

**INTERNATIONAL COLLABORATION AGREEMENT  
(INTERBEEF)**

**BETWEEN**

**THE PARTIES LISTED IN PART A OF SCHEDULE 1**

**and**

**INTERNATIONAL COMMITTEE FOR ANIMAL RECORDING**

**and**

**INTERBULL CENTRE**



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Ref: 70/CM169**

**THIS AGREEMENT** is made on the [        ] day of [        ] 2011

**PARTIES:-**

- (1) **THE PARTIES LISTED IN PART A OF SCHEDULE 1**, (the “**Service Users**”);
- (2) **INTERNATIONAL COMMITTEE FOR ANIMAL RECORDING through its wholly owned subsidiary Service - ICAR**, Via G Tomassetti 3, 1/A -00161, Rome, Italy (“**ICAR**”);
- (3) **INTERBULL CENTRE**, Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences, Undervisningsplan, E1-27 PO Box 7023, 750 07 Uppsala, Sweden (“**ITBC**”).

The Service Users, ICAR and ITBC are together referred to as the “**Parties**” and each as a “**Party**” (which definitions shall also include any additional organisations that are admitted to the Project pursuant to Clause 2.5).

**BACKGROUND:-**

- A. The collaboration contemplated by this Agreement is of mutual interest and benefit to the Parties for improving the accuracy of genetic evaluations for beef breeds and traits being developed and provided by the Service Users in their respective areas.
- B. ICAR and ITBC have the ability and capacity to provide an administrative and technical service respectively to the Service Users for the purposes of the collaboration.
- C. Certain of the Parties (being ICAR, ITBC and the Irish Cattle Breeding Federation Society Limited) have previously entered into a letter of agreement on 5 March 2008, 18 February 2008, 26 February 2008 and 21 February 2008 respectively with the Institut National de la Recherche Agronomique (the “**Letter of Agreement**”). The Parties wish to acknowledge and confirm certain terms of the Letter of Agreement and to incorporate these, in so far as they are applicable, into this Agreement.

**THE PARTIES AGREE** as follows:-

**1 Definitions and Interpretations**

- 1.1 In this Agreement, unless the context otherwise requires, the following expressions shall have the following meanings:-

“**Agreement**” means this international collaboration agreement (which expression shall be deemed to include its Schedules and any part thereof).

“**Annual Meeting**” means the annual meeting of all the Parties arranged by ITBC, which shall take place in each year of the Term.

“**Background Intellectual Property**” means Intellectual Property (excluding Intellectual Property in and to Results), in the same or related fields to research conducted in the course of the Project, owned, licensed to or otherwise controlled by any of the Parties prior to the Effective Date or developed by one of the Parties outside the scope of the Project and provided (whether before or after the Effective

Date) by any Party pursuant to the Project and includes the Intellectual Property identified in Schedule 4(a).

**“Code of Practice”** means the then current ICAR Guidelines for beef performance recording as updated and developed by the Working Group from time to time.

**“Confidential Information”** means all information obtained by any of the Parties from any of the other Parties pursuant to this Agreement which is expressly marked as confidential or which is manifestly of a confidential nature or if verbally communicated which is confirmed in writing to be confidential within 30 days of its disclosure and includes the terms of this Agreement itself.

**“Deed of Adherence”** means a deed of adherence in the form set out in Schedule 7.

**“Effective Date”** means [            ].

**“Intellectual Property”** means patents, patent applications, inventions, Know-how, trade secrets and other confidential information, rights in design (registered and unregistered), copyright (including, without limitation, rights in computer software), data, database rights and *sui generis* rights, rights affording equivalent protection to copyright, trademarks, service marks, logos, domain names, business names, trade names, brand names, certification marks, assumed names and other indicators or origin, rights in any drawings, designs, plans, specifications, manuals, computer software, assets, inventor’s certificates and invention disclosures, writings and other works, whether copyright or not, bills of material, moral rights and all other industrial or intellectual property or other rights or forms of protection of a similar nature or having similar effect in any part of the world and rights in and in relation to them and, where appropriate, applications for any of them in any country or jurisdiction, rights in the nature of unfair competition rights, rights to sue for passing-off, the right to apply for any of them and all other information necessary for the technical exploration of any of the same and all registrations.

**“Know-how”** means unpatented, unpublished, technical information (including, without limitation, information relating to inventions, discoveries, concepts, methodologies, models, research, development and testing procedures, the results of experiments, tests and trials, manufacturing processes, materials, formulae, formulations, processes, research or experimental results, techniques and specifications, quality control data, analyses, reports and submissions) that is not in the public domain.

**“Project”** means the research, commercial or intellectual activity to be carried out as described in Schedule 2.

**“Project Plan”** means the relevant project plan adopted by the Parties from time to time in connection with the Project, the first of which is annexed as Schedule 9 of this Agreement.

**“Protective Applications”** means applications for patent, design, trademark or other registration available for the protection of Intellectual Property.

**“Publication”** means any written, oral or other public disclosure of Results, including the public use or sale of an invention based on the Results.

**“Purpose”** means the purpose of researching, developing and operating genetic evaluation services in the base and scale of a Service User’s own country, breed and trait set combination.

**“Representative”** means the representative of each Party as specified in respect of each Party in Schedule 1 or his/her replacement as may be notified to ITBC from time to time.

**“Results”** means all information, Know-how, Intellectual Property, results, software, inventions, works, discoveries and creations, made or conceived or identified as a direct result of the Project or first reduced to practice or writing in the course of the Project including the identification, pedigree, phenotypes, genotypes and genetic evaluations data as contained in the Interbeef database held by ITBC.

**“Service Fee”** means the annual fee(s) payable by the Parties as determined from year to year in accordance with Clauses 5.2 and 5.3.

**“Term”** means the period of five years from the Effective Date and, unless the Agreement is terminated pursuant to Clause 11 of this Agreement, each successive period of one year during which this Agreement shall continue.

**“Third Party”** means any person, group, company, organisation or other entity of any nature whatsoever which is not a Party to this Agreement.

**“Working Group”** means the ICAR Interbeef Working Group as appointed by ICAR in accordance with the rules of ICAR.

1.2 In this Agreement the following interpretations shall apply:-

- (a) the headings in this Agreement are for ease of reference only and shall not affect the interpretation or meaning of this Agreement;
- (b) the singular shall include the plural and vice versa and, unless the context otherwise requires, references to words in one gender include references to the other gender;
- (c) the expressions “include”, “includes”, “including”, “in particular” and similar expressions shall be construed without limitation;
- (d) words such as “hereunder”, “hereto”, “hereof” and “herein” and other words commencing with “here” shall, unless the context clearly indicates to the contrary, refer to the whole of this Agreement and not to any particular section or clause thereof;
- (e) a reference to any statute, enactment, order, regulation or other similar instrument shall be construed as a reference to the statute, enactment, order, regulation or instrument as amended, consolidated, modified, extended or replaced in whole or in part, by any subsequent statute, enactment, order, regulation or instrument or as contained in any subsequent re-enactment thereof;
- (f) a reference to a Party shall mean any of the individual Parties (including the individual Service Users) to this Agreement, as appropriate, together with their respective permitted successors and assigns;

- (g) nothing in this Agreement shall affect any statutory rights or provisions granted by mandatory statutory law or regulatory authority, which cannot be waived or limited by contract. In the event and to the extent only of any conflict or ambiguity between the terms of this Agreement and mandatory statutory law or regulatory authority, then the latter shall prevail;
- (h) a reference to “an”, “the” or “a” shall refer to the particular matter or item in question;
- (i) each Party shall comply with any express obligation in this Agreement to comply with any document, statute, order, enactment, regulation or other similar instrument that is referenced in this Agreement;
- (j) no provisions of this Agreement shall be interpreted as requiring or permitting any act or omission by either Party which is contrary to any mandatory statutory law or regulatory authority; and
- (k) the Parties have participated jointly in the negotiating and drafting of this Agreement. If an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties and no presumption or burden of proof shall arise favouring or disfavouring any Party by virtue of the authorship of the provisions of this Agreement.

## **2 Scope of Project**

- 2.1 The Parties shall commence the Project promptly on the Effective Date, shall carry on the Project for the Term and shall use commercially reasonable endeavours to perform and complete the Project substantially in accordance with the terms and conditions of this Agreement and, in particular, in accordance with the terms of Schedule 2.
- 2.2 If the Agreement is entered into after the Effective Date, it will apply retrospectively to work carried out in relation to the Project on or after the Effective Date.
- 2.3 None of the Parties undertakes that the Project will lead to any particular outcome or Results and does not guarantee a successful outcome to the Project.
- 2.4 The activities of the Project will be conducted through the contractual powers of the Parties to this Agreement. This Agreement defines the terms and conditions under which the Parties shall perform their obligations for the Project. The Parties shall at all times perform their obligations as independent contractors. Nothing in this Agreement shall be deemed to empower any Party to be an agent for, or otherwise bind, another Party. This Agreement and the Project is not intended to be, nor shall it be construed to be, a joint venture, partnership or other formal business organisation. None of the Parties shall have any liabilities for any activities of any of the other Parties.
- 2.5 The Parties agree that additional organisations may apply to join the Project as Service Users by undergoing the application process and meeting the conditions set out in Schedule 6 and by signing the Deed of Adherence in Schedule 7.

## **3 Obligations of the Parties**

In addition to and without prejudice to the obligations contained in this Agreement:

- 3.1 the Service Users shall each comply with their basic obligations as set out in Part A of Schedule 3 and also any additional obligations or conditions specific to that Service User as set out in Schedule 8;
- 3.2 ICAR shall comply with its obligations as set out in Part B of Schedule 3;
- 3.3 ITBC shall comply with its obligations as set out in Part C of Schedule 3.

