and our Web site is 100% encrypted in that transmission from you to us. It can't be seen it can't be taken the data's already packaged in an envelope and it cannot be read.

From compromising the internal external network access we are proactively monitoring our site performance and activity. We're also going to go through

and look for unauthorized connection attempts. But we're going to need and we are going to work with the industry to make sure if you are being routed to the right Web site is that in the industry or is that because there's a rogue Web site that you're being directed to.

What we do not want to have happen is you are supposed to be going to the Census site and for some reason a large industry player who's a telecommunications firm somehow had a breach is being routed to the wrong place. Those are the things we're talking about and solutions we have to go through working with the industry.

Impersonation of the census. We are proactively identifying rogue Web sites. A rogue Web site is basically a fake Web site of the census. So we have already within the communications organization at Census purchased many Web site names domains that people could use would use that look like the Census. But ultimately someone may come up with a Web site and try to point you at that Web site.

We have services that proactively scan and look across the Internet and detect these rogue Web sites and there are federal processes we follow through once they're identified to go through the federal government to go through the closure of those Web sites. But ultimately as I said before this is an external threat. We will proactively communicate this as soon as possible when we see these events to educate the public but we're not necessarily in direct control as the census to shut down a Web site. But we're going to let people know if this happens and we're going to do it as quickly as possible.

Invalid response. We have an automated analysis of our individual responses. As responses come in we have systems that are looking at social media and looking at other places to determine is this an accurate response or should we

flag this for further follow-up. This is where people and processes come in. We will be flagging and tagging some of these responses that come in and looking at them to determine what do we think. Is it irregular or not? This is something that's been done in past censuses when it was paper as well.

We're going to be looking at the analysis of these irregularities and taking action. And we'll also be looking at data flow analysis. Is too much data coming in from one place or not? That looks weird. You know, there's things we're going to be watching to make sure that the data matches our expectations as it's coming in. But ultimately this is a process that has to be followed with people and eyes on it to validate the responses.

On the next slide. So these are things that are internal threats to the census. This is things where I'm going to describe the solutions technologies and protocols but we're not going to be talking in further about them. Our partners know about them and we're working with them but in a public forum disruption to the Internet self-response site. Well we're monitoring for traffic spikes and we'll be able to take action in those. I'll say that based on the solution design I've described we'll be able to sustain services.

If we're monitoring for traffic spikes and we can continually grow the system to make sure it's always working we have a complement and a mitigation to this. Proactive identification and malicious traffic and robots we're going to be using all the technology within our telecommunication providers to directly connect with. They have DDoS services that detect these things. We'll be having things that ask you up front are you a robot or not. These are things called capture they're known standards. These are just standard things to do.

All of these things are in place to mitigate against just a typical automated attack. We're also going to be working as a I said with the cyber threat

intelligence group. They're going to be looking at is someone going to be coming at you. Did they see that someone's going to come at us? Did we see in social media that someone's trying to come at us? Sometimes being ahead of the game is the best attack and approach so the more that we can know about this unknown area of threats things that we may not see initially but someone else has their eyes on it and focused the better off we will be.

I already (mentioned) on the other one the other bullet the design to sustain self-response services. That's key. We have an ability to continually sustain the services based on the design which can mitigate some of these as well. And I did say this last bullet as well there are distributed denial service protections from telecommunications providers as well as from our Web site. We have solutions in place to offload the initial attack of our Web site to an industry leader who does this on a daily basis.

And they will be the first line of defense before they filter out the robots and the problems and the things and then they come to us to handle. So we have many layers of solutions in place to funnel in the non-wanted traffic into what we want to come to our Web site.

Data breaches is the big area. I want to describe the data breaches to the census is not just the risk of someone taking data from the census it's also the risk of someone going through a non-natural path an unexpected path. We expect people to follow the Internet Self Response site. We expect them to enter in their data through our Web site and submit it. We don't want people to come into the site and change the data without going through the natural flow of the system we want.

We will be watching for that and detecting it. Though we'll be at the same time monitoring for unauthorized access that's what that was speaking about.

We will be making sure you're supposed to be going through the site the right way to put data in. If we see something we don't like we immediately contain it immediately no questions asked. We monitor for regular data flows. If we see data flowing the wrong way or an irregular pattern that we don't like we will contain it and we will find out later what's going on.

The sustain of the services will allow us to continue to allow people to respond and our ability to contain the issue means data will not be affected we have protected it. Also in this case some data breaches encryption of data and transit in at risk this is the best practices that we have at the census have followed with all of our data not just for 2020 for the 2020 Census. The data sitting inside of the on – inside of the networks when you respond is encrypted and then I also said it's locked in a vault even after you submit it. So it's taken off the Internet very quickly.

We continually go through system application and penetration pre-penetration testing with industry leaders as well as the federal government. We have already last year we had industry leaders go through and do a penetration test which means try to technically break in with brute force into the Internet Self Response Site last year and this year.

This year we had the federal government Department of Homeland Security go through a penetration testing of not just our Internet Self Response Site and trying to break in into the enumeration solutions that are on the cell phones into the address listing and mapping applications that will list the US into all of the devices and solutions to collect the data for the 2020 Census.

No critical or high findings were found in this both from the industry as well as from DHS and we're continually going through and can securing the solution if we found some things that are at a level we need to correct but

nothing major was discovered. No data was able to be taken because of the design and the way to go through and do things and because of the diligence of the processes as we follow to continually keep systems up to date.

Systems security management monitoring analytics. In summary we have all of the tools you would have to monitor what is happening on each server what is happening in each application what looks irregular what looks right. That is the 95% solutions. The industry solutions that do 95% of the issues are watching for all of these things. We have those in place. We're also taking those and looking for – taking those tools and not just looking for the 95% stuff we're taking those tools to then show us where there's an irregular data flow.

Show us where we don't like to see where something's happening and we may not like to technically see. Look to identify a pattern we don't like. We're using those tools to identify that. Timely patch manager and when we identify that there is an issue, we continually are scanning the technology. This is typical practice. You scan a system in the technical configuration and if something pops-up that says the configuration needs to change, we change it.

These are things that are identified through a process of continually making sure your technology's configured the right way. This is done not just by the Census but the Department of Homeland Security scans all of our publicly addressable systems and complements this as well so we have transparency and accountability outside of just this Census looking for this.

It is also the federal government. Continual cyber awareness training, this is the connection to the culture of the Census. We are continuously going

through and educating our employees with a batter of things that are just kind of in the compromised employee devices, phishing attacks, attempts.

Everyone in the Census contracting as well as employees knows the value of our data and knows that their responsibilities exist for stewardship. This is important because technology alone can stop so much but people seeing something and saying something and that's someone else's, you know, tagline it's important in security sometimes that's what you need.

And the quicker and more comfortable feel that they can do that, the better off you will always be. That's embedded and ingrained in the way we operated on a daily basis here at the Census and the other thing here is continue as you can see we're going to have a proactive outreach and awareness campaign.

We're going to let people know what we're doing and why and how it relates to them. I'll let you know that the design we have to contain the issues means data's not going to go anywhere. We're going to have a handle on that and so in the outreach and awareness that's being (unintelligible) with that and move forward with that from a design aspect.

So the last section - long going through this - is the compromising employee devices so not just the laptops and desktops and Census employees and contractors. What are we doing for all the devices we're handing-out to enumerators who will work for a part-time basis collecting data for the Census.

Data is encrypted in transit and at rest on those devices so from a cellphone aspect of enumeration, this device, data is encrypted on it and it's also encrypted when it's transferred back to the Census. If something happens on this device we don't like because we're watching it, we can remotely wipe it

and we can clean all the data and all the system and all the technology off of it.

One key thing that is not mentioned here that I would like to state again is that the key design factor here in the enumeration tools is similar to the design factor in the Internet self-response tool. Once the enumerator collects the data on the device and hits submit, the data is off the device. It is gone. It is removed. It is locked away in a vault inside of the Census.

So the exposure of data on this phone is minimal because there's not going to be a lot of data on this phone. It's going to remove itself as soon as it's connected to the network and as we said here, we're monitoring the activity on this phone.

We're using two-factor authentication into the devices and we're also going through a complement of phishing tests within the organization to make sure people know what they're supposed to do but the devices in enumeration are restricted to just specific areas they can go.

They're not logging-in to the network of Census which means they do not have access to the data of the Census. They are simply an input submission device and it manages their workload. The data on that is removed quickly and not a threat to the overall, you know, the overall confidence of what we're doing to protect the data because it's the data itself is not on the phone.

So a lot of the two-factor authentication and mechanisms that were discussed previously were what are you doing to protect the data? Those are all things that are standard practice and to any Census employee logging-in to any federal network, there is a distinction of if you're logging-in to a federal network or not and so I wanted to make that clear as my last point.

And so from the standpoint of my summary, Mr. Fontenot I'm done. I guess now, yes, I am open for questions and I'll do my best to that.

Marianne Bellotti: Hi, Marianne Bellotti, Department of Commerce. I'm curious about the identification of rogue Websites. Is this part of your plan to share that data from GNS monitoring with industry partners so they can stop the spread of such campaigns on their own platform?

Kevin Smith: Our intent to that so we have a service to monitor for the rogue Websites. Our intent is to share that data with our partners we're working with but as known in technology stopping it sometimes is difficult.

We will look at engaging industry to see what they can do to block the access to these but it's a harder problem than you would think to resolve and that's why we think a lot of it as an approach of communicating quickly is a more is a quicker path than attempting to technically block some of those. This is a difficult problem.

Al Fontenot: Other questions? If not, thank you very much, Kevin. We appreciate it. At this point we are going to go to Deb Stempowksi and (Deb) and her team will talk in more detail about the ATN end-to-end test than I had performed at the introduction but that's ...

(Deb Stempowksi): Great, thanks Al, thanks everybody for being here again today. I was listening as Al was doing his opening remarks and even though a Census is a major undertaking and has many moving parts, I think the 2018 Census test has been a major undertaking and it has a lot of parts too in case you're wondering.

So what we're actually going to do today is going to follow-on to strategy that I laid-out at the beginning of the PMRs about the 18 tests. This'll be kind of that agile update where we're going to talk about things that just happened and some of those topics will roll-off and we're not going to talk about them in October because we'll be into another part of the test.

Can we go to the next slide so here's our old friend the placemat. It's still here, nothing's changed but what has changed in this 2018 test update is I'm not going to do all the talking so I'm really pleased today to have three ladies from my team here who are going to talk about self-response non-response follow-up and then we've also started out group quarters operations for 2018.

