UK EID Evidence Report

Electronic identification of sheep and goats: Commission report in connection with article 9(4) of Regulation (EC) No 21/2004
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Background</td>
</tr>
<tr>
<td>2.</td>
<td>UK Industry</td>
</tr>
<tr>
<td>3.</td>
<td>Scope of Projects</td>
</tr>
<tr>
<td></td>
<td>a. Test conditions</td>
</tr>
<tr>
<td></td>
<td>b. What technical devices were tested?</td>
</tr>
<tr>
<td></td>
<td>c. What other factors were considered?</td>
</tr>
<tr>
<td></td>
<td>d. What numbers were involved?</td>
</tr>
<tr>
<td>4.</td>
<td>Content of Projects</td>
</tr>
<tr>
<td></td>
<td>a. Conformance tests.</td>
</tr>
<tr>
<td></td>
<td>b. Performance tests</td>
</tr>
<tr>
<td></td>
<td>c. Functionality of tested devices</td>
</tr>
<tr>
<td></td>
<td>d. Link with supplementing software</td>
</tr>
<tr>
<td></td>
<td>e. Economic evaluation</td>
</tr>
<tr>
<td>5.</td>
<td>Results of Projects</td>
</tr>
<tr>
<td></td>
<td>a. Current state of play</td>
</tr>
<tr>
<td></td>
<td>b. Advantages/disadvantages of the specific systems</td>
</tr>
<tr>
<td></td>
<td>c. Starting points for improvements to the systems</td>
</tr>
<tr>
<td></td>
<td>d. End user perspective</td>
</tr>
<tr>
<td>6.</td>
<td>Costs and Benefits of EID</td>
</tr>
<tr>
<td>7.</td>
<td>Technical Issues</td>
</tr>
<tr>
<td></td>
<td>a. Work since the UK Trials</td>
</tr>
<tr>
<td></td>
<td>b. Technical Guidelines</td>
</tr>
<tr>
<td>8.</td>
<td>Conclusions</td>
</tr>
</tbody>
</table>

### Annexes

- **A. Part 1**  
  English Pilot Trial – Summary  
  (26 KB)  

- **A. Part 2**  
  English Pilot Trial – detailed report  
  (715 KB)  

- **B. Part 1**  
  Northern Irish Trial – Summary  
  (28 KB)  

- **B. Part 2**  
  Northern Irish Trial – detailed report  
  (273 KB)  

- **C.**  
  Scottish Trials – Summary  
  (21 KB)  

- **D. Part 1**  
  Welsh EID Project – Summary  
  (33 KB)  

- **D. Part 2**  
  Welsh EID Project – Final Report July 2005 (this document will be available soon)  

- **E.**  
  Regulatory Impact Assessment – England (please note: this is a work in progress)  

- **F.**  
  Final Report with ADAS field trials in support of
producing a Regulatory Impact Assessment for sheep identification in England (2.88 MB – warning: this is a very large file)

G. Risk Solutions report: Impact of Sheep EID on Disease control (1.11 MB – warning: this is a large file)

H. Interim Report of the South West Livestock Pilot (718 KB)
1. Background

1.1 Article 9(3) of Council Regulation 21/2004 ("the Regulation") introduces mandatory electronic identification for sheep and goats (EID) from 1 January 2008.

1.2 Article 4 of the Regulation provides for the Commission to submit a report to the Council by 30 June 2006 on the implementation of electronic identification and proposals confirming or amending the 1 January 2008 implementation date.

1.3 Following the adoption of the Regulation in 2003 the UK has carried out extensive work on the feasibility and benefits of introducing electronic individual recording of sheep and goats. This paper summarises the outcome of the UK trials (annexes A - D) and work identifying cost and benefits of EID (annexes E - H). This report provides references to these annexes in italics. The Commission are urged to take account of the evidence gathered by the UK when preparing their report for the Council. This report also answers (in sections 3 to 8, below) the specific questions to which Bernard van Goethem sought answers in his letter of 3 May 2006.

2. UK industry - overview

2.1 The UK has the largest sheep population in the EU and the introduction of electronic identification is expected to have a greater impact on the UK sheep industry than anywhere else in the EU. In June 2005, the UK had a total sheep population of just under 34 million of which half were adult breeding ewes. There are approximately 92,000 sheep producers applying different systems of production to suit the varied topography and climate of the UK. More than 25% of land in the UK is above 500m. Hill breeds make up approximately 50% of the national flock and play an important role in preserving the upland environment. The UK’s stratified and extensive industry mean that sheep move more times on average during their lives than in other Member States. In 2005 over 1 million batch movements of sheep took place.

