Audit for the ICAR Certificate of Quality
Options for which the application may be made

Please tick the fields of activity you submit for the ICAR Certificate of Quality audit:

- ID  Animal identification (cattle)   ______
- IO  Animal identification (other species)  ______
- PD  Milk recording (cattle)    ______
- PB  Beef recording (cattle)     ______
- MLRO Milk recording (other species)  ______
- MTRO Meat recording (other species)  ______
- PRO  Production recording (other traits)  ______
- HB  Herdbook recording    ______
- LC  Conformation recording    ______
- DP  Data processing  ______
- LML  Laboratory analysis (milk)  ______
- RM  Reference laboratory (milk)  ______
- LG  Laboratory analysis (DNA)  ______
- GD  Genetic evaluation (dairy cattle)  ______
- GB  Genetic evaluation (beef cattle)  ______
- GO  Genetic evaluation (other species)  ______

Should a member, or organisation, require consideration for an ICAR Certificate of Quality for an activity which is not listed above, application should be made to the ICAR Secretariat.
For the ICAR Certificate of Quality procedures and processes, please consult ICAR Guidelines, section 8.

The basis for evaluation of the recording activities of an applicant for the purposes of awarding the Certificate of Quality is, where applicable, the current ICAR Recording Guidelines pertaining to the various fields of activity. It is expected of applicants to demonstrate and provide documentary proof of their proficiency in the recording activities of the particular field of activity and their adherence to the relevant ICAR Recording Guidelines pertaining to the particular fields of activity.

When supplying answers to the questions:
1. Answer only those sections you have submitted for audit.
2. Head each reply with the question and its number as some of the questions may not apply to all applications.
3. Use definitions contained within the ICAR Recording Guidelines where possible.
4. Use tables, graphs, charts where possible.
5. For any points of clarification please contact the ICAR Secretariat electronically on elena@icar.org (Ms. Elena Couto) or charl@icar.org (Mr. Charl Hunlun). The chairman of the auditor Expert Advisory Group can also answer your questions: juho.kyntaja@mtech.fi (Mr Juho Kyntäjä).
6. The information supplied in this questionnaire will be treated in strict confidence by ICAR and the auditor. Information supplied will only be used for the purposes of evaluation for the ICAR Certificate of Quality.
7. Please reply in English.
8. Ensure that all relevant questions / fields of activity in the questionnaire are completed by the applicant organisation and each of the constituent-organisations.
9. Save the completed MS-Word documents (Appendices 1 and 2) as PDF-files before it is sent to the ICAR Secretariat.
Audit Questionnaire
The information supplied in the process of completing this questionnaire will be treated in strict confidence by ICAR and the auditor. Information supplied will only be used for the purposes of evaluation for the ICAR certificate of Quality.

General questions and questions regarding the organisation:
1. Is the organisation applying for certification a single / unified entity or is it a national coordinating (“umbrella”) organisation?
2. In the case of a national coordinating (“umbrella”) organisation:
   a. Give details of the various constituent organisations and its association with the applying organisation.
   b. Give details of any measures taken by the applying organisation regarding quality assurance / compliance checks / audits on the various constituent organisations regarding the activities for which certification is requested.
   c. In submitting the reports to ICAR, please include national information and copies of the replies from each constituent-organisation.
3. Please give details of the organisation, including a description of the governance and management structures and details of any state / government involvement.
4. Please provide an organisational structure chart.
5. What is the core business of the organisation?
6. What other business is the organisation involved with?
7. How is the organisation funded (e.g. private company, cooperative, non-profit organisation, government funded, etc.)?
8. Does the organisation provide services in other countries or to other third parties? If so please give details.
9. What, if any, other quality assurance schemes, not covered elsewhere, have the organisation in place? Please provide details and some relevant examples.
10. In the case of national coordinating (“umbrella”) organisations (the purpose of this section is to ascertain the inter-relationships in the areas of supervision and commercial activity):
    a. What quality standards of performance are expected of the participating constituent-organisations?
    b. What input do the participating constituent-organisations have in the quality control programme of the whole organisation?
    c. What direction is given, if any, on individual service and product development in constituent-organisations?
    d. Is there active business competition between the constituent-organisations?
    e. If there is such competition, what effect does this have on the national coordinating (“umbrella”) organisation?
11. What direct and indirect benefit do you believe that organisation will derive from the ICAR Certificate of Quality?
12. Have your organisation participated in any ICAR / ICAR-sanctioned surveys / questionnaires in the past three years? Please specify.
13. Provide a comprehensive table of statistics of live / active animals, illustrating the scope of all relevant fields of activity and species, stating the date of validity for these statistics.
Animal Identification (specify species, please remember to include all the species concerned):

14. Is there a unique national identification scheme for the species for which certification is sought? Give details of the format(s) and give examples. Give details of how identifications are allocated.