But I thought before I left this slide and turned it over to (Alexa) it would be appropriate here to thank not only these ladies and everybody else in this building who executed the test and also give a special shout-out to the national processing center, the New York regional office, the Providence area Census office and of course all those people on the ground knocking on doors collecting data no matter what happened, no matter what the weather was.

They were out there getting the job done so a big thanks to the many moving parts and pieces that helped us pull-off much of the operation in this test so if we want to go to the next slide, I'm going to turn it over to (Alexa) to talk about self-response.

(Alexa): Thank you. You can go ahead and move forward. In this portion of our presentation about the 2018 end-to-end Census test I'll be covering a couple of things. You can see the agenda up here. I'll cover the key components of the operational testing conducted in 2018.

We'll take a quick pass through the 2018 test mail strategy and sample characteristics as that information is likely familiar to most of you already and then we'll get to the exciting part which is taking a look at some results from the 2018 end-to-end Census test.

You'll see an overview of self-response, the self-response by mode and panel, a graph of self-response by mode over time and information about how the Census questionnaire assistance operation performs.

I'll also talk a little bit about the partnership activities we conducted with the United States Postal Service and what we're doing to build on the successes of the 2018 test and finalize preparations for the 2020 Census. Our goal for the 2018 end-to-end Census test was to build on prior test efforts to further improve and refine our self-response operations.

As you know self-response has been running in many of the prior Census tests as we've had some good opportunities to get to where we are today and we wanted to use this one last chance to run self-response again and see what we could do to do some tweaks and improve it even further. For Internet self-response, we again utilize the EK platform for our Internet self-response instrument.

As in the 2017 test, the ISR instrument was available to the public in both English and Spanish. The Census questionnaire assistance operation or CQA again used the contracted solution to provide assistance to the public both by answering questions about the test and by taking responses over the phone.

Our interactive voice response system was active and we had live agents working inbound calls to the self-response portion of the operation. For the

2018 test we had language support available in English, Spanish, Chinese both Mandarin and Cantonese, Vietnamese, Korean, Russian and Arabic.

Our paper did a capture operation onsite at our national processing center and used updated scanning equipment for the 2018 test. This was also the first test where we were able to setup our paper data capture operations in dedicated space and then we used that experience to further refine the operational design and our paper-controlled processes.

The forms printed in distribution operation which is responsible for the printing and mailing components of self-response was able to use the test to refine our operational approach including our print mail procedures and our quality control procedures.

This slide will likely look familiar to many of you. It shows the basics of the mail strategy and sample characteristics of the 2018 end-to-end Census test. The 2018 end-to-end Census test was conducted in Providence County, Rhode Island in a self-response universe included nearly 280,000 housing units.

Each housing unit was assigned to one of two panels. About 70% of the housing units were assigned to the Internet first panel. Those housing units received a letter inviting them to respond online as part of their initial contact.

About 30% of the housing units were assigned to the Internet choice panel which received a questionnaire as part of their initial mailing along with information on how to respond by phone or online. In terms of the languages of the mailed materials, about 73% of the housing units received materials in English only while 27% received bilingual materials in English and Spanish.

New for the 2018 test was the implementation of our anticipated staggered mail strategy where we divided the Internet first panel into three cohorts and staggered the mailings by cohort. The first cohort received their initial mailing on March 16th and the third and final cohort received their initial mailing a week later on March 23rd.

In 2010 the staggered mail strategy will help smooth the workload up for the participants' self-response operation over the duration of self-response period of the Census. In particular we paid special attention to the ways in which we can use the staggered mail strategy to ease the burden on the Census questionnaire assistance call centers especially at the beginning of the Census period.

Similar to past tests, in 2018 the entire universe with huge Mailings 1 and 2 and only non-responding house units received Mailings 3 through 5. The first data line of the table where it says total volumes shows the drop-off in mailed materials as more households responded. All right, now let's dig-in to some preliminary results from the 2018 end-to-end Census.

This is one of our periodic performance management reports we generate through the test to keep an eye on how response looks at a high level. As background self-response from our self-response type of enumeration area or TEA 1 started on March 16th.

Internet and phone self-response operations ended July 31st. Paper data capture, self-response operations are still underway but as you might imagine our seats are minimal at this point so the data on this slide and the following slides represent essentially self-response for the test.

The graph at the top shows response rates over time as well as the projected response rates over time which is the dotted gray line. As you can see at the beginning of the tests we were tracking consistent with our expectations for self-response with a solid uptick at the beginning of the test and another bump around Census Day which is April 1st.

Once we got into the later portion of the mail-in strategy when people were receiving reminder mailings and when the Internet first panel was receiving paper questionnaires, we did not see response come-in quite as strongly as we had initially anticipated. This is something we were watching very closely as we approached the start of non-response follow-up or NRFU on May 9th.

As you can see near the second vertical line though we had closed most of the gap by the time we started NRFU. At this point in the test we are outperforming expectations with a response rate of 52.3% compared to our projections of 49.3%. I'm very pleased about that.

In the table below the graph, you can see the response by mode for both the self-response area and the update leave area TEA 2. I'll talk more about TEA 1 in a minute so for now we'll just look at update leave. Update leave began April 9th. You all housing units had a paper questionnaire delivered to their door and were also able to respond online on by phone.

The initial workload update leave was 1800 housing units. Of those 633 or about 37% self-responded. Given that our projected self-response rate for update leave was 31%, we were very pleased with this result and as expected the majority of self-response and update leave areas came in the form of paper questionnaires. You can move forward with the next one, thanks.

Now let's take a closer look at the self-response from TEA 1, the self-response type of enumeration area. This table we haven't shown before in this format but the data is the data that we're most frequently asked about so figured it would be good to show you today. It shows self-response by panel and mode includes a projection for 2018 and 2020 as well for reference.

On the left-hand side you can see the modes. The top line is total responses all modes followed by Internet, phone and paper. Across the top you can see we have both the volume and percent of responses for the total of both panels, the Internet first panel and the Internet choice panel.

Overall about 61% of self-response came-in via the Internet, 8% by phone and 31% by paper. When we look across the panels we see roughly what we expect for the Internet first panel. The majority of responses from that panel were submitted online.

We were also pleased to see though that nearly 34% of the responses from the Internet choice were submitted by the Internet self-response instrument. Given that this panel had a physical paper questionnaire in their hands from the very beginning of the test, we were pleased to see so many Internet responses from that panel.

This graph shows self-response by mode over time from the beginning of self-response in March through yesterday. The blue line shows the total of all responses across all modes. The red line shows Internet responses while the orange line shows paper responses and the yellow line phone responses.

As you can see respondents who utilized the Internet self-response instrument generally did so toward the beginning of the test but we did receive online responses up to the very end of the IFR operation on July 31st.

Looking at the orange line of paper responses, keep in mind that only about 30% of housing units received paper in that first mailing. Paper forms were delivered to the Internet first panel between April 12th and April 9th which is marked with a bracket at the bottom of the timeline.

You notice there's a little lag between the delivery of the paper questionnaires and an uptick in paper responses but the time non-response follow-up began, the majority of paper responses had been received and processed.

Phone responses are shown in the yellow line toward the bottom of the graph. One thing we did find interesting in this test was the uptick in self-response after the start of non-response follow-up. This seems to indicate that activities in the field which included leaving notice of visits forms at the doors of housing units that have not yet responded prompted additional self-response.

During the non-response follow-up phase, we picked-up an additional 24,000 self-responses. It was 12,000 came-in by the Internet and 3500 by phone and 9000 by paper. The significant piece here is by phone. That was actually 31.4% of all phone responses came-in during the non-response follow-up period.

Our Census questionnaire assistance call centers were active from March 16th through July 31st as I've mentioned before. During that time we had an inbound call volume of nearly 26,000 calls.

In the lower table you can see that a little over 19,000 of those calls went to a live CQA agent which was slightly under expectations for the test but we were very successful in turning those calls into responses. As we saw in the earlier slides, about 11,000 of those calls resulted in a completed phone response.

The total call volume by language pie chart and associated sub-table at the top of the slide show the distribution of calls by language. While the majority of calls were in English and Spanish, we did take calls in every CQA-supported language during the 2018 test.

One exciting development for the 2018 end-to-end Census test was our expanded partnership with the United States Postal Service. There were two key components of our engagement during the test, Internet self-response kiosks and then form delivery e-mails.

We worked with the Postal Service to install self-response kiosks in 30 Post Offices across the Providence County, Rhode Island area. These kiosks enabled people to access the Internet self-response Website for the 2018 test and complete their questionnaire online right at the Post Office.

As you can see on the top chart, we received 111 responses via the kiosks. Additionally we leveraged the Postal Service's informed delivery e-mail subscription service to encourage self-response via the Internet and provide easy access to the Internet self-response instrument.

Informed delivery of the free service that enables users to register their home address with an e-mail address after validating their identity. Once subscribed users received daily e-mail messages that contain a scanned image of the address side of each letter or postcard mailed piece that's headed for their mailbox.

For the 2018 test a digital preview of the mailed piece including a ride-along image and embedded link that connected subscribers to the Census Bureau's

2018 end-to-end Census test online questionnaire. There were over 13,000 informed delivery subscribers in Providence County.

The chart on the lower right shows the number of e-mails sent and opened as well as accounts of various actions initiated by those e-mails. Informed delivery resulted in 54 submitted ISR responses in addition to the intangible while raising awareness about the test among subscribers.

Operationally we were very pleased when both pilots very well and we're in the process of analyzing results from the test and determining the next steps in this arena. Now that the 2018 end-to-end Census test is largely concluded for the key self-response operations, we'll turn our attention towards finalizing the systems and operations in preparation for the 2020 Census.

For Internet self-response on our docket is to add languages to the Internet self-response instrument, expanding to 13 total languages, English, Spanish, Chinese, Vietnamese, Korean, Russian, Arabic, Tagalog, Polish, French, Haitian Creole Portuguese and Japanese.

For the Census questionnaire assistance or CQA operation, we're expanding our required language support for 13 total languages and we're determining the locations of the commercial contact center facilities.

For paper data capture operations, we'll be opening to paper data capture centers, one in the east near the Jeffersonville, Indiana location of the current national processing center and one in the west in Phoenix, Arizona.

And for the forms put in distribution operation as AI mentioned earlier we'll be working with a new print vendor to execute the requirements for the 2020

Census including setting-up the mechanism for securely transferring the address file.

