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Moderator:

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NY: Thank you all for waiting and thank you for joining us for this Arches webinar on participating in the Arches Open-Source community. My name is Nina Young and I'm an Arches Project team member at the Getty Conservation Institute. And today's moderator presenting first is David Myers, my colleague from the Arches Project team at the GCI. We're also very pleased to have with us, Andy Jones who is a software development manager with Historic England. David will provide an overview of today's topic and Andy will share his team's experience at Historic England as an Arches implementer and active community member and contributor. Before we get started, I would like to mention some housekeeping notes. We will hold a Q&A session at the end of the presentation. So if you have a question about today's topic at any point, feel free to enter it into the Zoom Q&A interface. The chat function is disabled, so please use the Q&A interface for any questions. If someone has asked a question that you also want to know the answer to, you can upvote that and we'll definitely get to answering it. If you need captions. This webinar offers live captioning, which you can enable by pushing the CC button on the bottom menu. You should have already been alerted that this webinar is currently being recorded and we will make the recording available within the next week. You'll be notified of this if you registered for the webinar or if you follow us on our social media channels or are a member of the Arches Community Forum. And with that, I will turn it over to David for his presentation.

DM: Thank you, Nina, and thanks everyone for joining today's webinar. I'd like to start by mentioning that this webinar builds directly upon the webinar that we held in August of this year Introduction to Open-Source Software Projects, which was presented by Open Tech Strategies. If you haven't viewed that webinar, you can find a video recording on the Videos page of the Arches Project website. While that webinar mostly highlighted important points about open-source software projects from a general standpoint, in this webinar, we'll look specifically at the Arches Project and how to engage and participate as a member of the Arches community. Before we turn to that subject of engaging in the community, I think it's helpful to first set the context a bit by explaining why the GCI and our original partner, World Monuments Fund, chose to create Arches as open-source software. First, the mission of the GCI is to advance practice in the conservation of cultural heritage internationally and with the similar mission of the

world monuments Fund. And we created Arches to serve that mission. We decided to create Arches after observing over a number of years a widespread need in the heritage field internationally for modern purpose-built software for cultural heritage data management. Because heritage organizations around the world tend to be under resourced, we also wanted to make sure that Arches would be economical. And this informed our decision to create Arches open-source software, and our choice of the software license. As was mentioned in the prior webinar on open-source software projects, a primary reason we chose the AGPL3 open source license is that it requires that when anyone improves Arches and puts it online, they're obligated to share those improvements with the rest of the community. And we believe that using this license would help heritage organizations around the world to benefit from each other's investments and also pool resources to make enhancements. The GCI is also a non-profit philanthropic institution, so we were also attracted to the community-oriented nature of open source projects and the ethos of community members contributing for the greater good.

Over time, we found that as more individuals and organizations get involved in the community more of them contribute. This can result in a virtuous cycle that has sometimes been described as a network effect. This diagram demonstrates the network effect using the example of the invention of the telephone and the potential for interactions. Two phones being connected results in one interaction, five phones on the same network results in ten interactions, and 12 phones leads to 66 interactions.

In terms of the Arches community, the number of those involved continues to grow. There is a multiplying effect in terms of the possibilities for community members to share work products, including software enhancements as well as expertise and experiences. As this quote notes, a network effect occurs when a product or service becomes more valuable to its users as more people use it.

We would say that Arches becomes more valuable as more people and organizations are engaged in the community. With the way that open-source software projects work, engagement in the community can be both good for Arches as a whole, so everyone gets better software as well as good for more particular interests of an organization or an individual. Having set that context, let's jump into the main focus of the webinar about participating in the community.

As you can see on the Arches website to the upper right, you can access a menu called Community. And there you can find a great deal of useful information about how the community collaborates. A webpage under that menu is called Participate in the Community and this provides a list with links to further information about a number of specific ways to participate. And I'll be touching on most of those avenues for participation now. But we encourage you to take a look at this webpage after the webinar for more information. One other thing to point out under that menu is the Arches Community Code of Conduct. The code of conduct sets expectations about values, tone, and other aspects of good conduct, and includes guidelines for commercial entities such as technical service providers through the Community Code of Conduct.