#### **4 Warranties and Representations**

- 4.1 Each of the Parties represents and warrants to the others that:-
  - (a) it has full right and authority to enter into this Agreement and perform its obligations under this Agreement and that, wherever and whenever required, such Party has or shall secure in a timely manner, all necessary notifications, authorisations and approvals;
  - (b) there are no outstanding obligations or agreements to which it is party that are inconsistent or in conflict with the entering into or performance of this Agreement;
  - (c) it is the owner of, or is otherwise fully entitled to provide and licence, the Background Intellectual Property which it makes available to the other Parties pursuant to the provisions of this Agreement;
  - (d) except to the extent disclosed to the other Parties at the time of making the Background Intellectual Property available, that Background Intellectual Property is capable of being used as part of the Project without requiring the consent of any third party; and
  - (e) it will not assign its rights in, encumber or dispose of the Background Intellectual Property during such time and in a manner that would prevent or otherwise limit its intended use as part of the Project.

#### **5 Fee**

- 5.1 Each of the Parties agrees to pay the relevant Service Fee(s) to ICAR.
- 5.2 During each year of the Term an annual fee for each of the Parties shall be proposed by the Working Group and shall be agreed as the Service Fee by the Parties at the Annual Meeting. In the absence of agreement, the dispute resolution process set out in Clause 21 shall be utilised to agree the determination of the Service Fee, with the Service Fee due for the year in which the dispute arises being the amount payable in the previous year and an appropriate adjustment being carried out once the new Service Fee is agreed following resolution of the dispute.
- 5.3 In determining the proposed Service Fee the Working Group shall take into account, among other things, (i) any grants that are made available to the Parties for the purposes of the Project and (ii) the size of population of the animals that potentially benefit from the Project in relation to the relevant Party.
- 5.4 Once the Service Fee is agreed, ICAR shall render invoices to the Parties in respect of the Service Fee.

- 5.5 All amounts payable (and/or any other applicable taxes) payable under this Agreement shall be due to be paid within 30 days of the date of invoice.
- 5.6 If the payment of any sum due under this Agreement shall not be paid by its due date, interest shall be payable at the rate of 4% above the then applicable refinancing base rate of the European Central Bank, on the amount of the delayed payment for the period of delay.
- 5.7 All charges payable under this Agreement are exclusive of any applicable taxes in any of the countries in which the Parties are located and these shall be paid by the Party making the payment at the rate and in the manner for the time being prescribed by law.

## 6 Confidential Information

- 6.1 Every Party (as a “**Receiving Party**”) shall treat as confidential the Confidential Information of the other Parties (the “**Disclosing Party**”) and shall not release or disclose it to third parties without the prior written consent of the Disclosing Party. Confidential Information of a Disclosing Party should not be disclosed to employees or consultants of the Receiving Party who are not actually working on the Project unless such personnel are members of the management or “decision makers” within the Receiving Party.
- 6.2 The obligation of confidentiality set out in Clause 6.1 shall not apply to Confidential Information which:-
- (a) is announced or published pursuant to Clause 7;
  - (b) is or becomes public knowledge prior to the receipt of such Confidential Information by the Receiving Party, other than by breach of this Clause 6 or Clause 7;
  - (c) is in the possession of the Receiving Party without restriction in relation to the disclosure before the date of receipt from the Disclosing Party;
  - (d) is independently developed by the Receiving Party without access to Confidential Information of the Disclosing Party;
  - (e) is received by the Receiving Party from a third party that has received it without restriction and who is under no obligation to restrict its disclosure;
  - (f) is required to be disclosed to the Receiving Party’s professional advisors, provided that such disclosure is to the extent necessary only for such advisors and on terms no less onerous than those set out in this Clause 6; or
  - (g) is required to be disclosed by law or final mandatory order of a court or other competent authority to which the Receiving Party is subject.
- 6.3 Each of the Parties shall ensure that its respective employees and agents who participate in the Project shall comply with the obligations of confidentiality set out in this Clause 6 as though they were Parties to this Agreement and each of the Parties shall ensure that where any of the aforementioned employees cease to be employed by that Party, they shall continue to be bound by such obligations of confidentiality.

- 6.4 Each Party agrees to use its Representative for sending, receiving and storing Confidential Information under this Agreement.
- 6.5 Upon termination or expiration of the Project and / or the Agreement or, in the case of any Service User, upon its withdrawal or expulsion, (and except as required to benefit from any licences granted under Schedule 4 (if any)), each Party agrees to use its best efforts to locate and return or verify the destruction of all existing Confidential Information (including tangible products or materials) received from any other Party pursuant to this Agreement, if requested to do so in writing by the Disclosing Party, provided, however, that each Party may retain a copy of each document containing Confidential Information of the other Parties for archival purposes. The confidentiality obligations set out in this Clause 6 shall continue to apply following the expiration or termination of this Agreement.

## 7 Announcement and Publication

- 7.1 Each of the Parties agrees that it will not refer to the terms of this Agreement or use the name of any of the other Parties in any advertising, promotional materials or publicity, without the prior approval of the relevant other Party. None of the Parties will use any trade name, trademark, trade device, service mark or symbol owned by another Party without first obtaining the prior written approval of such use from such other Party. By entering into this Agreement, none of the Parties endorses any product or service provided by any other Party and none of the Parties shall in any way imply that this Agreement is an endorsement of any such product or service by another Party without obtaining the prior written permission of such other Party.
- 7.2 The Parties recognise that the Results may be published and agree that, subject to the provisions of Clauses 7.3, 7.4 and 7.5 and to any other relevant provisions of this Agreement, each of the Parties may make Publications (including, but not limited to):-
- (a) making presentations at seminars, symposia, national or regional professional meetings; and
  - (b) publishing on their website or in scientific or trade journals;
- provided, however, that the Working Group shall have been furnished with copies of any proposed Publication at least 30 working days in advance of the making of the proposed Publication.
- 7.3 The Working Group shall have 14 days after receipt of copies of any proposed Publication (“**Objection Period**”) to object to such proposed Publication. During the Objection Period, the Working Group shall consult with any relevant Parties and following such consultation, if, in the Working Group’s reasonable opinion, amendments(s) to the Publication or a delay of Publication is necessary in order to protect the commercial interests of, or the commercial use to any of the other Parties or their licensees including the need to file Protective Applications with regard to the information proposed to be included in the relevant Publication, then the Working Group may object to the proposed Publication.



- 7.4 If the Working Group makes an objection pursuant to Clause 7.3, the Party seeking to publish the proposed Publication shall refrain and shall ensure that its personnel shall refrain from making such Publication for as long as necessary to protect the relevant commercial interests or for any Protective Applications to be obtained. If the Working Group does not object to the Publication during the Objection Period, then the Publication may proceed.
- 7.5 A delay imposed on submission for Publication as a result of a requirement made by the Working Group pursuant to clause 7.4 shall not exceed 18 months from the date of receipt of the proposed Publication by the Working Group, although the Party proposing to publish the Publication will not unreasonably refuse a request from the Working Group for additional delay in the event that Intellectual Property in the Results might otherwise be unreasonably jeopardised.

## **8 Intellectual Property**

- 8.1 None of the Parties shall, in respect of the Intellectual Property (including, without limitation, Background Intellectual Property), products and / or services of the other Parties, represent, either directly or indirectly, that such Intellectual Property, products and / or services of the other Parties is owned or endorsed by the representing Party, without the prior written consent of the relevant other Party.
- 8.2 This Agreement does not affect the ownership of any Background Intellectual Property or of the Intellectual Property in and to any other technology, design, work, invention, software, data, technique, Know-how or materials that are not Results and not created as part of the Project. No licence to use any Intellectual Property is granted or implied by this Agreement, except the rights expressly granted in this Agreement.
- 8.3 The Parties agree that Schedule 4(b) sets out the agreement between the Parties regarding the ownership and use of any Results.
- 8.4 Where a third party such as a student or contractor is involved in the Project, the Party engaging that third party will ensure that the third party assigns any Intellectual Property rights they may have in the Results in order to be able to give full effect to the provisions of this Clause 8 and Schedule 4. The Parties shall ensure that individuals working on the Project maintain adequate and secure records, either electronically or in record books, for the purpose of establishing inventors and invention dates.
- 8.5 Unless specifically agreed otherwise and confirmed in writing, each of the Parties hereby grants the other Parties a royalty-free, non-exclusive licence to use its Background Intellectual Property which it has provided to the Project for the purpose of carrying out the Project in accordance with the Agreement but for no other purpose whatsoever. None of the Parties may grant any sub-licence to use another Party's Background Intellectual Property.
- 8.6 Each of the Parties will notify the other Parties promptly after identifying any Result that it believes can be protected by a Protective Application and will supply the other Parties with relevant details and copies of that Result.
- 8.7 Each of the Parties shall keep and shall instruct their respective officers, employees, representatives and agents to keep signed, witnessed and dated written records of all Results and will furnish the other Parties promptly with complete information in respect thereof and will do all reasonable things necessary to protect the interests of

the Parties therein and to ensure accurate and timely disclosures of any new ideas, disclosures or inventions arising from the Project.

- 8.8 The Parties do not warrant to each other that any Results developed under this Agreement do not infringe any Intellectual Property rights of a third party. The Parties will undertake reasonable efforts to avoid the need for a licence to use third party Intellectual Property in order for a Party to use or commercialise any of the data and Results and, where the need for such a licence cannot be avoided, will use reasonable efforts to obtain a licence to use such Intellectual Property with a right to sub-licence. No Party shall knowingly conduct activities under the Project which infringe the valid Intellectual Property of any third party.
- 8.9 Without prejudice to the terms of this Agreement, the Parties acknowledge and agree that any ownership or Intellectual Property rights prescribed by or arising under the Letter of Agreement shall, notwithstanding that the period of the Letter of Agreement may have expired, continue in full force and effect during the Term in so far as they may apply between the Parties (or any of them) and in so far as they do not conflict with the terms of this Agreement (in which event the terms of this Agreement shall take precedence).