2.2 There are some 11,000 goat holdings in the UK and the total population is around 95,000. Most goats do not leave the holding on which they were born and therefore total movements are low.

3. Scope of Projects

a. Test conditions  (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 1a)

3.1 EID trials have taken place in England, Northern Ireland, Scotland and Wales. Farmers were given the choice of using tags or boluses, with the majority (86%) choosing the former. However, boluses were the preferred identification device at markets and abattoirs. The farm trials used existing
commercially available ISO (11784/11785) compliant and ICAR certified equipment. The exception was in Scotland where some non-ISO compliant devices were also assessed.

3.2 The English trial, lasting 18 months, was centred on sheep farms but also covered markets and slaughterhouses. It focused on trialling typical ICAR approved EID identifiers and reading equipment – plus software packages capable of holding animal data collected through EID - that could be purchased ‘off the shelf’ by any farmer. Aims included identifying aptitude and attitudinal factors of EID users (as they might affect potential take up), establishing any associated costs/benefits, the level of training and support required, and the readiness of the market to rollout commercial EID systems in time for 1 January 2008.

3.3 The Northern Irish trial, involving cattle only, centred heavily on identifying issues around the practical application, roll-out and implementation of EID and electronic data transfer (EDT) in working abattoir conditions. None of the tests were conducted under laboratory conditions. Instead they tested concepts of EID and electronic reporting methods in practical farming conditions, and attempted to show how farmers might adapt to the use of the technology and demonstrate the resulting business benefits.

3.4 The Scottish trial focused on markets and abattoirs and investigated the feasibility of introducing an advanced, interactive and efficient electronic traceability system for cattle. This was later extended to sheep during the trial.

3.5 The Welsh EID Evaluation Project focused entirely on farm experiences, using both cattle and sheep. The objectives were to evaluate the feasibility of introducing EID to a range of Welsh enterprises and to assess the practical issues and the potential management benefits that EID could bring to the Welsh livestock industry. Management benefits were to include adult sheep and lamb performance monitoring and the maintenance of flock and movement records (individual and batch), including veterinary treatments.

<table>
<thead>
<tr>
<th>Sheep EID trials</th>
<th>Farm</th>
<th>Market</th>
<th>Abattoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Scotland</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Wales</td>
<td>✓</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>×</td>
<td>×</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 1: UK EID Trials by country

b. What technical devices were tested? (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 1b)

3.6 Both HDX and FDX-B technologies were deployed in all the trials. The English and Welsh trials used both ear tags and boluses, whereas the Scottish and Northern Irish trials were solely focused on ear tags. On farm, handheld readers, static (race readers) and electronic weight crates were
assessed. At both markets and slaughterhouses, a number of hand held and static readers were also assessed.

c. What other factors were considered? (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 1c)

i) Software
3.7 The Northern Irish trial focused on making modifications to their accredited database, the Animal Public Health Information System (APHIS). The English trial looked at the transfer of electronic data from software packages installed on farm PC’s to a custom made centralised database via the internet. At the outset farm software was provided by 2 EID systems integrators. An alternative farm management software package was used later on during the study that provided improved interface facilities with different intelligent RFID readers.

3.8 In Scotland the equipment was used in live markets and abattoirs. Ease of use and disruption to normal business was considered, by employing additional staff. The Welsh project evaluated integrated EID systems, with the aim of demonstrating the equipment’s capabilities in basic identification and recording, in addition to providing farm management benefits (such as veterinary and medicine reporting, and performance recording).

ii) Training
3.9 This was considered and evaluated throughout the trials. In England, participants received specific training on the application of EID devices and relevant equipment. Over 90% of farmers required IT training in the use of personal computers and the EID software provided to collect and hold animal information obtained via EID.

3.10 In Wales individual training and support from the EID supplier company was also evaluated. Each company tailored training to each participant’s specific needs, which allowed previous knowledge of data recoding or IT skills to be taken into account. Whilst every effort was made to select farms representative of Wales, 92% of those selected had some experience with computers and software pre-trial, and all had experience with data collection and recording. It should be noted, however, that this is not representative of sheep keepers across Wales, where a very low percentage are currently competent in computer & IT skills.

