Please stand by for realtime captions.
>> Hello everyone, this is Laura at GPO. I'm doing the last audio check and will be getting started shortly.
>> Morning everyone. Welcome to
GPO - PTAB Insights into the ISO 16363 audit of GPO . My name is Laura Flynn. With me here is Kathy Carmichael. From the PTAB team, our presenters are David, Don, we also have Terry. Before we get started, I will walk you through a few housekeeping reminders. If you have any questions, or if you have technical issues, feel free to use the chat box. I will keep track of all questions that come in and the presenters will answer them at the end of the session. We are recording today's session and we will email a link after the webinar. We will be sending you a participation certificate using the email you used to register. If anyone needs additional certificates, please email outreach@GPO.gov and include the title of today's webinar along with the names and email addresses of those needing certificates. If you need to zoom in on the slides, you can click on the full screen button. To access the full screen mode, mouse over the blue bar and click on the blue return button to get back to the default view. At the end of the session, we will share the webinar survey with you. We'll let you know when the survey is available in the URL will appear. We appreciate your feedback including comments on the presentation style and the value of the webinar. Our presenters today are members of
PTAB body. These internationally recognized experts in digital preservation were involved in writing ISO 16363 . Together they represent four decades of knowledge and experience. David is the lead auditor and director of PTAB. John is a PTAB lead auditor. He is a cochair of the data archive interoperability working group and was the principal analyst at NASA space science archive. Steve is a PTAB auditor at the JPL laboratory. This is a PTAB auditor. He was formerly an information technology specialist at the national archives and visiting professor at the University of Maryland. Jerry is a senior member of ACM, a systems engineer and data information standards. He has worked with Lucky Martin integrated systems. You can see
you are in good hands. I will hand it over to David.
>> Thank you. I am just getting control. So, my name is David. I have been nominated to do most of the presenting. The aim of this is to give insights into the [Inaudible] to give you the feeling of how and why the audit was conducted in the way it was. To put it into the international context, and to describe how PTAB's specific procedures are governed and fit in to that international context, we can give some examples to show the source of things we are looking at and to give a feeling for the level of preparation by GPO. But, of course, limitations of time I confidential lightly means we cannot go into an Ole Miss detail. We will be talking about the benefits of certification. I hope those who watch this presentation will have some familiarity with ISO 16363 . It is a ISO standard and the references at the end of presentation, there are links which allow one to download these standards, free of charge
through the CSST site. The users that have seen it no that there are a large number of metrics or requirements. You'll notice that they arrange hierarchically. As, we are in a special position. As auditors, we wrote the standards. I can tell you that the motivation for writing the standards in the way it is written is we realized, they are needed to guide auditors. [Inaudible] we have to guide them to make a judgment. If a particular judgment, if the federal repository can be trusted to preserve encoded information. That is not simply
if you can keep the bits now, is it doing the right things? The way it will enable the information to be preserved in the way that is embodied in the reference model which I will come back to. The metrics are arrange hierarchically. I will go into this later. But, the ID, or have the metric where it needs some additional additional aspects looked at, we'll go into a sub metric. If that needs further exploration,
then we get a sub- sub metric. That is why we have this hierarchy-year-old metric and there are so many. Despite that, it is still impossible to specify metrics for everything. So, some of them are quite general. We don't have time to go into the specifics. But, to help auditors, we also have a large number

