A Guide to Electronic Identification

by Shearwell Data Ltd
For some time now we have wanted to help users and potential users of Electronic Identification (EID) equipment understand more about how the technology works. With this brochure we hope we have gone some way in doing that. Having been involved since the early days (1990) we feel we have been there and done that!!! Although we must state that our opinions and explanations are as close as we can get to the facts and that some may disagree with what we say, it will always be the case with such a difficult technology to 'really' understand.

Richard Webber is the Managing Director of Shearwell Data Ltd, an animal identification company supplying visual and electronic ear tags, bolus, farm software and electronic identification systems.
Introduction

Perhaps it would help you if I explain how we became interested in the technology. In 1994 EU were proposing trials of EID equipment (the IDEA Trials) and called for interest from all Member States (part of Integrated Administration and Control System IACS). The UK was coming up to an election, and the Government at that time would not take part. As we were one of the largest livestock producing Member States we felt it important that we set up some trials mirroring the IDEA trials, so that we were at least able to form an opinion. Also at that time enlargement debates were coming to an end and it was highly likely that the poorer Eastern European countries would be taking a lot of our support mechanism as the CAP was at its limit (how true that proved to be!). The theory being that with EID it would now be possible to identify the productive and non-productive animals within commercial flocks and herds and be more able to compete at a world market price.

The IDEA Project started in 1998 and demonstrated “that a substantial improvement can be reached for livestock identification by using electronic identifiers” concluding that “It is the proper time to introduce electronic identification for cattle, buffalo, sheep and goats in view of establishing an improved livestock identification, registration and management system in the EU”. UK not having taken part had little or no voice in the outcome of the trials and there was certainly no other Member State that traded animals in such numbers as us so yet again we have had to play catch up.

A lot of progress has been made since the early days, with prices for EID devices dropping from £4.50 down to .75p for sheep and £2 for cattle. Cables linking equipment are now replaced by Bluetooth and software systems are emerging that will allow farmers, auctioneers and abattoirs to become even more efficient in their businesses.

As a sheep farmer running a 1200 ewe flock I never thought it possible to be able to automatically see how much revenue each ewe had made me as she entered the handling crate. We now have a measure of the individual performance of both our ewes and rams. Although this is not an answer for everyone, our position has been to make sure if we are compelled to use EID, at least we have the ability to advise how to make best use of the technology.

Disease and the lack of a real time database plus the huge resource that is presently used has to be addressed. We owe it to ourselves to be proactive in making sure we are as effective in both disease control and management information as some of our competing red meat countries are! This is now possible with EID especially in cattle. We should press hard for a simple system where key control points for EID reading is possible if a farmer does not wish to invest in reading equipment. Abattoirs, markets and hauliers could all play their part in this. In Australia hauliers with reading equipment on board found it generated an increase in business.

An Introduction to Electronic Identification

Background - Electronic Identification (EID) is used to identify livestock and is based on electronic devices and readers.

The device used is a microchip in either an ear tag or a ceramic bolus. The bolus is swallowed by the animal (they can only be used with ruminants) and remains in the animals’ stomach for its lifetime.

The reader records the individual number on the device and this data is recorded and locked to the visual ear tag.

The benefit of EID is that animals can automatically be identified without handling the animal. Treatments, weights etc can be recorded against the individual animal with minimum human intervention, especially when using a race reader.

With the use of a handheld stock recorder this information can be stored or downloaded onto the farm management software package, FarmWorks by Shearwell Data.

Microchips - There are two types of transponders (microchips) based on different types of technologies.

When a reader is switched on it sends out a signal. The microchips receive the signal and depending on their type of technology, they will do one of two things.

Full duplex (FDX-B) transmits a signal back to the reader the whole time that the reader is transmitting.

Half duplex (HDX) cannot transmit a signal back to the reader until the reader stops transmitting.

To be fully ISO compliant a reader has to be able to read both technologies.
EID - How Our System Works

Below is a diagram which visually explains how electronic identification works in livestock. It shows the use of a system of electronic tags or boluses; handheld readers and recorders and how data can be captured and sent back to a software package on a computer.