3.11 In the Scottish trials the equipment was operated in a live situation by existing staff, although support staff were present in the market trial.

iii) Other
3.12 Consideration was given to countering electrical interference at markets and abattoirs. Interference comes predominantly from working in close proximity to stunning equipment and metal penning. In practice other unexplained interferences, including power surges from other electronic equipment, detrimentally affected reading performance.
3.13 The South West Livestock Pilot is trailing EID and EDT, to ascertain what management benefits might be obtained were EID equipment to operate satisfactorily. (see Annex H)

d. What numbers were involved? (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 1d)

3.14 The four trials comprised 85 sheep farms, 14 cattle farms, 2 markets and 4 abattoirs. A total of approximately 153,000 sheep and 4,100 cattle were tagged with EID devices. The English trial lasted 18 months, the Welsh trial two years and the Northern Ireland trial two years four months. The Scottish trial was shorter, lasting three to four weeks. No goats were assessed during any of the trials. 23 Farmers are taking part in the South West Livestock Pilot.

4. Content of the projects

a. Conformance tests. (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 2a)

4.1 There were no specific conformance tests.

b. Performance tests (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 2b)

4.2 Performance was evaluated by the users (e.g. farmers, markets and slaughterhouse personnel carrying out everyday management tasks) and by project managers and system integrators. Equipment was evaluated to determine ease of use, reliability and robustness.

i) Device performance
4.3 Information collected included tag and bolus losses, information on non reads and the effectiveness of reading different technologies.

ii) Readers
4.4 Information collected included performance of reading equipment (including malfunctions, effectiveness of reading devices and actions taken, time to perform basic functions.

iii) PCs and software
4.5 Information collected included, the level of training needed, the effectiveness of transferring data to PCs and from PCs to a project database.

iv) Bolus recovery
4.6 No trials were carried out using equipment developed to automate bolus recovery, as none was available at the start of the trials.

c. Functionality of tested devices (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 2c)
4.7 The devices trialled were predominantly electronic (i.e. tags, boluses, readers), with paper systems assessed on control farms in England to identify difference in results between manual and electronic systems. There were aspects of the race readers in markets and abattoirs that are mechanical, e.g. hydraulically operated shedding gates to separate out and deal with un-read animals.

d. Link with supplementing software (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 2d)

4.8 The English study looked at the link with on farm software to sheep production systems, electronic interfaces with EID reader systems, electronic upload capability to central databases, data manipulation and processing to provide individual and group performance output. This was initially found to be too complex for both the users and existing software packages to cope with and the flock management reporting facilities were underused. Once functionality was limited, to simplify processes, farmers found it too simple to meet management purposes. It was also discovered that there was no ability to mix and match software and hardware, which had been developed by different manufacturers.

4.9 In addition to an on-farm evaluation of 4 EID systems on 30 commercial farms, the Welsh EID Project also included a detailed scientific evaluation of the 4 sheep EID systems at IGER, an Aberystwyth based research institute. The evaluation was undertaken by one of the technical staff at a common site to ensure an accurate and unbiased comparison and all systems were evaluated in parallel to read identifiers and to record enterprise actions, with data transferred to the appropriate farm management software. A ‘Point Index Evaluation’ was adopted; databasing individual sheep (read and store information on the associated database software) varied from fair to excellent, data transfer from poor to excellent, training from fair to excellent and company support from poor to good. Two methods were used to read identifiers, a handheld device and a static reader attached to the weigh crate. The handheld reader was preferred for a small number of sheep (100) due to convenience and practicality but the electronics failed with two of the hands free systems due, according to the suppliers, to the cold conditions.

e. Economic evaluation (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 2e)

4.10 A full economic evaluation of EID could not be carried out on all trials, as some of the trials undertaken were not of sufficient length to produce the necessary data (particularly for benefits.) A further project (Southwest Livestock Project), set up to examine the value of animal data to farmers, used EID as a supporting tool to aid data collection. An interim report for this project is expected to be available in August 2006, and will be forwarded to the European Commission.

4.11 An economic evaluation was carried out as part of the of the Welsh EID Project (see Annex D Part 2, appendix 9). In England a Regulatory
Impact Assessment has also been prepared (see section 6) and these costs have been worked up into a UK figures.

