[Integrating Section 508 Requirements in the Development Lifecycle](https://section508.gov/sites/default/files/Integrating%20Section%20508%20Requirements%20in%20the%20Development%20Lifecycle.pptx) (MS-PPT, October 2017). Read the transcript (coming soon). Presenter: Mark Urban, 2:00 to 3:15 p.m.

Speaker: Mark Urban

Room: 1151

2017 Inter‑Agency Accessibility Forum

CCB: Good afternoon. We don't have a mic working. We had serious mic challenges this morning. I am Cynthia with the Department of Homeland Security office of accessibility and technology. It's about 1:55, this is integrating Section 508 into the development lifecycle assessment you have 5 minutes to go if this is not where you are supposed to be. Presenting for us today is Mr. Mark Urban. A lot of you may ‑‑ you (indicating). A lot of you may know him and others presenting. You should have a bio in your package. So, I won't read extensively.

>> Thank you.

>> Very impressive though.

Mark: Thank you. It's ‑‑ I tried to make up a good story because it sounds good.

>> Mark comes to us as Section 508 coordinator and co‑chair for the U.S. Census for disease control and the agency for toxic substances and disease. Now you tell me

>> I work in public health I can tell you.

>> Everyone ‑‑ I have CDC and ATSDR 508 coordinator. What is that and how do I get it? Is it catching? You don't want it, trust me. ATSDR, if you have anthrax in your lab, we know who you are.

>> If you get a chance read Mark's bio. I was like what has he not done. Mayor?

>> He has been around.

(LAUGHTER)

>> That's what I need a little ‑‑

>> I am going to we have about 3 more minutes to little folks trickle in or you could go ahead and get started.

>> We will give people a minute or two to run away.

>> All righty.

>> But now we have a lot of people in here you can still hear me in the back? Okay. Maybe a couple ‑‑ a few introductory comments before we get started. This is meant to be a conversation. I am going to give you slides we are going to talk around the slides just like a good presenter does. But I need to hear from you all as well, yes, I live in North Carolina. About what types of projects that you are working on what types of development activities are happening in your agency. How ‑‑ how agile are you. How oh, my God please kill me if you say the word agile one more time are you. If you are doing eLearning or activities around trying to set up some kind of a governance system. Or just hey I got no idea what any of this stuff is, but it sounded really cool. That's okay too. But it's important I hear from you. If you say, hey, ask me questions. Throughout the presentation, take me off topic. Let's make this a conversation and useful to you not just the stat particular presentation. You can read slides online.

So, just letting you know ahead of time. It's important, why? Because we are going to be talking about some of the modern development methodologies and how they fit into kind of our classic oversight process. When we think of oversight in governance, for 508 we think of, okay, well we are going to make sure the contract language says it needs to be 508 compliant we will get a little piece of paper from the 508 people or from the companies saying it's going to meet the standards. And then they will go develop it and when they come back it will meet the standards, life will be good we will compare notes accept it and send them a check. And we will all go away happy singing kumbaya that's now how it works nowadays. A lot of times we don't know what we don't know yet. We will talk about the methodologies how they work and also, how you can try and do governance because governance overage vial and deaf ops ‑‑ def ops if you have been a parent it's much more like the winnable battles with the kids’ discussions than ‑‑ someone is laughing in the back yeah I know.

It's much more like the winnable battles with the kids what are you going to fight for what are you going to accept as well as dirty fingerprints on the wall. How do we make those decisions? Welcome along join enjoy the ride. And please ask questions when it occurs to you and if I say, well I am not going to answer that it's usually because I am going to talk about it later in the slid or I don't have a good answer I will just say I have no idea let's talk about that. Okay.

My name is Mark Urban I was introduced for those who missed it. I am so, glad. I am the CDC Section 508 coordinator, and I am also, the HHS domain chair for Section 508er to the enterprise performance lifecycle try saying that three times fast. What that means is there a is a whole huge document that the Department of Health and Human Services that's called the enterprise performance lifecycle which is a classic governance model for waterfall methodology where you have stage gates and moments where you sit there and do technical evaluations of things at various stages of development. I wrote all of that. I am going through therapy I feel much better about myself.

(LAUGHTER)

>> But it also, means that I am in the process of updating that to deal with the real world we live in today not the waterfall world we lived in ten years ago. Okay. So, what are you going to learn what is a lifecycle. Classic ‑‑ those 508 coordinators we have different people in the room. Some of them are standing. There are a few seats if you have a seat that's available nearby so, people can find. There is one up in the front row so, I can make fun of you back here. We have a few open reserve seats I am at a point I can give one or two away if someone needs one. Okay. So, talking about what a lifecycle is and talk about classic versus the more modern types of development methodologies. Why authoring tools matter. We are going to talk about authoring tools and why they become a really important part of the discussion about how your solutions going to be provided. Validation. How we know it's 508 compliant the fingerprints on the wall conversation I had about kids, and keeping an eye on kids some of this is how compliant is it and is it getting better becomes a much bigger discussion than give me your checklist that says it's perfect. Because it probably isn't. And but there may be opportunities for it to improve because of the way agile works. Agile is not only a bad word. It's a different way of looking at things. It's a different methodology to think about when you are thinking to govern that stuff. I am really scared there are this many people in the room.

(LAUGHTER)

Mark: So, I want to tell you ahead of time. There is one or two up front they say reserved they are reserved for you. Because we are at a point now where you can take one feel free to do so. So, what's a lifecycle. For those who are ‑‑ anyone here starting out new in 508 or just found out I am a 508 coordinator now what is that?

(LAUGHTER)

Mark: A couple people raised their hands when talking about lifecycle I am going to be public healthy about it. One of the oh, my God you did that too things I was a Navy corps man a field medic with the Marine Corps that's how I got into public health I dealt with breakouts all over the world with various things. A lifecycle is just a way of describing growth and development. So, when we talk about your kids I go back to the idea if you have kids, you know that your kids start out pretty they smile sometimes. But they poop a lot. All the way to they are fully developed and they are growing and they are going to go out the door and make something of themselves even when they do, they are still your kids.