The EID ruminal bolus OR ear tag is applied

Reading the animals individual EID number

Hands free recording - the complete system

Linking an animal’s EID and tag number

EID Does Not Work Without Software

It may seem a simple point but it has been the success or failure of every project we have been involved with! All too often people look at the EID tags and readers and forget to look hard at the software. BE UNDER NO ILLUSION you will need to buy a complete system to get the most out of your investment in the technology.

It amazes me that we are still having to educate people organising trials who expect every handheld or farm software program to integrate with each other. What planet are they on! Virtually every farm livestock program is written and designed by individuals using different code and different ideas of how to make theirs work better than their competitors. It is little wonder therefore that if you have a program that you will have to either change to the one your preferred EID supplier recommends or that you purchase EID equipment from your present software provider.

Be very careful about this as your savings on management and efficiencies will be determined at this point.

If your flock is small then you may get away with relatively low cost and low performance hand helds but if you run larger numbers say over 500 ewes or 150 cattle then you would be wise to invest in some up market hand helds and software that allow you to perform more management tasks and hold large numbers of animals ‘with’ management information.

So combining all of the above with the EID element and the experiences of installation, training and support you may find that there are few choices out there. We would recommend you seriously look at the software and how it relates to the equipment you need to aid the management of your cattle and sheep.

So start with the device, then how you wish to read it (hand held or race reader or both) then how this downloads and uploads to the farm software and then how, or if, the farm software links to other databases, where more benefits can be found, such as automatic drafting etc.
In recognition of the increasing importance of traceability of sheep, we at St Merryn have been looking at ways to prepare for changes in legislation, whilst also improving the profitability of our producers’ businesses.

With plans to increase our lamb kill to 16,000 lambs a week, our established Livestock and Information Technology departments have looked at innovative ways to improve the efficiency of production and to offer an additional benefit to existing and new producers.

We took the decision to install an EID reader from Shearwell Data on our lamb line. Technicians from Shearwell Data have synchronised the reader with our existing system of recording weights and grades and have enabled the easy transfer of data from one system to the other.

This means that there has been minimal disruption to our system and maximum benefits for us as a company. Producers will also benefit from increasing returns, through improved and more efficient management and selection of lambs.

After numerous trials and little tribulation, we have now reached the final stages of implementation and soon the system will be able to read individual electronic tags on lambs.

A major benefit to us as a company is that farmers will be more likely to produce lambs that fit our dead-weight specification of 16kg to 21kg. It is hoped, that as farmers grasp the importance of EID, and invest in the relevant equipment and software, they will be able to select and assess which lambs perform best under certain management systems. In turn, by selecting lambs to fit the processors specification, their bottom line will be greatly improved.

St Merryn are pleased to fully endorse this system and would encourage all lamb producers to invest in the necessary requirements to take full advantage of the benefits of the Electronic Identification System installed at our Merthyr Tydfil plant.

For further information, contact Sara Downes on 01685 35 4800.
Blade Farming

Blade Farming is a new approach to rearing beef animals, aiming to capture and apply best practice to produce high quality products, profitably and competitively. Providing guaranteed prices for forward contracts gives some level of stability to its members. The three-tiered initiative sources calves, rears calves and provides calves for the finishers. The scheme has brought together the following partners in order to provide standardised medicines, feeds and recording systems for physical and financial management:

- Westpoint Veterinary Practice works closely with the calf rearers providing the vaccinations and medicines, health advice and regular health plans.
- Mole Valley Farmers provides the feed and together with SDL has designed and manufactured the electronic ID calf crates used by the calf rearers.
- Shearwell Data has provided the software for both the calf rearers and the finishers, writing a bespoke management program for Blade for use by the finishers. SDL also provides the Electronic ID equipment.
- Southern Counties Fresh Foods being one of the founders of the Blade system processes the calf reared under the system.

About 16,000 calves go through the system every year. Up until recently there has been a two-pronged approach to sourcing calves, with Friesian calves mainly being sourced from dairy farms and collection centres and Aberdeen Angus and Continentals rather than the Friesians. This year’s elevated price of cereal has brought about a change in policy with the project focusing more on the Aberdeen Angus and Continentals rather than the Friesians.

