



EpiX Analytics LLC
1643 Spruce Street
Boulder
Colorado

Attn: Francisco Zagmutt
By email to: fzagmutt@epixanalytics.com

Date: 11/02/2019
Our ref: FSA628

Dear Sirs,

Award of contract for the supply of Quantitative Risk Assessment Training for Food Safety

Following your tender/ proposal for the supply of **Quantitative Risk Assessment Training for Food Safety** to Food Standards Agency, we are pleased to award this contract to you.

This letter (Award Letter) and its Annexes set out the terms of the contract between Food Standards Agency as the Customer and EpiX Analytics as the Supplier for the provision of the Services. Unless the context otherwise requires, capitalised expressions used in this Award Letter have the same meanings as in the terms and conditions of contract set out in Annex 1 to this Award Letter (the “**Conditions**”). In the event of any conflict between this Award Letter and the Conditions, this Award Letter shall prevail. Please do not attach any Supplier terms and conditions to this Award Letter as they will not be accepted by the Customer and may delay the conclusion of the Agreement.

For the purposes of the Agreement, the Customer and the Supplier agree as follows:

- 1) The Services shall be performed at: Venue to be confirmed
- 2) The selected training is option 5: two-week course to be run from 4th March 2019 – 15th March 2019.
- 3) The specification for the Services shall be as set out in Annex 2.
- 4) The technical proposal of the Services to be supplied is as set out in Annex 3.
- 5) The financial proposal (cost) for the Services shall be as set out in Annex 4
- 6) The Term shall commence on 11th February 2019 and the Expiry Date shall be 31st March 2019
- 7) The address for notices of the Parties are:

Customer

Food Standards Agency, Foss House,
Peasholme Green, York, YO1 7PR

Supplier

EpiX Analytics LLC, 1643 Spruce Street,
Boulder, Colorado

- 8) The following persons are Key Personnel for the purposes of the Agreement:

Name

Title

Francisco Zagmutt
[REDACTED]

EpiX Analytics

Food Standards Agency

- 9) For the purposes of the Agreement the [Staff Vetting Procedures/data security requirements/equality and diversity policy/ and environmental policy are <https://www.food.gov.uk/>
- 10) The Customer may require the Supplier to ensure that any person employed in the provision of the Services has undertaken a Disclosure and Barring Service check. The Supplier shall ensure that no person who discloses that he/she has a conviction that is relevant to the nature of the Services, relevant to the work of the Customer, or is of a type otherwise advised by the Customer (each such conviction a “**Relevant Conviction**”), or is found by the Supplier to have a Relevant Conviction (whether as a result of a police check, a Disclosure and Barring Service check or otherwise) is employed or engaged in the provision of any part of the Services.

Payment

The payment will be made by bank transfer. The invoice will need to be sent to [REDACTED] after the training course has been delivered (but before 31 March 2019) and include the following information:

- Supplier name and address
- Amount and required currency
- Bank Account number/IBAN
- BIC/Swift/routing code
- Bank name
- Account name
- Invoice reference number

Liaison

For general liaison your contact will continue to be [REDACTED] Email: [REDACTED]

We thank you for your co-operation to date and look forward to forging a successful working relationship resulting in a smooth and successful delivery of the Services. Please confirm your acceptance of the award of this contract by signing and returning the enclosed copy of this letter to me **within 7** days from the date of this letter. No other form of acknowledgement will be accepted. Please remember to quote the reference number above in any future communications relating to this contract.

Yours faithfully,

Signed for and on behalf of Food Standards Agency

Name: Rachel Leggett

Procurement Category Manager

Signature:



Date: 13 February 2019

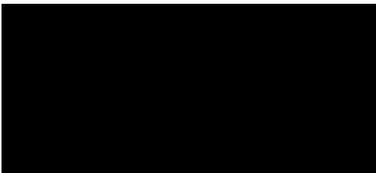
We accept the terms set out in this letter and its **Annexes**, including the Conditions.

Signed for and on behalf of EpiX Analytics LLC

Name: Dr Francisco J Zagmutt

Job title: Managing director

Signature:



Date: February 12, 2019

Annex 1

Terms and Conditions of Contract for Services

1 Interpretation

1.1 In these terms and conditions:

- “Agreement” means the contract between (i) the Customer acting as part of the Crown and (ii) the Supplier constituted by the Supplier’s countersignature of the Award Letter and includes the Award Letter and Annexes;
- “Award Letter” means the letter from the Customer to the Supplier printed above these terms and conditions;
- “Central Government Body” means a body listed in one of the following sub-categories of the Central Government classification of the Public Sector Classification Guide, as published and amended from time to time by the Office for National Statistics:
- (a) Government Department;
 - (b) Non-Departmental Public Body or Assembly Sponsored Public Body (advisory, executive, or tribunal);
 - (c) Non-Ministerial Department; or
 - (d) Executive Agency;
- “Charges” means the charges for the Services as specified in the Award Letter;
- “Confidential Information” means all information, whether written or oral (however recorded), provided by the disclosing Party to the receiving Party and which (i) is known by the receiving Party to be confidential; (ii) is marked as or stated to be confidential; or (iii) ought reasonably to be considered by the receiving Party to be confidential;
- “Supplier Personnel” means all directors, officers, employees, agents, consultants and Suppliers of the Supplier and/or of any Sub-Supplier engaged in the performance of its obligations under this Agreement;
- “Controller, Processor, Data Subject, Personal Data, Personal Data Breach, Data Protection” take the meaning given in the GDPR;

Officer”

“Customer”	means the person named as Customer in the Award Letter;
“DPA”	means the Data Protection Act 1998;
“DPA 2018”	means Data Protection Act 2018
“Data Loss Event”	means any event that results, or may result, in unauthorised access to Personal Data held by the Processor under this Agreement, and/or actual or potential loss and/or destruction of Personal Data in breach of this Agreement, including any Personal Data Breach;
“Data Protection Impact Assessment”	means an assessment by the Controller of the impact of the envisaged processing on the protection of Personal Data;
“Data Protection Legislation”	means (i) the GDPR, the LED and any applicable national implementing Laws as amended from time to time (ii) the DPA 2018 to the extent that it relates to processing of personal data and privacy; (iii) all applicable Law about the processing of personal data and privacy;
“Data Subject Access Request”	means a request made by, or on behalf of, a Data Subject in accordance with rights granted pursuant to the Data Protection Legislation to access their Personal Data;
“Expiry Date”	means the date for expiry of the Agreement as set out in the Award Letter;
“FOIA”	means the Freedom of Information Act 2000;
“GDPR”	means the General Data Protection Regulation (Regulation (EU) 2016/679);
“Information”	has the meaning given under section 84 of the FOIA;
“Joint Controllers”	where two or more Controllers jointly determine the purposes and means of processing
“Key Personnel”	means any persons specified as such in the Award Letter or otherwise notified as such by the Customer to the Supplier in writing;
“Law”	means any law, subordinate legislation within the meaning of Section 21(1) of the Interpretation Act 1978, bye-law, enforceable right within the meaning of Section 2 of the European Communities Act 1972, regulation, order, regulatory policy, mandatory guidance or code of practice, judgment of a relevant court of law, or directives or requirements with which the Supplier is bound to comply;
“LED”	means Law Enforcement Directive (Directive (EU) 2016/680);
“Party”	means a Party to this Agreement;
“Personal Data”	means personal data (as defined in the DPA) which is processed by the Supplier or any Staff on behalf of the Customer pursuant to or in connection with this Agreement;
Processor Personnel:	means all directors, officers, employees, agents, consultants and contractors of the Processor and/or of any Sub-Processor engaged in the performance of its obligations under this Agreement
“Protective Measures”	means appropriate technical and organisational measures which may include: pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the

such measures adopted by it including those outlined in Schedule A;

“Purchase Order Number”	means the Customer’s unique number relating to the supply of the Services;
“Request for Information”	has the meaning set out in the FOIA or the Environmental Information Regulations 2004 as relevant (where the meaning set out for the term “request” shall apply);
“Services”	means the services to be supplied by the Supplier to the Customer under the Agreement;
“Specification”	means the specification for the Services (including as to quantity, description and quality) as specified in the Award Letter;
“Staff”	means all directors, officers, employees, agents, consultants and Suppliers of the Supplier and/or of any sub-Supplier of the Supplier engaged in the performance of the Supplier’s obligations under the Agreement;
“Staff Vetting Procedures”	means vetting procedures that accord with good industry practice or, where requested by the Customer, the Customer’s procedures for the vetting of personnel as provided to the Supplier from time to time;
“Sub-processor”	means any third Party appointed to process Personal Data on behalf of the Processor related to this Agreement;
“Supplier”	means the person named as Supplier in the Award Letter;
“Term”	means the period from the start date of the Agreement set out in the Award Letter to the Expiry Date as such period may be extended in accordance with clause 4.2 or terminated in accordance with the terms and conditions of the Agreement;
“VAT”	means value added tax in accordance with the provisions of the Value Added Tax Act 1994; and
“Working Day”	means a day (other than a Saturday or Sunday) on which banks are open for business in the City of London.

