

## Summary of the Results of the First User Trial of the Shintau Software Architecture

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## Introduction

This document summarises the results of the first user trial of the Shintau software as run by the National E-Science Center (NeSC) in Glasgow on the 1<sup>st</sup> of December 2009. These trials took place using a small group of 9 volunteers using a trial configuration of the Shintau software provided by the ISSRG group at the University of Kent.

The trial was conducted in the following manner. Participants were given a talk demonstrating access to the current DAMES portal at which NeSC asserts all the roles that a user possesses. The talk then discussed the issues with the existing model, namely that the NeSC identity provider should not be the authoritative source for all the user's attributes, before introducing the Shintau software. The user was then given a copy of the user instruction document and asked to follow the demonstration detailed in its pages. Once the user had completed the demonstration they were given a questionnaire and asked to return the completed copy via email to Dr J Watt at the NeSC in Glasgow.

## Methodology

The questionnaire consisted of 19 questions. The first three of these questions attempted to determine the user's understanding of the process and whether the demo was completed successfully. Questions 3-6 questions concerned the usability of the linking service. Questions 7 – 10 discussed user's views on attribute release and the party that should control it. Questions 11- 15 dealt with the packaging of the software and where that software should be deployed. Finally questions 16 – 19 acted as a catch all that allowed the user to comment on the software itself and any concerns he/she may have had with it.

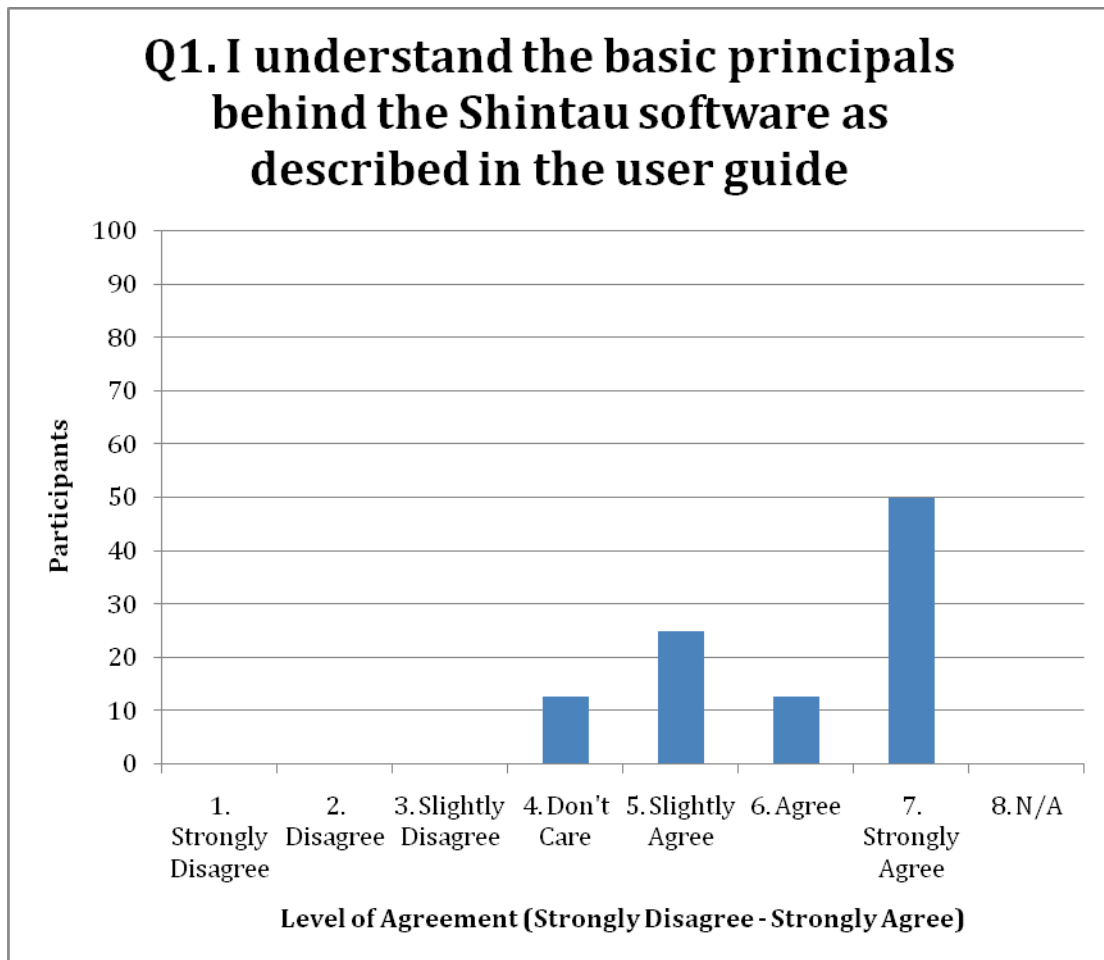
When questions needed to elicit a respondent's opinion about a topic, a Likert-type 7-point scale, with answers ranging from 1) Strongly Disagree, 2) disagree, 3) Slightly Disagree 4) Don't Care 5) Slightly Agree 6) Agree to 7) Strongly Agree. Users were also given the option of NA (not applicable) if they did not feel that they could answer the question. The questionnaire was distributed to nine people at the user trial in Stirling and at the time of writing 8 replies had been received and a summary of the results is presented below. The full questionnaire can be obtained from <http://sec.cs.kent.ac.uk/shintau/user-trial-questions.doc>

## Analysis of Results and Comments

In this section the results of each of the questions and their associated comments are analyzed and discussed. Any trends discovered in the user data are detailed.

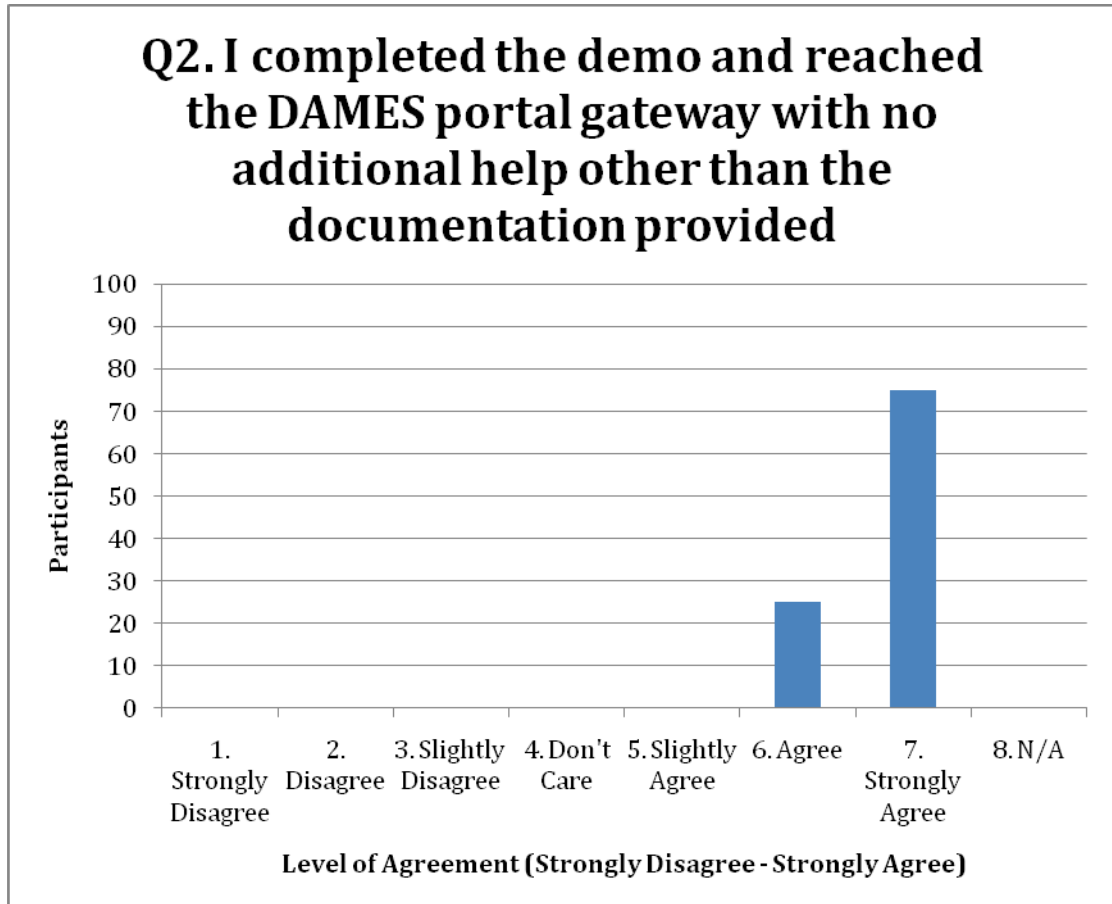
The collected comments of the participants can be viewed by question in Appendix 1 and the data set constructed from the collected questionnaire results can be viewed in Appendix 2.