(LAUGHTER)

Mark: I have six grandkids six. Okay. My kids are still my kids. My kids still come to me are like: Hey can you watch the kids on Friday? Or I don't know how to fill out this tax form. My daughter is 35 she just did her taxes for the first time on her own.

(LAUGHTER)

Mark: They are always your kids. One of the things about looking at new development methodologies is new development methodologies talk about a life cycle that is a continuous process of growth and development. Not just an event. It can happen in a formal process and be very informal. Oftentimes you are going to be one of the people that's deciding that. And then it happens whether you put a name to it or not. You are going to have life cycle regardless whether it's officially life cycle or talking about hey we started developing this all of a sudden it became it went from being a hey we were trying to start the innovation lab to everybody loves this let's make it work in the enterprise. That's how real software happens now.

>> Let me audio describe the image this is the HHS life cycle. Okay? If you can't see it none of you can ‑‑ it breaks down everything into two steps. This is a lifecycle for an investment. An investment is not just a single project it may be a collection of projects it may be a whole set of systems that all work together. Basically it's a big pot of money that someone is using to develop stuff. Definitely English language translation. They let Pat in here?

>> It requires analysis design development test implementation, operation and maintenance and disposition. Wow. That's exciting as watching paint dry. I want you to understand this concept of a lifecycle started from if you were, again, getting back to the idea if you are a parent when your kid first came out you are like okay they are going to be like this a little while and then like this I read the book the book says that they are going to be like this on day 37. That is what this old classic lifecycle is. It's a planning methodology that starts from I have no idea what I want to do, to I have developed a very detailed plan of what I want to do to I went to a group that assigned it, developed it to my specifications. I tested to make sure it met those specifications. And then I implemented it, made a formal decision to implement it. I am in operations and maintenance mode I do bug fixes if there is something wrong with it. And finally I throw it in the trash when it's done. The problem is, that's not how things work anymore. This is the formal life cycle process for HHS. Now, we still have to follow this, but we deal with a different world. Okay? Each of those steps is what they call a stage gate. You stop and say: Okay, do I go, do I not go, do I make a call about moving forward or do I not. So, I am going to talk about agile in a minute. I want everyone to understand life cycle at the base level and we are going to talk about getting out of the mold. So, ‑‑

>> Can I record this?

>> I absolutely may record this.

>> Thank you this is sounding so, interesting already.

(LAUGHTER)

>> Okay. So, first of all what basically you will get three answers back from your governance person. At HHS, there are governance people for all kinds of things security governance person, HR, acquisitions, there is a ‑‑ oh, infrastructure ‑‑ I.T. infrastructure, there is ‑‑ security.

>> Did I just do that security? Budget and finance. And then of course the business owner so, there is a whole set of people including 508 who will do critical partners they do a stop where they say, okay, are we going to move forward? Basically, you come up with two different approaches you get a couple of different answers if you are a project manager. If you are the governance person you are the one making this call. So, either you are going to recommend you are going to recommend with conditions or you are not going to recommend. And so, when are you going to recommend? I want everybody to hear both sides of this. Let's talk first from the governance side if I am a 508 coordinator it's getting hot I am aching ‑‑ I am taking this off. If I have a 508 coordinator and trying to figure out what to do it has no issues at this point based on where I am in that lifecycle if I am a concept all I know does 508 apply to this. All the way to the final test. Is do we have a test document. No issues, issues have been remediated. Meaning we already knew there were issues but they have been fixed. Or issues can't be fixed and that's okay. That may be a situation too. You may find welcome to real life for a minute real life moment. I don't know I can let you record this or not but she can. You are going to find stuff, not 508 compliant. In the real world, a lot of stuff doesn't come out of the box and it certainly doesn't come out of the very integrated process of development being fully 508 compliant everything is nice all shiny if it's like that it's a used car salesman thing, that's the one in the accident 7 times and they did a re‑paint job. In real life in real systems means continuous improvement means you may have issues. The question is, are you going to go fix them? Or are you going to just leave them. And are they important to what you are doing? Example: Had an issue with a system for uploading videos. Okay? This was the first iteration of the system that we use ‑‑ that we use now. It wasn't very accessible. But the only people who were going to be able to upload videos are people who did video clearance. Now we have a whole bunch of people who have to be able to look at the video to do clearance for the video who are going to use it the issue with the website it had poor color contrast the application. So, I said: I recommend go fix the color contrast after you do the deployment go back in change the CSS you don't have to do that today. Why? Because there is no risk. The risk is so, miniscule I am not going to stop operations just to deal with this risk: Recommend with conditions. Recommend with conditions are there are issues but the project is working on it. You might say, you must fix the contrast on this by this date. I thought it was important enough. And then you still can let the thing move forward but you put a tab saying on that date I am going to send you E‑mail and you better say yes I mixed it or ‑‑ yes I fixed it or we will have a cushion and the discussion will not be nice. In HHS and many other organizations I know this is the same in IRS, I believe in VA too, if the critical partner for 508 says thou shall not proceed you wouldn't proceed. You don't want to be there. You don't want to be there as the 508 person either. Because if you get there it means that we didn't have this conversation about lifecycle and you didn't talk ‑‑ you didn't have the conversations back when you could have. Okay?

So, it's ‑‑ this is a dual responsibility it's not the project's responsibility to chase you it's not your responsibility to chase the project it's both of your responsibilities to work together. Whenever you are writing a condition ‑‑ this is your project managers how many are project managers ordeal with development on a daily basis? Okay. How many are 508 coordinators or too do that type stuff. Great half and half. Either way, you should ‑‑ if you are saying it or if you should hear it always a condition on a system that's going through these life cycle reviews should always say: Be phrased as X will be done by date. Or event. Might be event. It might be. If it's agile, tell them what needs to be done and when you expect it to be done by. Don't say no, it's not compliant and don't do anything. Stopping a project is a very serious thing. I will talk about stopping a project in a minute. Frankly the light doesn't turn red right away it turns yellow first. The idea here you warn a project ‑‑ if you see them getting off track let them know, that's got to get fixed before we talk next. Even if we talk next in the next stage or next sprint. That needs to be put on the bug list by this date. And the bug list has to be resolved by this date there are ways you can orient that but it has to have a date. And it has to be specific about what you want done. Not what the problem is, what do you want fixed. Because you want to give developers the ability to innovate. To solve the problems that you present to them not just say thou shall change the CSS no I want to just I want the contrast issues fixed.

