Animal Selection, Genetics & Genomics Network Toolkit
Discussion Paper

Part 3: Intellectual Property

Authors
G Shackell
H Oddy

May 2013

www.asggn.org
DISCLAIMER: This paper has been prepared for the Animal Selection Genetics and Genomics Network (ASGNN) of the Global Research Alliance on Agricultural Greenhouse Gases.

Every effort has been made to ensure this publication is accurate. It is intended for discussion only. The authors will not be responsible for any error or omission in this publication unless specifically agreed otherwise in writing.

ACKNOWLEDGEMENT: Preparation of this document was funded, in part, by the New Zealand Government in support of the Livestock Research Group of the Global Research Alliance on Agricultural Greenhouse Gases.
## Contents

EXECUTIVE SUMMARY ........................................................................................................... 4

BACKGROUND ......................................................................................................................... 5
  Individual datasets .................................................................................................................. 5
  Who is involved? ...................................................................................................................... 6

HOW CAN WE MANAGE INTELLECTUAL PROPERTY? ...................................................... 7

TRANSFERRING MATERIAL .................................................................................................... 7

TRANSFERRING DATA ............................................................................................................. 7

REFERENCES .......................................................................................................................... 8

APPENDIX 1: GENERIC SAMPLE MTA .................................................................................. 9

APPENDIX 2: EXAMPLE INTELLECTUAL PROPERTY AGREEMENT ................................. 11
Executive summary

A major challenge to delivering animal breeding solutions for managing CH\textsubscript{4} emission is accurate phenotyping of large numbers of animals of known pedigree for methane emissions in order to establish the genetic parameters for a methane trait.

The prerequisite is to implement faster, more efficient techniques for identifying and breeding from low methane emitting livestock.

The Animal Selection, Genetics and Genomics Network (ASGGN) of the Global Research Alliance on Greenhouse Gases Livestock Research Group is developing a coordinated international research effort around measurement of methane traits in individual animals to facilitate the generation of genetic parameters and selection tools (including genomic predictions) to reduce CH\textsubscript{4} emissions from ruminant livestock.

In order to make the best use of data and material from a wide group of independently funded researchers, there will be a requirement to share both data and material.

In order to do this there will be a requirement for an agreed Intellectual Property policy.

This document has been formulated in order to generate discussion and form the basis of an initial working document.

The aim is to provide a framework for dissemination that provides a discussion platform for all members. It contains thoughts, recommendations and examples based on current documents.

It is hoped that from these discussions, a working strategy will be created for IP management within the ASGGN community.

  o a network requires that key groups function in an environment that uses a coordinated scientific approach
  o such a scientific network will not deliver solutions under its own name, however, it can offer a forum and collaborative environment in which independently funded scientists in diverse countries can share information and data
  o genomic selection methodologies are constrained by access to information on heritability, repeatability and genetic and phenotypic correlation estimates with other traits
  o key to maximising these datasets is combined analysis
  o each individual dataset is gathered within specific funding and ownership parameters for key stakeholders
  o one challenge is to enable an environment where data can be shared so that analyses can be performed to take advantage of the genomic platforms currently available
  o the default position is that data is freely available and shared and that use of the data generated by this process precludes IP protection, except where a defensive posture (i.e. protect and make freely available), is deemed appropriate.

The biggest challenge is to adopt an IP position that is workable across borders. In order to do this, documentation must be acceptable to a large number of parties within a variety of legal jurisdictions.

Examples of documents that are in use in existing international genetics and genomics collaborations are presented for discussion - many of the parties likely to be signatory to an ASGGN agreement are already working in projects covered by documents similar to those that are presented.
Background

As identified in the Animal Selection Genetics and Genomics Network Toolkit Discussion Paper Part 1: Background; The immediate research goal of the ASGZN is to establish the genetic parameters associated with routinely measured production traits and a well defined methane phenotype. This will enable development of genetic and genomic tools to include information on CH₄ emissions at low cost into current breeding programmes.

The Animal Selection, Genetics and Genomics Network (ASSGN) is an unincorporated association, comprising a network of scientists and researchers working together in the field of Animal Selection, Genetics and Genomics, which exists under the wider umbrella of the Livestock Research Group of the Global Research Alliance (GRA) for reduction of agricultural greenhouse gases.

The science behind developing genetic and genomic technologies that will contribute to designing animal selection indexes that target the mitigation of CH₄ emissions from ruminant livestock requires a huge resource of animals of different breeds and species.

This is impossible to achieve for a single research organisation, or indeed a country, working in isolation. Therefore, the most effective way to maximise the impact of these new technologies, is for key groups to function in a network environment using a coordinated scientific approach.