1.2 In these terms and conditions, unless the context otherwise requires:

- 1.2.1 references to numbered clauses are references to the relevant clause in these terms and conditions;
- 1.2.2 any obligation on any Party not to do or omit to do anything shall include an obligation not to allow that thing to be done or omitted to be done;
- 1.2.3 the headings to the clauses of these terms and conditions are for information only and do not affect the interpretation of the Agreement;
- 1.2.4 any reference to an enactment includes reference to that enactment as amended or replaced from time to time and to any subordinate legislation or byelaw made under that enactment; and
- 1.2.5 the word ‘including’ shall be understood as meaning ‘including without limitation’.

2 Basis of Agreement

- 2.1 The Award Letter constitutes an offer by the Customer to purchase the Services subject to and in accordance with the terms and conditions of the Agreement.
- 2.2 The offer comprised in the Award Letter shall be deemed to be accepted by the Supplier on receipt by the Customer of a copy of the Award Letter countersigned by the Supplier within 7

days of the date of the Award Letter.

3 Supply of Services

- 3.1 In consideration of the Customer's agreement to pay the Charges, the Supplier shall supply the Services to the Customer for the Term subject to and in accordance with the terms and conditions of the Agreement.
- 3.2 In supplying the Services, the Supplier shall:
- 3.2.1 co-operate with the Customer in all matters relating to the Services and comply with all the Customer's instructions;
 - 3.2.2 perform the Services with all reasonable care, skill and diligence in accordance with good industry practice in the Supplier's industry, profession or trade;
 - 3.2.3 use Staff who are suitably skilled and experienced to perform tasks assigned to them, and in sufficient number to ensure that the Supplier's obligations are fulfilled in accordance with the Agreement;
 - 3.2.4 ensure that the Services shall conform with all descriptions and specifications set out in the Specification;
 - 3.2.5 comply with all applicable laws; and
 - 3.2.6 provide all equipment, tools and vehicles and other items as are required to provide the Services.
- 3.3 The Customer may by written notice to the Supplier at any time request a variation to the scope of the Services. In the event that the Supplier agrees to any variation to the scope of the Services, the Charges shall be subject to fair and reasonable adjustment to be agreed in writing between the Customer and the Supplier.

4 Term

- 4.1 The Agreement shall take effect on the date specified in Award Letter and shall expire on the Expiry Date unless it is otherwise extended in accordance with clause 4.2 or terminated in accordance with the terms and conditions of the Agreement.
- 4.2 The Customer may extend the Agreement for a period of up to 6 months by giving not less than 10 Working Days' notice in writing to the Supplier prior to the Expiry Date. The terms and conditions of the Agreement shall apply throughout any such extended period.

5 Charges, Payment and Recovery of Sums Due

- 5.1 The Charges for the Services shall be as set out in the Award Letter and shall be the full and exclusive remuneration of the Supplier in respect of the supply of the Services. Unless otherwise agreed in writing by the Customer, the Charges shall include every cost and expense of the Supplier directly or indirectly incurred in connection with the performance of the Services.
- 5.2 All amounts stated are exclusive of VAT which shall be charged at the prevailing rate. The Customer shall, following the receipt of a valid VAT invoice, pay to the Supplier a sum equal to the VAT chargeable in respect of the Services.
- 5.3 The Supplier shall invoice the Customer as specified in the Agreement. Each invoice shall include such supporting information required by the Customer to verify the accuracy of the invoice, including the relevant Purchase Order Number and a breakdown of the Services supplied in the invoice period.
- 5.4 In consideration of the supply of the Services by the Supplier, the Customer shall pay the Supplier the invoiced amounts no later than 30 days after verifying that the invoice is valid

and undisputed and includes a valid Purchase Order Number. The Customer may, without prejudice to any other rights and remedies under the Agreement, withhold or reduce payments in the event of unsatisfactory performance.

- 5.5 If the Customer fails to consider and verify an invoice in a timely fashion the invoice shall be regarded as valid and undisputed for the purpose of paragraph 5.4 after a reasonable time has passed.
- 5.6 If there is a dispute between the Parties as to the amount invoiced, the Customer shall pay the undisputed amount. The Supplier shall not suspend the supply of the Services unless the Supplier is entitled to terminate the Agreement for a failure to pay undisputed sums in accordance with clause 16.4. Any disputed amounts shall be resolved through the dispute resolution procedure detailed in clause 19.
- 5.7 If a payment of an undisputed amount is not made by the Customer by the due date, then the Customer shall pay the Supplier interest at the interest rate specified in the Late Payment of Commercial Debts (Interest) Act 1998.
- 5.8 Where the Supplier enters into a sub-contract, the Supplier shall include in that sub-contract:
- 5.8.1 provisions having the same effects as clauses 5.3 to 5.7 of this Agreement; and
 - 5.8.2 a provision requiring the counterparty to that sub-contract to include in any sub-contract which it awards provisions having the same effect as 5.3 to 5.8 of this Agreement.
 - 5.8.3 In this clause 5.8, “sub-contract” means a contract between two or more suppliers, at any stage of remoteness from the Authority in a subcontracting chain, made wholly or substantially for the purpose of performing (or contributing to the performance of) the whole or any part of this Agreement.
- 5.9 If any sum of money is recoverable from or payable by the Supplier under the Agreement (including any sum which the Supplier is liable to pay to the Customer in respect of any breach of the Agreement), that sum may be deducted unilaterally by the Customer from any sum then due, or which may come due, to the Supplier under the Agreement or under any other agreement or contract with the Customer. The Supplier shall not be entitled to assert any credit, set-off or counterclaim against the Customer in order to justify withholding payment of any such amount in whole or in part.

6 Premises and equipment

- 6.1 If necessary, the Customer shall provide the Supplier with reasonable access at reasonable times to its premises for the purpose of supplying the Services. All equipment, tools and vehicles brought onto the Customer’s premises by the Supplier or the Staff shall be at the Supplier’s risk.
- 6.2 If the Supplier supplies all or any of the Services at or from the Customer’s premises, on completion of the Services or termination or expiry of the Agreement (whichever is the earlier) the Supplier shall vacate the Customer’s premises, remove the Supplier’s plant, equipment and unused materials and all rubbish arising out of the provision of the Services and leave the Customer’s premises in a clean, safe and tidy condition. The Supplier shall be solely responsible for making good any damage to the Customer’s premises or any objects contained on the Customer’s premises which is caused by the Supplier or any Staff, other than fair wear and tear.
- 6.3 If the Supplier supplies all or any of the Services at or from its premises or the premises of a third party, the Customer may, during normal business hours and on reasonable notice,

inspect and examine the manner in which the relevant Services are supplied at or from the relevant premises.

- 6.4 The Customer shall be responsible for maintaining the security of its premises in accordance with its standard security requirements. While on the Customer's premises the Supplier shall, and shall procure that all Staff shall, comply with all the Customer's security requirements.
- 6.5 Where all or any of the Services are supplied from the Supplier's premises, the Supplier shall, at its own cost, comply with all security requirements specified by the Customer in writing.
- 6.6 Without prejudice to clause 3.2.6, any equipment provided by the Customer for the purposes of the Agreement shall remain the property of the Customer and shall be used by the Supplier and the Staff only for the purpose of carrying out the Agreement. Such equipment shall be returned promptly to the Customer on expiry or termination of the Agreement.
- 6.7 The Supplier shall reimburse the Customer for any loss or damage to the equipment (other than deterioration resulting from normal and proper use) caused by the Supplier or any Staff. Equipment supplied by the Customer shall be deemed to be in a good condition when received by the Supplier or relevant Staff unless the Customer is notified otherwise in writing within 5 Working Days.