>> You know, Mark, as you are talking about that when you are declaring thou shalt I think some of the folks who are beginning and just in those positions, part of the thing that will help them when they declare thou shalt since we are going to use that type of phrasing who is going to authorize Moses to say thou shalt you say that and the program manager looks at you like who are you.

>> Who are you how do you spell 508 again? You are from what office? First of all, for those of you who are at our last episode in this room you hopefully have a 508 policy in your agency. And the 508 policy will generally grant a 508 office in DHS, OAST who has the authority to clear systems or to be the critical partner for Section 508. That person who is the 508 clearance ‑‑ I am using generic terminology but the 508 critical partner or clearance officer is the one who makes those decisions that's a good point Joseph. If you don't have a policy that grants you that authority now is the time to start talking about with the policy to see whether or not ‑‑ I bet you ten to one this already exists. This lifecycle is part of the capital planning investment control the CPIC framework that's mandated by OMD. Every agency was a CPIC coordinator if you don't know who manages the projects in your agency find out from your CIO's office who is the CPIC coordinator is. Why? Because they are required to report to the Office of Management and Budget every year on every project that's done in your agency that's larger than I think 150,000 now? I don't know where the thresholds are anything above a minor project has to get reported up to OMB for an I.T. project. So, there is someone within your agency who not only knows where this ridiculously large document about who does what is but can also, get you plugged into the process. Was that clear as mud? Okay. Sir, in the back.

>> Yes.

>> Wait, you are Census. Go ahead.

(LAUGHTER)

>> Yes. Is there a rule of thumb for establishing like a criticality, is there a rule of thumb for establishing a criticality I guess how can you establish the important concerns of what 508 issues should get fixed versus what should wait? Who ‑‑

>> I am going to repeat the question because it was not well heard I think up front here. But you are basically asking: How do you determine what is a critical issue I need to say recommend with condition or God forbid you can't go forward and how do you say things are just like the color contrast issue on the video thing don't care. Okay. Most important thing you will learn, this is the write down part most important thing to learn you have to apply risk to these reviews. Because if you are going to tell somebody thou shalt you better stand on the mountain and talking to the guy upstairs you can't be oh, well it looks like we might want to do this thing. You have to feel comfortable that you have an issue that the issue is serious enough it raises with a project team. And set a mandate or requirement. And if it's really serious, then, no, we are not going to proceed we are going it go have a talk with the CIO or your business owner your division director or you know center director and have a real heart to heart about whether or not we can continue with this. Not recommend is the red light just like for those who ever played soccer or football as it's called you throw a yellow card before a red card some things are red cards. How do you make that determination? I have a very simple criterion that I use, which is, first of all, is the system high risk systems which are public and enterprise systems. Public systems are exposed to the public, enterprise systems are systems that are going to be used by everybody in the agency. So, if it's the major ‑‑ then the third criteria is systems specifically supporting persons with disabilities or have information relevant to persons with disabilities. Yes, the reasonable accommodation tracking system is a high-risk system. But ‑‑ but for example, the financial reporting system for the 14 budget office analysts in each of the 14 centers at CDC that's 14 users am I going to stop that project because there is 508 compliance issue? No I might put a condition on it depending on the seriously of the issue if it's not serious I will let it go. I can't give you a document because part of this is you have to use your brain, you are a federal official GS12, 13, 14 whatever you need to apply common sense so, that when the development team hears you say no they know that you mean no. Because you are not just going to say it arbitrarily every time you run into an issue. So, yes the answer is, yeah there is a criticality thought. Now if they have a whole list of stuff, you can make one thing and say, thou shalt fix the list or thou shalt fix the critical items on the list you could say these are the critical items by this date. That's a very useful thing for development team to hear. But understand if you eventually want them all fixed you need to say that too. And you ‑‑ you are use your common sense. Because you need to build ‑‑ the 508-coordinator people the PMs need to hear it too. You need to build a level of reputation with your project managers so, they know that you are not going to be the 508 police you are the 508-partner. Your job ‑‑ you are the critical partner your job is to help them get to compliance. Not to prevent them from getting their project done. If you come forward as I am stopping you from doing your project all the time eventually people are going to stop talking to you. You know? It's like when I was a Navy corps man the marine come in doc whenever I do this it hurts yeah don't do that.

(LAUGHTER)

>> You are going to have the same problem with the project managers if you show up every day and say, no, no, no it's not 508 compliant you are a train wreck we have to put a red flag on this also. At some point, they are going to say maybe I should try to do this without having conversations with you.

(LAUGHTER)

>> You need to build ‑‑ eventually ‑‑ if you throw the red flag down, okay, at some point you are going to be in front of your CIO or the head of a division or God forbid the head of your agency and you better be able to say: This is a serious problem, sir, and this is why it's a serious risk to the agency. This is why we have a problem. Not, well it's a technical violation of 11.22 section E023. That will last you one time. The next time you will get a letter you are no longer the 508 coordinator, have a nice day. Frankly if you can't make that assessment of risk that is something you need to think about and come up with a plan to think about because you will need to do that. That's why I put that one first because I wanted to have the real-life conversations rather than the formal training stuff where you can read the slides. Okay, let's talk about waterfall. Unlike the various ‑‑ I don't remember the group the three ladies. Don't go chasing waterfalls.

>> TLC.

>> Everybody else knew it you know what the problem my daughter had an addiction to Hansen it wasn't pretty with years of therapy I am hoping she will be all right. She went to a Hansen concert the other day began playing the same song over and over again just like when she was a teenager. I say to myself, self I am glad I don't live in that house anymore. But she also, is a big fan of don't go chasing waterfalls which I heard constantly. Waterfall is the classic design. When we showed you that complex chart that we do at HHS with all of the various requirements and all of the stages, and all of the other elements that's classic waterfall. Start with maybe we should have a baby to oh, look they are graduating from high school have fun.