Such a scientific network is unlikely to deliver solutions under its own name, but its members will deliver solutions that are specific to their own species, industries and animal improvement structures... However, the ASGZN can offer a forum and collaborative environment in which independently funded scientists in diverse countries can share information and data.

A coordinated international research effort using agreed methodologies that are either the same, or at least validated against each other, will significantly increase the power of the contributing individual research programmes. In turn, this will leverage the focus, and achieve progress at a much faster rate than could be expected if the programmes were being conducted in isolation.

To do that requires sharing of at least data, and perhaps also material. In addition within their own research programmes, scientists will be analysing DNA from material owned by another party.

Individual datasets

Genomic selection methodologies are constrained by access to information on heritability, repeatability and genetic and phenotypic correlation estimates with other traits. The accuracy of any genomic prediction equation is influenced by these estimates, number of animals with accurate trait measurements and the number of animals with

---

1 This document should be read in association with the following:

1. A positioning paper with the working title Breeding ruminants that emit less methane – development of consensus methods for measurement of methane, (currently in draft format) prepared by the ASGZN Methane Phenotype Working Group.

2 The philosophy of this document has drawn largely on the experience of a number of existing international collaborations in the fields of Animal Genetics and Genomics. In particular we acknowledge The International Sheep HapMap Consortium and the International Sheep Genomics Consortium; The 1000Bull Genomes Project;
genotypes that can be used to train the prediction equation. As well as, continued updating of the prediction equation by continued measurement of the methane trait.

The more of this data that is available, the more accurate genomic predictions become. However, the collection of the data can be constrained by time, financial and infrastructure. The requirement is for data specific to species and breed as well as management and feeding practices. Furthermore, enteric CH\textsubscript{4} emissions from ruminant livestock are measured and/or calculated by a variety of methodologies (Pickering and McEwan, 2013).

The key to maximising these datasets is combined analysis. This requires access to data that have been stored in such a way that analysis can be undertaken by anyone with access to the information in order to produce results that can be interpreted by all participants (see Animal Selection Genetics and Genomics Network Toolkit Discussion Paper Part 2: \textit{International Data sharing}).

\textbf{Who is involved?}

Genotypes and phenotypes are typically owned (through the funding body) by the individual researcher, animal owner, a semen distributor or other entity. As has been discussed in other documents in the Animal Selection Genetics and Genomics Network Toolkit Discussion series, there are advantages from collaboration. These data, and perhaps also DNA, could be shared within agreed, specified guidelines, between Network members in order to produce species and breed specific genomic prediction equations.

Given the cost of recording these traits, a likely method of applying animal selection and breeding tools to mitigating enteric CH\textsubscript{4} emissions is genome wide selection. For this to be successful, thousands of animals per species must be genotyped and/or sequenced in the research phase. In practice, this will only be achieved by international collaboration, in a non-competitive environment. \textit{The intended default ASGGN position is this information is be placed in the public domain free of any IP entanglements}.

Sharing of data and establishing shared protocols is an important step forwards in maximising the international research effort.

Each individual dataset is gathered within specific funding and ownership parameters. While the objective of the ASGGN is, where necessary, to foster collaborative use of datasets, it must be remembered that there are potentially a huge number stakeholders that have an interest in the data necessary to underpin calculating genomic prediction equations for selecting animals with low CH\textsubscript{4} emissions. Therefore data sharing will need to be within a framework that protects the interests of all parties.

For example, Funding sources may involve:
- Federal Governments and/or State Governments who have no interest in owning IP
- Universities and/or Private institutes who may want to own IP
- Producer bodies and/or Breed Societies who may want to be free to use IP for their private benefit
- Commercial semen suppliers who will want to protect their IP
- Consortia of various combinations of the above (within and across borders) with end-user interest who may want to licence IP

The challenge is managing the IP interests of all involved. \textit{See: How can we manage Intellectual Property?}

Researchers who record phenotypes and take DNA samples from animals will require approval to use the material. Ownership of animals from which samples must be taken and/or information has been gathered may include:
- Funding bodies
- Industry bodies
- Genetic recording schemes
- Commercial stock/semen suppliers
- Company owners/farmers
- Individual owners/farmers
Furthermore, many of these stakeholders may also be involved in collaborations that are made internationally, interstate, inter-organisationally or in almost any imaginable perturbation of connectivity, and transfer of material between interested parties will also require agreement.