7 Staff and Key Personnel

- 7.1 If the Customer reasonably believes that any of the Staff are unsuitable to undertake work in respect of the Agreement, it may, by giving written notice to the Supplier:
- 7.1.1 refuse admission to the relevant person(s) to the Customer's premises;
 - 7.1.2 direct the Supplier to end the involvement in the provision of the Services of the relevant person(s); and/or
 - 7.1.3 require that the Supplier replace any person removed under this clause with another suitably qualified person and procure that any security pass issued by the Customer to the person removed is surrendered,
- and the Supplier shall comply with any such notice.
- 7.2 The Supplier shall:
- 7.2.1 ensure that all Staff are vetted in accordance with the Staff Vetting Procedures;
 - 7.2.2 if requested, provide the Customer with a list of the names and addresses (and any other relevant information) of all persons who may require admission to the Customer's premises in connection with the Agreement; and
 - 7.2.3 procure that all Staff comply with any rules, regulations and requirements reasonably specified by the Customer.

7.3 Any Key Personnel shall not be released from supplying the Services without the agreement of the Customer, except by reason of long-term sickness, maternity leave, paternity leave, termination of employment or other extenuating circumstances.

7.4 Any replacements to the Key Personnel shall be subject to the prior written agreement of the Customer (not to be unreasonably withheld). Such replacements shall be of at least equal status or of equivalent experience and skills to the Key Personnel being replaced and be suitable for the responsibilities of that person in relation to the Services.

8 Assignment and sub-contracting

8.1 The Supplier shall not without the written consent of the Customer assign, sub-contract, novate or in any way dispose of the benefit and/ or the burden of the Agreement or any part of

the Agreement. The Customer may, in the granting of such consent, provide for additional terms and conditions relating to such assignment, sub-contract, novation or disposal. The Supplier shall be responsible for the acts and omissions of its sub-Suppliers as though those acts and omissions were its own.

8.2 Where the Customer has consented to the placing of sub-contracts, the Supplier shall, at the request of the Customer, send copies of each sub-contract, to the Customer as soon as is reasonably practicable.

8.3 The Customer may assign, novate, or otherwise dispose of its rights and obligations under the Agreement without the consent of the Supplier provided that such assignment, novation or disposal shall not increase the burden of the Supplier's obligations under the Agreement.

9 Intellectual Property Rights

9.1 All intellectual property rights in any materials provided by the Customer to the Supplier for the purposes of this Agreement shall remain the property of the Customer but the Customer hereby grants the Supplier a royalty-free, non-exclusive and non-transferable licence to use such materials as required until termination or expiry of the Agreement for the sole purpose of enabling the Supplier to perform its obligations under the Agreement.

9.2 All intellectual property rights in any materials created or developed by the Supplier pursuant to the Agreement or arising as a result of the provision of the Services shall vest in the Supplier. If, and to the extent, that any intellectual property rights in such materials vest in the Customer by operation of law, the Customer hereby assigns to the Supplier by way of a present assignment of future rights that shall take place immediately on the coming into existence of any such intellectual property rights all its intellectual property rights in such materials (with full title guarantee and free from all third party rights).

9.3 The Supplier hereby grants the Customer:

9.3.1 a perpetual, royalty-free, irrevocable, non-exclusive licence (with a right to sub-licence) to use all intellectual property rights in the materials created or developed pursuant to the Agreement and any intellectual property rights arising as a result of the provision of the Services; and

9.3.2 a perpetual, royalty-free, irrevocable and non-exclusive licence (with a right to sub-licence) to use:

(a) any intellectual property rights vested in or licensed to the Supplier on the date of the Agreement; and

(b) any intellectual property rights created during the Term but which are neither created or developed pursuant to the Agreement nor arise as a result of the provision of the Services,

including any modifications to or derivative versions of any such intellectual property rights, which the Customer reasonably requires in order to exercise its rights and take the benefit of the Agreement including the Services provided.

9.4 The Supplier shall indemnify, and keep indemnified, the Customer in full against all costs, expenses, damages and losses (whether direct or indirect), including any interest, penalties, and reasonable legal and other professional fees awarded against or incurred or paid by the Customer as a result of or in connection with any claim made against the Customer for actual or alleged infringement of a third party's intellectual property arising out of, or in connection with, the supply or use of the Services, to the extent that the claim is attributable to the acts or omission of the Supplier or any Staff.

10 Governance and Records

- 10.1 The Supplier shall:
- 10.1.1 attend progress meetings with the Customer at the frequency and times specified by the Customer and shall ensure that its representatives are suitably qualified to attend such meetings; and
 - 10.1.2 submit progress reports to the Customer at the times and in the format specified by the Customer.
- 10.2 The Supplier shall keep and maintain until 6 years after the end of the Agreement, or as long a period as may be agreed between the Parties, full and accurate records of the Agreement including the Services supplied under it and all payments made by the Customer. The Supplier shall on request afford the Customer or the Customer's representatives such access to those records as may be reasonably requested by the Customer in connection with the Agreement.

11 Confidentiality, Transparency and Publicity

- 11.1 Subject to clause 11.2, each Party shall:
- 11.1.1 treat all Confidential Information it receives as confidential, safeguard it accordingly and not disclose it to any other person without the prior written permission of the disclosing Party; and
 - 11.1.2 not use or exploit the disclosing Party's Confidential Information in any way except for the purposes anticipated under the Agreement.
- 11.2 Notwithstanding clause 11.1, a Party may disclose Confidential Information which it receives from the other Party:
- 11.2.1 where disclosure is required by applicable law or by a court of competent jurisdiction;
 - 11.2.2 to its auditors or for the purposes of regulatory requirements;
 - 11.2.3 on a confidential basis, to its professional advisers;
 - 11.2.4 to the Serious Fraud Office where the Party has reasonable grounds to believe that the other Party is involved in activity that may constitute a criminal offence under the Bribery Act 2010;
 - 11.2.5 where the receiving Party is the Supplier, to the Staff on a need to know basis to enable performance of the Supplier's obligations under the Agreement provided that the Supplier shall procure that any Staff to whom it discloses Confidential Information pursuant to this clause 11.2.5 shall observe the Supplier's confidentiality obligations under the Agreement; and
 - 11.2.6 where the receiving Party is the Customer:
 - (a) on a confidential basis to the employees, agents, consultants and Suppliers of the Customer;
 - (b) on a confidential basis to any other Central Government Body, any successor body to a Central Government Body or any company to which the Customer transfers or proposes to transfer all or any part of its business;
 - (c) to the extent that the Customer (acting reasonably) deems disclosure necessary or appropriate in the course of carrying out its public functions; or
 - (d) in accordance with clause 12.

and for the purposes of the foregoing, references to disclosure on a confidential basis shall mean disclosure subject to a confidentiality agreement or arrangement containing terms no less stringent than those placed on the Customer under this clause 11.

11.3 The Parties acknowledge that, except for any information which is exempt from disclosure in accordance with the provisions of the FOIA, the content of the Agreement is not Confidential Information and the Supplier hereby gives its consent for the Customer to publish this Agreement in its entirety to the general public (but with any information that is exempt from disclosure in accordance with the FOIA redacted) including any changes to the Agreement agreed from time to time. The Customer may consult with the Supplier to inform its decision regarding any redactions but shall have the final decision in its absolute discretion whether any of the content of the Agreement is exempt from disclosure in accordance with the provisions of the FOIA.

11.4 The Supplier shall not and shall take reasonable steps to ensure that the Staff shall not, make any press announcement or publicise the Agreement or any part of the Agreement in any way, except with the prior written consent of the Customer.

12 Freedom of Information

12.1 The Supplier acknowledges that the Customer is subject to the requirements of the FOIA and the Environmental Information Regulations 2004 and shall:

12.1.1 provide all necessary assistance and cooperation as reasonably requested by the Customer to enable the Customer to comply with its obligations under the FOIA and the Environmental Information Regulations 2004;

12.1.2 transfer to the Customer all Requests for Information relating to this Agreement that it receives as soon as practicable and in any event within 2 Working Days of receipt;

12.1.3 provide the Customer with a copy of all Information belonging to the Customer requested in the Request for Information which is in its possession or control in the form that the Customer requires within 5 Working Days (or such other period as the Customer may reasonably specify) of the Customer's request for such Information; and

12.1.4 not respond directly to a Request for Information unless authorised in writing to do so by the Customer.