We aspire to foster collaboration, collegiality and an inclusive and welcoming community. To start participating, the first place that we recommend is the Arches Community Forum. Here you can introduce yourself, ask questions about ways that Arches is being implemented by others, and seek out solutions to technical issues after you gain some experience. You can provide feedback to help others and learn about and share announcements and input on Arches development discussions. Another way to participate in the community is through regional or topical Arches user groups. These groups are self-organizing and to date user groups have been formed in the UK and the United States. You can go to the links on this webpage to find out more about either of those two groups, including when their next meetings are. And the same webpage provides guidelines and resources for creating a new user group.

Another way to participate is to contribute to and share translations of the Arches user interface or review the translations of others. Arches source community members can help localize the software user interface through collaborative translation work into multiple languages. The Arches Project uses Transifex as a platform for collaboration on translation and to make those translations available to others for use in their own Arches instances. Here you can see the languages for which translation work has been contributed for Arches v7.

One way to participate that we enthusiastically encourage is to share your Arches deployment, which can be beneficial in several ways. One way to share is to share information about your deployment with the Arches Project team to add to the, 'Who's using Arches?' webpage. This allows others interested in Arches to see the variety of uses of the software in terms of use cases and types of cultural heritage dealt with, the kinds of organizations using Arches and the geographic diversity of users. Community members can also write blogs or articles about their deployment such as the blog interview with the Historical Maps of Candia team that we recently published online. Community members can also share their deployment through presentations as the Dunhuang Academy team did earlier this year in Australia. More deployments can be shared through online webinar presentations like this, as was the case with the Greater London implementation a few months ago. As I mentioned, sharing your deployment can provide a number of benefits. These include making others in the community aware of your deployment and a possibility to collaborate in mutually beneficial ways. As I'll discuss shortly, this could include sharing software enhancements, sharing software packages and sharing controlled vocabularies. Sharing deployment experience can be helpful to others in the community and can encourage useful feedback about your own deployment. This can also show the utility of Arches to those evaluating the software. Anyone has gone through the process of evaluating software can understand how that can be helpful. This also has the potential to expand the community, which can lead to possible benefits across that community.

As I mentioned, another very beneficial way for Arches implementers to participate is through contributing and sharing software packages, as well as vocabularies. Arches has been designed in a modular and flexible way, and one of the benefits of this is that different Arches implementations can share their work configuring and customizing Arches. This can mean not only sharing new functionality, but just as important sharing resource models and any associated configurations and customizations. An example of this is the Arches for HERs. Historic England, in collaboration with the GCI and Lincoln City Council will be making the resource models, controlled vocabularies, consultation workflows and code customizations built for the Greater London Historic Environment record available to the entire community. And this is especially helpful for English Historic environment records that adhere to the same standards. This slide shows the current package library that's in the process of being updated to better accommodate the submission of packages, projects, and applications for use by the entire community. In the meantime, if you're interested in sharing your work with the rest of the community. please let us know via the Community Forum. Sharing controlled vocabularies can help community members who have a similar use case. The creation of controlled vocabularies requires a lot of research and knowledge organizational work. And by sharing this work with others in the community, you help others to avoid reinventing the wheel as well as help standardize terminology across different implements of Arches.

Just recently, the Mapping Archaeological Pre-Columbian Heritage of South America Project shared news of their work in creating a cultural affiliation thesaurus shown here. After an Arches project creates vocabularies, the next step could be to share Arches thesauri story files for others in the community who might be interested in incorporating their own network in their own Arches implementation. Sharing your Arches deployment can help make others in the community aware of where there's potential value in sharing software packages and vocabularies. The Arches Project also welcomes community participation in creating and improving the official Arches documentation. Improving the Arches documentation is a way that even small contributions can benefit the whole community. Good documentation is fundamental to the success of software. People need to know how to install it, how it works and how to use it. Members of the community help ensure that the documentation keeps up with Arches by identifying errors, omissions and topics needing update as shown here. Just like the Arches source code itself, this documents is maintained under version control at GitHub. GitHub issue tracking for documentation as shown here facilitates collaboration and keeps track of the history of contributions and changes to the documentation. The Arches community also welcomes collaboration in the development and maintenance of the software code itself. This webpage from the Arches vcode repository on GitHub shows co-development of new code to enhance Arches Web accessibility features with IT staff from Historic England taking part. For software developers, open-source development is very attractive. They can learn through mentorship and collaboration and they gain greater recognition for their contributions. But you don't necessarily have to be a software developer to help; anyone can submit bug reports and feature requests to improve the software.