**Q1. I understood the basic principles behind the Shintau software as described in the User Guide**



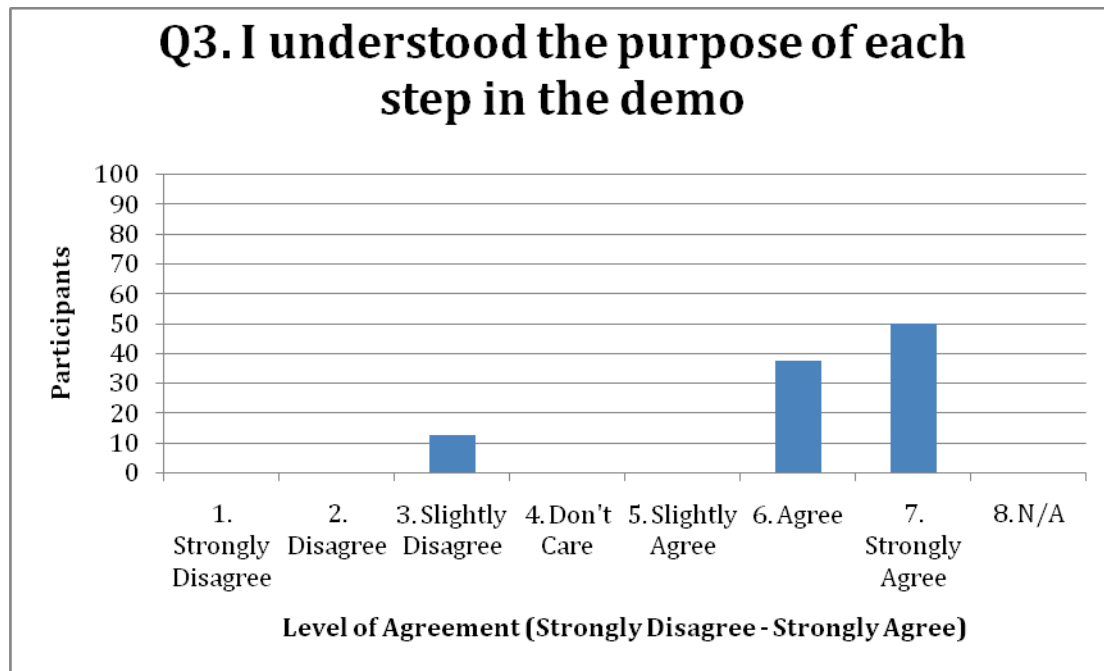
This question was put to the respondents to gauge their understanding of the problem space prior to the demo being performed. The results show that almost all of those queried understood the principals behind the software, with almost all the respondents stating that they at least slightly understood the problem space. The single “Don’t care” answer was submitted in conjunction with a comment that stated that the respondent had prior knowledge of the problem, which he/she felt helped their understanding beyond that of the information set out in the user guide. Other comments for this question stated that the information was described very clearly in the document and that the respondent felt that the software was intended “to deal with the situation where a person has more attributes than their own institution knows about. Shintau aims to make collecting these attributes less burdensome.”

Q2. I completed the demo and reached the DAMES portal gateway with no additional help other than the documentation provided



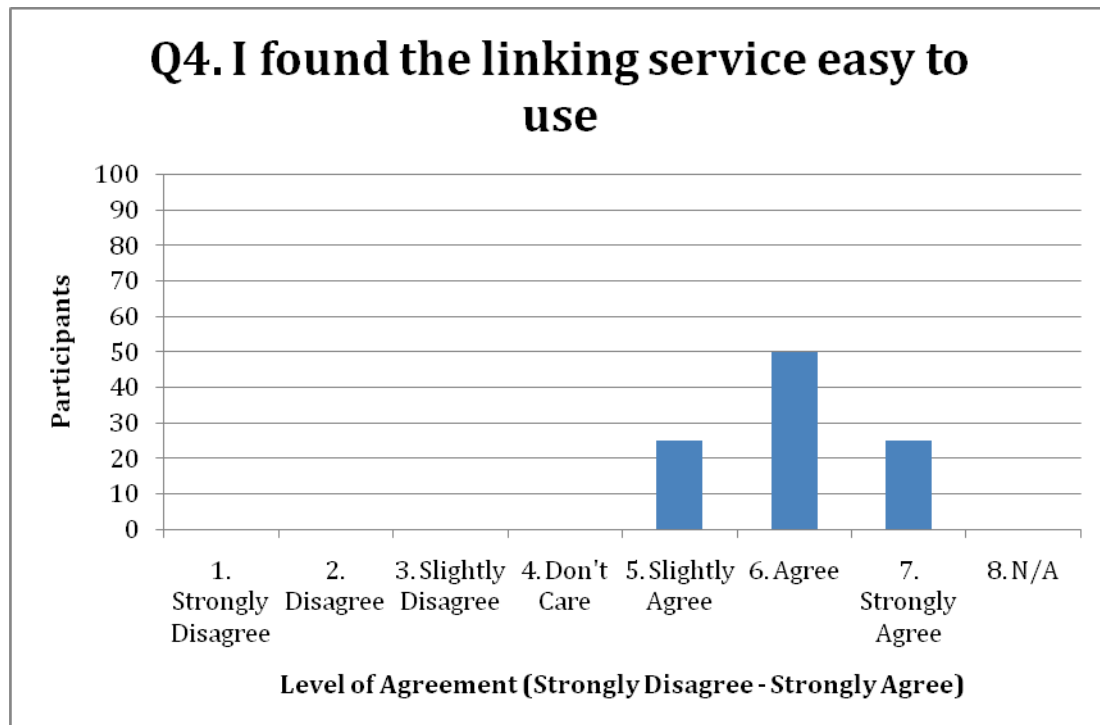
This question was intended to determine whether or not the user managed to complete the demo without additional help from sources other than the documentation provided. The results show that all the participants managed to complete the demo without additional help. A single comment was received here stating that the demo was straightforward and easy to understand.

### Q3. I understood the purpose of each step in the demo



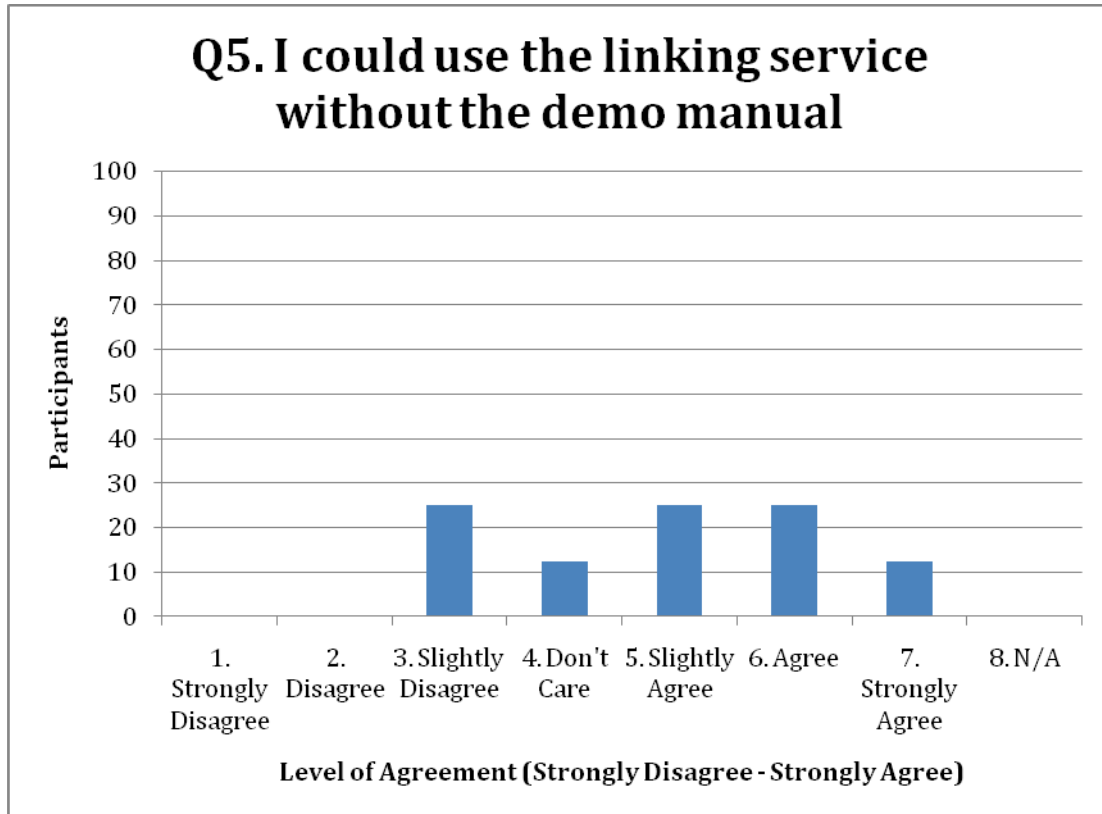
This question was intended to test the user's understanding of the reasoning behind each step of the demo. The results show that almost all of the respondents understood the purpose of each of the demo's steps with only a single participant having any significant problems. We also received comments asking for additional explanation and help within the software on "how/where aggregation is being attempted" and one user stated that he/she only understood the process after "some thought" and that they did not understand the purpose of the "final step taking me to the DAMES front door. Did that imply getting to a Service via the Linking Service web pages?" Therefore although the results imply that the users understood the process in future trials additional help documentation should be included in the software to ease user understanding.