12.2 The Supplier acknowledges that the Customer may be required under the FOIA and the Environmental Information Regulations 2004 to disclose Information concerning the Supplier or the Services (including commercially sensitive information) without consulting or obtaining consent from the Supplier. In these circumstances the Customer shall, in accordance with any relevant guidance issued under the FOIA, take reasonable steps, where appropriate, to give the Supplier advance notice, or failing that, to draw the disclosure to the Supplier's attention after any such disclosure.

12.3 Notwithstanding any other provision in the Agreement, the Customer shall be responsible for determining in its absolute discretion whether any Information relating to the Supplier or the Services is exempt from disclosure in accordance with the FOIA and/or the Environmental Information Regulations 2004.

13 Data Protection

13.1 The Parties acknowledge that for the purposes of the Data Protection Legislation, the Customer is the Controller and the Contractor is the Processor unless otherwise specified in

Schedule A. The only processing that the Processor is authorised to do is listed in Schedule A by the Controller and may not be determined by the Processor.

- 13.2 The Processor shall notify the Controller immediately if it considers that any of the Controller's instructions infringe the Data Protection Legislation.
- 13.3 The Processor shall provide all reasonable assistance to the Controller in the preparation of any Data Protection Impact Assessment prior to commencing any processing. Such assistance may, at the discretion of the Controller, include:
- (a) a systematic description of the envisaged processing operations and the purpose of the processing;
 - (b) an assessment of the necessity and proportionality of the processing operations in relation to the Services;
 - (c) an assessment of the risks to the rights and freedoms of Data Subjects; and
 - (d) the measures envisaged to address the risks, including safeguards, security measures and mechanisms to ensure the protection of Personal Data.
- 13.4 The Processor shall, in relation to any Personal Data processed in connection with its obligations under this Agreement:
- (a) process that Personal Data only in accordance with Schedule A, unless the Processor is required to do otherwise by Law. If it is so required, the Processor shall promptly notify the Controller before processing the Personal Data unless prohibited by Law;
 - (b) ensure that it has in place Protective Measures, which are appropriate to protect against a Data Loss Event, which the Controller may reasonably reject (but failure to reject shall not amount to approval by the Controller of the adequacy of the Protective Measures), having taken account of the:
 - (i) nature of the data to be protected;
 - (ii) harm that might result from a Data Loss Event;
 - (iii) state of technological development; and
 - (iv) cost of implementing any measures;
 - (c) ensure that:
 - (i) the Processor Personnel do not process Personal Data except in accordance with this Agreement (and in particular Schedule A);
 - (ii) it takes all reasonable steps to ensure the reliability and integrity of any Processor Personnel who have access to the Personal Data and ensure that they:
 - (A) are aware of and comply with the Processor's duties under this clause;
 - (B) are subject to appropriate confidentiality undertakings with the Processor or any Sub-processor;

- (C) are informed of the confidential nature of the Personal Data and do not publish, disclose or divulge any of the Personal Data to any third Party unless directed in writing to do so by the Controller or as otherwise permitted by this Agreement; and
- (D) have undergone adequate training in the use, care, protection and handling of Personal Data; and
- (d) not transfer Personal Data outside of the EU unless the prior written consent of the Controller has been obtained and the following conditions are fulfilled:
 - (i) the Controller or the Processor has provided appropriate safeguards in relation to the transfer (whether in accordance with GDPR Article 46 or LED Article 37) as determined by the Controller;
 - (ii) the Data Subject has enforceable rights and effective legal remedies;
 - (iii) the Processor complies with its obligations under the Data Protection Legislation by providing an adequate level of protection to any Personal Data that is transferred (or, if it is not so bound, uses its best endeavours to assist the Controller in meeting its obligations); and
 - (iv) the Processor complies with any reasonable instructions notified to it in advance by the Controller with respect to the processing of the Personal Data;
- (e) at the written direction of the Controller, delete or return Personal Data (and any copies of it) to the Controller on termination of the Agreement unless the Processor is required by Law to retain the Personal Data.

13.5 Subject to clause 1.6, the Processor shall notify the Controller immediately if it:

- (a) receives a Data Subject Request (or purported Data Subject Request);
- (b) receives a request to rectify, block or erase any Personal Data;
- (c) receives any other request, complaint or communication relating to either Party's obligations under the Data Protection Legislation;
- (d) receives any communication from the Information Commissioner or any other regulatory authority in connection with Personal Data processed under this Agreement;
- (e) receives a request from any third Party for disclosure of Personal Data where compliance with such request is required or purported to be required by Law; or
- (f) becomes aware of a Data Loss Event.

13.6 The Processor's obligation to notify under clause 1.5 shall include the provision of further information to the Controller in phases, as details become available.

13.7 Taking into account the nature of the processing, the Processor shall provide the Controller with full assistance in relation to either Party's obligations under Data Protection Legislation and any complaint, communication or request made under clause 1.5 (and

insofar as possible within the timescales reasonably required by the Controller) including by promptly providing:

- (a) the Controller with full details and copies of the complaint, communication or request;
- (b) such assistance as is reasonably requested by the Controller to enable the Controller to comply with a Data Subject Request within the relevant timescales set out in the Data Protection Legislation;
- (c) the Controller, at its request, with any Personal Data it holds in relation to a Data Subject;
- (d) assistance as requested by the Controller following any Data Loss Event;
- (e) assistance as requested by the Controller with respect to any request from the Information Commissioner's Office, or any consultation by the Controller with the Information Commissioner's Office.

13.8 The Processor shall maintain complete and accurate records and information to demonstrate its compliance with this clause. This requirement does not apply where the Processor employs fewer than 250 staff, unless:

- (a) the Controller determines that the processing is not occasional;
- (b) the Controller determines the processing includes special categories of data as referred to in Article 9(1) of the GDPR or Personal Data relating to criminal convictions and offences referred to in Article 10 of the GDPR; or
- (c) the Controller determines that the processing is likely to result in a risk to the rights and freedoms of Data Subjects.

13.9 The Processor shall allow for audits of its Data Processing activity by the Controller or the Controller's designated auditor.

13.10 Each Party shall designate its own data protection officer if required by the Data Protection Legislation.

13.11 Before allowing any Sub-processor to process any Personal Data related to this Agreement, the Processor must:

- (a) notify the Controller in writing of the intended Sub-processor and processing;
- (b) obtain the written consent of the Controller;
- (c) enter into a written agreement with the Sub-processor which give effect to the terms set out in this clause 13 such that they apply to the Sub-processor; and
- (d) provide the Controller with such information regarding the Sub-processor as the Controller may reasonably require.

13.12 The Processor shall remain fully liable for all acts or omissions of any of its Sub-processors.

13.13 The Controller may, at any time on not less than 30 Working Days' notice, revise this clause by replacing it with any applicable controller to processor standard clauses or similar

terms forming part of an applicable certification scheme (which shall apply when incorporated by attachment to this Agreement).

- 13.14 The Parties agree to take account of any guidance issued by the Information Commissioner's Office. The Controller may on not less than 30 Working Days' notice to the Processor amend this agreement to ensure that it complies with any guidance issued by the Information Commissioner's Office.
- 13.15 Where the Parties include two or more Joint Controllers as identified in Schedule A in accordance with GDPR Article 26, those Parties shall enter into a Joint Controller Agreement based on the terms outlined in Schedule [Y] in replacement of Clauses 1.1-1.14 for the Personal Data under Joint Control.