15. Is the above identification used as the sole identifier within your organisation? If not please give details of the format of other identifications and give examples.

16. If there is no single national identifier, what system(s) is/are used?

17. What checks are made by your organisation to ensure correct animal identification and avoidance of duplication? If there is a routine programme for such an action give details, including timescales.

18. What action takes place if errors of identification are found?

19. What methods of animal identification is used / prescribed by your organisation?

20. Is animal identification in your country subject to national legislation and are the methods used / prescribed by your organisation in compliance with such legislation?

21. Are ICAR-certified identification devices used / prescribed by your organisation?

22. Are records of the identification methods used / employed (per species / field of activity / individual animal) kept? Please provide statistics of a recent period (e.g. past year).

23. In what way does your organisation add value (through service / data analyses) to basic animal- and owner data?

24. Have the Animal Identification procedures in your organisation been scrutinized by an external certifying / quality control organisation since the previous ICAR CoQ Audit? If yes, provide details and results.

25. Please provide statistics regarding the number of animals born, recorded and parentage tested per species / breed during the previous 12-month period (state dates).

26. Please list the most important quality risks you have identified within animal identification, and explain what you are doing to keep them as low as possible.
**Herdbook recording (specify species, please remember to include all the species concerned, including parentage):**

27. For how many, and for which breeds, does the organisation do the recording of the Herdbook inscriptions?

28. Please provide details of the business processes followed during the recording of the Herdbook inscriptions regarding the regulations pertaining to breed purity and upgrading, ownership and general rules regarding Herdbook recording.

29. What plausibility checks are in place to ensure accurate Herdbook inscriptions? Please give details.

30. Do the breed societies whose Herdbooks are kept by your organisation belong to international breed federations?

31. To what extent do the Herdbook inscriptions performed by your organisation comply with the requirements of the relevant international breed federations?

32. What method(s) of parentage verification are used in your organisation (specify per species / field of activity where necessary / relevant)?

33. To what extent are the parentage of animals checked for correctness in your organisation (specify per species / field of activity where necessary / relevant)?

34. In what way are animals identified / nominated for parentage verification? Please give details.

35. Give the name of the laboratory carrying out parentage verification analyses for your organisation. Indicate if the laboratory is ICAR certified or accredited, or takes part in international ring-testing programmes and what other qualifications it may have to show technical competence (e.g. ISO 17025). Also, please indicate what the purpose of the results of these tests is.

36. Are genetic defects recorded and reported? Please give details.

37. How are the animal identification numbers of imported animals and semen- and ova donors recorded in the Herdbooks that are kept by your organisation?

38. Is the data in the Herdbooks that are kept by your organisation used as the basis for genetic evaluations for the breeds concerned? Do any of these breeds participate in international genetic evaluations (INTERBULL/ INTERBEEF)?

39. What steps are taken when inconsistencies / mistakes in pedigrees and other particulars are identified and what is the prevalence of such incidents?

40. Are the recorded Herdbook data used for any other purposes (other than for Herdbook purposes), e.g. production recording, linear classification, official statistics, etc.? Please provide comprehensive statistics, comparable to the table in Question 25 above, regarding the activities of your organisation in terms of Herdbook Recording.

41. Please list the most important quality risks you have identified within herdbook recording, and explain what you are doing to keep them as low as possible.
Milk Recording (specify species, please remember to include all the species concerned):

43. What is the number of farms serviced by the organisation? If a national coordinating (“umbrella”) organisation please give details for each constituent member organisation.

44. Please list the available recording options with the number of herds and cows (or flocks and goats etc.) in each option. Here and in the following three questions, options mean recording options as defined in the ICAR Recording Guidelines (Section 1.3). Should there be other options these should be clearly shown and defined.

45. Give details of the supervision programmes for technicians and both internal and external staff, where applicable. Include the routine number of checks for each recording option.

46. What process is in place if it is found that a farmer knowingly provides misleading or false information, within the official recording programmes?