The challenge is to enable an environment where material and data can be shared so that analyses can be performed to take advantage of the genomic platforms currently available. See: Transferring Material. This is not a new problem. Many ASGGN members have already involved in consortia that have tackled the problem and found successful ways to handle it (see The ISGC et.al. (2010))

How can we manage Intellectual Property?

The ASGGN is not a core funder for either research, or members’ participation in network activities.

The core research required for ASGGN participants is funded from within the participating countries.

It is anticipated that the participants of the ASGGN can use general information and knowledge gained from the network to apply for funding within their own country. It is anticipated that results obtained from this research can be used subject to agreed principles within the network.

For ASGGN to function effectively we propose an environment where the members are free to participate in the group and to communicate with each other and share information within the network’

The default position of the network will be a shared knowledge “public domain” operating principle.

For example, The International Sheep Cattle and goat HapMap Consortiums, like other large-scale genomic projects, do not consider deposition of its data into its own or public databases to be the equivalent of publication in a peer-reviewed journal. Therefore, although the data are available to others, the scientists who produce those data still consider them to be formally unpublished. However, there are guiding principles as to how that data is used (Toronto International Data Release Workshop 2009).

The biggest challenge is to adopt an IP position that is workable across borders. In order to do this, documentation must be acceptable to a large number of parties within a variety of legal jurisdictions.

Therefore, the initial documents presented for agreement are based on documents that are currently in use in a similar area of research. A number of parties likely to be signatory to an ASGGN agreement are already party to documents based on those presented.

Transferring Material

All genotypes are generated from DNA, which must be sampled from the animals that are phenotyped.

In order for genotypes to be shared, each researcher must first have an agreement with the animal owner to transfer a material sample via a material transfer agreement (MTA) so that DNA can be extracted, and genotyped.

A similar document would be required for sharing material between laboratories

Appendix 1 is a Generic MTA based on the document used by the International Sheep Genome Consortium www.sheephapmap.org. This is attached for discussion as a potential template.

Transferring Data
This is addressed by the accompanying document Animal Selection Genetics and Genomics Network Toolkit Discussion Paper Part 2: *International Data sharing.*

Data transfer needs to be between signatories to an agreement that allows use of the data but preserves ownership and provides anonymity.

It is essential that no individual animals are identifiable.

Appendix 2 is an example of an IP sharing agreement based on the document used by the 1000Bull Genomes Consortium [www.1000bullgenomes.com](http://www.1000bullgenomes.com). *This is attached for discussion as a potential template.*

**References**


Appendix 1: Generic sample MTA

TRANSFER OF BIOLOGICAL MATERIAL AND INFORMATION TO [the institute] FOR USE BY THE ANIMAL SELECTION, GENETICS and GENOMICS NETWORK

Background

The [the institute] acting through [campus] is located at [address].

[the institute] is a member of the Animal Selection, Genetics and Genomics Network (the Network) which is .......... (the Project).

[the institute] has agreed to assemble and a repository of DNA and share related information necessary for the conduct of the Signatory and to supply DNA and information to Signatory participants.

The Owner (named below) wishes to contribute tissues samples (Material) from the Animal/s (described below) and Records associated with the Animal/s (being the Animal ID and the IDs of its parents) for use in the Project.

Agreement

The Owner agrees to:

supply the Material to [the institute], or allow [the institute] to collect the Material, and to supply the Records to [the institute], for the sole purpose of [the institute] using and/or supplying the Material and Records to others for using, for the purpose of conducting the Project; and

upon receipt of an appropriate invoice from the Agent (details provided below), pay the Fee (specified below) to the Agent for use by the Consortium to contribute to the costs of the use of the Material and Records in the Project.

The Owner warrants that it is the owner of and/or is authorised to make available the Material and Records for the purposes of this agreement.

[the institute] agrees that:

if it collects the Material from the Owner, it will do so at its own cost;

it will supply a sub-sample of the Material to the Owner on request;

it will not use or permit any other person to use the Material or the Records otherwise than for the purpose of conducting the Project;

it will not provide any of the Material or disclose any of the Records to any person other than a participant in the Project;

subject to any negligence or unlawful act by the Owner, it uses the Material and Records at its own risk;

it will work with the other participants in the Signatory to ensure that:
the results of the Signatory are released into the public domain as soon as practicable;
the Owner is kept informed of the results of the Signatory as they relate to the Owner’s Material and Records;
the Owner receives prior to submission for publication a copy of any manuscript that describes the results of the
Signatory as they relate to the Material and Records and that any such manuscript acknowledges the Owner’s
contribution to the work reported;
it will not include any of the results of the Signatory in any patent application before those results are released into
the public domain; an
before supplying any Material or Records to a participant in the Project, it will enter into an agreement with that
participant binding the participant to obligations consistent with the obligations of [the institute] under this
agreement.

