

# ilir2

**Navigates you  
towards  
a prosperous  
future**

## International Livestock Registry

- Open source (i.e. license-free) operating system and database management.
- Internet enabled.
- Multi-user, multi-species and multi-lingual.
- Runs on low-cost servers.
- Draws on 40 years of ABRI experience.
- High level of integration with third party information eg. blood labs, DNA tests.
- Vast international user base.
- Scalable to any size of breeding group.
- Highly configurable to meet the specific needs of clients.
- Economical to maintain.



**Agricultural Business  
Research Institute**



# Background

The registered seedstock industry internationally provides most of the performance-recorded stock that are used to create genetic improvement in livestock productivity. The ABRI has been very successful in servicing the recording requirements of this market with its first-generation product, International Livestock Register 1. ILR1 became the system of choice of 140 breed associations worldwide with collective databases exceeding 40 million animals.

The registered seedstock industry worldwide is shrinking in size, breed associations are facing cost challenges (particularly with IT systems), many associations are seeking to achieve economies of scale through resource sharing and the internet has revolutionised the way that breed associations are able to service their members.

ABRI has drawn on 40 years of experience as a leading supplier of agri-business IT systems to create ILR2 - a new generation of breed register software which is predicted to provide an advanced and competitive solution to livestock recording through to 2025 (when ILR3 will be introduced).

ILR2 incorporates 50 person years of software development - such is the depth of its design and functionality. This effort cannot easily be duplicated.

**ILR2 is a new-generation breed registry and genetic evaluation system developed by the Agricultural Business Research Institute (ABRI).**



# Technical Details

## Development Tools for ILR2

ILR2 is a modern client/server system.

*The ILR2 Server* uses a popular enterprise version of Linux - an open source operating system which has a huge international user base. There are no license or support fees for our selected version of Linux.

*The Database Management System* is PostgreSQL. This is also open source and provides high levels of performance and data integrity.

*The ILR2 user interface* is windows-based. The application runs on Windows 2000 or later and has been developed in Delphi. There are no runtime license fees payable on Delphi. A flexible license-free reporting tool has been used by ABRI in developing ILR2 reports.

## Hardware

ILR2 will allow large databases to be run on relatively inexpensive industry-standard servers including laptop PCs.

## Multi-User

An operator of ILR2, with appropriate privileges assigned, is able to access from a single PC window, the databases of several associations that are in an alliance. This means high efficiency in labour use - an important issue as labour is normally the most expensive input for breed association operation.

## Multi-Species and Multi-Lingual

The ILR2 application is largely parameter driven. Screen field captions and drop-down menus can easily be reconfigured for different associations and different species. Languages other than English are able to be implemented.

## Data Interchange

ILR2 has developed efficient procedures for exchanging data and reports with third parties. Examples of this are data from DNA laboratories, PC herd management systems and genetic evaluation agencies. Data transfer can be automated by web services.

# Technical Details

## Debtors Accounting Module

ILR2 has an integrated debtors accounting module. Transactions that are processed through ILR2 may generate a charge at appropriate rates to the members. Invoices are generated automatically and can be retrieved electronically for any period of time e.g. seven years if required. Payments are received in ILR2. At the end of each month, statements are produced (if required), and the totals for the debtors system are posted into the general ledger system of the association's choice. This means that administrative staff know the exact status of each member's account from within ILR2.

## Report Generation

A wide range of reports are available within the system. All reports can be automatically converted to PDF and where required, emailed to recipients.

Reports are stored in the database for easy retrieval for any nominated period of time e.g. up to 7 years. That is,

ILR2 becomes an electronic filing system for much of the Association's business. This creates significant economies in administrative time and facilitates more efficient servicing of members.

## Flexible Configuration

ILR2 is scalable and economically handles the business of breed associations ranging in size from 20 to 10,000 or more members.

For medium to large-sized associations the preference is usually to install ILR2 on an in-house server. Because the run time products are license-free, in-house installations are cost effective.

Specialised bureaus also use ILR2 to service other breed associations, eg. ABRI in Australia, Performance Beef Breeders in New Zealand, American Beef Records Association in the USA and Pedigree Cattle Services in the UK.