## **9 Limitation of Liability and Indemnity**

### **9.1 Save:**

- (a) in respect of death or personal injury caused by the negligence of any of the Parties and subject to the provisions of Clause 9.2; or
- (b) in the case of a breach of this Agreement whereby any of the Parties provides, passes on or makes available to any Third Party in any way whatsoever information or data received as a result of that Party's involvement in the Project; and
- (c) without prejudice to the provisions of clauses 9.4 and 9.5,

each of the Parties liability for any claim whether in contract, tort (including negligence) or otherwise, for any loss or damage, arising out of or in connection with this Agreement or otherwise, shall in no case exceed €10,000.

### **9.2 None of the Parties shall be liable to any of the others for any indirect, consequential or special loss or damage and / or for any of the following:-**

- (a) loss of profits;
- (b) loss of goodwill;
- (c) loss of business;
- (d) loss of anticipated savings; or
- (e) loss arising from delay.

### **9.3 Save as expressly set out in this Agreement, all warranties, conditions, representations, statements, terms and provisions, express or implied by statute, common law or otherwise, are hereby excluded by each of the Parties to the fullest extent permitted by law and, for the avoidance of doubt, all such warranties by each of the Parties are expressly excluded in respect of any use of the Results by the other Parties. None of the Parties makes any warranty, express or implied, to the**

accuracy of any work performed and any information given to the other Parties and none of the Parties will be held responsible for any consequences arising out of any inaccuracies or omissions unless such inaccuracies or omissions are the result of negligence on the part of that other Party or its agents.

- 9.4 Each Party (the “**Relevant Party**”) undertakes to defend each of the other Parties from and against any claim or action brought against that other Party in connection with any use of the Results by the Relevant Party and any third party allegation of personal injury or property damage arising from the design, manufacture, use, licensing or sale of products which utilise or incorporate, directly or indirectly, the outcome of the Project including, without limitation, the Results (“**Product Claim**”) and agrees to fully indemnify, keep indemnified and hold harmless the other Party from and against all costs, claims, demands, liabilities, expenses, damages or losses (including, without limitation, all interest, penalties and legal and other professional costs and expenses) arising out of or in connection with any Product Claim.
- 9.5 Each Party (the “**Relevant Party**”) undertakes to defend each of the other Parties from and against any claim or action brought against that other Party that the use of the Relevant Party’s Background Intellectual Property and / or the outcome of the Project including, without limitation, the Results in accordance with the terms of this Agreement infringes any Intellectual Property of a third party (“**IP Claim**”) and agrees to fully indemnify, keep indemnified and hold harmless the other from and against all costs, claims, demands, liabilities, expenses, damages or losses (including all interest, penalties and legal and other professional costs and expenses) arising out of or in connection with any IP claim.

## **10 Meetings/Decision Making**

- 10.1 The Working Group shall meet on at least an annual basis.
- 10.2 An Annual Meeting shall take place each year.
- 10.3 Both the meetings of the Working Group and the Annual Meetings shall proceed and take decisions in accordance with the rules and procedures adopted by ICAR.
- 10.4 Except where this Agreement provides otherwise or the Parties otherwise agree, the Working Group shall be responsible for managing the Project and for taking such decisions as are required in this regard. In particular, the Working Group shall (i) prepare the Project Plan for consideration and agreement by the Parties and (ii) instruct specific research projects in pursuance of the Project and disseminate the results of any such research to the Parties.

## **11 Termination**

- 11.1 Subject to the provisions of this Clause 11, this Agreement shall continue in full force and effect for the Term unless all Parties agree to terminate it.
- 11.2 Subject to the provisions of Clause 12, any of the Service Users may withdraw from the Project (and cease being a Party to this Agreement) at any time by giving not less than thirty (30) days’ prior written notice to ITBC (who shall immediately upon receipt of such notice from a Service User notify the other Parties).
- 11.3 Subject to the provisions of Clause 12 and notwithstanding anything else contained herein:-

- (a) if any Party commits a material breach of any term of this Agreement and (in the case of a breach capable of being remedied) fails, within 30 days after the receipt of a notice in writing (such notices to be issued by ITBC when the breach is by a Service User and by any Service User, with the approval of all other Service Users, when the breach is by ITBC or ICAR), requesting it to remedy the breach; or
- (b) if any Party shall have a receiver, examiner or administrator appointed to it or over any part of its undertakings or assets or shall pass a resolution for winding-up (otherwise than for the purpose of a *bona fide* scheme of solvent amalgamation or reconstruction) or a court of competent jurisdiction shall make an order to that effect or if the Party shall become subject to an administration order or shall enter into any voluntary arrangement with its creditors or shall cease or threaten to cease to carry on business or any analogous situation shall arise in relation to that Party,

then,

- (i) in the case of a Service User, the Working Group may, forthwith on giving notice to the Service User concerned, expel that Service User from the Project, whereupon such Service User shall cease being a Party to this Agreement; and
- (ii) in the case of either ICAR or ITBC, the Agreement shall terminate.

## **12 Effects of Termination/Withdrawal or Expulsion**

- 12.1 Subject to the terms of this Agreement, any termination of this Agreement (howsoever occasioned) shall not affect any accrued rights or liabilities of any Party, nor shall it affect the coming into force or the continuance in force of any provision of this Agreement which is expressly or by implication intended to come into or continue in force on or after such termination.
- 12.2 Subject to the terms of this Agreement, the withdrawal or expulsion of a Service User from the Project pursuant to Clause 11.2 or Clause 11.3 shall not affect any accrued rights or liabilities of any Party, nor shall it affect the coming into force or the continuance in force of any provision of this Agreement which is expressly or by implication intended to come into or continue in force on or after such withdrawal or expulsion.
- 12.3 Upon termination of this Agreement, for any reason:
  - (a) each of the Parties undertakes to each of the other Parties that it will cease using the Background Intellectual Property and data provided or made available by the other Parties pursuant to this Agreement; and
  - (b) ITBC and ICAR undertake to make available to the Service Users the database and all relevant information and material held by them in relation to the Project and shall transfer such information and material to a nominee of the Service Users (to be agreed among them) as soon as reasonably practicable following termination.
- 12.4 Where a Service User withdraws or is expelled from the Project pursuant to Clause 11.2 or Clause 11.3, that Service User:

- (a) undertakes to each of the other Parties that it will cease using the Background Intellectual Property and data provided or made available by the other Parties pursuant to this Agreement;
  - (b) agrees, that data provided by it pursuant to the Agreement shall remain available to be used by the remaining Parties in accordance with the terms of the Agreement; and
  - (c) acknowledges and agrees that it shall no longer have any rights of ownership to the Intellectual Property in the Results and that any such rights that it may have obtained pursuant to paragraph 1 of Schedule 4(b) are immediately relinquished and shall be transferred pursuant to paragraph 10 of Schedule 4(b).
- 12.5 Clauses 1, 6, 7, 8, 9, 12, 13 & 21 and Schedules 3, 4 & 8 shall survive expiry or termination of this Agreement, howsoever arising.

### **13 Notices**

- 13.1 Any notice or communication which a Party is required or authorised by this Agreement to serve on another Party shall be sufficiently served if sent to the other Party at the address for that Party specified in Schedule 1
- (a) by hand;
  - (b) by registered post or recorded delivery;
  - (c) by facsimile transmission confirmed by registered post or recorded delivery; or
  - (d) by electronic mail confirmed by a recorded delivery message.
- 13.2 Notices sent by registered post or recorded delivery shall be deemed to have been served fifteen days following the day of posting. Notices sent by facsimile transmission shall be deemed to have been served on the date of transmission, if transmitted before 16.00hours (in the receiving party's time zone) on a working day, but otherwise on the next working day provided that confirmation by registered post or recorded delivery is sent the same day. Notices sent by electronic mail, where such is an established means of communication between the Parties, shall be deemed to have been served on the day of transmission, if transmitted before 16.00hours (in the receiving party's time zone) on a working day, but otherwise on the next working day. In all other cases, notices and other communications will be deemed to have been served on the day they were actually received.
- 13.3 The Parties hereby agree that:-
- (a) words in electronic form shall be deemed to be "writing" for the purposes of all applicable legislation where "writing" is required;
  - (b) electronic evidence shall be admissible in any court or other quasi-judicial proceedings between the Parties; and
  - (c) the Parties shall agree the format of electronic communications between them.

### **14 Force Majeure**

- 14.1 If the performance by any Party (the “**First Party**”) of any of its obligations under this Agreement (except a payment obligation) is delayed or prevented by circumstances beyond its reasonable control, including acts of God, governmental actions, war or national emergency, acts of terrorism, protests, riot, civil commotion, fire, explosion, flood, epidemic, lockouts, strikes or other labour disputes, the First Party will not be in breach of this Agreement because of that delay in performance. However, if the delay in performance is more than 3 months, the other Parties, acting unanimously, may either terminate this Agreement (where the First Party is either ICAR or ITBC) or expel that Party (where the First Party is a Service User) with immediate effect by giving not less than seven days’ written notice to the First Party.

## **15 Amendment**

- 15.1 Any variation of this Agreement or to the performance of the Project shall only take effect upon the written agreement of the terms between the then current Parties.

## **16 Further Assurance**

- 16.1 The Parties shall use all reasonable endeavours to do or procure to be done all such further acts and things and to execute or procure the execution of all such other documents as may be reasonably required from time to time for the purpose of giving each Party the full benefit of the provisions of this Agreement.

## **17 Waiver of Remedies**

- 17.1 No delay or failure of any Party in enforcing against any other Party any term or condition of this Agreement and no partial exercise by any Party of any right under this Agreement shall be deemed to be a waiver of any right of that Party under this Agreement.