5. Results of the projects

a. Current state of play (Annexes A (parts 1 and 2), B (part 1), C and D (part 1) paragraphs 3a)

5.1 It has been shown that with significant perseverance and goodwill on the part of the user EID can be made to work on farm and in abattoirs. But the equipment available is generally neither reliable nor robust enough nor is the technology sufficiently developed for roll out on a commercial basis. The trial in Scotland showed that electronic data transfer could be successful, but the English and Welsh trial showed disappointing results in this area.

5.2 The results of trials in abattoirs were varied. The Northern Irish trial indicated that commercial implementation at abattoirs would be possible now if the appropriate skills were available at operator level and appropriate process were adopted. But this view did not emerge from the other trials. In other cases, speed of reading, and quantity read proved to be an issue. More importantly there no commercially available bolus recovery machines available to abattoirs.

5.3 The trials identified the following issues as barriers to implementing EID in 2008:

- Equipment does not perform well in wet and/or cold conditions. For example:
  - Battery life is short. Hence data was frequently lost.
  - Equipment has hazardous trailing cables, which has implications for health and safety.
  - Liquid crystal displays performed badly.
  - Read speeds, and read accuracy, were low.

- The costs of EID devices and the equipment are high with no direct benefits to keepers when recording the data required by Regulation 21/2004.

- Equipment was too complex for farmers to understand and operate. Software programmes were too complicated for basic farm operation.

- The hardware and farm software packages were too often incompatible, with suppliers of each blaming the other for frequent equipment and operator failures.

- The level of training needed has proved to be extensive and would be required for all keepers. 90% of English trial participants needed basic IT training before they could use basic EID equipment. Extensive training would be required for all keepers, English trials concluded that
an average of 6.6 hours training would be required and 9.5 hours of support for each, in order to bring them to standard required for them to meet the basic requirements for EID. Further more after 12 months of training not all participants in the English trials were able to perform the basic EID tasks (See Annex A Part 2, section 1.3). This is of considerable concern and signals that extensive and costly training will be required to support the introduction of EID. There is also currently little or no EID training available to UK keepers. Industry stakeholders are not aware either of training programmes for farmers, these have yet to be developed.

- EID identifiers and reading equipment must be seen to work ‘first time out of the box’ and be simple and reliable to use for farmers readily to accept it. We have found no evidence that this is yet the case, but the UK is working closely with Joint Research Centre (JRC) on this (see paragraphs 7.5 and 7.6).

- Bolus recovery equipment is not readily available. Only prototypes are available.

- Within markets and abattoirs, equipment is not able to handle anomalies (e.g. animals not carrying identifiers) at speed without interrupting procedures. Reading equipment suffers from electromagnetic interference from the physical structure (i.e. metal) of the premises around it.

5.4 The English trial (Annex A (Part 2), chapter 18) found that it would be impractical to rollout a complete integrated EID system for every producer in the UK by 2008. It was suggested that a further five years would be required before the technology is sufficiently advanced to perform adequately in commercial conditions.

b. Advantages/disadvantages of the specific systems (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 3b)

i) Tags/Boluses

5.5 Tag losses for the trials varied considerably between tag types and was also a function of breed and of fencing used on the farm loss rates ranged between 2 and 9%. There were no bolus losses. Boluses were harder to read using hand held readers and were more expensive. Tags themselves were more prone to cause infection, leading to welfare problems that could increase loss rates. Recovery of boluses by hand in abattoirs was only 81% successful.
ii) Readers

On farm
5.6 Handheld readers were convenient for smaller numbers of animals. Non-programmable readers meet minimum requirements but do not allow management benefits. Costs for readers are high (see section 6). The non-ISO equipment in Scotland performed well in abattoirs, and showed less tendency to be affected by electromagnetic interference.

5.7 The performance of hand held readers was shown to be poorer than anticipated because of:

- the constraints of the software with which they had to interface;
- damp, wet or very cold conditions;
- short battery life; and
- quality of manufacture.

5.8 The battery life problem resulted in losses of data and thus of user confidence in the system. The performance of intelligent readers with weigh crates (essential aspect of provided greater added value for users) was hampered by computer hardware, electronic systems and installation.