of examples, and evidence can be provided. [Inaudible] these are also of help. We have had a rep as a Terry, they have confirmed this to us. They have helped the repositories doing self-evaluation either in preparation for nodded or planning a repository. I mentioned OAIS, I believe most people involved in preservation would be familiar with that. That lays out the fundamentals ideas of preservation and provides a reference model, and information model and mandatory requirements. However, that by itself, was not suitable to be the basis of the audit certification. That is why we wrote ISO 16363. By the ways, before writing 16363,
we gave the question of do we need to write the series? When we look at it, it is about the here and now where we need to look to the future, for long-term preservation. But, when we talked to ISO, we discovered whether anything else was needed, it turned out
, in fact this was a discussion with the head of the conformity assessment arm, we needed a standard requirement and the standards which have an audit process associated with him. A standard
like this. These bodies provide audit and certification, [Inaudible] digital repository. If you look at that standard, you will find it is quite empty because most of the ISO standards are written by these bodies himself. ISO has two types of auditing certifications. One is called the products, for example, computer software, medical equipment and the other sort is for management systems. Clearly, when one is looking at
trustworthy repositories, it is not a project although it does use pieces of software. It is the whole organization and falls under the heading of management systems. What [Inaudible] does is it provides additional requirements specific to the auditing of repositories.
>> One of the things that an audit looks for, I will introduce definitions here. I will keep mentioning conformity these. ISO distinguishes between what are called major nonconformities. That is something that is threatening to, in ISO terminology, affects the capability of the management systems to achieve the intended results. In our case, it would be major nonconformity
. It would affect the ability of the repository to preserve. There are minor nonconformities which are not quite so serious. But, there's still nonconformities. So, during an audit, what you would expect, a reasonable requirement, a major nonconformity must be addressed quickly. ISO specifies being within six months. And, there is a process where were -- there is a root cause analysis. Is it a lot of related things? Is it systemic? Is there a plan for corrective actions? Those have to be defined by the audit. And then there is verification that the nonconformity has been fixed. The evidence has been provided. Again, provided to the auditors. Finding nonconformities that are not so urgent, there should be a plan that needs be implemented.
Why be certified? Well, the last bullet there is taken from a GPO document and it says certification under ISO 16363 demonstrates every forces GPO's commitment to its mission to ensure access to U.S. government information through the preservation of content in digital formats. That is a good reason for wanting to be certified. Basically, it provides proof that the repository does a good job. In those cases where there is a choice between repositories and the reason for [Inaudible] certified repository versus a noncertified repository, to instill confidence in the auditors. In upper management, for example, [Inaudible] also the upper management needs to have confidence that those in charge
are doing a good job. Of course, in general terms, the U.S. taxpayer. The money is not being wasted. These are all good reasons to certify. I M going to talk about the ISO audit process. There are many audit processes. In a sense, anybody can set up and say, come to me, I will do your audit. So, some of these are local, some are international. What is special about ISO audits? Well, I think, for me, I believe for many, it is the fact that ISO audits are [Inaudible] and it affected by audits whether it is food, medical, automobile safety, airplane design. I mentioned ISO 27,000, information security. The ubiquitous ISO 9000. You see these things found everywhere. So there seems to be a good thing to do.
[Inaudible] I mean, the ISO audit, certification, the aim is to, overall, to underpin international trade in services and goods. While ensuring that there is a uniformity across, basically the world. The aim is to

