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IMPACT ASSESSMENT

Accompanying the document

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

amending Regulation (EC) No 1760/2000) as regards electronic identification of bovine aniemals and deleting the provisions on voluntary and beef labelling

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IMPACT ASSESSMENT

COMMISSION STAFF WORKING DOCUMENT

Electronic identification of bovine animals and reducing administrative burden in animal passports, holding registers and beef labelling

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revision of existing legislation (Regulation (EC) No 1760/2000) with view to reducing administrative burden and introducing electronic identification

1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

This legislative initiative is part of the Commission Animal Health Strategy (2007-2013)[1]. Stakeholders and other Commission services concerned have been closely involved in the preparatory process from an early stage.

The Impact Assessment (IA) follows the structure given in the Commission's IA Guidelines SEC (2009)92 of 15 January 2009. It aims to consider the environmental, economic, social and other aspects of policies on bovine animal identification and beef labelling in an integrated and proportionate way.

An inter-service group was established. The group was led by DG SANCO with the participation of others Directorate Generals and Services: Secretariat-General, DG AGRI, INFSO, ENTR, JRC, OLAF, TRADE, MARKT, COMP, ENV, BUDG. The inter-service group met once. Parts of this IA are based on the results of external studies. DG SANCO had commissioned the Food Chain Evaluation Consortium (FCEC) to carry out an analysis in the context of the ongoing Evaluation Framework Contract for Lot 3 (Food Chain). The *Study on the introduction of electronic identification (EID) as official method to identify bovine animals within the EU* [2] was conducted on behalf of FCEC by Arcadia International with the support of Van Dijk Management Consultants and is publicly available. This study contained the collection of stakeholder views and also economic calculations.

In addition to that, elements from the report of the *EU project on baseline measurement and reduction of administrative costs*[3], which was carried out by a Consortium consisting of the companies Capgemini, Deloitte and Ramboll Management, are included. These results are based on a wide consultation carried out by the contractors.

The Communication from the Commission to the Council and the European Parliament (COM (2009)544) on an "Action Programme for Reducing Administrative Burdens in the

1 http://ec.europa.eu/food/animal/diseases/strategy/index_en.htm
2 http://ec.europa.eu/food/animal/identification/bovine/docs/EID_Bovine_FinalReport_04062009_en.pdf
3 http://ec.europa.eu/enterprise/admin-burdens-reduction/action_program_en.htm

EU"[4] listed the bovine identification procedure and voluntary beef labelling as "*information obligations with special importance in terms of the burdens they impose on businesses"*.

Furthermore, the "High Level Group of Independent Stakeholders on Administrative Burdens" (Stoiber Group)[5] put forward the suggestion "*to repeal the notification requirement with regards to the use of voluntary labelling indications for beef* "[6].

In addition to the consultations carried out by the contractors several stakeholder consultations took place in the course of finalisation of this IA. The table 1 in the Annex IV summarises the consultations carried out with involved stakeholders, Member States and Commission services. In Annex VII, short summaries and minutes of the different consultations are included.

Opinion of the Impact Assessment Board

The draft Impact Assessment (IA) report was presented to the IA Board on the 26th January 2011.

On 31st January the IA board submitted its opinion containing several recommendations and requested to receive a revised draft of the IA report.

The draft report was modified following the Board's recommendations and re-submitted to the Board on the 11th April 2011.

On 28th of April, the Board noted that the IA report now provides clearer information about the problem being addressed, the practical implications of the various options and how the impact varies by stakeholder group. The Board also referred to certain aspects of the draft IA which should be still further improved. The revised draft IA report addresses elements mentioned by the board like providing a summary table listing information on the economic impacts of the estimated cost of all tasks for the baseline scenario and the mandatory option per task and for all actors, in which the total cost in excess of the baseline scenario can be retrieved. The summary table reflects the variations depending on whether electronic ear-tags and boluses are used. The requested table has been added to the "comparison of options". The table has been also added to the executive summary (which has been extended) in order to better explain the costs of each option. Table 3 of the draft IA has been modified accordingly in order to further clarify that option 2A entails differing tagging approaches across the Union.
Finally, presentation of annexed tables has been reviewed and the sources of information for some of the tables contained in the draft IA have been indicated when necessary.

[4] http://www.cc.cec/sg_vista/cgi-bin/repository/getdoc/COMM_PDF_COM_2009_0544_F_EN_ANNEXE.pdf

[5] http://ec.europa.eu/enterprise/policies/better-regulation/administrative-burdens/high-level-group/index_en.htm

[6] http://ec.europa.eu/enterprise/policies/better-regulation/files/hlg_opinion_agriculture_050309_en.pdf

2. INTRODUCTION

2.1 NEED TO ADAPT THE EU SYSTEM FOR IDENTIFICATION AND REGISTRATION OF BOVINE ANIMALS-BACKGROUND

In the light of the Bovine Spongiform Encephalopathy (BSE) crisis Community rules on the identification and traceability of bovine animals were re-enforced in 1997. Regulation (EC) No 820/97 of the European Parliament and of the Council established a regime of individual traceability of cattle by means of:

(1) Individual animal identification of animals with two eartags;
(2) Holding register on each holding (e.g. farm, market, slaughterhouse)
(3) Individual passport for each animal containing data on all movements
(4) Reporting all movements to a national database that is able to quickly trace animals and identify cohorts in the case of disease.

These principles were upheld later in Regulation (EC) No 1760/2000 of the European Parliament and the Council. The ultimate goal was to re-establish consumer confidence in beef and beef products through transparency and traceability of bovine animals and the respective bovine food products. Also, to localise and trace animals for veterinary purposes, which is of crucial importance for the control of infectious diseases. With a view to achieve these objectives, the regime can be considered nowadays to be a success (BSE has been put under control in the EU and consumer confidence re-gained[7]), demonstrating its effectiveness and efficiency in providing important information to ensure the control of several infectious diseases (e.g. Foot and Mouth Disease, Bluetongue) and to ensure traceability of bovine food products.

However, when the current rules for bovine identification were adopted in 1997, electronic identification (EID) was not sufficiently developed from the technical point of view as to be applied at that moment for cattle. Electronic identification systems based on radio frequency identification (RFID) have considerably developed during the last 10 years. EID based on RFID introduced among others, a faster and more accurate reading of individual animal codes directly into data processing systems, saving labour costs for manual reading but at the same time, increasing equipment costs. Thus, the existing legislation on bovine identification does not reflect these latest technological developments.

The major aim of this report is to identify if and how an EU legal framework should be established for bovine EID, presenting the advantages and disadvantages of the several options and comparing those against the current. The use of electronic identifiers could help to reduce the administrative burden and paper-work, for instance when the holding register is kept in a computerised form (which is the case for a growing percentage of farms), by using automatic reading and by using automatic entry into the register. In addition, a faster and more reliable system will allow among others a faster and higher reading accuracy than classical ear-tags, easing the procedure to report animal movements to the central data base and therefore improving better and faster traceability of infected animals and/or infected food.

Based on the EID current technological advances, several EU Member States have decided on a voluntary basis, to start to implement Bovine EID. Experience outside the EU shows also an

[7] COM (2005) 322 Final-TSE Road Map: http://ec.europa.eu/food/food/biosafety/tse_bse/docs/roadmap_en.pdf

increasing use of bovine EID (see 3.1.1 current and preferable situation). In addition, EID has been already introduced in the EU for several animal species (for most of them as mandatory)[8].

Regulation (EC) No 1760/2000 (which establishes a system for the identification and registration of bovine animals and labelling of beef and beef products -including voluntary labelling- and introduces elements like “double ear tag”, “holding register”, “cattle passport” and “national computerised database”) was listed as "*information obligations with special importance in terms of the burdens they impose on businesses"* under the Communication from the Commission to the Council and the European Parliament (COM (2009)544) on an "Action Programme for Reducing Administrative Burdens in the EU"[9].

The Commission Action Plan of the Animal Health Strategy[10] foresees to simplify information obligations (e.g. holding registers, passports) in the course of introduction of bovine EID. A regulatory proposal to be adopted by the ordinary legislative procedure is planned in the Commission's Agenda Planning for the first semester of 2011.

A detailed list containing information on several research projects supporting the need for this proposal is available in Annex II.

2.2 NEED TO ADAPT THE EU SYSTEM FOR BEEF VOLUNTARY LABELLING-BACKGROUND

Regulation (EC) No 820/97 established a system labelling of beef and beef products, which was further strengthened by Regulation (EC) No 1760/2000.
It concerns:

(1) The compulsory indication of the origin of the cattle (born/fattened/slaughtered) from which the beef originated;
(2) Compulsory references to the identification code number of the slaughtered animal, and the establishments where the meat has been processed (slaughterhouse and meat cutting plant)
(3) A formal approval procedure including a notification requirement for any additional labelling information other than compulsory ones under (1) and (2)

Already in 2004 the Commission had submitted a report to the Council and the European Parliament on the provisions on beef labelling laid down in Regulation (EC) No 1760/2000[11] that pointed out deficiencies of the voluntary beef labelling scheme. Those were that the system is not applied in a uniform way in all Member States *(e.g. the administrative practice differs considerably between the Member States*) and that all indications included in the label (including those that are not related to origin, traceability or quality characteristics of the meat) are subject to a formal approval procedure by the competent authority.

The Commission Staff Working Document on Simplification of the CAP[12] points out the suggestion put forward by the “High Level Group of Independent Stakeholders on Administrative Burdens” (Stoiber Group) to repeal the notification requirement with regard to the use of additional voluntary labelling indications for beef.[13]. The suggestion was based on

[8]Further information concerning the situation of EID in the EU for animal species other than bovine is presented in **Annex III.**
[9]http://www.cc.cec/sg_vista/cgi-bin/repository/getdoc/COMM_PDF_COM_2009_0544_F_EN_ANNEXE.pdf
[10] Reference COM (2007) 539 final
[11] COM (2004) 316 final
[12] SEC(2009)1601 of 16/11/2009 http://ec.europa.eu/agriculture/simplification/sec2009_1601_en.pdf
[13] http://ec.europa.eu/enterprise/policies/better-regulation/files/hlg_opinion_agriculture_050309_en.pdf, page 7.

the "EU project on baseline measurement and reduction of administrative costs"[14]. Annex X contains an excerpt from this project with a calculated administrative burden reduction and detailed recommendations to repeal the provisions regarding the voluntary labelling of beef. The report mentions 53 000 applications for approval for the period covered, 75% of the related costs are "business as usual"(costs which would arise anyhow) but 25% are attributed to the legal information obligations. The expected administrative burden reduction was estimated to be 362 000 € in total per year.