7. The Owner acknowledges that any results provided to it under this agreement may be preliminary and/or
tentative and agrees that it uses those results at its own risk. The Owner further agrees in relation to such results
that it must not:
   a. disclose them to any other person; or
   b. include any of them in any patent application before they are released into the public domain.

8. This Agreement will continue in force (unless terminated earlier by either party as a result of a breach) for
   a period of five (5) years, at which time (or immediately after earlier termination) [the institute] will, if requested in
   writing by Owner, return to the Owner or destroy all Material remaining in the possession of [the institute].

OWNER’s NAME and address: [the institute]

______________________________
Signature

______________________________
Signature

______________________________
Date

Animal ID: (attached)

Fee: [..........]
Appendix 2: Example Intellectual Property Agreement

List of Parties to this agreement

Animal Selection Genetics and Genomics Network

Intellectual Property AGREEMENT
TABLE OF CONTENTS

1  INTERPRETATION

2  TERMS AND PURPOSE OF AGREEMENT

3  GRANT OF A LICENCE

4  LICENCE PURPOSE

5  STEERING COMMITTEE

6  SIGNATORY PARTY CONTRIBUTIONS

7  SIGNATORY PARTY APPOINTMENTS

8  CEASING TO BE A SIGNATORY PARTY

9  INTELLECTUAL PROPERTY

10 CONFIDENTIALITY

11 PUBLICATION

12 LIABILITY

13 TERMINATION

14 EFFECT OF TERMINATION

15 MEDIATION AND ARBITRATION

16 COSTS AND DISBURSEMENTS

17 NOTICES

18 WAIVER OR VARIATION

19 FURTHER OBLIGATIONS

20 COUNTERPARTS

21 WHOLE AGREEMENT

22 NO RELIANCE ON WARRANTIES AND REPRESENTATIONS

23 SEVERANCE

24 NO MERGER

25 CONSENTS AND APPROVALS
THIS AGREEMENT is made on

PARTIES

Party A
Party B
Party C
TERMS

INTRODUCTION
The Parties each conduct research in methane emissions from grazing livestock
The Parties wish to exchange and use Contributed Data on the terms set out in this Agreement.

IT IS AGREED

INTERPRETATION
In this Agreement, unless otherwise indicated by the context:

"Business Day" means a day that is not a Saturday, Sunday, public holiday or bank holiday in the place where an act or event must occur or not occur under this Agreement;
"Commencement Date" means dd Month yyyy;
"Chairperson" means the person appointed by the Committee and listed in 0 of Schedule 1 and any other person appointed as Chairperson by the Committee;
"Confidential Information" means all know-how, business information, financial information and other commercially valuable information of whatever description and in whatever form (whether written or oral, visible or invisible), including but not limited to the Contributed Data, unpatented inventions, trade secrets, formulae, graphs, drawings, designs, biological materials, samples, devices, models and other materials of whatever description (whenever it was obtained) which relates to either of the Signatory Party’s:

- business, operations or strategies;
- Intellectual Property; or
- actual or prospective customers, clients or competitors.
- The information must be any one of the following:
  - confidential in fact;
  - reasonably regarded by either of the Parties as confidential; or
  - information that a written notice from either Signatory Party to the other states is confidential.
- Information is not confidential if:
  - it is in the public domain, unless it came into the public domain by a breach of confidentiality by the receiving Signatory Party or a third party;
  - it is already known by the other Signatory Party at the time this Agreement is entered into;
  - created or developed independently by the other Signatory Party without any knowledge of the Signatory Party’s information;
  - it is obtained lawfully from a third party without any breach of confidentiality; or
  - the disclosing Signatory Party waives compliance with the confidentiality obligation in writing;

"Contributed Data" means Whole Genome Sequence data and exome sequence data for individual animals, not including phenotypic data or breeding values, contributed by a Signatory Party, including the data referred to in Schedule 2;

"Contributed Data Intellectual Property Rights" means all Intellectual Property Rights in all Contributed Data;

"Data Exchange Server" means the repository for the binary alignment map files ("BAM") which are created for each animal consisting of Whole Genome Sequences or single nucleotide polymorphisms ("SNPs") or copy number variation ("CNV") across all bulls and cows;

"Educational Purposes" means teaching conducted by a Signatory Party;
"Enhanced Data" means all information, knowledge, discoveries and biological material created as a result of further development of Contributed Data under this Signatory (but does not include Contributed Data);

"Enhanced Intellectual Property Rights" means all Intellectual Property Rights in all Enhanced Data (but does not include Contributed Data Intellectual Property Rights);