#### Q4. I found the Linking Service easy to use



This question was used to determine the usability of the Shintau Linking Service's web interface. Despite a few minor problems reported by users in the comments, namely that cookies had to be cleared from the browser and that the PHP scripts had display problems in the Safari browser, the results show that all the users agreed that the linking service was quite easy to use with most users (76%) believing that the service was easy to use or very easy to use. This view is reflected in the comments in which several users stated that the service was "straightforward". Other comments stated that "the manual is easy to understand and follow, and the interface is very similar to the way we surf the internet." It was also pointed out that whilst the service was easy to use it could easily become very time consuming to perform linking for every SP. Therefore we can conclude that whilst the linking service interface was not perfect it presented no significant barriers to use.

## Q5. I could use the Linking Service without the demo manual

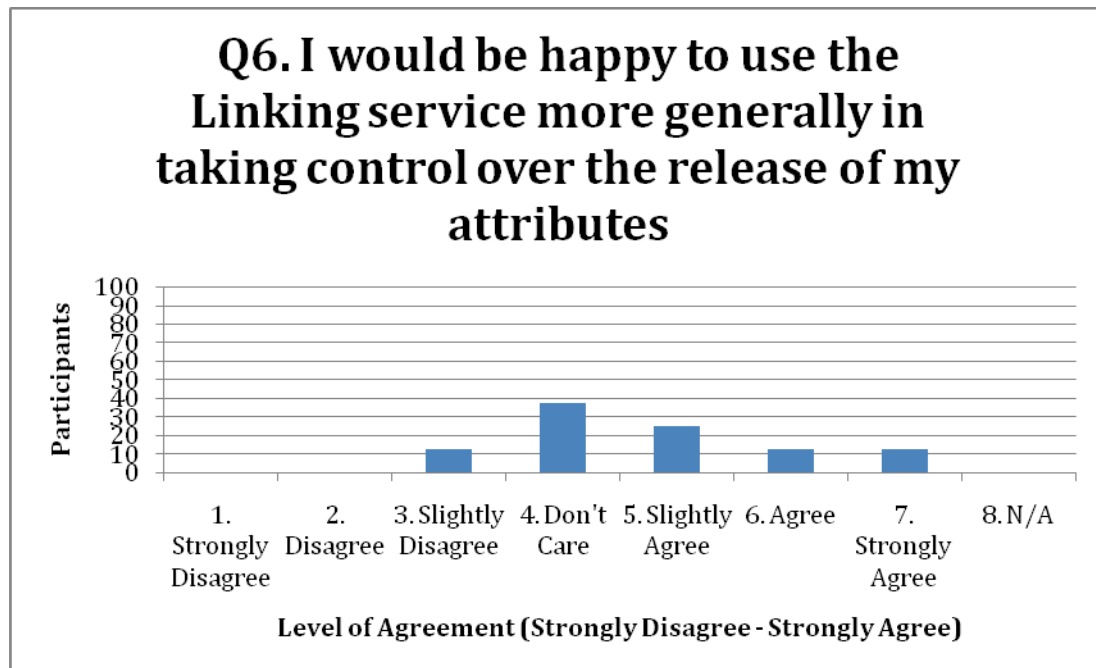


This question was once again intended to determine the ease of use of the linking service and whilst the results are not as positive as those in question 4 with several participants being unsure as to whether they could perform linking without the manual the majority 5/8 of the participants agreed with the premise. Only 1 participant was not sure and 2 were doubtful. This indicates that additional work is required on the web interface to make sure that the user flow through the software is made clearer and that additional effort should be utilised in this area. The comments were positive overall but made it clear that in most cases reading the user document at least once would be required in order to use the software. Other comments referenced that fact that the demo required the user to remember a large number of URLs such as SP URLs suggesting the need for some form of friendly name for each SP (and IdP<sup>1</sup>). It was also suggested that it would be useful to see the attributes available from each linked IdP to make a more informed decision as to which IdP's to link together<sup>2</sup>.

<sup>1</sup> Note that the UK Federation metadata already contains a friendly name for IdPs, but does not for SPs.

<sup>2</sup> Note that this would break the privacy model of Shintau since the Linking Service is not supposed to know these attributes. The Shintau designers also believe that most IdPs will only issue one attribute to each user (as is the case with today's plastic cards), in which case the user would intuitively know which attribute each IdP will release.

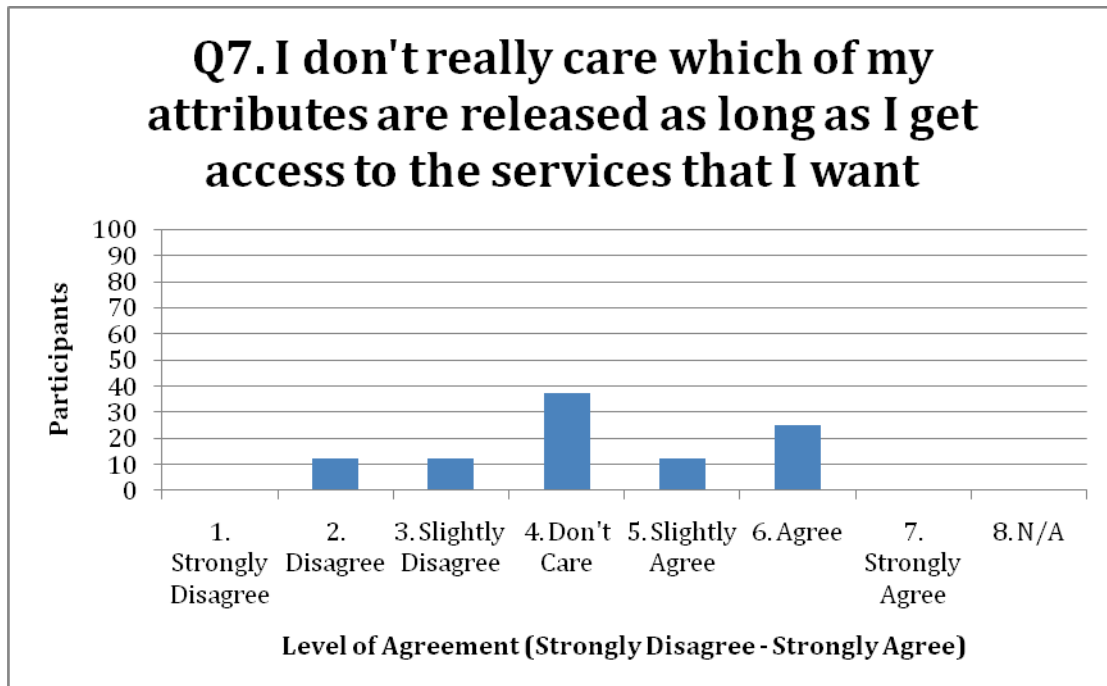
**Q6. I would be happy to use the Linking Service more generally in taking control over the release of my attributes**



No conclusive answer can be drawn from this question which attempts to determine how receptive members of the public would be to using a system such as Shintau to take control of the release of their attributes. Whilst 50% believe to some extent that they would be happy to utilise the Linking Service for this purpose the other 50% either has no opinion or slightly disagrees. The comments suggested that whilst participants may be in favour of the idea in theory they would require additional information to be provided on the context of the attributes to be released, before committing to a definite answer. Several users did express a desire for finer control over attribute release but also pointed out that some users would have little interest in such a scheme.

