

DPS FRAMEWORK SCHEDULE 4: LETTER OF APPOINTMENT AND CONTRACT TERMS

Part 1: Letter of Appointment

Dear Sirs

Letter of Appointment

This letter of Appointment dated 18/02/2020, is issued in accordance with the provisions of the DPS Agreement (RM6018) between CCS and the Supplier.

Capitalised terms and expressions used in this letter have the same meanings as in the Contract Terms unless the context otherwise requires.

Order Number	██████████
From:	Independent Commission on Civil Aviation Noise ("Customer")
To:	National Centre for Social Research (Natcen) ("Supplier")

Effective Date:	24/02/2020
Expiry Date:	End date of Initial Period: 20/09/2020 End date of Maximum Extension Period: 11/01/2021 Minimum written notice to Supplier in respect of extension: 30 days

Services required:	Set out in Section 2, Part B (Specification) of the DPS Agreement and refined by the Customer's Project Specification attached at Annex A and the Supplier's Proposal attached at Annex B; and the Price Schedule and Rate Card attached at Annex C.
--------------------	--

Key Individuals:	For the Customer: ██████████ ██████████
------------------	---

	<p>For the Supplier:</p> <p>████████████████████</p> <p>████████████████████</p> <p>████████████████████</p> <p>████████████████████</p>
Guarantor(s)	N/A

Contract Charges (including any applicable discount(s), but excluding VAT):	The total contract value is £99,866.00 (excluding VAT and excluding the extension option).
Insurance Requirements	As per RM6018 Contract Terms.
Liability Requirements	As per RM6018 Contract Terms.
Customer billing address for invoicing:	<p>Invoices should be submitted to: ICCAN, Spaces, Albion House, High Street, Woking, GU21 6BG.</p> <p>Payment can only be made following satisfactory delivery of pre-agreed certified products and deliverables.</p> <p>Before payment can be considered, each invoice must include a detailed elemental breakdown of work completed and the associated costs.</p>

GDPR	See Contract Terms Schedule 7: Processing, Personal Data and Data Subjects
Alternative and/or additional provisions (including Schedule 8 (Additional clauses)):	N/A

FORMATION OF CONTRACT

BY SIGNING AND RETURNING THIS LETTER OF APPOINTMENT (which may be done by electronic means) the Supplier agrees to enter a Contract with the Customer to provide the Services in accordance with the terms of this letter and the Contract Terms.

The Parties hereby acknowledge and agree that they have read this letter and the Contract Terms.

The Parties hereby acknowledge and agree that this Contract shall be formed when the Customer acknowledges (which may be done by electronic means) the receipt of the signed copy of this letter from the Supplier within two (2) Working Days from such receipt

For and on behalf of the Supplier:

For and on behalf of the Customer:

Name and Title:

, Director of Methods

Name and Title:

 Commercial Manager)

Signature:



Signature:



Date: 19/02/2020

Date: 21/02/2020

Annex A

Customer Project Specification

1. SCOPE OF REQUIREMENT

1.1 Aims

1.2 The overall aim of this project is to develop a robust and practical design that meets stakeholders' needs and helps community groups to have confidence in its design and results and, in turn, as an evidence base for policy decisions on aviation noise.

1.3 The design for the new survey shall:

1.4 Provide up to date evidence on attitudes towards aviation noise, which factors influence attitudes and the effect of aviation noise on people's attitudes, health, quality of life and wellbeing at different noise exposure levels over time;

1.5 Be a highly robust and representative survey;

1.6 Provide evidence to determine thresholds for community impacts to inform policy decisions by government and airports;

1.7 Be set up in a way to allow it to be repeated regularly to track change over time and provide evidence on the change effect which could be used in assessing the impact of changes more accurately and allow for this evidence to be incorporated into policy decisions;

1.8 Incorporate more information on health, quality of life and wellbeing to be used to monitor the impacts of aviation noise over time;

1.9 Provide clear, transparent evidence to the general public and external stakeholders;

1.10 Provide value for money.

2. OBJECTIVES

2.1 The principal objective for this project is to develop a design for the new aviation noise attitude survey. This includes:

2.2 To develop a design for the new survey. This shall involve developing detailed options on a number of issues including the target population, sampling methods, sample sizes, survey mode, and costs. These options shall be presented to the Customer for consideration and shall be discussed with relevant stakeholders. The Customer shall then consider which option to take forward.

2.3 This shall require the Successful Supplier to develop detailed options on the methodological questions set out below:

2.4 Scope of population

2.5 How can the survey include noise contours at a level below that used in SoNA to balance robustness of results, value for money and accuracy of lower noise estimates?

- 2.6 The Customer requires options to be presented which consider the size of the population at these lower contours, the sample size needed in order to obtain accurate results, fieldwork costs, fieldwork feasibility, and the accuracy of noise estimates at these lower contours. The options shall also need to consider the case for examining existing thresholds such as the current Lowest Observable Adverse Effect Level (LOAEL) and the World Health Organisation (WHO) Environmental Guidelines for the European Region (2018).
- 2.7 Work shall include mapping noise contours using existing noise metrics (which the Customer shall facilitate access to) and obtaining population sizes within these contours, sample size and cost estimation. Furthermore, the Supplier shall need to speak to relevant experts about the accuracy of noise estimates and current noise thresholds (which the Customer shall facilitate).
- 2.8 Should the survey get a national view of a large number of airports or focus on fewer airports but with increased sample coverage around them?
- 2.9 The Customer requires options to be presented which weigh up the pros and cons of getting a national view of airports and focussing on a smaller number of airports. This should consider population sizes around airports, sample sizes needed in order to obtain robust results, fieldwork costs, fieldwork feasibility, and how the survey data can be used.
- 2.10 When considering the option of looking at fewer airports, the Customer would like to look at options for which airports could be included in order to meet the surveys overall objectives. In order to facilitate this, the Customer requires the top ten (10) airports to be classified according to factors that may affect the survey topics. This may include factors such as airport size, area of the UK, surrounded by rural or urban areas, engagement between the airport and community, number and density of population around the airport and within noise contours, demographics/characteristics of the population near the airport, if there has been recent change to airport operations or there is one expected, whether they deal with freight, and whether or not they operate night flights. The Customer can assist with populating this from their knowledge of airports.
- 2.11 The Successful Supplier may want to analyse the SoNA 2014 data in order to examine whether any differences between attitudes around different airports can be detected.
- 2.12 How could the survey be designed to include relevant flight operational changes and their influence on annoyance? For example, those who are/shall be newly overflown vs. those who have been overflown for some time, those who get respite vs. those who don't, those who experience one mode of airport operation vs. those who experience another (e.g. westerly vs. easterly operations).
- 2.13 The Successful Supplier shall assess whether these comparisons are possible in the main survey or whether 'boost' samples in particular areas would be needed. The Customer requires options to be presented which consider the sample sizes needed in order to obtain accurate results, fieldwork costs, and fieldwork feasibility.

- 2.14 Should the survey interview one adult in each household, or should they also include children resident in the household?
- 2.15 The Customer requires options to be presented for including children in the household which should consider likely population sizes, estimated sample sizes, accuracy of results, fieldwork costs, fieldwork feasibility and consent and ethical issues. It should also consider the benefits of obtaining data from children to the overall evidence base which may involve reviewing existing relevant research involving children.
- 2.16 Survey mode
- 2.17 Are other modes of interview feasible other than face-to-face interviewing, including mixed modes of contact and interview?
- 2.18 The Successful Supplier shall consider whether survey modes other than face-to-face interviews, including online approaches, are feasible. The Successful Supplier should present options for different modes (or mixed modes) with the pros and cons for each mode. If Suppliers consider that trials of other modes would be necessary then they should detail the rationale, method and costs in the tender.
- 2.19 Sampling
- 2.20 What is the best way to sample to ensure the survey achieves a representative sample of noise exposures?
- 2.21 The Customer would like the Successful Supplier to consider whether noise metrics are the best way to achieve a representative sample for the survey or whether other strategies used in other similar research (for example using distance from the airport or flight paths) would be more appropriate.
- 2.22 The Successful Supplier shall examine a selection of relevant noise metrics (likely to include LAeq, Lden, N65 and N70) to examine how appropriate they are to use when selecting a sample. The use of multiple noise metrics in combination should also be considered.
- 2.23 The use of other factors that may influence responses should also be considered in order to create a representative sample. This may include ensuring a spread of different modes of airport operation or areas that get respite and those that do not.
- 2.24 The new survey may include questions on sleep disturbance. Therefore, the Customer requires the Supplier to consider options for including night noise metrics in the sampling to ensure a representative sample is achieved.
- 2.25 This work is likely to involve examining maps of different noise metrics around airports included in the sample and analysing SoNA 2014 data to look at the correlation of noise metrics with key survey variables. Sample sizes, precision of results, fieldwork costs and fieldwork feasibility should also be considered. It shall include an appraisal of the strengths and weaknesses of the various options available.
- 2.26 Is clustered sampling the best approach to use? If so, how could it be done to ensure robust coverage of the population?