One other potential way to participate is to become an Arches commercial service provider. The Arches website includes a page of current technical service providers who have demonstrated the ability to implement and customize Arches and who agreed to abide by the Community Code of Conduct. This page provides guidance for additional service providers to be recognized there as well. Community members can also provide input on the Arches software roadmap which is published on the Arches website. Community meetings of Arches developers provide one avenue for discussion and input on the software roadmap and here you see a recent forum post on a developer meeting planned for March 2024 and discussion of an agenda on the forum. Last but not least, Arches community members can support software enhancements that the entire community can benefit from. For example, in Arches v7 seven, the Arcadia Fund supported internationalization of the Arches platform and in version 7.3, the Auckland Council in New Zealand provided for development of a single sign-on function for the platform which provides for greater security and compliance for an organization. Historic England has also supported Arches software enhancements which Andy Jones will speak to shortly. I'd like to sum up about participating in the community by saying that as the Arches community continues to expand, the possibilities for sharing work products and software code that is relevant to other community members continues to multiply. The more that community members engage, the greater the value for the whole community.

Before I turn the webinar over to Andy, I'd like to close by briefly mentioning the Arches Governance Initiative, which is an undertaking of the GCI to plan for the long term governance and sustainability of the Arches software and the open-source project. Through this initiative, we've identified two near-term objectives, which are first, to create a governance framework for stakeholder participation in determining future priorities for the Arches software project. We've already created an external advisory group to provide input on this planning, and the GCI is looking to create a more full-fledged governance body or bodies to provide for decision making with Arches stakeholders. And second, we're looking to establish pathways for external funding and in-kind contributions to support the Arches software project into the future. We will be updating the community as our work on this initiative progresses. In the meantime, you can find additional information on the Arches Governance Initiative webpage. Also under the Community menu, this page includes FAQs with answers as well as direction on sharing input. So this concludes my part of the webinar presentation. So I'll turn it over now to Andy

AJ: Thanks, David. Just share my screen. OK. Well, thank you very much for having me here today to really talk a little bit about my team's experience on the Arches open-source community. So from a development team's perspective, other members of the organization also have been involved. But this is just a taste of what we've been doing. So I'm a software developer manager, Historic England have been here for 13 years.

And I manage a team who are responsible for developing, maintaining, and integrating Arches applications within the organization. And we started working with Arches around five years ago now where we ran a prototype project for aerial photography using Arches, just to see kind of what its capabilities was. And since then, we've gone on to successfully migrate two of our major systems to Arches. So the national record of the Historic Environment internally called WARDEN and more recently the Greater London Historic Environment Record, which we completed earlier in the year internally and we'll be looking to make that more public soon. And we are also in the early stages of developing a new maritime record system. So we've been doing quite a bit since then. During that time, we've as a team gone through quite a transformation So significant changes how we work, the processes we undertake, how we approach software development and changes to the scope of our work. And really, all of this has been influenced by the nature of open source and working within that collaborative community.

So I think to begin with, I wanted to just to start looking at how that how the team has changed over time. And the differences between how we went then and how we work now. So when, when, when things gets off, we had limited experience in open source software development. We were a single in-house team working on projects for a specific business unit and they were custom built from the ground up, often with proprietary software tailored really to exactly what we needed. And we had our own approach to building this and deploying systems that was under our full control. We knew exactly how we wanted to do it. So when we made that transition to start working with Arches, we found ourselves - we found that we needed to make quite a few changes to how we think about things. How our processes for code manual worked, how our work planning needs to certain things to be done because we were no longer in a vacuum. We were working with other teams. We were now working on something that wasn't our own. So we weren't we weren't in control. And so we noticed that tended to change almost every day. So it's kind of keeping up with something that was quite organic at the time and kind of adds that it was a new piece of software. So it was quite a steep learning curve, getting used to something new. But also the way that that it was built with always sort of developed and the processes around that. But what we found after some early stumbles that actually - it wasn't just us on our own struggling with something new, we were actually part of what was really a distributed team of other developers. And instead of, you know, looking for support within your own team as you start something new, we were able to look outward and draw on the experience of other developers through that community model that helped support us as change. We started engaging with other external developers to benefit from their broader experiences at the time. And over time, mostly we were able to then start helping others and help people solve issues and work out solutions. We began to ingest as part of made that part of our process. And that was really to help us plan features and also see where people were already doing the things that we needed to do, which is often a nice surprise because you know, you're going to save a bit of a bit of time. So that was great. And planning starting to now plan core features around a contribution first pattern that provides us with that community support by making it a core piece of code. And really the distributed team helped us with kind

