Steps so far

- SNP data has become an integral part of genetic evaluation of cattle
- Concerns to share this data have decreased
  - Although in many (AI) / herdbook organisations this is not yet the case
- Interbull conducted in 2012 a survey among their customers to assess the demand
  - Sent to the customers → they should share this document with other organisations involved in this field (ie for parentage with breed federations)
Genoex – potential demand from survey

- Worst case scenario: only those definitely interested join
- Best case scenario: those considering the possibility also join

Bulls represented by respondents

1) GenoList
2) Genotype repository
3) Parentage SNPs (95 ISAG for confirmation)
3) Parentage SNPs (400 for Parentage Discovery)
3) LD genotypes
3) 50K genotypes
3) HD genotypes
3) Full sequences
4) Imputation
5) Intergenomics
6) Additional information on bulls
7) Monitor inbreeding trends
8) Analytical tools
Actions in 2013

- Little time for discussion in the IB SC because of GMACE implementation
- Technical proposal developed by Interbull centre
  - Sent to group of experts
- Active participation in ICAR parentage WG
- Discussion with NAC (Indianapolis July 2013) showed an option to establish a different approach (not a single location with all data rather a connection between (the servers of the) parentage verification service providers)
- Presentation to the ICAR board (November 2013)
Actions in 2014

- Interbull proposed a joint session with ICAR on use of SNP data in parentage issues → Session Tuesday May 20, 2014
- Interbull SC decided to separate implementation into two levels
  - Complete genotype repository (e.g., demand from BS federations, Interbeef)
  - Infrastructure to enable parentage SNP data exchange between breeding organisations
- Business plan developed
- Presentation of a proposal at the ICAR meeting in Berlin
VALUE PROPOSITION

- Establish the INFRASTRUCTURE necessary for international cooperation based on SNP data
- Optimize customer investments in genotyping by AVOIDING DUPLICATION
- Establish STANDARD PROTOCOLS FOR GENOMIC DATA EXCHANGE
- Become the international source of BOVINE PARENTAGE SNPS
- Facilitate MULTILATERAL SNP DATA EXCHANGE by establishing a common repository and customer driven access rules
- (Provide affordable GENOMIC DATA STORAGE for small populations)
Parentage SNP exchange service
## Genoex – budget - parentage

<table>
<thead>
<tr>
<th>Initial investment (€)</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software (initial licensing)</td>
<td>30,000</td>
<td>0</td>
</tr>
<tr>
<td>Data collection functionality (BC Platforms)</td>
<td>5,000</td>
<td>0</td>
</tr>
<tr>
<td>DB server</td>
<td>5,000</td>
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<tr>
<td><strong>Total initial investment</strong></td>
<td>40,000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Operational costs (€)</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Software (maintenance fee)</td>
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<td></td>
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<tr>
<td>Internet bandwidth and traffic</td>
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<tr>
<td>Programmer/DB Admin (50%)</td>
<td>15,000</td>
<td>15,000</td>
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<tr>
<td>Scientist (20%)</td>
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</tr>
<tr>
<td>Overheads (33% of salaries)</td>
<td>4,950</td>
<td>4,950</td>
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<tr>
<td><strong>Total operational costs</strong></td>
<td>25,950</td>
<td>15,000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Income source (€)</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Infrastructure grants</td>
<td>40,000</td>
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</tr>
<tr>
<td>Service fees</td>
<td>19,950</td>
<td>19,950</td>
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<tr>
<td><strong>Total income:</strong></td>
<td>59,950</td>
<td>19,950</td>
</tr>
</tbody>
</table>
Infrastructure grants

- Potential sources:
  - ICAR
  - SLU
  - Swedish funds
Service fees

- Parentage SNP exchange service
  - Participation fee I, irrespective of usage rate
Customized genomic repository service
Genoex – service categories
Genoex – service categories