- 2.27 The Customer would like the Successful Supplier to present the pros and cons of various options considering precision of the results, representative coverage of the population, fieldwork feasibility and survey costs.
- 2.28 Is disproportionate sampling needed and, if so, where?
- 2.29 The Successful Supplier shall present the pros and cons of various options considering sub-group analysis, precision of the results, representative coverage of the population, fieldwork feasibility and survey costs.
- 2.30 What sample sizes are needed to robustly conduct the analysis required?
- 2.31 The Successful Supplier shall present the pros and cons for various sample sizes options and outline the precision of the data, representative coverage of the population, sub-group analysis, fieldwork feasibility and survey costs for each option in order to make an informed decision on the survey design which balances robustness, practicality and value for money. The calculations used shall be provided to the Customer.
- 2.32 Time series
- 2.33 How can this new survey be set up to ensure that it can be conducted regularly over time to build up a robust timeseries?
- 2.34 The Customer requires the Successful Supplier to present the pros and cons of a cross-sectional time series and a longitudinal study considering the sample sizes needed, accuracy of results, representativeness of the survey over time, feasibility and survey costs.
- 2.35 The Customer would like to ensure that the new survey can contribute to the evidence base on the change effect. How could the new survey help add to the evidence base on the change effect?
- 2.36 The Successful Supplier shall also evaluate whether the survey should be run in the same way for each wave or whether it is possible to rotate modules of the survey or the survey population (for example rotating which airports are covered) for each wave.
- 2.37 How frequently might the survey be run?
- 2.38 The Supplier shall evaluate options for how frequently the survey should be run in order to build a robust time series. This may involve investigating whether there are similar previous surveys which can be analysed to examine how quickly attitudes towards aviation noise change over time and what types of changes in noise have low/high effects on attitudes.
- 2.39 Should the survey seek compatibility with other historic UK noise topic surveys, or international studies; and, if so, to what extent?
- 2.40 Once options for the new survey design have been agreed, the Customer would like to look at whether the results would be comparable with other historic UK noise topic surveys or international studies. If not, then the Customer would like to consider whether any calculations would be possible which would allow the results to be adjusted to allow for comparisons to be made. If a calculation is possible, it should be presented with an assessment of the robustness of the method.

- 2.41 Questionnaire
- 2.42 Did the questions in the SoNA 2014 questionnaire work well or are there any improvements that could be made?
- 2.43 The Successful Supplier should conduct a full review of the SoNA 2014 questionnaire.
- 2.44 In particular, this would include an examination of the standardised questions used to measure annoyance and the methods for calculating the noise indicators as these are key indicators used in the survey.
- 2.45 It should also consider the order of the noise modules used in SoNA 2014 and whether the different routes through the questionnaire influenced results in the aircraft noise module.
- 2.46 Consideration of whether the questionnaire is future-proofed to allow questions to be repeated over a long period of time should be undertaken.
- 2.47 This is likely to include an examination of the SoNA 2014 questionnaire and analysis of SoNA 2014 data to look at how questions performed. It may also include cognitive testing if the Successful Supplier feels this is necessary. If suppliers consider that cognitive testing would be necessary then they should detail the rationale, method and costs in the tender.
- 2.48 Can new topics of questions be developed and tested, including expanding the sections on sleep disturbance, health, wellbeing and quality of life?
- 2.49 The Customer would like the Successful Supplier to examine questionnaires used in other similar surveys and consider whether other topics should be included. If so, the Successful Supplier should develop new questions and test them if necessary. An appraisal of their practicality, appropriate methodologies and impact on costs should be provided.
- 2.50 The Customer may want to include some new questions in the questionnaire. In particular, the Customer would like to look at how they could expand the sections on sleep disturbance, health, quality of life, and wellbeing to examine these topics in more detail. An appraisal of their practicality, appropriate methodologies and impact on costs should be provided.
- 2.51 The Customer would like to add a screening question which would determine whether the respondent was resident in the reference period. They would want the Successful Supplier to develop this test if necessary.
- 2.52 If suppliers consider that any question testing would be necessary then they should detail the rationale, method and costs in the tender.
- 2.53 What should the reference period for the aircraft annoyance questions be (e.g. the summer months or 12 months previously or another period) and when should the fieldwork be conducted (e.g. during the summer months or following them or another period)?
- 2.54 This may involve looking how other similar studies have been conducted and conducting some cognitive testing of the questions to see what works best. Options presented shall need to consider any need for comparability with similar

international surveys and what is practical in terms of fieldwork length given the size of the survey, mode of interview and location of sample points.

2.55 Would the survey benefit from any objective measures? For example, actual noise measures, actual monitoring of sleep disturbance, sleep/annoyance diaries or apps, or health monitoring.

2.56 This may involve looking at what has been done in other similar surveys. The Customer would like options to be presented which outline the benefits and costs for additional objective measures.

3. THE REQUIREMENT

3.1 Methodology

3.2 The Customer is open-minded about the most appropriate approach and methods that shall need to be employed to address the requirements for this project. However, the Customer expect that the study shall be largely desk based but could comprise some or all of the elements below. Proposals are welcome which consider several methods and set out justification for their preferred approach.

3.3 Engagement with members of an the Customer-appointed development study and other key stakeholders and noise experts – they expect that some initial engagement with a limited number of key stakeholders shall be conducted which shall be facilitated by the Customer. This shall be necessary to understand their needs for the new survey and how they want to use it. This is likely to include meetings with DfT, CAA, Defra, PHE, community groups and others to be confirmed at project inception (tenders should assume there shall be 10 of these initial engagement meetings for costing this element).

3.4 Feedback from an the Customer-appointed development study steering board - once options for elements of the survey design are developed, these should be presented to the Customer who shall put them to the steering board for their feedback. This feedback shall be considered by the Customer before making a decision on which option to adopt for the final design.

3.5 Review of the Customer's review of SoNA 2014 and other key literature – the Customer does not anticipate that the successful Supplier shall need to undertake a full literature review since much of this work has already been done in the Customer's review of SoNA 2014. However, Suppliers shall be expected to examine the material covered by the Customer's review and identify and consider other relevant material where necessary.

3.6 Review of SoNA 2014 data – SoNA 2014 data is publicly available. The Supplier shall examine the data to inform the design the new survey, proposes additional data which could be collected and additional analysis which could be practical and useful. This shall build on work already being undertaken in house.

3.7 Question testing – bidders should consider whether any question testing would need to be conducted on any of the SoNA 2014 questions or any of the new questions the Customer may want to develop.

- 3.8 Brief testing exercise – bidders should consider whether, once recommendations on approach are developed, a limited piloting exercise would be appropriate or practical.
- 3.9 The Customer shall facilitate access for the successful bidder to speak to the relevant internal experts within the Customer for gathering information relevant to the scope of the project. The Customer shall also define which of the objectives detailed above shall be included in the final requirement and workplan for the development project based upon cost/benefit and timing trade-offs. The assessment of these trade-offs shall be made through consideration of suppliers' proposals and workplans for the development project.
- 3.10 Key deliverables for the development project shall include:
- 3.11 An inception meeting followed by an initial detailed project plan. The meeting and project plan shall outline key dates and milestones, clearly indicating any actions that the Customer is required to perform. The project plan should include key dates upon which presentations (written or verbal) could be made to the Customer's team to discuss interim findings, emerging recommendations and next steps.
- 3.12 Brief weekly progress reports from the Supplier during the life of the project outlining progress towards key milestones and actions needed by the supplier and the Customer.
- 3.13 Regular updates to a Customer-appointed development study steering board on progress.
- 3.14 The Customer welcomes Suppliers to suggest which deliverables and meetings are needed in order to achieve the objectives outlined in section 5. The Customer expects to be presented with potential options for each topic of interest through a series of reports and discussions at relevant stages of the project. These reports and discussions should present the approach taken and the options considered with the pros and cons of each option and enough detail for the development study steering group to feedback their views and for the Customer to consider which option to take forward for the final design of the aviation noise attitudes survey.
- 3.15 A final presentation (in MS PowerPoint) to the Customer setting out the approach taken, a high-level view of options considered and the agreed final approach for the new survey.
- 3.16 A final written report (in MS Word) detailing the suppliers approach to the work, the options explored for the new survey and details on the final option chosen for the new survey design, by end August 2020.
- 3.17 A short written report (in MS Word) of estimated costs for the new survey and the different cost options considered through the design process. Please also note that estimated costs shall not be published or shared with other bidders for the mainstage survey, nor shall they prejudice any bid for the full survey by the Successful Supplier for this study.
- 3.18 Agreed versions of any research instruments (e.g. questionnaires).

3.19 The Customer requires an anonymised copy of any dataset produced as part of the development project, in a compatible format, at the end of the project.

3.20 The Customer requires Suppliers to detail the time needed for the objectives listed above in Section 5. The scope of this development project shall be agreed with the Successful Supplier before formal commissioning as part of the post-tender negotiation process.

