



May 24, 2010

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# INTERBULL CENTRE ACTIVITY REPORT 2009/2010<sup>1</sup>

## INTRODUCTION

The 2009/2010 period turned out to be an extremely challenging one in Interbull's history. All developments in the rapid adoption of genomic evaluations by many countries posed additional expectations on the organization's shoulders. The natural consequence was a substantial increase on the activities at Interbull Centre, which had to make room for accommodating novel research and development to incorporate genomic information on international genetic evaluations while maintaining the previous level of demands regarding the conventional MACE evaluations. This time of changes is far from being over, but it is safe to say that important steps were made in the period covered by the present report and hopefully readers will agree that Interbull continues fulfilling its mandate before its customers. This document describes the activities at the Interbull Centre since the last annual meeting of Interbull (August 21-24, 2009, Barcelona, Spain). Work plans, budgets and future activities are also presented.

## BUDGETS AND FINANCES

A complete financial report can be found in Appendix I-III. Budgets will be official pending approval by the Interbull Steering Committee on May 31, 2010. The result for 2009 showed a small surplus which was close to budget. Service fees were as expected. Slovak Republic entered as a new country the Interbull services in 2009 and Lithuania in 2010. The EU commission has continued its support of the Interbull Centre and an increase to € 91,000 was achieved for 2009. The workshop on genomics held in Uppsala in January was sponsored by the AI industry in the Nordic countries.

Due to intensive work on developments in the area of genomic selection costs for travels, the workshop in Uppsala, task force meetings and conferences were considerable higher than budgeted for. On the other hand salary costs were lower, mainly due to the fluctuating exchange rate, where the Euro gained against SEK. Swedish borne income and costs were thus slightly lower than budgeted. The costs for development of a new data base aimed for both dairy and beef data at the Interbull Centre have been taken directly by SLU. An agreement was made with Helsinki University for use of Dr Jarmo Juga as project leader for this development. The outsourced activities included computation of MACE for conformation traits by US Holstein.

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<sup>1</sup> Presented at the 2010 Interbull Meeting, Riga, Latvia, May 31-June 4, 2010

For 2010 (revised according to the actual situation) the financial prognosis indicates a balanced result, primarily because EU decided to increase its support by € 60,000 due to the required developments in genomic evaluation. The budget for 2011 includes many uncertainties as it is unclear at this stage what new service activities might be included in the 2011 portfolio. The budget presented for 2011 assumes the same activities as in 2010. Additional budget decisions might be needed when it has been clarified what the services will be in 2011.

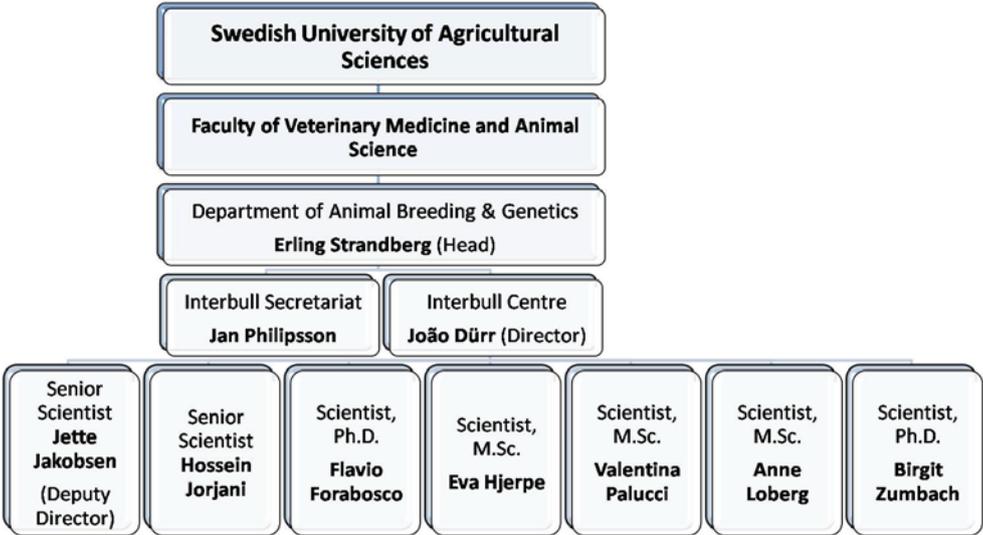
The service fees for 2010 – 2011 were computed according to the current fee structure. The level of service fees has not changed since 1999 and no change in service fee is proposed for 2011, at least not until it has been clarified how GMACE and related activities will be financed.