14 Liability

- 14.1 The Supplier shall not be responsible for any injury, loss, damage, cost or expense suffered by the Customer if and to the extent that it is caused by the negligence or wilful misconduct of the Customer or by breach by the Customer of its obligations under the Agreement.
- 14.2 Subject always to clauses 14.3 and 14.4:
- 14.2.1 the aggregate liability of the Supplier in respect of all defaults, claims, losses or damages howsoever caused, whether arising from breach of the Agreement, the supply or failure to supply of the Services, misrepresentation (whether tortious or statutory), tort (including negligence), breach of statutory duty or otherwise shall in no event exceed a sum equal to 125% of the Charges paid or payable to the Supplier; and
- 14.2.2 except in the case of claims arising under clauses 9.4 and 18.3, in no event shall the Supplier be liable to the Customer for any:
- (a) loss of profits;
 - (b) loss of business;
 - (c) loss of revenue;
 - (d) loss of or damage to goodwill;
 - (e) loss of savings (whether anticipated or otherwise); and/or
 - (f) any indirect, special or consequential loss or damage.
- 14.3 Nothing in the Agreement shall be construed to limit or exclude either Party's liability for:
- 14.3.1 death or personal injury caused by its negligence or that of its Staff;
- 14.3.2 fraud or fraudulent misrepresentation by it or that of its Staff; or
- 14.3.3 any other matter which, by law, may not be excluded or limited.
- 14.4 The Supplier's liability under the indemnity in clause 9.4 and 18.3 shall be unlimited.

15 Force Majeure

Neither Party shall have any liability under or be deemed to be in breach of the Agreement for any delays or failures in performance of the Agreement which result from circumstances beyond the reasonable control of the Party affected. Each Party shall promptly notify the other Party in writing when such circumstances cause a delay or failure in performance and when they cease to do so. If such circumstances continue for a continuous period of more than two months, either Party may terminate the Agreement by written notice to the other Party.

16 Termination

- 16.1 The Customer may terminate the Agreement at any time by notice in writing to the Supplier to take effect on any date falling at least 1 month (or, if the Agreement is less than 3 months in duration, at least 10 Working Days) later than the date of service of the relevant notice.
- 16.2 Without prejudice to any other right or remedy it might have, the Customer may terminate the Agreement by written notice to the Supplier with immediate effect if the Supplier:
- 16.2.1 (without prejudice to clause 16.2.5), is in material breach of any obligation under the Agreement which is not capable of remedy;
 - 16.2.2 repeatedly breaches any of the terms and conditions of the Agreement in such a manner as to reasonably justify the opinion that its conduct is inconsistent with it having the intention or ability to give effect to the terms and conditions of the Agreement;
 - 16.2.3 is in material breach of any obligation which is capable of remedy, and that breach is not remedied within 30 days of the Supplier receiving notice specifying the breach and requiring it to be remedied;
 - 16.2.4 undergoes a change of control within the meaning of section 416 of the Income and Corporation Taxes Act 1988;
 - 16.2.5 breaches any of the provisions of clauses 7.2, 11, 12, 13 and 17;
 - 16.2.6 becomes insolvent, or if an order is made or a resolution is passed for the winding up of the Supplier (other than voluntarily for the purpose of solvent amalgamation or reconstruction), or if an administrator or administrative receiver is appointed in respect of the whole or any part of the Supplier's assets or business, or if the Supplier makes any composition with its creditors or takes or suffers any similar or analogous action (to any of the actions detailed in this clause 16.2.6) in consequence of debt in any jurisdiction; or
 - 16.2.7 fails to comply with legal obligations in the fields of environmental, social or labour law.
- 16.3 The Supplier shall notify the Customer as soon as practicable of any change of control as referred to in clause 16.2.4 or any potential such change of control.
- 16.4 The Supplier may terminate the Agreement by written notice to the Customer if the Customer has not paid any undisputed amounts within 90 days of them falling due.
- 16.5 Termination or expiry of the Agreement shall be without prejudice to the rights of either Party accrued prior to termination or expiry and shall not affect the continuing rights of the Parties under this clause and clauses 2, 3.2, 6.1, 6.2, 6.6, 6.7, 7, 9, 10.2, 11, 12, 13, 14, 16.6, 17.4, 18.3, 19 and 20.7 or any other provision of the Agreement that either expressly or by implication has effect after termination.
- 16.6 Upon termination or expiry of the Agreement, the Supplier shall:
- 16.6.1 give all reasonable assistance to the Customer and any incoming supplier of the Services; and
 - 16.6.2 return all requested documents, information and data to the Customer as soon as reasonably practicable.

17 Compliance

- 17.1 The Supplier shall promptly notify the Customer of any health and safety hazards which may arise in connection with the performance of its obligations under the Agreement. The Customer shall promptly notify the Supplier of any health and safety hazards which may exist or arise at the Customer's premises and which may affect the Supplier in the performance of

its obligations under the Agreement.

17.2 The Supplier shall:

17.2.1 comply with all the Customer's health and safety measures while on the Customer's premises; and

17.2.2 notify the Customer immediately in the event of any incident occurring in the performance of its obligations under the Agreement on the Customer's premises where that incident causes any personal injury or damage to property which could give rise to personal injury.

17.3 The Supplier shall:

17.3.1 perform its obligations under the Agreement in accordance with all applicable equality Law and the Customer's equality and diversity policy as provided to the Supplier from time to time; and

17.3.2 take all reasonable steps to secure the observance of clause 17.3.1 by all Staff.

17.4 The Supplier shall supply the Services in accordance with the Customer's environmental policy as provided to the Supplier from time to time.

17.5 The Supplier shall comply with, and shall ensure that its Staff shall comply with, the provisions of:

17.5.1 the Official Secrets Acts 1911 to 1989; and

17.5.2 section 182 of the Finance Act 1989.

18 Prevention of Fraud and Corruption

18.1 The Supplier shall not offer, give, or agree to give anything, to any person an inducement or reward for doing, refraining from doing, or for having done or refrained from doing, any act in relation to the obtaining or execution of the Agreement or for showing or refraining from showing favour or disfavour to any person in relation to the Agreement.

18.2 The Supplier shall take all reasonable steps, in accordance with good industry practice, to prevent fraud by the Staff and the Supplier (including its shareholders, members and directors) in connection with the Agreement and shall notify the Customer immediately if it has reason to suspect that any fraud has occurred or is occurring or is likely to occur.

18.3 If the Supplier or the Staff engages in conduct prohibited by clause 18.1 or commits fraud in relation to the Agreement or any other contract with the Crown (including the Customer) the Customer may:

18.3.1 terminate the Agreement and recover from the Supplier the amount of any loss suffered by the Customer resulting from the termination, including the cost reasonably incurred by the Customer of making other arrangements for the supply of the Services and any additional expenditure incurred by the Customer throughout the remainder of the Agreement; or

18.3.2 recover in full from the Supplier any other loss sustained by the Customer in consequence of any breach of this clause.

19 Dispute Resolution

19.1 The Parties shall attempt in good faith to negotiate a settlement to any dispute between them arising out of or in connection with the Agreement and such efforts shall involve the escalation of the dispute to an appropriately senior representative of each Party.

19.2 If the dispute cannot be resolved by the Parties within one month of being escalated as

referred to in clause 19.1, the dispute may by agreement between the Parties be referred to a neutral adviser or mediator (the “**Mediator**”) chosen by agreement between the Parties. All negotiations connected with the dispute shall be conducted in confidence and without prejudice to the rights of the Parties in any further proceedings.

- 19.3 If the Parties fail to appoint a Mediator within one month, or fail to enter into a written agreement resolving the dispute within one month of the Mediator being appointed, either Party may exercise any remedy it has under applicable law.

20 General

- 20.1 Each of the Parties represents and warrants to the other that it has full capacity and authority, and all necessary consents, licences and permissions to enter into and perform its obligations under the Agreement, and that the Agreement is executed by its duly authorised representative.
- 20.2 A person who is not a party to the Agreement shall have no right to enforce any of its provisions which, expressly or by implication, confer a benefit on him, without the prior written agreement of the Parties.
- 20.3 The Agreement cannot be varied except in writing signed by a duly authorised representative of both the Parties.
- 20.4 The Agreement contains the whole agreement between the Parties and supersedes and replaces any prior written or oral agreements, representations or understandings between them. The Parties confirm that they have not entered into the Agreement on the basis of any representation that is not expressly incorporated into the Agreement. Nothing in this clause shall exclude liability for fraud or fraudulent misrepresentation.
- 20.5 Any waiver or relaxation either partly, or wholly of any of the terms and conditions of the Agreement shall be valid only if it is communicated to the other Party in writing and expressly stated to be a waiver. A waiver of any right or remedy arising from a breach of contract shall not constitute a waiver of any right or remedy arising from any other breach of the Agreement.
- 20.6 The Agreement shall not constitute or imply any partnership, joint venture, agency, fiduciary relationship or other relationship between the Parties other than the contractual relationship expressly provided for in the Agreement. Neither Party shall have, nor represent that it has, any authority to make any commitments on the other Party’s behalf.
- 20.7 Except as otherwise expressly provided by the Agreement, all remedies available to either Party for breach of the Agreement (whether under the Agreement, statute or common law) are cumulative and may be exercised concurrently or separately, and the exercise of one remedy shall not be deemed an election of such remedy to the exclusion of other remedies.
- 20.8 If any provision of the Agreement is prohibited by law or judged by a court to be unlawful, void or unenforceable, the provision shall, to the extent required, be severed from the Agreement and rendered ineffective as far as possible without modifying the remaining provisions of the Agreement, and shall not in any way affect any other circumstances of or the validity or enforcement of the Agreement.