(LAUGHTER)

>> Or college or whatever wherever they are going to get to. It's ‑‑ you recognize the need you define the problem design the solution, you analyze and validate the design. You build to the spec. You test it. You deploy it. You bug fix maintenance and finally you give it a decent rest and replace it with other system or integrate it into another system that's classic waterfall design. 508 in this is well documented. I have a document you can have a critical section 508 critical partner manual version, 3.5, a 25‑page document that takes every single one of the stages and tells you what you need to ask for in Section 508 you are welcome to it I will be glad to give it to you.

>> Let me E‑mail you.

>> It's not that useful anymore. Why? Because we don't do software like this anymore. We still do sometimes, all right, if you are in DoD some of their projects are done this way. A lot of projects are ‑‑ a lot of projects are thought of in this way. But the actual ‑‑ everything from design a solution to the problem to test to specifications is done in a much different way. We are going it talk about that in a second. Unfortunately, that's the critical stuff for 508 because you are like, hey, I need to see the design before I can tell you what standards apply and they are like design? We don't need no design.

(LAUGHTER)

>> We just did a mockup it's not, really, it's not working so, all right let's talk about modern design development. The iterative approach. So, you start identifying the overarching requirements and the basic need. So, okay we need a budget analyst tool so, budget people know what money they have in the budget. Just basically reporting out. We don't know quite what it's supposed to look like yet but the budget people are screaming because they don't know what is in the budget. So, we have a problem. That overarching requirements document will often be very vague and very generic. Then your team is immediately going to start ‑‑ you are going to put out a contract to get it done you are going to say what the general problem is this talks ‑‑ we talked about this at the first session today I try to throw Bens to other people Robert talked about this at the beginning the idea of using performance work statements as a way of saying basically, hey, we got a problem please help us fix it instead of a statement of work I want you to do this I want you to do this, this specification.

And somewhere in the contract will say by the way you have to do 508 but we may not know what the applicable standards are yet. It will say hey here is what we think the applicable standards are. Sometimes you will have to do that. Because the development part is you develop ‑‑ you define a part of the problem sit down in a room everybody says okay now let's ‑‑ what do you need first budget analysts. And they say I need a ‑‑ we need something that shows us what our current budget is we need to submit budgets what does everybody agree is the biggest issue we don't know what the budget is today we don't know what we spent and have left to spend. Okay. Well, that's part of the problem. Let's go work on that while you figure out the rest of it. So, the development team will go off and start building a solution to that part of the problem. Instead of building the whole system to spec. What's the 508 real issues of this particular piece? This is the part you are going to have to be as a 508 coordinator you have to be able to help people understand 508 applies to every part of the problem. But it ‑‑ there is a higher risk, getting back to the gentleman in the back, what he was saying, there is a higher risk to things. First thing you might ask as 508 coordinator sitting in and hearing this discussion is: How many budget analysts actually see that? Only the center budget analyst sees that one in every center how many centers? 10 centers we are talking about 10 people who look at spreadsheets every day. Are we going to do video stuff or multimedia fancy stuff? Doing data visualizations in this no we need to know the numbers just the spreadsheet on a website somewhere that shows me what I got. Okay. Now I kind of know what the applicable standards are. What are the amicable standards. Pat?

(LAUGHTER)

>> Everyone is like ‑‑ they just changed the applicable standards are WCAG for websites because it's a web‑based applications. No fancy multimedia. No software or anything else. Does it solve now the next development piece does it solve that part of the problem they mock it up and say is this what you are looking for they will say yes or no. If they say no they go back build another mockup is this what you were locking for? No this is not 508 compliant and shouldn't be. Part of the process of agile this is one of the areas we get into challenges with 508 and agile. A 508 person says that's not accessible at all. It's just a mockup. I literally you know, painted this picture of what it would look like because I need to know whether it's going to solve the problem most of this is magic and mirrors in the background creating artificial numbers this is not what it's going to be. It's just ‑‑ I guess the best example, I hand you a brochure of a car. Not a car. Don't ask whether the car will go 65, it's a brochure of a car. Does it look good? This is the kind of car you are like. That's what they are asking at this point. Yes? Now, go make it. No, let's go back and try to make it a little bit more like what they need. I know half of you are falling asleep I know this I know what agile is the other half is like what? Unfortunately, that's part of the reason of this session is to get everybody on the same page. Because a lot of the agile stuff tends to be written like for developers, and it talks about development methodologies and other things you as 508 coordinator person needs to know they are going to look at pieces of the problem and saying let me build that piece out and fix that problem.

That functionality. That functionality then gets ‑‑ then you keep repeating this until you get as much of the problem solved as resources allow. You do a bug fix make sure you get the bugs fixed out. And eventually you maintain the system and you might go back and do more development and get more money. That's just the way things ‑‑ that's the way things work today. That's not ‑‑ that's not that classic waterfall lifecycle. And this is why we get into situations because everyone is thinking well you are only defining that part of the problem now I am all done I am the 508 guy I told you it's ‑‑ it's a website, website standards. Well, halfway through this process, they stop and say, you know, we really need some chart visualizations for our budgets so, that we can do real planning and start seeing kind of go to our management and start showing them off these things. That will happen in these projects. Where all of a sudden, they add functionalities that change the 508. There are three ways you can approach to address these things. I am going to talk about them later on which is great because it makes you stay in the hot room a little bit I have a question here.

>> So, you have a 508 issue, do you ‑‑ do you fix it during that build or what do you do?

>> Those are one of the three things we will talk about at the end of this.

>> Cool.

>> So, let me throw a few terms around for those who don't know the terms half will fall asleep the worst is half that's not what that means.

(LAUGHTER)

>> This is meant to be English data. As they used to say in star trek not meant to be the accurate exact terminology it's meant to allow people who don't understand the stuff to understand the stuff. There is agile which is emphasis on the business needs and constant realignment. The best example I can give you is any of you have any of you ever hung up a picture with a significant other? Raise your hands? Just to see if you are awake. It doesn't have any ‑‑ okay. When you hang up a picture with a significant other. I used to be married I know how it works. You hang it ‑‑ you put your hand on the wall you hold up the thing against the wall and say how about there? Your significant other steps back and looks and goes little to the left. You move it over. A little to the right.