Starting 2007, Interbull Centre leads a pilot project for development of a system for routine international genetic evaluations of beef breeds and traits (Interbeef). Funding has been agreed for three years, and amounts to € 80,000 per year. The project ends by May 31, 2010. A total deficit of € 38,000 is expected for the project.

Interbull membership fees are handled directly by the ICAR office, Rome, Italy, and reported at the official meetings of ICAR. Membership income is used to cover overhead costs for ICAR/Interbull, some travel expenses, publications and information. The Interbull Centre also contributed € 6,930 in 2009 from service fees to cover these costs.

**PERSONNEL**

Figure 1 shows the Interbull Centre team and the administrative hierarchy within the Swedish University of Agricultural Sciences (SLU). However, the content of work and budget for the Centre and the Secretariat is decided upon by the Interbull Steering Committee.



**Figure 1** – Interbull Centre administrative structure in May 2010.

The staff employed at the Interbull Centre consists of the Interbull Secretary, the Centre Director and seven scientists, of which one is a PhD student, Anne Loberg, in maternity leave from September 2009 to August 2010, 0.35 programmers and 0.10 secretaries. Furthermore, there are currently two externally financed PhD students and one MSc student at SLU related to Interbull Centre: Mohammad A. Nilforooshan, working on multi-trait MACE, Thierry Pabiou, working on national and international genetic evaluations for Irish beef cattle and Worede Zinabu, working on pedigree and population structure in the Brown Swiss breed. The Interbull Centre has signed a research agreement with Service ICAR, which has hired Dr. Gerald Jansen as a part time consultant in software development for genetic analysis at Interbull Centre. Dr. Jansen has started to provide services in January 2010 for a period of one year, which can be extended if all parties agree.

Two international students have been spending time at Interbull Centre during this period: Lilian Gomes, a Veterinary Medicine student from Brazil, who completed her mandatory internship under the supervision of João Dürr, and Ezequiel Luis Nicolazzi, a PhD student from Italy, who investigated biases on international breeding values to predict future performance of imported bulls in Italy.

## **SERVICE AND OPERATIONS**

Test evaluation runs were performed in September 2009 and May 2010. Many changes in national evaluations have been introduced during this period, and are all described in the service reports published on [www.interbull.org](http://www.interbull.org) after each routine evaluation.

Routine international genetic evaluations for production traits were computed as scheduled in August 2009 and January and April 2010. Lithuania joined the evaluation for Holstein and Red Dairy Cattle from January 2010.

International genetic evaluations for Brown Swiss, Guernsey, Holstein, Jersey and Red Dairy cattle conformation traits were computed according to the same schedule as for production traits.

Udder health evaluations for Brown Swiss, Guernsey, Holstein, Jersey, Red Dairy Cattle and Simmental were also computed according to the same schedule as production traits. Slovak Republic entered the evaluation with the Holstein and Simmental breeds.

Longevity evaluations for Brown Swiss, Guernsey, Holstein, Jersey, Red Dairy Cattle and Simmental were computed according to the same schedule as for production traits. Czech Republic participated for the first time with Holstein and Simmental data in January 2010.

Calving trait evaluations for Brown Swiss, Holstein and Red Dairy cattle were computed according to the same schedule as for production traits. United Kingdom, Hungary and Switzerland (Red Holstein) joined the evaluation for Holstein.