4. KEY MILESTONES AND DELIVERABLES

4.1 The following Contract milestones/deliverables shall apply:

Milestone/Deliverable	Description	Timeframe or Delivery Date
1	Inception meeting with the Customer.	Within week 1 of Contract Award (w/c 24/02/2020)
1	Inception report with agreed project plan and timetable	Within week 3 of Contract Award or no later than 13/03/2020
2	Stakeholder interview schedule and discussion guides	Within week 7 of Contract Award or no later than 10/04/2020
3	Suppliers shall suggest what interim deliverables and meetings are needed in order to achieve the objectives (see section 6.3.4).	Before week 22 of Contract Award or no later than 31/07/2020
4	A final presentation to the Customer setting out the approach taken, a high-level view of options considered and the agreed final approach for the new survey.	Within week 23 of the Contract Award on 29/07/2020
5	First draft of final reports	Within week 24 of Contract Award or no later than 07/08/2020
6	Final reports agreed	Within week 27 of Contract Award or no later than 28/08/2020

5. MANAGEMENT INFORMATION/REPORTING

- 5.1 Sophie Hossack is the Customer's project manager for this project. They shall be responsible for the day-to-day management of the contract. Once the contract has been awarded, all contact with the Customer concerning the project should be made through them. The Supplier shall be required to appoint a contract manager who shall act as the principal point of contact for the Customer.
- 5.2 The Supplier shall be expected to work closely with the Customer project manager and through them, with internal customers within the Customer throughout the duration of the contract. They must be kept informed of progress and be involved in key decisions. Proposed changes in project staffing (at all levels) or deviations from the agreed work programme must be discussed and agreed with the project manager in advance. They are responsible for all decisions that involve funding.
- 5.3 The Customer expects that an inception meeting would be held soon after the contract award to discuss the background, objectives and scope of the study.
- 5.4 Initial engagement meetings shall be required with the Customer-appointed development study steering group and other key stakeholders (see 6.1.1).
- 5.5 The Customer welcomes Bidders to suggest which other interim meetings are needed in order to achieve the objectives outlined in section 5 (see 6.3.4).
- 5.6 A final presentation to the Customer shall be required - setting out the approach taken, a high-level view of options considered and the agreed final approach for the new survey.
- 5.7 The majority of project meetings and presentations are expected to take place at the Customer's offices in Woking, although some may take place at the Supplier's premises by arrangement.

6. CONTINUOUS IMPROVEMENT

- 6.1 The Supplier shall be expected to continually improve the way in which the required services are to be delivered throughout the contract duration.
- 6.2 The Supplier should when necessary present new ways of working to the Customer after face-to-face project meetings.
- 6.3 The Supplier where relevant should share their learning with the Customer throughout the project.
- 6.4 Changes to the way in which the services are to be delivered must be brought to the Customer's attention and agreed prior to any changes being implemented.

7. QUALITY

- 7.1 Suppliers should include a quality control plan with their proposal, which should demonstrate their internal procedures to assure quality control.
- 7.2 Proposals should also include an assessment of the key risks to this project. This should identify the most significant risks to successful completion of the programme of work, assess the degree of risk (likelihood and impact), set out

strategies for minimising these risks and managing the consequences if problems occur.

- 7.3 Reports should be concise and written in plain English. The Customer requires high standards of presentation and expect all drafts and final versions to be complete and to have been proofread before being delivered.
- 7.4 Suppliers should assume that reports and presentations shall require to be amended in the light of comments made by the Customer, and that at least two drafts shall normally be required before agreeing a final draft. Allowance should be made for this in the proposed timetable for the research. The Customer shall strive to provide timely comments, given the short timescales for this project.
- 7.5 The Customer requires all summaries, reports, data and presentations to be provided in an electronic format, compatible with Microsoft Office applications.
- 7.6 The Supplier shall be expected to have an ethics policy and ethical clearance protocols where appropriate on the use of data to protect confidentiality of individuals and project documents.
- 7.7 To preserve confidentiality and anonymity, details of individual participants in the research must not be included in the analysis and reports.
- 7.8 Published outputs of statistics shall be consistent with statistical disclosure guidelines, as advised by the Customer.

8. STAFF AND CUSTOMER SERVICE

- 8.1 The Customer acknowledges that broad expertise and skillsets are required for the successful delivery of this project and that it is possible that agencies invited to tender do not have the full range of skills/knowledge within their organisation. Where relevant, the Customer therefore encourages Suppliers to collaborate with other suppliers to ensure that they are fully capable of undertaking this work. The Customer is also developing an expert panel who may be available to advise on aspects if relevant.
- 8.2 The Customer places a high importance upon having access to the expertise required across all aspects of this project and are looking for a tailored approach which - with a willingness to challenge and develop the Customer's existing thinking - can bring some original thinking to this work.
- 8.3 The supplier shall provide a sufficient level of resource throughout the duration of the Contract in order to consistently deliver a quality service.
- 8.4 The Supplier's staff assigned to the Contract shall have the relevant qualifications and experience to deliver the Contract to the required standard.
- 8.5 The Supplier shall ensure that staff understand the Customer's vision and objectives and shall provide excellent customer service to the Customer throughout the duration of the Contract.
- 8.6 Proposed changes in project staffing (at all levels) or deviations from the agreed work programme must be discussed and agreed with the Customer's project manager in advance. They are responsible for all decisions that involve funding.

9. CONTRACT MANAGEMENT

- 9.1 As previously highlighted the research organisation shall be expected to work closely with the Customer's project manager and through them, with internal customers within the Customer throughout the duration of the contract. They must be kept informed of progress and be involved in key decisions. Proposed changes in project staffing (at all levels) or deviations from the agreed work programme must be discussed and agreed with the project manager in advance. They are responsible for all decisions that involve funding.
- 9.2 The research organisation shall be expected to report as highlighted in section 8.
- 9.3 The Customer retains the option of whether or not to commission the study, or any element of it.
- 9.4 Terminating the contract – the Customer reserves the right to terminate the contract prematurely (for any reason) should this be deemed necessary. In the event that it would become necessary to terminate or adjust the contract, the Customer shall cover costs for services provided up to that point. Contractors should not book or schedule fieldwork until written confirmation has been provided by the Customer. Contractors should provide a cancellation policy, including details of charges (if any) should it be necessary to cancel fieldwork.

10. LOCATION

- 10.1 The location of the Services shall be carried out at the Supplier's premises.
- 10.2 The majority of project meetings and presentations shall take place at the Customer's offices in Woking, although some may take place at the Supplier's premises by arrangement.

Annex B

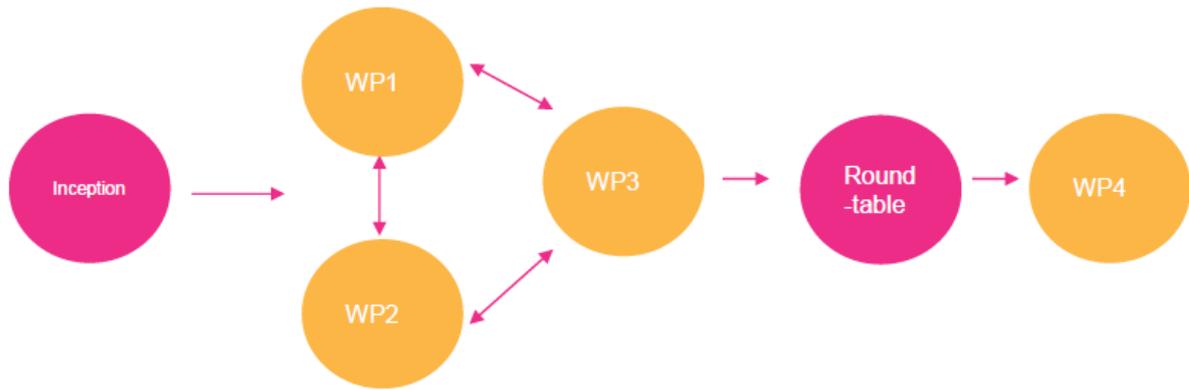
Supplier Proposal

1. OVERVIEW OF METHODS

- 1.1 The aim of this project is to provide the Customer with evidence-based recommendations of the most suitable approach for a survey of attitudes to aviation noise. This shall require a range of inter-connected activities that shall run in parallel. These activities shall establish the information needs, identify and review existing sources for this information or modes to collect it, and recommend a programme of research that is best suited for providing it. The Supplier's approach is to carry out several work packages, that shall deliver your requirements, as follows:
- 1.2 Inception meeting and inception report – setting out the specific tasks and milestones for each work package outlined below;
- 1.3 Work package 1: Engagement with stakeholders;
- 1.4 Work package 2: Development work on five different strands looking at the population, sampling, time series, questionnaire review and outcome measures;
- 1.5 Work package 3: Synthesis and recommendations. This shall be followed by a roundtable discussion with the Customer to review short-listed options;
- 1.6 Work package 4: Final recommended design of new survey along with instructions on what further pre-testing is required from survey contractors.
- 1.7 The inception meeting shall provide a good opportunity for the Supplier and the Customer lead researchers to meet and discuss priorities and expectations for this project. Given the complexity of the topic and the diverse programmes of research that the Supplier proposes to undertake for it, the Supplier believes that a close relationship between the Supplier's teams is paramount for the success of the project. Apart from discussing ways of working together, the work packages, strands and tasks that the Supplier are proposing here, at this meeting the Supplier would also appreciate an initial discussion about the resources available for the new research programme, i.e. budget, time, research capacity and any other constraints, which shall no doubt impact on recommendations. It is often the case that the preferred gold standard for a research project can be prohibitively expensive, so having a rough idea of what budget could be allocated for the newly designed project means that the Supplier shall be able to offer feasible and reasonable suggestions for it.
- 1.8 The first two work packages (WPs) shall take place in parallel and shall inform each other. The researchers involved in these initial stages shall work closely together as well as with the Customer to ensure that all relevant aspects of the project are well understood and addressed. First and foremost, the Supplier shall conduct 5 workshops with stakeholders identified together with the

Customer. These shall inform WP2, which shall run in parallel with interviews for WP1. The aim of these interviews is to discuss and confirm findings from WP2 as they are uncovered. The five strands of development work of WP2 are as follows:

- 1.9 WP2a. Defining the survey population: This strand shall explore the advantages and disadvantages of available metrics of noise exposure, estimate the population exposed to different levels of aviation noise and calculate the minimal sample size required to conduct robust comparisons of key measurements across subgroups.
- 1.10 WP2b. Sampling: This strand shall examine sampling methods to ensure robust estimates of important measures including which variables to include in stratification, the feasibility of a clustered design, the utility of disproportionate sampling and a power analysis of different designs to ensure robust subgroup analysis
- 1.11 WP2c. Time series: This strand shall consider how frequently data should be collected and whether all data collection should be cross sectional, or whether some data collection should be longitudinal.
- 1.12 WP2d. Questionnaire review: This shall be comprised of a desk review of existing noise and annoyance surveys to ascertain which questions should be included in a new survey. This shall include a review the SoNA questionnaire and other relevant documents.
- 1.13 WP2e. Outcome measure review: A variety of additional outcome measures shall be reviewed to ascertain which could be used in as outcome measures in a survey about exposure to aviation noise. This strand shall look at options for measuring wellbeing, quality of life, sleep quality, mental health and general health. Both questionnaire measures and objective measures shall be considered.
- 1.14 The Supplier shall use multiple methods including literature reviews, reviews of survey documentation, secondary analysis of existing survey data, and panel discussions with survey and subject-matter experts. Please note some objectives given in the research brief shall be incorporated into multiple work packages. For example, survey mode implications shall be discussed in all strands as this has a bearing on both sampling strategy and questionnaire design. A brief summary report shall be delivered on each of these strands as they are completed.



1.15 WP3 shall bring together the findings of the initial stages, synthesise them and provide options for potential survey designs. For each survey design considered the Supplier shall demonstrate the implications, and the design's pros and cons. These shall bridge the information needs identified at WP1 with the findings for the WP2 strands. Once the options have been outlined, the Supplier shall organise a one-day roundtable with the Customer, and any nominated stakeholders, where the Supplier shall present an overview of the research conducted with options and cost implications for different survey designs. The last work packages, WP4, shall focus on recommendations for the final design of a new survey. All outputs shall be compiled into a final report that the Supplier shall deliver to the Customer in the last phase of the project.

2. WP1 ENGAGEMENT WITH STAKEHOLDERS (4.1 AND 4.2)

2.1 The first stage of the research shall aim to engage with the relevant stakeholders and experts that the Customer has already identified. The purpose of this stage is to better understand the information needs and requirements that the new survey should cover, and how this information shall be used. This shall involve a series of workshops and telephone interviews to ensure that as many people as possible have the opportunity to provide their feedback. The Supplier shall work closely with the Customer to identify and contact the stakeholders and arrange for workshops to take place at a time and place convenient to them (for costing purposes, the Supplier has assumed that most workshops shall take place in Greater London or Woking).

2.2 Having previously undertaken similar activities for feasibility projects the Supplier conducted, the Supplier advises that the workshops include a diverse group of experts and stakeholders (policy makers, analysts etc.), such that various opinions and points of view can be discussed at one time. The Supplier shall gladly rely on the Customer to put us in contact with the key stakeholders that they have already identified. The Supplier shall invite representatives of the Customer to take part or observe these workshops, as this shall give us the opportunity to discuss any relevant aspects of these workshops during or immediately after them.

2.3 In the Supplier's experience, five workshops with experts should be sufficient to identify the information needs and any relevant information. The Supplier shall

provide the option of telephone interviews as an alternative to those experts who are unable to attend the workshop in person (or electronically, using video conferencing facilities). Given the importance and relevance of this topic, the Supplier believes that experts shall make a concerted effort to engage with this stage of the research. The workshops shall be guided by a topic guide, previously agreed between the Supplier researchers and the Customer, which shall cover in more or less depth the themes that shall be explored in Strands A-E described below. Two senior members of the Supplier's team (■ and ■) shall act as moderators of these sessions, which the Supplier predict shall take about half a day each.

2.4 The telephone interviews shall follow a similar, but simplified topic guide, and whenever possible, the Supplier shall try to use teleconference facilities such that more than one expert/ stakeholder can be interviewed at the same time. This shall allow the experts to engage with the topic and with each other. The Supplier shall also be able to conduct some telephone interviews once the WP2 strands are underway, to discuss with the stakeholders the relevance and importance of the more theoretical findings. In total, the Supplier shall undertake approximately 12 telephone interviews (including any mop-up ones conducted after the workshops have been completed).

2.5 The output of this work package shall be a brief report outlining the information needs that the stakeholders have with regards to the future research programme on attitudes to aviation noise. ■ and ■ shall take the lead on this initial phase.

3. WP2 DEVELOPMENT WORK (4.1 AND 4.2)

3.1 In parallel with the engagement with relevant stakeholders, the Supplier shall be also conducting five strands of mostly desk-based research. The Supplier has selected a team of experts from the Supplier to lead on each of these strands and foresee that they shall be in constant communication with each other, the project lead and the Customer to discuss the direction and relevant findings. The Supplier has also enlisted the help of an academic expert in the field to advise and guide Strand E. Each strand shall produce a brief report of findings to be used in assessing the suitability of each option at WP3.

3.2 WP2 Strand A: Deciding the survey population (4.1)

3.3 This strand shall explore different options of defining the population exposed to aviation noise, estimate the distribution of the population exposed to aviation noise at different levels, and begin to consider the advantages and disadvantages of different sampling strategies.

3.4 The Customer has outlined a number of considerations that merit investigation when determining an appropriate population for a survey on aviation noise.

3.5 What is the best way to measure exposure to aviation noise? What are the most appropriate metrics and thresholds?

3.6 Which subgroups are important to include in analysis (and therefore sampling design)?

3.7 How are populations and subpopulations distributed across noise exposure levels?

3.8 Metrics and Thresholds

3.9 To begin to answer these questions, the Supplier first proposes to undertake a desk review of the measurement of exposure to aviation noise in other surveys in the literature more broadly. The Supplier shall use this review to explore the advantages and disadvantages of different noise metrics and thresholds. The Supplier shall discuss the results of this review with stakeholders and experts in the meetings set up in WP1 to narrow down potential candidates of exposure and threshold measures on the grounds of availability and feasibility to a short list of those that shall be most fit for purpose for a future survey.

3.10 If feasible, the Supplier would suggest one more piece of work to help inform a choice of noise metrics and/or threshold. Depending on availability of noise metric data, it would be useful to conduct some secondary data analysis of SoNA 2014 data. In particular, the Supplier would like to append the different noise metrics shortlisted above to the SoNA data and examine associations between metrics (or combinations of metrics) at different thresholds and key outcome measures (to be identified in conjunction with the Customer). This piece of analysis would explore, for instance, whether exposure variables such as (say) LAeq, Lden, N65, N70 (at set number of decibels) or other measures of exposure, such as distance to airports, have different degrees of association with aviation noise annoyance.

3.11 Subgroups

3.12 The Supplier proposes to examine which subgroups shall be important to include in a future survey in three different ways. First, the Supplier shall include a discussion of subgroups of interest in discussions with stakeholders and experts from WP1. The Supplier also proposes a desk review of the broader literature around aviation noise and quality of life. The Customer has already identified that children may be a potential subgroup of interest and shall therefore be included in this review. Based on the results of this review the Supplier may want to do some secondary analysis to SoNA 2014 data, to explore the associations between aviation noise and quality of life measures using available subgroups identified in the review and with stakeholders. It is unlikely that any survey shall be able to be designed in a way to provide robust subgroup analyses on ALL subgroups of interest. The Supplier, therefore, proposes to work with the Customer to prioritise subgroups to take forward in designing a sample.

3.13 Population sizes

3.14 Once the Supplier has identified appropriate noise measures, thresholds and subgroups the Supplier shall work to ascertain population and subpopulation sizes using different options of the target survey population. This shall involve mapping noise contours using the short list of noise metrics identified above to estimate the populations and subpopulations exposed to different thresholds. The Supplier shall gather data on the short list of noise metrics from the Customer and other sources and draw on mid-year population

estimates from ONS by lower super output area to estimate populations. Depending on the format of the short-listed metrics, this can be done using either statistical or Geographic Information System (GIS) software, the team has vast experience with both software systems. For instance, if distance to an airport was identified as a key metric of interest, the Supplier could use GIS software to assign a distance to airport to the centroid of every lower super output area and using mid-year population estimates of populations (by subgroup) estimate the total population within (say) 5/10/20 miles of an airport.