inspire confidence that if you have a service [Inaudible] then, that is comparable to somewhere else. The audits have to be done showing impartiality. Of course, the auditors have to be competent. The audit has to be carried out with responsibility, as be open. It has to respect the confidentiality of the information in the repository. Equally, if things go wrong, the audit body has to be responsible for complaints. Of course, since the audit cannot look at absolutely everything, a risk based approach has to be taken. What we do is we follow a standard maintained by 12701. That is the tried and tested rulebook that governs audits in so many activities which affect the lives of many countries and many organizations. The process, part of it is to [Inaudible] and recertification audits. ISO standard [Inaudible] is a repository. The international context is [Inaudible] so, here is GPO. It is being evaluated according to the metrics required in ISO 16363 . PTAB is the basis for the audit. In the sense that PTAB is allowed to do that but, PTAB is a certification body and it is evaluated according to 16919 and [Event Concluded] so, who evaluates PTAB or any other certification bodies? In every country, there are what is called national accreditation bodies. The U.S. is actually a international accreditation body I think. In the UK, the UK certification service, India and Italy, every country has its own accreditation body. And, they appoint assessors to help decide whether to accredit
the certification body, in our case [Inaudible] . Who says
that the bodies across the world are comparable? Well, the accreditation body is evaluated according to public standards, [Inaudible] that we have accreditation bodies in different countries. They are all doing roughly the same thing. There are regional [Inaudible] there is the international designation Federation that has its own technical capabilities. There is a standard that these accreditation bodies adhere to
. And, something that took me a little while to fully understand is that, potentially, any organization at every level, is evaluated every year. That sounds amazing but, as you go up levels, then there are fewer of these things that need evaluating and so it is not an infinite number of evaluations. It has worked for many, many years and now with the [Inaudible] this is the system that ensures pretty much uniformity around the world in all these different areas for which there are ISO certifications and how ISO 16363 [Inaudible] repositories. So, who audits? I explained the international context. I didn't say what is in 16905, it has a list of competencies. These are things that one can essentially use as a checklist,
does the auditor, does this auditor have this confidence and this confidence
? Is quite a detailed list. There is a very close correspondence between [Inaudible]
>> It is using the tried and tested procedures. An audit organization has to have many, many processes documented and of course, they are governed or led by [Inaudible] but specific to processes for additional repositories. Of course, all of this, PTAB, we are assessed annually.
>> The audit body. That does various things. First of all, of course, it has to determine whether it is able to perform the audit. Does it have the right auditors available? The availability, it could be languages, it could be expertise in particular legal systems, it could also be [Inaudible] so, that is judge on the basis of the application and the initial iterations between repository that is asking for an audit and the audit body. And, if it is excusable, the audit body comes forward with a program. This is really very important. There are two stages. The first stage is up side. It can be on-site. It is a review of documentation and evidence. The gain here is that, just think about it. If one went to a repository and did an on-site review, then all sorts of things like [Inaudible] and that makes life difficult and very expensive. What stage one is therefore is to allow the auditors to identify areas of concern. These are things which would be
classified or could be classified as unconformities during an on-site visit. The time to do a repository to address these areas of concern. In fact, there is no time limit specified to [Inaudible] addressees things.
Then the on-site review, it is very brief and very well organized, in order to ensure, in order to basically to keep costs down and make sure that different audit organizations won't be [Inaudible] plenty of time to basically fix most things and then stage II
, ideally finds very few nonconformities. If they are found, the repository can resolve the issues [Inaudible] there is an audit team that looks of the document Tatian. But, they do not actually make the

audit [Inaudible] that is led by a separate committee. The reason that is done is to limit the amount of familiarity
, influence that might be built up between the on-site auditors. It is a wall between gathering the evidence and making judgments about certification. Those are the stages. As I mentioned, there is certification and an annual surveillance audit in the final 2 years and then [Inaudible] . Not necessarily looking at everything and then [Inaudible]
>> So, this is a PTAB process and starts with the interaction between repository activities in lieu of the PTAB 's activities. Once the application is made, PTAB decides that they will undertake the audit and they begin stage I. The repository completes, it gathers evidence and evaluates. PTAB looks at these things, evaluates them . It identifies errors and hopefully as time [Inaudible]

>> Page 2 is where we have made the [Inaudible] it is very short. And, it gathers evidence in a report to the certification committee. The repository has [Inaudible] a limited time. And, when it is resolved, the certification committee makes its decision and [Inaudible] repository can PTAB puts the appropriate information on its website. To maintain certification, [Inaudible] that is our process. Each of these things, these documents that have guided 17201, they specialize in [Inaudible] I have mentioned stage one, identifying areas of concern, but, there is also an opportunity for other things, that is for the audit to understand the system on standard repositories and the standard processes [Inaudible] prepare for the on-site [Inaudible] it provides a focus for a step-based audit to make sure it is carried out efficiently.
>> Some of the points gathered in the GPO represents the [Inaudible] many tens of terabytes. These figures are out of date. I guess they have gotten bigger. It allows 1 million archival information packages every month. And, a staff of 40 which is quite [Inaudible] as part of the preparation for stage I, the GPO collected detail [Inaudible] just look at the amounts of documents that we have. There are quite a lot of duplicates because one document [Inaudible] just the real figures are megabytes of documents in 900 files and of course, [Inaudible] that is a lot of documentation. Most of these things are documented, GPO, I believe has, in any case, i don't know what they've done, they've collected them together. There are smaller portions of documents which were created especially for audit. We use these, we ask questions like are the [Inaudible] accurate? Do they adequately support the understandability? It depends on the definition of the physical [Inaudible] . Are the integrity checks and backups adequate? I mean, are the backups sufficiently powerful in the repository? You think about fires, meteorite hits, it is a matter of judgment. So, [Inaudible] after was updated. Then it was agreed that stage II, the on-site audit was [Inaudible]