Female fertility evaluations for Brown Swiss, Guernsey, Jersey, Holstein, Red Dairy Cattle and Simmental were computed according to the same schedule as for production traits. Poland entered the evaluation for Holstein in January 2010 and United Kingdom introduced an across breed evaluation.

International genetic evaluations for workability for Brown Swiss, Holstein, Jersey and Red Dairy Cattle were computed according to the same schedule as for production traits. France participated for workability traits for Holstein from August 2009.

**Table 1** - The total numbers of populations in the most recent (April 2010) routine Interbull genetic evaluation services were as follows:

Breed group	Production	Conformation	Udder health	Longevity	Calving	Female fertility	Workability
Brown Swiss	9	7	8	8	5	6	5
Guernsey	6	4	5	5	-	4	-
Holstein	27	21	24	21	12	17	6
Jersey	10	9	8	7	-	6	3
Red Dairy Cattle	12	8	10	9	3	7	4
Simmental	11	-	9	3	-	2	-
Total	75	49	64	53	20	42	18

### Database developments

Jarmo Juga has acted as project coordinator for the development of the Interbull database until March 2010, when he presented his final report to the Steering Committee. Although the contract between SLU and University of Helsinki expired, Jarmo volunteered to continue acting as mentor of the project. Both his coordination and the current contribution are greatly appreciated. The coordination of the project is now among the Interbull Centre director's responsibilities.

Two major modules of the database have been developed: pedigree and incoming national data. While customers have already been involved in uploading and editing pedigrees through the database interface, uploading national data into the database is planned to involve national evaluation centres only after the August 2010 run.

Other modules and functionalities are still to be developed, and partially depend on new implementations in the international genetic evaluations, such as sire-dam pedigree in MACE and GMACE.

### Meetings

The 2009 Interbull Meeting was held in Barcelona, Spain, from August 21 to 23, 2009, and counted with 151 participants from 32 countries. At the open meetings, 45 reports were presented.

Once again Interbull and EAAP held a joint session on "Impact of Global Market on Cattle Breeding Programs and Practices", which was chaired by Jarmo Juga and Georg Thaller and counted with 10 reports.

Interbull organized another International Technical Workshop on the use of genomic information for (inter)national genetic evaluations from March 4 to 5, 2010. The event was held in Paris, France, and was co-organized with France Genetique Elevage in connection with the International Agricultural Show of Paris.

### Information activities

The Interbull website was completely re-built in the second half of 2009. Now Interbull counts with a modern portal, which not only facilitates communication and information exchange but also hosts the interface of the database in an area restricted to authorized users from national centres.

Interbull Bulletin 40, proceedings from the Interbull Open Meeting in Barcelona, has been published and Interbull 41, proceedings from the Technical Workshop in Paris, is in the final editorial stage. The Interbull Centre director represented ICAR in the 11<sup>th</sup> Pan-American Dairy Congress, realized in Belo Horizonte, Brazil, in March 2010. Besides acting as invited speaker, João Dürr focused on establishing contacts to enroll Latin-American countries as ICAR members and, in a second moment, to integrate Interbull.

## RESEARCH AND DEVELOPMENT

The following is a brief summary of research and development activities conducted at the Interbull Centre or with the involvement of the Interbull Centre staff since August 2009.

### Female pedigree in MACE

A pilot involving a full run with sire-dam pedigree in MACE was conducted early 2010. Pedigree as used for the analyses was extracted from the data stored in the new Interbull database and supplemented with pedigree information submitted with the O10-files for the January evaluation. Also, the sire-dam MACE software was changed to follow the same format as the streamlined S-MGS MACE software. Close to unity correlations and regressions were computed between breeding values obtained using the SD MACE software and the S-MGS software. Number of countries participating in international genetic evaluations, number of bulls submitted from individual countries as well as the amount of pedigree has increased since the first SD-ped pilot study done at Interbull Centre in 2007. The new set up showed computational limitations in use of FSPACK for solving Mixed Model Equations (MME) for Holstein production traits. It has therefore been tested instead to use iteration on data for solving MME. Also, different depth of pedigree has been tested for the evaluation. Further in the streamlining it has been tested to omit standardization factors and to run one deregression only for breeding value prediction and for correlation estimation. Results of the latter will be presented during the Interbull Open Meeting in Riga.