21 Notices

- 21.1 Any notice to be given under the Agreement shall be in writing and may be served by personal delivery, first class recorded or, subject to clause 21.3, e-mail to the address of the relevant Party set out in the Award Letter, or such other address as that Party may from time to time notify to the other Party in accordance with this clause:
- 21.2 Notices served as above shall be deemed served on the Working Day of delivery provided delivery is before 5.00pm on a Working Day. Otherwise delivery shall be deemed to occur on

the next Working Day. An email shall be deemed delivered when sent unless an error message is received.

21.3 Notices under clauses 15 (Force Majeure) and 16 (Termination) may be served by email only if the original notice is then sent to the recipient by personal delivery or recorded delivery in the manner set out in clause 21.1.

22 Governing Law and Jurisdiction

The validity, construction and performance of the Agreement, and all contractual and non contractual matters arising out of it, shall be governed by English law and shall be subject to the exclusive jurisdiction of the English courts to which the Parties submit.

Schedule A: Schedule of Processing, Personal Data and Data Subjects

This Schedule shall be completed by the Controller, who may take account of the view of the Processors, however the final decision as to the content of this Schedule shall be with the Controller at its absolute discretion.

1. The contact details of the Controller's Data Protection Officer are:

[REDACTED]

2. The contact details of the Processor's Data Protection Officer are:

Dr. Huybert Groenendaal

Managing Director

EpiX Analytics

1643 Spruce St, Boulder, CO 80302, USA

+1 303 440 8524

[REDACTED]

3. The Processor shall comply with any further written instructions with respect to processing by the Controller.

4. Any such further instructions shall be incorporated into this Schedule.

Description	Details
Identity of the Controller and Processor	The Parties acknowledge that for the purposes of the Data Protection Legislation, the Customer is the Controller and the Contractor is the Processor in accordance with Clause 14.3.
Subject matter of the processing	<p>The contract will deliver training on quantitative risk assessment for FSA staff.</p> <p>The processing is needed so the trainer can gain an understanding of the attendee's learning needs, for example by asking them to complete a survey before the event to capture information on their current level of knowledge and training requirements.</p>
Duration of the processing	7 February 2019 to 15 March 2019
Nature and purposes of the processing	Email a survey to training participants, share spreadsheets with participants via a web page, receive spreadsheets from participants as part of their exercises. Potentially share datasets with instructor to use in exercises.
Type of Personal Data being Processed	Participants names, academic degrees, job titles, and email addresses.

Categories of Data Subject	Staff
<p>Plan for return and destruction of the data once the processing is complete</p> <p>UNLESS requirement under union or member state law to preserve that type of data</p>	<p>Data will be retained for four weeks (two-week training + 2 week after the training to make sure any follow-up questions can be addressed).</p>

Annex 2
Specification

<i>Specification Reference</i>
FSA628
<i>Specification Title</i>
Quantitative Risk Assessment Training for Food Safety
<i>Contract Duration</i>
February – March 2019

This specification, which forms part of the Invitation to Tender (ITT), comprises of three individual sections: -

- A. SPECIFICATION:** An outline of the requirement
- B. PROCUREMENT TIMETABLE:** An estimated timetable for the procurement of the proposed requirement

THE SPECIFICATION, INCLUDING PROJECT TIMETABLE AND EVALUATION OF TENDERS

GENERAL INTRODUCTION

The Food Standards Agency is an independent Government department working across England, Wales and Northern Ireland to protect public health and consumers wider interest in food. We make sure food is safe and what it says it is.

The Agency is committed to openness, transparency and equality of treatment to all suppliers. As well as these principles, for science projects the final project report will be published on the Food Standards Agency website (www.food.gov.uk). For science projects we will encourage contractors to publish their work in peer reviewed scientific publications wherever possible. Also, in line with the Government's Transparency Agenda which aims to encourage more open access to data held by government, the Agency is developing a policy on the release of underpinning data from all of its science- and evidence-gathering projects. Underpinning data should also be published in an open, accessible, and re-usable format, such that the data can be made available to future researchers and the maximum benefit is derived from it. The Agency has established the key principles for release of underpinning data that will be applied to all new science- and evidence-gathering projects which we would expect contractors to comply with. These can be found at <http://www.food.gov.uk/about-us/data-and-policies/underpinning-data>

Summary

The FSA is strengthening its risk assessment capabilities. To support this, the FSA are seeking a training provider to provide staff with quantitative risk assessment skills.

A. THE SPECIFICATION

Background

Training is needed to provide Food Standards Agency (FSA) staff with introductory and intermediate skills in quantitative risk assessment for food safety.

The Specification

Aim: Tenders are invited for the provision of training on quantitative risk assessment as below.

The training should:

- focus on Quantitative Risk Assessment (QRA) for food safety;
- apply to a range of hazards (e.g. microbiological and toxicological);

- introduce QRA at a level appropriate for attendees with knowledge of qualitative risk assessment but who do not necessarily have experience in quantitative risk assessment or simulation tools, and then build skills to an intermediate level;
- introduce the key statistical concepts that underpin QRA;
- introduce and then provide intermediate skills in risk modelling;
- introduce dose-response modelling, in particular for microbiological risk assessment (desirable);
- introduce and compare deterministic and probabilistic approaches, but focus on stochastic processes, probabilistic risk assessment and Monte Carlo simulation;
- involve building risk assessment models (preferably using @RISK) of basic to intermediate complexity. Additional materials showing the solutions or exercises in R would be desirable but not essential.
- outline how to source, select and use data when building models;
- outline how to use expert opinion when building models;
- describe probability theory, probability distributions, conditional probability, probability distributions and distribution fitting;
- outline scenario and sensitivity analysis;
- involve modeling variability and uncertainty;
- describe how to present risk assessments and their findings;
- describe common risk modeling mistakes and how to prevent them;
- describe how to critically assess the results from published risk assessments;
- involve a mixture of taught lessons and practical hands-on sessions.

Please provide options for how this training / knowledge transfer could be delivered.

Out of scope: The training does not need to cover qualitative risk assessment or introduce how QRA fits into the wider context of risk analysis.

Number of participants: Approximately 20 participants will attend the training.

Timing: The training must be delivered in February and/or March 2019 (with March preferred). Please specify the date(s) on which the trainers would be available to deliver the course.

Location: The training will be held in London (UK). The venue will be sourced separately by FSA and associated costs do not need to be included in the tender.

Personnel: For 1) your organisation, and 2) specifically for key personnel involved in the delivery of this contract, please provide details of their experience and expertise of delivering quantitative risk assessment training relevant to food safety, including the number of years during which they have provided this training.

B. PROCUREMENT TIMETABLE

Table 1 details an **estimated** project timetable for the project. Tenderers should however be aware that the Agency needs to acquire the evidence outlined in this ITT in a timely manner and you should justify your timings in your work plan.