- 3.15 Initial exploration of sampling approaches
- 3.16 When the Supplier has suitable estimates of populations at different exposure levels the Supplier can begin to explore options for the sampling design of a future survey. A first step here shall be another desk review of sampling approaches in other surveys. Using results from this desk review and the Supplier's substantial experience in sampling design for surveys such as Health Survey for England, National Diet and Nutrition Survey, and British Social Attitudes Survey, the Supplier can then begin to outline the advantages and disadvantages of different sampling strategies.
- 3.17 As the Customer has outlined, the key considerations in selecting a sampling design are population sizes (which have been estimated in population sizes), sample sizes, accuracy of results, field work costs and field work feasibility.
- 3.18 The next component of this strand shall address sample sizes. The Supplier proposes to conduct a power analysis aimed at estimating minimal sample size required to conduct robust comparisons of key measurements across key subgroups both within one survey and over time. As part of this, the Supplier proposes to conduct a post-hoc power analysis of selected SoNA 2014 results. Results from these power analyses shall inform decisions about the lowest noise contour level used as a primary sampling point and key subgroups used in analysis.
- 3.19 When the Supplier has determined minimal sample sizes, the Supplier can then conduct a preliminary assessment of the feasibility of a clustered design. Using estimates of populations exposed, the Supplier can explore the implications of different clustered designs: including a survey of all airports versus some airports; and the use of different noise thresholds as Primary Sampling Units. These topics shall also be discussed with the stakeholders as part of WP1. As part of this feasibility assessment, the Supplier shall outline options for selecting some airports to demonstrate they are representative of key characteristics that may affect primary outcomes of the survey. These key characteristics shall be identified in conjunction with the Customer, informed by a secondary analysis of SoNA 2014 data to examine whether any differences between attitudes around different airports can be detected. the Supplier shall classify the top 10 airports according to these factors to help facilitate selection.
- 3.20 The next part of this strand shall focus on accuracy of results. Stratifying the sample, shall not only ensure that a sample is representative of the variables included as stratifiers, it can also improve precision of results when the stratification variables are related to the outcomes of interest. As part of this

strand the Supplier proposes to explore the availability of potential stratification variables at different thresholds levels (e.g. LOAEL). The next strand (WP2 B) shall pick up on the results of this to help identify the most appropriate stratification variables for a future survey.

- 3.21 The final component of this strand shall address fieldwork costs and fieldwork feasibility. In particular, the Supplier shall outline mode considerations of a future survey. All survey modes have distinct advantages and disadvantages in terms of fieldwork costs and feasibility. Advantages of web surveys include lower fieldwork costs and remove the need to cluster a survey but also are associated with lower response rates. Face-to-face surveys are much more expensive and shall require clustering to keep down fieldwork costs, but response rates are typically higher. Using the results from the previous components of this strand, the Supplier shall feed into WP2D discussed below, and the Supplier shall consider the mode implications of a future survey.
- 3.22 The Supplier proposes to feedback the results of the Supplier's analyses on sample sizes, accuracy of results, fieldwork costs and feasibility with the Customer via the regular catch-up meetings and relevant stakeholders (if appropriate, the Supplier shall conduct one or several telephone interviews to this purpose) to narrow down which options should continue to be investigated in Strand B.w Rebecca Steinbach shall be the lead on this strand, and the output of this strand shall be a brief report of findings.
- 3.23 WP2 Strand B: Sampling strategy (4.1)
- 3.24 This strand shall take the results on measures of aviation noise exposure and populations exposed from the previous strand and examine sampling methods to ensure robust estimates of key measures.
- 3.25 There are two main components of this strand: a stratification review aimed at identifying the most important stratifiers to include in a future survey; and appraisal of different sampling design options to ensure robust subgroup analysis.
- 3.26 Stratification review
- 3.27 Picking up from the available stratification variables identified in the strand A, the Supplier proposes to conduct a stratification review to identify a set of variables that shall not only ensure representativeness of the sample but also improve the precision of survey estimates with regards to key measures. the Supplier routinely conducts stratification reviews of the Supplier's multi-year surveys and have recently conducted stratification reviews of the Health Survey for England, National Travel Survey and National Diet and Nutrition Survey. The Supplier envision a stratification review for this project shall involve more secondary analysis of SoNA 2014 data. Specifically, the Supplier proposes to append potential stratifiers to SoNA data (where available, and not already included on the SoNA data) and analyse which of these potential stratifiers is most associated with key outcome measures. The Supplier shall identify a final list of relevant outcome measures in conjunction with the Customer but expect these to include attitudes towards noise and quality of life measures.

- 3.28 This stratification review shall produce a recommended list of potential variables to use in the stratification of a future survey. Using information from this component and the work from Strand A identifying key subgroup and subgroup population sizes by exposure, the Supplier shall then consider whether disproportionate sampling would be useful in a future survey.
- 3.29 Detailed analyses of sample options
- 3.30 Here, the Supplier proposes to pick up on the initial feasibility assessment of a clustered design and examine a selection of different sampling designs in depth. The Supplier proposes to assess each clustered design in terms of precision of the results, design effect, fieldwork feasibility and survey costs. After discussion with the customer the Supplier shall short-list a menu of sampling design options, based on the results of Strand A. For example, the Supplier may conclude the Supplier would like to examine 1- an in-depth survey of one airport; 2- a survey representative of the 10 largest airports; 3- a survey representative of all airports. For each menu-item the Supplier shall calculate the impact of potential clustering on precision (design effects), conduct a power analysis to estimate sample sizes needed for robust subgroup analyses, and review the implications of potential clustering on fieldwork feasibility and survey cost. Depending on the results of Strand A, and possible uncertainty around selection of metrics/thresholds the Supplier could provide sampling design options based on a short list of different metrics and thresholds.
- 3.31 As it is unlikely that any survey shall be able to provide robust analyses on all the subgroups of interest, the Supplier shall work with the Customer to examine whether there are any particular subgroups that should be considered for a boost sample in the menu-items described above. This strand shall also be led by Rebecca Steinbach, and the output shall be a brief report outlining the sampling design options identified.
- 3.32 WP2 Strand C: Time series for data collection (4.1)
- 3.33 This strand shall gather evidence to help inform decisions related to survey timing and frequency.
- 3.34 Examination of the change effect
- 3.35 the Customer would like the new survey to contribute to the evidence base surrounding the change effect. The change effect is when sensitivity to noise is higher in communities who have experienced a change in noise levels compared to communities who have longer-term exposure to equivalent noise levels. It has also been demonstrated that consultation regarding an increase of airport noise, prior to any changes in noise levels, can also impact noise sensitivity¹ (possibly by increasing the salience of existing airport noise).
- 3.36 One criticism of SoNA was that as a cross-sectional survey the data collected offered a 'snap-shot' of annoyance levels at one particular time. It has been suggested that the data collected in SoNA occurred when seven of the sampled airport vicinities were undergoing consultation or actual changes in noise exposure during the survey's reference period. Therefore, critics claim that data on annoyance levels collected in SoNA may have been inflated by change effects². This suggests that data need to be collected again, but also on a

regular basis so there is more evidence on whether annoyance levels are stable over time or fluctuate in different circumstances.

- 3.37 One way to get robust data on the prevalence and longevity of any change effects would be to conduct a longitudinal element to data collection. This is where data collection on levels of annoyance would be gathered from the same individuals over time to see the extent to which annoyance levels fluctuate or remain stable. Options and costs for setting up a survey panel shall be discussed, compared to more regular cross-sectional surveys (which could also include the option of some longitudinal data collection).
- 3.38 Accounting for seasonality
- 3.39 Another potential issue with SoNA was that fieldwork was conducted between October 2014 and February 2015, with no fieldwork in the summer months. As seasonality is a factor related to reported annoyance³ the Supplier wish to review whether survey fieldwork should be staggered over different points of the year. This work would be looked at in tandem with the questionnaire review, where the Supplier shall evaluate what reference period should be used for the annoyance measures (e.g., last summer, last 12 months or another reference period).
- 3.40 In order to make informed decisions on frequency of data collection the Supplier shall conduct the following activities:
- 3.41 Stakeholder engagement (WP1). Measurement aims shall be discussed including whether there is an interest in finding out more about whether change effects occur, when they occur and their duration, if present. The Supplier shall also discuss options related to measuring seasonal effects and how much of a priority these are, if at all.
- 3.42 The Supplier shall conduct a brief desk review relating to ‘change effect’ in relation to attitudes towards noise exposure (building on the work already included in the Customer’s review of SoNA). The main focus of this review shall be to establish whether any prior surveys have tried to counter or adjust for this effect and, if so, what steps they have taken.
- 3.43 The Supplier shall conduct a brief desk review of ‘seasonal effects’ in relation to attitudes to aviation and traffic noise. This review shall focus on how other surveys on noise attitudes have attempted to account for and calibrate against seasonal effects.
- 3.44 An expert panel of survey practitioners to discuss design options. This shall be a half-day workshop shall be attended by the project team, the Customer representatives, the Supplier’s Head of Household Surveys and the Director of the the Supplier Panel. During this panel the different design options regarding timelines of the survey, and options for follow-up and/ or a longitudinal survey element shall be discussed in depth. – Some preliminary findings from WP2b findings on sample options and sample sizes shall be addressed. The practical implications of conducting longitudinal data collection shall be discussed in term of impact on initial sample size needed considering longitudinal sample attrition. Mode considerations shall also be discussed in relation to both cross-sectional and longitudinal designs.