### Interbeef

The Interbull Centre presented a business plan for a service of international genetic evaluations of beef breeds and traits to the Interbeef working group, but it is considered too early to move into a fee based service. Since the three year development project ends at the end of May 2010, financial support must still come from sponsoring sources and gradually move into a situation in which service fees can support operations. INRA transferred programs and expertise to Interbull Centre and the genetic evaluations can start being run in Uppsala from now on. Research will continue to be supported by the participating organizations (mainly INRA and ICBF). The ICAR board has accepted to combine Interbeef and the Beef Identification working group, so all issues related to beef cattle are handled by the same group. Brian Wickham was invited to chair the new working group and accepted. One of the consequences of this action is that the Interbeef governance is completely independent of Interbull from now on, but the Interbeef group wants to keep Interbull Centre as the operational unit for beef international evaluations and continue sharing the database with Interbull. Currently, the working group is committed to find the necessary resources to assure continuity of the project.

## Variance components estimation for reduced rank across country evaluation

Interbull Centre has cooperated with Agrifood Research Finland MTT from January 2008 to December 2009 in a research project in which the aim was the development of an estimation procedure for variance components of a reduced rank random regression (RR) MACE model. The research was conducted by Anna-Maria Tyrisevä, who presented results in the open sessions in Niagara Falls and Barcelona, and will also report in the Riga and the WCGALP meetings. The project has been carried out in cooperation with Vincent Ducrocq, INRA, France, Freddy Fikse, SLU, Sweden, and Karin Meyer, University of New England, Australia.

## Intergenomics

The ultimate goal of the Intergenomics project is to develop a framework for genomic evaluations of small populations using an international common reference population and carried out by the Interbull Centre. The initiative currently involves only the Brown Swiss breed, but its results will be useful for other situations in which the size of the population is a limiting factor for developing genomic prediction equations. Participating countries are: Austria, France, Germany, Italy, Slovenia, Switzerland and United States. The project effectively started in September 2009 and genotypes started to be sent to the Interbull Centre in December 2009. The first experimental genomic evaluations will be presented in the open meeting in Riga.

## Validation of Genomic EBVs

One of the most important roles that Interbull plays is to harmonize and provide validation for national genetic evaluations of dairy cattle. Since the technical workshop in Uppsala (January 2009), it became evident that Interbull should prioritize the development of a validation procedure to produce evidence that the national genomic evaluations being published by its customers are technically sound and can be used for genetic comparisons in the same fashion as conventional genetic evaluations. The Genomic Task Force and the Interbull Technical Committee joined forces and a method was proposed by Esa Mäntysaari, Paul VanRaden and Zengting Liu. The first version of the method was distributed by the Interbull Centre to the national evaluation centres in February 2010 and preliminary results were presented in the technical workshop, in Paris. An updated version was distributed in April 2010 and the results are expected to be presented and discussed in the annual meeting, in Riga.

## Modified MACE model for genomic data (GMACE)

Paul VanRaden and Peter Sullivan have proposed a methodology for international comparison of genomic breeding values<sup>2</sup>. In addition, Peter Sullivan is developing the necessary software to implement the methodology and the first version was already tested at Interbull Centre. Further development is still in course and Interbull Centre will invite national centres to participate in a pilot study as soon as possible.

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<sup>2</sup> VanRaden, P.M. & Sullivan, P.G. 2010. International genomic evaluation methods for dairy cattle. Gen. Sel. Evol. 42, 7.