## **18 Entire Agreement**

- 18.1 The Parties have read and understood this Agreement and agree that it constitutes the complete and exclusive statement of the agreement between them with regard to the subject matter hereof and supersedes all proposals, representations, understanding and prior agreements, whether oral or written, and all other communications between them relating thereto, with the sole exception of the Letter of Agreement in so far as and to the extent to which it is confirmed by this Agreement.
- 18.2 Each of the Parties acknowledges and agrees that in entering into this Agreement and the documents referred to in it, it does not rely on and shall have no remedy in respect of any statement, representation, warranty or understanding (whether negligently or innocently made) of any person (whether party to this Agreement or not) other than as expressly set out in this Agreement. The only remedy available to it for breach of this Agreement shall be for breach of contract under the terms of this Agreement. Nothing in this clause shall, however, operate to limit or exclude any liability for fraud.

## **19 No Agency**

- 19.1 No provision of this Agreement creates a partnership between the Parties and none of the Parties shall act or describe itself as the agent of the other, nor shall it make or represent that it has authority to make commitments on any other Party’s behalf.

## **20 Assignment**

- 20.1 This Agreement is personal to the Parties and none of the Parties may assign, transfer, sub-contract or otherwise part with this Agreement or any right or obligation under it without the prior written consent of the other Parties (such consent not to be unreasonably withheld or delayed).

## **21 Dispute Resolution**

- 21.1 The Parties to this Agreement shall seek to resolve any dispute between the Parties or any of them arising out of, or relating to, this Agreement, amicably.
- 21.2 All disputes between the Parties or any of them arising out of or relating to this Agreement shall be referred, in the first instance to the Working Group for resolution.
- 21.3 If any dispute cannot be resolved by the Working Group within a period of fourteen (14) days following referral, then the dispute shall be referred to all the Representatives for resolution.
- 21.4 If the dispute cannot be resolved by the Representatives within a period of fourteen (14) days following referral, then the Parties shall first seek settlement of the dispute by mediation in accordance with the London Court of International Arbitration (the LCIA) Mediation Rules, which rules are deemed to be incorporated by reference into this Clause.
- 21.5 If the dispute is not settled by mediation within 90 days of the appointment of the mediator, or such further period as the Parties shall agree in writing, the dispute shall be referred to and finally resolved by arbitration under the LCIA Rules, which rules are deemed to be incorporated by reference into this Clause. In any arbitration commenced pursuant to this Clause the number of arbitrators shall be one and the seat or legal place of arbitration shall be London, UK.
- 21.6 The language to be used in the mediation and the arbitration shall be English. The governing law of the Agreement shall be the substantive law of England.

## **22 Severability**

- 22.1 In the event that any provision of this Agreement is declared by any judicial or other competent authority to be void, voidable, illegal or otherwise unenforceable, the Parties shall amend that provision in such reasonable manner as achieves the intention of the Parties without illegality, or such provision may be severed from this Agreement and the remaining provisions of this Agreement shall remain in full force and effect.

## **23 Execution by Fax and Counterpart**

- 23.1 This Agreement may be executed in any number of counterparts, each of which, when so executed, shall be an original, but all counterparts shall together constitute one and the same instrument.
- 23.2 The Parties agree that a facsimile copy of this Agreement, including its signature pages, shall be deemed to be an original, however, notwithstanding this, the Parties shall arrange to deliver original signed copies of the Agreement to each other as soon as practicable after signing.

## **24 Costs**

- 24.1 Each of the Parties shall bear their own legal and professional advisers costs and expenses in connection with the negotiation and entering into of this Agreement.



### Part B – ICAR and ITBC

<b>Name</b>	<b>Address</b>	<b>Contact Details</b>	<b>Representative</b>
ICAR	Via Tomassetti, 3 - Rome 00161, Italy	Tel: +39 06 44202639 Email: <a href="mailto:icar@icar.org">icar@icar.org</a>	Uffe Lauritsen Andrea Rosati
ITBC - Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences,	Undervisningsplan, E1-27 PO Box 7023, 750 07 Uppsala, Sweden	Tel: +46 18 67 1976 Fax: +46 18 67 2648	Prof Jan Philipsson

## **Schedule 2**

### **The Project**

The setting up and operating of services to facilitate the provision of genetic evaluations for the full range of relevant traits for beef cattle by the sharing of data, knowledge, tools and expertise relevant to the computation of genetic evaluations. More specifically this will involve a number of Service Users that:

1. cover the interests of a particular combination of breed(s), traits and country(s);
2. are responsible, in their own right or with another named party, for assuring the quality and providing to the Project; pedigree data, phenotypic data and other data relevant to the computing and researching of genetic evaluations for the interests they cover; and
3. are responsible, in their own right or with another named party, for providing and supporting beef genetic evaluations in the territory and combination of breeds and traits they cover.

In the course of the Project a series of beef genetic evaluation and other related services will be developed and provided to the Service Users.

Without Prejudice to the above the Parties agree that the Project Plan shall constitute part of the Project.

### **Schedule 3**

#### **Part A – Service Users' Obligations**

(i) Subject to the provisions of sub paragraph (ii), Service Users must:

- as soon as they are in a position to do so, for their country, breed and set combination, contribute and update all identification, ancestry and phenotypes owned by them or available to them, to the Project in accordance with the Code of Practice and in such form as ITBC requires;
- provide, on a consistent and non discriminatory basis, and at a reasonable cost, genetic evaluations on their base and scale for any animal, of any gender, for their country, trait, set and breed combination to any Party;
- provide details of any Third Party working with it in providing data or supporting evaluations in areas related to the Project

(ii) Service Users must not:

- provide genetic evaluations in the base and scale of any country, breed, trait, set combination other than their own;
- provide data that they do not own or have the right to provide to the Project;
- use identification or ancestor data provided by another Service User under this Agreement for any purpose other than validating and correcting data held by the Service User in its own database(s);
- use ancestor data provided by another Service User to populate a pedigree where such other Service User has indicated (by the use of a flag on the relevant data) that such data is not to be so used;
- without prejudice to the terms of the Agreement, pass on information obtained through their involvement in the Project to any Third Party.

#### **Part B – ICAR Obligations**

ICAR must:

- ensure the appointment to the Working Group of suitably skilled and motivated individuals;
- annually review the work of the Working Group and provide information to its members on the activities of the Working Group;
- manage the finances of the Project and provide financial support services;
- provide a forum at which the Working Group may hold its annual meetings.

#### **Part C – ITBC Obligations**

ITBC must:

- hold all relevant data in a website/database and ensure that such information is available to all Parties, subject to and in accordance with the terms of the Agreement;
- administer, maintain and operate the website/database on which the information is held and ensure that it is updated promptly and protect the database;
- arrange all meetings relating to the Project and provide administrative support in respect of the Project as required;

- subject to the terms of this Agreement, provide relevant data to approved research providers in accordance with best practice standards for research.

## **Schedule 4(a)**

### **Background Intellectual Property**

- The Intellectual Property in the data supplied by the Service Users for the Project
- Any Intellectual Property supplied by the parties to the Letter of Agreement pursuant to the terms of the Letter of Agreement.

## **Schedule 4(b)**

### **Ownership and Use of Results**

#### **1. Joint Property**

To the extent that any Intellectual Property in the Results has been devised or developed as part of the Project, and subject to the provisions of this Agreement and in particular this Schedule 4(b), ICAR, ITBC and the Service Users, for the time being, shall jointly own the Intellectual Property rights in the Results in equal shares as beneficial owners in common and any costs arising in this regard shall be shared equally between them.

#### **2. Mutual Licences**

Subject to paragraphs 6(a) and 6(b) below, ICAR, ITBC and the Service Users hereby grant to each Service User an exclusive, royalty-free, perpetual, unencumbered licence to use the Intellectual Property in the Results for the Purpose.

#### **3. Protection of Results**

- (a) In the event that, pursuant to Clause 8.6, a party identifies any Result that it believes can be protected by a Protective Application, the Parties agree that the responsibility for the drafting, filing and prosecution of such a Protective Application (including payment of costs) in respect of the Result shall rest with ITBC.
- (b) ITBC shall ensure that sufficient information is incorporated into such Protective Applications and shall submit all such Protective Applications to the other Parties for review and written approval at least 45 days prior to such Protective Applications being filed with any relevant registry. All Protective Applications in respect of the Results shall be in the joint names of the Parties and each Party shall sign such documents and give such assistance to the other as is necessary to effect this.
- (c) Where Protective Applications are submitted for review pursuant to sub paragraph (b) above, each Party shall have the right to suggest modifications to the Protective Applications and if any Party objects to the filing of the Protective Application, in whole or in part, will specify that portion of the submitted material it objects to and the reason for such objection. Upon receiving any such objection, ITBC agrees to discuss the objection with the other Parties and where relevant to delete any Confidential Information in such Protective Application to which the Party objects. Nothing in this sub paragraph will preclude an agreement between the Parties for immediate filing of a prompt response to all Protective Application filing requests. However, any such agreement must be in writing.

#### **4. Infringement**

- (a) Each Party shall inform the other Parties promptly if it becomes aware of any infringement or potential infringement of the Results and the Parties shall consult with each other to decide the best way to respond to such infringement.
- (b) If the Parties agree jointly to commence any infringement proceedings in respect of the Results, all costs, charges and expenses of or incidental to or consequent upon such proceedings, shall be borne and paid by the Parties in equal shares and all damages or other sums recovered in such proceedings shall be divided in the same proportions between the Parties, after payment of all expenses in connection with or arising out of the proceedings.