2.3 CONTEXT

The Action Plan of the **Animal Health Strategy** (AHS) proposes considering EID for bovine animals as a possible improvement to the existing EU system of identification and registration (I&R). EID could contribute to one of the AHS's aims which is "prevention is better than cure" by supporting several goals like ensuring a high level of public health and food safety, promoting animal health and improving economic growth, cohesion and competitiveness.

Bovine EID is expected to contribute to some key objectives contained in the **Europe 2020 strategy,** will re-enforce EU policies supporting **Small and Medium Enterprises** (SMEs), and will be in line with other major EU policies like the external dimension of **Global Europe** and the EU **Market Access Strategy (MAS).**

Bovine EID ensures traceability**. Traceability**[15] means the ability to track any food, feed, food-producing animal or substance (including ingredient) that will be used for consumption, through all stages of production, processing and distribution (from the farm to the fork). **Bovine identification**[16] is provided by two ear tags (in this report referred as "conventional ear-tags"). The system of identification has been approved by the competent authority based on Regulation (EC) No 1760/2000 and Regulation (EC) No 911/2004 containing information which is unique for every bovine (individual number). The objectives of the current system of traceability are **the localisation and tracing of animals for veterinary purposes** (leading to the effective control and eradication of animal diseases, particularly BSE and FMD), **the traceability of beef for public health reasons**; and t**o assist with the management and supervision of certain Community aid schemes** in the field of agriculture (such as livestock premiums as part of the Common Agricultural Policy (CAP) subsidy schemes).

In order to understand the overall context, an EU overview of the bovine livestock, number of markets, assembly centers and slaughterhouses is available in **Annex XVI**. Information on the *access to the internet by EU farmers* is available in **Annex XI.** The latter are important elements in order to understand the context for this proposal.

3. IDENTIFYING THE PROBLEM

3.1 Overview of the problem

The main problems can be summarised as follows:

a) Although the current system of traceability is perceived as being efficient by most of the stakeholders and answers to the actual policy objectives, it can be improved in terms of accuracy and speed in order to reduce identification errors and to reduce delays necessary to manage disease outbreak crises when they occur

[14] http://ec.europa.eu/enterprise/policies/betteregulation/documents/files/abs_development_reduction_recommendations_en.pdf

[15] A more detailed explanation is provided **in Annex XVIII.**

[16] A more detailed explanation is provided **in Annex XVIII**

b) Excessive administrative burden caused by requirements related to written notifications for keepers (farmers and other stakeholders). Currently, all notifications (births, deaths, animal movements) must be manually registered and converted into an electronic format to the computerised database

c) The lack of legal coverage for EID does not help to ensure that bovine electronic transponders and readers placed on the EU market comply with minimum quality as well as information to be contained. This situation may lead in the future to different technical standards being implemented by stakeholders or by EU Member States, putting at risk the functioning of the single market for the bovine sector and resulting in an adverse economic impact for some economic operators

d) In the case of voluntary beef labelling, the main problem is excessive administrative burden

The above-mentioned elements are presented in detail below:

a) and b) Basis for improvement for the current system of bovine traceability and identification and the problems related to excessive administrative burden

One of the main problems relates to the **excessive administrative burden**[17] caused by requirements related to written notifications for keepers (farmers and other stakeholders). Currently, all notifications (births, deaths, animal movements) must be **manually registered** and converted into an electronic format to be introduced into the computerised **database**. For instance, the holding register shall contain substantive information on each animal.[18] The Food and Veterinary Office (FVO) Overview Report 9505/2003[19] highlighted some operational deficiencies in relation to the current system for identification and traceability, most importantly:

- holding registers not up-to-date with missing paper and documentation as well as non organised data and documents
- delays in registering the movements in the national databases and delay or absence of reporting events (births, movements, death) to the CDB (Central Data Base)
- additional weaknesses in particular in the area of recording animal movements through the markets & assembly centres involved.

It was also noted that the current system is till based on a lot of paperwork, with obvious consequences for human mistake and even fraud. This has been subject of concern to farmers and other animal keepers in terms of **labour costs and administrative implications,** as well as to **reductions of the Single Direct Payment and other CAP (Common Agriculture Policy) schemes** in case of negligence when performing activities like identifying, registering and/or notifying animal movements.

On the basis of the above-mentioned elements it has to be noted that although the current identification and traceability regulation is perceived as being efficient by most of the stakeholders and answers to the actual policy objectives, it can be improved mainly in terms

[17] The Communication from the Commission to the Council and the European Parliament (COM (2009)544) on an "Action Programme for Reducing Administrative Burdens in the EU" listed the bovine identification procedure and voluntary beef labelling as "*information obligations with special importance in terms of the burdens they impose on businesses"*.

[18] The following information should be kept at the holding register: identification code, date of birth, sex, breed or colour of coat, the date of death of the animal on the holding, or in case of departure the identification code of the holding of destination and the date of departure, and in case of arrival identification code of holding of dispatch and the date of arrival). Controls carried out by the CA must be also identified in the register.

[19] DG(SANCO)/9505/2003: Overview report of a series of missions carried out in all members states during 2002 in order to evaluate the operation of controls over the traceability and labelling of beef and minced beef

of accuracy and speed by reducing identification errors and by reducing time for notification and up-date of the central database. Gaining on accuracy and speed will lead to a real-time system necessary to manage disease outbreak crises when occur.

c) The need for EU harmonisation

The RFID technique offers a wide range of *options in addition to those set up by ISO standards* and depending on the option chosen, it would meet specific operational considerations of performance (and cost). The range differs mainly on the transmission frequency (**Low Frequency (LF): < 135kHz, Radio frequency (RF): 13,56 MHz, Ultra high Frequency (UHF): 862 – 915 MHz, Microwave: 2,45 GHz and 5,8 GHz)**. The possibilities of using LF, RF and UHF for **bovine animal identification** were discussed with RFID manufacturers (supplying LF, RF and UHF products) and RFID experts were consulted at the Study on the introduction of EID. It has to be noted that d*epending on the RFID frequencies*[20] *to be used for animal identification different disadvantages may occur* (e.g.: interferences, collisions, situation where none of the tags can be read, poor reading distance, humid environment -e.g. wet manure sticking to the ear tag transponder-, poor reading, etc…). A similar situation applies also for electronic readers[21], where it is important to note that similar shortcomings have been detected, affecting the performance of this type of readers. Finally, the quality assurance of transponders (conformity to the ISO 11784 and ISO 11785 standards and performance criteria, tested conform to ISO 24631-3) ***are considered as being crucial*** for achieving good reading performance.
This wide range of options for RFID may lead in the future to different technical standards being implemented by stakeholders or by EU Member States. For instance, if RFID technologies used in a given EU Member State are not the ones selected in another EU Member State, electronic reading and exchange of data would not be possible in case of bovine movements from one EU Member State to another and all benefits of EID systems would be lost. This could lead to putting at risk the functioning of the single market in particular for intra-EU trade movements of live bovines (e.g. readers at markets or slaughterhouses not being able to process the information electronically depending on the EU Member State where the cattle is coming from) and could result in an adverse economic impact for some EU economic operators. Based on the experienced gained with EID in other animal species (e.g. sheep), there is a need to ensure that bovine electronic transponders and readers placed on the EU market comply with minimum technical characteristics and quality as well as information to be contained.

d) Concerning *beef voluntary labelling*, the main problems are:

- Excessive **labour costs and administrative burden**
- Lack of uniform way of implementation in all Member States
- Need of a formal approval procedure by the competent authority of any indication on a beef label other than the compulsory ones
- Potential for conflicts with other legislation on labelling of foodstuffs

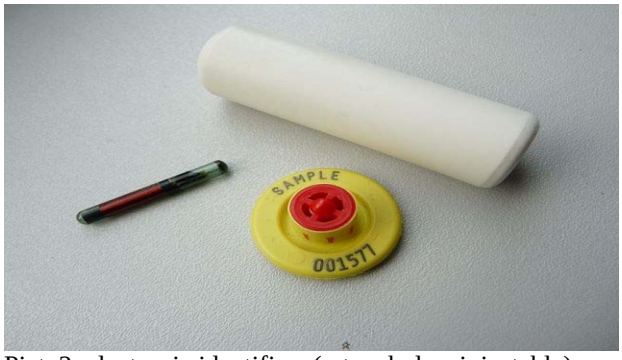
Traceability of beef products is guaranteed via the compulsory labelling elements. This includes in particular the origin of beef (born/fattened/slaughtered). If market operators want to put any additional information on the label (irrespective if related to the origin or not) this

[20] Detailed information on the benefits and disadvantages of every frequency are available in Annex XV
[21] More detailed information on the characteristics and functioning of every type of reader is available in Annex XIII

requires official authorisation by the competent authority for each individual information on the label. The increasing interest of market operators to label aspects of product quality (e.g. highlighting the breed, the feeding system, the region of production) has led to an inflation of voluntary beef labels in several Member States. A horizontal EU legislation on labelling of foodstuffs has been established in the meantime by Directive 2000/13/EC and was applied also in the meat sector with the exception of beef because of the existing specific Regulation 1760/2000. To dismantle the voluntary beef labelling in Regulation 1760/2000 would not only simplify administrative procedures for beef but it will also align beef with meat from other animal species. The scope of beef voluntary labelling as laid down in Article 16(1) of Regulation (EC) N° 1760/2000 covers any indication on a beef label, irrespective of their nature and with the only exception of those included in Articles 13-15 (compulsory labelling).

3.2 Electronic Identification

Radio Frequency Identification (RFID)[22] is a technology that uses communication via radio waves to exchange data between a reader and an electronic tag. It is based upon passive tags (without a battery), called transponders, wearing an unique identification number. One of the most interesting aspects of RFID is that **is capable to transform physical information into electronic (digitalised) information based on the e-reading of the electronic identifier and also capable to fully use these e-data for recording and transfer.** Introduction of EID can help to reduce typing mistakes as it allows a more accurate reading than with classical ear tags, to better keep holding registers up-to-date and to better secure registration of movements within the 7 days period as required by the EU legislation.