- 3.45 Some of the preliminary findings from WP2E (on new outcome measures) shall also be presented. These findings shall be on whether the outcome measures would be better administered as part of a face-to-face interview (e.g. some objective measures may require this) or not.
- 3.46 The Supplier shall also review the resources needed should any of these options be desirable to implement.
- 3.47 Jo d'Ardenne shall co-ordinate this strand with input from the project leads of other strands. The output from it shall be an interim report of different options of how the new survey could work in terms of frequency, timelines, cross-sectional versus longitudinal design and survey mode. Some designs shall be optimal in terms of looking at change effect and seasonality, whereas other designs may have practical advantages in terms of cost or increase sample size for analysis. The interim report shall start to examine some of the trade-off that may have to be addressed in these areas.
- 3.48 WP2 Strand D: Questionnaire Review (4.2)
- 3.49 As part of the development work, the Supplier shall undertake a thorough review of the SoNA questions using a systematic approach to questionnaire review.
- 3.50 Content review of SoNA
- 3.51 The first step shall be to review the content of the existing SoNA questionnaire to assess what areas are currently covered and whether there are any topics of interest (i.e. those raised by stakeholders in WP1) that are missing. The Supplier shall also look at whether any question areas may be redundant (i.e. if stakeholders suggest that certain question areas are no longer a priority).
- 3.52 Quality appraisal of SoNA
- 3.53 The Supplier regularly use the Questionnaire Appraisal System 99 (QAS99)⁴ to review survey questions and ensure they are fit for purpose. The QAS-99 is a checklist which can be used in reviewing survey questions systematically for problems in the wording or structure of the questions which may pose threats to the validity and reliability of the data collected. Two research methodologists shall review the SoNA 2014 questions individually, assessing the instructions, wording, routing and respondent burden. Once the questions have been reviewed by two researchers independently, an arbitration meeting shall take place to discuss any items that have been assessed differently. Based on this review, the Supplier shall suggest changes and improvements to the questions deemed more problematic. The output shall be a marked-up version of the questionnaire with suggestions for question wording changes.
- 3.54 Mode review
- 3.55 There is an interest in exploring whether online methods of data collection could be used in any future survey of aviation noise. As discussed earlier in WP2A, offering a mixed-mode, web-first approach may prove to be a cost-effective option, provided the response rate to the web mode is high enough to off-set additional set-up costs. However, apart from the sampling challenges,

another challenge of a mixed-mode survey is designing a questionnaire that is functionally equivalent in both modes.

- 3.56 Different conduits of communication lead to different forms of bias, for example visual questionnaires are more prone to primacy effects, while aurally administered questionnaires are more prone to recency effects. When questions are asked in different modes there is a risk of a mode effect occurring. Mode effects can create artificial differences between groups during data analysis. Attitudinal questions are considered higher risk items for mode effects⁵. This could be problematic if using a mixed mode approach where the key measures for this survey are attitudinal (e.g. annoyance with aviation noise).
- 3.57 There are steps that can be taken to reduce the likelihood of mode effects occurring when designing questionnaires. Certain formats of questions are known to work well across modes and some biases can be ameliorated by consistently offering self-completion modules, even during questionnaires administered by an interviewer.
- 3.58 In recent years, there has been an increase in the number of surveys delivered online, rather than face to face. This is also influenced by the government's Digital by Default service standard⁶, which encourages government services to make use of the digital options as much as possible. By considering mode effects now the Supplier shall be future proofing any new questionnaire. Even if the 2021 survey shall continue to make use of interviewer modes, subsequent waves may not, or may employ a mixed-mode design. The Supplier's questionnaire design specialists have extensive experience in reviewing questionnaires to identify items that are at risk of mode effects. As part of this strand, the Supplier shall provide recommendations on which of the existing SoNA questions would work on an online survey and which would require adaptation.
- 3.59 The question of survey mode (i.e. whether the survey should be conducted using interviewer modes, online or mixed-mode) shall be considered and discussed across all five development strands. The survey mode shall have an impact on both decisions related to selection (population and sampling strategy) frequency and measurement (number of questions, whether questions are prone to mode effects and whether objective measures can be collected). Survey mode shall also have an impact on the overall cost of the survey.
- 3.60 Review of other survey on aviation noise
- 3.61 The Supplier shall also undertake a swift review of any other surveys that the Customer and the Supplier shall consider relevant for this project, up to a maximum of three surveys. The Supplier shall identify the relevant questions that could be adapted to be used on a newly designed instrument, as well as relevant methodological aspects (population and mode of administration). The priority for this strand shall be to map and identify areas of content used in other surveys, not covered in SoNA, that are of interest to existing stakeholders given their data requirements.
- 3.62 Given the Supplier's close relationship with international national statistics institutes (NSIs) the Supplier shall also be able to contact them to inquire about

any international research programmes looking at aviation noise and how these were implemented. This shall provide a good overview of the current best practice in the field and shall allow us to discuss advantages and disadvantages of any designs with the teams that have been involved in carrying out that research. The Supplier shall be able to draw on their experience and make relevant recommendation for the proposed research programme. The Supplier shall discuss with the Customer at the inception meeting if there are any other relevant documents that should be reviewed as part of this strand. The Supplier have identified some ourselves already (e.g., a systematic review from 2017 conducted by WHO on environmental noise guidelines⁷).

3.63 New question development

3.64 The review of SoNA, other existing surveys and other documents shall be mapped on the information needs identified at WP1. New ideas for topics to be included in the survey, mode of data collection, inclusion of objective measures as part of the research programme shall also be discussed with the stakeholders and assessed for feasibility in the context of the new survey. The Supplier shall also conduct a separate strand of work looking at options for outcome measures (WP2E) to address priorities for new question areas. These are discussed in the following section.

3.65 There may be a small number of additional questions, in addition to outcome measures, to be added to the new survey. For example, the statement of requirements mentions the need to develop a screening question to determine whether the respondent was resident during the reference period. If the Supplier recommend the reference period remains unchanged from SoNA the Supplier shall develop check questions of this nature.

3.66 Outputs

3.67 The lead on this strand shall be Jo d'Ardenne. Jo shall work closely with the leads on the other strands, who shall provide feedback regularly, which shall be used to shape the discussions with the stakeholders. The output of this strand shall be a marked-up version of the SoNA questionnaire with any recommended changes and a document showing questions modules of interest found in other surveys. A brief report of new themes of interest shall also be produced, including potentially different approaches identified.

3.68 WP2 Strand E: Outcome measure development (4.2)

3.69 The final component of work package two shall be a review of what new outcome measures could be included in a new survey of aviation noise. These shall be measures that did not form part of SoNA or other surveys of aviation noise identified in WP2D. the Customer are interested in expanding questions that ask about sleep disturbance, quality of life, wellbeing and general health. More suggestions for new outcome measures may also be generated during consultation with stakeholders in WP1.

3.70 the Supplier has extensive experience of measuring all the above areas as part of the Supplier's survey portfolio, and the Supplier can provide you with informed advice on factors that should be considered when deciding what measure to use.

3.71 Sleep disturbance review

3.72 There are numerous different approaches that can be used to measure sleep, in terms of sleep duration and quality. There is existing evidence that different methods for measuring sleep yield different results. For example, participants shall typically report they have slept more if diary measures are used compared to if retrospective self-reports are used.⁸ Sensor data can potentially be used to supplement or replace questionnaire data on this topic and can provide more detailed information on sleep quality (for example the number of night awakenings). However, the collection of sensor data comes with its own set of considerations. There is evidence to suggest that in a survey context sensor data result in measurement error, for example if survey participants do not use sensors in the intended way during the survey period⁹. In order to help the Customer make informed decisions on which measures of sleep would best meet their needs the Supplier shall first conduct a rapid review of existing options for sleep measures. For each option the Supplier shall present pros and cons plus practical considerations, for example impact on questionnaire length, whether measures would work online and what the cost to administer would be.

3.73 Wellbeing, quality of life and mental health measures review

3.74 the Customer wish to review what measures of general wellbeing should be used in the new survey. There are numerous validated wellbeing measures in existence. This topic area is very broad as wellbeing is a term that can be used to describe multiple different domains that affect someone's quality of life. For example, the ONS Measuring National Wellbeing programme collects and reports data on ten areas: relationships, personal finance, health, governance, national economy, natural environment, work/education, neighbourhood, and personal wellbeing. The last of these is also widely referred to as subjective wellbeing. This relates to how people experience and evaluate their lives. This is also closely linked with mental wellbeing or as positive mental health. One advantage that these measures have is that it would allow comparison with data collected at a national level on various studies.

3.75 SoNA included the short-form version of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). This is a validated wellbeing measure that has been used in a range of other surveys. There are number of other validated measures that the Customer may wish to consider, depending on their needs and the needs identified by their stakeholders in the scoping interviews. Based on their feedback the Supplier shall conduct a rapid review of existing validated measures, building on an existing review the Supplier have already conducted for the Welsh Government on options for measuring wellbeing in surveys.¹⁰ Again, for each option identified the Supplier shall present the pros and cons, plus the impact of each on questionnaire length, mode issues, cost implications (this is of particular importance for wellbeing measures as some incur a license fee to administer) and whether or not National Statistics exist for each measure. This latter consideration may be important if stakeholders wish to benchmark wellbeing against national or regional averages.

3.76 Health and objective measures review

3.77 The Supplier shall explore with the Customer and stakeholders whether there is any interest in collecting additional information on general health, including whether there is any interest in collecting objective measures of health. Depending on the level of interest, the Supplier can review options for measuring health conditions, screening for mental health conditions, assessing cognitive functioning or a range of other options.

3.78 Outcome measures for children

3.79 In the Customer's 2019 review one issue raised was whether any new survey should include one adult in each household or whether children resident in the household should also be included in data collection. As part of this review, the Supplier shall explore with the Customer whether outcome measures in relation to children should be collected and if so whether data should be collected from children themselves or via proxy (e.g. from a parent or guardian resident in the household). Again, parameters for this activity shall be set as part of the stakeholder engagement. If child measures are considered as part of this review the practicalities of this shall be discussed in terms of implications for sample size, mode of data collection and costs.

3.80 Expert panel

3.81 An expert panel of survey practitioners shall be held to discuss different options for the outcome measures available. This shall be a half-day workshop shall be attended by the project team, the Customer representatives, the Supplier's Head of Health and Biomedical Surveys and Prof. [REDACTED] from the [REDACTED], who is a renown expert in the field. During this panel the different options shall be discussed in depth, including which outcome measures are most likely to be influenced by environmental noise levels. The Supplier shall also look to provide practical advice relating to the administration of these in practice.

