	TECHNOLOGY PARTNERSHIP - QUESTIONS AND RESPONSES	
No	**Question**	**Response**
1	Is there a minimum annual turnover a company must have in order to bid for the above contract?	In line with the Public Contracts Regulations (PCR2015) the minimum yearly turnover companies are required to have shall not exceed twice the estimated contract value exclusive of Value Added Tax (VAT). The estimated contract value exclusive of VAT is £5.25 million and companies must have an annual turnover of a minimum of £10.5 million in order to bid. The relevant provision in PCR2015 is 58. (9) and can be found at this link http://www.legislation.gov.uk/uksi/2015/102/regulation/58/made This response was amended on 29 October. The required minimum annual turnover was originally stated to be £12m. The correct figure is £10.5m as now stated.
2	I couldn't seem to find detail in the guidance documentation of when the development was expected to be complete?	The development milestones can be found on pages 9 and 12 of the specification document, which can be found at https://www.hdruk.ac.uk/gateway-development-phase-2/, with a final completion date of 30 April 2022.
3	Are you able to provide any budget guidance for the development?	The maximum total budget for this procurement excluding the rapid development task (i.e. design, development and operation of the Gateway to April 2022, Milestones 2-5) is £6.3 million inclusive of VAT.
4	We understand minimal viable services are being developed by a current supplier. Is it possible to contact this company to explore consortium bids?	HDR UK expects to announce the names of the Gateway Phase 1 delivery partners in the next couple of days. You may contact any company to explore consortium bids.
5	Regarding this section of the tender: 'Following interviews, a shortlist of no more than 3 applicants will be invited to take part in a rapid development exercise. This will take place over 8 weeks and will involve the shortlisted applicants working independently to build and test a specified functional component of the Gateway. The HDR UK team will work alongside each applicant over this period and the work will be remunerated according to the contract for this task. Following completion of this task, HDR UK will select a partner based on the completed component and the experience over the rapid development period.' Would this be a process the potential applicants would have to attend without payment?	Applicants will be remunerated for taking part in the rapid development exercise in accordance with a contract to be agreed with the shortlisted applicants. The contract for the rapid development exercise will be provided on 22 November to suppliers who are invited to submit a proposal.
6	In section 3.6 Value for Money you state 'The maximum total budget for this procurement excluding the rapid development task (i.e. design, development and operation of the Gateway to April 2022, Milestones 2-5) is £6.3 million.' Please can you confirm if the £6.3 million is exclusive or inclusive of VAT.	The figure of £6.3 million is inclusive of VAT (Value Added Tax). The net figure is £5.25 million.
7	In your FAQs document, the response to the first question is: In line with the Public Contracts Regulations (PCR2015) the minimum yearly turnover companies are required to have shall not exceed twice the estimated contract value. The estimated contract value is £6.3 million and companies must have an annual turnover of a minimum of £12 million in order to bid. We would like to check: The contract value is £6.3m over 2 years i.e. £3.15m per annum. Can you confirm that when reviewing turnover to contract value, we should consider the threshold is twice the lifetime value of the contract or twice the annual value of the contract?	We can confirm that the threshold is twice the lifetime value of the contract. The contract value is £5.25 million excluding Value Added Tax (VAT) and companies must have an annual turnover of £10.5 million in order to bid. In line with Regulation 6. (1) of PCR 2015, the calculation of the estimated value of a procurement shall be based on the total amount payable, net of VAT, as estimated by the contracting authority, including any form of option and any renewals of the contracts as explicitly set out in the procurement documents.
8	Is there anything that the MVP partners know that may give them a strategic advantage in this call?	No. The Minimum Viable Product (MVP) is being developed to ensure that the learnings and outputs can be reused and that the MVP process does not confer an advantage on the partners involved.

9	Are there any areas of the Service not currently being fulfilled through your current incumbent supply chain that you would like to see addressed through this procurement.	The current service is a limited scope MVP (Minimum Viable Product). The procurement is to address the development, delivery and operation of a production Gateway to address the functionality described in the specification.
10	Does the engagement allow for offshore, or hybrid offshore/onsite development resources?	We would consider a hybrid approach however this is an Agile project and will require regular face to face interaction with HDR UK and our broad stakeholder community in the UK.
11	Should we expect any additional information describing product functionality in more details during the RFP stage? Otherwise - is it safe to assume that we should prepare a detailed project plan / roadmap based on the existing information?	This is an Agile project where requirements will evolve during the course of the project and therefore we will not be providing any additional information during the RFP (Request for Proposal) stage. Your assumption is valid.
12	Seems like security of handling requests will be key - interested in how that will be specified/measured	HDR UK is not taking responsibility for the handling of data access requests. This will remain with the data custodians. The Innovation Gateway is intended to provide an enhanced front end to these processes.
13	What Framework is this contract under?	The contract is not being let under any existing Framework. The requirement has been posted to OJEU (the Official Journal of the European Union) using the Innovation Partnership process and therefore is open to any supplier that is interested in submitting a bid.
14	Who needs to submit Questionnaire Parts 1 and 2 that each member of the consortium will complete - the individual organisations themselves, or the lead organisation ?	Our preference would be for the lead organisation to co-ordinate the response and therefore should submit Parts 1 and 2 for supporting organisations. However, if the supporting organisation did submit directly this would be picked up as long as they provide an answer to 1.2 (a) - (ii) Name of group of economic operators.
15	What are the Open Source components that are in the existing software architecture?	The MVP (Minimum Viable Product) architecture is under development and all outputs will be open source and so available to the successful supplier.