"Field" means the use of DNA sequence technology for analysis of useful traits of individuals;

"Intellectual Property Rights" means statutory and other proprietary rights and any interest therein, including:

- patents, copyrights, circuit layouts, plant variety rights, plant breeders rights, registered and unregistered designs, registered and unregistered trademarks, know-how and any right to have Confidential Information kept confidential, and all other rights with respect to Intellectual Property as defined in Article 2 of the Convention Establishing the World Intellectual Property Organisation of July 1967; and
- any application or rights to apply for registration of any rights referred to in clause 0;
- and includes, without limitation, rights of legal and beneficial owner and rights enjoyed under licence;
- but does not include Moral Rights;

"Licence" means the licences granted in clause 0 and clause 0;

"Material Obligations" means in respect of each Signatory Party, its material obligations in respect of this Project;

"Moral Rights" means the rights of attribution, rights against false attribution and rights of integrity described in Article 5 of the WIPO Performances and Phonograms Treaty as if it were extended to apply to any literary, dramatic, musical or artistic work or a cinematographic film;

"New Technology" means all information, knowledge, discoveries and biological material directly related to the Field created by or for the Signatory Parties under the Project, but does not include Contributed Data, or Enhanced Data;

"New Intellectual Property Rights" means all Intellectual Property Rights in and to New Technology;

"Phase" means an agreed period of time as determined by the Committee. The initial Phase will be 12 months;

"Signatory Results" means data or information produced by a Signatory Party pursuant to this Agreement;

"Signatory Parties" means each of the parties to this Agreement;

"Purposes" means the purpose set out in clause 0;

"Reasonable Conditions" means appropriate market conditions including possible financial terms taking into account the specific circumstances of the request for rights, for example the actual or potential value of the rights to which license is requested and/or the scope, duration or other characteristics of the use envisaged;

"Term" means the period commencing on the Commencement Date until 1 November 2016 unless this Agreement is terminated earlier in accordance with clause 0;

"Third Party" means a person that is not a party to this Agreement;

"Whole Genome Sequence" means the entire DNA sequence from individuals or functional equivalent thereof.

In this Agreement, unless otherwise indicated by the context:

- words importing the singular include the plural and vice versa;
- headings are for convenience only and do not affect interpretation of this Agreement;
- a reference to a clause, paragraph or schedule is a reference to a clause, paragraph or schedule of this Agreement;
where any word or phrase is given a definite meaning in this Agreement, any part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- an expression importing a natural person includes a body corporate, partnership, joint venture, association or other legal entity;
- a reference to a statute, statutory provision or regulation includes all amendments, consolidations or replacements thereof;
- a reference to a Signatory Party to a document includes that Signatory Party’s legal personal representatives, successors and permitted assigns;
- a covenant or agreement on the part of or for the benefit of two or more persons binds or benefits them severally only;
- a reference to a body, whether statutory or not:
  - which ceases to exist; or
  - whose powers or functions are transferred to another body,
- is a reference to the body which replaces it or which substantially succeeds to its powers or functions; and

"including" and similar expressions are not words of limitation.

Nothing in this Agreement constitutes the Signatory Parties as being in partnership with each other. The legal rights and obligations created under this Agreement are contractual only. The Signatory Parties shall at all times be independent contractors, and not a partner or a joint venturer of each other, and nothing contained herein shall be deemed to create any partnership or joint venture relationship between the Parties. Without the prior express written consent of a Signatory Party, no Signatory Party shall be authorized to enter into obligations that bind another Signatory Party.

TERMS AND PURPOSE OF AGREEMENT

This Agreement will commence on the Commencement Date and will continue for the Term, unless this Agreement is earlier terminated in accordance with this Agreement.

The Parties agree to collaborate in good faith in the Signatory as set out in this Agreement with a view to:

- Each Signatory Party providing its best available Contributed Data to the Project;
- Each Signatory Party agreeing to exchange Contributed Data; and
- Each Signatory Party agreeing to deal with Intellectual Property Rights in accordance with this Agreement.

GRANT OF A LICENCE

Each Signatory Party grants to each other Signatory Party, a world-wide, royalty-free, non-exclusive, and revocable licence of its Contributed Data Intellectual Property Rights for the Term and the Purposes of the Agreement.

Subcontracting

The Signatory Parties may sublicense the licence granted in clause 3.1 only with the unanimous consent of the Committee.

licence purpose

The Licences are granted to the Signatory Parties only for the following purposes:

- performing the Project;
- conducting Research by a Signatory Party; and
- Educational Purposes.
The Signatory Parties may grant each other further rights of use subject to reasonable conditions

STEERING COMMITTEE
As soon as practicable after the Commencement Date, the Signatory Parties will establish a Steering Committee ("Committee"), which will consist of the individuals set out in 0 of Schedule 1.