Pict. 2: electronic identifiers (e-tag, bolus, injectable)

Concerning means of electronic identification, ear tag, ruminal bolus and injectable are the main types of transponders that are used for animal RFID[23]:

- **Ear tag** transponders are plastic covered transponders that have to be fixed to the ear of the animal by using a onetime use locking mechanism
- **Boluses are** transponders placed into a high specific gravity container able to be orally administered to ruminants, which remain permanently in the fore stomach.
- **Injectable** transponders are small sized transponders that are encapsulated in a biocompatible and non porous material, e.g. glass and which have to be injected into an animal's body. Others transponders can be used imbibed in a mark on the pastern, but are of limited use.

[22] A detailed description of the state of play of the current system of bovine identification is given in **Annex V** and a description of technical standards for conventional ear tags is available in **Annex XIIb**

[23]More detailed information on the characteristics of electronic transponders are available in Annex XII

3.2.1 Current and preferable situation

Since 1992 EU animal health legislation contains rules on official identification of bovines with conventional eartags. In the meantime radio frequency based system have been developed and applied as farm management tools but also as official means of identification (either mandatory or voluntary) in various species and countries under certain circumstances. There are different technologies available to electronically identify animals and they differ mainly in the transmission frequency and the way of application of the identifier.

Several actors, including Member States, have started to introduce EID for bovines at national level (e.g. DK, DE, IT, CY, ES) mainly on a voluntary basis going beyond of EU legal requirements. Also, some third countries have established EID rules for bovine animals (e.g. Australia, USA, Canada, Botswana and some South American countries[24]).

At international level the ISO standards 11784 and 11785 have been established for EID and already included in the EU legal framework for several species apart from bovine (pet, equidae, sheep and goats[25]). So far, there is a lack of EU legal coverage in relation to harmonisation of technical standards for bovine EID.

Dairy and beef industry have started already to use different types of electronic transponders on a voluntary basis[26] since the technology is proven to be a useful tool for improving farm management and on-farm automation. However, the technology currently used at dairy and beef industry may not necessarily be compatible to the ISO 11784 and ISO 11785 standards.

EID is being driven by market forces and it will continue to do so at short term. Even if this is not causing practical problems yet, inter operational difficulties are probable to occur in future due to the lack of EU harmonisation in relation to technical standards or EID. ***Therefore the preferable situation would be to provide EU legal coverage aiming to ensure a minimum level of harmonisation in the EU for the use of technical standards for bovine EID.***

3.2.2 Impacts of introducing EID as official means of identification

Implementing EID as official means of identification is expected to bring associated costs (reading equipment, electronic identifiers, applicators, local IT-systems) and benefits (reduction of labour costs, administrative burden) at the same time, depending on the stakeholder. For instances, introduction of EID can help to reduce recording typing mistakes as it allows a more accurate reading than with classical ear tags, to keep holding registers up-to-date, to secure registration of movements within the 7 days period as required by the EU legislation. The main economic advantage of EID is based on the e-reading of the electronic identifier to transform physical information to electronic (digitalised) information at very early stage (when tagging) and then to fully use these e-data for recording and transfer.

The study on the introduction of EID considered that the quality of the electronic ear tag may be higher compared to the conventional ear tags, leading to a slight reduction of the loss rate, even if today there is no solid evidence in that respect. An analysis of these cost and benefits along the whole supply chain is included in **Annex VI**.

[24] More information is available in **Annex III b**
[25] More information is available in **Annex III a**
[26] See Annex XXI for more detailed information

3.3. Simplification of animal passports, holding registers and beef voluntary labelling

3.3.1 Current situation

Regulation (EC) No 820/97 established the system of paper based passports and holding registers where individual data on the movements of animals are recorded. In parallel, Member States established computerised databases where the same information is to be recorded in an electronic IT format. These databases became fully operational from 2000 onwards and have further developed continuously allowing more and more animal keepers to notify births, deaths and movements of animals online via internet and having full access to their data. Keeping in addition a written holding register is therefore redundant for these keepers without necessarily improving traceability. The same goes for paper based passports accompanying the animals[27].

Regulation 820/97 and later on 1760/2000 established strict rules on the labelling of beef. This includes in particular the origin of beef (born/fattened/slaughtered). If market operators want to put any additional information on the label (irrespective if related to the origin or not) this requires official authorisation by the competent authority for each individual label. The increasing interest of market operators to label aspects of product quality (e.g. highlighting the breed, the feeding system, the region of production) has led to an inflation of voluntary beef labels in several Member States. A horizontal EU legislation on labelling of foodstuffs has been established in the meantime by Directive 2000/13/EC and was applied also in the meat sector with the exception of beef because of the existing specific Regulation 1760/2000. To abolish the voluntary beef labelling in Regulation 1760/2000 would not only simplify administrative procedures for beef but also align it with meat from other species.

The EU project on *baseline measurement and reduction of administrative costs* and various stakeholders proposed that the system of passports, holding registers and beef voluntary labelling could be simplified. In fact Regulation (EC) No 1760/2000 was highlighted as one of the EU legislative acts which would imply considerable unnecessary administrative burden. Both DG SANCO and DG AGRI highlighted in this project the potential for reducing the administrative costs of paper-based passports and holding registers and the potential for reducing administrative burden in the area of voluntary beef labelling.

3.3.2 Consequences of changes in the Regulation for animal passports, holding registers and central data-base

When transferring the read ID to the competent authority in case of manual reading, it is assumed that each ID needs to be re-copied to e.g. a document that can then be faxed or that it is typed into the corresponding fields on a web interface. The requirements for passports and holding registers can be simplified under the condition that the relevant information is available in the national databases and can be easily retrieved[28].

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[27] A more detailed description of the state of play of the system of passports, holding registers and beef voluntary labelling is given in **Annex V.**

[28] Animal keepers are using increasingly the internet to notify births, deaths and movements to the central database. A separate holding register on farm would not be necessary if animal keepers keep the central database with their timely online notifications up to date.

The abolition of *passports* also in intra-EU trade would require a system of electronic exchange of information between national databases. Such system is in preparation but not yet established. If such system would become operational, it could replace the system of paper passports completely, implying an additional burden reduction[29].

Central databases in EU MS are performing according to the requirements, although shortcomings and delays may occur due to the fact that information on animal movement and registration is to be done manually. This proposal does not imply major consequences on the functioning of the central database (CDB), apart from improving its performance in relation to faster and more accurate traceability.

Commission Regulation (EC) No 911/2004 lists detailed rules on the content of the *holding register* that shall contain up to date information on each animal[30]. Holding registers not properly maintained were highlighted as one of the operational difficulties by a survey carried out by the Commission[31]. The use of electronic identifiers may improve this situation if the holding register is kept in a computerised form leading to less paper work and less paper loss[32]. The main benefits are not coming from electronic identification per se but from the fact that EID is *linked to the e-reading.* These two elements are inter-related in the sense that electronic identification would be an incentive to move to e-reading and management of holding registers in a simple database format (e.g. excel). This can already happen with the current system if the farmer has acumen for computer work or an economic reason for using computers.

3.3.3 Consequences of changes in the Regulation for voluntary beef labelling if current provisions on voluntary beef labelling are abolished

Traceability of beef products remains guaranteed via the compulsory labelling elements. Existing approved voluntary labels would continue to apply and fall under the horizontal labelling rules of Council Directive 2000/13 on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs. Also existing voluntary beef labels that were approved under Regulation (EC) No 1760/2000 could continue to be in place. However, the ex-ante approval and the obligation to support voluntary labels with ad-hoc specifications, controls and sanctions from organisations, would be abolished. In terms of information to consumers on beef specificities through certification schemes, the initiative would be left to the public (at national or regional level) and private sectors. Following the adoption of the Quality Package[33], EU best practice guidelines for voluntary certification schemes for agricultural products and foodstuffs (C (2010) 8822) are available for operators of public and private certification schemes. In the future, new 'optional quality terms' may also be defined. This possibility is conceivable following the proposal for a Regulation of the European Parliament and of the Council on agricultural product quality schemes (COM (2010)733). This light-administrative-burden labelling tool, which would not require a certification but only self-declaration from the user, would allow informing the consumers on beef specificities in a less bureaucratic way than with the current beef voluntary labelling.

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[29] With this aim, the Commission launched in 2009 an internal IT pilot project "Bovine ID exchange" aiming to develop a web-based exchange of cattle passports between EU MS electronically.

[30] See footnote 17

[31] Food and Veterinary Office (FVO) Overview Report 9505/2003– highlighted some operational deficiencies in relation to the current system for identification and traceability. See also point 3 of this report *"basis for improvement"*

[32] When holding registers are kept under electronic format, the data flow to slaughterhouses, through markets & assembly centres would be faster and more accurate.

[33] http://ec.europa.eu/agriculture/quality/policy/quality-package-2010/index_en.htm

3.4. Who is affected by the problem and to what extent?

In **Annex VIII** there is an overview given of all concerned areas which could be affected by legislative changes in relation to animal identification, animal passports and holding registers. The most affected parties may vary depending on whether they are primary producers (livestock keepers), or other economic operators of the food chain (processing, slaughterhouses, transport and retail) **as detailed in Annex VIII. The position of major stakeholders** in relation to bovine EID is available in **Annex VII**. As a summary, some stakeholders expressed support for the voluntary option (OPTION 2) and some other for the mandatory option (OPTION 3) –*see chapter 5 and 6 of this report*- and expressed the need to harmonise readers with other species (from a technical point of view) and that the advantages to move into the new system should be explicit.

3.5. How would the situation evolve without a change in policy?

The obligations contained in the current Regulation (EC) No 1760/2000 that establishes a system for the identification and registration of bovine animals are considered by a large majority of the stakeholders and the CAs as being efficient in fulfilling objectives of individual traceability, **but that improvements could be made.** Keeping the current situation as it is, it would result in unnecessary burden for economic operators as well as additional administrative costs. Without a change in the current Regulation, there will be a lack of EU harmonisation in terms of technical characteristics, quality standards as well as information to be included in the electronic identifiers. As a consequence, EU Member States would likely start developing national technical standards and this may adversely affect the functioning of the single market and to some economic operators.
Concerning beef voluntary labelling, the current system does not seem to have worked efficiently. By keeping the current situation, Member States would continue to apply different national evaluation and approval procedures. The rigid scope of the Regulation would formally require official approval of all indications on beef labels other than the compulsory ones. This creates administrative and financial burden to all operators.