TABLE 1. ESTIMATED PROJECT TIMETABLE	
EXPECTED DATE	INVITATION TO (ITT) TENDER
19 December 2018	Invitation to Tender (ITT) issued by the Agency
Immediately as above	ITT Clarification period opens*
7 January 2019	ITT Clarification period closes**
14 January 2019	Closing date for submission of ITT responses***
15 January 2019	Evaluation of ITT responses and tenderers contacted with any points raised with responses required by 21 January 2019
22 January 2019	Appraisal panel meeting held to consider clarified ITT responses
23 January 2019	Tenderers notified of outcome of appraisal and preferred Tenderer (or Tenderers) identified
24 January 2019	Contract awarded and signed
As soon as possible following contract award	Project initiation meeting/teleconference takes place and project commences
Contract delivery period	February – March 2019



OPTION 5: Two-week course on the following dates: 4/3/19-15/3/19

<i>Day 1</i>	<p>Introduction to quantitative food safety risk assessment</p> <ul style="list-style-type: none"> ○ Principles ○ Deterministic vs probabilistic approaches ○ Main steps <ul style="list-style-type: none"> ● Model design ● Model building: stochastic processes and data, food safety specific methods ● Modeling parameter and model uncertainty ● Communicating results <p>Statistical foundations</p> <ul style="list-style-type: none"> ○ Introduction to probability theory ○ Statistical descriptors: moments, percentiles and more ○ Probability distributions: uncertainty, variability and inter-individual variability ○ Graphical representations of risk events ○ Introduction to some commonly used probability distributions <p>Introduction to risk modeling</p> <ul style="list-style-type: none"> ○ Monte Carlo simulation, @RISK and Excel, the R statistical environment and other scripting languages ○ Calculation vs. simulation - the pros and cons of Monte Carlo ○ Most commonly used distributions, their parameters, and how to read them ○ Typical risk analysis results, their presentation and interpretation <p>Practical problems to solve</p>
<i>Day 2</i>	<p>Stochastic processes - applications to QRA (mix of lectures and problems to solve)</p> <ul style="list-style-type: none"> ○ Binomial Process <ul style="list-style-type: none"> ● Binomial, beta, negative binomial and geometric distributions ● Population prevalence and individual state with imperfect test ● Practical problems to solve ○ Poisson Process <ul style="list-style-type: none"> ● Poisson, gamma, exponential, Erlang, Polya, and Delaporte distributions ● Modeling foodborne cases incidence, predicting future foodborne cases

	<ul style="list-style-type: none"> • Practical problems to solve
<i>Day 3</i>	<p>Stochastic processes (continued)</p> <ul style="list-style-type: none"> ○ Mixed Poisson and Binomial processes ○ Hypergeometric process <ul style="list-style-type: none"> • Hypergeometric and inverse Hypergeometric distributions • Herd state estimation with imperfect diagnostic test ○ Practical problems to solve <p>Aggregate modeling</p> <ul style="list-style-type: none"> ○ Summing large number of random variables: calculating indemnification costs, total outbreak losses, total foodborne illnesses ○ Useful identities and approximations ○ Practical problems to solve <p>Case studies - microbiological and toxicological QRA</p>
<i>Day 4</i>	<p>Use of data for QRA modelling</p> <ul style="list-style-type: none"> ○ Selecting data: appropriateness, quality, missing values ○ How to use reported data in risk assessment models ○ Statistical methods to fit distributions to data ○ Combining data sources and/or expert opinion: mixture distributions and meta-analysis <p>Practical problems to solve</p> <p>Case studies - microbiological and toxicological QRA</p> <p>Discussion of application to attendees' work-based projects:</p> <ul style="list-style-type: none"> ○ Link to case studies ○ Relevant modelling methods
<i>Day 5</i>	<p>Work on attendees' work-based projects, with support from trainer</p>
<i>Day 6</i>	<p>Refresher and Q&A</p> <p>Principles of food safety modelling</p> <ul style="list-style-type: none"> ○ Farm to fork vs. empirical and risk attribution models ○ Exposure assessment <ul style="list-style-type: none"> • Principles in microbial and chemical food safety • Food consumptions databases and limitations <p>Dose-response modelling</p> <ul style="list-style-type: none"> ○ Mechanistic vs. "curve fitting" and empirical models ○ Chemical vs microbial DR <p>Food safety modeling problems to solve</p> <p>Case studies - microbiological and toxicological QRA</p>
<i>Day 7</i>	<p>Modeling parameter and model uncertainty</p> <ul style="list-style-type: none"> ○ Bayesian statistics <ul style="list-style-type: none"> • Theory and derivation, comparison with classical statistical and Bootstrap methods <ul style="list-style-type: none"> ▪ Example: modeling p when no events are observed (zero-numerator) • Posterior construction and simulation <ul style="list-style-type: none"> ▪ Conjugate priors, discrete approximations, Bayesian Monte Carlo, MCMC, Likelihood-free methods (ABC) ○ Classical statistics <ul style="list-style-type: none"> • Using classical statistical inference and tests to model uncertainty about population parameters • Mean, SD/SE, prevalence, incidence • Limitations ○ The bootstrap <ul style="list-style-type: none"> • Non-parametric and parametric Bootstrap techniques • Using the bootstrap to model correlations <p>Practical problems to solve</p> <p>Case studies</p>
<i>Day 8</i>	<p>Scenario and sensitivity analysis</p> <ul style="list-style-type: none"> ○ Objectives and principles ○ Overview of methods <p>Model design and validation</p> <ul style="list-style-type: none"> ○ Good practices in risk modeling: how to build and maintain a model (A-Z steps) ○ Common mistakes and their prevention ○ Risk analysis checklist <p>Work on attendees' work-based projects, with support from trainer (1/2 day)</p>

Day 9	Work on attendees' work-based projects, with support from trainer
Day 10	<p>Communicating results: presentation and interpretation</p> <p>How to critically assess published risk assessments</p> <ul style="list-style-type: none"> ○ Review of selected published QRA ● <p>Wrap-up: presentation and discussion of attendees' work-based projects</p>

2: ORGANISATIONAL EXPERIENCE AND EXPERTISE (15%)

Founded in 2003, EpiX' work covers all aspects of the quantification of risk and advanced statistical analysis, but its core expertise is in animal and human health risk analysis, including food safety, toxicology, and epidemiology. EpiX' clients include a balanced mix of regulatory agencies, universities, and private companies. Example clients relevant to the proposed project include the

EpiX is recognized worldwide as a training reference in risk analysis for food safety. Examples of public courses can be found at <https://www.epixanalytics.com/risk-analysis-in-health-epidemiology-and-food-safety.html>. EpiX' has also delivered courses to most of the institutions listed above, while also actively collaborating with leading research and training institutions such as the Royal Veterinary College (London), Colorado State University (Colorado), and JIFSAN (Maryland) in providing risk analysis training at the graduate and professional level. The proposed training will build on the existing material developed for these courses, but updated and customized to FSA's needs and requirements.

EpiX Analytics has also made freely available online a repository of risk analysis methods, knowledge, and example applications, including white papers. This wiki-style resource, Model Assist (<https://modelassist.epixanalytics.com/>), is widely used by the risk analysis community and gets an average of 10,000 individual visits per month. Regulators from the US and abroad use this tool extensively to perform risk assessments.

3: TRAINERS EXPERIENCE AND EXPERTISE (15%)

Dr. Francisco Zagmutt will be the main trainer for the proposed courses in QRA for Food Safety. Dr. Zagmutt is a managing director of EpiX analytics, where he uses innovative risk modelling and analytics methods to help clients make key decisions under uncertainty. With over 18 years of risk modelling experience, Francisco has developed a well-known reputation in the risk analysis community for his teaching abilities and for his clarity when communicating complex risk assessment principles to a broad audience. Over the past 12 years with EpiX, Francisco has trained more than 1,200 professionals from academia, government agencies, and private companies on every continent in risk analysis and simulation modelling. In addition to providing training to risk assessment teams in most of the agencies listed as EpiX clients earlier, Dr. Zagmutt also leads the advanced risk analysis training module for the Joint Institute for Food Safety and Applied Nutrition (JIFSAN), training a significant number of risk assessors for FDA-CIFSAN, China, and the Middle East. He is currently leading a series of food-safety risk assessment projects including a foodborne antimicrobial resistance attribution and prediction model, and a foodborne chemical exposure assessment.

Francisco is affiliate faculty at Colorado State University, Animal Sciences department, and also lectures in Risk Management Theory and Application at the Colorado State University College of Business.