3.82 Outputs

3.83 The leads on this strand shall be [REDACTED] and [REDACTED]. The output of this strand shall be an interim report of options for new questionnaire content, as well as options for objective measures that should be considered (e.g. sensor data to understand sleep disruption). The Supplier shall provide practical information on all short-listed options (length estimate for each module of questions, mode considerations and cost implications).

4. WP3 SYNTHESIS AND RECOMMENDATIONS (4.1 AND 4.2)

4.1 This work package shall focus on bringing together the findings for WP1 and all strands of WP2, focusing on the potential methodologies that shall need to be employed. The different options revealed at the WP2 strands shall be synthesised into distinct and complete options for the options for the survey. For example, if it is found that the best sampling strategy for the survey shall survey the population within a 10mi radius of any UK airport, that shall have implications on the proposed mode (for example, push to web), population, its size, types of questions to be asked, and the overall costs for the project.

- 4.2 Given the versatility of this topic, the Supplier shall limit the Supplier's recommendations to maximum of five suggested survey designs, but the Supplier shall be able to offer optional contained choices that could be added on to the research programmes proposed. The Supplier shall most likely recommend that a thorough pre-testing exercise be undertaken regardless of the research programme chosen.
- 4.3 The Supplier shall draw on the expertise of the Supplier's the Supplier colleagues to provide approximate costs for each option. [REDACTED] shall co-ordinate this work package. The output shall be a report with various potential research programmes to be considered.
- 4.4 Roundtable presenting findings and design options (4.1 and 4.2)
- 4.5 A final roundtable between the Supplier research team, the Customer project team and stakeholders that the Customer would like to invite shall take place after the three work packages have been completed. Prior to this roundtable, the Supplier shall deliver the outputs from all strands summarising the findings and recommendations for each. Of interest shall be the brief report from WP3 which shall outline the most important and feasible options for the new research programme and survey. A draft agenda shall also be agreed with the Customer and circulated to relevant stakeholders. At this stage, the Supplier anticipate this shall include the following:
- 4.6 Overview of the project, its aims and objectives.
- 4.7 Presentation of findings to date: – information needs identified at WP1 and their implications on the research design
- 4.8 development work of WP2 – ways in which the Supplier can adapt and adopt different methodologies
- 4.9 different options presented in the WP3 report and how these map on WP1 and WP2 findings
- 4.10 A discussion on the recommendations in the population scope and sampling strategy review. The goal of this session shall be to discuss the pro and cons of different options, including mode and cost.
- 4.11 A discussion about the resources available for the new research project and survey.
- 4.12 A discussion about the next steps for the project and what the best option for the research programme could be.
- 4.13 The Supplier assume that this roundtable shall be a day long and shall take place at the the Supplier offices. The Supplier shall count of the Customer's help to identify the relevant stakeholders that shall be invited to take part in this day-long meeting. Minutes shall be kept so all discussion points and decisions are documented. The roundtable shall be led and facilitated by [REDACTED] and [REDACTED].

5. WP4 FINAL DESIGN (4.1 AND 4.2)

- 5.1 The various options presented and discussed at the roundtable (based on WP3) shall be brought together and mapped on the information needs (WP1), development work (WP2) and resource considerations, and the final, most suitable design shall be presented in a report. This shall outline the rationale for the proposed approach, any potential benefits, as well as drawbacks of the method, and detailed recommendations for the implementation. The Supplier shall also provide an approximate cost for this option.
- 5.2 This last strand shall be led by Jo d'Ardenne and Rebecca Steinbach and the output shall be succinct final report outlining the proposed research programme and design.
- 5.3 The main output for the project shall be a final report bringing together all the other deliverables in a clear and succinct manner. This final report shall be showing an executive summary of all prior work packages, including the final design recommendations. Other outputs for the project shall include recommended survey questions to include and agreed versions of any research instruments (e.g. questionnaires) and anonymised copies of any datasets produced as part of the project.
- 5.4 Piloting and cognitive testing
- 5.5 the Customer have asked bidders to consider whether question testing (for example cognitive interviews) or piloting need to be conducted as part of this review. At this stage the Supplier do not have any evidence that a cognitive interviewing component shall be required. The Supplier do not know what the full information needs of stakeholders are, nor the extent to which unmet needs can be addressed with existing questions that have already undergone some form of validation. However, based on the new areas mentioned in the statement of requirement (sleep quality, wellbeing, quality of life and so on) the Supplier are confident that many of the current information gaps could be filled with existing measures. If the Supplier shall establish that there is a need for the development of multiple new measures, the Supplier shall provide instructions and suggestions as to what methods should be adopted to test these. The Supplier shall be happy to provide a separate quote for cognitive testing if this is required, once more information is available on the number and content of items to be tested. As such, cognitive testing could be a standalone project, regardless of which research programme is undertaken. Should the Customer wish to commission a web survey, the Supplier shall suggest that the cognitive testing project contain a usability testing strand as well, to ensure that the interface is easy to use for all participants.
- 5.6 Some form of piloting should always be a required pre-test method to check elements of the final design. A small pilot (or soft launch of the mainstage fieldwork) would be the best vehicle to confirm that length and flow of the questionnaire, as well as predictions on response rates. However, the Supplier do not recommend including this exercise as part of the development work. This is because the Supplier recognise that it may be more cost efficient and provide better accuracy if the final survey contractor would run these types of pre-testing exercises. This is so costs related to various set-up activities (e.g. questionnaire

programming and interviewer training) shall only need to be done by a single contractor shall only be incurred once.

6. CONTRACT MANAGEMENT AND GOVERNANCE

- 6.1 the Supplier has a reputation for high quality delivery, with extensive experience of managing large and complex research projects. The Supplier's approach is underpinned by the Supplier's well-developed Quality Management System (QMS). This comprises documented quality procedures covering all stages of the research process, alongside internal audit, staff observations, self-assessment, best-practice sharing, contract management meetings, staff training and development. QMS procedures are also supported by additional guidance that provides more information about internal working practices, industry best practices, and specific client requirements.
- 6.2 The Supplier's QMS is aligned with externally recognised standards and is therefore subject to full scrutiny by external auditors, as part of the Supplier achieving and maintaining accreditation to the ISO 20252 Standard for Market, Opinion and Social Research. Procedures and projects are subject to close examination during the six-monthly ISO surveillance visits to ensure that procedures and practice are compliant with the requirements of the Standard. Feedback from audits confirmed that the Supplier demonstrates a strong commitment to quality management and "clearly embraces quality and the need for continuous improvement by reviewing processes and procedures". Auditors observed that "there is a very impressive approach to continual improvement, led from the top but with empowerment at all levels".
- 6.3 All QMS procedures have a named owner within the Supplier and are subject to regular reviews and internal auditing to ensure that they continue to reflect the Supplier's best practice and are effective in delivering high quality research to clients. During project implementation the Supplier shall align the Supplier's internal quality standards with the the Customer's performance and quality management requirements, using the Supplier's Management Information to monitor compliance. the Supplier has documented information security procedures and is accredited to ISO 27001 Information Security Management. Compliance is monitored through reporting of issues, regular audits and intensive ISP surveillance visits every six months.
- 6.4 The Supplier have appointed a project lead, Jo d'Ardenne, who shall ensure that all work packages and all strands within the work packages are delivered on time and to a high standard. Jo shall quality assure all outputs outlined below. She shall organise weekly team meetings to monitor progress on the tasks pertaining to that week. Each work package shall also have a named lead researcher, who shall be responsible to the tasks pertaining to that activity and who shall ensure high quality deliverables. They shall each be supported by more junior members of their respective teams. The Supplier shall also enlist the support of an experienced Project Manager, who shall deliver weekly communications to the Customer outlining the task undertaken that respective week, any outstanding tasks and the tasks scheduled for the following weeks.

The Supplier envision a close working relationship with the the Customer lead researcher, such that any issues and risks to the project's timeline can be identified, discussed and resolved in a timely manner.

7. TIMETABLE AND KEY MILESTONES

- 7.1 The table below presents an outline of the Supplier's proposed timetable for the project. The key milestones the Supplier have identified are highlighted in bold and the person or team responsible for each activity is indicated in parentheses. Please note that the timeframes and dates indicated in the table below are not final and they shall be discussed in more detail between the Customer and the Supplier at the inception meeting. The Supplier shall then be able to outline specific tasks and dates that shall guide the delivery on the project based on the Customer's needs which shall all be included in the inception report. The Supplier shall also specify exactly when the Supplier shall require input or signoff from the Customer. Thus, at the inception meeting the Supplier would appreciate any discussion around specific dates and milestones that are important for the Customer.
- 7.2 The Supplier shall monitor progress on all work packages and strands internally and inform the Customer of any threats to this timeline, should any arise.