of running through that quality and assurance part of the review process, you know, making sure that it's consistent and it's also usable by the whole community.

So looking at some of the specific ways we take part in the open source community: obviously, as a development team, we are primarily engaged through contributing code and working on the code within Arches as we implement Arches for our own use cases, you know, we found things that we can't do or things that we need to change to make it better for our requirements. And the open-source model means that we are able to add those things, which is great. So some of the notable things that we've done over the last couple of years are, to name a couple, we've added HTML format exports when using search. They not just exporting the data, but also being able to export something that is presentable and can be sent to Historic England customers and members of the public to kind of give them a great experience and also something that's accessible for all sorts of people. We also were looking - we also needed to be able to serve some of the geospatial data that Arches contains to GIS clients or be able to then serve it onwards to up the systems. And we found we needed something that worked live. It was easy to configure nice and nice and quick. It performed well and also supported our Esri state as well. So we have a lot of people using the Esri desktop product. So we wanted to make sure that it was compatible with that. So we built that capability into the Arches database, which leverages the powerful capabilities of PostGIS that it sits on top of. This is a currently managed directly in the database at the moment with where it's in a preview and we are hopefully going to be getting to build the user base on top of that pretty soon to make again, another, another core component used by everyone.

And something that David alluded to is our improvement to accessibility within Arches. So as a UK government body, we've got to ensure that the applications we provide meet web content accessibility guidelines and we must show that where an application doesn't meet those, there is a plan to compliance and that we're going to do it. So we worked on this internally for a number of years on our own implementations but over the last six months or so, we've been working with Farallon as a community developer team to make it a core feature and really, you know it's something that we've been building over the over the last couple years and we wanted to make sure that it was, you know available to a wider group of users and that one was going to obviously benefit from that. And one thing to note with this one is, is because it touched on such a large part of the application they did add to the roadmap for version 7.5 that is hopefully soon to be released. So yeah, because being part of that roadmap meant the more people were able to be aware of the change and know that it was coming and adapt accordingly.

So as well as those features we also fix things. Bugs being a major issue for us all. When we started working on it, our implementations run on top of a Windows infrastructure and fairly quickly we ran into a number of issues with that because I know, a lot of the - most of the development teams don't use Windows. So pretty much almost all of our kind of early contributions were around addressing Windows

specific issues. But you know, that was great. And we knew that we were helping those contributions for the people who are going to come out on Windows platform and help them. And all of this while we were doing this, we were getting to know the development team within the community, they were helping us review, refine and really get used to it and yeah, as well as the features and the changes and fixes that we put in, we also made sure that all of these changes we were doing, the features we were building, had documentation that was contributed to Arches docs. So pretty much everything above is now in there, including that information on the preview feature of spatialization. So I've kind of glossed over what a lot of the challenges I think at this point that we went through doing it. It was a transition. And one of the things moving into working in an open-source development was really appreciating the importance of getting the code in and contributing it to the project from an early stage. So we did experience quite a lot of technical debt when we were kind of getting up to speed things. And for those who don't know technical debt, it's one of the things where you build customizations to integrate into implementation, but then there's a requirement for you to maintain that long term and as time goes on and you customize more, that becomes an unmanageable situation to be in. So we needed to make that shift to contribution first, which was certainly a kind of an unusual situation to us. You know, we were going to be building these features into code that we were then going to bring in. But what it really amounts to was that it provided us with a method of supporting our code through that that community model, which is actually an incredibly valuable asset for us to have. And then by moving to this, this contribution first approach, we had to change how we planned our releases. We had to make start making sure we were aligning with Arches release, the Arches release cycle where possible, and starting to look at how we would need to coordinate working a little bit more with the community to ensure the features we were working on made it into the versions of Arches that we then needed to use. So there were changes there that we had to make sure we made. And obviously working on something that's not your own, you know, you need to understand how the other teams are, what standards, what practices they put in place for getting the code in there, and so that is done in a sustained and consistent, consistent fashion. So understanding that and starting to get used to that was quite important early on.