He holds a DVM from the University of Chile, a Masters in Preventive Veterinary Medicine from UC Davis, and a PhD in Epidemiology from Colorado State University. His profile is available at: <https://www.epixanalytics.com/dr-francisco-zagmutt.html>

Drs. Costard and Pouzou will be additional trainers who will provide remote support for Options 3 and 4 of the proposed training.

Dr. Solenne Costard is a Senior Consultant at EpiX Analytics. Prior to joining the company in 2012, she worked in the Veterinary Epidemiology and Public Health Group at the Royal Veterinary College (RVC) in London, UK, from 2005 to 2011. Solenne is one of the instructors of public and private courses given by EpiX in quantitative risk analysis in general, and epidemiology and food safety in particular. She also participated to the development of new courses, offered by EpiX Analytics and/or in collaboration with other institutions. As part of her consulting and research work, Solenne has also led and worked on engagements that involved food safety modelling, foodborne antimicrobial resistance modelling, multi-criteria decision analysis, modelling of disease introduction and spread in populations, and various statistical analysis methods. She holds a DVM from Oniris Nantes, France, a Master of Science and a PhD from the University of London, UK. Her profile is available at: <https://www.epixanalytics.com/dr-solenne-costard.html>

Dr. Jane Pouzou is a quantitative health risk analysis consultant at EpiX Analytics. Jane specializes in the probabilistic assessment of environmental and occupational exposures to chemical and microbial agents and their potential impacts on human health. Jane joined EpiX Analytics after completion of her doctoral degree in 2016 at the University of Washington School of Public Health's Department of Environmental and Occupational Health Sciences. Jane's research interests include comparative exposure and risk assessments and the use of decision analysis methods in health risk evaluation. She holds a PhD from the University of Washington and a Master of Public Health from the University of Virginia. Her profile is available at: <https://www.epixanalytics.com/dr-jane-pouzou.html>

Pre-evaluation clarifications dated 17/01/19

Requests for clarification and additional information

Question 1: The course content for day 1 of option 2 appears to be missing in the tender. Please would you clarify what would be covered on this day.

Response:

Apologies for this, it seems the content was accidentally deleted as we uploaded the file.

The course content for day 1 of option 2 is the same as that for option 1, day 1:

[Redacted content]

Question 2: For the remotely supported modules, what proportion of their time are course participants likely to spend on the module? For example, for a 1 week remotely supported module, do you anticipate that the course participants would spend the full week working on the module or only a proportion of their time (if so, approximately what proportion)?

Response:

[Redacted content]

Question 3: Would electronic copies of the all of the course materials be made available to FSA? If so, would this apply to all five training course options?

Response:

Yes, electronic copies of all course materials (for any of the 5 options) will be made available to FSA. See a more detailed description under section 1, Delivery of the Requirements.

Question 4: Would EpiX Analytics give FSA authorisation to retain and re-use electronic versions of the course materials and for us to re-run the course ourselves in the future at no cost? This would be for internal training purposes only and we would not circulate the materials outside the FSA.

Response:

Yes. While EpiX Analytics will retain the copyright of the training material, EpiX will grant FSA unrestricted authorisation to retain and re-use electronic versions of the course materials for internal training purposes only, with attribution given to EpiX as the source of the material.

It is understood that FSA would not run, use, or circulate the materials outside of the FSA (e.g. for commercial purposes, offer open training courses, share material publicly online).

Question 5:

[Redacted content]

**Annex 4
Financial Proposal**

**Application form for a project with the Food Standards
Agency Financials Template**

Tender Reference	FSA628
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Tender Title	Quantitative Risk Assessment Training for Food Safety
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Full legal organisation name	EpiX Analytics LLC
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Main contact title	Dr.
Main contact forname	Francisco J.
Main contact surname	Zagmutt

Main contact position	Managing Director
Main contact email	[REDACTED]
Main contact phone	[REDACTED]

Will you charge the Agency VAT on this proposal?	No
--	----

Please state your VAT registration number:	N/A
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**Project Costs Summary Breakdown by Participating
Organisations**

Please include only the cost to the FSA.

Organisation	VAT Code *	Total (£)
<i>EpiX Analytics</i>	EXE MPT	£45,449.50

Total Project Costs (excluding VAT) **	£45,449.50
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* Please indicate zero, exempt or standard rate. VAT charges not identified

above will not be paid by the FSA

** The total cost figure should be the same as the total cost shown in table 4

** The total cost figure should be the same as the total cost shown below and in the Schedule of payments tab.

Project Costs Summary

Staff Costs	£ [REDACTED]
Overhead Costs	£ -
Consumables and Other Costs	£ [REDACTED]
Travel and Subsistence Costs	£ [REDACTED]
Total Project Costs	£45,549.50

COST OR VOLUME DISCOUNTS - INNOVATION

The Food Standards Agency collaborates with our suppliers to improve efficiency and performance to save the taxpayer money.
A tenderer should include in his tender the extent of any discounts or rebates offered against their normal day rates or other costs during each year of the contract. Please provide full details below:

SIGNATURE	
NAME	Francisco Zagmutt
DATE	10-Jan-2019
REVISION DATE	Enter the effective date if this version of the template replaces an

earlier version

Staff Costs Table

*This should reflect details entered in your technical application section 4C.

Please insert as many lines as necessary for the individuals in the project team.

Please note that FSA is willing to accept pay rates based upon average pay costs. You will need to indicate where these have been used.

* Role or Position within the project	Participating Organisation	Daily Rate (£/Day)	* Daily Overhead Rate (£/Day)	Days to be spent on the project by all staff at this grade	Total Cost (incl. overheads)
Project manager and trainer	EpiX Analytics	£ [REDACTED]	£ -	[REDACTED]	[REDACTED]
Risk analysts (average pay costs)	EpiX Analytics	£ [REDACTED]	£ -	[REDACTED]	£ [REDACTED]
Administrative support	EpiX Analytics	[REDACTED]	£ -	[REDACTED]	£ [REDACTED]
Total Labour Costs					[REDACTED]
* Total Overhead Costs (if not shown above)					£ -

[REDACTED]

Consumable/Equipment Costs

Please provide a breakdown of the consumables/equipment items you expect to consume during the project

Item	Quantity	Cost/Item(£)	Total
Training media	█	£ █	£ █
Total Material Costs			£ █

Travel and Subsistence Costs

Please provide a breakdown of the travel and subsistence costs you expect to incur during the project

Purpose of journey or description of subsistence cost	Frequency	Cost each (£)	Total Cost
Airfare Denver to London to deliver class	█	£ █	£ █
Ground transportation (to/from airport, in London)	█	£ █	£ █
Lodging (based on US Dept. of State rates for 2019)	█	£ █	£ █
M & IE (based on US Dept. of State rates for 2019)	█	£ █	£ █
Total Travel and Subsistence Costs			£ █

The Pricing Schedule

Please complete a proposed schedule of payments below, **excluding VAT** to be charged by any subcontractors to the project lead applicant. This must add up to the same value as detailed in the Summary of project costs to FSA including participating organisations costs.

Where differing rates of VAT apply against the deliverables please provide details on separate lines.

Please link all deliverables (singly or grouped) to each payment. Please ensure that deliverable numbers are given as well as a brief description e.g. Deliverable 01/02: interim report submitted to the FSA, monthly report, interim report, final report

Payment will be made to the Contractor, as per the schedule of payments upon satisfactory completion of the deliverables.

Proposed Project Start Date	01-Feb-2019	Amount				
Invoice Due Date	Description as to which deliverables this invoice will refer to (<i>Please include the deliverable ref no(s) as appropriate</i>)	*Net	** V A T C o d e	§ Duration from start of project (Weeks)	§ Duration from start of project (Date)	Financial Year
25-Mar-2019	Two-week training course	£ [REDACTED]	E X E M P T	7	25-Mar-2019	2018-19

Retention/Final Deliverable	***	£	[REDACTED]			
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Total	£ 45,549.50
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* Please insert the amount to be invoiced net of any VAT for each deliverable
 ** Please insert the applicable rate of VAT for each deliverable
 *** 20% of the total project budget is withheld and will be paid upon acceptance of a satisfactory final report by the agency.
 §The number of weeks after project commencement for the deliverable to be completed

Summary of Payments

	Year 1		
Financial Year (Update as applicable in YYYY-YY format)	2018-19	Retention	Total
Total Amount	[REDACTED]	[REDACTED]	£45,549.50