47. Please provide the following Key Performance Indicators wherever possible:

<table>
<thead>
<tr>
<th>Key Performance Indicator</th>
<th>Your value</th>
<th>Your explanation</th>
<th>ICAR explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missed cows/goats etc., % of all cow recordings with milk yield expected</td>
<td></td>
<td>Any cow/goat etc. without a record for milk yield is considered missed, also the ones reported sick or absent.</td>
<td></td>
</tr>
<tr>
<td>Cows/goats etc. recorded with a duly tested milk meter, % of all cow recordings</td>
<td></td>
<td>The record can be based on individual records, or calculated by the number of cows/goats etc. in herds with duly tested vs. irregular meters</td>
<td></td>
</tr>
<tr>
<td>Unanalysed samples, % of all samples</td>
<td></td>
<td>Share of samples with no analysis result, for whatever reason.</td>
<td></td>
</tr>
<tr>
<td>Missing samples, % of all individual recordings with analysis expected</td>
<td></td>
<td>In recordings when the general herd was sampled, share of records with no sample (cows sampled but not analysed excluded).</td>
<td></td>
</tr>
<tr>
<td>Dairy deliveries as % of recorded yields</td>
<td></td>
<td>Where available, calculate dairy-delivered milk/recorded yield. This can be calculated on a 24-hour basis or from a longer period. Please note that if dairy deliveries are measured in litres, they must be multiplied by 1.036 for this calculation. Please also report the number of herds and cows for whom the dairy comparison has been calculated.</td>
<td></td>
</tr>
<tr>
<td>Out-of-range pregnancies, % of all reported calvings/kiddings etc.</td>
<td></td>
<td>Share of live births where the length of pregnancy is outside the breed average (d) ±6 %</td>
<td></td>
</tr>
<tr>
<td>Data capture to reporting delay, d</td>
<td></td>
<td>Time from milk recording data capture to reporting (days) in average.</td>
<td></td>
</tr>
<tr>
<td>Satisfied or very satisfied customers, % of all respondents</td>
<td></td>
<td>In a recent customer survey, the share of customers who said they are satisfied or very satisfied with milk recording services.</td>
<td></td>
</tr>
<tr>
<td>Samplers trained within the last 12 months, % of all the people taking samples</td>
<td></td>
<td>Number of sampling training participants/total number of samplers</td>
<td></td>
</tr>
<tr>
<td>Technicians supervised within the last 12 months, % of all the people recording</td>
<td></td>
<td>Number of supervised recordings/total number of people who record at the milking</td>
<td></td>
</tr>
</tbody>
</table>
48. Please provide the average processed and factored results of all recordings in your milk recording system, for the last 12 months if available. Please note that these results should not be direct measurement and analysis results if you make corrections in the milk yield or the fat percent. Please calculate the milk constituents as weighted and not direct averages.

<table>
<thead>
<tr>
<th>Sampling method</th>
<th>Number of samples</th>
<th>Avg 24-hour milk yield</th>
<th>Avg calculated fat, %</th>
<th>Avg protein, %</th>
<th>Avg cell count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportional (P)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morning sample (Z, T, C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evening sample (Z, T, C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robotic milking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add rows for other sampling and calculation methods you may use</td>
<td>Take new rows also for the same methods for a different species</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Recording and Sampling Devices**

49. Who owns the recording and sampling devices used on farms?
50. Please give details of the numbers of each type of recording device.
51. Please give details and records of check procedures to ensure maintenance of recording devices.
52. Please give details of the milking robot and sampling device combinations used within your organisation. Please check the combinations at the ICAR website.
53. Who is responsible for the maintenance and calibration of the recording and sampling devices? Please provide details of the frequency of the maintenance and calibration and the manner in which the details of the maintenance are recorded and indicated.
54. Is such maintenance and calibration carried out in accordance with ICAR Recording Guidelines or another protocol?
55. What action takes place if the results obtained from the recording or sampling devices are found to be outside the limits described in the ICAR Recording Guidelines?
56. What process does the organisation take to ensure staff and farmers are aware of ICAR-approved recording or sampling devices?
57. What use is made of any record derived from non-ICAR-approved recording or sampling devices?
Production recording

58. Give details of how data is recorded on the recording day and what on-farm checks are done to ensure the best quality of data.

59. What unit of measurement is used to record milk yield?

60. What, if any, checks are made to ensure that the recorded yield is in line with that which may be reasonably expected and what is the process undertaken if they are not?

61. In which cases and under what conditions are records deemed to be missing and what procedures are then taken to “bridge the gap”?

62. Are the ranges of yields recorded in conformance with ICAR Recording Guidelines?

63. Where meat production is recorded (in the dairy herd), please give details of the programme also give details of any international linkage in this regard.