16	The Tech Spec states the Gateway should be developed with all components developed in the open, using open source principles incorporating best practice in security, reliability, availability and scalability such that it can meet the business critical requirements. Whilst all platform services should ensure they utilise Open Standards wherever possible to support their integration and the ability to easily swap services / components in and out with minimal rework we think there are some licensed software products that would provide a good basis for the strategic roadmap which whilst having a license cost associated with them would be portable across different cloud providers. Can you clarify if these products could be submitted as non-strategic technology choices for validation by the formal governance process ?	Our principle is that open source should be used wherever possible and that all development funded by HDR UK will be made available as open source. If you consider that a licenced software package would be best of breed for a functional component this could discussed during development however it would not be our preference and we would seek assurance to avoid platform lock-in.
17	Is Security Clearance required for the people who will deliver the project? And if yes, at what level please ?	No. Security clearance is not required.
18	Does the Provision of the Cloud service form part of this bid or it is contracted separately ?	Yes, this is an operational as well as development contract.
19	To clarify any assumption that could be made relating to patients feedback requirement can you please advise:- - what will the patients feedback be used for? - how will it be used ? - where will it be used ? - is there any expectation on what platform this feedback will be presented on? - will patients have access to the portal to access information held on themselves by the Trustees? - are patients to leave feedback on the portal ? - Freedom of Information Act	The Gateway provides services to support the research and innovation community. It will not provide direct access to the data and patient feedback on data will be through the data custodians. However, we expect patient involvement and engagement in the development process of the Gateway.
20	It is assumed the patient feedback will be used by the Data Custodians to improve the quality of data held in the Hub - is this a correction assumption ?	The Gateway provides services to support the research and innovation community. It will not provide direct access to the data and patient feedback on data will be through the data custodians.
21	Is the assumption correct that the data hubs are hosted within the Trusted Research Environments?	Yes. HDR UK's opinion is that all analysis should be conducted within Trusted Research Environments.
22	Is training only required for HDR UK team and the Data Custodians?	Yes, training is only required for HDR UK team and the Data Custodians.

23	It is assumed the capabilities outlined within the Spec Doc (Pages 12 and 13) for delivering each milestone is the basic functions needed for training the HDR UK team and Data Custodians. Is this assumption correct? If so: - Are there capabilities listed on the doc that will not be required for training? i.e Process - Are there capabilities/functions not listed on the doc that may be required for training?	This is an Agile project and the requirements for training will evolve during the project.
24	Are there preferences on what the training materials should be? E.g. Should it be in the form of a video or slideshow?	Details will be defined later with the successful supplier.
25	Are training materials to be grouped by milestones? or at a even lower level i.e. features such as Dashboard, Access Request Management?	Details will be defined later with the successful suppler.
26	Is the purpose of the training material to demonstrate how to manage the Gateway from an administrator perspective? Or how to use the Gateway from an end user perspective?	End users should be supported through the Gateway by intuitive design with appropriate context based help.
27	Appendix 1 states 2 different completion dates for the Rapid Deployment Development task - 20th March 2020 (pg 12) and 27th March 2020 in the capabilities table (pg 13). Which is the correct date ?	20th March - Date for completion of the Rapid development task. 27th March - Date for the selection of the Technology Partner.
28	Could you explain the relationship between the infrastructure and the DIHs?	The Health Data Research Hubs will be members of the UK Health Data Alliance and as such will be making their data available for discovery though the Gateway
29	Clarity on the IP requirements and the process to manage background IP.	Our principle is that open source should be used wherever possible and that all development funded by HDR UK will be made available as open source. If you consider that a licenced software package would be best of breed for a functional component this could discussed during development however it would not be our preference and we would seek assurance to avoid platform lock-in. It is expected that any background IP that is required for newly developed capability to be licenced under a free, non-exclusive perpetual licence.
30	Is it expected that any 3rd party tooling/licencing costings for the 2 years will be included in the response?	Yes. Any response that requires 3rd party tooling/licencing should include the costs within the pricing model for your proposal.
31	Will the outputs of the MVP adhere to the earlier stated principles, specifically will they be open and available to all interested parties + bidders?	It is a fundamental principle of HDR UK that our funded development will be made available as open source. All MVP (Minimum Viable Product) outputs will be available to the successful partner and also to the wider community. We want to develop a community that will develop a rich set of tools over the coming years.
32	The proposals should be centred around public and patients. Should the supplier have access to the groups already in place or can HDR UK provide access to suitable groups for user research?	We will be providing the successful supplier with access to the user community . We have a Health Data Research Public Advisory Board that will be actively involved in this process including the supplier selection process. The successful supplier will be working with the Public Advisory Board as well as with our broad user community. We have run design workshops in the work preceding the MVPs (Minimum Viable Products) so we have very engaged users who will provide high quality input.
33	I can imagine that a potential consortium might include, for example, existing HDR UK academic members. Is this OK, or excluded due to potential conflict of interest?	It is not excluded due to potential conflict of interests. We expect that some of the proposals will include academics that have a relationship with HDR UK.
34	Are you looking for bids that cover all three aspects or are you accepting bids that only cover part of the wider ecosystem?	We are looking for a bid that covers all aspects of the procurement. We do have an expectation that some bids may not be from a single supplier, and that we may see bids come from consortia that cover different aspects of the procurement coming together under a legal organisation. So there is an approach that if you have strengths in one particular aspect, that you can collaborate with others, but we expect the proposals to address the whole of the procurement.