The calves are owned by Blade and are reared for Blade by contract farmers, with Blade providing all of the feed and medicine for the calves. All calves are weighed and vaccinated on arrival in the units. Those using EID are tagged with an electronic tag at this point. There are currently 16 farms rearing Blade calves all of which are using FarmWorks by SDL to record weights, treatments, feeds and statutory information. Several of the calf rearers are using electronic ID — electronic tags, a Psion Workabout Pro and electronic weigh crate, to aid the speed and accuracy of capturing the data. Alex Robinson (pictured below), one of the rearers, but also a member of the Blade team, believes that using electronic ID is an invaluable tool to aid recording and rearing the Blade calves.

Other members also use the EID tag to trigger automatic milk feeders for the calves.

The rearers regularly back up their FarmWorks data to the National Livestock Management Database (NLMD), where it can be viewed by the Westpoint vets.

The calves are sold to the Blade finishers at about 12 weeks generally remaining in the same batches that they have been reared in. The farm data is backed up to the NLMD when the calves leave the rearing units. On arrival at the finishing units, the farmers are able to import the cattle data for those calves onto their bespoke Blade FarmWorks program from the NLMD.

One of the long term aims of the project is to fit electronic readers into cattle races for the finishers and also to install a reader into the abattoir to provide a system that automatically records animals and can send carcase information directly back to the Blade / FarmWorks programs via the NLMD.

This unique project provides a regular income for the calf rearers, a forward contract price for the finishers and detailed information captured and transferred electronically for the Blade office.

For further details on Blade, please visit: www.blade-farming.com
Ben Bennett

Ben Bennett took over responsibility from his parents for the 200 acre holding at Lower Norton Farm, Nr Callington, Cornwall two years ago. The farm is still very much a family farm with Ben’s parent’s Barbara and Richard helping out wherever they can – especially at lambing time!

The Bennett’s have always believed that the only way to improve the performance and quality of stock is through individual recording. To this end they began using Shearwell EID systems with their sheep nine years ago starting with the electronic ruminal bolus in the ewes and moving on to electronic SET tags in 2004. Most of the recording is done through the Shearwell electronic weigh crate with the Psion Workabout Pro – sorting groups for tupping, weighing, drafting and recording treatments. Ewes are recorded against individual tups and lambing records are entered directly onto the Psion using a Bluetooth handheld reader. This data is downloaded onto FarmWorks by SDL to enable Ben to assess the performance of individual rams and ewes from reports produced by the program.

The Bennett’s participated in Defra’s South West Livestock Project that ran from August 2005 to July 2006. As well as recording individual animals for on farm management the project brought together other partners to trial the importance of electronic data transfer. Individual carcase information gathered at Jaspers abattoir was sent directly to the NLMD for download into FarmWorks by SDL and to the farmer’s vets for identification of health problems brought to light in carcase condemnations.

In September 2006 Ben joined the Blade Calf Rearing Scheme and now takes in batches of 200 calves every three months to rear under contract. All the calves are tagged with an electronic tag on arrival. The electronic weigh crate fitted with the SDL reader and antenna is used with the Psion Workabout Pro to capture weights and treatments. These calves are moved off the units at 12 weeks old. “Recording using EID has helped make recording for Blade accurate and efficient. Using the EID system speeds up the process of recording weights, treatments and TB testing.”

The increased price of cereals and the low profit margins that arose from lambing in December and employing staff, has brought about a change in direction for the farm this year. Ben has decided to reduce the number of sheep to 400 ewes, to lamb them outdoors in March next year and to increase the number of calves reared under the Blade scheme to batches of 540.

In 2006 Lower Norton Farm joined the LEAF Organisation. This aims to raise consumer awareness of farming, environmental concerns and farm produce. Through this Ben organises visits to the farm on a regular basis.

Health planning is an important factor in the management of both the sheep and the calves. Ben has been working with his vets for seven years to improve the health of the flock through Health Plans and vaccination. The Blade system provides its own health plans and vets who work closely with Ben. Individual recording of treatments has helped to improve the general health of the stock. Using the Psion and FarmWorks to record the treatments and reasons for treatment has helped to identify (and so start to resolve) the problems.