We're also continuing to refine and improve our implant quality control processes, leveraging in automation where feasible to provide more timely information flow back to headquarters as the printing operations are taking place and that concludes the self-response portion of our 2018 test discussion. Does anyone have questions?

(Mitchell): Good morning, thank you for the update. Hi, I'm (Mitchell) from JAO. Yes, just a couple of quick questions on 26 you have the 2020 projections for the response rates. I was just curious, are those reflecting the lessons learned already from the 2018 test? Have those been updated yet or that's just what you've had like the last nine cost models ...

(Alexa): No, they have not been updated for the majority of the testing. It's just very recently.

(Mitchell): ... okay, great, and then on 28 yes, I'm looking at the average handle time like I don't know what the (nap) is like 12% or something like that increase. Given that you got a lower deflection rate one would expect that they kind of correlate with longer calls of different types. Do you have anything observed, anything known, any preliminary observations that you actually have learned yet like what was going-on with those?

(Alexa): I'm going to pass this one to (Sheila) who's in charge of CQA.

(Sheila): I thought you might so the average handling time's a little bit longer than we anticipated and it's largely due to the fact that there's an increase in enumeration so we're doing more enumerations than we had originally

projected that we would do and it takes a little bit longer to enumerate then to just answer questions. Yes.

(Mitchell): Yes.

Man: (Unintelligible) and (Ron) from GAO. Just curious for 2020 do you expect the partnership efforts at all to emphasize certain response options or rather is it just about getting information out there or do you see that having a direct impact on the mix of response options?

Al Fontenot: We are asking our - this is Al - we are asking our partnership people to focus people on the Internet self-response, that's our first and most efficient and most cost response mode. It is the easiest response mode for people to respond to so that's the focus is they are another source of question or assistance when they're out there and show people how easy it is to respond directly online.

They'll be working with community organizations who may have response parties where people come-in with iPads and they can sit down and they can respond to the Census online. We want to drive people towards that mode with (unintelligible) it's our lowest-cost mode.

(Mitchell): Thanks.

Burton Reist: If I could add to that, I'm Burton Reist, Chief of Decennial Communications and Stakeholder Relations, you know, the partnership program gives us a lot of opportunities to really tailor and have them tailor what they're asking communities to do, how they're reaching communities, how they're supporting communities.

The language program for example comes into big play here so that you know, partners who are in a particular community that speaks a particular language can either direct people to the 12 languages that we're making response options available to either via the Internet first always but also over the telephone but also supplying the support materials in 59 languages and even tailoring materials that we provide them to communities that speak very specific languages that we don't actually support.

So that's just one way but I mean, that's an important question that you're asking because it's really in the partnership program that we get into the heart of communities and tailor the support and the messaging and have our partners tailor the support and the messaging to those communities to make them (unintelligible) as possible.

(Mitchell): Thank you very much.

(Alexa): Okay, I don't see any more questions but we'll have time for questions throughout this session so what happens when people don't send (Alexa) their response, then we knock on (Jennifer)'s door and (Jennifer Reichert) is going to tell us how things went things went with response follow-up during the test.

Jennifer Reichart: Okay, so here's an overview of what I'm going to cover today so we'll talk about what the objectives were for NRFU for 2018. I'll talk a little bit about what went into NRFU in 2018. Everybody knows it's the non-respondents but we'll talk about how NRFU went in terms of performance as well as some of the successes that we were able to observe in 2018.

Some of the one of those big successes was our use of administrative records to reduce that workflow so we've got some early results from that part of NRFU and then finally like (Alexa) did we'll kind of cover how we go from

18 to 2020 and some of the things that we know we need to do moving forward. Next.

So the objectives, I mean, I think everyone is familiar with what the overall objectives were for '18 for the people, processes and systems. For NRFU in particular we had a few areas that we really wanted to focus-on.

One was all of the automation. We know that there was a lot of automation introduced for 2018 so we, you know, with the recruiting and the hiring and the actual enumeration and getting people paid, all of that automation was tested successfully.

We again tested the use of our mojo optimizer for making sure that the field work was as efficient as we could make it in getting the assignments out to the enumerators again mentioning the use of administrative records to reduce the workload both in terms of the vacant and delete units as well as for the occupied housing units so we'll talk about all of that.

Okay, so this slide I showed this as the last PMR so I think people have seen it. It's just a good illustration of fall the workloads that come-in and out of NRFU. This was all managed very successfully in 2018 so that's a great success.

I've added some of the actual numbers from '18 now that the operation is over so as you can see about 147,000 non-responding units. That did not self-respond came into NRFU and then things kind of came-in and out all throughout the process.

So one of the things I wanted to point-out rather than walking through every one of these arrows which I did last time is just talk about one of the things

that this chart that I like to say that it illustrates is that it shows that it basically this one chart is replacing five different paper operations in 2010.

So we had NRFU, we had NRFU re-interview, we had residual NFRU, we had the field verification operation as well as the vacant/delete check operation. That was five separate operations in 2010, all paper, all had to be manned separately that are now all one part of one automated operation so that's a huge step forward and I think that this chart kind of illustrates that.

Okay, next slide and so how did we do with all of that so as you saw with (Alexa) this is our standard performance management report that was out there for NRFU. We used this throughout the operation to kind of show how we were doing. On the top chart is our progress as we can see.

From the beginning of the operation we tracked very steadily with our expectations in terms of progress. Towards the end as Al pointed-out the staffing shortages started to take their toll so we started to fall a little bit behind and then you'll see kind of some weird fluctuations there at the end.

That is that time that we've spent in the final weeks of the operations for the testing and honing our close-out in our final attempt procedures so what we were doing was re-opening cases that had previously been closed so it kind of made it look like we lost progress but it's just sort of an artifact of those efforts at the end of the operation.

The bottom chart shows our costs. We started-out below budget and stayed well below budget for the entire operation so that was good. Wanted to point-out the lower left-hand corner, that little box shows the number of self-response returns that we got for the NRFU universe.

So over 14,000 of our NRFU households responded via self-response during NRFU so that's about 10% of that non-responding universe and that was a great indicator that those notices of visits and those additional mailings that we did during NRFU.

And just having the enumerators out there knocking on doors and interacting with the community really did encourage households to respond on the ISR or the paper questionnaires and that's a huge boost for our cost savings and reducing that NRFU workload.

Okay, next slide so successes was a huge step forward, having been through 2000 and 2010 which were all very paper-oriented, I kind of wanted to walk through some of the successes but before I do that, I wanted to remind everybody what all of this looked like 10 years ago, right?

So we had enumerators walking around the country handling literally reams of paper every day. They had those huge address finders. They had all of their 308 forms to record their time and attendance. They had their case list. They had all of the paper materials that they used to sort of talk to the respondents whether it be a language card or any of those other materials.

They had to meet with their crew leaders every day in face-to-face meetings in order to handle all of that paper, all of those questionnaires, all of their time and attendance sheets, those meetings had to happen every day.

The enumerators had to make multiple visits to empty lots and vacant housing units and search around to find proxies to verify that a lot was empty or that a housing unit was vacant. That was a lot of effort that they put-out in the field to do that so how did that change so now we have the iPhones.

The enumerators are doing everything on those iPhones, right? They're turning-in their payroll, they're doing their enumeration. They're talking to their supervisors on the iPhone. They're texting. They're making phone calls. They're not having to do all of that manual transport of paper and meeting with their crew leaders every day so that's a huge step forward.

The payroll was big. As Al mentioned earlier, we didn't have hundreds of clerks and hundreds of offices keying-in payroll every day 24/7 and that was a huge savings. The enumerators got their assignments on their iPhones.

I can remember in 2010 sitting with enumerators in the morning at McDonald's while they sat with this huge paper map and their list of cases and they were trying to figure-out how they were going to do their work that day. They don't have to do that anymore. The optimizer tells them how to do their work and what order and keep those cases as local to them as they can.

And then finally those vacant and delete units, we're trying to pull those out so that the enumerators don't have to walk around and look for people to confirm to them that a vacant lot is indeed a vacant lot so those are getting pulled-out with our use of administrative record so some huge successes in terms of automation and just making the operation more efficient.

So on the topic of administrative records again a huge success in '18. I'd just remind everybody of our strategy so for vacant and delete housing units, the strategy was to identify them prior to the NRFU operation, pull them out of the workload and then mail a postcard. We have we get reports back from the Postal Service as to whether or not they're able to deliver that postcard.

If they can't deliver it, they give us an indication that it was undeliverable as addressed or UAA. If we get that UAA, those cases are done. They're

complete. We don't ever have to go out and try to find them in the field. If we don't get a UAA, those cases can get recycled back into NRFU so that we make sure we're not missing anybody maybe living in those units.

So in '18 we were able to remove about 11,000 cases prior to the start of NRFU. You can see the split there, most of them vacant housing units. About a thousand deleted housing units as well.

Waiting for that return back from the Post Office, we ended-up putting about 3500 cases back into NRFU because we did not receive that UAA from the Post Office so that process worked very successfully.

And then for occupied units, again we modeled them at the start to see if we have good high-quality administrative records data and those are data from federal sources like the IRS and the Social Security Administration and we sort of a consolidated set of those federal records.

If we have good high-quality data for a household, we'll make one attempt to go out there, try to knock on the door, try to do an interview. If we can't make contact with that household, then we will use those administrative records data in order to enumerate that household and then we don't have to make any more of those expensive visits.

We did this in two phases in '18 as you can see here we had over 32,000 households that were modeled as record numeration households. Most of them were right at the beginning of NRFU when we got that first delivery of tax data in May, we were able to pull-out most of those cases.

We did run that modeling again in June and were actually able to pull-out another about 680 housing units out of NRFU. Now those 680 obviously they

were in NRFU for a month so some of them may have received more than that one visit but as soon as we remodeled them as (ad rec and) numerator we could pull them out of the workload.

Okay, so now we're done with '18. We learned a lot in '18. We have to move forward in 2020 so how do we get there? As with any test we had some issues and some challenges in '18 that we know we need to address. Early on in the operation the automated training process we had some challenges kind of clearing enumerators, getting them out of the training phase and into production.

There were some issues in the software about recording the assessment scores for the enumerators. That issue was fixed so we had to implement some workarounds in '18 so we know that we need to make sure things like that don't happen.

The iPhones themselves great tool, for doing all of that automation we did hear from some enumerator that they had some difficulty with getting the instrument to recognize their toe - they're not toe touches - finger touches. I didn't see anybody doing it with their toes, I did not observe that, not that there's any rule against it.