35	What are the goals and success metric from MVP - Phase 1?	The goal of the MVP (Minimum Viable Product) is to be able to bring together the metadata from key datasets, and to provide an exemplary discovery experience i.e. search and browse experience over that metadata. We have clearly set out to the suppliers what we are looking for from that experience. The key is getting a really exemplary user experience, building on the knowledge that came from the NIHR (National Institute for Health Research) funded Health Data Finder. The specification documents for Phase 1 are available on our website at https://www.hdruk.ac.uk/gateway-development/
36	Is this project entirely technology agnostic or is there a preference for any specific tech for reasons of supportability, efficiency etc?	At this point the procurement is technology agnostic. As we go through the co-development of the Innovation Gateway we will work with the supplier to ensure that we have technology that meets the guiding principles around security, availability, supportability etc. That will form part of the design and development phase and it is likely those technologies will change which is one of the reasons we need this to be Agile, to be modular, and make best use of API technologies as it is going to evolve over the next 2- 5 years.
37	Can a sub-contractor be on more than one bid?	There is no reason why a sub-contractor cannot partake in more than one bid.
38	Please can you confirm when and where the slides from this webinar will be available?	The slides will be made available on our Phase 2 webpage of our website later this afternoon. The recording will also go on to the same page.
39	Envisaged ROM demographics for the gateway architecture: a. Range /number of concurrent users b. Number of separate upstream data sources / linkages (federated data end points) c. Technology range / variety of Trusted Research Environments d. Volumes of data and data types anticipated (day 1 …… year 3)	It is difficult to be precise about the level of usage to be expected once the Innovation Gateway is in production usage so these are order of magnitude estimates; a. High number of registered users (1000s) but low concurrent use (10s) as this isn't an analysis platform. b. 1000s of datasets with 10s of linkages to other federated sources, metadata catalogues. c. 5-10 TREs. Some specialised (e.g. imaging with high GPU capability) some more general. d. Unknown. Data will not flow through the Innovation Gateway so this should not affect design.
40	What are the data services /products that will be provided through the Gateway: a. What, to whom, anticipated usage / demographics	Services to be provided are shown in the specification. Data products and services will be provided by users of the Innovation Gateway such as the Health Data Research Hubs.
41	High level architecture definition /diagram – is there anything that can be circulated (functional & technical)	The architecture will be co-developed with the successful supplier. As an agile, design-led project the first phase of development will include detailed user requirements analysis and this will help determine the most appropriate architecture.
42	May /buy components: a. Will a solution comprising components of commercial software be accepted as an enabler to de-risk and reduce delivery lead times for the design & build b. If the above is an acceptable approach, will providing such software on a perpetual license basis be ok? c. How would HDR UK align the use of such components with the open source policy as envisaged by HDR UK	Our principle is that open source should be used wherever possible and that all development funded by HDR UK will be made available as open source. If you consider that a licenced software package would be best of breed for a functional component this could discussed during development however it would not be our preference and we would seek assurance to avoid platform lock-in.
43	Does the software development have to happen onsite or can it be offsite? If so, can it be done 'nearshore'	We would consider a hybrid approach of onshore and offshore however this is an Agile project and will require regular face to face interaction with HDR UK and our broad stakeholder community in the UK. Onshore resources are not expected to be co-located with HDR UK.
44	Do the references have to be with UK-based companies? (we have very strong and relevant non-UK references)	The references do not have to be with UK based companies. The relevance to our requirement is important.
45	Please can you confirm the technology solutions and frameworks you are using in the MVP underway as part of Phase 1 of the programme?	Details of the solutions being used for the MVP (Minimum Viable Product) are provided at https://www.hdruk.ac.uk/gateway-development/ An announcement of the other partners for Phase 1 will be released week commencing 11/11/19.

46	What metadata and data sets are you targeting first in the MVP and early roadmap for the Gateway?	We will shortly be making available a metadata specification that will describe the dataset and variable level metadata for the first stage of onboarding. We are working with the hubs and Alliance members to prioritise datasets for onboarding and this will be addressed as a separate agile project. These datasets will reflect a refresh of the HDF datasets, initial datasets from the Health Data Research Hubs and from the UK Health Data Research Alliance.
47	Do you require solution and cloud service platform suppliers to be included in the RFI response for 15th November or can these be added as the procurement progresses?	Details of solution partners that have already been identified should be included within the Standard Selection Questionnaire response.
48	Portal function - Discover: is this functionality based on the metadata that is onboarded onto the Gateway Portal only? That is, for the Discover function the Gateway Portal would not query actual data held by Alliance or Hub members.	As this is an agile project using a design thinking methodology these will be refined during the design and user analysis.
49	Portal function - Discover: is this functionality based on the metadata that is onboarded onto the Gateway Portal only? That is, for the Discover function the Gateway Portal would not query actual data held by Alliance or Hub members.	As outlined in the specification initial search experience will be through metadata only, however this will be enhanced through semantic search and cohort identification that will require search over remotely held data. This will require remote search and not be based on importing of data into the Gateway.
50	TRE Integration: Are the owners/operators of the TREs responsible for standing up CI/CD pipelines for provisioning and deployment of containerised workloads into those environments and expose the pipelines so that the pipelines can be accessed via the Gateway Portal and used by data custodians to provision the workloads required by end users?	There will be a joint responsibility to develop an approach to deploy containerised workload into TREs. The specification includes functionality for a tools repository that will need to be integrated with TREs.
51	Operations: Milestone 5 specifies "Full 365 * 24 *7 production operations to support international usage". What is the expectation in terms of operations support prior to Milestone 5 - reasonable endeavour and UK business hours?	The initial Service Level Agreement (SLA) details will apply for part of the contract. The details in the specification are indicative of the initial SLA. The development will need to support the potential requirement to move to a more rigorous SLA but the operational aspects of this would be negotiated separately. The specification includes this as suppliers will need to have the infrastructure to support a 24*7 support and operations infrastructure.
52	Monitoring: what are the system monitoring requirements?	As this is an agile project using a design thinking methodology these will be refined during the design and user analysis.
53	DevOps: what are the DevOps requirements?	As this is an agile project using a design thinking methodology these will be refined during the design and user analysis.