## 5. Action by Third Parties

- (a) If any warning letter or other notice of infringement is received by a Party, or legal suit or other action is brought against a Party, alleging that the use of Results or the manufacture, importation, use, marketing or sale of any product or process that may be licensed pursuant to this Agreement, infringes the rights of any person, that Party shall promptly provide full details to the other Parties and the Parties shall discuss the best way to respond.
- (b) In respect of any suit arising in the country within which it operates, each Service User (the “**Home Service User**”) shall have the right, but not the obligation, to defend such suit and shall have the right to settle with such third party, provided that if any action or proposed settlement involves the making of any statement, express or implied, concerning the validity of any rights in the Results, the consent of the other Parties must be obtained before taking such action or making such settlement. If the Home Service User shall decline to defend any third party suit for infringement, the other Parties shall have the right, but not the obligation, to do so, provided that if any action or proposed settlement involves the making of any statement, express or implied, concerning the validity of any rights in the Results, the consent of the Home Service User must be obtained before taking such action or making such settlement (such consent not to be unreasonably withheld). In situations where more than one Service User operates in a particular country then the Service Users operating in that country shall, subject to the provisions of this paragraph, decide among themselves whether or not they wish to deal with such suits. In the event that they fail to agree on a course of action the matter will be dealt with in accordance with the provisions of Clause 21 of this Agreement.

## 6. Commercial Exploitation

- (a) Notwithstanding the provisions of any national laws governing the rights of joint owners of Intellectual Property and subject to paragraph 6(b) below, it is hereby agreed (to the extent permitted by such laws) that the Service Users shall have the right to commercially exploit the Results including, without limitation, the right to grant one or more licences (whether exclusive, sole or non-exclusive) in respect of the Results to enable other persons to develop and commercially exploit the Results and the right to collaborate with such persons in such development and exploitation for the Purpose and for no other purpose whatsoever.
- (b) Without prejudice to paragraph 6(a) above, each Service User acknowledges and agrees that it shall not use nor exploit, nor permit others to use or exploit, the Results outside its own country, breed and trait set combination or for any purpose that may reasonably be considered to compete with the operations of any of the other Parties.
- (c) Each Service User shall report regularly to the other Parties on the steps that have been taken by it to find prospective licensees and enter into licence agreements for the Results. The other Parties shall have the right to review and comment on the provisions of any proposed licence to be granted under this paragraph. The purpose of such a review shall be to ensure that the licence is not in conflict with any prior grant of rights or with the good standing of the other Parties.

## 7. Records

- (a) Any Service User commercialising the Results, (the “**Commercialising Party**”) shall provide details of any commercial exploitation of the Results to ITBC.

- (b) ITBC shall maintain records of the details provided pursuant to paragraph 7(a) above and shall make such records available, on reasonable notice, for inspection by the other Service Users. The details provided to ITBC pursuant to paragraph 7(a) shall be Confidential Information.

## **8. Future Collaboration**

- (a) The Parties intend to continue to collaborate and work together to further develop the Results. Any improvements or other developments arising from such collaboration ("**Improvements**") shall be owned jointly by the Parties as beneficial owners in common and shall also become part of the Results and, as such, shall be governed by the provisions of this Agreement. Each Party shall inform the other Parties from time to time when any Improvements are made and provide the other Parties with full details of such Improvements.
- (b) If Improvements are commercially exploited by any Party the Parties shall negotiate in good faith to agree what proportion of returns from such commercial exploitation should be paid to the Parties in any particular case, such proportion to reflect the Parties' respective beneficial interests in the Improvements and in any other Results being exploited in that case.
- (c) If the Parties are unable to agree on the proportion in the manner referred to in sub paragraph (b) above, the matter shall be dealt with in accordance with the provisions of Clause 21 of the Agreement.

## **9. Confidentiality**

Without Prejudice to Clause 6 of this Agreement, none of the Parties shall disclose the existence or content of any discussions that any other Party holds or has held with commercial organisations in relation to the development or commercialisation of the Results without the prior written consent of the other Party except to the extent necessary only to achieve the development or commercialisation of the Results and then on terms no less onerous than those set out in Clause 6 of the Agreement.

## **10. Transfer**

In the event of any Party being wound up or dissolved (except for the purpose of any restructuring) or, in the case of Service Users withdrawing or being expelled from the Project pursuant to Clause 11.2 or Clause 11.3, ("**Party A**"), all Party A's rights in and to the Results (if any) shall, unless otherwise agreed between the Parties, be transferred to the other Parties on a pro rata basis and Party A shall sign all relevant documents and do all necessary acts to effect such transfer.

## **11. Management of IP**

Without prejudice to the terms of this Agreement, the Parties agree that the Working Group shall determine how the management and administration of the Intellectual Property in the Results is to be undertaken.



## **Schedule 5**

### **Conflicts of Interest**

It is in the interests of the Parties to declare and manage conflicts of interest. To this end, the Parties should ensure that they have policies and procedures in place to identify and, if necessary, address conflicts of interest. The Parties should declare any conflicts of interest in advance of embarking on a collaborative research project.

In particular, the Parties should:-

- establish procedures that help research employees to recognise areas where conflicts of interest may occur;
- maintain a policy for the management of conflicts of interests;
- encourage full disclosure of potential areas of conflict through open discussion between the parties at an early stage of the Project;
- document any identified conflicts in writing;
- agree how identified conflicts will be managed; and
- manage and resolve conflicts as they occur.

## **Schedule 6**

### **Joining the Project**

Any organisation wishing to join the Project as a Service User must:

- be a member of ICAR
- complete the appropriate application form
- be accepted for membership by all then current Parties
- agree to comply with the terms of this Agreement and sign the Deed of Adherence in Schedule 7

**Schedule 7**

**Deed of Adherence for Service User**

**FORM OF DEED OF ADHERENCE**

**Deed of Adherence pursuant to Clause 2.5 of the International Collaboration Agreement dated [insert date] between the Service Users (as described in Part A of Schedule 1 of that Agreement), ICAR and ITBC (the “Agreement”)**

**BY THIS DEED OF ADHERENCE**

[I, [insert name], of [insert address]] **OR, FOR A COMPANY** [We, [insert company name], registered in [insert country] under registration number [insert registration number], having our registered office at [insert address]]

intending to become a party to the Agreement as a Service User hereby agree[s] with the Parties to the Agreement to comply with and to be bound by all of the provisions of the Agreement, as defined above (a copy of which has been delivered to [me/us] and which [I/we have initialled] and attached to this Deed for identification) in all respects as if [I/we] [was/were] a party to such Agreement and named in it as a Service User.

**EXECUTED AS A DEED** on the                      day of                      [           ]

*[insert execution blocks as appropriate]*

## **Schedule 8**

### **Obligations and Conditions Applicable to Specific Service Users**

**Schedule 9**

**Project Plan**

See Project Plan Annexed

**EXECUTION PAGES**

**EXECUTED** on the

day of

20[ ]

**The Service Users**

**IRISH CATTLE BREEDING FEDERATION SOCIETY LIMITED**

**SIGNED** by a duly authorised signatory for and on behalf of  
**IRISH CATTLE BREEDING FEDERATION SOCIETY LIMITED**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**AGRICULTURAL RESEARCH COUNCIL**

**SIGNED** by a duly authorised signatory for and on behalf of  
**AGRICULTURAL RESEARCH COUNCIL**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_



**CZECH MORAVIAN BREEDERS' CORPORATION INC**

**SIGNED** by a duly authorised signatory for and on behalf of  
**CZECH MORAVIAN BREEDERS' CORPORATION INC**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**Edinburgh Genetic Evaluation Service, a unit of Scottish Agricultural College**

**SIGNED** by a duly authorised signatory for and on behalf of  
SCOTTISH AGRICULTURAL COLLEGE on behalf of EGENES

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**FEDERACION ESPANOLA DE CRIADORES DE LIMUSIN**

**SIGNED** by a duly authorised signatory for and on behalf of  
**FEDERACION ESPANOLA DE CRIADORES DE LIMUSIN**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**FRANCE GENETIQUE ELEVAGE**

**SIGNED** by a duly authorised signatory for and on behalf of  
**FRANCE GENETIQUE ELEVAGE**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**KNOWLEDGE CENTER FOR AGRICULTURE**

**SIGNED** by a duly authorised signatory for and on behalf of  
**KNOWLEDGE CENTER FOR AGRICULTURE**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**FABA COOP**

**SIGNED** by a duly authorised signatory for and on behalf of  
**FABA COOP**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**SWEDISH DAIRY ASSOCIATION**

**SIGNED** by a duly authorised signatory for and on behalf of  
**SWEDISH DAIRY ASSOCIATION**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

**ICAR**

**SIGNED** by a duly authorised signatory for and on behalf of  
**ICAR**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_



**ITBC**

**SIGNED** by a duly authorised signatory for and on behalf of  
**ITBC**

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Witness: \_\_\_\_\_

## WORKING PLAN FOR BEEF INTERNATIONAL GENETIC EVALUATIONS

The second phase of the Interbeef project has been negotiated among the interested parties and now it is agreed that work has to be re-started. There have been already exchanges between the chairman organization (ICBF) and the Interbull Centre about the working model that should be adopted during this second phase. In the first three years INRA took the responsibility of method development and pilot runs, while the Interbull Centre dealt with data and pedigree reception and verification, communications and secretarial duties.

In the next three year period the proposal is to involve more partners in the research activities, bringing more expertise into the project and, at the same time avoiding unbalanced investments on human resources from any of the partners. Interbull Centre will continue providing the infra-structure necessary for the project.

Therefore, the basic proposal is to structure the work plan as:

**INTERBULL CENTRE**

- Data handling
  - Storage
  - Editing
  - Harmonization
  - Supply “clean” data to research partners
- Data types
  - Phenotypes
  - Pedigrees
  - (SNPs)
- Data analysis
  - 2<sup>nd</sup> Phase Pilots
  - Routine Runs
- Communication
  - Code of Practice
  - Data calls
  - Distribution of results
  - Forums
  - Web site
- Networking
  - WG Meetings
  - Events



**RESEARCH PARTNER I**

- Responsibilities
  - Method development
  - Method testing
  - Method documentation
  - 1<sup>st</sup> Phase Pilots
  - Productionize method
- Themes
  - Productionize across country correlations
  - Inclusion of crossbreds
  - Genomics

**RESEARCH PARTNER II**

- Responsibilities
  - Method development
  - Method testing
  - Method documentation
  - 1<sup>st</sup> Phase Pilots
  - Productionize method
- Themes
  - Calving Difficulty
  - Female fertility

**RESEARCH PARTNER III**

- Responsibilities
  - Method development
  - Method testing
  - Method documentation
  - 1<sup>st</sup> Phase Pilots
  - Productionize method
- Themes
  - Carcass
  - Muscle/Conformation

**Research partners** are national evaluation centers participating in the project and that are able to offer their expertise to contribute for the development of the international genetic evaluation of beef cattle breeds and traits. Eventually, external expertise may be added as well, given that the WG identifies advantageous opportunities.