The Signatory Parties may add additional members to, or modify the members of the Committee as agreed upon by all of the Signatory Parties. Notwithstanding that Signatory Parties may appoint additional members to the Committee; each Signatory Party shall be allocated one vote at any meeting of the Committee.

Any decisions made by the Committee shall be agreed upon by at least seventy five percent (75%) of all the members of the Committee.

The Committee will:
- appoint a Chairperson;
- appoint Signatory Parties in accordance with clauses 0 to 0;
- meet at such times (and no less than three times per annum) as is necessary for it to discharge its functions properly or as requested by the Chairperson, and the Committee will aim to have at least one meeting face-to-face per annum, while any other meeting may take place by means of either video-conference or tele-conference facilities, unless decided otherwise by the Committee;
- make and implement management decisions relating to the conduct of the Agreement, provided that such decisions are consistent with this Agreement;
- discuss the progress of the Agreement;
- exchange information (including without limitation research, scientific and regulation information); and
- undertake such duties as the Committee may agree.

SIGNATORY PARTY CONTRIBUTIONS
Each Signatory Party must contribute Data and place it on the Data Exchange Server.

SIGNATORY PARTY APPOINTMENTS
The number of Signatory Parties is unlimited.

The Signatory Parties are any legal person appointed in accordance with clauses x.x to x.x.

Applications to participate in the Signatory must be made in writing and be signed by the applicant.

Only legal persons approved unanimously by the Committee in writing shall be eligible to become Signatory Parties.

As soon as practicable following acceptance of an application for participation in the Agreement, the Committee will send the applicant written notice of the acceptance. An applicant for participation in the Signatory becomes a Signatory Party upon such acceptance and execution by the new Signatory Party of a deed of accession or other accessory contract agreeing to be bound by this Agreement.

The rights and obligations of each Signatory Party are personal to each Signatory Party and are not transferable by the Signatory Party’s own act or by operation of law. The Signatory Parties shall not assign nor subcontract the Signatory in whole or in part without the prior written consent of the other Signatory Parties.

CEASING TO BE A SIGNATORY PARTY
A Signatory Party’s participation in the Signatory will cease:

- if a Signatory Party gives the Committee written notice of resignation, from one month after the date of receipt of that notice by the Committee;
- if a Signatory Party is in breach of Material Obligations under this Agreement and, despite receiving written notice from the Committee has within a timeframe of 20 Business Days failed to rectify that breach as determined by the Committee in accordance with clause x.x.
- The Committee will determine whether a Signatory Party has breached Material Obligations by holding a meeting at which the relevant Signatory Party has an opportunity to be heard.
- After the relevant Signatory Party has had an opportunity to be heard, the Committee will determine whether the relevant Signatory Party has breached Material Obligations under this Agreement.
- The Committee may remove a Signatory Party only after a unanimous decision by the Committee that the Signatory Party is in breach of Material Obligations under this Agreement. The relevant Signatory Party is not allowed to vote at the meeting.
- If a Signatory Party ceases to be a Signatory Party, clause XX applies in respect of that Signatory Party.
- Despite a Signatory Party ceasing to be a participant in the Signatory under this clause, the Signatory and the Agreement continues amongst the remaining Signatory Parties.

INTELLECTUAL PROPERTY

Ownership and Licensing of Contributed Data
Each Signatory Party retains all proprietary rights and interests to its Contributed Data Intellectual Property Rights. Each Signatory Party acknowledges and agrees that it will have no proprietary rights or interests in or to the Contributed Data Intellectual Property Rights of other Signatory Parties other than as expressly set out in this Agreement.

Ownership and Licensing of New and Enhanced Intellectual Property Rights
All Enhanced or New Intellectual Property Rights are to be owned by the Signatory Party who has created the Enhanced or New Intellectual Property Rights. All Enhanced or New Intellectual Property Rights to which several Signatory Parties have created shall be owned by those Signatory Parties who have created the Enhanced or New Intellectual Property Rights.

For the Term, each Signatory Party grants to each other a world-wide, royalty free, non-exclusive, revocable licence of its Enhanced or New Intellectual Property Rights for the Purposes. The Signatory Parties may grant each other further rights of use subject to reasonable conditions.

If a Signatory Party wish to seek Intellectual Property protection in respect of the Enhanced or New Intellectual Property Rights, then it shall prepare, file, prosecute and maintain any patent application or patents at its own expense.