54	Containerisation: what is the requirement of containerisation? The Technology Partnership Specification mentioned in passing containers and containerised workloads but does not make it clear the extent of containerisation or whether orchestrated containerisation required. For example, would the use of Kubernetes or Openshift as a container platform be required, encouraged or desired?	As this is an agile project using a design thinking methodology these will be refined during the design and user analysis.
55	Geographic cover: the Technology Partnership Specification states that "The Gateway will be designed to operate at a national and international scale". Which geographic locations are required to access the Gateway and what are the expected performance?	The initial focus will be on the UK. However it is expected that academic researchers and industry from outside the UK will be active users. The datasets will however be exclusively from UK data custodians. Performance requirements will be refined during the design and user analysis.
56	Data centre locations: are there any restrictions where the data centres should be (in cloud)?	We have not currently placed any restrictions on the hosting the application. The Gateway will not be holding health data, only metadata.
57	Disaster Recovery: what is the expectation of the HDR UK, if any, in terms of DR patterns?	The indicative requirements for recovery are outlined in the specification. Suppliers will be expected to configure to meet these requirements. This will be a public cloud only deployment.
58	Aside from cohort Identification can you please outline the other search criteria expected for the end users?	The high level search and browse requirement are described in the specification, these will be refined during the design and user analysis.
59	In the scenario that end-user is not happy with the data results, how is this process handled?	The Gateway will provide user feedback support. In addition it is expect that all search operations will be logged to allow for continued improvement.
60	Gateway support operations - can this be run by teams working outside the UK ?	Yes.

61	On the functional Spec It mentions “Gap analysis will be conducted to identify searches that do not yield results to support prioritisation of dataset onboarding and improvement to search functionality” But how will this process look like? I.e. - User views and searches for data set - Data set is returned but does not contain all the information required by user - User submits form request expressing their dissatisfaction - Form completion triggers the Gap analysis mentioned on the functional spec	As this is an agile project using a design thinking methodology these will be refined during the design and user analysis.
62	TRE Integration: are the analytical workspaces to be provided in the Gateway or TREs but accessible in the Gateway through integration with TREs?	All analysis will take place in TREs. The Gateway will not provide workspace for analysis.
63	Please can you describe how you envisage the flow of the data from Data Alliance partners and TREs to the gateway and what is your expectation of the Technology partner to manage that end to end integration.	Data will not flow through the Gateway. The Gateway acts to provide discovery, access request management, tools repositories and integration with TREs. There is no data flow through the Gateway.
64	As part of the data flow, please can HDR provide details of your expectation of the deidentification and linkage integration between the alliance partners and the TREs.	Data will not flow through the Gateway. The Gateway acts to provide discovery, access request management, tools repositories and integration with TREs. There is no data flow through the Gateway.
65	Please could you provide details of the expected renumeration for the Rapid Development Task	This will be provided to successfully shortlisted suppliers once shortlisting has been completed. An indicative figure is £80,000 for the period
66	Please provide details of any anticipated storage or compute expected to be required in the gateway, for example related to any repositories required for repositories for artefacts such as shareable analytics, libraries and/or shared/collaboration areas.	The Gateway will not provide for an analytics environment and therefore the storage and compute will reflect the requirements to support the storage of metadata, tools artefacts, etc and the compute requirements for primary search and discovery.
67	Please could you provide details of the expected resources required in terms of skillsets and numbers for the Rapid Development Task to understand what is required so that we can provide the appropriate resources to support this.	This will be provided to successfully shortlisted suppliers once shortlisting has been completed. It is expected that the Rapid Development Task will require a team of less than five people, requiring skills in development, architecture and project management.
68	Please confirm that operational / BAU support can be operated from offshore.	Yes.
69	Please can you confirm how HDR UK will be funding this procurement?	The development of the Gateway is being funded as part of the £37.5M Industrial Strategy Challenge Fund Digital Innovation Hub Programme being delivered by HDR UK on behalf of UKRI (UK Research and Innovation). Further details on funding will be provided to suppliers shortlisted for the RFP (Request for Proposal) phase of the procurement.
70	[Section 3 - Required Training] Please confirm that at the Milestone date the training materials should have been developed and signed off and that after the Milestone the training should be delivered?	Details of the online training will be developed with the supplier. It is expected that online self-paced material will be developed to support the functionality delivered at each milestone. Training is not expected to represent a major element of the technology partnership but is there to support the usability of the delivered functionality.
71	Is there a requirement for a service desk? If there is, should we use ticket volumes or can HDR provide an assumption for consumption?	The supplier will be expected to meet the Service Level Agreement (SLA) requirements. The details of the SLA will be agreed during contracting however the Specification document provides guidance on the expectations. Suppliers should propose approaches to meet these requirements. As this is a new service we do not have a history of usage to guide estimates of ticket numbers. It is expected that support will be handled through online submission, tracking and resolution and that there will not be a need to either telephone support or livechat.
72	We have stated as part of the Selection Questionnaire that we are applying as a prime organisation with subcontractors. Can you confirm that we do not need to use a Heads of Terms agreement (as specified on pg 19 of Specification doc) as we are not a "consortium"? We intend to secure the services of our subcontractors via IBM Procurement following due diligence and teaming agreements.	A Heads of Terms agreement is only needed if you are applying as a consortium of suppliers. Sub-contractors will be subject to relevant terms and conditions contained in the main HDR UK contract.
73	[Appendix 4: Gateway Service Level Agreement] The proposed SLA states 24*7 availability with business support hours being 9-5. Is there an expectation that incidents outside of business support hours are remedied at that time or within the following business support hours window?	It is expected that issues reported outside of support hours will be addressed only during business support hours. However it is expected that the solution architecture will support automated restart and recovery to minimise disruption.