But so we did learn that maybe we need to provide them with styluses in 2020 trying to help them kind of interact more effectively with the instrument. The notice of visit form, so this was interesting.

We gave the enumerators all those notices of visits which were great at getting people to self-respond but the enumerators had to write the case ID on the notice of visit so that the respondent would know what to enter into the if they

want to go online and respond and as it turns-out that the enumerator is standing on people's front porches.

They were looking for hard surfaces in order to write that down because they just had sort of this loose stack of these forms so stupid little things like that but it really has a big impact when you have hundreds of thousands of people out on the street doing this so we know we need to give them like a little clipboard or maybe give them tear-offs, you know, pads of these forms because it has a hard cardboard backing so those are things that we learned.

The proxy pass when in the instrument, proxies are an important part of doing non-response follow-up especially as we get to the end of we're really trying to get data. We had some issues with the proxy pass. There was a bug early-on that I think most observers saw where it was forcing enumerators to make repeated attempts to get proxies when they didn't need to.

That bug was fixed but it, you know, it was something that impacted the enumerators. In addition we got some feedback from the enumerators and some of the observers that the proxy pass is burdensome, not just for the enumerator but also for the respondents because a lot of times when you're talking to a proxy, they don't know all the details of everybody that lives in their house next door.

They might know there's five people but they don't know their birthdates or their ages and so the enumerators were forced to go through every element in the instrument and enter-in don't know or refused or whatever and it took time and it's a burden for both the respondent and the enumerator.

So we want to look at is there any way to streamline that process to kind of make that easier on both our proxies and our enumerators. Last thing I

wanted to mention was alerts so alerts are in the operational control system and they're meant to be tools for the managers to be able to see what's going-on with their employees and with the work in their area.

A handful of the alerts, there were some issues with the thresholds not being set right or getting false alerts and so it kind of drew into question all of the alerts and so I think as a whole for the test the alerts weren't as effective as we had hoped.

So we know moving forward we've got to make sure we have the right set of alerts and that we have the threshold set so that these are useful to the managers. They need to be able to use these alerts to know how to manage their employees and their work so that's something that we're going to work on.

And then the next slide is in addition to some of the challenges and issues, they're just stuff that we know we still have to do for 2020 so enhancements and improvements, browse living quarters. This is something that will give the manager the ability to see the status of all of the addresses in their area and help them to kind of understand what's going-on in their whole area.

Mapping application, we know we need to give the enumerators a map where they can see their work on a map and kind of see where everything is. Infield ads, I mean, enumerators are going to find basement apartments and they're going to find new developments and they have to have the ability to add those cases and get those people enumerated.

Dangerous data database, this is the tool that is incredibly important for the field staff to know when there's an area that is dangerous and we need to

make sure that we can keep the enumerator safe and we'll implement that capability across the country.

Work availability is something that they do now where they tell their supervisors and the system when they're available to work. We want to improve that availability, maybe give them if they can work two hours in the morning and two hours in the afternoon, let them tell us that so that we can give them work in the morning and in the afternoon.

So make the most use we can of all the availability. Stopping and restarting, we always have to do this whether it's a natural disaster or if there's a quality issue and we have to re-enumerate somewhere. We know we need to be able to stop an operation and then restart it or reset it so we have to build that capability.

Manager visit cases are a new thing. This is where we talk to the managers in multi-unit buildings to kind of get an idea of the vacant units in their building. We want to make that process more efficient so that we can release what we call the children cases which are the individual units within the multi-unit.

We want to make those cases available immediately if it's appropriate to do so so if it's in the evening and it's on the weekend, those enumerators we want them to be able to go right away and start knocking on doors when people are home so we want to make that process more efficient.

We're going to work on our reports. We know that's always a, you know, that's always been a high priority for us to make sure that the managers in the offices as well as at headquarters have the information they need to know what's going-on.

We know we have to finish adapting everything for Puerto Rico because Puerto Rico is coming. It wasn't in '18 but it will be in 2020 so we have to make sure everything is ready for the Puerto Rico addresses and then the last two bullets are really just kind of things that are coming that weren't in '18 so early NRFU, we know we're going to do in 2020.

This is where we go-out to the colleges and try to get there early before the students leave their off-campus housing and then the additional workloads that will come into NRFU that didn't come into play in '18 so (Luca) appeals, the response recollect operation, new construction, all of those operations that weren't in '18 will impact the workload for NRFU.

It's not really new functionality, it's just making sure that we're ready and planning for all of those additional types of cases that will come-in and I think that that is our list and I have question or I don't have questions, maybe you have questions.

Al Fontenot: Yes, thanks for that, it's always fun to hear the update. Congratulation on the costings, way to go. What's that say about your cost estimation for 2020? I mean, I'm just like did we learn something from how we estimated those costs because that's a great achievement. I'm just wondering what was the explanation for the delta.

Jennifer Reichert: So the delta in the costs I think there are a lot of factors there. I mean, we didn't have as many staff as we had planned so that certainly plays a big part in it. The soft response was a little higher than we had anticipated so that plays a part in it but yes, I mean, I think we're taking the lessons from '18 and working with (Ed) and his group to make sure that we reflect them, yes.

Al Fontenot: I also note that the administrator records pulled-out from the NRFA workload, significant percentage higher than they did in 2010. Congratulations and do we know how those compare to what you're thinking for 2020? I just don't remember from some of the early conversations, I mean, there were like 5 and 22%. Is that kind of in the ballpark of kind of what you're planning for or not planning but what you're kind of projecting for 2020?

Jennifer Reichert: I know (Tom) is in the audience so I think it's pretty close to where we were projecting, right (Tom)? I don't know if you wanted to comment on your he's been looking at the administrative records results.

(Tom Euly): (Tom Euly) of DFFC. One thing with especially on the occupied side, the 2018 test had a lower self-response rate so there's a larger percentage of cases that we could apply to in 2018 that we may not retrospectively apply then in 2010 or may happen again in 2020.

If that difference if they end-up having more cases, more likely we're able to use the administrative record. That's one thing we're trying to assess but I think it explains the higher percentage of occupied that we were seeing in 2018.

Al Fontenot: That's a really good point, thanks (Tom). That's, yes, the dynamic nature of who's responding and who you can call out in the admin record and then I don't know if I know you're going to be doing some analysis and a lot of evaluating, assessing and talking about what you learned from the '18 test.

But at this point is it too early to comment on kind of the obviously I think you talked about meeting your goal of what the test was for but would you move towards 2020 from this test and everything you've learned and what you've demonstrated with it.

Is it too early to talk about how you're going to test some of the many things that you've got that you've got on your list that look like it's not just a system issue, not just a people issue, it's kind of a system and people issue and I'm just thinking from here on out to 2020, is there more space for any additional kind of people and systems testing?

I mean, I just noticed looking at your list mostly towards technology needs people and I think you've learned you've got what you need to do kind of before but is there room, is there space yet from where testing here on out in any way?

Man: We will have small local tests of particular things. We may do some out of headquarters here. We may do some out of other regional offices so it'll enable us to test some of those interactions between the people and systems on a more-focused small level.

There will not be a large-scale test in '19 but we will have isolated instances where we want to test some specific functionality, some specific management test in our current field of infrastructure that we have.

Man: I mean, and that's built, you've got the schedules kind of built-in space for that kind of thing and the opportunity to turn around and build that and I just we even look at the schedule and just trying to figure-out where some of this stuff fits in and ...

Man: Yes, as we layout what they are, it depends on what elements there are (too early) because some elements we have to define what we need to do from the assessment of the test results and then determine where does that fit within our overall development schedule to make sure we stay on track for development?

In some cases there is time slack within the schedule that will enable that and other places the schedule is very tight and it won't enable it so closely.

Man: Thank you.

(Carol Rice): (Carol Rice), OIG. If I recall re-interview is the first time you tested it was in this test and I was just there were no - you had no feedback - so I'm just wondering could you have heard anything from that how it went?

Jennifer Reichert: So for re-interview for this test we did have re-interview both the sample selection through (smarx) and also cycling the re-interview cases through CQA first if we had a phone number and then sort of doing the (caddy) recycle and they recycled back out to the field.

That was all successfully implemented in this test. What we did not get done in this test was the clerical resolution and that will be that functionality will be tested later this year with headquarters. Staff will go-out in NPC and kind of work with the (smarx) system in doing that clerical resolution but all of the field components in the cycling of the cases was successfully through there, yes.

Deb Stempowksi: More questions for Jennifer? Okay then bringing us home to the break. We still have part of our 2018 test still in the field and Judy Belton is here today to introduce us to group quarters and give us an update on where we are at this moment.

Judy Belton: Great, thank you (Deb), (less top GQs). I know (Deb) has already given a shout-out but I wanted to give a special shout-out to the GQ IPT members for all of the hard work on group quarters data collection, just got signed and we

have a long way to go but they're working really hard so I wanted to just pull them out.

All right, so my discussion topic today I'm going to define group quarters for those of you who are familiar with group quarters and the objective of the operation is whether to give you some updates on how the test has been going so far.

So group quarters and this is our very high-level definition, group quarters are places where people live or stay in a group living arrangement that is owned or managed by an entity or an organization providing housing and/or services for the residents. This is not a typical household type living situation and persons living in group quarters typically are not related to each other.

So here's some examples, we have correctional facilities for adults so what's in there, we have the federal facilities like the Bureau of Prisons. We have state prisons. We have some local jail correctional facilities for juveniles. These may be detention centers, boot camps, things like that.

We have skilled nursing facilities. Those are nursing homes and these are also places where within a facility they have seven-day, 24-hour skilled nursing care so that's where the skilled word comes from so we know what the college university student housing facilities are.

Group homes for adults rather for treatment centers, military barracks and then we also have the service space location so with our emergency and transitional shelters, food kitchens, regularly-scheduled mobile food vans and target non-shelter outdoor locations and I like to call them tent folks.

So as you can see when you look at this list, (crew) quarters is a very complex operation, right, so there's not a one-size fits all here. We are at the mercy of the facility administrator. We call them the gatekeeper.

They have privacy and they have security concerns that we have to deal with so in group quarters data collection what we try to do is offer enumeration methods that make it comfortable for the administrator to participate in this Census if they decide to participate.

But sometimes, you know, they say no and then we have to put on our, you know, our salesman hat to get them to do (stuff) so we want to give them the options that they're comfortable with but we also want to make sure that the options that we're providing gives us the quality data. Next slide. Okay, so group quarters data collection is a two-phased operation.