3.6 Does the EU have a right to act?

The aim is to amend the current legislation, Regulation (EC) No 1760/2000, which is based on Articles 37 TEC (current 43 TFEU) and 152 TEC (current 168 TFEU). Therefore, the legal basis for the EU to act already exists. Identification of animals and tracing of their movements are of crucial importance for the control of infectious animal diseases. Moreover, in the Animal Health Strategy (2007-2013) already under Pillar 3 (Prevention, surveillance and preparedness), identification and tracing is one of the areas of activity. No option described in this Impact Assessment conflicts with the EU Charter of Fundamental Rights.

4. OBJECTIVES

The overall **general objectives** of this proposal are the following:

- **To support competitiveness of the sector;**
- To **reduce administrative burden and simplify procedures** in relation to animal passports and holding registers
- To contribute to better animal and public health via a more accurate an faster system for bovine **traceability**

4.1 Electronic Identification

- The objective is to review the Regulation on bovine identification in order to:

- Contribute to the Animal Health Strategy (2007-2013), by supporting goal 2 (improve economic growth/cohesion/competitiveness)
- To encourage the harmonised use of most **advanced efficient technology** safeguarding the economic **growth/cohesion/competitiveness** of the sector and to foster the single market
- To contribute to a more accurate and faster system **of traceability**

- In order to achieve the general objectives, the following **specific objective** has been established:

- To include the latest most efficient technology in the field of animal identification with view to maintain traceability and to allow for the integration of advanced farm and animal management tools while creating the possibility to reduce administrative burden

- The **operational objective is**:

- providing legal coverage for EID as an official means of identifications as well as other provisions for reader equipment. In relation to technical standards, it is not the intention to go beyond ISO international standards.

4.1.2 Animal passports and holding registers

- The **general objective** is to review the Regulation on Bovine identification in order to:

- Contribute to the Animal Health Strategy (2007-2013), by supporting goal 2 (improve economic growth/cohesion/competitiveness)

- The following **specific objectives** have been established:

- To simplify the rules regarding holding registers and animal passports without compromising traceability
- To reduce the administrative costs concerning animal passports and holding registers

- The **operational objectives** are:

- To make paper based holding registers optional when the information can also be accessed in the Member States CDBs
- To establish the general rule that Member States can make animal passports optional for national movements under the condition of a CDB is established;
- To establish conditions under which animal passports could be abolished in Intra-EU trade once the CDB are connected electronically.

4.2 Beef voluntary labelling

- The general **objective** is:

- To reduce unnecessary administrative burden concerning beef labelling

- The **specific objectives** are:

- To simplify the beef voluntary labelling system and aligning it with general EU provisions on food labelling
- To enable the beef and veal sector to have access to more flexible and less burdensome types of labelling systems, including the optional quality terms as proposed in the Commission proposal on agricultural product quality schemes.

- The **operational objective** is:

- To repeal the notification requirement and approval procedure for voluntary beef labels

5. POLICY OPTIONS

The following discussion of policy options will concentrate on introducing electronic identification for bovines as an official means of identification. The second objective, the proposed amendments in relation to animal passports, holding registers and beef labelling are not directly linked with this and should be considered separately as a simplification exercise. Therefore, there are no options to consider but an analysis of the conditions under which animal passports, holding registers and the approval of beef labels could be abolished. A summary of detailed impacts on different actors is provided in the **Annex VIII**. The option of abolishing **beef voluntary labelling** will be compared to the baseline scenario of no EU action under point 6.1.4 of this report. In relation to a possible introduction of EID the following Policy Options presented below had been defined and were subject of the external study[34]. Contrary to Option 1, OPTIONS 2 and *3 will imply developing EU legal obligations* for EID and reading equipment.

The options considered for this study are related to the modification of the provisions of Art. 4(1) of Regulation (EC) No 1760/2000 as follows:

5.1.1 OPTION 1: "DO NOTHING" (OR STATUS QUO) REGIME (BASELINE SCENARIO)

No change to the actual provisions implies that bovine animals would be identified by two conventional visible ear tags, resulting in no improvement in relation to the current administrative burden. The current legal framework does not prohibit Member States to use electronic identifiers on a voluntary basis, but this must be done in addition to the official ones. As no EU harmonised technical standards have been established different types of electronic identifiers and readers with different RFID frequencies could be used.

5.1.2 OPTION 2: VOLUNTARY REGIME WITH TWO SUB-OPTIONS

OPTION 2 will introduce EID as a tool of official identification. This implies that it is not possible f or a Member State to opt for the "Do Nothing" scenario under the voluntary regime. EU Member States may opt for a mandatory introduction on their territory (OPTION 2A) or to allow farmers to decide whether to introduce it (OPTION 2B). The establishment of harmonised technical standards for EID and reading equipment on EU level is, contrary to OPTION 1, part of this option. However, this will not go beyond ISO international standards.

5.1.2A Option 2a: Introduction of electronic identification is voluntary at EU level, and **individual Member States have the possibility to opt for a mandatory regime in their territory.** In case the Member State opts for the *mandatory regime*, the same obligation as under OPTION 3 would be applicable in that Member State (e.g.: each bovine animal is to be identified by one conventional visible ear tag AND one electronic identifier *-ear tag or bolus).* In case the Member State opts for the *voluntary regime*, bovine animals could then be identified by:

1. two conventional ear tags, or
2. One conventional visible ear tag AND one electronic identifier (i.e. an electronic ear tag or a bolus) that has been recognised as an official means of identification

[34] http://ec.europa.eu/food/animal/identification/bovine/docs/EID_Bovine_FinalReport_04062009_en.pdf

5.1.2B Option 2b: Introduction of electronic identification is voluntary at EU level, and **individual Member States do not have the possibility to opt for the mandatory regime.** Under the voluntary regime, bovine animals could be identified by:

1. two conventional ear tags, or
2. One conventional visible ear tag AND one electronic identifier (i.e. an electronic ear tag or a bolus) that has been recognised as an official means

5.1.3 OPTION 3: MANDATORY REGIME

Each bovine animal is to be identified by one conventional visible ear tag AND one electronic identifier (ear tag or bolus)[35]. Contrary to Option 1, this option implies the development of EU legal obligations for EID and reading equipment which should not go beyond ISO international standards.

Table 3: summary on individual means of official identification in bovine per option

	**Option 1 "Do Nothing scenario"**	**Option 2 VOLUNTARY " EU MS may opt for a mandatory regime " 2A**	**Option 2 VOLUNTARY " stakeholders may voluntarily choose EID" 2B**	**Option 3 "Mandatory at EU level"**
Conventional ear-tag	**2**	**1 (for EU MS going mandatory)** **2/1 (for EU MS under 2B)**	**1 (*willing to use EID)/* 2*(not willing to use EID)***	**1**
Electronic transponder *(ear-tag or bolus)*	**0**	**1 (for EU MS going mandatory)** **1/0 (for EU MS under 2B)**	**1(*willing to use EID)/* 0*(not willing to use EID)***	**1**

5.2 POLICY OPTIONS FOR BEEF VOLUNTARY LABELLING

Two different scenarios are present for beef voluntary labelling:

5.2.1 Option 1 – **do nothing (baseline scenario**): no change in the current system

5.2.2 Option 2 – abolishing the beef voluntary labelling. The specific provisions on beef voluntary labelling would be deleted from Regulation (EC) No 1760/2000[36]

6. ANALYSIS OF IMPACTS OF THE OPTIONS

This analysis is based on three sources: i) an external study finalised in 2009, ii) data supplied by Member States' competent authorities and iii) data collected during stakeholders' consultations. The analyse shows that direct costs and benefits are not balanced all along the chain. Costs, which are mainly related to equipment (transponders and readers), are mainly borne by the farmers whereas benefits, in case of full valorisation of the electronic device (early e-reading at farm gate's level), are for downstream actors within the food chain (e.g. markets & assembly centres and slaughterhouses). Additionally, CAs profit from the fact that all data can be automatically computerised, reducing labour costs. The study concludes that the voluntary option for the introduction of EID in the bovine sector on the basis of harmonised standards would be the preferred option.

[35] The mandatory regime is currently used in the EU for other animal species (e.g. sheep and goats).

[36] compulsory labelling of the origin of beef would stay unchanged.

6.1. *Impacts of option 1* "Do nothing" (Baseline scenario)

No change to the actual provisions implies that each bovine animal is to be identified by two conventional visible ear tags. If keepers want to use electronic identifiers on a voluntary basis, this is in addition to the two official ones. OPTION 1 does not address the problems as reported by several CAs in the auditing reports (Food and Veterinary Office (FVO) Overview Report 9505/2003[37]) -*see point 3 "Identifying the problem"*-. Also, no reduction of the administrative burden for the sector is achieved. Most interviewees consider that the current system for identification and traceability is effective but it could be improved. For instance, accurate tracing of bovine animals in case of emergency, may be difficult due to the fact that holding registers are not always up to date (with missing paper and documentation as well as shortcomings regarding organisations of data and documents, delays, mistakes or absence of reporting events (birth, movement, death) to the central database or recording of animal movements through markets & assembly centers are not always respected.

Stakeholder views: most of the interviewees consider that the current traceability system is efficient and effective but can be improved. Some stakeholders are convinced by the added values of a fully integrated EID system in which electronic identification is a pre-requisite. Farmers that are not engaged in any field trials or/and research on the subject reject the idea of mandatory introduction of EID: they *do not see any added values by simply replacing a conventional ear tag by an electronic one, other than to allow an EID device to be an official one.*
The main concern linked to the consideration of this option is based *on the lack of harmonised EU technical standards.* Each MS can select the standards it wants and this approach may be an obstacle to harmonisation. If technologies used in a given MS are not the ones selected in another MS electronic exchange of data would not be possible in case of export from one MS to another and all benefits of EID systems would be lost.