The Bennett’s confidence in the benefit of individual recording of livestock has prompted Ben to say “I wouldn’t keep sheep without EID and using EID in the calf unit has made recording so much easier.” Also “We have worked with Shearwell for many years and have found their support and advice excellent.”

* For further details on the South West Pilot please visit: www.defra.gov.uk/animalh/id-move/register/sw-livestockpilot.htm
Shearwell Data Ltd in Saudi Arabia
150,000 sheep identified electronically in Saudi Arabia by Shearwell Data Ltd

Shearwell secured a contract to microchip a large flock of sheep in Saudi Arabia. Initially 25,000 animals were tagged with EID SET tags to make sure the system was viable and working well. It was a huge compliment to receive a follow up order for 150,000 more tags, 9 autodraft crates and Psion handhelds reporting to the FarmWorks by Shearwell Data program.

This contract not only proved EID does work but also that Shearwell’s equipment can manage large volumes of animals efficiently. The flock consists of over 300,000 sheep and goats and is run on 9 units with 9 main holding yards or houses per unit. There are a number of breeds (approx 28) which vary from wool growing (Syrian shearers earn 33p per 4 sheep!) to woolless sheep which store a large volume of fat either side of their tail! (See photo opposite)

The management is very professional with AI and detailed recording taking place. Ewes are milked and the company retails their own brand of organic milk. Once the ewes are milked the lambs are then let back with the ewes to have their turn.

One of the challenges for us was to provide a handheld stock recorder that could carry 150,000 animals’ with ‘management’ information and to have as many as 11 different handhelds reporting to the main program and still keep all units up to date with the latest information. Amazingly this has been done and works well.

Fat lambs make a huge price, £135 with production costs of £100!

The following article is written by Mike and Colin from our IT department which I hope you find interesting:

A normal working day starts at 6 am with a lunch “break” from 12 to 3 and then the afternoon session until at least 6 pm. During our stay we were quartered in the owner’s palace – a large building with numerous bedrooms for guests and a vast dining hall.

The sheep IT building together with its adjacent...
sheep pens was some distance from the palace so we were always transported by car. At that time of year they were harvesting the grain crops from their giant crop circles which are over 1 Km in diameter. As we passed by we were able to see flocks of 3000 or so sheep at a time grazing amongst the stubble with up to 5 flocks of 3000 per crop circle, herded by 3 Syrian shepherds per mob (Shepherds earn £120 per month) who were with them throughout the day in temperatures of up to 45C. The air-conditioned IT building was a welcome respite from the outdoor heat!

One evening, in honour of the imminent departure of one of their IT staff and also of our visit, we were invited to a traditional Bedouin feast out in the desert. We were driven for some time, visited a herd of (hand milked) camels and ended up at a large balustraded stone platform in the middle of the desert. A very memorable experience.

Our main work while out there was to commission previously delivered equipment, to install new software and to train their staff in using the equipment and software. At the time of our visit they had already loaded over 100,000 sheep onto the database and are intending ultimately to have some 500,000 sheep on record. The new software for both the PC and handhelds was intended to optimise their data input operations which had been a bottleneck for them and to add enhancements and new functionality.

Out in the sheep pens we carried out a number of trial drafting operations to check and verify the correct operation of the 9 drafting crates supplied by Shearwell Data. It was very pleasing to see how well both the mechanical and electronic parts of the drafting crates coped with the wide range of sheep sizes during these trials – ranging from goats weighing less than 10 Kg to rams in excess of 110 Kg.

It was fascinating to see our system working well on such a large scale, in a country so different from ours.

served tea, as we all sat propped up on cushions on the stone floor surrounded by Arabs in traditional dress – all men, no women allowed. Carpets were then unrolled and prayers were said. Finally several large plates about 4 feet across were brought in and on each plate, laid out on a thick bed of rice, was a complete sheep! So there we were – lying out on the carpets, eating rice and sheep meat using our hands under the stars in the middle of the desert. A very memorable experience.
EID Equipment Guide - Data Collection

Stick Reader
Simple stick readers, such as the Shearwell SDL400S, are principally used for reading EID numbers. As they have a small number of buttons (often just one) limited data entry is carried out. Instead, any EID numbers read are transmitted (via a wireless Bluetooth link) to a device such as a mobile phone. For example, Shearwell have a mobile phone application that, in conjunction with a stick reader, is capable of sending cattle birth and movement records directly to CTS, thus removing the need for any movement paperwork.