## R&D Funding

In addition to funds raised from service fees, research and development activities at the Interbull Centre are financed by grants from the Swedish University of Agricultural Sciences (SLU), the European Union, and the World Guernsey Cattle Federation (WGCF).

Funding for the three-year project to develop a system for international genetic evaluation of beef breeds and traits is provided by ICAR, Institut de l'Élevage (France), Irish Cattle Breeding Federation (Ireland), British Limousin Cattle Society (UK) and Nordic Cattle Genetic Evaluation (Denmark, Finland and Sweden).

Investments are made in development of methodologies for inclusion of genomic information in international genetic evaluations financially supported by the European Union. A pilot project initiated by the European Brown Swiss organization is conducted in collaboration with most national Brown Swiss organizations globally (Intergenomics).

Contributions of the above organizations to the future development of Interbull services are gratefully acknowledged. Contributions made to R&D activities in other countries and organizations leading to improved or expanded Interbull services are also much acknowledged.

## INTERBULL STRATEGIC PLAN

The Interbull Steering Committee, the Interbull Scientific Advisory Committee and part of the ICAR Executive Board formed a working group in January 2009, under the coordination of Neil Petreny, ICAR President, to elaborate a new strategic plan for Interbull. This plan was reviewed by the Steering Committee and presented during the Interbull business meeting in Barcelona (August 2009). In October 2009 a more detailed version of the plan was sent to all Interbull customers and to all national evaluation centres, with the intention of adding the contributions from the community. During the Paris events, in March 2010, the Steering Committee reviewed the comments received and a revised version will once again be presented in the Riga meeting. The strategic plan is a very important document to guide the decision makers within the organization and to establish objective goals for Interbull.

## INTERBULL PUBLICATIONS/PRESENTATIONS

Interbull Bulletin No. 40. Proceedings of the 2009 Interbull Meeting, Barcelona, Spain, August 21-24, 2009.

Interbulletin. The Official Newsletter of the International Bull Evaluation Service (Interbull) August 2009.

Banos, G., Calus, M., Ducrocq, V., Dürr, J., Jorjani, H., Liu, Z., Mäntysaari, E., Sullivan, P. & VanRaden, P. 2009. Preliminary report from Interbull Task Force on the role of genomic information in genetic evaluations. Proc. of the Interbull Technical Workshop. Genomic Information in Genetic Evaluations, Uppsala, Sweden, January 27-28, 2009. Interbull Bulletin 39, 61-65.

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Buch, L.H., Sörensen, A.C., Lassen, J., Berg, P., Jakobsen, J.H., Eriksson, J.-Å. & Sörensen, M. K. 2009. Hoof diseases in dairy cows have different genetic components. 60th Annual Meeting of the EAAP, Barcelona, Spain, August 24-27, 2009. Book of Abstracts 15, 108.

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- Dürr, J.W. & Jakobsen, J.H. 2009. Country profiles regarding the use of imported dairy bulls. Proc. of the Interbull Open Meeting, Barcelona, Spain, August 24-27, 2009. Interbull Bulletin 40, 259-266.
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- Jorjani, H. 2009. Revisiting Interbull rules of data inclusion. Proc. of the Interbull Technical Workshop. Genomic Information in Genetic Evaluations, Uppsala, Sweden, January 27-28, 2009. Interbull Bulletin 39, 103-106.
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Pabiou, T., Fikse, W.F., Näsholm, A., Cromie, A.R., Drennan, M.J., Keane, M.G. & Berry, D.P. 2009. Genetic parameters for carcass cut weight in Irish beef cattle. J. Anim. Sci. 87, 3865-3876.

Pabiou, T., Fikse, W.F., Näsholm, A., Cromie, A.R., Drennan, M.J., Keane, M.G. & Berry, D.P. 2009. Genetic parameters for carcass cuts in Irish cattle. 60th Annual Meeting of the EAAP, Barcelona, Spain, August 24-27, 2009. Book of Abstracts 15, p. 141.