6.1.1. Economic impact

No change to the actual provisions implies that each bovine animal has to be identified by two conventional visible ear tags. Individual traceability of bovine animals is guaranteed. If keepers want to use electronic identifiers, the current legislation allows doing so but only *in addition* to the two official (conventional) ear tags, resulting in a total of three means of identification. If farmers decide to go this way despite no harmonisation of technical standards, this option would more expensive compared to option 2 (voluntary) and to option 3 (mandatory) since animals would need **three instead of two identifiers.**

6.2 *Impacts of option 2* Voluntary regime

Under the OPTION 2 is not possible to predict in a precise manner which EU Member States and/or which holdings would introduce EID on a voluntary basis, making additional specific calculations for these two sub-options in the cost model would be difficult. Therefore, the total cost of OPTION 2 is expected to be in a range between OPTION 1 and OPTION 3. After all, if under OPTION 2A EID would become ***obligatory*** in a specific Member State, the cost of this will be made available also under OPTION 3 and therefore figures per MS could be consulted in Annex VI as well as in the Study on the introduction of electronic identification

[37] DG(SANCO)/9505/2003: Overview report of a series of missions carried out in all members states during 2002 in order to evaluate the operation of controls over the traceability and labelling of beef and minced beef

(EID) as official method to identify bovine animals within the EU[38]. There is no definitive data available on *which EU MS would decide to choose OPTION 2A or 2B* and anticipating this information in this report would be difficult. However, this report already referred to a number of EU MS which on a voluntary basis, have decided to go for bovine EID.

Stakeholders views: one of the main key advantages of the voluntary approach, regardless if it is OPTION 2A or OPTION 2B, is based on the fact that actors would have time to familiarise themselves with EID system and identify added values in specific conditions. The voluntary option approach leaves the possibility to EU Member States and to private actors to organise themselves, to evaluate if it is really an improvement, to consider regional differences, different types of production and it is flexible enough to allow support by the public authorities. Already now, bovine EID is allowed in several MS and used by farmers/private operators on basis of commercial interest and management requirements. If the introduction of EID became voluntary, it can be assumed that this regime would be chosen by the keepers that make use of the immediate benefits for farm management. This is a completely private decision taken on economic reasons (*market access driven*) by each operator. However these actors are prepared to consider voluntary EID depending on what are the benefits in terms of regulatory benefit. For instances if individual information will be recorded centrally there should be no *need to maintain on farm holding registers or use movement documents* (which are necessary even if passports are not required); a*llowing reporting by third parties* (e.g. transporters -so that the keeper does not have to report off movement as it is already in place for other species[39]) would be also attractive. Also, it was highlighted that there would be significant benefits if the off movement could be recorded at a critical control point (i.e. market or slaughterhouse). By considering other changes in the regulation than "allowing introduction of EID as an official method of identification" users will identify quantifiable regulatory benefits, and *therefore will decide by themselves to use EID[40]*. Full extrapolation at the Member State level or at EU level would, however, remain arbitrary and could quickly lead to wrong conclusions. However, a voluntary approach may lead to negative consequences in several years time, as the EU could be faced with different situations leading to a certain level of confusion in terms of identification. In case of intra-EU trade it may become rather difficult to trace which kind of official identification is being used. Similar to OPTION 1, some EU MSs (or stakeholders) considered that the actual system for bovine identification and traceability is fully operational and satisfactory. Concerning consumer confidence, under OPTION 2 it will be difficult to make difference between EID-meat and conventional-tagged-meat, so the impact will not differ from meat without EID. However, national or regional systems for *traceability* may gain on accuracy and speed for those EU MS deciding to go for Option **2A** strengthening in this way consumer confidence.

Costs of EID identifiers and reading equipment: Although data on the costs for EID is available for the three Options, it has to be noted that the price of the identification devices will strongly depend on ***how the ordering and purchasing of the tags is organised within a country***. The fact that the tags are tendered on a regional, or on a national level, or every independent farmer has to order his own tags has up 40% impact on the price of the tag sets. **Approval of RFID products (**transponder and reader equipment) may be organised in such a way that not every product has to be tested and approved by every EU country. It may be preferred to have one registration authority responsible for the registration of the approved

[38] http://ec.europa.eu/food/animal/identification/bovine/docs/EID_Bovine_FinalReport_04062009_en.pdf
[39] Sheep and goats (Annex C of Regulation (EC) N° 21/2004
[40] See **Annex XX** for more detailed information on additional benefits and quantitative considerations of EID

equipment and the results of the different laboratory test should be accepted by every EU MS. In relation to *reading equipment, i*t is expected that only farmers that have a certain amount of animals will buy handheld reading equipment[41], **for small farms** there is no need to buy the equipment because the use of RFID will not give them any additional benefit. It is expected that only part of **big farmers** will be interested in buying static reading equipment. There would be no need to prescribe the reader equipment that shall be used on farms. **Markets & assembly centers** and slaughterhouses are expected to buy handheld and static high throughput equipment. **Competent authorities** are expected to use handheld equipment or user equipment that is available (e.g. data from static reader that is installed in a slaughterhouse).
The study also noted that *using the "Alpha numeric" coding* (currently used for conventional tagging) for the EID transponders is not possible. EU Member States that have a visual alpha numeric coding and that want to use the same numbering visually and electronically shall convert the alpha numeric code into a decimal code. The costs of this adaptation *should be a key consideration for OPTION 2 [42] and OPTION 3* at least during the transitional period.
The analysis of the sub-options within option 2 is carried out in one chapter, because they differ from each other only in a few specific elements. This will be made clear in the text.

6.2.1. Voluntary regime *(sub-options)*

- **Option 2A:** Electronic identification is voluntary at EU level, and **individual Member States have the possibility to opt for the mandatory regime**
- **Option 2B:** Electronic identification is voluntary at EU level, and **individual Member States do <u>not</u> have the possibility to opt for the mandatory regime**

6.2.1.1. Economic impacts

Option 2.B follows the assumption that EID would only be used by those animal keepers that compensate costs for EID with additional benefits, in particular by saving of labour. This would be farms with a relatively high degree of the use of e-tools in farm management (e.g. feeding belts) or having other incentives[43]. On the other side any operators not wishing to introduce EID as management tool or for other economic considerations would not be obliged to invest in EID equipment. With this approach, farmers/operators would remain unlimited in their economic choice of investments and on-farm management. The **cost of EID tagging** is more expensive than the cost of conventional ID tagging. This is a general rule that applies uniformly across the EU 27. Based on the comparison of the costs of using 100% of each of the technologies and the assumption that a quarter of the breeders would opt to introduce EID on a voluntary basis (of which half based on E-Ear tags and half based on boluses), it can be concluded that under the OPTION 2, the cost of the identification would increase by **about 8% compared** to the baseline scenario (OPTION 1).

[41] See 6.3.1.1 of this report *"the cost of e-reading"*
[42] C. Saa, M.J. Milan, G.Caja and J.J. Ghirardhi (2005). "Cost evaluation of the use of conventional and electronic identification and registration systems for the national sheep and goat populations in Spain". The cost of building, running, and maintaining of a national database for sheep and goats in Spain has been estimated to be the same as the "Simogan" cattle database currently in use, which corresponds to a total of 46 Mio € over a 6,5 year period.
[43] See Annex XX for more detailed information

Table 5: Illustration of the possible range of costs related to tagging for OPTION 2[44] (in euros)

Technology	**100% e-ear tag**	**100 % boluses**	**100 % conventional tagging**	**25% EID**
Total annual cost (equipment + labour)	201.585.199	274.737.440	177.144.845	192.398.963
Total cost in % of conventional approach	113,80%	155,09%	100,00%	108,61%

In relation to registration and reading, the table below presents a sensitivity analysis of what the impact would be if not 100% of the reading could be performed electronically or only 25%, 33% or 50%. For all simulations, it is assumed that E-ear tags and boluses are each used in half of the cases. There it could be seen a net major profit of EID depending on its higher presence in the field.

Table 6: sensitivity analysis of the cost-effectiveness of e-reading in markets & assembly centres for OPTION 2(in euros)[45]

Markets	**E Eartag**	**Bolus**	**Manual**	**25% EID**	**33% EID**	**50% EID**
Equipment cost	4.898.992	4.898.992		4.898.992	4.898.992	4.898.992
Labour (100% manual reading)			32.917.876			
Labour (100% e-reading)	3.061.362	3.225.952				
Labour (25% EID with equal parts for bolus and E ear tag)				25.474.322	23.092.384	18.030.767
Total	**7.960.354**	**8.124.944**	**32.917.876**	**30.373.314**	**27.991.376**	**22.929.759**
Efficiency gain	-24.957.522	-24.792.932	0	-2.544.563	-4.926.500	-9.988.118

It could be assumed that under OPTION 2B, more holdings will postpone the investment in e-reading equipment in case they are not convinced about the additional business opportunities. Regarding the cost of the removal and recuperation of EID material it can be expected that the uncertainties concerning the identifier used will globally increase the required efficient time. It is assumed that the additional cost could amount to 20%. The weighted costs of a number of scenarios have been calculated; these are presented in the table below:

Table 7: Sensitivity analysis of the removal and recuperation costs of EID material under OPTION 2(in euros)[46]

	E ear tag	**Bolus**	**Conventional**
Total cost	9.773.892	21.176.766	9.773.892
Total cost incl 20% mark-up	11.728.670	25.412.119	11.728.670
	25% EID	**33% EID**	**50% EID**
Total cost incl 20% mark-up	13.439.101	13.986.439	15.149.532

Markets, assembly centres and slaughterhouses would have *only limited benefits from voluntary EID because most of the linked advantages in labour saving are based on the precondition that 100% of the animals can be read electronically*. The same should apply in relation to reduction of **administrative burden** for this option which will be difficult to

[44] Study on the introduction of EID as official method to identify bovine animals within the EU
[45] Study on the introduction of EID as official method to identify bovine animals within the EU
[46] Study on the introduction of EID as official method to identify bovine animals within the EU

estimate depending on the decision taken by stakeholders (on a voluntary basis). Therefore, it would be up to the FBO to determine whether or not they wish to purchase or trade animals only electronically identified and to restrict access of non-EID tagged animals to their facilities, and thus to the supply chain. Again, this would remain the freedom of choice of the FBO according to own economic considerations.