>> The idea is to assess information about all the metrics and in many ways it is
, some of the important ways are interviews with staff. They know what they are doing. Observing processes, looking at software. Looking at the system and how things change as the integration comes in beside these [Inaudible] and so forth. And review any additional documents such as computer logs, error logs and so forth. Things which we didn't have the opportunity to look at in stage I. Or, we didn't look at a large number in stage I. Once [Inaudible] specifies it is part of details that is about how the audit of the on-site [Inaudible] the on-site team is its recommendation. Although of course, that team did not [Inaudible] towards certification. I should point out that, as part of our own evaluation, in a sense, we have normally two auditors for two days, it can be a little longer. We actually have two additional auditors as part of their evaluation. So, we have four people there and it made life a little easier. Just to give you a flavor, they wanted you to [Inaudible] look at what we found out from stage I as an opportunity for a much more detailed [Inaudible] proper processes and we break into teams looking at different aspects of ISO 16363. By the way is, this is [Inaudible] where we approved [Inaudible] to make sure we are conducting the audit in a time efficient manner. At the end of the day,

we give feedback. We give this to GPO. We continue to produce , in this case, there is an additional backup site which
one team traveled to to undertake some specific [Inaudible] about the technical infrastructure, the risk management. In the meantime, team one was at GPO to look at [Inaudible] and then we came back with for did the [Inaudible] and an internal meeting to finalize the report to the GPO staff and the closing meeting. Again,
a number of things would have to be following 12701. This insurance transparency and to give, in the end, the auditors recommendations for certification. To give brief examples, we looked at software, we looked [Inaudible] staff and looked at the software, certification, the [Inaudible] risk register but that [Inaudible] GPO staff are extremely proficient with that. We looked at single points of failure including people. There is a very skilled set of people here
. It is impossible for somebody
to fall under, in the UK it is the proverbial bus. But, as it turns out, the GPO staff had strength in depth. Of course, we looked at further details about information and so forth.
[Inaudible] has to cover a number of issues. The aim is to provide accurate services and a clear record of the audit that performs the basis of the surgery rotation made.

>> In a sense, I'm sorry to say despite our best efforts, [Inaudible] I think we were surprised . But, we kept the auditors kept looking and the staff kept coming back with
[Inaudible] it was a nonconformity but that does not mean the GPO system is perfect. Nor, can you preserve anything and everything. We know that we dressed all the metrics that we cannot look at every single thing in the repository. We did focus on
certain aspects guided by the documentation. And, by the interaction during the stage II. And, on this basis we judged that the repository would achieve its aim as [Inaudible] and there were no major nonconformities and [Inaudible] no minor nonconformities either. But, one of the aims of the I also audit is continuous improvement. The auditors have a responsibility to consider there are recommendations to make. So, we did talk about, that we continue and those who produce and deposit the information [Inaudible] standard buys of the information package. We recognize there are many different software packages involved. They need to be monitored carefully and of course, things change. So, we recommend that GPO should consider that pairing a new publishing paradigm where most of the data and information is in the form of PDF's and documents by, in the next few years, one might expect more complex forms
to be produced. And require preservation. With audits we looked at those areas that were done so closely. Of course, things changed. Over the years, many things have changed. Systems, people, organizations, procedures, hardware. All of those have changed. And, they need to be considered in the audit. So the certification decisions, that was the cost of the certification because [Inaudible] to complete the picture, the certification committee have been isolated on the details of the audit and documentation. What was provided was [Inaudible] if additional evidence was required to be looked at by the certification committee, that was provided and of course we, the audit team had to confirm that the objectives have been achieved. And, we followed our own procedures
. The procedures of 17201. And all of that was found to be [Inaudible]
>> The certification was awarded. I was thinking about the time scale. It took months to realistically, to view the documents in stage I. The stage II [Inaudible] , early in December. About three weeks elapsed before the certification decisions were made. There were quite a lot of discussion over the certification committee and the audit team members. Then, we sent it to GPO [Inaudible] is proudly displayed. And then, of course, anybody can print a certificate. In order to confirm certification, we record a website that the certification was valid and, provides additional details that is on a specific event. So, in