64. Give details of how calving / lambing / kidding is recorded.

65. Give details of the training programmes for farmers and field staff to ensure reliable recording practices.

66. Give details on how you make sure the milk samplers always know the relevant sampling procedures and can check them in case of uncertainty

67. Which milk sampling schemes are used in your organisation (e.g. proportional sampling, equal measure sampling, one milking only, multiple samples, etc.)?

68. What indicators of milk sample quality are used by your organisation? Please specify.

69. Which tools are used to aid in the capture of recording / farm data (e.g. PDA, pen/paper, laptop, etc.)?

70. Which method does your organisation use for calculating 24-hour milk, butterfat and protein yields? Please be specific and include appropriate references to standard methods (see the relevant sections in the ICAR Recording Guidelines - Section 2.9.4.) and any adaptations of / deviation from these methods.

71. Which method does your organisation use for calculating accumulated yields? Please be specific and include appropriate references to standard methods (see the relevant sections in the ICAR Recording Guidelines - Section 2.9.5) and any adaptations of / deviation from these methods.

72. Are records from in-line milk analysis systems used for official milk recording? How would they be used?

73. How are the results from the recording made available to farmers? Please specify time frames, format, means of distribution, additional information provided, etc.

In cases where milking robots are used

74. What is the minimum duration of the sampling cycle on the recording day (in hours)?

75. How many samples are taken during the sampling cycle?

76. In case more than one sample is taken, how are these samples taken?

77. Over how long a period is the milk yield recorded / calculated (e.g. 1 / 4 / 7 days etc.)?

78. How does your organisation calculate 24-hour milk, butterfat and protein yields from robotic milking data?
In cases where milk yields are recorded from stationary parlour meters for periods exceeding one day

79. Over how long a period is the milk yield recorded / calculated (e.g. 1 / 4 / 7 days etc.)?
80. How does your organisation calculate 24-hour milk, butterfat and protein yields from stationary parlour meters?

Goats and sheep related specific questions, please include sheep and goats also in all relevant answers above

81. Please provide details on the milking regimes allowed / followed – suckling / milking periods, lactation length, determination of dry-off dates, etc.
82. Which productions are used for calculating lactation yields (Total Milk Yield / Total Milk Milked / Total Suckled and milked Milk)?
83. Please provide details of the calculation methods used to calculate the reference production in your organisation – what productions are used, standard lactation lengths, etc.
84. How is the first recording day defined?
85. What are the number and the frequency of milk recording visits per lactation?
86. What is the minimum number of valid tests that is allowed for a valid lactation?

Buffalo-related specific questions, please include buffaloes also in all relevant answers above

87. Please provide details on the milking regimes allowed / followed – first recording, lactation length, determination of dry-off dates, etc.
88. Please provide details of the calculation methods used to calculate the lactation yields – how many recordings (minimum) are used, standard lactation lengths, etc.
89. What are the number and the frequency of test intervals / milk recording visits per lactation?
90. What is the minimum number of valid recordings allowed for a valid lactation?

Transport of samples

91. How are samples and sample boxes identified for transport to the laboratory?
92. Are there any temperature constraints or criteria during transportation?
93. Give details of the transport system, collection points and timeframes used for samples from farm to laboratory.
94. Give details / routes and timeframes used for recorded data to go from farm to data-processing centre.
95. In the case of a national coordinating (“umbrella”) organisation, are there fixed requirements (in terms of time from farm to laboratory, sample box distribution, etc.?) for constituent organisations? If so, please specify.
96. Who is responsible for the transportation of the samples / boxes (e.g. own vehicles, courier, mail, contractor, technician, etc.)
97. Please provide a comprehensive table of statistics reflecting the numbers of samples transported month / year / route, as may be appropriate for your organisation.
98. Please list the most important quality risks you have identified within milk recording, and explain what you are doing to keep them as low as possible.
Meat Recording (specify species):

99. Please describe the recording system in broad terms.

100. What is the number of farms serviced by the organisation? If a national coordinating ("umbrella") organisation please give details for each constituent member organisation.

101. Please list the available recording options with the number of herds and cows (or flocks and sheep etc.) in each option. Here and in the following three questions, options mean recording options as defined in the ICAR Recording Guidelines (Section 3.2.1). Should there be other options these should be clearly shown and defined.

102. Give details of the supervision programmes for technicians and both internal and external staff, where applicable. Include the routine number of checks for each recording option.