(LAUGHTER)

>> That corner looks a little down. Put it move the right‑hand side just a little bit oh, that's it that's it don't move it. That's it. Okay. A lot of agile is like that it's very much the case of having the business person who wants it solved to figure out how to make it work what technologies to use. The constant realignment is part of the agile process it comes in a number of different flavors you hear all of this terminology. When you think agile think along the lines of constantly realigning to what the business owner needs. So, when you are hanging up the painting, and your significant other spouse says move it to the left that's because they ‑‑ they don't know what they want but they will know it when they see it. That's a big part of agile. Keep adjusting and keep aligning to the ‑‑ to that increasing definition of what is needed. It may be a little piece of what is needed it may be a specific functionality or the whole thing depending if you go lean agile scrum think of those terms first. The old way of waterfall is engineer's way you measure the wall you identify the big points in the wall, you identify the height up you build out a template you measure out the exact point of the screws you bolt the thing to the wall, I make sure it's triple bolted and take a level make sure it's completely level with the building and it's in the exact perfect place and just hope nobody asks you to ever move it.

(LAUGHTER)

>> Because you will never get the thing off the wall it's staying with the house when you sell it. Agile. There is first most common one you see is scrum. Build fast fail fast. Throw it up ‑‑ start with one thing, that that you know they want and start building. Let' start prototyping and looking at it. It happens in sprints they are fast and often two‑week development cycles they build the thing in two weeks hey we are done. We are only done with this piece but we are done. We might have releases every two to three months or two to three weeks depending how many people are assigned to the resource. We will talk about how as a 508 person you will deal with. We want you to know the terminology. Lean agile hybrid of iterative development. It's classic for lack of a better term it's the slow version of agile it's very much a case of we are going to have a pretty strong requirements document ahead of time and keep tweaking the requirements rather than pick one requirement and make that happen. What does that mean? Developers have to validate accessibility during each sprint regardless how you do agile. Each will have nonfunctional requirements which are a list of things that have to get done security is always on the list. Things that have to get done with every little piece they build. You have to have 508 as part of that requirement. That means the devs have to know how to do 508 and they have to be willing to fail and come back and say I think I did this but no one has done this before is this where we needed or not. Dev ops emphasis on embedded teams ‑‑ I call this is the Lego approach. I think dev ops as Legos you build standard connectors you put them on top of each other and build a custom piece just for the custom part you need the death star leg go set up there are standard blocks but there are a couple special blocks with the cool satellite on it. You will see code reuse. And oftentimes they are open happening in open source environments where they take open source libraries jQuery and build off of those and do rapid development right out of them. The good advantage a lot of these are standardized and beaten at by the open source community. The bad part of dev ops is you can take a bunch of Legos, create the cool death star, with you know the thing everything just right and almost kind of visualize Luke with his light sabre in the corner, or get the big pile of Legos and install sticks together. Keeping the big picture in dev ops is always the challenge. Keeping that enterprise‑wide what do you want this to look like at the end thing can be the challenge in dev ops because it's taking a lot of pieces made to fit together but may not be made to look and function effectively together. With dev ops you focus on the user interface component don't spend time worrying about the business objects in the background. Okay? Because the business object stuff doesn't relate to 508 it's not user interface. It's all the rules how it talks to the financial management system how it does its ‑‑ how it does its business launching if you try to get involved in every little piece of the development, it's like trying to examine and validate every leg go ‑‑ Lego piece while the kid is building it they will be frustrated you will be frustrated. You can't stop your kids from building the pile of Legos. Your job is if they pick up the special piece it goes in the right spot. Those are the pieces in the dev ops environment. I want to make sure everyone is awake.

>> 2:40, I got you.

(LAUGHTER)

>> All right. Someone have a question? No everyone is just like oh, God, this is way too much. I'm sorry. Is this at all helpful?

>> This is very good.

>> It's good.

>> Census people in the back have questions.

>> You touched on it are you going to talk about evaluating during the sprints or how you do that.

>> We will talk about the three ways you approach compliance in modern 508 yes. So, the answer is yes. We are going to have to because this is how life is getting done. How do we help teams doing this? Again, our job is not ‑‑ we oftentimes the 508 compliance officer in your minds and unfortunately in a lot of project managers heads it's the 508 police they are coming for us.

(LAUGHTER)

>> And the answer is, yes, to some extent we are. But like a beat cop we can be the guy chasing after you because you stole a purse and trying to get away with it or we can be helping you across the street and holding off traffic and letting you through. I prefer holding up traffic and helping to let you through to use the crosswalk, no, no, let me help you get over the crosswalk and we will get it done. You are trying to help people to compliance. Your job as a 508 coordinator as compliance officer is to help people get to “yes”. Not help people get to train wreck. If you are trying to get people to yes. You have to think about one get the project teams WCAG checklists. It sounds simple. You would be amazed the number of times developers come to me how do I spell the 508 things. Okay. Here is the WCAG checklist. More importantly on the WCAG site, there is a build yourself a checklist tool. That you can type in the types of functionality that you are using as keywords and it will build you a checklist for you, based on what you are doing. The great thing about that you can go back adding functionality, add it to the list and see if you get a couple more standards get applied. Show your developers how to do it, it takes them 10 minutes how to do it and then they have a list applicable to their project yes, ma'am.

>> What website?

>> <http://www.w3.org/>.

>> if you went to (inaudible) he talks about it a few times.

>> Bruce Bailey talked about it a few times this morning. If you go to <http://www.W3.org/WAI> look up ‑‑ there should be a WCAG it's called how to use WCAG 2.0. And how do use it includes customizable checklist where you can say I am using these web technologies what are the applicable standards to what I am doing. Show the developers how to do it as they add features they go back to the list I added video I added visualization. They don't have to keep coming back to you as 508 coordinator every time they want to do anything. Because you are not going to sit there and stand up meeting two hours every morning and tell them and follow along with the project. Maybe you are. Maybe you have that time. If you do, I really want to work for your agency.