The Shearwell SDL400S stick reader also has built in memory, so that it can be used for creating ‘management groups’ by reading and storing the EID of all animals in a group. These groups can then have ‘movements’ or ‘treatments’ recorded for them as a block using FarmWorks by Shearwell Data.

Basic Handhelds
There are a range of basic handheld devices available which offer more functionality than a stick reader and are suitable for carrying out basic data recording. These types of device we recommend as suitable for farmers with typically less than 500 animals. FarmWorks by Shearwell Data currently supports both the Ges 2S and the Agrident APR350 in this category. With these units each animal is read using the in-built reader and can then have basic data entered by hand against each animal.

Only 5 of these programs can be loaded on to the handheld at any one time. The user decides what they will be recording before going out on farm. These devices have ‘mobile phone’ style key pads so are only recommended for limited data entry. These types of device do not typically link to race readers, weigh heads and other equipment so should not be viewed as ‘expandable’.

Workabout Pro
This is the most powerful, easy to use and expandable type of handheld device. Shearwell supply the Psion Workabout Pro running a dedicated program which, with full colour touch screen, full alphanumeric key pad and inbuilt reader offers a very comprehensive data recording system. This type of handheld will hold all the records for your livestock, including parentage, weight, treatment and movement history so all this information is available at your fingertips while out with your livestock. Unlimited general purpose comments can be stored and re-called for each animal. The device has enough memory to hold information for more than 100,000 animals.

In addition, the Workabout Pro can be linked wirelessly using ‘Bluetooth’ to a wide range of peripheral devices. These devices are shown on the next page, and include such equipment as EID race readers (allowing large numbers of animals moving through a race to be automatically read and recorded), weigh systems (allowing automatic weighing of animals) and a range of equipment for drafting animals into different groups, based either on weight or any other data stored on the handheld such as age, breed, sex, breeding performance etc. The choice is endless!
EID Equipment Guide - Accessories

**Static Readers**

Static readers are generally used in conjunction with a race or weigh crate, and enable animals fitted with an EID device to be read very quickly and with minimal human intervention. Static readers consist of one or more antennae which fit on to the side or around the race and a control unit which reads the EID and sends it to the data collection (handheld) unit. Many readers, such as the Shearwell SDL130 are fitted with Bluetooth, which means the EID number can be sent to the handheld without the need for lots of interconnecting cables.

**Weighing equipment**

Weighing equipment can also be linked to the handheld unit, so that once an animal has been identified via its EID device its weight can also be automatically recorded. Weighing systems typically consist of a pair of load bars fitted under a weighing crate and a weigh head which reads the weight and sends it to the handheld unit. Again it is possible to get Bluetooth enabled weigh heads, removing the need for cumbersome interconnecting cables.

**Antennae**

Perhaps this is the most under-rated part of an EID system! Orientation of the device is all important when being presented to the antenna. If a device is running parallel to the antenna then in most cases it will need to be closer to achieve a read. For that basic reason we always advise people to make sure they are being supplied with either a twin antenna or a portal antenna. In this way you stand the best chance of reading 100%. There are developments underway to switch orientation from one antenna to the other making it virtually impossible for an animal not to be read! Plate antennae can either be single, double. Loop antenna’s normally bridge over the top of the race and portal antennae the animals run through.

**Hand Drafting System - ‘Ewe Draft’**

Shearwell has developed a low cost drafting system based around the Psion Workabout Pro handheld unit. This unit connects, via Bluetooth, to a race reader such as the SDL130 and Bluetooth enabled earphones. As each animal enters the race, it is identified using it’s EID. The handheld can be set up to direct each animal out of one of three gates based on any saved information such as animal breed, age, sex, breeding performance etc. The handheld sends an audible instruction to the operator who controls manual gates in his existing race system to direct animals out of the appropriate gate. This system enables you to draft out animals based on any saved criteria whilst not incurring the outlay costs of a fully automatic drafting system.