103. Please indicate, per species, what traits are recorded to evaluate the Production Recording for meat, stating (for each trait) what weights or other metric are recorded per trait and what other (ancillary) data, (e.g. birth date, weigh date, contemporary group identification, etc.) are deemed to be mandatory for each trait.

104. Which, if any, of these traits / data are used for genetic evaluations?

105. Are any fertility traits (female / male) recorded and evaluated? Please specify / elaborate.

106. Are body measurements of the animals taken / recorded? Please specify / elaborate.

107. What, if any, checks are made to ensure that the recorded data / metric is in line with that which may be reasonably expected and what is the process undertaken if they are not?

108. Are the ranges of yields recorded in conformance with accepted norms? Please indicate, per species trait, what the ranges of acceptability are.

109. Please indicate, per species / trait, the calculation methods which are used to process the captured data into useable information for the farmer.

110. Are there any rules regarding minimum contemporary group size? Please elaborate.

111. Are contemporary group sizes reported in the results reported to the farmers?

112. Give details of the training programmes for farmers and field staff to ensure reliable recording practices.

113. Give details of check procedures to ensure maintenance of recording devices (specify devices).

114. Which tools are used to aid in the capture of farm data (e.g. PDA, pen/paper, laptop, etc.)?

115. How are the recorded / processed results made available to farmers? Please specify time frames, format, means of distribution, additional information provided, etc.

116. Please provide relevant examples of the reports sent to farmers.

117. Please provide a comprehensive table of statistics per species / trait reflecting the numbers of animals recorded for the various traits (e.g. birth weight; weaning weight; standardised growth tests; etc.).

118. Please list the most important quality risks you have identified within meat recording, and explain what you are doing to keep them as low as possible.

Production Recording (Other traits) (specify trait / species):

119. Please give details of how and what events such as calving / lambing / kidding, inseminations (AI and natural, plus identity of sire) and health events are recorded.

120. Please describe the recording system in broad terms.

121. Please indicate, per species, what traits are recorded to evaluate the Production Recording for other traits, stating (for each trait) what weights or other metric are recorded per trait and what other (ancillary) data, (e.g. birth date, weigh date, contemporary group identification, etc.) are deemed to be mandatory for each trait.

122. Does the organisation record health traits, if so which? What use is made by the organisation of this information? Is such information passed to third parties and if so give examples.

123. Are any fertility traits (female / male) recorded and evaluated? Please specify / elaborate.

124. Are body measurements of the animals taken / recorded? Please specify / elaborate.

125. Which, if any, of these traits / data are used for genetic evaluations?
126. What, if any, checks are made to ensure that the recorded data / metric is in line with that which may be reasonably expected and what is the process undertaken if they are not?

127. Which tools are used to aid in the capture of farm data (e.g. PDA, pen/paper, laptop, etc.?)

128. How are the recorded / processed results made available to farmers? Please specify time frames, format, means of distribution, additional information provided, etc.

129. Please provide relevant examples of the reports sent to farmers.

130. Please provide a comprehensive table of statistics per species / trait reflecting the numbers of animals recorded for the various traits (e.g. fleece weight; fibre diameter; etc.).

Conformation recording:

131. Give details of any conformation recording carried out by the organisation. Include details of which animals are classified for conformation, such as whole herd, parity groups, only daughters of young sires, any rescoring asked for by farmers or breeding organisation, etc. Clearly show breeds involved and give examples of conformation scoring for each breed.

132. Please indicate, per species / type, what linear traits are recorded to evaluate the conformation of animals, stating (for each trait) what measure or other metric are recorded per trait and what other (ancillary) data, (e.g. birth date, weigh date, contemporary group identification, etc.) are deemed to be mandatory for each trait.

133. Are the recorded traits (per definition) harmonised with international recording schemes for the recording of linear traits / conformation and are the results assimilated into international evaluations for these traits? Please provide details.

134. Which, if any, of these traits / data are used for genetic evaluations?

135. Is the body condition of animals scored and recorded as an integral part of your program?

136. By whom are the animals evaluated / scored (what methods of recording (ICAR Recording Guidelines Section 1.3) are used)?

137. Are body measurements of the animals taken / recorded? Please specify / elaborate.

138. What, if any, checks are made to ensure that the recorded data / metric is in line with that which may be reasonably expected and what is the process undertaken if they are not?

139. Are the ranges of yields recorded in conformance with accepted norms? Please indicate, per species trait, what the ranges of acceptability are.

140. Give details of the training and evaluation programmes for field staff / classifiers to ensure reliable recording practices.