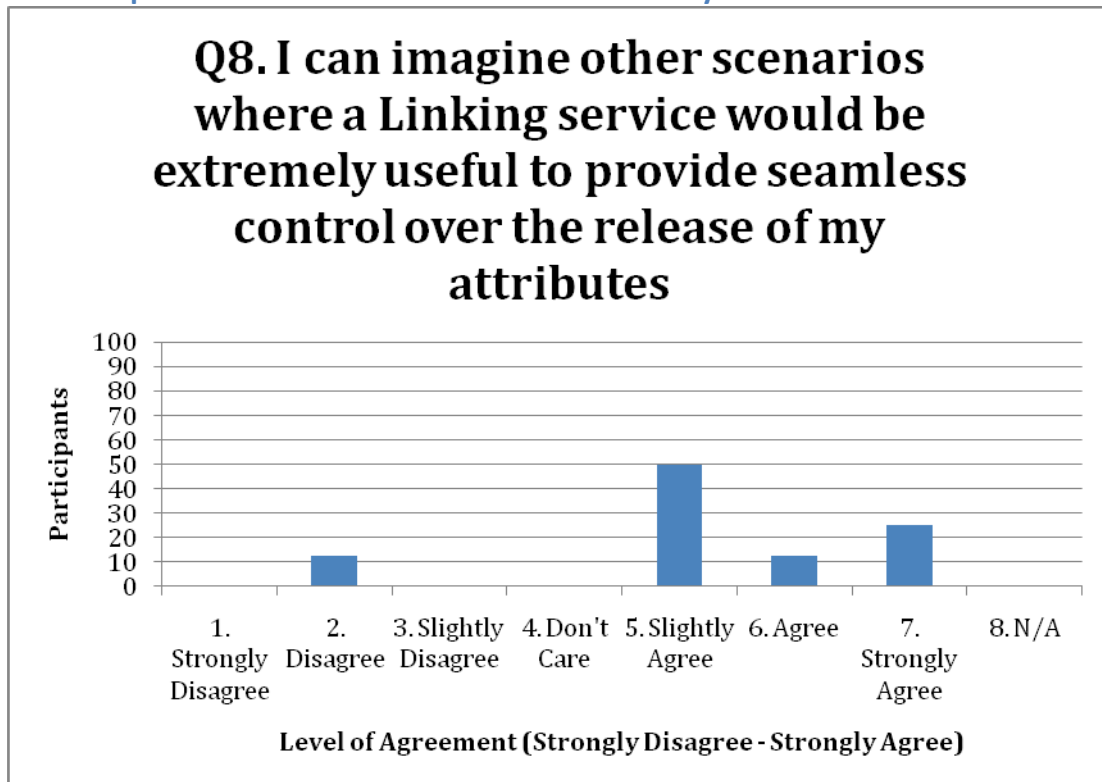


Q7. I don't really care which of my attributes are released as long as I get access to the services that I want.



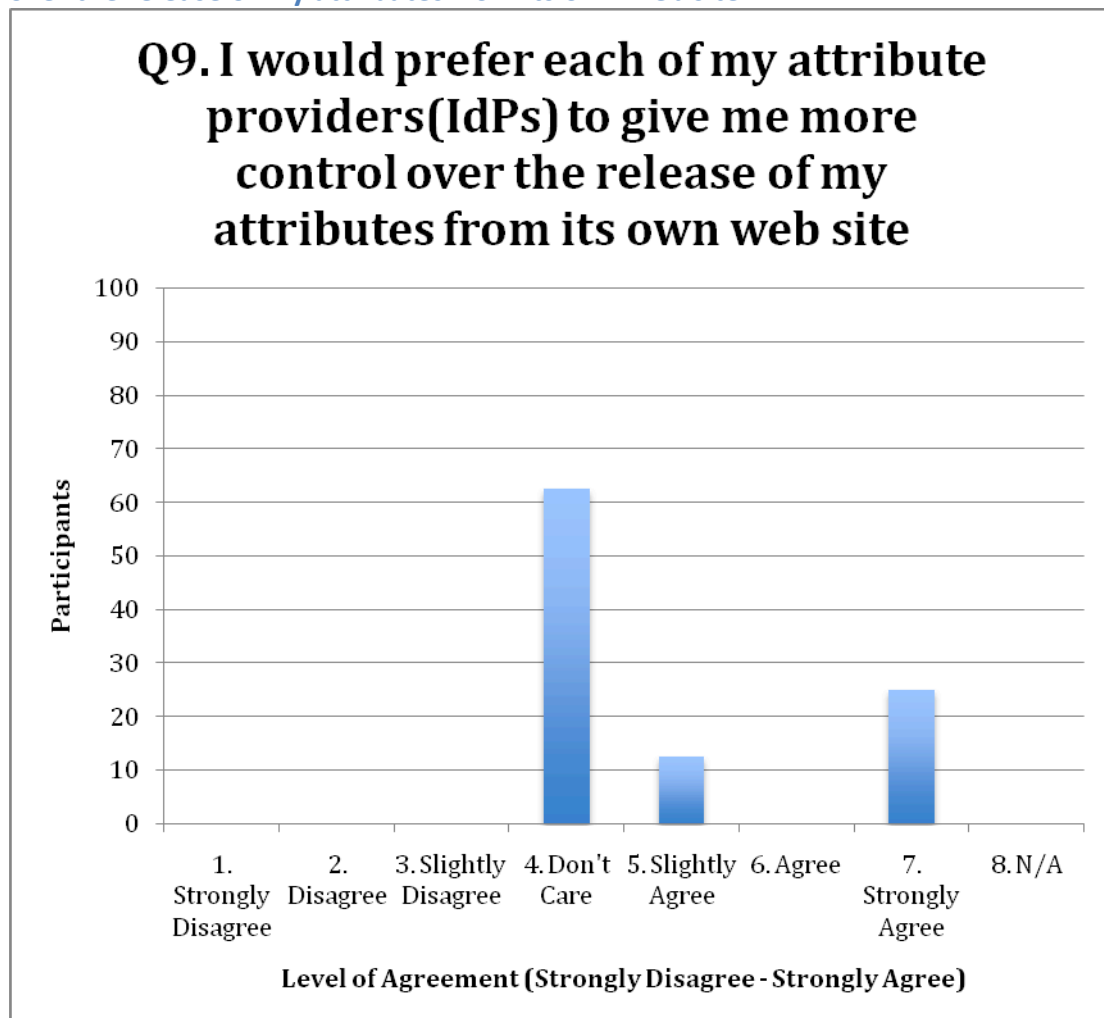
This question was intended to determine the participant's views on the release of their attributes and the relevant trade off between attribute privacy and security and access to resources. The results are very evenly balanced with roughly one third of the participants agreeing with the question, one third having no strong opinion and the last third disagreeing with the statement. The comments suggest that the participants are aware of the trade off and that their answers are dependent on the types and values of the attributes to be released i.e. they would like greater control over some attributes such as those used for banking but have little interest in those used for less important tasks such as VO participation which they would prefer to leave upto the system to determine.