(LAUGHTER)

>> Because I don't. So, that's the first thing. Now, have them ‑‑ rather than going to the project managers and say I am the 508 person I need to see your stuff every single time you code anything. That's not going to happen. Not with the kind of discussions that we are having. So, let the project manager be a project manager. Say, here is the problem. We need to make sure it's 508 compliant and include checks for 508 compliance. How ‑‑ what is the sprint plan what is the iteration plan already for this. Now let's plug in 508 to it. That might be a couple of different things depending on the risk of the system and it's also, going to be dependent on how fast are they doing this? There are three ways basically I have seen one is 508 checks actually in the development cycle. Every sprint at some point gets a day where they run 508 tools against what they have got and get general issues around 508 resolved. Some have a QA spot in each dev cycle if they have a QA the 508 happens in the QA. The problem with 508 the quality assurance cycle element it's after the development has already happened. So, if you are waiting until QA to do 508 if there is an issue it's going to be bug fixed for the next sprint they are not going to fix it. It's okay again is that okay? Are they going to fix it is it in the cycle to get fixed if that's the way they want to do it that's fine? Recognize all of these have benefits and nothing is perfect these are all trade‑offs. Adherence to standards if they are coaching HTML5 using accessible rich Internet application standards, you can feel a lot better about the QA happening at the end, why? Because they are coding to standard to begin it they are using HTML5 they are not writing a ton of Java script and using flash or some other methodology that requires applications testing. They are using HTML5 all right a lot easier. You can feel a lot more comfortable. Having a validator as a partner. Oftentimes I will tell projects especially high-risk projects, just get a partner get ‑‑ have the coding team get a partner that knows how to do this and have them come in and basically be eyes on to the code as it's being developed. Works perfectly fine. Excellent way to solve the issue ‑‑ the issue of iteration of the you don't see the 508 coordinator stops everything and goes and checks it for 508. Because that will not happen that's not the way you can do this. This is happening too fast you are going to be a roadblock and start being in a situation where people are like, well we have been waiting three days for the, my development team is sitting around three days because 508 hasn't told us it's accessible or not. You can't be in that place. You have to approach it from the stand point of, building it into the project team's activity. And you and your staff being the subject matter expert reference when the project team gets stuck on something. Hey, I think this works. But I am having trouble with this one because ‑‑ my keyboard keeps getting stuck. Oh, you know what browser ‑‑ that's a known issue with the browser don't worry about it. Yeah that is actually going to be an issue that's out of order you have to fix it in a lock tab order. If you are a 508 coordinator those who raised your hand, you are meant to be a resource and a partner in the team to help them get on the right track to begin with, not to be checking their 508 compliance every time. Because you will ‑‑ that is a cycle literally that you will die in. From a stand point of level of effort and also, from the stand point of supporting the project. The project will be unhappy with you, you will be unhappy with the project you will start having fights and you know pretty soon you are arguing over China you don't want to go there.

>> Can you recommend any 508 development tools.

>> Okay. So, let me ‑‑ I will not pick specific ones mainly because I try not to be vendor specific I will tell you this browser plug ins, tools that allow for browser review of code as it's being rendered of much more effective development tool than the tools that just look at the code itself. The reason why is because it's not what you have coded it's what the end user is going to see that's going be to the ‑‑ that's going to be the accessibility issues. There are all kind of tools to help you test templates if you have doing SPX or doing ‑‑ JSP or different technologies you can look at all of the pieces but, ultimately, it's got to work. And one of the most effective ways to make it work, and evaluate whether it's working is to look at the rendered pages in your web‑based application and actually use a tool that plugs into the browser and actually sees where there might be issues. You will get a lot of false positives. There are more mature tools that only you pay for. There are more simple tools that you don't have to pay for. The simple tools tend to have more errors and the more mature tools help you manage things in a much more IDE judges GRE environment that create bug lists if you are a developer or project manager on a major system you need to buy yourself a real tool or plug into a real tool. Real tool being a more mature engine‑driven tool. The browser type of things tend to be useful for quick checks. But they are mostly good for stat particular web pages and very simplistic low risk applications. If you want to really do it ‑‑ you want to get a hand on the tool that works in the browser while they are going through the application not tools that just look at ‑‑ at necessarily a code. Why? Because it's what the users are seeing that is higher risk. It's the users that end up working or not working. You will have to ‑‑ for large projects, large being here is an interesting thing large is not a number of money. Large is generally for higher risk projects to take the point from the back. You might have to create validation checkpoints to. ‑‑ too. You might have to say, let's get together with security, and privacy, 508, and all of the other kind of compliancy people records management and we are all going to participate in a checkpoint sprint. After sprint ‑‑ after release 2 let's say there are 4 releases planned. After release 2 we are going to stop and take a week. You put it in the project plans everybody goes on vacation that week you look at stuff and start saying this is going to work are we ‑‑ are they getting off the rails here on the project? Get them back on the rails before they get down to version 4. And do ‑‑ do that breather space. Large projects good sprint ‑‑ good scrum managers will do it anyway as part of the management we will see whether or not it's working for people. And whether the customers are happy that's a great time to have customer conversations and demos happening after the first release or two. Did that make sense? Okay. No one is nodding no which means you are asleep or you are just at this point ‑‑ 5 minutes?

>> No 3:15 right? Brian works for me he is used to telling me what to do.

(LAUGHTER)

>> Let's talk about authoring tools. This is much more of a conversation questions. I am talking at you. Somebody ask me a question.

>> Can you tell us other authoring tools.

>> Shut up Pat.

(LAUGHTER)

>> All right. Let's talk about authoring tools. Okay, the 508 ‑‑ yes, sir?

>> The question the checkpoint included ‑‑ what is the duration.

>> What is the duration?

>> How long ‑‑

>> Usually if it's like a for release project. After release 2 you will schedule a basically a customer check sprint that has to do with validating the customer is satisfied where you are going. You bring in a lot of the end users to kind of see where it's at now. You are doing that basically ‑‑ it's the reality check of Okay. Great the few people in the stand-up meeting every week think it's great. But does the whole team think ‑‑ the whole team it's a team check. The team of people who will be using the application get to see it and play with it and really say aha this is what we are looking for. Or we have been trying since release 1 it's going in the wrong direction here. There is ‑‑ there is generally speaking in best practices scrum there is usually a customer engagement sprint at some point along the way. That customer engagement sprint is the ideal time for 508 security and other people to be involved in a more comprehensive review of where it's going instead of today's decision and stuff make sense.