And then finally kind of changing our perspective on how we focused on the work that we were doing. So previously, we were working solely for the internal users who were specifically going to use that and changing more towards looking how the features that we were building were going to serve a wider community that weren't necessarily going to be using it for the same use cases. So making sure that we designed those things in an as useful way as we possibly could, to really maximize the effectiveness of the tool across the community. And it's worth touching on, I think David raised earlier, you know, we've not just done work on the code. It's worth touching on a lot of the work HE's done is around the modeling and specifically the data standards team in getting and sharing those schemas, the structures of data that make Arches you know, really versatile in that respect.

The models play a fundamental role in Arches implementations, serving is really the backbone influence on how the implementation works. So yeah, that's great. And modeling is very tricky. I'm not definitely not an expert, I'm definitely a coder not a modeler. It's quite a tricky thing to get right, a lot of domain knowledge is needed to produce them. And a lot of time as well and testing to make sure that they you know meet standards and are flexible, but also meet all your requirements. So Arches being able to share those entities this has been really useful and we've tried hard to make sure that's shared. And as I said, David said that we have shared this with the Arches for HER project. So the models that we have running in Great London Historic Environment Record, they are currently available in the Arches for HER project up on GitHub and people can download those and use those as they as they need and obviously use in their own implementation of Arches for HER.

And also I think the forum that is provided to the community is key and really just having that conversation and starting conversations and it's that kind of go-to place if you're starting out. For my team the way we use the forum is primarily around supporting other developers, you know, keeping an eye out for people who are having issues. If it's a Windows issue, then great, we might have an answer for you or similarly if it's a feature that we've worked on previously then we can. But the great thing is there are other developers who are more experienced in other areas that can help and normally do. And we still post, you know, we still will post questions there about things that we tried that we're having issues with that, we might gain and some value asking for support from elsewhere. We've also been involved in some of roadmap proposal discussions on there so looking at, you know, changes to permissions models, looking at new UI frameworks, you know, being able to discuss that and have a voice and help with a decision is a really useful thing to be able to do and kind of add to that community effort and shared community effort. We've also taken part in discussions around enhancing documentation and also, as David said, talking about meetups and arranging things with other developers through that forum. And I would say if you're starting out, then definitely introduce yourself on there. It is really good to be able to see who's there, who're talking to you. And obviously it brings everyone a little bit closer. So they can have some great discussions.

And then some of the community events that have been touched on earlier in the presentations that we have been as a team involved in the Arches UK User group meetings. Some of my developers have presented their work on our implementations and particular features on there. Other Historical colleagues also take part in presentations such as Stuart Cakebread, who is also now the current chair of that group. And beyond the Arches UK user group, we have done some demonstrations, we've done some technical Q&As and knowledge sharing with other organizations around the UK who are interested, who want to know a little bit more, maybe what's involved with getting something up and running. Yeah, just, just really being able to answer those questions that is quite difficult early on when you're trying to decide what you're going to do or what solution is right for you. And yeah, I find again, developer meetups, the

developer community regularly meets up, there wasn't one last year, but previous years, we've done that. We've talked about some of our implementations and there's another one again next year. That is currently being arranged where we can all get together, show and tell the work that we've been doing and really have a discussion about the way forward and get to know everyone. So all of that's really important and it's really great that that is something that we can be involved with. So that's it really, that's our experience to date. So thank you very much for having me. And if you're interested, I'll get help address you - will have a look what we've been doing. Thank you.