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Venot, E., Fouilloux, M.N., Forabosco, F., Fogh, A., Pabiou, T., Moore, K., Eriksson, J.-Å., Renand, G. & Laloë, D. Interbeef genetic evaluation of Charolais and Limousine weaning weights. Proc. of the Interbull Open Meeting, Barcelona, Spain, August 24-27, 2009. Interbull Bulletin 40, 61-67.

## WORKPLANS

### Services

Routine evaluations for production, conformation, udder health, longevity, calving, female fertility and workability traits are scheduled with the following release dates:

2010	August 17
	December 7
2011	April 5
	August 9
	December 6

Test evaluation runs for production, conformation and udder health, longevity, calving, female fertility and workability traits take place as follows:

2009	September
2010	January
	September

### Research and Development

**Table 2** - Summary of current and planned research and development activities at the Interbull Centre .

Project	Current Stage
Database	On-going to be implemented
Female pedigree in MACE	Test run in September 2010
Interbeef	Implementation
Intergenomics	Data analysis
Validation of GEBVs	Data analysis
GMACE	Planning

## Meetings

The 2011 Interbull meeting, in conjunction with the 2011 EAAP in Stavanger, Norway, August 26-28, 2011.

## Planned Publications

Interbull Bulletin No. 41. Proceedings of the 2010 Interbull Technical Workshop and Industry Meeting, Paris, France, March 4-5, 2010.

Interbull Bulletin: Proceedings Interbull Open Meeting, May 31-June3, 2010, Riga, Latvia.

Interbulletin August 2010.

## Appendix I

### INTERBULL CENTRE FINANCES AND BUDGETS, May 2010

#### Comments to accounts and budgets

The financial situation of the Interbull Centre is presented in Appendix II. All figures are given in Euros. The table includes the final accounts for 2009 in comparison with the budget for 2009 and with the results for 2008. A prognosis for 2010 is made according to the expectations as of the end of April 2010. A budget for 2011 is presented for approval. However, the budget is made as if the service portfolio is unchanged, whereas it might be expected that the introduction of services related to genomic evaluations may cause some changes to be decided upon at a later stage. Furthermore, uncertainties remain at this stage as regards the opportunity to maintain in 2011 the extra support of EU for development of genomic evaluations, and what the opportunities are for Interbeef to develop a user-paid service portfolio after 31 May 2010. Thus a review of the service portfolio and finances from 2011 and onwards is needed.

A number of important assumptions for the budgeting procedure have been made. They will be given into some detail for each year below, but the most important facts are:

- Services include all six breed groups for production, conformation (except Simmental), udder health, longevity and fertility, four breed groups for workability traits (Brown Swiss, Holstein, Jersey and Red Dairy Cattle), and three breed groups for calving traits (Brown Swiss, Holstein and Red Dairy Cattle). Slovak Republic entered into the services in January 2009 and Lithuania entered in January 2010.
- For expansion of the activities in the area of including genomic information a contribution of € 60,000 has been received in 2010 from EU and will be applied for also in 2011. Another € 17,500 is provided in 2010 by participating organizations in the Intergenomics project (Brown Swiss). Further support by posting a post doc for the project is provided by SLU outside the Interbull budget until 1 July 2011. Thereafter this position is included in the Interbull budget to capitalize on the knowledge built in the genomic evaluation area.
- Estimated costs for the activities related to the pilot project for development of international beef evaluations (Interbeef) are presented separately (Appendix III). The personnel costs covered by Interbeef until 31 May 2010 are included in the Interbull budget for the remaining part of 2010 for work on the dairy services, whereas it is assumed that Interbeef covers these costs from 2011 and onwards.