141. What statistical measures are used to compare the results of classifiers?

142. Is an internal audit system (ICAR Recording Guidelines Section 5.2.3.3) used on a regular basis for quality control of the Linear Classification / -scoring system? Please elaborate.

143. Please provide a comprehensive table of statistics per species / trait reflecting the numbers of animals scored / classified for the various traits / groups of traits.

144. Have any significant changes been observed in the descriptive statistics (means, SD’s) or key indicators of the traits / groups of traits evaluated (per classifier / herd / breed)? Please provide a table of the descriptive statistics per breed / trait for the data recorded over the last available year.

145. Please list the most important quality risks you have identified within conformation recording, and explain what you are doing to keep them as low as possible.
Laboratory Analysis (Milk):

Note: If the laboratory doing the milk analyses is not owned or under the direct control of the organisation applying for the ICAR Certificate of Quality, the applying organisation cannot be certified for this field of activity.

146. Is the laboratory owned or under the direct control of the organisation applying for the ICAR Certificate of Quality?

147. If not owned by the applicant:
   a. Please give details as to ownership and governance.
   b. What standards of performance are expected, or contracted, in terms of service provision in areas such as return of results to either the data processing centre or farmer?
   c. Who instigates development of analysis-driven services?
   d. Does the laboratory carry out analytical work for another organisation which carries out similar work to the applicant?

148. Does the laboratory have external certification? Give details, e.g. ISO 17025.

149. Does the laboratory take part in regular ICAR proficiency tests? Give details.

150. Give numbers and details of analytical instruments used.

151. How many samples are tested annually?

152. How are samples identified within the laboratory? Give details.

153. Is there any secondary check to ensure that the sample received is from the specified animal?

154. Give details of systems and processes which are used where sample results are not that which would be expected.

155. Give details of the processes which take place if the samples are missing or in a condition which would not give reliable results.

156. Are the ranges of constituents reported in conformance with ICAR Recording Guidelines?

157. Are there any other relevant analyses carried out for which there are currently no ICAR Recording Guidelines? Give details.

158. At which point are laboratory results incorporated with yield and other data?

159. How are results reported to the requesting organisation?

160. Please list the most important quality risks you have identified within milk analysis, and explain what you are doing to keep them as low as possible.

The following questions are to be answered only in case the laboratory is not ISO 17025 accredited:

161. Give details of instrument calibration and checking programmes.

162. Give details of staff skills, including routine training and monitoring programmes.

163. Give details of the systems and processes used to ensure accurate analyses.

Laboratory Analysis (DNA):

Note: If the laboratory doing the DNA analyses is not owned or under the direct control of the organisation applying for the ICAR Certificate of Quality, the applying organisation cannot be certified for this field of activity.

164. Is the laboratory owned or under direct control of the organisation applying for the ICAR Certificate of Quality?

165. Does the laboratory have ICAR accreditation for parentage testing? Please provide details.

166. Does the laboratory have external certification? Give details, e.g. ISO 17025, ISAG, etc.

167. Does the laboratory take part in regular certification / quality control tests? Give details.

168. How many samples are tested annually?

169. Are there any other relevant analyses carried out for which there are currently no ICAR guidelines? Give details.

170. At which point are laboratory results incorporated with other data?

171. How are results used in the business processes of your organisation?
172. Please list the most important quality risks you have identified within DNA analysis, and explain what you are doing to keep them as low as possible.

**Genetic evaluation – General:**

**Note:** If the facility / group doing the genetic analyses is not owned or under the direct control of the organisation applying for the ICAR Certificate of Quality, the applying organisation cannot be certified for this field of activity.

**Note:** that all the questions in this section relate to conventional genetic evaluation for all species. Secondly, for species / traits that are part of international evaluations, a current GE form should be in place on the INTERBULL web site before the audit. However, for species / traits which are not part of INTERBULL evaluations, prepare an equivalent GE form for all relevant traits following exactly the format used by INTERBULL and submit these with the application.

173. Does the organisation seeking the ICAR Certificate of Quality carry out the genetic evaluations itself?

174. If the applicant does not carry out the genetic evaluations itself:
   a. Please give details as to ownership and governance of the GE facility.
   b. What standards of performance are expected, or contracted, in terms of service provision in areas such as return of results back to the data processing centre, third parties such as breeding organisations or farmers?
   c. Who instigates development of analysis-driven services?
   d. Does the evaluation centre carry out analytical work for other organisations which carries out similar work to the applicant?