There's advance contact and then there's enumeration so the objectives are to reduce responder burden by limiting the number of visits that we make to the group quarters and this is where our advance contact operation comes into play where clerks in our ACOs will make a phone call to the group quarters to let them know that we're coming.

But what we did this time before the advanced contact operation actually happened, we sent letters out - introductory letters - to the group quarters facilities and the service-based locations letting them know we were coming.

There was a link in that letter where they can go to our Website and they can learn a little bit more about group quarters. They can learn (the lessons) that we were offering and, you know, so they know in advance of our phone call.

And then another objective is to take advantage of facility-provided records and these are records provided both in the electronic format and in paper format so for 2018 and 2020 we're introducing some different.

It's the electronic data response which is an e-response option and I'll get into that a little bit more but this is a good option for those administrators who, you know, really don't want to be bothered and they're really concerned about the privacy and they can upload the data onto a secure server.

So we're more than 2/3 done with testing group quarters data collection in 2018. We conducted advance contact June 18th through July 10th and we conducted service base enumeration last week over a three-day period, July 25th through the 27th and then we just started group quarters enumeration on Monday so we're just getting going. Next slide.

So what did that workload look like in our test site? As you can see here, we had a good mix of the GQs. We had the service base, locations, we had the correction facilities, juveniles facilities, the nursing facilities, we had a good number of the college and university student housing, religious group quarters and group homes and residential treatment centers.

So our initial workload was about 569 group quarters but we found that we were lacking a little bit with the service base enumeration so through a special process we added some additional service-based locations because we really wanted to be able to test the hard-to-count population in this '18 test. Next slide, so the clerks in our area Census office used the production control system.

This is in-house system that is used for some other decennial programs but it was tailored specifically to help us with GQ advanced contact so within that

system the clerks they would enter the expected population date which is the Census date April 1st, preferred method of enumeration as well as a day and time for our enumerators to go-out and to conduct the data collection.

So we were given so what are those methods? You know, we give the administrator five options. The first one is an electronic one. I talked about that a little earlier. That was the e-retest, the e-response method and then there's four paper data collection options.

There is facility, staff enumeration and here's where this contact person really becomes an enumerator. They're sworn-in, they're trained and they're given, you know, all the tools that they need to be able to conduct the group quarters data collection for their facility.

Then there's drop-off-pick-up where the enumerator drops-off the form to the administrator and then returns later to pick them up so it may sound similar to facility self-enumeration but there's a big difference there.

Then there's in-person interviews. Here's what the enumerator conducts the in-persons interviews with each resident to complete the ICQ by the individual Census questionnaire and then there's paper listing where the facility doesn't want to be bothered, you know, just come out, I give you a roster of everybody that's here along with the demographic items.

So I'll let you know that not all of these options are given to every GQ type so where it doesn't make sense, we wouldn't offer drop-off-pick-up to a soup kitchen, you know, so we just don't offer that to them but for the most part many of these GQs will get a variety of these options available to them.

Okay, so we're done with the advance contact operation so let's talk about a little bit of what we saw so here's a breakdown of the total workload. This is raw data. This is an evaluation that will be done in the fall, what we've learned and, you know, we'll look at everything that's coming-out of there, that operation so therefore the information I'm sharing is based on just our day-to-day monitoring observations.

So let's look at the status of advance contact cases over to my left and there are three options, there are three categories. There's the completed with appointment and enumeration method, the out-of-scope and unresolved. Looking at the complete, we were able to make contact with 283 or 41% of the GQs during advanced contact.

This included 60% of the colleges and student housing, 37% of the nursing homes and 61% of the religious group quarters. We were also able to make contact with a few of the state prisons, emergency and transitional shelters and soup kitchens.

Down looking at the out-of-scope, 187 of the GQs were out-of-scope because they were non-residential, they could have been stores, you know, businesses, places like that or the GQ was closed on April 1st so during advanced contact although we tested a little later, we were asked you know, were people living there on April 1st?

If it was no, they were out-of-scope and will be living at the service base or at the service base location July 25th or through the 27th and if they said no, they were out-of-scope so many of these as you probably would guess were our service base locations.

We did have some group homes in that category, some residential treatment centers and a few nursing facilities which I think are suspect but that's what we found during advanced contact. Two hundred and twenty or 39% were unresolved, meaning that we weren't able to contact them at all. They were refusals. Vacants are also included in this category.

One thing that I would note about this category if for all the unresolved they were (pushed to the field) so although they were unresolved, we weren't able to make contact with them during advance contact, they are going to the field for service base enumeration and GQ enumeration so we didn't forget about them.

So looking at the enumeration method selected, a variety of methods were chosen as you can see. The paper listing is the method most selected by the administrators by the 152 of them or 54% followed by e-response, we had 75 administrators choosing that method then drop-off-pick-up and then in-person, you see it's going down.

A variety of GQs selected the paper listings. Most of them were the group homes. We have some colleges and some nursing facilities to choose that particular method. E-response they you know, was across the GQ types but I think those the larger number that shows e-response were, you know, colleges and nursing homes and the group homes again.

State prisons chose drop-off-pick-off and which I was hoping that they would have chosen the e-response method. Personally, because we were we tested some prisons with the e-response method a couple of years ago but they chose drop-off-pick-up which isn't really a surprise either but I was just hoping that you'd choose e-response but we're working on that.

So is this what we expected, I would say yes. Looking at 2010, 60% of the GQs gave us paper listings, you know, they said come here, pick it up and you know, get out of our hair so what we're hoping to do between now and 2020 is to really share the information about the e-response so that you know, have them comfortable with uploading the files and sending them to us electronically.

So we're developing partnerships. We already have a partnership with the Bureau of Prisons, the U.S. Marshals and we're working on partnerships with some other umbrella organizations that can help us get that message out about our various methods and in particular the e-response method.

Next, so we just started, the group quarters component but let's look a little bit at what happened for our service base enumerations so we were able to during advanced contact confirm 11 interviews or get confirmations from 11 FTE facilities during advanced contact.

There were seven shelters, those seven shelters four of them chose paper listing and three chose in-person interview. We were able to confirm interviews and make contact and go-out to three soup kitchens, they were all in person and then there's the one TNSOL and TNSOLs are targeted non-shelter outdoor locations.

These are places like, you know, under a bridge, by a park bench and so I was really interested in this one TNSOL that we had that had an address and we were able to make contact and we were able to go out there but it was a refusal but we noticed there was a gap there. We needed to test this population a little better.

So the partnership specialist and field division you know, did some research and they found in some TNSOLs for us to go they found 36 of them for us to visit and so we were able to contact them but so I'm moving ahead with the TNSOLs but so looking at just the other SBEs so 11 we were able to confirm and we were able to go out, 14 turned-out to be non-interviews.

And so with the TNSOLs again we were able to our partnership - field partnership specialist make contact, go out and interview 36 councils with 36 sites were enumerated and we interviewed actually 32 people. And these people, I mean kudos to them. They were looking under bridges, in cemeteries, really dedicated people to find persons who were living that are out at these non-sheltered locations.

So group quarter data collection, the other GQ types, we just started interviewing them on Monday, on July 30. So we had a workload of 400 group quarters and 200 of them at my last check were assigned to enumerators. We sent letters out to the 75 administrators who wanted to do e-response. Those letters are (Epidore) and within that letter, we instruct them (unintelligible) user ID for the contact person and there's an ID for each of the GQs that are associated with that administrator. So if we expected them to upload a file for that GQ and if they are responsible for multiple, every GQ has an ID associated with it. And so we expect a separate file for each of those.

So those letters and instructions for doing that have gone out. And we actually did receive one file yesterday I believe it was from the Marshal Service and it was for a GQ that was under their umbrella. So we're looking forward to evaluating what's going on with that.

I want to touch a little bit -- it's not on your slide -- touch a little bit on the not 219 unresolved cases that we found. So we were doing - that's why I wanted to really give a kudos to our GQ folks. They were able to convert 15 of those 219 cases to in-person interviews, 17 to drop-off, pick up, and 11 to paper listings. So very good job.

That's all I have. Questions? Yes, (David).

(David): I really appreciate the updates. I just had two quick questions on advanced contact. So for 2020, you'll probably be doing advanced contact and then enumeration closer to April 1. So do you expect that to have any impact on the distribution of enumeration methods that facilities use has become more or less convenient to pick one or the other if you're closer to April 1?

Judy Belton: I would say for the college dorm, university housing, a lot of them chose paper listings because many of those places, many of them didn't have (unintelligible) there. Truthfully, I hope that they remember that moving forward for 2020 and also choose the paper listing. Or if they don't want us there, because a lot of them have really privacy issues with us being there on site.

But other than that, I think it's to be expected. I don't think I had any really surprises there.

(David): And then given that this was the first time I think that advanced contact had been conducted out of the office, when you go to evaluate sort of the effectiveness of that, is part of what you're looking at how the distribution of enumeration methods from advanced contact stacked up with what was actually the case on the ground? In other words, was it an accurate predictor of the methods the facilities liked?

Judy Belton: Yes.

(David): Are you okay with cases where facilities change up at the last minute how they want to be enumerated? What level of comfort do you have?

Judy Belton: So I wouldn't say that I'm okay with it but I'm used to it. Having worked in the ACF, I know that it happens. They say one thing and then when you get there, they change their mind. But what we need to train on is being prepared for those switches, being prepared for if they want to drop off/pickup and then when you get there, they want something else. So I think our enumerators just need to be prepared for doing all four of those paper options, if they five, if they don't to do e-response. Just being prepared.

(Alexis): Okay, any other questions? Can we go to the last slide on 2018? I know folks are looking for a break but we had to end here. I think what I want to take away from this slide at the very end, of course, is remember the test isn't over just because we've closed out a lot of these operations. Our GQ operation will be running until pretty far into August as well as the close out of our paper data capture operations.

And then of course, we have to do all the stuff that goes on behind the scenes when people don't see what's happening with close collection, processing, tabulation, all those steps that are required to make a data product. And we'll be talking about those more as we move through these PNRs later this year. So I believe that wraps our 2018 test update. A), are you in charge of break?

Al Fontenot: I've become in charge of the break. Thank you very much (Deb) and team, (Alexis) thank you. We would like you to try to take a break at this point and

if we could ask you all to be back in your places by 3:25 so we can get started again at 3:25. Thank you very much.

Thank you very much. I'm glad that you have rejoined us for the afternoon session. We're going to start off turning it over to Atri Kalluri, our chief decennial IT division and he will be giving us an update on our systems readiness. Atri?

Atri Kalluri: Thank you, Al. Good afternoon ladies and gentlemen. This is the most interesting part of the PMR.