**Q8 I can imagine other scenarios where a Linking Service would be extremely useful to provide seamless control over release of my attributes**



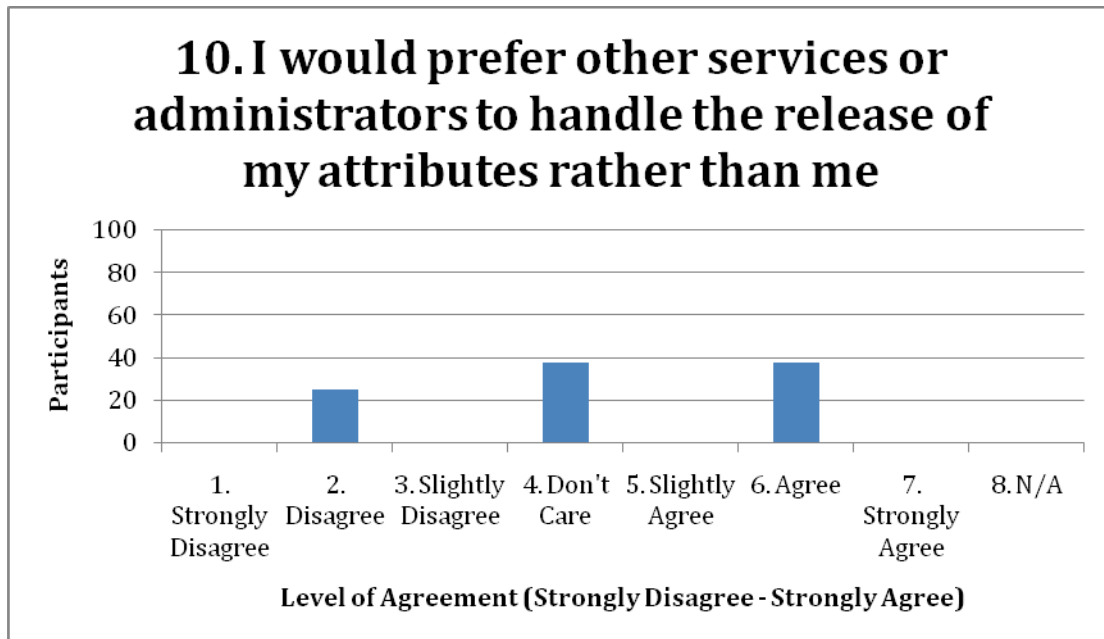
This question was designed to determine how useful the linking service could be in daily life. Almost all of the participants could imagine additional scenarios where the linking service could be useful. The comments suggested that whilst users could see the value of the linking service the participants had concerns over the requirements for all SP and IdPs to support the Shintau software. Other concerns were over the perceived need for all services to be signed up to the same authentication provider, which may be down to the way the service provider in the demo was configured to always use a single IdP for the initial act of authentication.

Q9. I would prefer each of my attribute providers (IdPs) to give me more control over the release of my attributes from its own web site



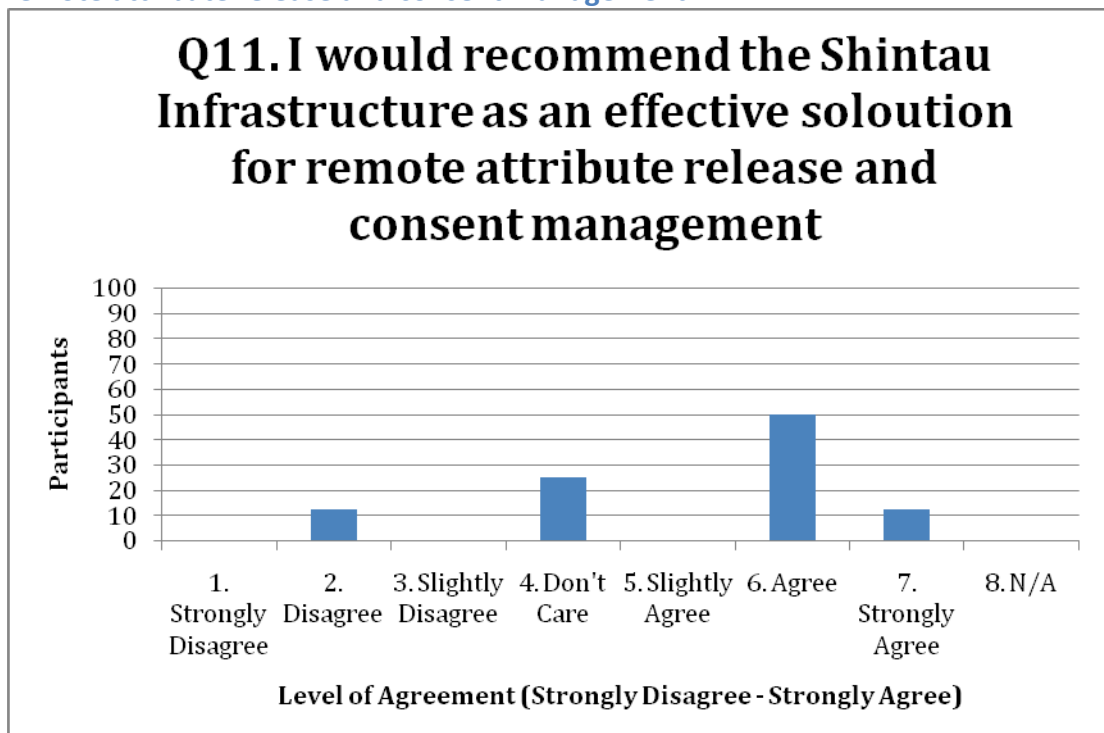
This question was included to determine how the participants felt about the current attribute release mechanisms provided by most IdPs. As can be clearly seen from the above graph over 60% of the participants had no strong views about the subject, believing that the current system is adequate for their purposes. The other participants believed to some degree that greater control should be provided and none of the participants believed that the IdPs should be given more control. The comments suggest that although those participating may prefer additional controls they were not sure that other less “expert” users would feel the same way.

**Q10. I would prefer other services or administrators to handle the release of my attributes rather than me**



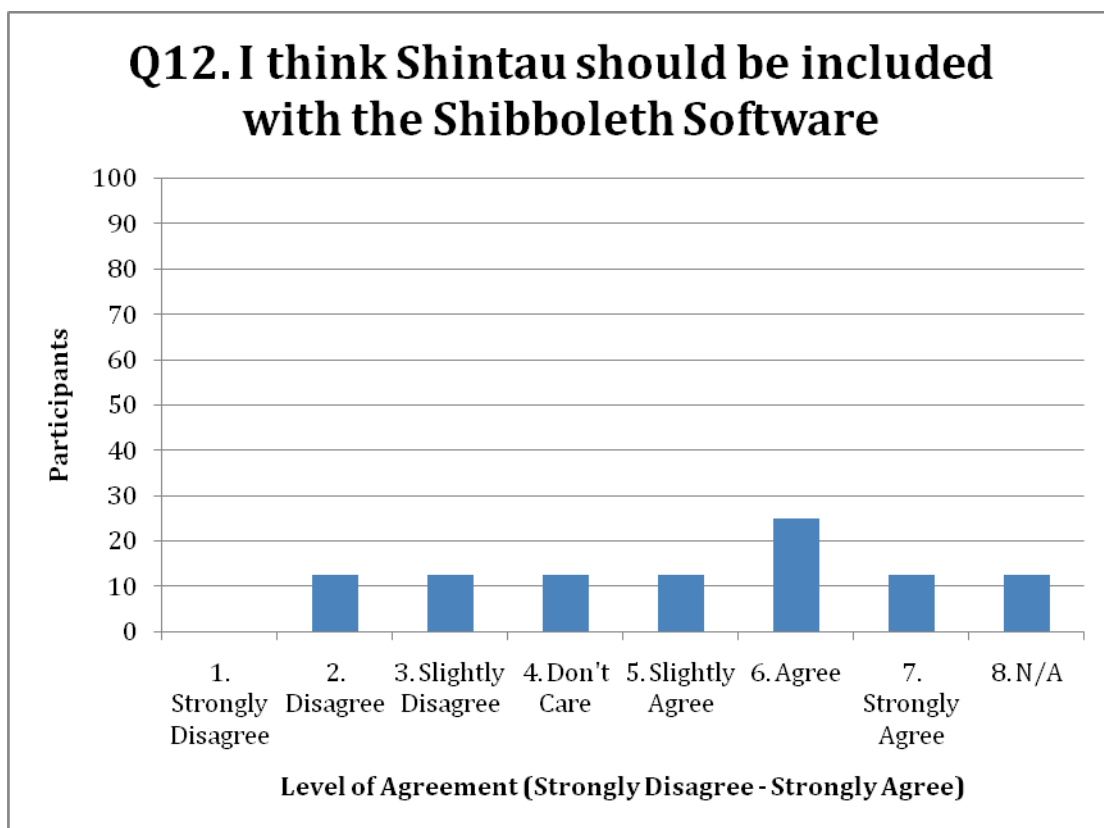
This question was intended to determine how much user interaction should be included in the release of attributes. The responses were evenly spread and indicated no preference, with roughly one third of users agreeing with the statement, one third disagreeing and one third not caring either way. The comments suggested that the participants' answers may be different for different use cases. They may want to configure the attribute release themselves sometimes, and may want it to be automated at other times, dependant on their trust in the services that are performing the configuration.