Timetable for the Development Work for a New Aviation Noise		
Week #	Activities (key milestones in bold, person/ team involved in parentheses)	Timeframe
1	Inception meeting (ICCAN + NatCen)	w/c 24 th February 2020
2	Inception meeting report detailing the tasks, outputs and timetable	6 th March 2020
3-5	WP1: 5 workshops (Jo, Rebecca)	w/c 9 th – 27 th March 2020
6-10	WP1: 10 telephone interviews (Jo)	w/c 30 th March – 1 st May
10	Brief report of WP1 findings	1 st May
4-12	WP2: all strands (Jo, Rebecca, Sally, Anne, Stephen, Curtis)	w/c 16 th March – 15 th May
12	All reports for 5 strands delivered	15 th May
13-14	WP3: Synthesis and recommendations (Jo, Alun)	w/c 18 th May – 27 th May
14	Report with options outlined and costed	27 th May
17	Roundtable with ICCAN to present options and discuss final design	w/c 15 th June
18-21	WP4: Final design (Jo, Rebecca)	w/c 22 nd June - 15 th July
21	Brief report of final design	15 th July
23	Presentation of the final design and steps undertaken to arrive here (NatCen + ICCAN)	w/c 23 rd July
24	First draft of final report – summarising the brief reports delivered to date (Jo)	w/c 3 rd August
25	Feedback from ICCAN on final report (ICCAN)	15 th August
27	Final report delivered (Jo)	w/c 24 th August

7.3 Risks and issues

7.4 Risk management is a fundamental element of all the Supplier's surveys, and the Supplier have developed a robust approach to anticipating, evaluating and mitigating those risks. The Supplier's approach to risk management builds on the Management of Risks (M_o_R®) and PRINCE2 best practice principles, but the Supplier have applied this to social surveys.

7.5 The table below shows what the Supplier see as the key risks to the project and sets out the Supplier's strategies for mitigating these risks. While listing the risks, the Supplier rate each one in terms of how likely the Supplier believe it is to occur and what its impact on the project would be if it were to occur. By combining these ratings, the Supplier work out which are the most serious risks the project shall face, namely the ones whose likelihood and impact ratings are highest.

Risk	Likelihood	Impact	Mitigation and contingencies
External delays to timetable	Medium	Medium	<ul style="list-style-type: none"> • A detailed timetable will be agreed at the inception meeting, clearly showing deadlines, dependencies and responsibilities this will be detailed in the inception report • We will closely monitor progress against the timetable so that any potential slippage is detected early and discuss this with ICCAN • Contingencies would include redeploying resource to make time up later
Confusion in requirements for new research	Low	High	<ul style="list-style-type: none"> • WP1 specifically designed to gather aims, objectives and requirements for new survey, to work before and alongside WP2.
Failure to identify relevant existing research resources	Low	High	<ul style="list-style-type: none"> • Discussion with ICCAN to ensure relevant documentation provided and relevant stakeholders involved in the project.
Work Packages operate independently, failing to inform one another	Medium	High	<ul style="list-style-type: none"> • Project cohesion overseen by Project Director, Joanna D'Ardenne • Programme of weekly knowledge sharing catch-up via email and/or telephone, particularly for WP2 and WP3.
Lack of consensus on preferences among clients and/or stakeholders at roundtable	Medium	Medium	<ul style="list-style-type: none"> • Discuss with ICCAN Project Manager • Potentially provide multiple options in report
Unexpected changes to staffing disrupt project	Medium	Medium	<ul style="list-style-type: none"> • Use of NatCen's resource planning tool to book time in advance and review availability if staffing changes unexpectedly • Large team of experienced researchers to draw on if availability of team unexpectedly changes • Project documents and key emails saved in shared team folder so no loss of information if team member unavailable
Poor scoping of emerging research requirements	Low	High	<ul style="list-style-type: none"> • Discussion of requirements with ICCAN and detailed research plan agreed for each work package from onset of project
Final outputs do not meet requirements	Low	High	<ul style="list-style-type: none"> • Reports drafted by experienced members of research team and signed off by Group Head; • Report structure and format signed off by ICCAN before analysis begins; report plan agreed with ICCAN • Draft report submitted with sufficient time for comments and revisions

ANNEX C PRICE SCHEDULE AND RATE CARD

Attachment 4 - Price Schedule							
Development Work for a New Aviation Noise Attitudes Survey							
Please use the table below to detail all charges for providing the Service outlined in the Attachment 3, Statement of Requirements. The charges shall be totalled to generate a total charge. The total charge shall be weighted at 100% of the total Price Score. Your total charge shall cover all aspects of completing the service. All charges shall exclude VAT, but include all expenses. All charges shall remain firm for the duration of the Contract.							
Activity	Details / Sub task	Named individual	Job Grade	Offered Daily Rate	Number of Days	Sub task Charge	Activity Charge
Stakeholder Engagement	Discussion guide development	[REDACTED]	Research Director: Survey Methods	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
			Research Director: Methodology and statistics				
			Researcher				
			Statistician				
	Workshop attendance x 5		Research Director: Survey Methods				
			Research Director: Methodology and statistics				
	Researcher						
	Statistician						
	Telephone interviews x 12	Researcher					
		TBC	Statistician				
Scope of the population, Sampling, Survey mode, Time series (5.5 - 5.16)	WP2a: Scope of population	[REDACTED]	Research Director: Methodology and Statistics	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
			Senior Statistician				
			Statistician				
	WP2b: Sample design:		Research Director: Methodology and Statistics				
			Senior Statistician				
			Statistician				
WP2c: Time series	Research Director: Survey Methods						
	Senior Researcher						
		Researcher					
Questionnaire: SoNA 2014 Questionnaire Review and development of new questions (5.17 - 5.20)	WP2d: Questionnaire review	[REDACTED]	Research Director: Survey Methods	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
			Senior Researcher				
			Researcher				
	WP2e: Outcome measure review		Research Associate: Health and Wellbeing				
			Director of Health and Biomedical Surveys				
			Research Director: Survey Methods				
	Senior Researcher						
		Researcher					
	Academic consultancy	[REDACTED]	Emeritus Professor of Psychiatry	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

		WP1 Synthesis	
Deliverable s: meetings	Inception meeting		Research Director: Survey Methods
			Research Director: Methodology and Statistics
	Expert panels x 2 (WP2- Time Series and WP2e- Outcome measures)		Research Director: Survey Methods
			Research Director: Methodology and Statistics
			Research Associate: Health and Wellbeing
			Director of Health and Biomedical Surveys
			Research Director: Panel Data
			Head of Household Surveys
			Senior Researcher
			Senior Statistician
			Researcher
		WP3: Roundtable with ICAAN	
			Research Director: Methodology and Statistics
			Senior Statistician
			Senior Researcher
Deliverable s: presentations	WP3: Roundtable presentation		Research Director: Survey Methods
			Research Director: Methodology and Statistics
			Senior Statistician
			Senior Researcher
	WP1: Stakeholder		Research Director:

Deliverable: reports (to include drafting, proof-reading and quality assurance)	WP1: Stakeholder Engagement Reporting	Research Director: Survey Methodologist		
		Research Director: Methodology and statistics		
		Researcher		
		Statistician		
	WP2a: Scope of population interim report	Research Director: Methodology and Statistics		
		Senior Statistician		
	WP2b: Sampling interim report	Research Director: Methodology and statistics		
		Senior Statistician		
	WP2c: Time series interim report	Research Director: Survey Methods		
		Senior Researcher		
		Research Director: Panel Data		
		Head of Household Surveys		
	WP2d: Questionnaire review interim report	Research Director: Survey Methods		
		Senior Researcher		
		Researcher		
Other tasks (excluding travel and subsidiaries)	WP2e: Outcome measure review	Research Associate: Health and Wellbeing		
		Director of Health and Biomedical Surveys		
		Research Director: Survey Methods		
		Senior Researcher		
		Researcher		
	WP4: Final reports and costings	Research Director: Survey Methods		
		Research Director: Methodology and statistics		
		Senior Statistician		
		Senior Researcher		
		Statistician		
	Researcher			
Project administration (including internal meetings, weekly progress reports and governance)		Research Director: Survey Methods		
		Research Director: Methodology and statistics		
		Senior Statistician		
		Senior Researcher		
		Statistician		
		Researcher		
	Project Manager			
Total Charge				£ 99,866.00

Attachment 4 - Price Schedule

Please use the tables below to outline your rate card costs. Please advise of any available discounts against the framework rates. Please advise of any available discounts but do not include roles that were not agreed at framework level. All prices must include all expenses but exclude VAT.

The rate card is for information purposes only and will not be evaluated.

Staff Grade	Description	Maximum Charging Threshold (Day Rate)	Supplier's Usual Day Rate	Offered (Discounted) Day Rate
Board Level / Chief Executive	As described in Category A roles, with further strategic decision making responsibility and overall accountability of organisation			
Category A	Senior member of personnel, e.g. Research Director having assumed responsibilities in his/her profession through the performance of management and supervision roles. Typically, he/ she shall have ten (10) years or more professional experience of which at least four (4) years must be relevant to the type of tasks to be performed under the contract at this level.			
Category B	Certified member of personnel e.g. Senior Researcher or Research Manager having received a high-level training in his/her profession and recruited for his/her appreciated skills as regards professional practice. Typically, he/she must have five (5) years professional experience of which at least two (2) years shall be relevant to the type of tasks to be performed under the contract at this level			
Category C	Member of personnel such as a researcher. Typically, with two (2) to four (4) years experience, with understanding and grounding in research projects and the type of tasks to be performed under the contract at this level.			
Category D	Junior member of research personnel e.g. junior researcher. Typically, with two (2) years experience. A newcomer to the profession but with training related to the type of tasks to be performed under the contract at this level.			
Category E	Administrative or general junior personnel (e.g. those involved in ensuring the logistics of the tasks are undertaken).			