summary, the line of processes that PTAB has been accredited as a certification body [Inaudible] to do that, the procedures and the personnel have to be consistent with specifications in [Inaudible]

>> GPO decided to apply for certification. They prepared their evidence to present to stage I and I think it is safe to say that the repository was found to be well designed and the staff was extremely knowledgeable. There were no major nonconformities which was extremely important. Certification was awarded. And, I think that that fulfills the aims of GPO when they began this process and of course, to be maintained
, this has to be followed by [Inaudible] . As I mentioned at the beginning, here are some links to the documents that can be downloaded and of course, the GPO certification can be checked. I haven't over and run? Are there any questions? Thank you very much, David. That was a helpful presentation. So, I haven't seen any questions come in yet. We have plenty of time. If you have any questions, please chat them into the chat box and the presenters can answer them for you.
>> We will be emailing everybody copies of the slides I mentioned and the recorded webinar will be up on the website.
>> We have a question from Scott. Are the follow-up audits done on site or off?
>> It would have to follow the 17201 procedures. So, stage I essentially is off-site and stage II is on-site. Of course, having looked at the initial certifications, there was a vast number of documents. We perhaps would just expect to see documents and so forth. And, the on-site one would be a little bit shorter than the conditional certification. Does that answer the question?
>> So, any other questions? We also have Jessica and David from GPO if you have any questions.
>> It looks like everything will was well exchanged. I'm not seeing any more questions. Stick around for a minute or two. Will send out a link to the webinar satisfaction survey. If you could complete the survey for us, that would be very helpful. If any questions occur to you, please chat them in. Here is the link to the survey. We want to say thank you to everybody associated with PTAB for all of your work with us on this whole process.
>> I think I can speak for the others, it is been a real pleasure. This is turned out to be a very professional team. By the ways, I should, Bruce has reminded me that one of the points made, thinking about subsequent audits, is recommendations of our assessors [Inaudible] the audit team, has changed about. Clearly, it is the same people and they go back to the same repositories, time and time again. And, an issue of over familiarization. So, many aspects of the procedures which
ensure that the audits are conducted in their correct way.

>> We do have another question. What is been the reaction to certification within GPO?
>> This is Jessica. I would say that, in some ways, on a very positive note, this is been something the entire institution of GPO has been really heavily involved in and really interested in. I think that we had a pretty high level of confidence going in to be a success. So, on a positive note, I think the certification, mostly served to reassert some of our own confidence as strange as that sounds. But, as those who are in the FDL are aware, we have had several upper management level changes at the administrative level since the change of executive administration with the U.S. government. It has been an important education piece, trying to bring people into the fold about what their certification is about.
>> Well good. I don't see any more questions. We will go ahead and finish up. Oh wait, hang on. A comment from Cindy. Appreciate the presentation was made. This helps with the understanding of their certification process and why GPO wanted to do it.

>> Thank you. Thank you very much.
>> All right. Thank you everybody. That completes the webinar for today. You'll get the recording in the slides. Thank you for taking the time and we will see you at the next webinar.

>> Thank you.