**Q11. I would recommend the Shintau infrastructure as an effective solution for remote attribute release and consent management**



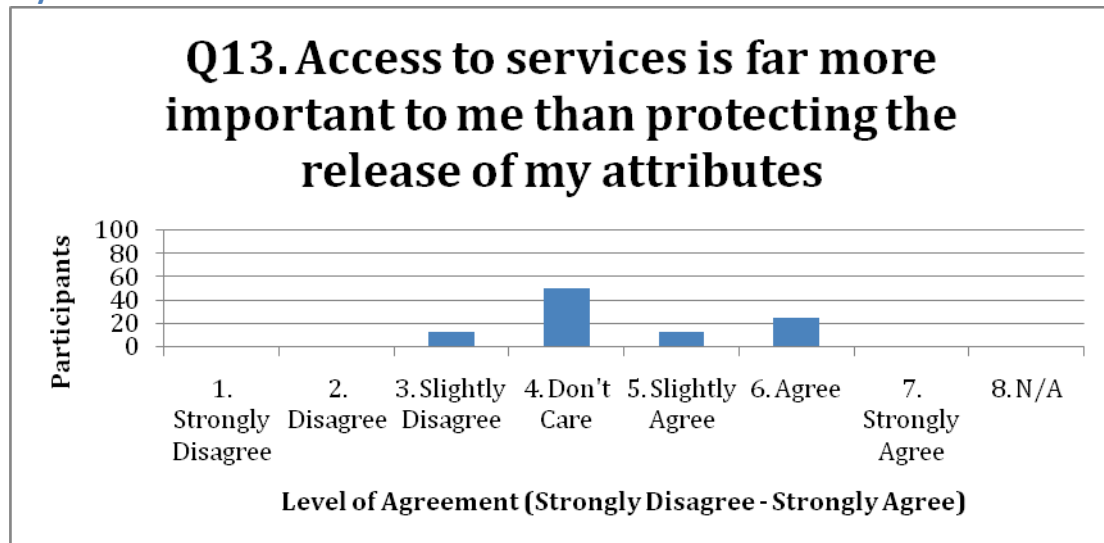
Question 11 details the user’s overall view on the software and whether they felt that the software provided an effective solution to the problem of attribute aggregation, release and consent. The results were generally positive with five of the eight participants agreeing that they would recommend or strongly recommend the software and only one participant stating that they would not recommend the use of the provided solution. Two users stated that whilst they would not recommend the solution they would also not discourage the use of it. The comments suggest that some users may have recommended the solution as they were unaware of any other existing solutions to the problem. One user also suggested that they would be more likely to recommend the software after the software is stabilised and the administration time is reduced.

**Q12. I think Shintau should be included with the Shibboleth software**



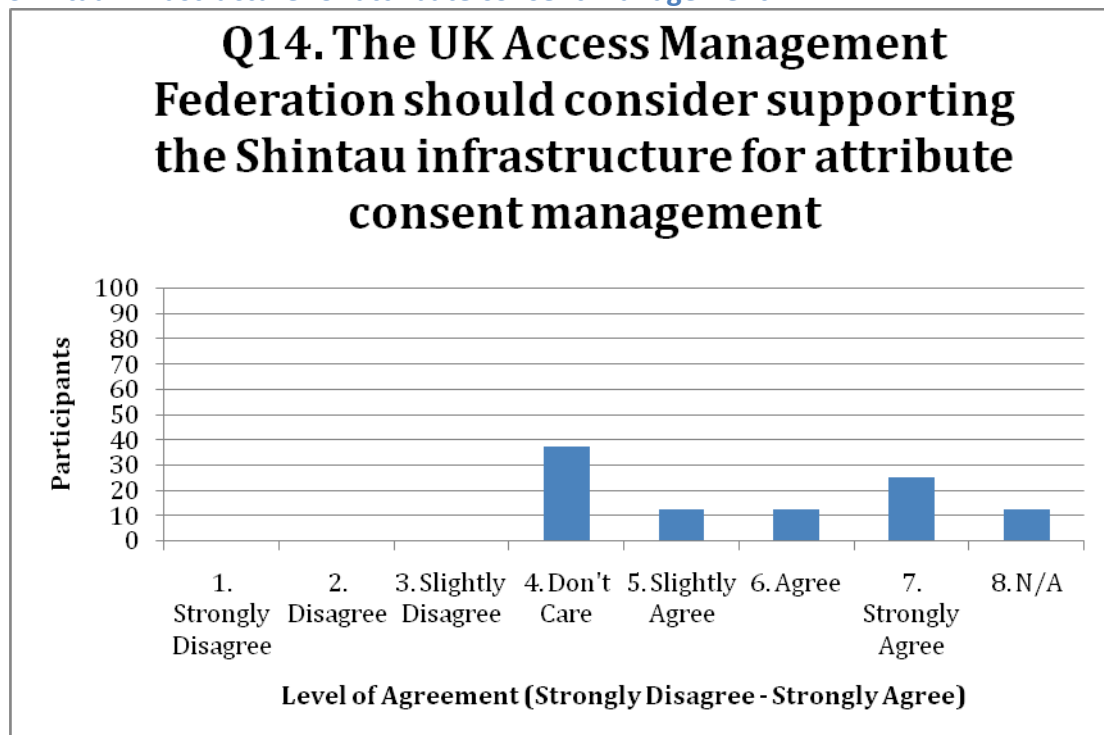
This question was intended to determine whether or not the Shintau software should be included with the internet 2 Shibboleth software release as standard. The results were inconclusive. The comments suggest that some users believe that the software is not currently ready to be included in a Shibboleth release but that this may change with future releases.

**Q13. Access to services is far more important to me than protecting the release of my attributes**



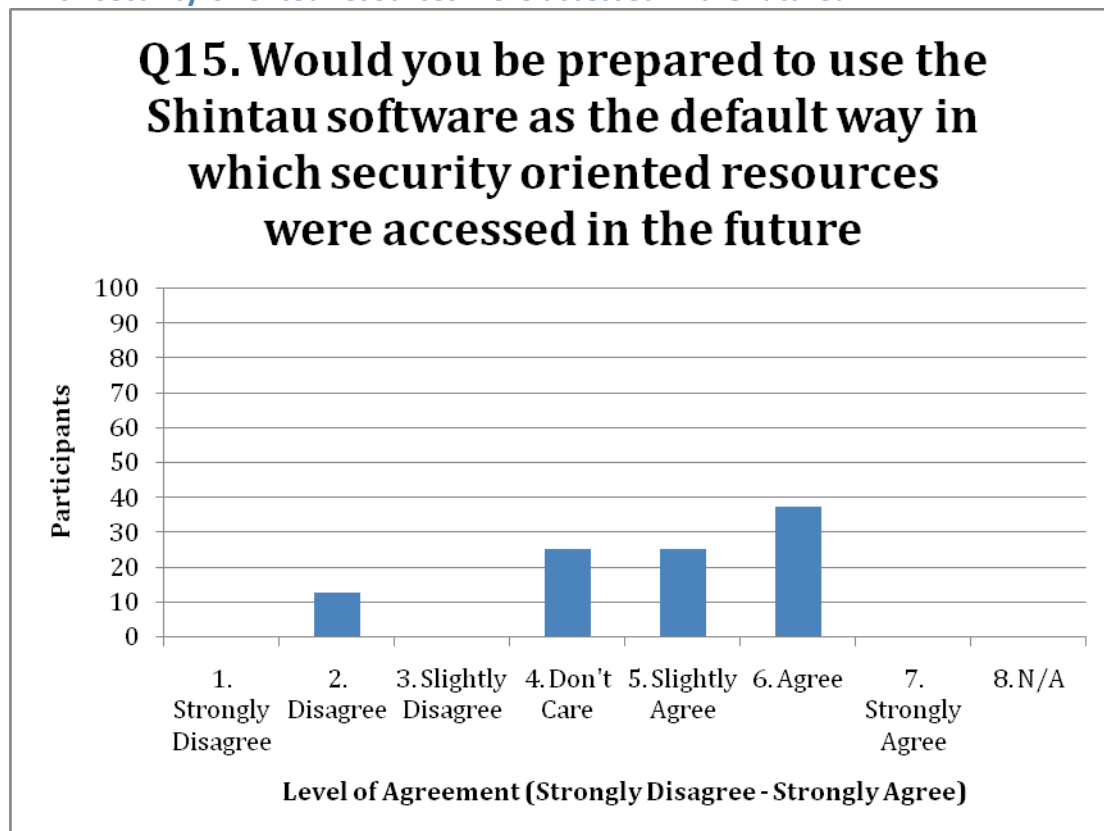
This question is aimed at determining the trade off between user privacy and protecting the release of personal attributes and providing seamless access to resources. The results show that 50% of users have no strong views about this but that those who do have a strong view believe that access to resources is more important than the privacy protection of their attributes. The comments suggest that the participants whilst aware of the trade off are more concerned with the ability to access services than protecting the attributes that are used to do this. The comments also suggested that users are likely to have different opinions when determining access to each service i.e. for some services the user will want direct control over attribute release and for others he/she will be happy for a trusted entity to take control.