**Automatic Drafting Systems**

As for the hand drafting system described above, this equipment enables you to draft out animals based on any saved criteria in addition to drafting by the animals current weight. The ‘in’ gate and multiple ‘out’ gates are all fully controlled via pneumatics, providing the ultimate in automatic drafting.

Please contact Shearwell for more information on this or any other system described on these pages.
Points to Consider When Buying EID Equipment

**Devices** - All devices (ear tags or bolus) and readers must comply with ISO 11784/11785. This is an international standard which dictates that equipment is made to work to a common standard (this does not include the management software). In addition it is important to identify a supplier that has a good background of experience and is able to advise and provide all parts of the system. Generally the technical aspect lets most people down and it is unwise to assume because a reader is attached to a crate that it has been tuned properly or has the degree of backup that may be required.

**Readers** - It is always important to make sure the readers read both HDX and FDX-B B (full ISO readers) in this way you will not be caught out later on if you purchase animals that carry a different technology than you have been supplied. Full ISO readers are the norm now and single technology readers went out of fashion in the UK a long time ago. As an industry we must make sure we have competition to bring both better performance but also competitive prices.

Bluetooth is also now becoming more widely available and reduces the risk of cables being chewed or not working. Make sure it is a quality Bluetooth and holds communication well (some small PDA’s lose Bluetooth connectivity very quickly).

**Antennae** - Generally if you are being offered a single antenna to read sheep on a run-through basis you run the risk of missing reads. If the animal enters a crate and has to stand there until it is read then that is a different matter. The orientation of the device to the reader is very important. If you are being offered twin antennae or a portal antenna then you stand the best chance of getting a 100% read.

**Other factors** - There are many reasons for poor performance of readers which are outside of the control of the supplier unless he is given access to the facilities. Some electricity supplies have “spikes” coming down the cables which detunes the reader and stops a read. Some old electronic motors which have not been CE approved create electromagnetic interference which can effect the reader’s performance significantly.

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Farm Management Software

Since its creation in 1998, our farm management program, FarmWorks by Shearwell Data has come a long way, continually improving and adding functionality, not to mention adapting to keep in line with Defra and EU legislation wherever possible.

With subsidies reducing it is becoming increasingly important to know the performance of your stock on an individual basis so that correct assessments can be made about the performance of sires, dams, breeds and, if finishing stock, the best sources of those animals. The program can help not only the pedigree breeder, but also the commercial farmer to identify the productive and non-productive stock and identify where those animals came from.

The comprehensive reports that are available include regulatory reports such as movement records and vet and med, but also management reports showing weight gain, calving reports, lambing records identifying those sheep that had one, two or three lambs and many more. Reports can be printed by management group, breed or location and many have the option to group by dam, sire or source.

One entry of data will ensure all of the relevant forms are completed, for example recording a birth will automatically put that record onto the dams record, into the movement book and herd book and (with cattle) allow you to send the application for the passport to BCMS at the click of a button. Data can be downloaded from CTS or validated against CTS at any time.
Shearwell Data has been instrumental in developing an Internet based database for farming information to be stored and queried securely. The National Livestock Management Database (NLMD) is a central repository for farm information, providing secure off-site backup facilities to farmers, with the additional benefit of detailed farm reports.

The web site, www.nlmd.co.uk, acts as a central store for animal, medicinal, treatment and feed data. The backup facility offers a safe-storage option for farm management programmes and gives the farmer fast access to electronic kill sheet information direct from the abattoir. Once stored on the NLMD, animal information can be retrieved from the rearer, saving valuable administration time and effort.

One of the greatest benefits of the NLMD is the ability to generate aggregate reports from a suite of options. The aggregate reporting features of the NLMD allow the farmer to benchmark his own production against similar farmers in a geographical or regional area. Benchmark reports allow the farmer to tailor their farming practices to achieve the greatest yield using clear graphical and statistical data reports.