>> It's like a sprint know new functionality.

>> It's a review sprint and a bug list development sprint basically. Sorry I am trying to not get too into the we understand of scrum and things

>> Just asking you to play the ‑‑ you said the answer but I was eating my food what is the 508 compliant representative of the agency that feeds information out we should contact to get checklists ‑‑

>> Your 508 coordinator is the person you should reach out to in your agency to try to figure out who you are supposed to get to what agency.

>> NASA headquarters in ‑‑

>> Headquarters.

>> Okay.

>> (inaudible)

>> I don't know I have to think about it. The point is I can get you the ‑‑ it's on the website go to Section 508.gov it will be there.

>> I think she had her hand up.

>> You had a question first young lady.

>> I was going to give you another term people might hear for the checkpoint kind of sprint thing user acceptance testing.

>> User acceptance testing let me talk about that because you brought it up it's a great point. UAT as they will say they never say user acceptance testing UAT can happen in individual sprints or as a sprint itself. One of the problems with UAT as a concept in a sprint cycle it's usually a couple of hours or maybe a day for a fast scrum cycle. UAT is basically does that do what you asked us to do yes no? Yes, great print it ship it. Oftentimes if you are doing QA work, that happens right before UAT. QA work is the 508 compliance should be done there the end users when they talked about this at a previous session, the end users may not have disabilities, just because the end users today don't have disabilities doesn't mean that isn't federal law that tomorrow an end user with a disability might not show up. You want to be careful about applying UAT as the 508 chapter. Well everybody in the ‑‑ you know the blind guy in the agency ‑‑ that's in the team, who happens to have ‑‑ happens to be a JAWS whiz can use it therefore it's fully compliant. The answer is no it meets the standards or it doesn't. It's ‑‑ you can, yes that's a specific risk item. It's got to work for that individual. But user ‑‑ one of the challenge we get with UAT is oftentimes UAT ‑‑ well I guess it's 508 compliant everybody can use it. Well that's everybody today not everybody tomorrow. So, we get really ‑‑ we have had ‑‑ I am glad you brought it up the PMs a lot of times that's UAT. No actually that's QA. Because a regular end user is not going to be able to do 508 compliance evaluation. Even if they might happen to have the technology.

>> We are doing UAT testing for (inaudible)

>> It isn't the number of ‑‑ the question was: We have a big, a large user group doing user acceptance testing. The answer is that could be helpful. But ultimately you got to check the code to see if it meets 508. In this case WCAG. So, if the code doesn't meet WCAG even if it works it just happens to work. It doesn't mean that you met the standards. It's kind of like, I tell people it's like this. All right. Think of 508 or think of WCAG as standards for a ramp that goes on a building. Okay? Just because someone can get up your ramp doesn't mean it's a standard ramp and it doesn't mean most wheelchairs are made for the ramp it means that particular person can get up the ramp. That is the no the way that you build buildings it's not the way we build systems we build systems to standards test against the standards if you want to use, user acceptance testing and include ‑‑ and you have people with disabilities actually ‑‑ absolutely include them in the UAT group. That's the final check. That's the oh, and someone can get up the ramp, not someone can get up the ramp, it's the standards. No, it's standards, and somebody can get up the ramp, we checked to make sure, that's the way you want to do that that final UAT is something that you want to validate after you already know you have good code. If you don't have good code it might work for somebody with disabilities this week they push update to assistive technology. Now I have 15 minutes.

>> So, real quick. 508 coordinator officer one and two, and they got all of the various programs where they are supposed to being checking code, all of that.

>> They are not checking any code.

>> Not checking code but going through the various ‑‑ the software. Checking the program as it goes through the different sprints.

>> That's one of the things I am saying the 508 coordinator, I am a 508 coordinator I should not be checking your code if I am checking your code then I am in the check willing somebody else's code and so, you are going to end up running around. Your job is not to check their code. Your job is to give them the checklist and let them be developers and let them develop to the standards. Then, that may include them checking their code and I said your browser based tools that they should be using to do it. You might ‑‑ if you are going to be involved in code check that's when we talked about the breather sprint where you say, okay, now we are going to get all of the critical partners and the security people the privacy people, all of the people not involved in the business and not in the day‑to‑day meetings but need to be happy with how things are going to get a briefing how things are at not spend time testing. If you are testing you are manually testing stuff in an agile or scrum environment you are slowing down the project. If you are a 508 coordinator and you are doing your job on top of that.

>> So, would the browser. With the browser based tools, who is validating that it's getting ‑‑

>> the development team. And they are reporting to the QA and the development team are reporting back to the project manager who sends you an E‑mail hey here is the latest sprint the update from the sprint and we did all of the checklists current checklists are this and we are good. So, you might get a lot of E‑mail but you don't get into the situation ‑‑ you don't want to get into the situation being the actual tester while developing. One of the changes of agile what you saw today may not be what it looks like two or three releases down the road. If you get stuck into that you end up ‑‑ it's like following your kid around making sure they don't get into trouble. You need to keep ear out and know where the kids are if you don't hear the kids something bad is probably going on. But if you do hear them they are playing in the hallway and there is a little bit of screaming but nobody sounds like they are injured okay keep playing be safe good. Because you have to have that balance and you have to keep that balance both for the sanity of your project managers and sanity of you as 508 coordinator Mark.

>> You mentioned developing trust mitigating risk in the development cycle and you mentioned aria as a tool and process ‑‑

>> ARIA is a accessible rich Internet applications standard it's a standard that is specifically oriented around stuff that's not stat particular HTML but instead are dynamic things that are happening on a website or in a web application. So, if you have ever been to a website and you enter in ‑‑ you do searching or click on some things and some parts of the website change and other parts stay the same it updates the latest info based on what you looked at the last time. Those are rich Internet applications and accessible rich ARIA standards which is W3.org helps you put boundaries and special tags. This isn't a development class I don't want to ‑‑

>> The reason, is there is a standard for that.

>> That can be given to a developer.

>> And they say follow that here is the best practice here is how toes from. Okay.

>> So, if you are creating content kind of like micro lesson using Adobe captivate 9.

>> God help you.

(LAUGHTER)

>> It's cool.