CONFIDENTIALITY

All Signatory Parties agree that the terms of this Agreement are confidential.

From the Commencement Date until 5 years after the termination of this Agreement, each Signatory Party must not use or disclose any of the Confidential Information of the other Signatory Parties for any purpose except for the purposes of this Agreement, unless disclosure is permitted under clauses x or x.

Duty to Preserve Confidentiality

No Signatory Party may disclose any of the other Signatory Parties’ Confidential Information unless any one or more of the following applies:

- The disclosure is necessary to comply with that Signatory Party's obligations under this Agreement.
• The disclosure is required by law or made reasonably to a professional legal adviser or professional auditor.
• The other Signatory Parties consent in writing to the disclosure.

The Signatory Parties will ensure that:

• their respective employees, contractors (including professional legal advisors and professional auditors) (and the contractor's employees) and students who participate in the Signatory or acquire access to Confidential Information comply with the obligations of confidentiality set out in this clause as though Signatory Parties to this Agreement; and
• any of the abovementioned persons who cease to be employed by the Signatory Party or cease participating in the Signatory continue to be bound by such obligations of confidentiality.

PUBLICATION

Any Signatory Party may publish their respective Signatory results in accordance with this clause XX.

Any Signatory Party wishing to publish Signatory Results or disclose information relating to the Contributed Data will provide the Committee and the Signatory Parties who contributed the Signatory Results or Contributed Data with a copy of any document or disclosure at least 45 days prior to the date of anticipated publication. The Committee will provide its consent to the publication of the document or disclosure unless the publication does not name each author from the Signatory Party providing the Signatory Results or Contributed Data, or the Committee reasonably believes that the publication would harm, prejudice or in any way injure the interests of the Parties in the Contributed Data Intellectual Property Rights. Unless the Committee or a relevant Signatory Party object to a publication which has been presented to them within 45 days or receipt of the complete documentation, consent shall be deemed given.

Any Signatory Party may publish a document or disclose information relating to the Enhanced Data or New Technology provided that all of the Signatory Parties are acknowledged.

LIABILITY

In respect of any information or materials supplied by one Signatory Party to another under this Agreement the receiving Signatory Party shall in all cases be entirely and solely liable for the use to which it puts such information and materials.

Each Signatory Party shall collaborate with their customary diligence and according to the state of science and technology known to them. There will be no warranty; in particular there will be no warranty that the Signatory results will be economically and technically exploitable and unencumbered by Intellectual Property Rights held by a Third Party.

The liability of each Signatory Party to each other shall be limited to intent or gross negligence. Any liability for consequential damage and pecuniary loss shall be excluded. The limitation of liability shall not apply to damage arising out of injury to life, body or health.

Each Signatory-Party must either:

• take out and maintain appropriate insurances to cover loss or liability under this Agreement or relating to the Signatory to a value of at least EUR 100,000 or
• maintain sufficient unencumbered free cash reserves during the Term of this Agreement and for a period of seven years after the termination or expiry of this Agreement, to the value of at least EUR 100,000 to meet any liability to any of the other Project-Parties or third parties that may arise as a result of a Signatory Party’s obligations under this Agreement or relating to the Signatory or
• be a public institution that has the financial status and backing of the relevant state to meet any liability to any of the other Project-Parties or third parties that may arise as a result of a Signatory Party’s obligations under this Agreement or relating to the Project.
TERMINATION

This Agreement, and the licenses granted under it, may be terminated by mutual written agreement between all the Signatory Parties.

The Committee may terminate this Agreement as it applies to a particular Signatory Party by giving written notice to a Signatory Party if any of the following happens:

- the Signatory Party materially breaches this Agreement and the breach cannot be remedied;
- the Signatory Party fails to remedy a material breach of this Agreement (which can be remedied) for more than 30 Business Days after receiving a notice from the terminating Signatory Party requiring the breach to be remedied; or
- an Insolvency Event occurs in relation to the Signatory Party.

EFFECT OF TERMINATION

Upon termination or expiry of this Agreement, each Signatory Party must immediately cease its use of the Confidential Information of the other Signatory Party and must immediately, at the option of the other Signatory Parties:

- return to the other Signatory Party;
- destroy and certify in writing to the other Signatory Party the destruction of; or
- destroy and permit the other Signatory Party to witness the destruction of all of the other Signatory Party’s Confidential Information in the possession or control of the first mentioned Signatory Party.

Consequences of Termination

Upon termination of this Agreement, all further rights and obligations of a Signatory Party (including, subject to clause 0, rights under the Licences) under this Agreement (other than any which are expressed to survive termination) are to end.