It is also important to look at the *experience gained on sheep & goats EID*, where 2 distinctive identification methods co-existing at the same time (e.g. conventional and electronic tagging) may lead to consequent risk of mixing of animals and according to some interviewees leading to 2 different markets within the same EU MS depending on the preferences of the operator in OPTION 2B. If animals are identified with 2 different systems, it may increase the labour costs for **markets & assembly centers and slaughterhouses since** e-reading would not be possible for animals that have not any electronic device. Manual reading would still be possible in any case. This situation would not motivate actors of the production chain to invest on bovine EID. Some actors may decide that only electronically identified bovine would be accepted in their holdings, limiting the choices of certain stakeholders and resulting on a hidden "mandatory "requirement *driven by market forces* (e.g. markets may "impose" EID for obvious economic reasons limiting farmers the right to chose). This could also lead to a possible impact vis-à-vis the intra-EU trade since *movements of live bovines* are important for some EU Member States (FR, IT, PL, NL, DE, ES). During the period 2007-2010[47] **FR** sent to **IT** 3.983835 live bovines. The potential impact in terms of intra-EU trade explains why some of the interviewees consider that the voluntary OPTION 2B is not the best choice at long term and that the voluntary OPTION 2A should be considered since it will have a less negative impact for intra-EU trade. If comparing against the baseline scenario (Option 1) the risks for intra-EU trade will be higher with option 2.B and lower with option 2A.

In case of **options 2A** – *the possibility of Member States to introduce EID as compulsory element* – the impact would be significantly different: freedom of choice of farmers/FBO would be restricted by decision taken at national level requiring investments on both levels (tag on farms, adding devices on processing stage). However, the fact that EID is compulsory within one EU MS may also help to facilitate the establishment of this technology and limit the risks and costs related to the "mixing" of two different systems of identification like additional handling and labour costs requested to keep those systems separated in time and space. The possible impact vis-à-vis the functioning of the internal market for economic operators will depend on whether the EU MS1 had adopted the same approach as EU MS2. In order to avoid negative impacts vis-à-vis functioning of the internal market, this option must guarantee that animals coming from MS1 (where EID is not mandatory) into MS2 (where EID is mandatory) should be accepted. However, being a market force driven, it is possible that operators may prefer to trade bovine wearing EID due to obvious advantages on cost reduction of labour. In this case, farmers located in EU MS in which the use of EID is voluntary can always choose to add EID as a third means of identification or to choose to replace one of the two conventional ear-tag by one EID. For all other actors in the chain, cost would be without significant benefits. Option 2.A will provide however better perspectives than 2.B in **reducing administrative burden in** those EU Member States deciding to implement EID on a mandatory basis on their national territories .

[47]Data available from TRACES. More information is available in Annex XVII

6.2.1.2 Trade

In relation to the impact for **trade** (exports of EU live bovines/beef to third countries), traceability and safety is ensured for both systems (the conventional and also the EID tagging). It would be difficult to predict which option (2A or 2B) will have a better impact in terms of market access in third countries. However, international trade is market force driven and it may occur that third countries may see additional advantages in OPTION 2 in relation to OPTION 1 by importing meat coming from live bovine using the latest technology for bovine identification. This option will have no impact on imports due to the following reasons: the legislative proposal will not apply to imports from third countries and the number of live bovines imported from third countries is minimal.

6.2.1.3 Social impacts

Compared to option 1, saving of **labour time** would be important in particular in slaughterhouses. **Employees** are doing work which can be done automatically in a more efficient manner and job losses may occur. Farmers and employees do not necessary need to work with the computer, so in the case of having not the equipment available, there is no need for this investment.

6.2.1.4 Environmental impacts

An estimation of the environmental impact caused by electronic waste is provided under OPTION 3. The same arguments can be used as under option 3 (mandatory regime), but limited as voluntary schemes will never reach the same level of implementation. Therefore, the total cost impact of OPTION 2 is expected to be in a range between OPTION 1 and OPTION 3.

6.3. *Impacts of option 3:"* Mandatory regime"

This option may not be the best approach as some stakeholders (e.g. small farmers) are economically affected in a non-advantageous way, but it will be the most efficient option in terms of consumer protection (traceability), **reduction of administrative burden, and to avoid risks related to the co-existence of two systems of identification.** In terms of coherence with similar EU policies on EID in other animal species (e.g. sheep)[48], this option would be justifiable. The analysis of the OPTION 3 (mandatory) leads to the conclusion that most of the costs are borne by the farmers when benefits are distributed all along the food chain. One main criticism collected from stakeholders is that it is not the "payers" who benefit from the investment. The *Study*, makes a distinction under OPTION 3 between the approach by which all bovine animals need to have an electronic identifier *within the first year* that the new regulation comes into effect (*one-off regulation-see Table 8)* and *a transitional approach* which implies that only new born animals get an electronic identifier. Some stakeholders (in particular representatives of the meat industry) have expressed their preferences for the mandatory option and the "*within one year*" implementation. Option 3 will not have to confront the problems described under OPTION 2 related to the coexistence of two different systems of animal identification at the same time. OPTION 3 will imply all stakeholders joining EID allowing optimal improvements for traceability in terms of accuracy and speed.

[48] EID is mandatory for other animal species in the EU

6.3.1 Economic impact

Annex VI presents the total cost of all tasks per actor and a comparison between the mandatory regime (option 3) and the baseline scenario (option 1)[49]. This table contains calculations with the assumption that electronic identification would become mandatory.

6.3.1.1 The cost of introducing EID as an official method

Based on the cost model parameters the total yearly costs for the obligatory electronic identification of bovine animals per EU Member State and per individual actor per technology and scenario are shown in table 8. In this table, the costs indicated for the one-off regularisation correspond to the costs incurred in Year 1. After this first year of regularisation, the costs are equal to the ones of the transitional approach[50]. It can be highlighted that one-off regularisation costs 393 Mio € for E-ear tags (compared to 202 Mio € for the transitional approach) and 511 Mio € for boluses (compared to 275 Mio € for the transitional approach), which is a significant extra cost in Year 1 (about + 90%). This cost has to be balanced with the advantages of not having a transitional period where two different systems are in place leading to possible threats in term of efficiency of the system. This element has been raised in several occasions by some stakeholders (e.g. representatives of the meat industry), expressing preference by the one-off regularisation.

Table 8: Total cost of identifying bovine animals (incl retagging in case of loss) per technology and scenario[51]

	OPTION 3 : E-Eartag and conventional identifier						**OPTION 3 : Bolus and conventional identifier**					
	One-off regularisation			**Transitional approach**			**One-off regularisation**			**Transitional approach**		
	Equipment cost	**Labour cost**	**Total cost**	**Equipment cost**	**Labour cost**	**Total cost**	**Equipment cost**	**Labour cost**	**Total cost**	**Equipment cost**	Labour cost	**Total cost**
Total EU 27	**261**	**132**	**393**	**134**	**67**	**202**	**369**	**142**	**511**	**211**	**64**	**275**

Table 9 presents the average costs of identifying one bovine animal under the OPTION 3[52]. It could be noted the higher cost of the applicator for boluses has a significant impact on the total cost difference between the two types of identifiers.

Table 9: breakdown of the cost of identifying one bovine animal[53]

	1 E-ear tag and 1 conventional ear tag	**1 bolus and 1 conventional ear tag**
Labour cost	**1,47 €**	**1,53 €**
Cost of tagging	*1,31 €*	*1,44 €*
5% retagging of conventional ear tags	*0,09 €*	*0,09 €*
4% retagging of E ear tags	*0,07 €*	
0,30% re-ID with bolus		*0,01 €*
Applicator	**0,45 €**	**1,28 €**
Identifier	**2,37 €**	**2,62 €**
Cost of tagging	*2,20 €*	*2,55 €*
5% retagging of conventional ear tags	*0,06 €*	*0,06 €*
4% retagging of E ear tags	*0,11 €*	
0,30% re-ID with bolus		*0,02 €*
Total (excl. Re-ID)	**3,96 €**	**5,26 €**
Total (incl. Re-ID)	**4,29 €**	**5,43 €**

[49] To note that the numbering of the options used in this study and therefore contained on the table does not necessarily fit with the numbering used in this report

[50] The transitional period should be considered by taking into consideration the bovine breeding animal's lifetime that can be more than 8 years.

[51] Information on the cost per EU MS is available in **Annex XX.** Study on the introduction of EID as official method to identify bovine animals within the EU

[52] abstraction is made of adding an additional electronic identifier to previously identified animals under the one-off regulation approach.

[53] Study on the introduction of EID as official method to identify bovine animals within the EU

When comparing **big and small farms**, it was noted that the cost of the applicator is the only cost that will vary (identification is performed at the farms) and it will depend on the size of the farm. Table 10 presents the cost-volume relationship between the size of the farm and the unit cost for the applicator for both types of EID identifiers (ear tags and boluses), concluding that ***the bigger size is the farm, the lower is the cost of identification:***

Table 10: Breakdown of total unit cost for EID depending on the size of the farms (in LSU)[54]

Size of the farm (in LSU)	**10**	**20**	**30**	**50**	**100**	**200**	**500**
Unit cost *							
Applicator	1,89 €	1,00 €	0,65 €	0,40 €	0,20 €	0,10 €	0,04 €
Identifiers	2,49 €	2,49 €	2,49 €	2,49 €	2,49 €	2,49 €	2,49 €
Labour	1,50 €	1,50 €	1,50 €	1,50 €	1,50 €	1,50 €	1,50 €
Total cost	**5,88 €**	**4,99 €**	**4,64 €**	**4,39 €**	**4,19 €**	**4,09 €**	**4,03 €**

(*) Values presented correspond to situation with of 50% weight for E-ear tags and 50% for boluses

The total cost for **removal and recuperation of EID material** depends on the type of identifier used and is fully linear with the number of animals slaughtered. For the E-ear tags, it was assumed that duration required as for the removal and recuperation of a conventional ear tag (i.e. 0,6 minute per tag). According to the *Study*, the efficient duration for removing and recuperating a bolus was set at 2 minutes per identifier.