A fundamental assumption in the present proposal is that all partners and the Interbull Centre would work on the same analytical platform (software), to shorten the time between research, development and implementation. See Appendix I for that.

Appendix II presents a detailed work plan based on the principle of involving expertise from three research partners. This is obviously one possible scenario, and needs to be further discussed within the WG to define the research partners and reiterate the time modules. For this reason, it is proposed that a workshop be organized as soon as possible involving national experts and the Interbull Centre, in order to specify the details and distribute responsibilities.

However, even before the workshop yields a detailed work plan, it is proposed a short term action plan to get the work started as soon as possible (to be accepted in the webinar).

### TIME LINE (SHORT TERM)

Action	Mar11	Apr11	May11	Jun11
Webinar				
Workshop				
Contracts				
Data call for adj. weaning weight				
Data sent to the Interbull Centre				
Pedigrees uploaded into Interbeef DB				
Weaning way pilot				

## APPENDIX I – TECHNICAL REPORT ON IMPLEMENTATION OF THE INTERBEEF EVALUATIONS USING THE SOFTWARE MIX99

### **Background**

- A) INRA run the first Interbeef pilot for weaning weight using ASREML for variance components estimation, the software Genial for estimation of breeding values and the MTEDC software (Sullivan, 2007) for estimation of reliabilities.
- B) The Interbull Centre received a copy of the Genial software from INRA and repeated the pilot for EBV estimation.
- C) Among a few choices of analytical software to estimate reliabilities, MiX99<sup>1</sup> was used at the Interbull Centre.
- D) Limousin and Charolais pedigree and performance data from 5 member countries were used (same data used by INRA). Genetic correlations were the ones supplied by INRA.
- E) Identical performance data and very similar pedigree data (some differences exist due to a different program to extract the pedigree) were used for the MiX99 and the Genial software.
- F) EBVs calculated with MiX99 and with Genial were compared and the correlations are presented below.

### **Results**

- A) The outputs obtained with the MiX99 software give very similar results as the outputs obtained with Genial software.
- B) Correlations between BVs obtained with MiX99 and Genial software are very close to 1
- C) Correlations between approximated reliabilities obtained with different methods (see below) with MiX99 are very close to 1
- D) For the Charolais breed, it takes one and half days to estimate EBVs with Genial and it requires some time for manual editing. It takes one and half hours to estimate EBVs with MiX99 and almost no editing. Both software were run in the same hardware.
- E) For the Limousin breed it takes less time. One day with Genial and one hour with MiX99.
- F) Using MiX99, there is no need for a separate software to estimate reliabilities.

### **Recommendation**

Given that the Interbull Centre is already adopting MiX99 as the solver for MACE evaluations (dairy breeds) and its performance seems to be optimized for large operations, it is recommended to use MiX99 to estimate EBVs and reliabilities in the Interbeef.

<sup>1</sup> MiX99 is a commercial software for solving breeding values from large animal populations developed by the MTT, in Finland ([https://portal.mtt.fi/portal/page/portal/mtt\\_en/mtt/research/expertise/bel/biometricalgenetics/software/MiX99](https://portal.mtt.fi/portal/page/portal/mtt_en/mtt/research/expertise/bel/biometricalgenetics/software/MiX99)).

## DESCRIPTIVE STATISTICS

Correlations between EBVs calculated with MiX99 (m99) and Genial (gen) for Denmark (DNK), France (FRA), Ireland (IRL) and Sweden (SWE) for the **Charolais breed**:

Final correlations MIX99 vs GENIAL FOR FRA IRL DNK AND SWE

CORR-proceduren

8 Variabler: EBV\_DNK\_m99 EBV\_FRA\_m99 EBV\_IRL\_m99 EBV\_SWE\_m99 EBV\_DNK\_GEN EBV\_FRA\_GEN  
EBV\_IRL\_GEN EBV\_SWE\_GEN

Simple Statistics

Variable	N	Mean <sup>2</sup>	Std Dev	Median	Minimum	Maximum
EBV_DNK_m99	44485	4.60715	10.42167	4.54770	-43.49400	45.67900
EBV_FRA_m99	44485	5.70867	12.94539	5.69270	-54.94800	55.95200
EBV_IRL_m99	44485	8.39095	19.00310	8.31840	-79.78700	83.24700
EBV_SWE_m99	44485	5.00065	11.38406	4.99220	-48.28000	49.37900
EBV_DNK_GEN	44485	5.12440	10.63508	5.10000	-43.23000	47.22000
EBV_FRA_GEN	44485	6.02583	13.14531	6.01000	-54.74000	59.30000
EBV_IRL_GEN	44485	9.23080	19.38119	9.19000	-79.35000	86.05000
EBV_SWE_GEN	44485	5.31773	11.57043	5.31000	-48.09000	52.10000

N =Pearsons korrelationsmatris 44485 Kendalls korrelationsmatris

	EBV_DNK_m99	EBV_FRA_m99	EBV_IRL_m99	EBV_SWE_m99	EBV_DNK_GEN	EBV_FRA_GEN	EBV_IRL_GEN	EBV_SWE_GEN
EBV_DNK_m99	1.00000	0.98819 <.0001	0.99934 <.0001	0.99055 <.0001	0.99520 <.0001	0.98520 <.0001	0.99457 <.0001	0.98709 <.0001
EBV_FRA_m99	0.98819 <.0001	1.00000	0.99302 <.0001	0.99980 <.0001	0.98641 <.0001	0.99607 <.0001	0.99035 <.0001	0.99593 <.0001
EBV_IRL_m99	0.99934 <.0001	0.99302 <.0001	1.00000	0.99484 <.0001	0.99516 <.0001	0.98979 <.0001	0.99564 <.0001	0.99126 <.0001
EBV_SWE_m99	0.99055 <.0001	0.99980 <.0001	0.99484 <.0001	1.00000	0.98827 <.0001	0.99593 <.0001	0.99182 <.0001	0.99612 <.0001
EBV_DNK_GEN	0.99520 <.0001	0.98641 <.0001	0.99516 <.0001	0.98827 <.0001	1.00000	0.99067 <.0001	0.99947 <.0001	0.99237 <.0001
EBV_FRA_GEN	0.98520 <.0001	0.99607 <.0001	0.98979 <.0001	0.99593 <.0001	0.99067 <.0001	1.00000	0.99452 <.0001	0.99985 <.0001
EBV_IRL_GEN	0.99457 <.0001	0.99035 <.0001	0.99564 <.0001	0.99182 <.0001	0.99947 <.0001	0.99452 <.0001	1.00000	0.99585 <.0001
EBV_SWE_GEN	0.98709 <.0001	0.99593 <.0001	0.99126 <.0001	0.99612 <.0001	0.99237 <.0001	0.99985 <.0001	0.99585 <.0001	1.00000

<sup>2</sup> Differences in means are mostly due to the fact that the pedigree extraction was not exactly the same and the number of animals differ because of that.

Correlations between EBVs calculated with MiX99 (m99) and Genial (gen) for Denmark (DNK), France (FRA), Ireland (IRL) and Sweden (SWE) for the **Limousin breed**:

Final correlations MIX99 vs GENIAL FOR FRA IRL DNK SWE AND GBR -> breed= LIMOUSIN

CORR-proceduren

10 Variabler: EBV\_DNK\_m99 EBV\_FRA\_m99 EBV\_GBR\_m99 EBV\_IRL\_m99 EBV\_SWE\_m99 EBV\_DNK\_GEN  
EBV\_FRA\_GEN EBV\_GBR\_GEN EBV\_IRL\_GEN EBV\_SWE\_GEN