At markets and abattoirs

5.9 EID systems tested in markets (and abattoirs) were not capable of dealing with the volume and speed of animals required. The need to handle non-read effectively is important if market operation is not to be affected. But specialist equipment developed so far tends to be expensive. Of particular concern was the high level of interference found in both markets and abattoirs because of the presence of metal in the physical structure of the premises. The majority of UK markets contain only metal pens and races because there are easily cleaned and disinfected, leading to better biosecurity. The JRC’s Technical Guidelines recommend avoiding placing the reading antennae in direct contact with metal fencing. This is particularly difficult in markets and abattoirs where the whole structure is of metal, and on farms where sheep are handled in a safe, secure handling system of metal construction.

5.10 At abattoirs equipment performance was found to be severely hampered by interference from the physical structure of the abattoir itself and electro-magnetic disturbances from the environment. In England market environment testing had to be conducted outside of live market situations, because of concerns that poor read performance and an inability to handle anomalies would bring normal market operations to a halt.

5.11 Of particular relevance to markets and abattoirs is the recognition in the draft final report, commissioned by DG SANCO ‘Evaluation of the Community Animal Health Plan’ which identifies that a significant
disadvantage of EID is that the potential for technical failures would increase administrative burdens and slow down traceability.

iii) PCs and software

5.12 The main issue experienced with using PCs was poor interfacing between the software on intelligent EID readers and the farm management packages into which the data had to be read. Additionally, performance was sometimes compromised by the unreliability of Internet connections and the effects of viruses. The software packages proved to be too complex in design for users, even where they were well versed in computer use, and significant problems were encountered. Accordingly a great deal of supplier training and every-day support proved to be needed in all of the trials.

c. Starting points for improvements to the systems (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 3c)

5.13 There are a range of developments needed. Equipment must be:

- Simple to use.
- Reliable and robust enough for use in all weathers and in all normal ‘on farm’ situations i.e. for fast moving groups of sheep of different ages, size and sex.
- Cost effective (particularly costs should be proportionate to any benefits gained). With the present derogation from double tagging and absence of a need for the simultaneous introduction of EDT (electronic data transfer), industry have still to identify any benefit of EID.
- Systems need to be developed that work in a physical environment that contains large amounts of metal and other electromagnetic disturbances, which effectively deal with non-reads and which retrieve boluses for destruction.
- Improved capabilities for electronic transmission of data between EID readers and databases held on farm or centrally.

5.14 At present there is no commercially available system that satisfies all of these requirements.

d. End user perspective (Annexes A (part 1), B (part 1), C and D (part 1) paragraphs 3d)

i) Farmers

5.15 Farmers in the UK have not generally accepted that EID should be mandatory. Across the board farmers believe that further technological development and improvement is necessary for EID to be workable and that there needs to be a significant reduction in costs before mandatory EID can be introduced. They are concerned that currently equipment is neither
sufficiently robust nor reliable enough for UK weather conditions and this has been supported by the various UK trials. Neither is the equipment simple enough to operate. Equipment must also be tailored for an industry that is not IT literate.

ii) Market and abattoir staff
5.16 The English pilot in markets did show a benefit in cutting down the amount of paperwork over a manual system that recorded the individual identities of sheep passing through, but not over the existing arrangement where recording is done on a batch, and not an individual basis. The trial also highlighted potential costs. Market operators, like farmers, are not convinced of the benefits of individual sheep recording. Abattoirs could not see any significant benefit of individual identification and there were concerns with recovery of devices. Industry views the burden of cost as outweighing the benefits. There are also concerns over the health and safety of staff, the welfare of animals, e.g. those caught in shedding gates and the additional staffing requirements in markets.


i) Costs
6.1 At the December 2003 Agriculture Council, the UK raised concerns that a cost: benefit analysis had not been completed and asked the Commission to come forward with a full cost benefit analysis. To date no such analysis has been produced. The UK requests again that the Commission produce a cost: benefit analysis. The UK also requests that the Commission consider alternative options, which deliver equivalent animal disease control safeguards.

6.2 The draft final report ‘Evaluation of the Community Animal Health Policy’ recommends that further assessment exploring technical and financial detail needs to be carried out before EID is introduced. The UK supports this recommendation.

6.3 A detailed Regulatory Impact Assessment has been carried out in England on the introduction of EID (Annex E). The costs are based on physical data collected in field trials by the Agricultural Development and Advisory Service UK Ltd (ADAS) at eleven commercial farms and an auction market (see Annex F, page 9 for scope).