175. What species/breeds are evaluated?

176. What traits are evaluated in each case?

177. Give details on the frequency of the INTERBULL / INTERBEEF validation tests.

178. Give details of any planned changes in the evaluation models in the next year (e.g. if the number of traits is to be expanded, new effects added, etc.) and give details.

179. Give details of standards of operation including any peer-review.

180. Give details of the average depth of the datasets used in terms of the length of time for which production and pedigree data have been included.

181. Give a comprehensive table of breeds / species / traits and frequency of analyses for the GE services rendered by your organisation.

182. Give a short summary / overview of the computing resources (hardware and software) used for the GE analysis.

183. Is the data used for GE stored in a separate dedicated GE database or is the data used directly from the main- / source database?

184. How regularly is the data used for GE analysis checked for validity / integrity and / or updates / changes?

185. What proportion of animals in the analysis dataset has valid phenotypic records?

186. What proportion of animals in the analysis dataset has (a) missing parent(s)?

187. Provide statistics regarding the numbers and average depth of pedigrees for animals with phenotypic records in the analysis for each breed / species.

188. What agreements are in place for accessing source- and GE data, e.g., can it be used in research for improved genetic evaluations?

189. What kind of technologies and protocols are involved in the data exchange between the source database, the GE database and the customers (paper, electronic device, web screens, etc.)?

190. Is there a dedicated IT / database person in the GE facility / team (extract, upload, etc.)?

191. What procedures are in place for reporting and correcting detected data errors back to the source(s)?

192. Describe the rules regarding minimum contemporary group size.

193. Describe the plausibility checks that are in place in terms of pedigree data and phenotypic data.
194. Give details of all pre- and post-evaluation validation procedures and protocols.
195. Who instigates new model development or other significant change in the GE processes?
196. How are the new model developments or other significant changes in the GE processes verified and approved before implementation?
197. What breeding value indices are calculated within trait complexes?
198. If breeding value indices are used, how are the weights for the different traits derived?
199. What, if any, formal links exist between your GE facility and other GE units internationally?
200. Are the various protocols / technical procedures regarding the GE services properly documented and up to date?
201. Please provide a comprehensive table of statistics, per species / breed, of the routine genetic evaluations done by your organisation since the previous ICAR CoQ Audit, stating numbers of live animals receiving Estimated Breeding Values (or equivalent) per trait.
202. Please list the most important quality risks you have identified within genetic evaluation, and explain what you are doing to keep them as low as possible.

**Genetic evaluation – dairy cattle**

Note: For applicants using ICAR’s INTERBULL services
- Where appropriate, the ICAR Secretariat will obtain a Report of Conformity relating to the Applicant in relation to genetic evaluations from the INTERBULL Centre, for the purposes of the audit, regarding compliance with the current ICAR Recording Guidelines and the current INTERBULL Code of Practice.
- Such a report will include:
  - Résumé of information received from the applicant or service provider.
  - A copy of the Form GE as per INTERBULL Code of Practice.
  - A short summary of current validation procedures.

203. Give details of the length of time which the applicant or service provider has taken part in ICAR’s INTERBULL activities.
204. Has the applicant or service provider’s data been rejected for inclusion in the INTERBULL evaluations for any reason the past five years? If yes give details and the steps taken to address the problem(s).
205. When did the applicant or service provider last take part in an INTERBULL test-run for production traits? If possible give a summary of that test.
206. What is the average correlation between your results and the results of other organisations participating in the INTERBULL evaluations? (Use the last two successive releases and date them using verify or equivalent).
207. Briefly describe the evaluation models and traits / combinations used for the GE of dairy cattle.
208. Describe the methodology employed to calculate accuracies / reliabilities of the calculated breeding values.
209. What type of data is used for the GE – what method(s) of recording; how is data recorded with Methods B and C handled in the evaluation processes; does the data meet the ICAR Recording Guidelines in all respects?
210. What are the base year(s) and scale of the EBV’s – all relevant traits / breeds?
211. Briefly describe the applicable publication rules for the EBV’s.
212. Give a comprehensive table of all relevant breed / trait combinations and the applicable correlations between the EBV’s of recent successive evaluations.

**Genetic evaluation – beef cattle**

Note: For applicants participating in ICAR’s INTERBEF services
- Where appropriate, the ICAR Secretariat will obtain a Report of Conformity relating to the Applicant in relation to genetic evaluations from the INTERBEF Centre, for the purposes of the audit, regarding compliance with the current ICAR Recording Guidelines and the current INTERBEF Code of Practice.
Such a report will include:

- Résumé of information received from the applicant or service provider.
- An equivalent of the Form GE as per INTERBULL Code of Practice, from the INTERBEEF Group.
- A short summary of current validation procedures.