74	In the event that a proposed solution leverages licenced products would HDR UK be the licence holder or should that be retained by the supplier?	In this circumstance HDR UK will be the licence holder.
75	Three of the milestone dates are weekends - are these the confirmed dates for completion? (Milestone 2 - Saturday 31 Oct 2020, Milestone 4 Sunday 31 Oct 2021, Milestone 5 Saturday 30 April 2022)	The dates specified are the last day of each particular month. The milestones would be expected to be completed by the previous working day.
76	Do HDR have an LMS (Learning Management System) or LXP (Learning Experience Platform) capable of hosting and deploying digital learning content for learners on their delivery device (which has to be SCORM compliant)?	All training and support material should be delivered through the Innovation Gateway. The training is not expected to include either virtual or instructor led classes.
77	Do HDR LMS/LXP have the ability to plan and manage scheduled learning activities including virtual classroom? E.g. a Virtual Classroom delivery tool (e.g., WebEx or similar) with sufficient licenses to support the maximum number of learners who will be attending virtual classes.	Please see Q76.
78	Are there specific security standards (NIST/NHS) that the Gateway solution should adhere to?	It is expected that the solution will conform to ISO 27001 and respect the principles of the UK Data Service '5 Safes' https://www.ukdataservice.ac.uk/manage-data/legal-ethical/access-control/five-safes, as described in the HDR UK Principles of Participation
79	On your webinar recording there is information that you want to build the community around the project. We understand that the portal should include and would benefit of the functionality which enables collaboration and allows researchers to connect with like-minded colleagues. The specification shares ability to collaborate via GitHub, Slack, etc. Could you please elaborate a bit more, what social / collaboration capabilities do you envision right now?	We are indeed interested in building a community around the Gateway. The approach will be co-developed with the technology partner but some initial thoughts include the development of the tools repository back onto GitHub or GitLab. We would also looks at a collaboration tools such as Slack to provide a moderated community for discussing use, sharing insight in datasets and providing peer support.
80	Should the system allow users to provide the feedback to the data custodians and public about the data sources, i.e. data source quality, results they managed to receive, etc.?	Yes. We want to be able to provide feedback publicly on aspects such as data quality as well as reporting results achieved. We would also look to be able to provide mechanisms to provide feedback directly to data custodians.
81	Should the Portal include capabilities to provide some users with the possibility to add their datasources and streams to the system?	This is an aspect to be explored. The Gateway will need to support self-service onboarding of metadata associated with datasets. The governance associated with which organisation can onboard a dataset is likely to be managed through the UK Health Data Research Alliance.
82	Should the System provide abilities of datasource moderation and management (manual or automated)?	The Gateway will not hold datasets directly. The curation of datasets is expected to occur in safe environments under the stewardship of the data custodians.
83	Should the System work with the real-time streams (IOT, smart beds, etc.), to ensure the direct connection with doctors and patients?	The Gateway is intended to support research and innovation on health data, and not to be part of the NHS clinical infrastructure. The Gateway will not directly connect to clinical systems. It is however expected that the datasets available for research will increasingly include data from IoT (Internet of Things) resources.
84	Should it be possible to create cross-datasource data discovery when data from different sources could be joined in different ways?	This is a capability that would need to be supported as part of the development of the cohort identification capability for the Gateway.
85	Appendix 4 states “Operation of the Gateway will be required to meet the targets set out in a service level agreement. Details of the specifications of the service level agreement will be provided to suppliers who are invited to submit a proposal.” Should we expect further documentation here?	The current version of the service level agreement (SLA) is the one provided in Appendix 4. The detailed SLA will be agreed with the selected supplier during the contracting discussions.
86	How are you thinking the level 1 support will work between the gateway and the DIHs? Are you looking for one organisation to own the services desk across both?	There is no expectation that a common approach will be required for Level 1 support. Details of the support model for the Gateway will be agreed with the selected supplier but it should be anticipated that this will be an online only reactive model and no require telephone nor live webchat support.

87	Are you planning to bring in some form of subscription model in the future to the platform for third party organisations? If yes, will it involve subscription/fee to access the gateway portal itself or will this be open to be accessed by the public (and a subscriptions/fee is only required to access the data itself to run analytics)? - If there is a subscription/fee for access to the gateway, will this provide access to the DIHs as well (under the right governances) ? - Who will be marketing and managing these subscriptions/fees.	Each hub and data custodian is responsible for developing appropriate sustainable operating models to access the data. The Gateway will in the first instance make transparent these arrangements. The future operating model of the Gateway forms part of ongoing work across HDR UK, in consultation with patient and public representatives.
88	Are you able to share any information about the current status of the Phase 1 Gateway MVP? In particular the insights and lessons we're gaining and the technical architecture of the solutions.	We are proceeding with the development of the Minimum Viable Product (MVP) which will be delivered on the 10th January. The project consists of three elements. A Metadata Catalogue that has been supplied by the University of Oxford. This is supplied to HDR UK under a perpetual binary licence and access will be available to the Technology Partner. Initial metadata has been loaded for a large number of datasets with continued work in partnership with Parity and MetadataWorks. The final element of the MVP is the Portal which provides the front end. This is being built by IBM using React and Node.js. All code will be made available as Open Source and will not include external dependencies. The Portal is integrated with the Metadata Catalogue through RESTful APIs (Application Programming Interfaces). Full details of the Portal including user research and design will be made available to the Technology Partner.
89	What are HDR's expectations relating to what is meant by the curate library of algorithms? Is it: a) referencing a collection of coded logic that is accessed and run within HDR environment, b) does this mean the equivalent of containerised workloads being provided out of HDR to be loaded into authorised user environments? or c) both?	The Gateway is not providing a storage / compute environment, therefore the Tools Repository is providing a curated source of assets from code snippets through to full containerised workload which might then be deployed into Trusted Research Environments. This will be a curated repository so we can ensure quality management of the assets.