As a producer, the farmer is able to use the NLMD as an additional tool to his farm management software and can generate bespoke reports of feed usage, animal treatment regimes and medicine stocks to name but a few. All reports have been created to give the farmer maximum power of his farm data and to make informed decisions over farming practices.

The NLMD has been set up in response to the needs of the livestock industry. It is to be owned by the farming industry and any benefit that can be gained by the NLMD is to be given back to the farming community. Data that is held in the NLMD can only be used with the express permission of the farmer and we have gone to great lengths to ensure any data used in aggregate reports cannot be identified as belonging to a specific farmer.
# Shearwell Data’s Guide to EID Terminology

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<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>826</td>
<td>Internationally recognised code identifying a microchip originating from the UK. Endorsed by the United Nations and ISO</td>
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<tr>
<td>Antenna</td>
<td>Linked to the reader to send and receive the chip number</td>
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<tr>
<td>Data Logger</td>
<td>A small handheld computer that can receive the microchip number and in most cases holds some management information</td>
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<tr>
<td>EID</td>
<td>Electronic Identification</td>
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<tr>
<td>FDX-B</td>
<td>Full Duplex - this is one of the technologies approved for livestock (see also HDX)</td>
</tr>
<tr>
<td>Full ISO Reader</td>
<td>Reads both HDX and FDX-B</td>
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<tr>
<td>Handheld Reader</td>
<td>Can be carried around and used for reading microchips. (Always determine whether it is just a reader or attached to a data logger)</td>
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<tr>
<td>HDX</td>
<td>Half Duplex - this is one of the technologies approved for livestock (see also FDX-B)</td>
</tr>
<tr>
<td>HF</td>
<td>High frequency - not approved for livestock in the EU regulation</td>
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<tr>
<td>ICAR</td>
<td>International Committee for Animal Recording. (Organisation recognised by ISO as the Registration Authority for silicon chip identifier manufacturer codes)</td>
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<tr>
<td>ISO</td>
<td>International Standards Organisation</td>
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<tr>
<td>ISO 11785</td>
<td>The standard governing the reading equipment protocols for use of EID in animals</td>
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<tr>
<td>ISO 11784</td>
<td>The standard governing the data content of the microchip</td>
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<tr>
<td>ISO Approved or ISO Reader</td>
<td>It can read either HDX or FDX-B but not necessarily both</td>
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<tr>
<td>JRC</td>
<td>Joint Research Centre, the EU technical laboratory for testing RFID equipment</td>
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<tr>
<td>LF</td>
<td>Low Frequency 125 kHz (only LF is approved in the EU regulation for livestock EID)</td>
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<tr>
<td>MF</td>
<td>Mid Frequency (Not approved for livestock in the EU regulation)</td>
</tr>
<tr>
<td>Microchip (also called a chip or transponder)</td>
<td>Microchip is the device carried on the animal which can be encapsulated in an ear tag or a bolus (can be glass or coil)</td>
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<tr>
<td>Multiplexed Antenna</td>
<td>Method of switching a system of antennae, time sharing of one or more aspects of the transmitter behaviour</td>
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<tr>
<td>Orientation</td>
<td>Which way the chip is presented to the antenna</td>
</tr>
<tr>
<td>PDA</td>
<td>Personal Digital Assistant (handheld recorder only)</td>
</tr>
<tr>
<td>Plate Antenna</td>
<td>Antenna placed on one side of the race</td>
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<tr>
<td>RF</td>
<td>Radio Frequency (see also RFID)</td>
</tr>
<tr>
<td>RFID</td>
<td>Radio Frequency Identification (see also RF)</td>
</tr>
<tr>
<td>Single Technology</td>
<td>Means either HDX or FDX-B</td>
</tr>
<tr>
<td>Static Reader</td>
<td>Only for use in a static position i.e. in a race or kill line</td>
</tr>
<tr>
<td>Transceiver</td>
<td>Reader used to read the chip (can be static or handheld)</td>
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<tr>
<td>Twin loop antenna</td>
<td>System which uses two antennae coupled to the same transceiver, usually placed opposite one another in a race or cage</td>
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<tr>
<td>Twin or Dual Technology</td>
<td>Means both HDX and FDX-B</td>
</tr>
</tbody>
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## EID Bodies

The International Standards Organisation (ISO) is an international association of national standards bodies. Its intention is to produce guidelines on a wide range of issues and applications. It is a non-governmental organisation. It is not involved in certification. ISO’s Working Group 3 (WG3) deals with animal identification and has a technical working group (TWG) made up of technical experts, independent experts and ICAR representatives (see below).