Q14. The UK Access Management federation should consider supporting the Shintau infrastructure for attribute consent management.



This question was asked in order to determine users opinions about whether the software should be supported by the UK Access Management Federation or not. None of the participants had objections to the software being used by the federation and half of those queried believed that it should be considered. The other half either professed no strong opinion or abstained and the comments suggested that this may be because they had no or little interest in the UK Access Management Federation themselves. It was also suggested in the comments that the software may need to be hardened before it could be considered ready for production use.

**Q15. Would you be prepared to use the Shintau software as the default way in which security-oriented resources were accessed in the future?**



This question was asked in order to gauge the users' views of the software as a long term solution to the problem of attribute aggregation and whether they could see themselves using the software in the future to access their resources. Only one participant disagreed with the statement and two others were undecided. Two agreed but had reservations and three agreed that they would be prepared to use the software as their default mechanism for accessing resources. The comments were also positive and suggested that if the software was hardened and the user interface improved users would be more receptive to long term use of this software.

**Q16. In what circumstances would you think the Shintau software should not be used and/or used with caution?**

This question was the first of the series of catch all question utilised to determine use cases when the software should not be used. This question prompted a variety of responses from the participants from which we have detected one common theme in the responses, namely, the participants believed that the software was still too complicated for non expert users and concerns were raised that they would not be able to configure the software effectively. One user was also concerned that the software should not be used to protect resources of high value (possibly due to the lack of visibility over attribute release or due to the prototype nature of the software). Another user pointed out that the software does not contain any form of redundancy checks on which IdPs are currently available to be queried by the LS.



#### **Q17. The best feature of the Shintau software is**

This question was a catch all question to determine what the users liked best about the software. The comments were very positive and suggested that most of the users liked the simplicity and ease of use of the software as a solution to the problem of attribute aggregation. Several users also commented on the potential the software has for accessing several services with single sign on. Comments were also made about the high quality of the web interface of the LS.

#### **Q18. The worst feature of the Shintau software is**

This question was a catch all question to enable us to determine what the users did not like about the software. Once again a single major theme emerged from the results with three of the eight participants commenting on the fact that the software brings additional complexity to the federated environment that non expert users may not be willing to undertake. Other comments stated that as the linking service is an untrusted brand, user's have no reason to trust that the LS is performing its tasks in a privacy preserving manner. There was also a comment on the naming of service providers and identity providers as URLs, which was described as cumbersome. Another user commented on the complexity of the installation, but real end users should not have been aware of this (suggesting that one of the installers participated in the end user trials).

One comment was implementation specific and is not relevant to the Shintau software. This user requested the use of a WAYF for determining the names of each IdP. As the software is Shibboleth based it is fully compatible with a federation WAYF although one was not used for the demonstration itself.

#### **Q19. How do you think the Shintau software might be improved?**

This question was a catch all, intended to determine how we might improve the software in a future release. No clear trends could be determined in the responses although several very useful comments were made (which match our own internal deliberations). These are:

- the speed of aggregation is too slow to be effective
- the long list of SP URLs should be replaced with some form of SP friendly name
- user's would like to have some mechanism inside the LS to determine which attributes are being held at each IdP so that they can use this information to effectively provide consent for their link release policies.

It was also suggested that the solution required "hardening" and additional case studies could be tested in a real test environment such as the UK federation rather than the sandbox demonstration utilised in these trials.

We also received some implementation specific comments that can be viewed in Appendix 1. These will be taken into consideration when updating the LS's web interface.

#### **Conclusions**

The user trial was a success and the results indicate that, notwithstanding minor problems that need to be addressed before the system is ready for a production environments, the Shintau software represents an effective solution to the problem of attribute aggregation. The majority of the users were happy with the

solution and found it generally easy to use. The major themes from this trial are that:

- a greater emphasis should be devoted to making the software more user friendly for “non expert” users who are not familiar with the problem space
- additional information about the attributes provided by each IdP should be made available to allow the user to make more informed consent decisions about the IdPs being linked and the attributes being aggregated.

## Appendix 1: User Comments

- 1) I understood the basic principles behind the Shintau software as described in the User Guide

It's described very clear step by step in the user guide.

I think my limited prior knowledge helped.

I understand it to deal with the situation where a person has more attributes than their own institution knows about. Shintau aims to make collecting these attributes less burdensome.

- 2) I completed the demo and reached the DAMES portal gateway with no additional help other than the documentation provided

It looks straightforward and easy to understand.

- 3) I understood the purpose of each step in the demo

Maybe a little more explanation within the tool itself on how/when an aggregation is being attempted

Only after some thought and I didn't really understand the final step taking me to the DAMES front door. Did that imply getting to a Service via the Linking Service web pages ?

- 4) I found the Linking Service easy to use

The manual is easy to understand and follow, and the interface is very similar to the way we surf the internet.

Yes it was straightforward

I found I needed to clear some cookies using Firefox – shutting windows didn't seem enough.

It was relatively straightforward to use, but would I want to do this for EVERY SP – I am not so sure?

- 5) I could use the Linking Service without the demo manual

I would need a second to think if I don't have the manual, but I surely can figure it out. It's straightforward and not complicated at all.

After reading the manual once yes

I doubt I would remember the URLs for all of the IdPs for each new SP, but other than that the service itself was relatively simple to use. Also not sure how would I know which attributes for which SP from which IdP in the future though?

- 6) I would be happy to use the Linking Service more generally in taking control over the release of my attributes

It involves more steps, but I would definitely like to use it for finer security.

Depends on the context and the value of the attributes (e.g. financial information in LDAP..?)

I think I would want to know more – eg someone who knows about these things saying it is a good idea

Possibly although I would like to have some finer grained control over which attributes from which IdPs were being used to make which authorisation decisions. I guess many users would not care about this though. Then again, if I have signed a license agreement with UKDA for data set X and another for data set Y, then I would like to know which X or Y was being used when I want to access some system. I assume PERMIS gets them all and uses them to make an authZ decision. I guess that this is an issue with the UKDA attribute release policy though and knowing with attributes to release to which SP for which individual.

- 7) I don't really care which of my attributes are released as long as I get access to the services that I want.

I agree to some extent. I understand security is seriously important, but I wouldn't want it to become one of the huge overhead to access the service I want. This system work fine for me.

Would have big privacy concerns about this.

In some projects I would be much care which attributes are being used. End users ignoring which attributes are being used for which service represent an end user who does not really care about security. I guess this is a bad thing!

- 8) I can imagine other scenarios where a Linking Service would be extremely useful to provide seamless control over release of my attributes

I wish there could be a way to see what attribute I hold in different account.

As long as all the services were signed up to the same authentication provider and that was robust (could represent a single point of failure...)

I can imagine lots more scenarios, but this will only happen when all SPs agree to make use of Shintau and trust multiple IdPs and the attributes they release. Much of this is a policy decision (indeed most IdPs in the UK access mgt federation only support one or two of the eduPerson attributes, never mind the VO/SP-specific attributes.

- 9) I would prefer each of my attribute providers (IdPs) to give me more control over the release of my attributes from its own web site

Control was adequate. Difficult to decide who should control this though (users might not be clued in on what they need to control...)

Be good to know what attributes I have across what IdPs and allow me to define whatever release policies I like. (I can imagine other users who would not give a hoot though!)

- 10) I would prefer other services or administrators to handle the release of my attributes rather than me

Depends on trust in service/admin provider.

It depends I guess! In some circumstances I want Glasgow University to assert things about me and release my attributes, but at other times I might want to do this myself. I know which projects and which SPs need which attributes, thus I am in a better situation to decide these things. This works to a point however. I am involved in MANY projects and would easily lose track of the attributes I have (and their validity etc).

- 11) I would recommend the Shintau infrastructure as an effective solution for remote attribute release and consent management

Agree, although I am not aware of any alternative solutions.