90	In the following statement, "Adapters to support at least 3 data custodians access management processes," is it a workflow system that takes in a user's request to access data at any one of the 3 data custodians and initiates an electronic submission that can then be tracked through to completion?	We expect this to be a workflow solution that takes a request which is then pre-validated possibly using a rules based approach to identify typical issues. This would then move to driving the data custodians' back end processes through to completion. The user would also be able to query to receive status updates on progress. The workflow would also be instrumented to provide metrics for service improvement by data custodians.
91	How many data providers and data sets are expected to be plugged into Gateway in Phase 2?	It is difficult to be precise about the volumes relating to the Gateway so the below are order of magnitude estimates: a. 1000s of datasets with 10s of linkages to other federated sources, metadata catalogues; b. 5-10 Trusted Research Environments. Some specialised e.g. imaging with high GPU (Graphics Processing Unit) capability, some more general; c. 100 distinct data custodians.
92	What and how many types of data sets will the Gateway deal with from those data providers. e.g. observational, claims, EHR, registries, genomics, and unstructured (articles)?	The Gateway will need to work with metadata from all modalities of datasets including structured, semi-structured, genomic and imaging data. However it is important to note that the data itself will not be hosted in the Gateway and will remain with the existing data custodians.
93	As data quality issues are expected across different data providers, is data harmonization/standardization for data providers will be considered in scope for Phase 2, including using standard data models and reference data (standardized medical vocabularies)?	The Gateway will not hold datasets directly. The curation of datasets is expected to occur in safe environments under the stewardship of the data custodians. However it is expected that the Gateway will be integrated with an Ontology service to support, for example, use of standard terminology for search and discovery, and cohort identification.
94	What is the data refresh frequency anticipated - per data provider/data type in scope for Phase 2?	Data will not flow through the Innovation Gateway so this should not affect design. The refresh period will vary across datasets. This will vary from static historic dataset, through to regularly updated datasets to near real time streaming data.
95	Please can you elaborate how you envision the flow of the data from Data Alliance partners and TREs (Hubs)?	Data will not flow through the Gateway. The Gateway acts to provide discovery, access request management, tools repositories and integration with Trusted Research Environments.

96	What is the user base, users' hierarchy (if any)? Is there a controlled group expected? Are there any existing personas describing users? a. Which user roles are expected for the portal? b. Are there specific restrictions to be applied to some international user groups (if any) e.g. based on geography, type of institution etc.?	During the Minimum Viable Product development, significant user research work has been undertaken and this has identified a range of personae. This work will be made available to the successful supplier. It is expected that some facilities will be openly available, such as search, but capabilities will only be available to registered and logged in users. Access to data will continue to be controlled by the data custodians, who will remain the legal data controllers. As such, they will continue to be responsible for ensuring that any restrictions on data access, such as for specific user groups are applied and that access is only available for ethical research and innovation that brings health and social care benefit.
97	What is the relationship/correlation between the implementation of "Allianz" and "Hubs" programs relative to Gateway?	The Health Data Research Hubs will be members of the UK Health Data Alliance and as such will be making their data available for discovery though the Gateway. For further information on the UK Health Data Alliance and Health Data Hubs visit our website https://www.hdruk.ac.uk/infrastructure/
98	Should Trusted Research Environment (TRE) financials be estimated in scope of this bid?	No. The bid should not include Trusted Research Environment (TRE) capability. The limit on scope is integration with TREs.
99	Will TRE environment include self-service components, i.e. so users will be able to develop their own workflows/pipelines, etc.?	This procurement does not include the provision of Trusted Research Environment (TRE) capability. The proposal should cover consideration on the development of a curated tools repository and integration with TREs to allow for the automated provision of capacity/workspaces and the deployment of workload.
100	Are there specific scalability requirements regarding each system component (Data Catalog, Gateway, and Portal) e.g. expected number of users?	It is difficult to be precise about the level of usage to be expected once the Innovation Gateway is in production usage but we expect a high number of registered users (1000s) but low concurrent use (10s) as this isn't an analysis platform.
101	Are patient committees the only way of patient involvement or other ways are anticipated, for their input into the development process of the Gateway? a. Can you provide more details about patient committees (how many exist or planned to be arranged, make-up, level of engagement they are assigned for)? Who will be responsible for creation of these committees? b. Could you please elaborate what level of in-person vs electronic communication is desired with the non-HDR stakeholders?	We will be providing the successful supplier with access to the user community . We have a Health Data Research Public Advisory Board that will be actively involved in this process including the supplier selection process. The successful supplier will be working with the Public Advisory Board as well as with our broad user community. We have run design workshops in the work preceding the Minimum Viable Products so we have very engaged users who will provide high quality input. It is expected that most of these engagements will be electronic however there will be a need for face to face engagement with our broad stakeholder community at times. HDR UK has a very strong commitment to Public and Patient Engagement and this will be central to this development.
102	Is there a preferred format or methodology for delivering the training for HDR team and wider users – e.g. some form of manual documentation or demo videos, etc.?	Details will be defined later with the successful supplier.
103	Are there any geographical restrictions for the offshore/remote locations of development resources?	There are no geographical restrictions. We would consider a hybrid approach of onshore and offshore however this is an Agile project and will require regular face to face interaction with HDR UK and our broad stakeholder community in the UK. Onshore resources are not expected to be co-located with HDR UK. Locations should be identified within your proposal.
104	Due to the nature of our business & local regulations, we cannot provide specific people CVs for the team role. Would it be ok to provide representative/sample CVs at this stage?	We will expect to see CVs (Curriculum Vitaes) for the key leadership roles. This is a technology partnership and therefore part of our evaluation will be based on the evidence of collaborative leadership and prior experience of delivering projects of this complexity.