Mark Tereszczak, Shearwell Data’s RFID Manager sits on both the Technical Working Group and Working Group 3 representing the UK through the BSI (British Standards Institute).

The International Committee for Animal Recording (ICAR) aims to promote the development and improvement of the activities of performance recording and the evaluation of farm livestock. ICAR has a liaison with ISO to supervise the implementation of the ISO standards for animal RFID, to issue the manufacturer’s numbers after approval of the manufacturer’s RFID products and to watch the quality of the approved products on the market.

United Kingdom Electronic Identification Association (UKEIDA) was established in 2006 to provide a service to the Animal Identification Industry by providing a forum for the discussion of non-competitive issues and to assist regulatory bodies in their decision making.

Shearwell Data recommend that you make sure your suppliers are members, visit www.ukedia.org for further information.
Expression of Interest in EID
Please complete and return to the address on the foot of this page

1 Name

2 □ Farmer □ Haulier □ Market □ Abattoir □ Advisor
   □ Govt. Dept. □ Producer Group □ Other (please specify)

3 Address

   Post Code  Telephone

4 Fax  Email

5 Farm Size: (Hectares)

6 Type of Farm: □ Hill □ Marginal □ Lowland

7 Stock kept: □ Beef Cattle □ Dairy Cattle □ Sheep □ Pigs
   □ Other (please specify) _______________________________________

Would you like Shearwell Data to contact you, regarding:

8 FREE EID Taster Day?  Yes □ No □

9 Electronic tagging?  □

10 Hand held readers / recorders?  □

11 Mobile phone application?  □

12 Automatic Drafting?  □

13 Farm Management Software? (a FREE demo disk will be sent to you initially)  □

14 The National Livestock Management Database?  □

15 Abattoir Installation?  □

16 Market Installation?  □

17 Do you currently use any form of EID, if so which type? ________________________________

18 Do you currently use a cattle/sheep recording program, if so which one/s? ____________________

Completing this expression of interest will be used by Shearwell Data to understand the current requirements of livestock farmers. We will not pass your details on to third parties. Please tick the box if you do not want to receive information or offers in the future from Shearwell Data Ltd □

EID Enquiry, Shearwell Data Limited, Putham, Wheddon Cross, Minehead, Somerset, TA24 7AS.
Shearwell Data Ltd

Shearwell Data provides a range of quality goods to aid identification of sheep and cattle from ear tags to electronic identification systems and is one of the leaders in the field of Data Capture and Data Transfer in the livestock industry. With increased demand for traceability, Shearwell Data is supplying Electronic ID systems not only in the EU but also around the world.

Shearwell Data is now commercially supplying EID systems for both sheep and cattle farmers at competitive prices and with the most comprehensively developed software available. Their system allows the optimum benefits to be achieved through better management and breeding while at the same time reducing the workload for the farmer.

Shearwell also have expertise in both market and abattoir installations. They are able to carry out site surveys and advise on any location as to its suitability for RF and how to combat noise that may affect the technology. Their systems not only allow dual technology to be used but they have also mastered synchronisation of readers, which has been a thorny subject within the RF fraternity. The company’s wide range of expertise allows it to be unique within the suppliers of RFID. This ranges from programming chips, printing ear tags, supplying and adapting handling systems and with 12 programmers supporting their products there is little that the company is unable to do to get a system supplied and installed. In addition to the software team Shearwell have experienced trainers and in house support staff which is another essential element that sets them apart from any other. Perhaps THE most crucial part of all is the fact that our director has a beef and sheep farm where all products are tried and tested to the full!

If you are interested and would like to discuss any aspect of EID please contact our sales team on 01643 841611

The Missing Link - Non EID handling equipment, suitable for sheep only - contact us for details