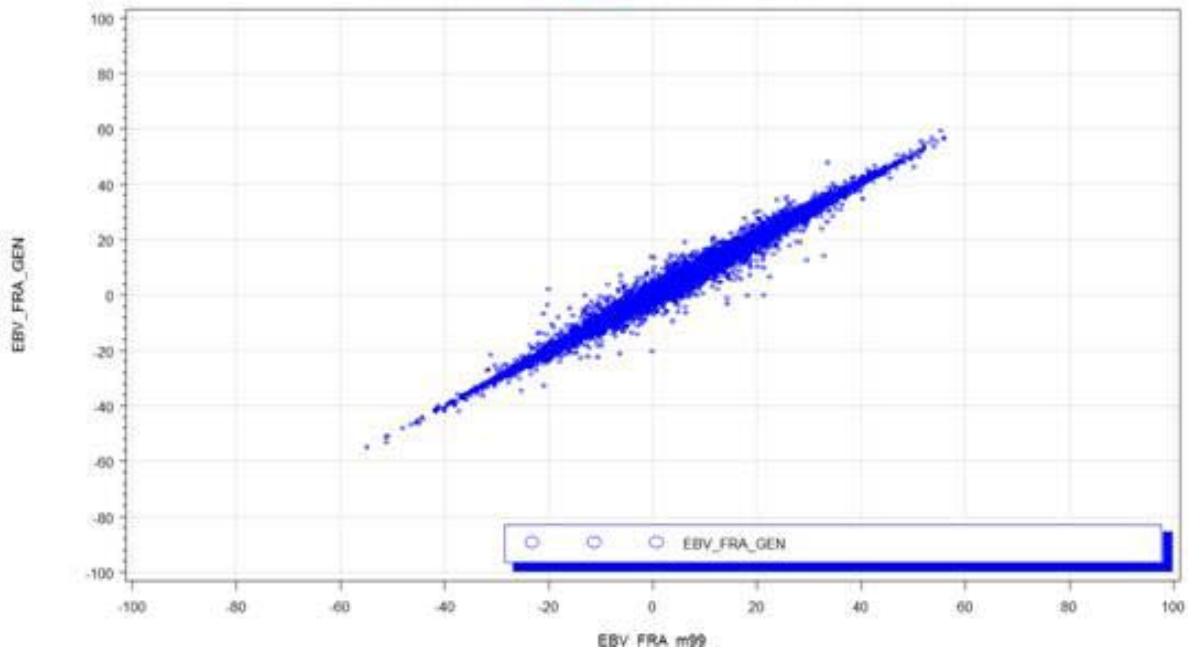
Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
EBV_DNK_m99	24536	5.66732	14.35202	139053	-48.34400	56.90800
EBV_FRA_m99	24536	5.22210	13.08045	128130	-43.72000	52.53300
EBV_GBR_m99	24536	4.93888	12.29034	121180	-40.66100	50.36800
EBV_IRL_m99	24536	5.74077	14.50106	140856	-48.76200	57.35600
EBV_SWE_m99	24536	5.17772	12.94962	127041	-43.38000	51.76900
EBV_DNK_GEN	24536	9.39019	15.08577	230398	-46.40000	62.96000
EBV_FRA_GEN	24536	8.44651	13.70542	207243	-42.07000	56.95000
EBV_GBR_GEN	24536	7.81597	12.82919	191773	-39.22000	53.87000
EBV_IRL_GEN	24536	9.45704	15.23145	232038	-46.83000	62.89000
EBV_SWE_GEN	24536	8.37642	13.56929	205524	-41.72000	56.24000

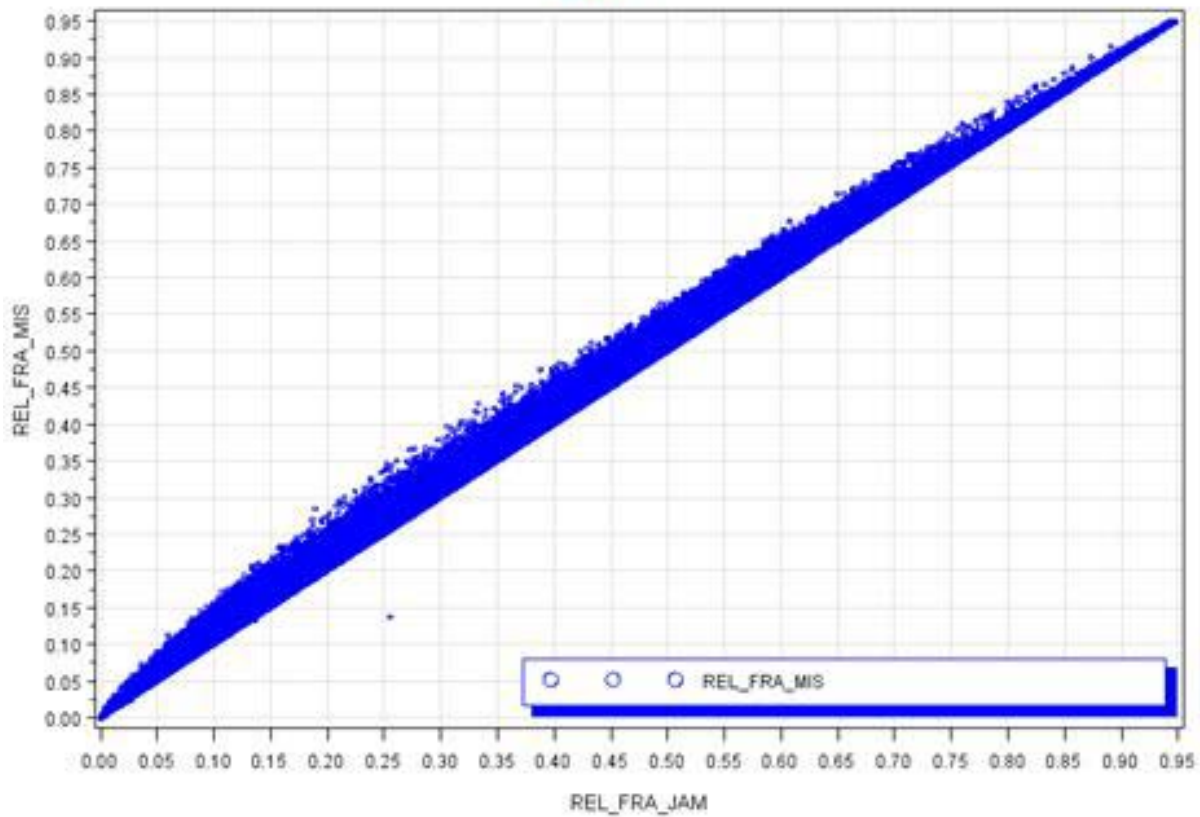
N =Pearsons korrelationsmatris 24536 Kendalls korrelationsmatris

	EBV_DNK_m99	EBV_FRA_m99	EBV_GBR_m99	EBV_IRL_m99	EBV_SWE_m99
EBV_DNK_m99	1.00000	0.99778 <.0001	0.99223 <.0001	0.99983 <.0001	0.99824 <.0001
EBV_FRA_m99	0.99778 <.0001	1.00000	0.99831 <.0001	0.99883 <.0001	0.99991 <.0001
EBV_GBR_m99	0.99223 <.0001	0.99831 <.0001	1.00000	0.99433 <.0001	0.99777 <.0001
EBV_IRL_m99	0.99983 <.0001	0.99883 <.0001	0.99433 <.0001	1.00000	0.99912 <.0001
EBV_SWE_m99	0.99824 <.0001	0.99991 <.0001	0.99777 <.0001	0.99912 <.0001	1.00000
EBV_DNK_GEN	0.99186 <.0001	0.99060 <.0001	0.98590 <.0001	0.99194 <.0001	0.99095 <.0001
EBV_FRA_GEN	0.98998 <.0001	0.99245 <.0001	0.99100 <.0001	0.99108 <.0001	0.99233 <.0001
EBV_GBR_GEN	0.98560 <.0001	0.99135 <.0001	0.99275 <.0001	0.98760 <.0001	0.99083 <.0001
EBV_IRL_GEN	0.99168 <.0001	0.99144 <.0001	0.98763 <.0001	0.99204 <.0001	0.99165 <.0001
EBV_SWE_GEN	0.99043 <.0001	0.99240 <.0001	0.99053 <.0001	0.99137 <.0001	0.99243 <.0001

Correlation EBVs FRA mix99 vs FRA GEN  
Wearing Weight France : Genial \* Mix99



Approx. reliabilities for FRA with mix99 — Mistzal vs Jam  
Wearing Weight REL France : Misztal vs Janrozki



## Top 20 bulls in the French scale estimated with the two softwares.

EVB FRA calculated with Genial software  $\bar{\pi}$  BEST 20 animals RANK 99

Observ. ANIMAL

1	CHAFFRAM000386125655
2	CHAFFRAM004413583632
3	CHAFFRAM000380117602
4	CHAFFRAM005886101621
5	CHAFFRAM000394118038
6	CHAFFRAM002194100118
7	CHAFFRAM005885108557
8	CHAFFRAM004509696390
9	CHAFFRAM001290110633
10	CHAFFRAM008685101471
11	CHAFFRAM005887100949
12	CHAFFRAM007184131537
13	CHAFFRAM000381110013
14	CHAFFRAM000310270239
15	CHAFFRAM007183106210
16	CHAFFRAM002186103007
17	CHAFFRAM002701850655
18	CHAFFRAM008586103272
19	CHAFFRAM007989101132
20	CHAFFRAM007178127143

EVB FRA calculated with MIX99 software  $\bar{\pi}$  BEST 20 animals RANK 99

Observ. ANIMAL

1	CHAFFRAM000386125655
2	CHAFFRAM004413583632
3	CHAFFRAM000380117602
4	CHAFFRAM005886101621
5	CHAFFRAM000394118038
6	CHAFFRAM002194100118
7	CHAFFRAM005885108557
8	CHAFFRAM004509696390
9	CHAFFRAM001290110633
10	CHAFFRAM008685101471
11	CHAFFRAM005887100949
12	CHAFFRAM007184131537
13	CHAFFRAM000381110013
14	CHAFFRAM000310270239
15	CHAFFRAM007183106210
16	CHAFFRAM002186103007
17	CHAFFRAM002701850655
18	CHAFFRAM008586103272
19	CHAFFRAM007989101132
20	CHAFFRAM007178127143