NY: Thank you so much, David and Andy for your presentations. Hi again everyone, we will begin the Q&A portion of the webinar now. I want to remind everyone that if you have a question, please do enter it into the Q&A field at the bottom of your screen. We are waiting on our first question right now. And as we wait, I wanted to just ask David and Andy if you have anything else to add.

DM: I would just second Andy's encouragement to introduce yourself on the forum. We've had a lot of people in the community join the forum who are posing questions and it's really nice to know more about someone's work with Arches and you know what use case they have and just get to know them also as individuals and you know that can be helpful to also try to connect members of the community with each other who might have similar interests if we know more about individual users of the forum.

AJ: As I said, the forum has been great and being able to kind of meet everyone on there is really - seeing what other people are doing as well. The more kind of discussions that I had on there, you can kind of get a good breadth of views on different implementations, as you said, because, you know, sharing that information can lead to conversations and lead to us being able to kind of use each other's code or features. So it is really useful.

NY: So we do have a question from Karl Fogel, and that is: "what is your rough estimate of how long it usually takes for new participants to go from showing up to making contributions and having them accepted?" David, I don't know if you'd want to take this one.

DM: That is an excellent question from Karl, I don't know if Karl's thinking specifically of code contributions and maybe Andy would have an idea about that.

AJ: Yeah, if it's a contribution, from my side of things, I think once we had got used to just how it worked to begin with, so that was sort of the key thing. But I mean, once we've kind of spotted the first thing that we knew we needed to fix it, it wasn't particularly long. I think it was probably a couple of weeks of just working out, you know, having a conversation with people. We knew, you know, we needed to raise an issue on GitHub. So we did that. And really it just led to a conversation and people pointing us in the

direction of how to do it, what the contribution instructions were. I think in the Wiki and yeah, it was relatively simple to do. I think there was a few little kind of gotchas around some of the etiquette and how you do particular kind of things within that particular request. But it wasn't, it wasn't difficult to do.

NY: All right. We have another question here from Galen Mancino, it says, "hi, Andy. I was just curious what you or the team at Historic England think works really well in Arches and what you hope could work better."

AJ: Oh, I think from a developer's point of view, it's great because it is something that's kind - it's really, it's very flexible. So I think, I think it's kind of the fact that you're able to drive a lot of it through modeling really puts a kind of the power that within the people who are going to use it, who are trying to who have the domain knowledge and want to be able to stand up and insist to do exactly what they want. They don't necessarily have to worry too much about the application itself, you know, kind of standing up and getting it kind of going is for the technical team, but a lot of it, a lot of what it does is defined by the users who want to use it. So I think that that is really important. I mean, in terms of things that could work better I think kind of from my side of things, maybe looking at taking forward you know, improving areas where it connects with the ArcGIS background. So, you know, maybe forward in that direction. And I know that's been looked at by a number of people in the community. So yeah, kind of continuing to take that forward and integrating it more outside of the application. And I think it's all moving in the right direction.

NY: Thank you for that, Andy. We have another question here from Fatiha Polin, "Hi, this is Fatiha from Bangladesh. I run the World Heritage Volunteers program here. We have a volunteer base of 200+ participants. How can I engage them in the platform? Can we teach them to do cultural mapping with the help of Arches platform?" David, is this something you can touch on for?

DM: Sure. I think - really - well, maybe a first thing to do would be to take a look at the Arches demo site that is available on the Arches project website to get familiar with Arches and then really, for the sort of project, it sounds like you're thinking of a project, you would need to have an instance of Arches that would be deployed for your specific project. So you know, I think, would need to think about who would kind of host that instance of Arches on a, you know, on a physical server or on the cloud and what kinds of data you would want to collect and then think about permissions for users in terms of creating data editing data, reviewing data. And so on. And if you go on the Arches Project website, under the documentation menu, there's a webpage called 'Implementation Considerations'. So I would recommend taking a look at that webpage to get more familiar with the things you might need to consider for implementing Arches.

NY: Thank you, David. We have a question from Eric Kansa for Andy. “Do you think your developers feel that open-source collaborations make their work feel more valued, with more sense of purpose? Or do they get something else out of it (in a personal sense)?”