Clauses x and x... continue in force following termination or expiry of this Agreement.

Rights Prior to Termination

Any termination of this Agreement will not affect the enforceability of any other obligations of a Signatory Party or any rights against a Signatory Party accrued prior to termination.

Data Remains

A Signatory Party’s Contributed Data remains subject to the Licence in clause 3 despite termination of the Agreement in respect of that Signatory Party.

MEDIATION AND ARBITRATION

Any dispute or difference whatsoever arising in connection with this Agreement that cannot be resolved between the Signatory Parties will be submitted to mediation in accordance with and subject to the laws or rules of mediation under the WIPO Mediation Rules.

If the Signatory Parties are unable to resolve their dispute or difference by submitting to mediation in accordance with clause 15.1, then such dispute or difference between the Signatory Parties will be submitted to arbitration in accordance with and subject to the laws or rules of arbitration under the WIPO Arbitration Rules.

COSTS AND DISBURSEMENTS
Each Signatory Party must pay its own legal costs and disbursements in relation to the negotiation, preparation and completion of this Agreement and other documents referred to in it, and for carrying out its obligations under the Agreement.

NOTICES
A notice or other communication required or permitted to be given by one Signatory Party to another must be in writing and:

- delivered personally;
- sent by pre-paid mail to the address of the addressee specified in this Agreement; or
- sent by email to the email address of the addressee specified in this Agreement and with acknowledgment of receipt.

A notice or other communication is taken to have been given (unless otherwise proved):

- if mailed, on the second Business Day after posting; or
- if sent by email, on the day it is sent. A Signatory Party may change its address for service by giving notice of that change in writing to the other parties.

WAIVER OR VARIATION
A Signatory Party’s failure or delay to exercise a power or right does not operate as a waiver of that power or right.

The exercise of a power or right does not preclude:

- its future exercise; or
- the exercise of any other power or right.

The variation or waiver of a provision of this Agreement or a Signatory Party’s consent to a departure from a provision by another Signatory Party will be ineffective unless in writing executed by the parties.

FURTHER OBLIGATIONS
Each Signatory Party will from time to time do all things (including executing all documents) necessary or desirable to give full effect to this Agreement.

COUNTERPARTS
This Agreement may be executed in any number of counterparts each of which will be an original but such counterparts together will constitute one and the same instrument and the date of the Agreement will be the date on which it is executed by the last Signatory Party.

WHOLE AGREEMENT
In relation to the subject matter of this Agreement:

- this Agreement is the whole agreement between the parties; and
- this Agreement supersedes all oral and written communications by or on behalf of any of the parties.

NO RELIANCE ON WARRANTIES AND REPRESENTATIONS
In entering into this Agreement, each Signatory Party:
• has not relied on any warranty or representation (whether oral or written) in relation to the subject matter of this Agreement made by any person; and
• has relied entirely on its own enquiries in relation to the subject matter of this Agreement.
• This clause does not apply to warranties and representations that this Agreement expressly sets out.

SEVERANCE
If any part of this Agreement is invalid or unenforceable, this Agreement does not include it. The remainder of this Agreement continues in full force.

NO MERGER
Nothing in this Agreement merges, extinguishes, postpones, lessens or otherwise prejudicially affects any right, power or remedy that a Signatory Party may have against another Signatory Party or any other person at any time.

CONSENTS AND APPROVALS
Where this Agreement gives any Signatory Party a right or power to consent or approve in relation to a matter under this Agreement, that Signatory Party may withhold any consent or approval or give consent or approval conditionally or unconditionally, other than as expressly set out in this Agreement. The Signatory Party seeking consent or approval must comply with any conditions the other Signatory Party imposes on its consent or approval.
The members of the Steering Committee are:

The Chairperson is
Schedule 2

The Agreement

The purpose of this Agreement is to ........................................... This information is exchanged to

Promote scientific research by the partners.
Provide an extended base of data for imputation of genetic variants for genomic prediction.

The Agreement aims to develop a resource to allow the Signatory partners to impute full genome sequence in animals that have been genotyped with 800K and 50K SNP arrays. This could be for example for the purposes of genomic prediction, genome wide association, and discovery of causal mutations.

The Contributors Data

The data provided by partners are whole genome sequence data in the form agreed under the ..............................................
**EXECUTED** as an agreement.

**EXECUTED** for and on behalf of

<table>
<thead>
<tr>
<th>Authorised Signatory</th>
<th>Authorised Signatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Name</td>
<td>Full Name</td>
</tr>
</tbody>
</table>