6.4 The data from the trials combined with assumptions and data provided by the English sheep industry were constructed into a model to assess the financial impact of EID. The RIA compares the costs and benefits of the UK’s current tracing system against those of EID with and without the use of the slaughter derogation provided for at Article 4 of the Regulation.

6.5 Readers should note that the RIA is incomplete. It does not yet capture all of the costs to industry and the government. In particular, as there is currently no commercially available bolus extraction equipment this process has not been costed.
6.6 The total cost for the sheep industry in England to implement EID would be £44.25m (€61.95m). This figure is reduced to £34.43m (€48.20) if keepers were only to purchase EID readers when they keep more than 100 ewes (Annex E, paragraph 6.5.1.2 and page 85). So if there were to be no mandatory requirement for electronic devices to be read before insertion, the cost of EID to the sheep industry in England would be 21% lower.

6.7 Detailed assessments of costs to primary producers have not yet been carried out in Scotland, Wales and Northern Ireland. But, when UK figures are extrapolated from the English costs, taking into account differing structures of sheep industry in the remaining countries of the UK, then the total cost to the UK sheep industry is £90.12m (€126.13m) (See Table 2 for UK EID costs). This cost translates into a cost of £3.24 (€4.54) per ewe.

6.8 Typical annual farm costs for the introduction of electronic identification for representative upland and lowland farms are of the order of £2,383 (€3,336) and £1,621 (€2,269) per year respectively at 2006 prices (Annex E, section 6.6). The 2004/5 UK net income figures for LFA cattle and sheep farms is £13,400 (€18,760) and for cattle and sheep lowland farms is £5,400 (€7,560). The implementation costs are therefore high when compared to the net income for sheep keepers. The costs are proportionately higher for lowland keepers or keepers of small numbers of sheep, where the high fixed costs of equipment and support are high (Annex E, section 6.6.3.3).

<table>
<thead>
<tr>
<th></th>
<th>Current System</th>
<th>Full EID</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Farms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour</td>
<td>£4.5m</td>
<td>€ 6.3m</td>
</tr>
<tr>
<td>Maintenance</td>
<td>£0</td>
<td>€ 0</td>
</tr>
<tr>
<td>Equipment costs</td>
<td>£0</td>
<td>€ 0</td>
</tr>
<tr>
<td>Device Costs</td>
<td>£8.8m</td>
<td>€12.32m</td>
</tr>
<tr>
<td>Training Costs</td>
<td>£0</td>
<td>€ 0</td>
</tr>
<tr>
<td>Total Cost</td>
<td>£13.3m</td>
<td>€18.62m</td>
</tr>
<tr>
<td><strong>Markets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour</td>
<td>£105k</td>
<td>€147k</td>
</tr>
<tr>
<td>Maintenance</td>
<td>£0</td>
<td>€ 0</td>
</tr>
<tr>
<td>Equipment Costs</td>
<td>£0</td>
<td>€ 0</td>
</tr>
<tr>
<td>Device Costs</td>
<td>£0</td>
<td>€ 0</td>
</tr>
<tr>
<td>Training Costs</td>
<td>£0</td>
<td>€ 0</td>
</tr>
<tr>
<td></td>
<td>Total Cost</td>
<td>£105k</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>Abattoirs</td>
<td>Labour</td>
<td>£38k</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>£0</td>
</tr>
<tr>
<td></td>
<td>Equipment Costs</td>
<td>£0</td>
</tr>
<tr>
<td></td>
<td>Device Costs</td>
<td>£0</td>
</tr>
<tr>
<td></td>
<td>Training Costs</td>
<td>£0</td>
</tr>
<tr>
<td></td>
<td>Total Cost</td>
<td>£38k</td>
</tr>
<tr>
<td>TOTAL COST TO INDUSTRY</td>
<td></td>
<td>£13.5m</td>
</tr>
</tbody>
</table>

Note an exchange rate of £1 = €1.4 has been assumed.

Table 2: Summary of annual costs to the UK sheep industry for Current system and Full EID

6.9 Overall the cost of fully implementing EID represents an increase in £76.67m (€107.31m) over our current system. (See Table 3). The burden of implementation of EID in the UK will be born by the UK industry. Of the industry costs, 96% will be born by keepers.