>> It's not that difficult.

>> When you go website W3.org and go actually generating ‑‑

>> There are eLearning elements.

>> Once it creates it ‑‑ it ends up with as you may know MP4 file you create it ‑‑

>> It can but also, ‑‑

>> That's how they are using it for the space.

>> but I want to be clear. The purpose of the tool is to give you something dynamic that you can say what you are doing and get a list for yourself. It will generate a thing. Micro training, I want to talk about eLearning because we are going to talk about authoring tools. Authoring tools become really important in this process. Okay? One of the challenges that you will experience as a 508 person is people love ‑‑ developers love their authoring tool. They think their authoring tool doesn't stink, is the greatest thing since Swiss cheese, and should be used everywhere. Pick enterprise authoring tools and stick with them and enforce them. There is value for a lot of reasons. The biggest being when you ‑‑ when you have tons of developers doing little pieces of code, if they are not using an IDE, integrated development environment, then all of these pieces of code there are a bunch of Legos in the box sifting through to find the green ones is like finding a needle in a haystack. Show me all of the UI elements these are all of the user interfaces the flag user interface elements. We are people hey I want to use text editor to do my coding this is the federal government guys. You did that in high school when you were doing your HTML coding. You know? Welcome to the real world the real world we check out check in code security certificates on code we don't allow ‑‑ we have ‑‑ we have security checks on code after they are passed they are signed we know someone wrote something bad we say, hey, you are a bad person we need to arrest you now.

(LAUGHTER)

>> That ‑‑ those all of those controls are in place for a reason. And you find contractor staff and development staff will feel uncomfortable with that. You need to understand that sometimes you will need to say, look, do you want me to stand over and watch every piece of code or do you want to use the IDE and we will work together to get you fast as possible out the door. That usually gets a better discussion. Authoring tools are very important with eLearning. I am not going to throw ‑‑ cast aspersions at any particular tools, but I will say this: Ask around, about the accessibility of various tools the tools fall into three areas. One is that doesn't produce successful stuff at all. That produces accessible stuff but only using it in this particular way standing on one foot while whistling and holding yourself at the right angle. If you know that you can. I can have a private conversation with you about specific tools. And then there are tools that are generally accessible unless you force yourself to make them bad. So, I obviously if you want a list of those I can list those too those are my personal opinion. I have certain tools that have produced really bad stuff.

>> (inaudible)

>> No I don't. Most people are not in a position of throwing darts at different tools like I said I will give you my experiences personally if you want to talk to me. In the back? We got to do it quick two minutes. 7 minutes.

>> I believe our agency has a pretty mature software development life cycle.

>> Census you do.

>> We have documents that should be generated at each step for instance before you start design, you need (inaudible) there is testing evaluation plan. What I am wondering is from a 508 perspective to make sure that it's on people's mind what documents should touch upon 508 and what language should be included within those documents.

>> Okay, so, three things that you need to think about when doing the life cycle, one is there shouldn't be a list of applicable provisions as soon as ‑‑ as soon as they have a concept, get a list of applicable provisions. The second document that you need is the plan, remember we talked about the plan for the sprints. You need to see what the is going to be so, you can then say, here is the best way to put 508 in that plan. If it's going to be a long ‑‑ lean, agile project, that's going to be 8 months or 9 months. Well, that will get a little more flexibility, we can plan break points for 508. Whereas, if it's ‑‑ if it's a high production sprint environment, where you have two or three development teams doing dev ops and plug ins, they have to do all of the 508 themselves and they should send you checklists every sprint. Saying ‑‑ or every component for dev ops every sprint for scrum here is the 508 checklist for this feature then it's just that feature not the system just the feature.

>> Keep going so, you have (inaudible).

>> I'm sorry.

>> So, you keep talking about checklists you have a checklist?

>> I am saying because use the WC3 to build one until we get the final ones at Section 508.gov I don't want people to wait. Okay. 508 SME can't be anywhere I said that.

>> (inaudible)

>> You forgot the third thing.

>> Development environments are necessary not just fancy text editors. Text editors are nice. They are ‑‑ but for when you are having this much code being built by this many different people all at the same time you cannot spend a lot of time sifting through all of that developers may like the text editors, I really don't care if you build it in a text editor you have to put it in the IDE because you have to have the flags on it to say it's a user interface element otherwise they can't test it in time. They will spend time with it for 508. Some COTS platforms are not accessible and the devs will not be able to make them so. Technology choices are important. If you choose lousy technologies, that are not accessible ‑‑ I shouldn't say loosely. If you choose technology ‑‑ that's not a nice thing to say, that's a personal opinion. If you use technologies that have inherent accessibility flaws your devs can't fix them. It becomes very important in a lot of COTS platforms, if you use a COTS platform know what you are getting into and know what the devs cannot fix no matter what, and share the VPAT or the new list, with the devs and the project manager so, that he knows. I can't fix that, it's always going to be an error.

>> Open source that seems to be the ‑‑

>> Let's talk open source

>> Everybody seems to think your developer can fix that.

>> No, but all right, because when you are thinking open source that falls into two categories there are whole platforms that are open source and that again you have to evaluate the accessibility of the platform. Assessing the accessibility of platforms in open source is tough unless there is a mature accessibility community around it. Example of mature accessibility community Linux NOME community, they have books, and components, and screen readers, and elements that that can evaluate contrast in your components within Linux very mature accessibility environment. Some other environments not so, much. So, what you have to do as the 508 coordinator we are going to use open source you have to evaluate whether there is an accessibility community as part of that open source community. There needs to be some people who are dedicated and have shown they are dedicated to keep coming in and looking at the accessibility of what you are getting in the open source platform. This is platform. Modules, is it a UI module if it is I want you to test for accessibility and send me the test. If it's not a UI module, it's not a UI module I don't care. Use it have fun. Focus on what matters and focus on the risks. Be a partner with your projects to get a project out the door, and accessible. I know it's Friday, and I have been through Washington traffic I am still recovering.

(LAUGHTER)

>> I will stay here for a few minutes people can ask me individual questions I am not going to keep you late thank you again everybody.

(APPLAUSE)

(APPLAUSE)

(APPLAUSE) (End of session)