213. Give details of the length of time and the extent to which the applicant or service provider has taken part in ICAR’s INTERBEEF activities, if applicable.

214. What is the average correlation between your results and the results of other organisations participating in the INTERBEEF evaluations? (Use the last two successive releases and date them using an appropriate method).

215. Briefly describe the evaluation models and traits / combinations used for the GE of beef cattle.

216. Which fixed effects (e.g. herd, year, season, gender, age, treatment group etc.) are taken into consideration during the processing of the data?

217. Describe the methodology employed to calculate accuracies / reliabilities of the calculated breeding values.

218. What type of data is used for the GE – what method(s) of recording; how is data recorded with Methods B and C handled in the evaluation processes; does the data meet the ICAR Recording Guidelines in all respects?

219. What are the base year(s) and scale of the EBV’s – all relevant traits / breeds?

220. Briefly describe the applicable publication rules for the EBV’s.

221. Give a comprehensive table of all relevant breed / trait combinations and the applicable correlations between the EBV’s of recent successive evaluations.

Genetic evaluation – other species

222. Briefly describe the evaluation models and traits / combinations used for the GE of other species.

223. Describe the methodology employed to calculate accuracies / reliabilities of the calculated breeding values.

224. What type of data is used for the GE – what method(s) of recording; how is data recorded with Methods B and C handled in the evaluation processes; does the data meet the ICAR Recording Guidelines in all respects?

225. What are the base year(s) and scale of the EBV’s – all relevant traits / breeds?

226. Briefly describe the applicable publication rules for the EBV’s.

227. Give a comprehensive table of all relevant breed / trait combinations and the applicable correlations between the EBV’s of recent successive evaluations.

Data Processing:

Note: If the data processing facility is not owned or under the direct control of the organisation applying for the ICAR Certificate of Quality, the applying organisation cannot be certified for this field of activity.

228. Does the organisation applying for the ICAR Certificate of Quality own the data processing centre or facility?

229. If not so owned please give details:
   a. Please give details as to ownership and governance.
   b. What standards of performance are expected, or contracted, in terms of service provision in areas such as return of results to the farmer, third party or genetic evaluation centre?
   c. Who instigates development of data-based services for farmers and others?
   d. Does the processing centre carry out work for other organisations which carries out similar work to the applicant?

230. Does that data processing centre have external certification and if so give details?

231. What are the timeframes from data processing to the farmers receiving reports?

232. Give details/examples of reports sent to farmers.
233. Do third parties such as nutritional advisors and veterinary surgeons receive copies of the farmer’s results? If so what protocols are in place for this service?
234. Who owns the computing facilities (hardware, software, etc.)?
235. Please describe the power, performance and storage capacity of the computing environment.
236. Are the data / processes organised into integrated database / platform or several databases for different species, different trait complexes or different applications?
237. What contingencies in terms of risk management are in place?
238. How long would it take to restart your system and resume normal operations in case of a shutdown?
239. Do you use standardised interfaces for data transfer (ADIS/ADED, HTML)?
240. Please describe the sources of incoming data (e.g. paper from farmers, electronic data from laboratories, etc.)
241. Does the centre or a subsidiary / partner offer data recording programs/devices to customers?
242. Do you have a system for analysing incoming data quality? If yes, please describe.
243. For how long is the raw / unprocessed data directly accessible?
244. For how long are the results directly accessible?
245. What is the frequency of archival storage of raw data and processed results?
246. Are there defined rules and automated hierarchical backup procedures in place?
247. What validity / plausibility checks are in place for pedigree data? Please specify.
248. What validity / plausibility checks are in place for performance data? Please specify.
249. Please describe the system of access authorisation for stored data and results.
250. Who are the primary owners of the data on your system?
251. Is authorised data access to owners /customers guaranteed?
252. Who instigates the development and improvement of methods?
253. Do you do your own development and programming or do you make use of methods / routines from other groups (other DP centres, scientific institutions)?
254. Who supervises the work of the centre?
255. Does the centre cooperate with other DP units or scientific groups?
256. Please list the most important quality risks you have identified within data processing, and explain what you are doing to keep them as low as possible.

Other:
If there has been a previous audit in your organisation:
Please list the procedures which, according to the Auditor’s Report of the previous ICAR CoQ Audit or Consultative Review, required improvement. Please provide a detailed explanation and documentary proof of the steps taken to address these issues.