Al Fontenot: Promise not to show that release but getting started.

Atri Kalluri: I'm happy to be here to give you all an update on the systems readiness for not only 2018 test but also 2020 census and the systems obviously including said CAP systems. As you all and you've heard, we've completed the (unintelligible) canvassing operation, many of the peak operations successfully for the 2018 test. We are now getting ready to support response processing, data products and dissemination, and redistricting data operations.

So what we put together as an agenda for today is to first recap the releases and systems supporting ongoing key operations, go over the remaining releases and systems to be deployed, and then talk about getting ready for the 2020 census, including the performance and scalability test plan, the systems release plan, and remaining key work.

Next slide please. So as shown on the screen, we had four main sets of systems release for peak operations, for self-response, which includes the operations of internet self-response, non-ID processing, census questionnaire assistance, and paper data capture. We released, tested, and deployed 23

systems successfully. But field enumeration, including update leave and non-response follow-up, 31 systems were involved. The first time deployment of the (SET CAP) system (unintelligible) enumeration took place as part of the enumeration release and that system, as you heard earlier, functioned successfully for the test and played a critical role for the non-response follow-up.

The self-response and field enumeration sets of systems also supported coverage improvement, re-interview by phone and in field, and field verification aspects of the test. (Unintelligible) the third row as you see, is where responses that could not be auto-coded are identified and action taken to code them with intervention from subject matter experts. The capability requirements for (unintelligible) coding were met as part of that release.

Group quarters release involved advanced contact, as you heard earlier from (Judy). Twenty-to systems were involved and enumeration, 24 systems were involved. The group quarters enumeration is ongoing as you heard and entails multiple modes of data collection, including electronic uploads for e-response in pre-published formats, and paper, which obviously contains drop off and (unintelligible) facility self-enumeration and enumerator personal interviews.

Next Slide. So this slide lists key systems that are part of the releases that supported or are supporting the operations. To make it convenient for you for reference, we provided the systems list and the backup slides that contain full name of each of the 52 systems and a description. What I'm trying to convey through this slide is that as you can see, many systems support multiple operations. Integration of systems involves development and testing of not only the functionality that each system is expected to fulfill, but also the development and testing of interfaces that a system may have with many other systems in relation to all of the operations it supports.

For example, E-Case, operational control system, as a traffic cop has to manage field enumeration activities, including group quarters, while at the same time managing self-response activities. So the incremental releases led to the consolidation, testing, and deployment of functionality and interfaces that each system needed to support multiple operations and thus, the 2018 test is proving in the release process for the 2020 census.

There are two main releases left. We are not done yet with the 2018 test. Response processing releasing with conduct operation data for October 1 and tabulation, product creation, and dissemination release with conduct operation data of January 7, 2019. Response processing includes de-duplication of responses, quality assessment of data, and creation of census unrelated file, or the CUF as we call it.

The last release includes tabulation, creation of census (unintelligible) file, the (CSF), the micro data file, the MDF, and also the creation of demonstration products for dissemination, such as public law 94-171, redistricting data products. This last release involves 11 systems. We are eager to complete these remaining aspects of the 2018 test. We are on track to release the systems for the schedule and dates shown on the screen.

Next slide. This slide shows the key systems supporting the remaining releases. The decennial response processing system, the RPS, plays a critical role in response processing and incorporates the component of disclosure avoidance. Let me provide some clarification regarding fraud detection. What we refer to as fraud detection system, FDS, in the systems list is really a system for self-response quality assurance. We gave a technical directive to the technical integrator to develop that system with us but we should have called it by the name specific to what it is actually intended to do, which is

self-response quality assurance. Because self-response quality assurance is part of our overall data quality and data integrity control, involving multiple systems and multiple operations, it also falls under the umbrella of fraud detection.

But it is not the only system responsible for fraud detection. So for everyone's clarity, as we move towards the 2020 census, we are implementing a change request to rename the system appropriately to self-response quality assurance system. There are two systems that will be released for the first time in support of the 2018 test in the last release. They are the tabulation system and the (unintelligible) system for dissemination. Next slide.

Now, let me give more details on the systems that are yet to be deployed in support of the 2018 end-to-end census test. FDS, which as I mentioned, which will be renamed to self-response quality assurance system, will have the ability to run custom built statistical models and algorithms to identify potential fraudulent returns in relation to self-response. For the 2018 test, the models will be running batch at the conclusion of the end-to-end census test.

These models use a variety of data sources to assess the likelihood that individual responses are potentially fraudulent, as well as identify suspect cumulative trends, both temporal and geospatial. The fraud detection team will also conduct a red team test where a group of testers outside of the fraud detection team will purposely introduce fraudulent responses into the 2018 end-to-end test data that the system is processing. This will allow the fraud detection team to determine whether the system can identify the fraudulent responses and/or what model adjustments are needed.

Beyond the 2018 test capabilities for the 2020 census, the self-response quality assurance system will also work to continue to mature the dashboards

and visualizations. The team has developed and implemented the first iteration of dashboards and visualizations, which will continue to be refined in advance of 2020.

They'll perform additional independent red team testing to determine model efficiency and areas for model improvement. The team will continue to update the models based on the findings from red team testing and any newly identified fraud vectors. They'll also stand up and test the fraud detection operations center and case management system to evaluate how analysts will adjudicate suspected fraud using dashboards and user interfaces.

The team has already procured a case management solution and is working to customize the solution for the operations center. While the fraud detection operations center and case management were not included in the 2018 test, the team is planning on performing small scale testing between 2018 and 2020 to ensure that the system is ready for 2020.

Now, regarding the tabulation system, most of its work will be through batch processing. The system will produce very products, including detailed tables, quick tables, and geographic comparison tables for public law, SF1 and SF2 deliveries, and will support all needed geographic summary levels. (TEDSI), which is the third system that is yet to be released, its enterprise data dissemination environment, EDDE platform as we call it, will enable data users to have access to prepackaged data products, application programming interfaces, and metadata documentation. EDDE platform is the replacement for the previous dissemination system known as American Fact Finder with many additional capabilities.

Specific to the 2018 test, (TEDSI) system will have embargo, which is the ability to support secure, restricted access by state representative, large bulk

download capabilities, and high performance of accessing all geographic summary levels down to the block level. All three systems are on track to be delivered on time. Next slide please.

This slide summarizes the key functions that are supported by systems as part of the 2018 test. As mentioned earlier, we have response processing, tabulation, product creation, and dissemination remaining, along with the ongoing work for group quarters, enumeration in the field. They're using a commercial cloud solution along with our datacenter. We established network and security operations centers. We made the utilization of administrative records possible and we built processes using systems that minimize the use of paper, including for recruiting, onboarding, training, time and expense, and payroll.

We established in-office (unintelligible) canvassing capability with more work being done in office than in the field and are collecting or collected responses using three modes - internet, including non-ID, telephone, and paper. We conducted update leave operation in the field using the listing and mapping application that runs on Windows platform just as we did for address canvassing in the field. We are optimizing case assignments and are using iPhones to run the enumeration app to collect responses as part of the non-response follow-up.

We built these capabilities under the systems, engineering, and integration framework defined by our CTO's office, and are implementing measures to ensure security of our systems and data using the guidance of our office of information security. So I want to link back to the innovation areas for the 2020 census, which you may recall, are reengineering address canvassing, optimizing self-response, use of administrative records and reengineering field operations. We built systems with those four innovation areas in mind and at

this time, I'll let you all think for a moment and relate the functions we implemented shown on the screen to those four innovation areas.

Progress has indeed been made but we still have quite a bit of work to do. First, we need to finish the 2018 test. In parallel, our focus is on the most important aspect of systems readiness, which is performance and scalability testing. Next slide.

So on the screen are the four phases of performance and scalability test. The four phase approach is typically taken in the industry. At first, each system that's functionally ready is assessed for its ability to scale by reviewing its implemented architecture and design. The system team that built that system is informed of any obvious issues to be addressed. As an example, method to connect to the database. One connection versus a pool of connections and based on information gathered through the assessment, a scaling approach for each system is determined, vertical versus horizontal, one database supporting multiple application (unintelligible) et cetera.

But please note that all of our 52 systems will go through Phase 1. Systems are assessed in a prioritized order based on when the need to be ready for production as part of an integrated system of systems. In Phase 2, testing begins with performance tests of individual systems on standard infrastructure but isolated. These tests establish baseline numbers. For instance, how many concurrent users can a system take on a standard configuration.

Phase 2 results help us determine and validate sizing and vertical scalability numbers. Integrated systems performance tests are conducted in Phase 3, concentrating on each individual business thread first, and expanding to full end-to-end tests. Integrated performance tests establish the performance numbers of the integrated systems with the emphasis on interfaces. Assessing

the performance numbers in comparison with the predicted peak loads through external and internal demand models, adjustments are made to the network, the software, and hardware configurations and tests are performed to ensure that the system of systems can scale to those peak loads. These performance tests are repeated under various scenarios, such as when backups are running.

In Phase 4, the system of systems is subjected to (SOAK), which is basically letting the systems run for a period of time at peak loads, and also fail over tests and the associated scalability tests are conducted. All of these tests are repeated until there is confidence in our ability to meet the non-functional and scalability requirements of the 2020 census. All those the phases, our performance engineers, architects, and infrastructure support engineers from across the organization monitor, troubleshoot, and validate performance test results and by design, the performance tests are to be completed by the production readiness review dates published in our schedules.

Next slide please. Let me now talk about the 2020 census systems releases. Later on, Jackie will give more details on the schedule for these releases. As you all heard in the last few PMRs, we have four releases for 2020 census. Based on the lessons learned from the 2018 test, and feedback from various sources, we worked with systems team, technical integrator, especially the team that does the performance and scalability testing.

We worked with field division, all of our contractors, device as a service, census questionnaire assistance, (CSHARPs). We worked with computer services division, office of information security, systems engineering and integration area, and operations managers to provide more granularity to each of the four releases by adding more detail.

As you all know, there are 35 operations and 52 systems for the 2020 census. Not all operations occur at the same time and not all systems support each operation. The four releases were created at a very high level, dividing them up for recruiting, address canvassing, peak operations, and response processing.

As you can imagine, that type of division meant handling of large number of systems for a huge number of permutations and combinations of operational threads, each thread requiring its own data, performance, and scalability assessment, integration testing, output testing, and where relevant, training. Every one of us needed a better organized approach with clarity and detail to be able to handle the huge number of permutations and combinations of operational threads effectively and efficiently with an ability to soft launch each operation.