It is still very much a work in progress. I know how much effort has gone in to the set up and protection of the system including visits from developers and debugging etc. Until this is made simpler, then I would be wary of recommending it to other SPs to use.

- 12) I think Shintau should be included with the Shibboleth software

Not applicable. I have never installed nor administered Shibboleth, so have little interest in its manner of distribution, or that of related packages. For all I care, they could be passed around on magnetic tape...

Once Shintau is hardened, then yes. Until that happens I would probably not recommend it right now.

13) Access to services is far more important to me than protecting the release of my attributes

In theory, no. In practice, improving ease-of-use (e.g. by reducing the number of authentication steps in the way Shintau does) is very important.

Depends again. Some services which are not on my paranoid list of we must protect this at all costs I want to have direct control over which attributes are being used for which services. Other times, I simply want to access services.

14) The UK Access Management federation should consider supporting the Shintau infrastructure for attribute consent management.

Not sure I completely understand the question

Possibly once it is hardened.

15) Would you be prepared to use the Shintau software as the default way in which security-oriented resources were accessed in the future?

If the user interface was improved.

I can see this approach would be good for a class of person

Possibly once it is hardened.

16) In what circumstances would you think the Shintau software should not be used and/or used with caution?

When normal users are involved. The average user is unlikely to understand what is going on or why which is likely to result in "its broken" complaints or them shoving all their attributes into one profile which they always use.

I cannot think of any - if the attributes are available on separate Idps already then there is no reason why they can't be aggregated.

Early in the development cycle. In association with any credentials that provide privileged or sensitive information.

I would be cautious to provide it to users with no prior knowledge of shibboleth, I think some users who don't know what attributes they would be disclosing may be cautious to do so. Where as if it were hidden

and they were asked what IdPs are you registered with and do you want to pull this information to gain access to service X?, they are more likely to agree.

I reckon one would need to see it working in practice – to get a clearer picture of where the problems might be.

Where I want production level access. It is still very much prototype in nature. There is always the danger of having more IdPs being linked that if any one of them goes down, then the SP can't be accessed. Be good to have multiple linkage possibilities for the same SP. Thus if the EDINA IdP goes down, then I should be able to access the DAMES portal using the Univ. Shintau/UKDA IdPs and be restricted to those resources not including EDINAs.

17)The best feature of the Shintau software is

The web interface is one of the best I've seen on a research project.

easy to use

The seamless release and aggregation of my attributes that saves me having to login to all 3 Idps.

Ease of use

Simplicity.

It solves a problem which in theory should make accessing several services with single sign on possible.

Should be convenient for users

It is novel and tackles something that will eventually be useful to many people.

18)The worst feature of the Shintau software is

The user is unlikely to know the URLs of their IDPs to insert them into the linking service. If they normally use the WAYF they may not have ever seen it or know it exists.

As long as it is obvious what roles are needed from each of the Idps in the first place then I cannot see any problems with the linking features available.

Untrusted brand, therefore don't know what's under the hood.

Service drop-down box on the release policy page is somewhat cumbersome.

It is still too complex for the layman. I think most users would be happy to specify the IDPs they are registered with and then expect the rest to happen automatically.

Adds overall complexity

Its complexity for administrators to set-up and use.

19) How do you think the Shintau software might be improved?

eliminate the long lists of SPs. Its simply too many especially when they all begin http.

It would be better if I can see my attributes holding in every Identity provider.

Speed of final aggregation could be increased.

Could it be automated?

The order of entries on the "My Linked Accounts" page appeared to be arbitrary; sometimes the order changed when assigning a new nickname, sometimes it did not. While it is perhaps unlikely that the number of accounts would ever make this particularly troublesome, presenting the accounts in alphabetical order of nickname may be helpful.

On the page where you are provided with the IdPs you have registered a fourth column allowing you to check the accounts you want to associate with the service before you press release policy, rather than having to select all or each individual one on the next page. Trivial change but just makes more sense to me.

The final step to collect attributes seemed a bit slow. The demo would be improved by showing it providing access to a demo service needing the multiple attributes. It is not obvious how it fits in and that affects how useful folk would imagine it being useful.

Harden it and try it out in more case studies. It would also be good to be able to integrate this and test it out in the field, i.e. in accessing real SPs from the UK access management federation using real IdPs. The existing scenario whilst representative is really a mock demonstration of what might be achieved in the real world. Better documentation for admins would also be advisable.



## Appendix 2: User Results

1. I understand the basic principals behind the Shintau software as described in the user guide	
1. Strongly Disagree	0.0
2. Disagree	0.0
3. Slightly Disagree	0.0
4. Don't Care	1.0
5. Slightly Agree	2.0
6. Agree	1.0
7. Strongly Agree	4.0
8. N/A	
2. I completed the demo and reached the DAMES portal gateway with no additional help other than the documentation provided	
1. Strongly Disagree	
2. Disagree	
3. Slightly Disagree	
4. Don't Care	
5. Slightly Agree	
6. Agree	2
7. Strongly Agree	6
8. N/A	
3. I understood the purpose of each step in the demo	
1. Strongly Disagree	
2. Disagree	
3. Slightly Disagree	1
4. Don't Care	
5. Slightly Agree	
6. Agree	3
7. Strongly Agree	4
8. N/A	
4. I found the linking service easy to use	
1. Strongly Disagree	
2. Disagree	
3. Slightly Disagree	
4. Don't Care	
5. Slightly Agree	2
6. Agree	4
7. Strongly Agree	2
8. N/A	
5. I could use the linking service without the demo manual	
1. Strongly Disagree	
2. Disagree	
3. Slightly Disagree	2
4. Don't Care	1
5. Slightly Agree	2
6. Agree	2
7. Strongly Agree	1
8. N/A	
6. I would be happy to use the Linking service more generally in taking control over the release of my attributes	
1. Strongly Disagree	
2. Disagree	

3. Slightly Disagree	1
4. Don't Care	3
5. Slightly Agree	2
6. Agree	1
7. Strongly Agree	1
8. N/A	
7. I don't really care which of my attributes are released as long as I get access to the services that I want	
1. Strongly Disagree	
2. Disagree	1
3. Slightly Disagree	1
4. Don't Care	3
5. Slightly Agree	1
6. Agree	2
7. Strongly Agree	
8. N/A	
8. I can imagine other scenarios where a Linking service would be extremely useful to provide seamless control over the release of my attributes	
1. Strongly Disagree	
2. Disagree	1
3. Slightly Disagree	
4. Don't Care	
5. Slightly Agree	4
6. Agree	1
7. Strongly Agree	2
8. N/A	
9. I would prefer each of my attribute providers(IdPs) to give me more control over the release of my attributes from its own web site	
1. Strongly Disagree	
2. Disagree	
3. Slightly Disagree	
4. Don't Care	5
5. Slightly Agree	1
6. Agree	
7. Strongly Agree	2
8. N/A	
10. I would prefer other services or administrators to handle the release of my attributes rather than me	
1. Strongly Disagree	
2. Disagree	2
3. Slightly Disagree	
4. Don't Care	3
5. Slightly Agree	
6. Agree	3
7. Strongly Agree	
8. N/A	
11. I would recommend the Shintau Infrastructure as an effective solution for remote attribute release and consent management	
1. Strongly Disagree	
2. Disagree	1
3. Slightly Disagree	
4. Don't Care	2
5. Slightly Agree	

6. Agree	4
7. Strongly Agree	1
8. N/A	
12. I think Shintau should be included with the Shibboleth Software	
1. Strongly Disagree	
2. Disagree	1
3. Slightly Disagree	1
4. Don't Care	1
5. Slightly Agree	1
6. Agree	2
7. Strongly Agree	1
8. N/A	1
13. Access to services is far more important to me than protecting the release of my attributes	
1. Strongly Disagree	
2. Disagree	
3. Slightly Disagree	1
4. Don't Care	4
5. Slightly Agree	1
6. Agree	2
7. Strongly Agree	
8. N/A	
14. The UK Access Management Federation should consider supporting the Shintau infrastructure for attribute consent management	
1. Strongly Disagree	
2. Disagree	
3. Slightly Disagree	
4. Don't Care	3
5. Slightly Agree	1
6. Agree	1
7. Strongly Agree	2
8. N/A	1
15. Would you be prepared to use the Shintau software as the default way in which security oriented resources were accessed in the future	
1. Strongly Disagree	
2. Disagree	1
3. Slightly Disagree	
4. Don't Care	2
5. Slightly Agree	2
6. Agree	3
7. Strongly Agree	
8. N/A	