105	Could you provide a brief description of the Operational Director project role?	The Operational Director role requires oversight of project delivery across the multiple teams and roles within the technology partnership. They are responsible for service and human elements (in contrast to the Technical Director who would be responsible for software).
106	Could you provide a brief description of the Public and Patient Lead project role?	The Public and Patient Lead has responsibility for ensuring patients and the public are involved in the development and governance of the programme, and will bring previous experience in this are to the role.
107	Do you expect technology partner's operations service to provide end user support?	Yes. The supplier will be responsible for the operation of the platform including user support.

108	Are there any specific security requirements for operational service & support teams? Will members of support team have access to PII data?	Security clearance is not required. The supplier staff will not have access to PII (Personally Identifiable Information) data.
109	Could you please clarify whether the requirement for milestone 2 “Fully operational to SLA operational requirements” implies 24x7x365 support as outlined in SLA section (Appendix 4)?	The proposed SLA (Service Level Agreement) states 24x7x365 availability with business support hours being 9am-5pm GMT. It is expected that issues reported outside of support hours will be addressed only during business support hours. However it is expected that the solution architecture will support automated restart and recovery to minimise disruption.
110	Is there a formal sign-off process for design authority/CTO approval?	A formal sign-off process will be included in the contract for the Technology Partnership and shared with the suppliers selected to deliver the Rapid Development Task.
111	Are you able to share with us the proposed architecture for phase 1 please? We need this to assess our capabilities of providing a solution to meet your requirements….	We are proceeding with the development of the Minimum Viable Product (MVP) which will be delivered on the 10th January. The project consists of three elements. A Metadata Catalogue that has been supplied by the University of Oxford. This is supplied to HDR UK under a perpetual binary licence and access will be available to the Technology Partner. Initial metadata has been loaded for a large number of datasets with continued work in partnership with Parity and MetadataWorks. The final element of the MVP is the Portal which provides the front end. This is being built by IBM using React and Node.js. All code will be made available as Open Source and will not include external dependencies. The Portal is integrated with the Metadata Catalogue through RESTful APIs (Application Programming Interfaces). Full details of the Portal including user research and design will be made available to the Technology Partner.
112	Regarding mention to individuals who will play a key role in the delivery, on Page 19, could you clarify what is expected of the "Operational director", "Project director" and "Public and Patient (Engagement) lead” please ?	The Operational Director role requires oversight of project delivery across the multiple teams and roles within the technology partnership. They are responsible for service and human elements (in contrast to the Technical Director who would be responsible for software). The Project Director will be responsible for the day-to-day delivery of the project and act as the primary contact delivery contact point for HDR UK. The Public and Patient Lead has responsibility for ensuring patients and the public are involved in the development and governance of the programme, and will bring previous experience in this area to the role.
113	Who do you see contacting the support organisation? Would you expect all service users to be able to contact i.e. public? Or will you be happy to have certain business champions or data stewards with the ability to raise technical tickets?	We expect all users to be able to contact the support organisation through online capability. However the support organisation will only have responsibility for the functional operation of the Gateway and not for queries related to the use or access to data.
114	Are you open to having business champions sitting between the support organisation and the front end to answer non-technical questions?	Non-technical questions around the use or access of data will not be the responsibility of the supplier. These will be redirected to either the appropriate data custodian or HDR UK. We will be working with the technology partner to develop the processes and tools to ensure these queries can efficiently separated and handled.
115	Who will provide approval for access, and who will perform the access?	At this point, approval for logged in access to the Gateway will be open to self-service registered users. If this needs to change, then this approval will be through HDR UK. Access to data will remain the responsibility of the data custodians.
116	Please can you confirm what you require for out of service support hours, but during operational hours i.e. if it is 2am and the system goes down, will there be someone available from the business to approve or give permissions for incidents or P1 fixes? What is required to be managed out of hours (if anything)	The proposed Service Level Agreement (SLA) states 24x7x365 availability with business support hours being 9am-5pm GMT (Greenwich Mean Time). It is expected that issues reported outside of support hours will be addressed only during business support hours. However it is expected that the solution architecture will support automated restart and recovery to minimise disruption.
117	Does each Hub/ data owner manage their own metadata catalogue or is it centralized? If not centralized will it be possible to extract/insert catalogue data via an API or import/export so that we can create a single search index and integrate properly?	The Minimum Viable Product (MVP) architecture has been based on a centralised Metadata Catalogue and it is expected that this approach will continue, however potentially federating with other local Metadata Catalogues to support access to deeper metadata. The current Metadata Catalogue supports APIs (Application Programming Interfaces) for import, export and search. As part of the MVP we have also developed web based tools to allow data custodians to import metadata into the catalogue.

118	Could you provide more information on the phenotype library in this context? Is it a collection of identifiers or pointers to parts of datasets that exist in one or more TRE's, grouped by phenotype?	Details of the functional requirements for the phenotype library support are still at an early stage of development alongside an ongoing HDR UK research project. It is likely the required capability will be based on extensions to a Metadata Catalogue with specific UI (User Interface) views. The capability is to provide a centralised repository of human and computer readable descriptions of the human phenotype rather than have this based on datasets held in TREs (Trusted Research Environments).
119	What is involved in cohort identification - does this equate to the ability to save a collection of data records or record types into a collection to make links between datasets?	We expect this to provide a capability to search a dataset (or group of datasets) to establish initially whether a cohort exists that match specific criteria with later capability to then provide ETL (Extract, Transform, Load) capability for deployment of the linked data into a TRE (Trusted Research Environment).