<table>
<thead>
<tr>
<th>Option</th>
<th>Farms</th>
<th>Markets</th>
<th>Abattoirs</th>
<th>Total</th>
<th>Disease Control Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current System</td>
<td>£13.3m</td>
<td>€18.62m</td>
<td>£38k</td>
<td>£13.5m</td>
<td>85% of Full EID/EDT</td>
</tr>
<tr>
<td></td>
<td>€147k</td>
<td>€53k</td>
<td></td>
<td>€18.8m</td>
<td></td>
</tr>
<tr>
<td>Full EID</td>
<td>+£73.2m</td>
<td>+£2.63m</td>
<td>+£842k</td>
<td>+£76.67m</td>
<td>Up to 15% Increase</td>
</tr>
<tr>
<td></td>
<td>+€102.48m</td>
<td>+€3.65m</td>
<td>+€1.18m</td>
<td>+€107.31m</td>
<td></td>
</tr>
</tbody>
</table>

Note an exchange rate of £1 = €1.4 has been assumed

Table 3: Comparison of costs of Full EID to UK industry, above the current system.

ii) Benefits

Disease Control Benefits

6.10 In early 2003 the UK developed epidemiological and economic models that allowed analysis of the impact of different strategies on the control and management of foot-and-mouth disease (FMD). An extension of this work
has been carried out to explore the impact of policy options for EID as a disease control measure (see Annex E, paragraph 5.5.2).

6.11 The work suggests that introduction of a full electronic system could offer some improvement in controlling disease, including reductions in outbreak costs, infected premises and animals culled (see Annex E section 5.5.3 and table 1). The introduction of individual identification using a full electronic system could reduce costs of managing an outbreak of exotic disease over the current UK system by up to 15%. The maximum benefit would however only be realised where all data was transferred electronically.

6.12 The analysis (see Annex G section 7) showed that whilst the existing batch identification system in operation in Great Britain appears to provide the smallest reduction in disease control costs of the three solutions considered, the additional benefit achieved by an EID system was small. Thus, at worst, the combination of the existing standstill and batch recording system produced 85% of the achievable benefit. Therefore the main conclusion of the report is that the majority of disease control benefit can actually be achieved by the current batch tracing system with a 6-day standstill (figure 15 of Annex G). Furthermore, once the cost of EID is taken into account, the existing batch tagging and recording system produce a higher cost/benefit ratio than any system of EID.

6.13 The report (Annex G section 7 Annex) also suggested that the size of an outbreak is not significantly affected by the success or speed of movement tracing, once it reaches a reasonable level of tracing probability. This is consistent with previous findings, in that while widespread dissemination of disease via animal movements into uninfected areas can occur during the silent spread period, these events are much less likely to occur now as a result of the introduction of the six day movement standstill regime, and the banning of high risk activities such as market to market moves.

6.14 The UK trials did not address the benefits of EID for other endemic diseases, such as TSEs in sheep. However, the introduction of EID may indirectly benefit the surveillance of scrapie, by reducing costs and improving traceability of TSE cases detected by abattoir monitoring (see Annex E paragraph 5.3.9). This would be conditional to identification taking place at the time of genotyping and keepers using the most appropriate means of identification for TSE surveillance.

Industry benefits
6.15 There will be no direct benefit, other than the potential disease control savings detailed above, to those farmers who choose to do the bare minimum required by the Regulation. There may however be indirect management benefits. The level of benefit for those keepers that choose to go beyond the requirements of the Regulation in operating EID could be significant. Improved management systems could deliver:

• improved slaughter and breeding selection;
• better profitability;
• improved flock health (although this would be a longer term benefit);
• greater understanding by vets of clients needs;
• more effective use of veterinary medicines;
• potential to improve marketing;
• waste disposal cost savings.

6.16 Discussions with stakeholders indicate that very few keepers in the UK will choose to record more information than that required by the Regulation. If this is the case in practice the majority of UK keepers will gain no benefit from the introduction of EID, only significant increases in costs.

Other disadvantages

6.17 The UK industry is concerned that the introduction of EID will have a negative impact on the competitiveness of UK exports of lamb. UK sheep keepers would potentially be disadvantaged in exporting sheep and sheepmeat. They will have higher production costs because of EID and will be at an economic disadvantage when competing with those Member States that do not have to EID their sheep. This does not make for a level playing field.