-*Costs of e-reading*: the introduction of EID as official method to identify bovine animals does not oblige the actors to perform an electronic reading. Calculations were made regarding the equipment that is required for electronic reading, combined with the number of readings required for regulatory purposes. For the **big breeders** it was analysed the number of extra non-regulatory readings per year in order to make the investment in e-reading equipment profitable. It was concluded that on average, **6,97 and 7,20 additional non-regulatory readings** per Livestock Unit (LSU) are required in order to obtain the break-even point in case of using respectively E-ear tags or boluses. It means that one reading per year is enough for a bovine expected to live for seven years. Depending on the labour cost (reflected in the "Value of time saved per reading") and number of LSU of the big breeders, this number varies from less than 2 additional readings per animal (e.g. in **Denmark**) to over 100 of additional readings (e.g. in **Bulgaria**). In specific production schemes (e.g. dairy production, fattening holdings) the number of non regulatory or production management readings can exceed the average figures mentioned above[55]. **Markets** on the other hand have a direct positive return on the investment in e-reading equipment. The positive return for the markets can be observed in most Member States, exceptions such as in Spain, Denmark or Italy are explained by the fact that there are relatively few movements via markets. Finally, for **slaughterhouses** a very strong impact on the profitability of the investments of e-reading will depend on the EU MS and the average size of the slaughterhouses. As a general rule, it can be concluded that for slaughterhouses in which more than 3.000 animals are slaughtered yearly, the investment in e-reading equipment is cost-efficient. Only exception to this rule is Lithuania which is however characterised by labour costs that are below the EU average.

-*Costs of notifications (transfer of the read ID to register or database):* additional cost savings as result of the investment in e-reading can also be obtained after the initial reading of the ID, in particular, when transferring the read ID to the competent authority. In case of manual reading, it is assumed that each ID needs to be re-copied to e.g. a document that can then be faxed or that it is typed into the corresponding fields on a web interface. It is assumed

[54] Study on the introduction of EID as official method to identify bovine animals within the EU

[55] As an example, each milk cow is read 2 times per day.

that it takes about 1 minute per ID to perform a manual transfer. In case a handset or static reader is used, the information can be much easier transferred in an electronic way. The study confirms that cost efficiencies caused by time savings in the transfer of read ID can be obtained (in particular in relation to manpower force) when the number of readings that need to be transferred each week exceeds 6 readings (in case of a static reader) or 10 readings (in case of a handset reader). These targets seem especially realistic for the **markets & assembly centers as well as slaughterhouses**, but much more difficult to obtain for the **holdings** and especially the small ones. Finally, in Regulation (EC) No 1760/2000 Article 7.(3), it is also stipulated that *'Each keeper shall supply the competent authority, upon request, with all information concerning the origin, identification and, where appropriate, destination of animals, which he has owned, kept transported, marketed or slaughtered'*. It was estimated that collecting and e.g. faxing the requested information manually would take about 30 minutes. This efficient duration was reduced to **10 minutes** in case the organisation can make a query electronically and send an electronic file to the competent authorities. If it is considered that all MS will make one request/year, time saving is estimated at 140 K hours for a total cost of **2,2 Mio €.** Finally, it has been checked what time and cost savings could be obtained at the side of the **competent authorities** in case all ID information would be transferred directly in an electronic format to the computerised database. In a fully automated environment based on e-reading and e-transfer of information where manual intervention is no longer required[56], it *would lead to a cost saving* of **20,3 Mio € for all national competent authorities together**. The costs of adaptation related to the link between visual and electronic numbers should be a key consideration[57] for OPTION 2 and 3.

6.3.1.2 Economic impact by stakeholder

The most affected group would be **livestock farmers** because they bear the costs for tagging. A comparison of electronic reading and manual reading (option 3 versus option 1), the *Study* clearly demonstrated that the increase equipment costs (identifiers and readers) is not automatically compensated by saving of labour costs for farmers. In relation to the cost of tagging, some EU MS may chose to compensate farmers financially[58]by making use of rural development funds and other types of public state aids. However, OPTION 3 may positively reduce the risks of mistakes when performing activities like identifying, registering and/or notifying animal movements, resulting on potential reductions of the Single Direct Payment and other CAP schemes in relation to OPTIONS 1 and 2[59]. The impact of the use of RFID transponders in **dairy and veal automation** is described in detail in **Annex XXI,** concluding that the use of the RFID transponders for farm automation is beneficial for beef farming and less for dairy farms that already have a high degree of automation. On the contrary, electronic reading would be rather cost efficient **for markets, assembly centres and in less extent, for slaughterhouses**. These stakeholders are characterised by supporting high movement frequencies and they will face only costs for reading equipment and no costs for tagging. The impact for EID suppliers (companies) may depend on the EU Member State which will decide on the way to carry out the distribution among stakeholders concerned[60] (call for tender, national bodies, single supplier-government- per EU MS, etc). Some stakeholders (in particular representatives the meat industry) have expressed their preferences for the

[56] For simulation the possible savings, it was assumed that 0,85 min is needed by the competent authorities to process 1 ID manually.
[57] See Annex XXII for more detailed information
[58] See 6.2.1.1 of this report
[59] Farmers are the stakeholders at higher risk in relation to reduction of this type of payment schemes
[60] This has been learnt on the basis of the experience with EID in other animal species

mandatory option and the *"within one year"* implementation. Budgetary consequences for the **competent authorities** could occur when current IT systems need to be adapted to cover electronic identification. As in any up-grading of IT system, these costs tend to result on a favourable and early cost/benefit ratio. The *Study* concluded that CAs will profit from the fact that all data can be automatically computerised, **saving labour costs** and **reduction of administrative burden for** the competent authorities[61]. EID may have a positive impact in terms of easing CA's activities like auditing the Single Direct Payment and other CAP schemes (inspectors could be equipped with readers already available for electronic reading of sheep and goats). Competent authorities may benefit more in OPTION 3 than in Option 2 and 1. The possible impact on **consumer** prices will be minor in relation to OPTION 1. Under the assumption that an increase of the price for meat would need to compensate the increase of production costs caused by EID, meat prices would raise by a maximum of 1%. Taking into account that other products like milk and the potential benefits for farm management are neglected, it is very unlikely that consumer prices will be affected at all.

6.3.1.3 Research (RTD)

On-farm, the use the introduction of EID would facilitate the introduction and dissemination of new production methods, technologies and products in line with EU 2020 strategy. It would stimulate the **research** and development of EID based farm-management applications (e.g. milk recording, feeding, fertility management). Standard setting for electronic identification devices is already used in farm-management, but this technology is not necessarily compatible with the existing ISO standards for animal identification. OPTION 3 would stimulate the development of compatible solutions.

6.3.1.4 Trade

OPTION 3 would be supported for those stakeholders involved in intra-EU trade in slaughterhouses, markets and assembly centres. Full introduction of EID would be cost-effective and would stimulate the market for identifiers, readers and management software. In addition, re-enforcing the EU traceability system will result in better market access opportunities regarding exports to third countries: it will return confidence to EU exports since it is perceived by third countries as one of the best guarantees vis-à-vis BSE[62]. This option will have no impact on imports, since the legislative proposal will not apply to imports from third countries and the number of live bovines imported from third countries is minimal.

6.3.1.5 Social impacts

As the labour costs and composition of the sector varies strongly in the EU 27, calculations on the cost efficiency of electronic identification were also made at the individual Member State level (see **Annex VI, table 3**). It became clear that in Member States with high labour costs electronic identification and reading would be cost efficient with only a few additional readings per animal and year take place. On the contrary, in Member States with low labour costs manual reading could still be cost efficient. Due to the fact that the main benefit of EID is reflected by saving of labour costs for the recording of individual animal codes, Member States with high **labour costs** (e.g. DK, SE) will compensate earlier the costs for EID equipment than those with lower **labour costs** (RO, BG). A mandatory regime could be burdensome for animal keepers, who cannot or do not use EID to improve their farm management (e.g. small farm size, poor IT skills) and may affect negatively Member States

[61] See also Annex XXI *"overview of possible benefits and qualitative considerations"* of EID for competent authorities).

[62] Following the BSE crisis more than 80 third countries imposed bans/import restrictions EU live bovines and/or bovine products. Those export restrictions will be lifted as long as the EU is able to demonstrate that a proper system of traceability is in place for bovine products intended to be exported to third countries

with low labour costs. Labour time and administrative burden is saved, especially **for slaughterhouses, markets and assembly** centres. This could cause loss of jobs by improvement of the efficiency of the process. It is also likely that farmers who are already working under economically unviable conditions take the mandatory introduction of EID as an opportunity to leave the business.

6.3.1.6 Environmental impacts

Increased use of EID will increase the number of E-tags and total amount of **electronic waste**. This waste would have to be dealt with in accordance with the appropriate legal framework, which is set by Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste (Waste Framework Directive). The amount of WEEE would be very minor compared to the overall WEEE arising annually: under the assumption that an RFID transponder contains 10 gram of WEEE and is used in 30 million of slaughtered animals the total amount of WEEE would be 300 tonnes. Compared to the total WEEE arising in EU 27 according to a recent study carried out by the United Nations University[63] of around 9 million tonnes this would be approximately 0,003 %, a **negligible amount**.

6.3.1.7 Other impacts

The introduction of EID could influence **Animal Welfare** in the cases where ruminal boluses would replace one eartag[64]. In addition the S*tudy* considers *additional impacts* worth to be mentioned, such as benefits for veterinarians, official controls and the benefits of the introduction of EID as an official method on dairy and fattening farms. Those are described in detail in **Annex XXI.**

6.4 Impacts of option for voluntary beef labelling

Two different scenarios are present for beef voluntary labelling:

6.4.1 Option 1 – **do nothing (baseline scenario**): no change in the current system

6.4.2 Option 2 – abolishing the beef voluntary labelling. The specific provisions on beef voluntary labelling would be deleted from Regulation (EC) No 1760/2000, however, compulsory labelling of the origin of beef would stay unchanged.

Economic impact of preferred option compared with baseline: the administrative procedure to approve voluntary indications on beef labels would disappear. Operators would be able to continue using existing labels. Consumer information would not be at risk as all labelling indications would fall under existing horizontal EU legislation that would be applicable to beef in the same manner as it is currently already applicable for other meats. The "EU project on baseline measurement and reduction of administrative costs" calculated a possible reduction of administrative burden of 362 000 €. Annex VIII gives a detailed overview of the impacts on different operators.

7. COMPARISON THE OPTIONS

For the comparison of the options a multicriteria analysis is used. It presents impacts that are the result of qualitative and quantitative data analyses and therefore, different underlying assumptions apply. The table below presents a summary comparison of the policy options in terms of their effectiveness, efficiency and coherence.