AJ: Yeah definitely. I think it is definitely something that they do take pride in doing. They certainly get a little kick out of having a pull request merge into cause certainly it's they will get away for daily stand up once that's done so yeah it. I think it is something they enjoy to do. They certainly get a kick out of it and and you know as a team, it does make us happy to know that we're giving it out for other people to use and they'll make you know, it'll help them and give them give them value really. So yeah that's great.

NY: All right. We have a follow up from Karl Fogel, who thanks us for our response and was grateful that we talked about the code contribution time commitment and was also asking about docs and just general participation. The Q&A session is still open, so please continue to type in your questions.

DM: Yeah for Karl's question about docs or documents, I think Eric Kansa, who I know is on the webinar, is the lead person on the documentation effort. He would probably be the best person to answer that. So that might be a good question for the forum. I'm not sure what the best answer for that is. Just one other thing I'll say to answer Karl's question is we have had members of the community that contact us and say, I'd be happy to translate. We have a webpage called What is Arches and translate it to a different language. And that doesn't take a lot of lot of time spent with Arches to be able to do that. That's just someone who has the capability and the interest to do that.

NY: We have another question here from Galen Mancino, again directed at Andy about the pull request process for developers inquiring about thoughts on how that could be improved and maybe if you could speak to the general experience of working with pull requests.

AJ: Um I mean, in terms of the know, the pull requests, it's not something that yeah we've necessarily found particularly hard. I think maybe some ensuring that the kind of the context around, you know, urgency or I think some of the things we've been looking at recently is this kind of making sure that pull requests are ready for specific versions of Arches. So, you know, just making sure that that's highlighted in somewhere. I think recently, we've been looking at talking with some of the other developers that as part of the issue, when you create the issue, you specify where you're going to be releasing, which version you want to target and just making sure that some of the information there is up to date. But I don't have anything kind of specific in my mind at the moment about how it could be improved. I think just ensuring that it at least it gets kind of picked up and maybe some information about who to assign it to might be quite useful because sometimes it's a bit of a guess, a potluck, just pick a developer that is

suggested some maybe a little bit of guidance on what that initial pull request - who that should target possibly. So yeah other than that, I don't have too many comments on it really.

NY: Thanks, Andy. We still have some time, so please continue to add your questions into the Q&A field. I will say that we just recently updated on the Arches Project website, a new updated version of our FAQs page that we highlighted recently in our bulletin. And this is a great place for other unanswered questions that maybe we don't get to today.

DM: I'll just add, since Nina mentioned the bulletin, the Arches team at the GCI, we prepare a bulletin generally every around three months, every quarter, with news from the community, news on development implementations and so on. And we always welcome receiving news from members of the community about your work. And I think the bulletin is a great way to share that work with others in the community or just others interested in Arches. And so just we would encourage people to share with us for those bulletins, upcoming bulletins and we expect to have the next one out in either late January, early February, sometime around that timeframe. So we'd be happy to receive any news that anyone out there might have.

NY: Another great place to share for example, your Arches implementation or deployment, as David already mentioned, is on our website on the 'Who is Using Arches?' page and we also include those implementations that are on that page in our interactive Arches timeline, which is a great resource if you want to look at the history of how the Arches community has grown over the past ten years. So highly recommend looking at that on our website as well.

DM: And one other kind of information that we are happy to share with the community is if anyone in the community has an Arches related job or bid or request for proposals that sort of thing. We have a Webpage for posting those kind of things and we're happy to share those things through our social media, on the forum, and in our bulletins.

NY: Eric Kansa has made a comment in the Q&A that we have some more guidance on collaboration and sustainable or maintainable development with Arches coming out in the official documentation release for the upcoming version 7.5. Keep an eye out on the forum or our social media for information about that new release. So we're getting to the end of our time here on the webinar. So if you have any last questions, please input them now. I think we might have gotten to the end of our question portion. So thank you so much everyone for joining us today for this webinar and thank you to David and Andy for their great presentations. Like I previously mentioned, we will be putting out a recording of this webinar within a week on our website, archesproject.org and on our YouTube channel. We will send out a notification of this to everyone who registered and share the recording on our channels as well. Thanks

again to all. And we hope to see you at a future webinar, on the forum, or in the many other Arches community spaces that were mentioned today. Thanks so much.