120	Could you briefly list the required functionalities for semantic search if these have been identified?	We have not identified details of the semantic search. However this is closely related to the requirements for cohort identification. The MVP (Minimum Viable Product) has been based purely around searching of metadata and it is expected that this will be sufficient for many users of the Gateway. Some use cases however require deep insight into the data itself, for example, to establish the number of records matching a specific age range and gender. This capability will also need to support integrated statistical disclosure control to provide security and to ensure that this capability is not used to conduct research that circumvents access request management.
121	We understand that no health data will be held in the gateway, but will any privacy/security/deidentification need to be applied to the data that is in the gateway (ie. metadata etc)?	There will be a requirement to work with HDR UK to continue to manage the metadata to ensure that no PII (Personally Identifiable Information) is exposed. We would be interested in developing options to automate the scanning of this information however this has been a manual process for the MVP (Minimum Viable Product). Depending on the approach to identity management there may also be requirements for security and privacy associated with this as well.
122	Can data be moved between TRE's or do they always need to be processed in place and then combined/federated?	Separate to this procurement, HDR UK are working on proposals with the UK Health Data Research Alliance around the characteristics of Trusted Research Environments (TREs). This recognises that there are use cases that are appropriate for distributed analytics avoiding the need for data travel but that there are others that will require the aggregation of data between TREs.
123	Is there any more information available on the TRE's, the platforms they run on and how they will need to be integrated with the gateway in terms of network connectivity etc? Are there any assumptions we can make about runtime environments available?	We have a UK Health Data Research Alliance working group developing our strategy around Trusted Research Environments (TREs). However this will be based on the characteristics of TREs rather than specific architectural requirements and it is expected that a range of TREs will meet these requirements. We would expect that HDR UK, the technology partner and the TRE providers will collaborate to agree tools to support deployment of workload into these environment and that these would exploit approaches and tools e.g. GA4GH (Global Alliance for Genomics and Health) WES (Workflow Execution Service)/TES (Task Execution Service) APIs (Application Programming Interfaces) and conform to open standards for describing and deploying containerised workflows e.g. CWL (Common Workflow Language)/WDL(Workflow Description Language).
124	Do we need to consider any license costs for products mentioned in the spec (eg, tranSMART, Talend, VM operating systems etc) that form part of the generic tools repository or will they be open source only?	Our development principles are based on an open source first approach. If your proposal includes using licenced software, we would expect a justification for the use of such software in preference to open source, and explanation as to how this will not restrict the use of the Gateway and for the associated licence costs to be included in the proposal.
125	We understand that any changes required within the TRE to deploy and run workloads/analytics etc originating from the gateway are not within the scope of the Phase 2 Gateway RFP. Is this correct?	This is correct. This procurement is associated with the Gateway and tools to support deployment, and does not cover any associated enhancements needed to TREs (Trusted Research Environments).
126	Answer 39 in the Q& A indicates there will be 1000s of datasets. Could you indicate a typical dataset size is in terms of schema size, number of classes, types etc to help with capacity planning?	There is a very significant variation in datasets as they will represent different modalities, obviously varying in breadth and depth. For the MVP (Minimum Viable Product) we have developed a Metadata Specification which can be found in the Supporting Documents on our website (https://www.hdruk.ac.uk/gateway-development-phase-2/), that describes the initial range of metadata that will needed to be hosted in the Gateway. Further examples can be seen in the Health Data Finder (http://www.hdf.nihr.ac.uk/) and in the underlying Metadata Catalogue (http://www.hdf.nihr.ac.uk/catalogue/#/catalogue/dataModel/all).

127	Is there an expectation that the Gateway UI extends into the TREs themselves, perhaps as an element within a standardised container approach, to better perform standard administrations tasks within the TRE itself?	There is no expectation that the UI (User Interface) extends to provide a common view of the workflow management in the TREs (Trusted Research Environments). However this is a co-development and we would be open to discussions with the technology partner and our stakeholders to understand whether this is a key priority and if so to include in the development.
128	Are you able to share any information about the current status of the Phase 1 Gateway MVP? In particular the insights and lessons learned and the technical architecture of the solution?	We are proceeding with the development of the Minimum Viable Product (MVP) which will be delivered on the 10th January. The project consists of three elements. A Metadata Catalogue that has been supplied by the University of Oxford. This is supplied to HDR UK under a perpetual binary licence and access will be available to the Technology Partner. Initial metadata has been loaded for a large number of datasets with continued work in partnership with Parity and MetadataWorks. The final element of the MVP is the Portal which provides the front end. This is being built by IBM using React and Node.js. All code will be made available as Open Source and will not include external dependencies. The Portal is integrated with the Metadata Catalogue through RESTful APIs (Application Programming Interfaces). Full details of the Portal including user research and design will be made available to the Technology Partner.
129	Can you share the detailed outcomes of the user research that you have performed to date? We are curious to understand what user groups you have identified in particular?	During the MVP (Minimum Viable Product), significant user research work has been undertaken and this has identified a range of personae. This work will be made available to the successful supplier. A total of 14 different personae were identified during this analysis with the focus on pharma researcher, medtech innovator, academic research (experienced and 'novice'), data custodian and member of the public.
130	Do you require provision for a period of hypercare or any services beyond Milestone 5 on 30 April 2022 within the scope of Phase 2?	This procurement is only to the end of Milestone 5. Support and development before and after this will be addressed separately.
131	Is there a requirement for granular security in the search subsystem or can anyone search/view all content?	For the MVP (Minimum Viable Product) we have taken the approach that all content will be openly searchable. Details for the Phase 2 are still to be developed but our current view is that most if not all metadata driven content will be available to all users. However it is likely that there will need to be more granular security around semantic search and potentially a need to support this for some more sensitive metadata in the future.