The result of an effort to arrive at a more detailed approach is that we converted the full releases into 16 operational deliveries of systems, including an operational delivery each for island areas and forced enumeration survey. The systems, engineering, and integration framework remains the same with specific test readiness, production readiness, and conduct operation dates identified for each operational delivery. Once the operational delivery dates are integrated into the IMS, we'll publish them.

We're also streamlining the readiness review process to allow the system teams to proactively provide information to the systems, engineering, and integration teams and participate in electronic readiness reviews. Next slide please.

This is my final slide. It identifies the remaining key work for 2020 census. First, we have to complete the development work that's identified as the delta

between the 2018 end-to-end census test and the 2020 census. Examples of delta work are the additional languages for the internet self-response system, specific work related to Puerto Rico where there is a specific address definition and structure, and the implementation of enhancements or improvements based on lessons learned from the 2018 test.

Then we need to conduct integration testing of systems, including the eight systems that were not part of the 2018 test. Parallel to integration testing is the performance and scalability testing, with all tests completing by the production readiness review dates. Based on the performance and scalability test results and taking into consideration the security configurations, the finalization of cloud deployment architecture needs to take place.

As you all know, we take cybersecurity very seriously and based on many tests we performed, including the penetration test that Kevin talked about, we need to strengthen the security architecture as needed. Also in parallel, we need to deploy the IT infrastructure needed at each ACU across the nation. We know we have a lot of work to do before the 2020 Census and all of our staff members, whether federal employees or contractors, are committed and dedicated to deliver all needed systems and infrastructure that meet the capability requirements and non-functional requirements for an accurate and efficient census.

I'll be happy to take any questions at this time.

Al Fontenot: With no questions for Atri, we thank you very much, Atri. And we are now going to turn it over to Jim Treat. Jim Treat will lead his team in a discussion of our scheduling, our risk assessment, and those key functionality that drive the census but you don't see them. They're in the background, unlike a field operation, but they're critical to our management of the census process. The

integrated master schedule basically drives everything we do and makes sure it stays on time and on track.

Our risk assessment allows us to look at changes in the environment as they impact us, internal and external things, and how we need to build contingency plans to be able to respond in the event of a risk becoming an issue. I'm going to turn it over to Jim.

Jim Treat: Thank you, Al. So today's presentations, the majority of the presentations have been focused on the end-to-end test, which is really great because there's been a lot of information, knowledge, lessons learned, and experiences from that. We're sort of transitioning now to talk on a more broader perspective as it relates to the program management areas for the 2020 census program. And when I say that, I mean it broadly, not the execution part of the 2020 census, but the larger elements of the program, which includes the end-to-end test as well as the test that preceded the 2018 end-to-end test.

And as Al said, we have two presentations this afternoon. The first is with Jackie Eanes. She is the assistant division chief over at the schedule management staff and she's going to talk about how we manage - develop, manage, and implement a critical component of the program, which is the integrated master schedule, and how we use that. And so on that, I'll turn it over to Jackie.

Jackie Eanes: Thank you, Jim. I think Atri made up some time. I'll try to keep the trend alive. So I'm going to talk to you a little bit today, touch upon the complexity of the 2020 Census, introduce the integrated master schedule, talk about roles and responsibilities of our stakeholders, and then review the process and the reports that come out of that process. And I'll wrap up with the status of our current IMS. Next slide. So the 2020 census is a large complex program and

it consists of multiple projects that rely on people, facilities, materials, systems, data, procedures, and contracts.

It's a large system. It integrates 35 operations across 52 systems and it spans multiple years, although we have a high level of activity that occurs over a six to nine month period of time that we refer to as our peak operations. We have very unforgivable deadlines that we must meet and all of this is with the goal to count everyone once, only once, and in the right place.

So I think this is familiar. This is our placemat and Atri showed kind of a different version of this, but each of these boxes represents one of those 35 operations and within those boxes are all of the systems that support those operations. So as you can see, that's a lot of complexity. It all has to come together to meet our ultimate goal. Next slide please.

So I wanted to put it in another context. This is just using a very simple model, a five operation program. Within that, there are a maximum of ten integration points. So if you apply that same formula to the 2020 program, we have a maximum of 3,741 integration points. We rely on our integrated master schedule to manage all of those relationships.

So what is the IMS? It's our integrated master schedule and it's a complex interdependent program schedule that consists of 87 projects. We currently have 24,000 activities, plus activities, and 47,000 plus relationships. We implement a tiered structure that allows for upward dynamic cause and effect scheduling. This means that movement at our lower tiers impacts milestones at our higher tiers. And we use Oracle Primavera to manage our schedule.

So this is just a depiction of the schedule architecture in the tiers that I'm speaking of. We take a four tiered approach, with Tier 1 representing our

highest program level milestones for the 2020. These are things such as apportionment counts and delivery of the redistricting summary files.

At the Tier 2, this is where those 35 operations and 52 systems align to. Tier 3 is a further breakdown of those, the sub-operational and subsystems milestones and high level activities. The one example there could be EK's census data lake or group quarters. And then Tier 4, these are our detailed level project schedules. These really are the day-to-day operational schedules. Following the GQ example that would be something like deliver (unintelligible) accounts for DOD for overseas personnel to (FACO), Federal (unintelligible) account received. It's a very detailed level.

Okay, so that describes the architecture of the schedule itself. I want to talk a little bit about the schedule management branch and their role in supporting that. So they are responsible for supporting the entire architecture and this includes developing, managing, and operating the schedule system within Primavera. We work with the project managers to build their project schedules, integrate them into the IMS and ensure alignment to our best practices and standards. We're responsible for managing these baseline schedules via our established change control process and producing standard and ad hoc schedule reports as well as to report program status out to Census Bureau leadership.

And this is a visual depiction of that process. So at the top level, you see the life cycle planning program and management. So that's really just following the operational workflow. We then break that down to the Tier 1 through 3 that we just reviewed, and then we break down to the finest level of detail, and then we move into the monitor phase. So that's our program level process.

At the project level, in the middle portion of this diagram, this is the weekly cadence and I'm going to talk a little bit about that. But these are those Tier 4 schedules where we work with the project managers to develop their scope, ensure accurate linkages, durations. We baseline, and then again, we status and monitor and I'll speak specifically to that, with the output being the weekly reports, which I'll also touch upon. And then the bottom is the schedule support that I just went over the roles and responsibilities for.

I wanted to provide a list of the GAO best practices. These are what we use as our primary guidelines to ensure complete and accurate 2020 Census schedule. So again, these would include things such as 100% scope, accurate and reasonable durations, and that everything is logically linked, thereby supporting the tiered architecture.

We also use the defense contract management agency, or DCMA 14 point assessment as a tool to assess the health of our IMS. It also ensures that we stay within our quality standards. And so we run this every few weeks to ensure that we stay within certain thresholds.

Okay. So those are the processes that the schedule management branch supports. These are other stakeholders I want to touch upon. We have our DCMD management and they of course ensure that we have complete support and participation with the schedule management process. Our program management governance board is a team that consists of key decennial stakeholders that are responsible for reviewing and approving our 2020 census projects deliverables.

And then we have our project managers. These are really the owners of the content of those Tier 4 schedules and they ensure that their schedules are accurate, that they're status, and that they are using them to manage the

projects and therefore the program. So I wanted to provide a visual representation of the weekly status cadence that I keep referencing. At the Tier 4 level, every Wednesday, we send status sheets out to the program managers. They send back their actual dates and status of their schedules by Friday. Schedule staff apply those status and actual dates and progress, run draft reports on Monday and we have an all stakeholder meeting on Tuesday where we review any variances and resolve those prior to producing final reports on Wednesday. And then we start the cycle over again.

And this is just a list of the guidelines that they use for providing the status. So provide the cadence. I wanted you to see the types of status that the staff are providing. They provide any actual dates for activities that have started or finished and then they provide a percent complete or remaining duration for anything in progress.

And so all of that occurs and on that Wednesday, we produce reports. These are three of our key reports. We produce a should have started, should have finished report and it's pretty self-explanatory. It lists the activities that were planned to start and/or finish but do not have any actuals associated with them, actual dates applied. We also produce a 30, 60, and 90 day outlook report, which is just upcoming activities to occur in the next one, two, and three months.

And then we have our executive alert report. That is a list of handpicked activities by the operational owners of key milestones that must occur on time in order to deliver apportionment to the President on time, meet our ultimate goal.

And that is pretty much it for the schedule management process. I think I did good making up my time. I am going to give you a little update on where we

are currently with the schedule. We did begin that Tier 4 development for the 2020 Census execution schedule last July and we baselined in December. We immediately began that weekly process that I just reviewed and over the past several weeks have been working, as Atri alluded to, with the operations, systems, and testing project managers to incorporate the converted releases into the IMS. We are working with a target date of October 31 to get all of those detailed releases into the schedule.

And with that, I'm going to turn it over to Deidre Hicks and she's going to talk about risk, and then we'll take questions.

Jim Treat: Just let me introduce Deidre. She's the assistant division chief -- that's okay, Jackie -- she's the assistant division chief over the program management area and under Deb's division in the decennial census management division.

Deidre Hicks: Thank you. This presentation is going to focus on the structure and the processes that are the bedrock of the 2020 Census risk management approach. The Census Bureau has been actively managing risk for decennial censuses since the 2010 cycle. Over the past decade, we have strengthened our procedures and this presentation will highlight many of our improvements. We will discuss our structured risk management, give an overview of our process, governance, and reporting, and walk through our portfolio red risks.

In the presentation Jackie Eanes just made regarding the integrated master schedule, she showed you a triangle very similar to this, that illustrates the tiers within our schedule. Similarly, the risk management process uses a tiered approach. As we often say, the 2020 Census is comprised of 35 operations and each of these operations, essentially are programs within themselves. It is critical that we manage risk within each of the 35 programs

and that we look across the programs and derive overarching risks. These overarching risks are our portfolio level risks.

In addition, within each program are projects and subprojects. Some are supported by major contracts. Our risk management approach involves managing risks from the sub-projects to those projects, programs, and ultimately at the portfolio level. This integrated approach to risk management ensures that we are monitoring and managing risk at all levels of the 2020 Census.

On this slide you see another triangle. We like triangles in program management. And this one mirrors the previous one and illustrates the interrelationships within our risk management structure. One level below portfolio is our program level risk. Here, I'm using systems engineering and integration as an example. Below SE&I are the projects that support SE&I, which are (SET CAP), 2020 Solutions, and Enterprise Enabling projects. And at the bottom of the pyramid are sub-projects, who in this case are the major contracts.