**Appendix II. DRAFT InterBeef Workplan (33 months)**

Work Plan	Months	Interbull Centre	Research Partner I	Research Partner II	Research Partner III
WP1	1-3	ITBC sends out a new call for Adjusted Weaning Weight (AWW) data. Participating National Genetic Evaluation Centres (NGEC) provide data in flat files. Call includes detailed documentation of GE system in that country. Note: this data will be used for WP2A research (see below).			
WP2	4-6	First routine run of new AWW evaluation (using Mix99), including reliability calculations by ITBC. Variance components based on the previous estimates obtained by INRA. ITBC sends out a call for data (AWW). Participating NGEC's provide data in flat files. Call includes detailed documentation of GE system in that country. Note: this data will be used for stage WP3A research (see below).	Research WP2A. New variance components for AWW are estimated including the new participating countries & breeds (based on data call request from above). This would include GE test runs & reliability calculations. After successful completion of parallel run, EBV & Rel's software would be transferred to ITBC for routine running.		
WP3	7-9	Second routine run of new AWW evaluation (using Mix99), including reliability calculations by ITBC.  ITBC sends out a call for data (AWW). Participating NGEC's provide data in flat files. Call includes detailed documentation of GE system in that country. Note: this data will be used for research WP4A (see below).	Research WP3A. Different models are tested to include crossbred animals. This research would include GE test runs & reliability calculations. After successful completion of parallel run, EBV & Rel's software would be transferred to ITBC for routine running.		
WP4	10-12	Third routine run of new AWW evaluation (using Mix99), including reliability calculations by ITBC.  ITBC sends out a call for data. Data would be AWW and 2 new traits - Calving Difficulty % and Carcass Kg. Participating NGEC's provide data in flat files. Call includes detailed documentation of GE system in that country. Note: this data will be used for WP5A, WP5B & WP5C research (see below).	Research WP4A. "Productionize" GE test run system (now incorporating multiple breeds, countries and including cross-bred data). Termed "Genetic Parameters, EBV's & Rel's System - V1". After successful completion of testing, "Genetic parameters, EBV's & Rel's system - V1" would be transferred to Research Partner II (ResP2) & Research Partner III (ResP3) for research runs.	Transfer of "Genetic parameters, EBV's & Rel's System - V1" to ResP2 for research runs.	Transfer of "Genetic parameters, EBV's & Rel's System - V1" to ResP3 for research runs.
WP5	13-15	Fourth routine run of new AWW evaluation (using WP4A software), including reliability calculations by ITBC. First pilot runs for Calving Difficulty% and Carcass Traits (using WP5B & WP5C software respectively).  ITBC sends out a call for data (AWW, Calving Difficulty%, Carcass kg and 2 new traits - Female fertility & Muscle/Conformation). Participating NGEC's provide data in flat files. Call includes detailed documentation of GE system in that country. Note: this data will be used for WP6 research (see below).	Research WP5A. New variance components are estimated using a range of models to investigate feasibility of moving to a single across breed evaluation for the range of breeds being evaluated. This would include the use of cross-bred data. This research would include GE test runs & reliability calculations. After successful completion of testing, EBV's & Rel's software would be transferred to ITBC for routine running.	Research WP5B. Research Partner 2 (ResP2) commences work to estimate new parameters and calculate international EBVs for Calving Difficulty % (including reliability's) - Direct & Maternal. This work is based on the countries and breeds that had submitted data. The work would be done using the "Genetic Parameters, EBV's & Rel's System V1", developed by Research Partner I. After successful completion of testing, EBV's & Rel's software would be transferred to ITBC for routine running.	Research WP5C. Research Partner 3 (ResP3) commences work to estimate new parameters and calculate international EBVs for Carcass Kg (including reliability's). This work is based on the countries and breeds that had submitted data. The work would be done using the "Genetic Parameters, EBV's & Rel's System - V1", developed by Research Partner I. After successful completion of testing, EBV's & Rel's software would be transferred to ITBC for routine running.
WP6	16-18	Fifth routine run of new AWW evaluation (using WP5A software), including reliability calculations by ITBC. First routine runs for Calving Difficulty% and Carcass Traits (using WP5B & WP5C software respectively).  ITBC sends out a call for data (AWW, CD%, Carcass kg, Female fertility & Muscle). Participating NGEC's provide data in flat files. Call includes detailed documentation of GE system in that country. Note: this data will be used for WP7 research (see below).	Research WP6A. Options for integration of International evaluations with National evaluations would be investigated. This research would include GE test runs & reliability calculations. After successful completion of parallel run, EBV's & Rel's software would be transferred to ITBC for routine running	Research WP6B. Research Partner 2 (ResP2) commences work to estimate new parameters and calculate international EBVs for Female Fertility (including reliability's). This work is based on the countries and breeds that had submitted data. The work would be done using the "Genetic Parameters, EBV's & Rel's System - V1", developed by Research Partner I. After successful completion of testing, EBV's & Rel's software would be transferred to ITBC for routine running.	Research WP6C. Research Partner 3 (ResP3) commences work to estimate new parameters and calculate international EBVs for Muscle/Conformation (including reliability's). This work is based on the countries and breeds that had submitted data. The work would be done in the "Genetic Parameters, EBV's & Rel's System - V1", developed by Research Partner I. After successful completion of testing, EBV's & Rel's software would be transferred to ITBC for routine running.
WP7	19-21	Sixth routine run of new AWW evaluation (using WP6A software), including reliability calculations by ITBC. Second routine run for Calving Difficulty% and Carcass Traits (using WP5B & WP5C software respectively). First routine run for Female Fertility & Conformation (using WP6B & WP6C software respectively).	Research WP7A. "Productionize" GE test run system (now incorporating multiple breeds, countries, use of cross-bred data, across-breed & integration into International evaluations). Termed "Genetic Parameters, EBV's & Rel's System - V2". New variance components would be estimated. Work would include GE test runs & reliability calculations. After successful completion of parallel run, genetic evaluation software would be transferred to ITBC (Interbull Centre) for routine running.	Research WP7B. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for calving difficulty% & female fertility. After successful completion of test (using V1 system from above), EBV's & Rel's software would be transferred to ITBC for routine running.	Research WP7C. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for carcass kg & muscle/conformation. After successful completion of test (using V1 system from above), EBV's & Rel's software would be transferred to ITBC for routine running.

Work Plan	Months	Interbull Centre	Research Partner I	Research Partner II	Research Partner III
		ITBC sends out a call for data (AWW, CD%, Carcass kg, Female fertility & Muscle). Participating NGEN's provide data in flat files. Call includes request for genotypes. Call includes detailed documentation of GE system in that country. Note: this data will be used for WP8 research (see below).		Transfer of "Genetic Parameters, EBV's & Rel's System - V2" to Research Partner (I) for routine running.	Transfer of Genetic Parameters, EBV's & Rel's system" to Research Partner (II) for routine running.
WP8	22-24	Seventh routine run of new AWW evaluation (using WP7A software), including reliability calculations by ITBC. Third routine run for Calving Difficulty% and Carcass Traits (using WP7B & WP7C software respectively). Second routine run for Female Fertility & Conformation (using WP7B & WP7C software respectively).  ITBC sends out a call for data (AWW, CD%, Carcass kg, Female fertility & Muscle). Participating NGEN's provide data in flat files. Call includes request for genotypes. Call includes detailed documentation of GE system in that country. Note: this data will be used for stage 9 research (see below).	Research WP8A. Options for integration of genomic data into International beef evaluations would be investigated. This research would include variance components, different models, GE test runs & reliability calculations. After successful completion of parallel run, EBV's & Rel's software would be transferred to ITBC for routine running.	Research WP8B. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for calving difficulty% & female fertility using V2 systems (from above). After successful completion of test, EBV's & Rel's software would be transferred to ITBC for routine running.	Research WP8C. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for carcass kg & muscle/conformation using V2 system (from above). After successful completion of test, EBV's & Rel's software would be transferred to ITBC for routine running.
WP9	25-27	Eighth routine run of new AWW evaluation (using WP8A software), including reliability calculations by ITBC. Fourth routine run for Calving Difficulty% and Carcass Traits (using WP8B & WP8C software respectively). Third routine run for Female Fertility & Conformation (using WP8B & WP8C software respectively).  ITBC sends out a call for data (AWW, CD%, Carcass kg, Female fertility & Muscle). Participating NGEN's provide data in flat files. Call includes request for genotypes. Call includes detailed documentation of GE system in that country. Note: this data will be used for stage 10 research (see below).	Stage WP 9A Research. "Productionize" GE test run system (now incorporating multiple breeds, countries, use of cross-bred data, across-breed, integration into International evaluations & Genomics). Termed "Genetic Parameters, EBV's & Rel's System - V3". New variance components would be estimated. Work would include GE test runs & reliability calculations. After successful completion of parallel run, genetic evaluation software would be transferred to ITBC (Interbull Centre) for routine running.	Research WP9B. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for calving difficulty% & female fertility using V2 systems (from above). After successful completion of test, EBV's & Rel's software would be transferred to ITBC for routine running.  Transfer of "Genetic Parameters, EBV's & Rel's System - V3" to Research Partner (I) for routine running.	Research WP9C. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for carcass kg & muscle/conformation using V2 system (from above). After successful completion of test, EBV's & Rel's software would be transferred to ITBC for routine running.  Transfer of Genetic Parameters, EBV's & Rel's System - V3" to Research Partner (II) for routine running.
WP10	28-30	Ninth routine run of new AWW evaluation (using WP9A software), including reliability calculations by ITBC (i.e., V3 software from above). Fifth routine run for Calving Difficulty% and Carcass Traits (using WP9B & WP9C software respectively). Fourth routine run for Female Fertility & Conformation (using WP9B & WP9C software respectively).  ITBC sends out a call for data (AWW, CD%, Carcass kg, Female fertility & Muscle). Participating NGEN's provide data in flat files. Call includes request for genotypes. Call includes detailed documentation of GE system in that country. Note: this data will be used for stage 11 research (see below).	Research Partner I development work is complete.	Research WP10B. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for calving difficulty% & female fertility using V3 systems (from above). After successful completion of test, EBV's & Rel's software would be transferred to ITBC for routine running.	Research WP10C. Continue international evaluation research (new parameters, evaluation model & reliability) for new countries and breeds for carcass kg & muscle/conformation using V3 system (from above). After successful completion of test, EBV's & Rel's software would be transferred to ITBC for routine running.
WP11	31-33	Tenth routine run of new AWW evaluation (using WP9A software), including reliability calculations by ITBC. Sixth routine run for Calving Difficulty% and Carcass Traits (using WP10B & WP10C software respectively). Fifth routine run for Female Fertility & Conformation (using WP10B & WP10C software respectively).  ITBC sends out a call for data (AWW, CD%, Carcass kg, Female fertility & Muscle). Participating NGEN's provide data in flat files. Call includes request for genotypes. Call includes detailed documentation of GE system in that country.	Research Partner I development work is complete.	Research Partner 2 work is complete	Research Partner 3 work is complete