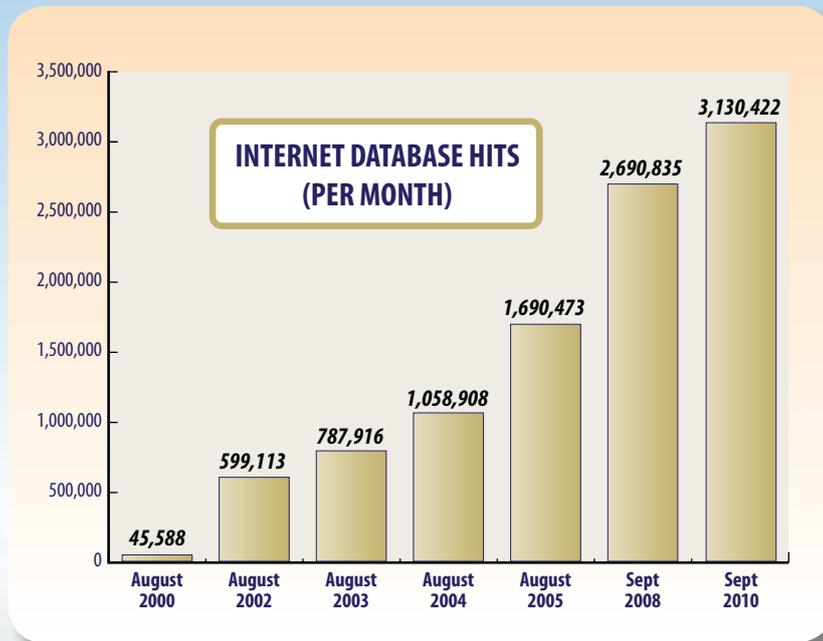
# Internet Solutions

The highly-successful Internet Solutions service developed under ILR1 has been migrated to ILR2. The aim of Internet Solutions is to provide decision making information from breed association databases on a 24/7 basis. This has been extended to recording of registrations and performance data.

The growth in enquiry rate for this service has been astronomical as the graph below shows.

Internet Solutions applications include:

- Animal/Member Enquiry Service
  - animal lists (with sort criteria)
  - pedigree display with photos/images
  - performance information (EPDs/EBVs)
  - progeny lists
  - graphs of performance
  - membership details
  - animal points, competition results
  - \$ Indices
  - display probabilities of genetic defects
- Sale Catalogues/Semen Lists.
- Internet Registrations/Inventory updates.
- Entry of Performance Data.
- Mating prediction service.
- Inbreeding coefficient calculation.
- Download Files/Reports from Association.



# Genetic Evaluation

The ILR2 implementation for beef cattle includes the BREEDPLAN genetic evaluation service.

This is a powerful multi-trait model which, subject to data availability, produces EBVs/EPDs for a balanced range of traits.



## BREEDPLAN Traits

<b>Growth</b>	<b>Fertility</b>	<b>Carcass</b>	<b>Other</b>
Birth weight	Scrotal Size	Carcass weight	Docity
Weaning	Days to Calving	Eye Muscle Area	Feed Intake
Yearling	Gestation length	Fat thickness (rib)	Flight Time
Final	Calving ease: direct	Fat thickness (rump)	Shear Force
Mature cow	Calving ease: daughters	Meat Yield %	Conformation
Maternal growth		Intramuscular fat %	

Species other than beef cattle tend to have their genetic evaluations performed by specialised agencies. ILR2 has advanced facilities for exporting data for evaluation, importing EBVs/EPDs following evaluations and then including EBVs/EPDs on reports and on Internet Solutions.

BREEDPLAN is used to undertake genetic evaluations for 45 beef breeds from 15 countries. Many of those breeds are undertaking international genetic evaluations.

It is so much easier to do this when all participating countries are using BREEDPLAN. For example the Hereford associations in USA, Canada, Uruguay and Argentina participate in a Pan American evaluation which involves over 4 million performance recorded cattle.

BREEDPLAN is genomics enabled and calculates marker-assisted EBVs/EPDs for breeds where the marker panel effect has been validated.



# ILR Online

ILR Online - Internet based “**Real Time**” application, written in PHP and fully integrated with ILR2.

**The “Core System” allows breed association members to undertake a range of data processing activities for their herds including:**

- Active animal herd management and disposal
- Inventory maintenance and submission
- Birth, weaning, yearling and final performance data entry
- Registration and maintenance of new animal details in real time
- Data integrity and validation checks identical to Association office
- Detailed animal inquiry
- Maintain client contact details
- Review billing and account balance information
- Request performance reports

**The “Enhanced ILR Online System” allows for:**

- Transfer of animals
- DNA Requests
- ET / AI Permit transfers



## Support Structure

ILR2 is now installed in countries covering seven international time zones.

Support requests are received by each Account Manager and handled directly or can be reassigned to individual members of the team.

A secondary Account Manager is assigned to provide an overlap when the Primary Account Manager is not available.

New technology is used to maintain communications with clients.

# Whatever your location or livestock breeding enterprise, ILR2 can be customised to assist you achieve your goals.

*“The integration of our members and animal database with BREEDPLAN, Internet Solutions and genomics has revolutionised the way we do things. It encourages registrations and performance recording and provides inexpensive world wide marketing opportunities. We are an information business. We now have the resources to collect it, analyse it, publish and promote it to add genuine value to our members’ cattle. Having dealt with ABRI for over 30 years, we know that the system will also keep pace with advances in technology.”*

John Croaker, General Manager  
Australian Brahman Breeders Association.

*“After a four-year period in which AHA spent hundreds of thousands of dollars on our breed register with two other service providers without achieving the desired result, the American Hereford Association developed a relationship with ABRI. This proved to be the best business decision the AHA could have made. The technical expertise of ABRI is unmatched in the pedigree registry and performance business. Our project with ABRI came in on schedule and within budget. In all aspects, ABRI delivered service above our expectations. It is with great enthusiasm that I recommend and endorse the ABRI.”*

Craig Huffhines, Previous Executive Vice President  
American Hereford Association.

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