Our integrated process allows risk to be identified, captured, and monitored and regularly updated at any level from the contracts to the sub-projects, projects, program, and portfolio levels. The risk management process also includes the ability to escalate risks and transfer risks to the appropriate level from any level that the risk is identified. Our process follows industry best standards and are aligned with the Census Bureau and Department of Commerce standards.

Portfolio risk span 2020 Census lifecycle and could jeopardize the ability to achieve our goals and objectives. In addition, these risks are broadly defined and represent threats to the success of the portfolio rather than just to an

individual program or project. In addition, portfolio risks have the potential to be realized more than once during the Census lifecycle (unintelligible) span several years. Thus, these risks remain open in the 2020 Census register until the last possible instance that it could occur.

They can spin off multiple issues, however the risk may remain if it still has the potential to occur in the future and they may elevate from the program, project, or sub-project level. The 2020 Census Risk Review Board is the overall governing body. The Risk Review Board includes representatives across all of the programs, as well as key stakeholders and is chaired by the DCMD Division Chief. The Risk Review Board is responsible for managing portfolio level risks, including identifying, assessing, planning risk responses, and monitoring risks.

In addition, the risk review board also regularly reviews risks at all levels of the program, from the (unintelligible) operations, projects, sub-projects, as well as contract lists.

Now, a little about our reporting - not about our reporting. We're getting there. I'm getting ahead of myself. We regularly report out on our risk, including the following deliverables: The DASH report, which is reporting to our census senior managers as well as the Department of Commerce on our top risks, including our mitigation and treatment plans; our Capital Planning and Investment Control Reporting, which is the E300, which is where do monthly reporting to the Department of Commerce, as well as the Office of Management and Budget on our full portfolio risk register, as well as our top lists on a quad chart.

We also report out to the portfolio management governance board on a quarterly basis on our top red and yellow risks. Now, what I'd like to

highlight a nuance in our approach to determining the probability and impact of our portfolio level risks. The probability is based on the likelihood of the risk occurring, which is standard for risk management. However, the impact is assessed in five separate areas individually, which are listed on this slide.

They include cost, schedule, technical, customer expectation, as well as public trust. The highest rating across each of these areas becomes the overall impact number that is multiplied the probability to determine our overall rating. This approach allows us to do a more detailed assessment of our risk in each of the individual impact areas.

Now that we've talked about the structure, process, and governance of the risk, we would like to now circle back to a slide that you see every single quarterly review that we have, and talk about our risks themselves. The first red risk that we have is around our ability to safeguard response data. As you see, the probability is a 3 and the impact a 5. And the area that's impacting or creating that 5 as the impact is the public perception around this risk. This risk has an active mitigation plan, including steps to continually monitor the public's confidence in data security.

Our second top risk is around cybersecurity incidence, which is also a probability of 3 and impact of 5. The impact area that is driving the rating is around both technology as well as public trust. We are actively mitigating this risk, including monitoring system development efforts to ensure proper IT security guidelines are followed, researching other Census Bureau programs, other government agencies, other countries, as well as private sector to understand how they effectively mitigate cybersecurity incidence. Ongoing auditing of systems to detect and trace outside infiltration as well as performing ongoing threat invulnerability analysis testing.

Our third red risk that's listed is our testing of performance measurement reports, which also has a probability of 3 and impact of 5. The impact there that's driving this risk is around customer expectation. This risk has an active mitigation plan that we are continuing to monitor the progress through FY19 to ensure that all of our performance reports are tested and accepted, and this is a relatively new risk to the register (unintelligible) but we feel very confident that this will continue to progress and be able to come down in its probability.

And then I'll also want to highlight that in recent months, we have begun to review the 2010 Census Risk register to look for risk that should be brought back into our current portfolio register. In this process, we have identified two new risks that have been rated yellow. The first is duplicate and missing living quarters within our address frame. This risk was identified in our 2010 cycle and we have now brought it back as a yellow risk.

In addition, a second risk is a risk in within household person over coverage and under coverage, which is erroneous enumeration. This review of our 2010 risk is ongoing and as we identify additional risk, they will come to our risk review board and be addressed, and will also become a part of our risks. And at this, we'll take any questions.

Al Fontenot: Lisa?

Lisa Pearson: Hi, this is Lisa Pearson from GAL. This is just - we were looking at the terminology that was being used between the schedule job and the risk assessment job. And we know that we talk about portfolio risks, but in the schedule we were at the program and the project level. Is the terminology - I know the risk changed recently. Has it not caught up to the risk, I'm sorry, to

the scheduling yet, or is there - is it going to still - is there not going to be a portfolio I guess schedule assessment?

Deidre Hicks: It really was brought in recently with Jim Treat joining us about six months ago. We began to realize that to really look across the board, we really are managing a portfolio, these operations are major. They're not just projects. They're programs. But you're right, that terminology has not filtered down across everything at this point. But it really is a way for us to really look at our - the way we do business and realize that it is a bit larger than just the program.

Jim Treat: Part of it too, is when you look at the - I think it's the 32 large risks, so I won't use portfolio, projects. If you look at the 32 large risks, as Deidre talked about it, these are things that really span - they're not typical what you would consider a project kind of risk because normally with project risks, at a typical project they are single events that occur. When they go from being a risk to an issue, you really transition to managing the issue and the risk closes.

But with the decennial census, because of the lifespan and the size of it, and the complexity, at that higher level, we had to come up with something to manage because as Deidre said, these are things that can occur multiple times through the program and we needed to figure out how to manage those in that effort and trying to bring language that elevates it to the top of the overall effort that we're doing to raise that visibility up to that level.

We always wrestle with terminology and nomenclature as we do this. I'll just say the process we're following leverage, whatever terminology you use, it leveraged what we did for risk management as well as schedule management from 2010 but it actually built on the lessons learned and is trying to take it to the next level for the program.

Al Fontenot: Any additional questions? If not, I'd like to thank Jim, Jackie, and Deidre. And now, we're going to turn it over to Michael Thieme to carry us home.

Michael Thieme: That's a good way to think about the end of a long day at the end of a long week. Thanks, Al. So I have a lot of notes and I apologize if I have to look at them sideways because of my chicken scratch. I was going to try to type them on my computer but I just thought I'm just going to go from this. But anyway, so Al started out today with a concise overview of the 2018 test, talked about systems productivity challenges and successes, and a brief update on our key 2020 preparations.

He also reminded everybody that we just awarded our field IT deployment contract this week. So we're very happy about that. Kevin spoke to us about our comprehensive approach to cybersecurity and I think this is actually - to me, this is one of the key takeaways from today that we want to keep in your mind. He talked about how privacy and confidentiality are in the Census Bureau's cultural DNA. He talked about our collaboration with partners to implement of network security where cyber experts across government and industry are on our 2020 Census team and have our backs.

He talked about our technical capabilities to contain an attack and maintain the census respondent user experience. He also addressed how employees will securely sign into our applications and how our data are encrypted at rest and in motion. The fact that our people will sign into applications with two-factor authentication. He talked about how we will handle threats from social media engineering by bad actors and how external experts will help us review what we've built.

And though we must keep our specific technical plans to ourselves, the Census - he talked about how the Census Bureau and the federal government together are employing a world class cybersecurity program for the 2020 Census. So these are things that I think are good to keep in mind in this era where cybersecurity is really what it's all about for the census.

Then we went to Deb and Deb sort of gave me some material because she said this is her favorite PMR because she gets to hand things off to Alexa, Jennifer, and Judy. Did a great job. Alexis talked about all aspects of self-response in the 2018 test, paper, internet, and phone, and our strategic response to employing those response modes to make the census as efficient as possible.

Jennifer then came in and she covered how non-response follow-up provided many opportunities for learning in this first mostly electronic census. She took us down memory lane, comparing the 2018 test to the 2010 census, showing very clearly how we've clearly entered the digital age. She also covered our use of admin records to make NARFU more efficient, and I have written down here (unintelligible). I don't know what she meant by that. She covered some of the non-response follow-up challenges and getting from the 2018 test to the 2020 Census (unintelligible) we've learned and covering new work still to be done.

Then we went to Judy who talked about GQ and she covered our sill ongoing operations in GQ, making one of our most complex operations look easy. Atri, as usual, discussed systems and accomplishments, and future systems work, including the new replan of our system operational deliveries to bring our activities into alignment with the census operations. And this is important because in the 2018 test, we learned that having an arbitrary set of releases did not line up with operations well and caused us to do things in our development that we thought we could improve on for 2020.

Jim, much like Deb, did a nice hand off to Jackie and Deidre and Jackie updated us on our excellent integrated master schedule, on the work being done on that, being sure to point out our alignment with JAO best practices. Deidre covered our well-conceived and executed risk management process, noting that we follow industry and Department of Commerce best practices, but unfortunately not mentioning GAO best practices.

And then finally, I keep on noticing in many slides, we have this thing, and Jackie, this is connected to you. We have deadlines in the Census Bureau, obviously. We often refer to them as unforgiving, but for some reason I've seen in, like, three or four presentations that our deadlines are unforgivable. And that's what your presentation actually said. So maybe it's true.

(David): I would say that's true.

Michael Thieme: So we have unforgiving and unforgivable deadlines. But with that, I will hand it back over to Al to take us more home.

Al Fontenot: Thank you very much, Michael. I'd like to thank everyone, both online and in the room here for your attendance at our August 2018 program management review. As we go-forward, we'll have more detail on analysis of the results of the 2018 test as we go through the next one, and on our progress in terms of developing partnership activities, developing plans from our communication directorate, and how we really get to 2020 as we march toward 2020.

I just have to digress for one brief story for one minute, if you will just tolerate me. In 2010, in the Los Angeles area, we had a crew leader, a dynamite crew leader. If you remember address canvassing in 2010 had this electronic instrument that had a biometric digital fingerprint read to log on.

She was mosaic artist when she was not working with us. Her fingerprints were not the same any two days in a row because of all the additional cuts in her fingerprints from being a mosaic artist. The only way we resolved it, she used a toe print instead of a fingerprint on a device to actually log in. So I just had to tell that one story because she was a great asset. We had to continue to use her and she was convinced every finger - no fingers worked and it was the only thing she could - or toe print didn't change. But toe prints are relevant. I will say that.

But thank you all. Have a wonderful weekend. Have a wonderful week. If you have any questions, follow-up with us via email, via telephone. We'll be glad to work with you. Thank you very much.

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