#### Accounts for 2009

The final accounts for 2009 (excl. Interbeef activities) are presented in Appendix II, according to the same format as in previous years. The accounts have been audited within the normal procedures for the Swedish University of Agricultural Sciences (SLU). The balanced result for 2009 was close to budget despite considerably higher costs for travels and conferences due to intensive work on developments in the area of genomic selection including the workshop in Uppsala, task force meetings and other meetings. On the other hand salary costs were lower, mainly due to the fluctuating exchange rate, where the Euro gained against SEK. Swedish borne income and costs were thus slightly lower than budgeted. The support of SLU and the WGCF has been maintained, and the EU contribution increased to € 91,000.

Office and university administration costs were close to 20% of the total costs, as has been the principle in previous years. Publications and phone, fax, postage could be kept at a low level because Interbull membership fees were supplied by ICAR to cover some costs for printing and distribution of Interbull Bulletins 39 and 40.

The final result for 2009 yielded a surplus of € 4,250, which means that the accumulated balance at the end of 2009 was € 141,540.

## Prognosis for 2010

Comments refer to the numbers in the table and points at deviations or new information since last meeting. Corresponding figures for 2009 are given within parenthesis when appropriate.

1. Service fees are for production €308,973 (316,599), conformation €82,357 (86,178), udder health €41,343 (43,619), longevity €36,833 (36,925), calving traits €27,611 (25,678), female fertility €46,999 (46,680) and workability traits €6,161 (6,471). In total 29 countries or consortia participate in the Interbull evaluations. The total service fees are less in 2010 (€550,276) than in 2009 (€562,580) despite addition of a few countries or country/trait combinations. The reason being fewer recorded cows and that the fees are dependent on these numbers.
2. SLU continues to provide support for the ordinary Interbull activities at previous levels, including further support on its own account for a post doc on genomic evaluation. The financing of this position directly by SLU explains the difference in budgeted grants as well as outsourced activities in the budget. Continued support (£ 5,000) by the World Guernsey Cattle Federation (WGCF) is also expected. Participants in the "Intergenomics project" (Brown Swiss) will contribute with €17,500 for work during 2010.
3. EU has decided to maintain its grant for 2010 of 91,000. An extra grant for work on genomic evaluation of €60,000 in 2010 has been received.
5. Salary costs, including social benefits, are calculated for on average 5.65 scientists, 0.35 programmers, and 0.10 secretaries. Interbeef personnel are back into dairy services from 1 June. Outside the budget one externally financed PhD student and a post-doc are working for Interbull.
7. Higher costs compared to the budget are expected in 2010 because of the Paris workshop on genomic evaluation, and also for the staff to attend more scientific meetings, including WCGALP, due to the rapid developments in genomic selection.
12. The contract established between Interbull and the North-American consortium on outsourcing the conformation evaluations, assumes an annual basic fee of 51,000. Furthermore, work on Interbull programs and their streamlining are outsourced to Gerald Jansen through Service ICAR.

It is expected that the 2010 result will be balanced or give a limited surplus. However, the effects of fluctuations in the financial market affecting exchange rates provide some uncertainties in estimating the costs.

## Budget for 2011 and provisional budget for 2012

1. No change in service portfolio and fees for 2011 are proposed at this stage, but might be decided upon at a later stage when it has been clarified what services will be offered in the genomic evaluation area.
2. Research grants from SLU, the WGCF and other sources will be applied for and are expected to be unchanged, except for the Intergenomics project which is financed through 2010.
3. EU will be approached to maintain the extra grant of € 60,000 for developments to include genomic evaluations in the service portfolio.
5. Salary costs assume that the future Interbeef budget carries the costs of one scientist again, thus it is not included in the 2011 Interbull budget. A half-year position for 2011 on genomic evaluation is accounted for when the post-doc position paid by SLU is finished.

It is expected that 2011 will yield a substantial deficit, provided no change in the service portfolio and service fees are changed. Alternatively personnel costs must be cut down. This is even clearer for 2012 where no extra EU support is expected. Thus, it is proposed that the SC appoints a committee to review the service portfolio and fees for 2011 and onwards, and that the budget will be revised according to a later SC decision based on that review. Then also a provisional budget for 2012 will be developed.