6.18 The Commission is committed to a Better Regulation agenda. It is clear from the UK evidence that the objectives to be achieved through EID could be achieved in a more cost-effective way through an alternative regulatory mechanism. In the light of these findings the UK requests that the Commission reconsiders the feasibility of introducing electronic identification and individual recording.

7. Technical Issues

7.1 No identifier, reader or antenna has yet been tested and approved against the standards set out by the JRC Guidelines. We do not yet know if any are capable of meeting the requirements. These requirements go considerably further than current ISO/ICAR conformance tests.

7.2 While we recognise that EID can work under controlled conditions with experienced operatives, we have yet to see an ‘off the shelf’ RFID/farm management system that can simply be ‘plugged in’ and operated by farmers – whose IT skill levels vary. A great deal of development work remains to be done before RFID and computer systems are integrated.

7.3 The issues identified at paragraphs 5.3 to 5.9 above are also technical issues still to be resolved.
Work since the UK trials

7.4 The UK is working with JRC to isolate, identify and resolve issues highlighted in market and abattoir environments. Between 26-29 June JRC carried out demonstrations of EID equipment at farms and a market in England. The purpose of the visit was to demonstrate a full EID system. However, the main findings of the visit were that:

- Devices and/or equipment performed poorly when reading and recording both HDX and FDX-B technology and performed particularly badly when reading FDX-B technology;
- Devices and/or equipment performed poorly when incorporated with metal farm and market infrastructure;
- The system failed to work first time in any of the tests and required continuous fine-tuning from the support team.

7.5 The overall conclusion from the visit was that JRC were unable to demonstrate a fully workable ‘off the shelf’ EID system suitable for UK farming conditions. We very much value the collaborative approach being taken with JRC and are working closely with them to develop a system that is workable. The JRC is now developing plans with the UK for further collaborative work to determine what is preventing effective use of RFID in market and abattoir environments in particular.

Technical guidelines

7.6 The Regulation also provides for the Commission to come forward with technical guidelines for the implementation of EID. Final version of Part 1 and Part 2 of the technical guidelines were distributed at Scofca on 18 July. It was necessary for full and detailed consultation to take place on these documents and JRC are to be congratulated on the content of the final report. However, the delay in reaching a common position on parts 1 and 2 has meant that a number of key decisions, for example numbering systems, have been delayed. Similarly, testing procedures, especially setting up National Reference laboratories and networks, will take some time to develop.

7.7 This delay has contributed to a shortage of companies engaging in EID technology. In Scotland, only 2 companies out of 21 who expressed an initial interest actually took part in the trial (see Annex C).

7.8 Part 3 of the guidelines covering informatics is still to be produced. This is worrying as it may be too late for most Member States to use within IT systems that are already being prepared, or have already been prepared. The final draft report ‘Evaluation of the Community Animal Health Policy’ also recognises that adopting integrated electronic systems for EU procedures could provide advantages.
8. Conclusions

8.1 We have carried out a considerable amount of work in the UK to understand the impact of individual identification via electronic means on the UK sheep industry. It is very disappointing that trials which commenced with an industry willing to be convinced of the benefits of EID, ended negatively, with those involved perceiving no benefit from EID. This is as a direct result of the failings of the technology demonstrated during the UK trials. There are many obstacles to overcome which should not be underestimated (see paragraphs 5.3 to 5.4). In particular, there is not yet a workable EID system, which is suitable for use in northern European Member States.

8.2 The costs as illustrated in the English RIA and projected on a UK basis clearly show that costs outweigh any benefits for the UK industry. The implementation costs of EID are high in comparison with the net income figures (paragraph 6.8) for representative UK farm businesses. The cost of EID in lowland sheep farms will represent nearly 30% of their net income.

8.3 In light of the evidence submitted (and especially Annex G) the Commission is requested to consider whether the regulatory requirement for individual identification and recording of sheep and goat movements is the most appropriate way to secure the EU’s disease control and traceability objectives.

8.5 The UK does not believe that the implementation of EID is achievable within the timescale originally set by the Council. Voluntary EID could still be introduced from 2008 and the UK believes this would allow those Member States who wish to proceed to do so. This would allow further technological developments to take place, which will lead to a smoother passage for the implementation of EID in northern Europe the future should the Commission’s further assessment conclude that this is indeed the appropriate way forward.