## Appendix II

### Interbull Centre Finances and Budgets (Euro), May2010 (excl. Interbeef)

	2008		2009		2010		2011
	Actual	Budget	Actual	Budget (original)	Projected Result	Budget	
<i>INCOME</i>							
1. Service fees	559,079	567,200	562,580	563,000	550,276	550,000	
2. Research grants	79,393	90,000	78,743	121,000	87,000	70,000	
3. EU grants	90,000	90,000	91,000	151,000	151,000	151,000	
4. Other income	1,630	-	7,519	-	-	-	
<b>Total</b>	<b>730,102</b>	<b>747,200</b>	<b>739,842</b>	<b>835,000</b>	<b>788,276</b>	<b>771,000</b>	
<i>Expenses</i>							
5. Salary costs	396,015	420,200	398,275	395,000	395,070	428,000	
6. Computer costs	35,561	45,000	51,506	45,000	55,000	55,000	
7. Travels, conferences	39,708	45,000	66,213	50,000	60,000	55,000	
8. Publications	10,500	10,000	4,405	10,000	7,000	7,000	
9. Phone, fax, postage	10,628	10,000	4,924	12,000	8,000	8,000	
10. ICAR	6,953	8,000	6,930	8,000	6,930	7,000	
11. Miscellaneous	9,584	5,000	7,342	20,000	10,000	10,000	
12. Outsourced activities	82,153	50,000	49,856	135,000	81,000	81,000	
13. Office and univ. adm. costs	140,166	148,000	146,141	165,000	156,000	162,000	
<b>Total</b>	<b>731,268</b>	<b>741,200</b>	<b>735,592</b>	<b>840,000</b>	<b>779,000</b>	<b>813,000</b>	
<b>Balance</b>	<b>-1,166</b>	<b>6,000</b>	<b>4,250</b>	<b>-5,000</b>	<b>9,276</b>	<b>-42,000</b>	
<b>Accum. Balance</b>	<b>137,290</b>	<b>143,290</b>	<b>141,540</b>	<b>136,540</b>	<b>150,816</b>	<b>108,816</b>	

**Note:** Interbull membership fees are not included in this table because they are handled directly by the ICAR office, Rome, Italy, and reported at the biennial meetings of ICAR. They contribute to cover overhead costs for ICAR/Interbull, some travels, publications and information work. The Interbull Centre also contributes (EUR 6,930 in 2009) annually to ICAR from service fees to cover these costs.

## Appendix III

### Finances and Budgets for the Interbeef pilot project

Through the agreement with ICAR and a number of national organizations an annual amount of € 80,000, i.e. in total € 240,000, is available for a period of three years. Activities of the Interbeef pilot project started officially in June 2007 and continue through May 2010. Beyond what is reported here French (INRA) and Irish (ICBF) resources have been made available for work on the project in these countries. Personnel costs at the Interbull Centre include salary costs corresponding to one full time employee. The real costs are about € 93,000 on average per year. Thus it is expected that the pilot project in total leaves a deficit of € 38,000 for the management committee of the project to handle. Beyond what is reported in the table SLU is providing resources for the data base development.

	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2009</b>	<b>2010</b>	
	<b>Actual</b>	<b>Actual</b>	<b>Budget</b>	<b>Actual</b>	<b>Budget</b>	<b>Prognosis</b>
<b>Expenses</b>						
Salary costs	31,369	52,955	53,000	55,529	27,000	23,000
Computer costs	7,558	10,778	9,000	8,075	5,000	3,000
Travels, conferences	11,265	5,109	5,000	5,401	3,000	4,000
Miscellaneous	648	1,645	1,000	108	1,000	1,000
Office and univ. adm. costs	14,229	17,846	17,000	17,278	8,000	7,000
<b>Total</b>	<b>65,069</b>	<b>88,333</b>	<b>85,000</b>	<b>86,391</b>	<b>44,000</b>	<b>38,000</b>