[63] See page iii of http://ec.europa.eu/environment/waste/weee/pdf/final_rep_unu.pdf

[64] See Annex XXI *"overview of possible benefits and qualitative considerations"*

	effectiveness	efficiency	coherence
Option 1 Baseline/do nothing	No positive impact on traceability performance	No compliance costs, additional costs will appear and will increase overtime due to lack of harmonised technical standards	No impact
Option 2 a **Voluntary EID, MS can make it mandatory**	Faster "growing in" as some MS will go for mandatory regime, high level of EID coverage could be achieved over the years, stronger market forces towards EID	Compliance costs limited to those MS and farmers that make use of the mandatory regime. Only one identification system for domestic movements although two different for intra-Union trade (with possible impacts on the efficiency of the traceability system).	Best balance of positive and negative (namely economic impacts). This option may result on less co-lateral problems than option 2 b.
Option 2 b **Voluntary EID, MS cannot make it mandatory**	No full effective achievement of EID, slow "growing in", and limited benefits of a full EID system only after several years, only market forces would drive EID.	No compliance costs, decision for EID taken by individual animal keepers based on private benefits. Two different systems co-existing at the same time (both at domestic and intra-EU trade) leading to additional labour and administrative costs, with possible impacts on the efficiency of traceability system.	Good balance of positive and negative impacts. This option could result in more co-lateral problems than option 2 a.
Option 3 **mandatory EID**	Best benefits in terms of traceability. Most effective option in terms of reduction of administrative burden and for the avoidance of risks for intra-EU trade	Highest compliance costs for private business (small farmers). Avoidance of additional costs on labour and administrative burden due to non co-existence of two different system of identification. Best impact in terms of reductions of the Single Direct Payment and other CAP schemes.	Positive economic impacts for most stakeholders apart from small farmers. Higher coherence with EID in other animal species.

Explanation and final conclusion

It may be concluded that **"OPTION 3: Mandatory"** is not the best approach at the moment as some of the stakeholders (e.g. small farmers) are economically affected in a non-advantageous way, but it would be ideally the most efficient option in terms of c**onsumer protection (traceability), reduction of administrative burden and avoidance of risks for intra-EU trade**. Considering **"OPTION 1: Do Nothing"** may lead to different technical standards and to negative intra-EU trade consequences. In addition, this option does not fulfil the expectations of the sector in terms of reduction of administrative burden. The **"OPTION 2B: Voluntary at stakeholder level"** was not considered as a valuable option by most of the interviewees as it may result in the establishment of 2 different systems in every EU MS, and ultimately 2 different markets leading to confusions with possible impacts on the efficiency of the actual traceability system.

The change in the identification system **can be best introduced on a voluntary basis (OPTION 2A) with the possibility for EU MS to decide**, if it wants to introduce EID on a mandatory basis in its national territory. EU Member States have very different farming practices and sector organisations and for these reasons, it would be advisable to recommend that it is up to each Member State to work collaboratively with all chain actors to identify

added values of EID and to secure its acceptation so that EID can be made compulsory at the right moment. Each MS could decide to introduce EID by law at a convenient time and not under a push scenario. **OPTION 2A** may limit negative co-lateral problems linked to the co-existence of two different systems of identification in relation to **OPTION 2B**. In terms of reduction of administrative burden, **OPTION 2A** is preferable to **OPTION 2B** if comparing with **OPTION 1**. In conclusion, even if electronic identification is still associated with higher costs compared to conventional identification, it has been demonstrated that benefits occur in specific business cases. It is only when considering regulatory and business benefits together that EID has a chance to be accepted by the actors. Therefore the *preferred option would be a voluntary regime (option 2) with the possibility for Member States to introduce a mandatory regime at national level (sub-option 2A)* Effectiveness, efficiency and coherence of Option 2A could be assessed after sometime of implementation. On the basis of the outcome of this evaluation, the Commission could further reflect on the need to strengthen the mandatory implementation of EID at EU level.

The summary tables below provides information on the economic impacts of the estimated cost of all official bovine recording tasks for the baseline scenario (referred in the tables as Option 3) and the mandatory option (referred in the tables as Option 1) per task and for all actors. There the total cost in excess of the baseline scenario can be retrieved. The cost of the Mandatory option (referred as option 1 in the table) presented reflects the variations depending on whether electronic ear-tags and boluses are used.

Table 11[65]: cost comparison for the mandatory and baseline options per task and under two scenarios

	Task 1: Preparatory	Task 2: Identification	Task 3: Reading	Task 4: ID transfer	Task 5: Processing by CA	Task 6: Removal & recycling	TOTAL
SCENARIO 1 : EID BUT NO e-reading AND NO e-transfer							
Option 1: E-ear tag	148.412	201.585	84.671	42.335	20.283	9.774	**507.060**
Option 1: Bolus	148.412	274.737	84.671	42.335	20.283	21.177	**591.615**
Option 3: Do Nothing	0	177.145	84.671	42.335	20.283	9.774	**334.208**
Difference for E-ear tag	148.411,5	24.440,4	0,0	0,0	0,0	0,0	**172.852**
%		*13,80%*	*0,00%*	*0,00%*	*0,00%*	*0,00%*	***51,72%***
Difference for Bolus	148.411,5	97.592,6	0,0	0,0	0,0	11.402,9	**257.407**
%		*55,09%*	*0,00%*	*0,00%*	*0,00%*	*116,67%*	***77,02%***
SCENARIO 2: EID AND e-reading AND e-transfer							
Option 1: E-ear tag	158.186	201.585	308.010	127.788	0	9.774	**805.344**
Option 1: Bolus	158.186	274.737	309.086	127.788	0	21.177	**890.975**
Option 3: Do Nothing	0	177.145	84.671	42.335	20.283	9.774	**334.208**
Difference for E-ear tag	158.186,3	24.440,4	223.339,4	85.453,2	-20.283,3	0,0	**471.136**
%		*13,80%*	*263,77%*	*201,85%*	*-100,00%*	*0,00%*	***140,97%***
Difference for Bolus	158.186,3	97.592,6	224.415,7	85.453,2	-20.283,3	11.402,9	**556.767**
%		*55,09%*	*265,05%*	*201,85%*	*-100,00%*	*116,67%*	***166,59%***

Table 12[66]: cost comparison for the mandatory and baseline options per each type of actor (in 1000 Euros and in %) and under two scenarios

[65] Study on the introduction of EID as official method to identify bovine animals within the EU
[66] Study on the introduction of EID as official method to identify bovine animals within the EU

	Big breeders	Small Breeders	Market & assembly centers	Slaughter-houses	Competent Authorities	TOTAL
SCENARIO 1 : EID BUT NO e-reading AND NO e-transfer						
Option 1: E-ear tag	294.497	106.018	50.310	35.838	20.397	**507.060**
Option 1: Bolus	358.064	115.603	50.310	47.241	20.397	**591.615**
Option 3: Do Nothing	203.163	27.176	49.377	34.209	20.283	**334.208**
Difference for E-ear tag	91.333,7	78.841,9	932,7	1.629,9	113,7	**172.852**
%	*44,96%*	*290,12%*	*1,89%*	*4,76%*	*0,56%*	***51,72%***
Difference for Bolus	154.900,5	88.427,4	932,7	13.032,7	113,7	**257.407**
%	*76,24%*	*325,39%*	*1,89%*	*38,10%*	*0,56%*	***77,02%***
SCENARIO 2: EID AND e-reading AND e-transfer						
Option 1: E-ear tag	652.424	106.018	13.748	33.041	114	**805.344**
Option 1: Bolus	716.821	115.603	13.912	44.525	114	**890.975**
Option 3: Do Nothing	203.163	27.176	49.377	34.209	20.283	**334.208**
Difference for E-ear tag	449.260,6	78.841,9	-35.629,1	-1.167,9	-20.169,6	**471.136**
%	*221,13%*	*290,12%*	*-72,16%*	*-3,41%*	*-99,44%*	***140,97%***
Difference for Bolus	513.657,6	88.427,4	-35.464,5	10.316,4	-20.169,6	**556.767**
%	*252,83%*	*325,39%*	*-71,82%*	*30,16%*	*-99,44%*	***166,59%***

8. INDICATORS, MONITORING AND EVALUATION

The way how the objectives set in section 5 are achieved can be monitored by key indicators. These data can be collected from the Member States within the framework of the Standing Committee on the Food Chain and Animal Health (SCoFCAH) which provides an excellent forum for exchange of information. If necessary an external evaluation on the basis of the data provided could be carried out. However, given the fact that the proposed legislative changes are more of technical nature, an external evaluation is seen as disproportionate at this stage. The available monitoring mechanisms will provide sufficient information to assess the need for revising the legislation at a later stage. The table below presents possible indicators that could be used to monitor the introduction of EID

Indicator	Source
Number of keepers using EID	MS
Number of Member States that choose mandatory EID	SCoFCAH
Price development for EID equipment	Manufacturers
Developments in the market for farm management software using EID	Market analysis
Number of suppliers for EID equipment (tags and readers)	ISO registration
Number of EID tags used	MS
Number of EID readers used	Market analysis
Slaughterhouses and markets only admitting EID	Market analysis

ANNEX I

ACRONYMS

BG:	Bulgaria
COM:	European Commission
COPA-COGECA:	General Confederation of Farmer Organisations and Agricultural Cooperatives
CY:	Cyprus
CVO:	Chief Veterinary Officer
DE:	Germany
DK:	Denmark
DG AGRI:	Directorate-General for Agriculture and Rural Development
DG BUDGET:	Directorate- General for Budget
DG COMP:	Directorate-General for Competition
DG ENTR:	Directorate- General Enterprise and Industry
DG ENV:	Directorate- General Environment
DG INFSO:	Directorate- General Information Society and Media
DG MARKT:	Directorate- General Internal Market
DG OLAF:	The European Anti-Fraud Office
DG SANCO:	Directorate- General Health and Consumers
EFSA:	European Food Safety Authority
EID:	Electronic Identification
ES:	Spain
EU:	European Union
FBO :	Food Business Operators
FESASS:	Féderation Européenne pour la Santé Animale et la Securité Sanitaire
FI:	Finland

FVE:	Fédération Vétérinaire Européenne
GPS:	Global Positioning System
IE:	Ireland
IFOAM:	International Federation of Organic Agriculture Movement
IO:	Information Obligation
ISO:	International Organization for Standardization
IT:	Italy
JRC:	Joint Research Centre
LSU:	Livestock Unit
MAS:	Market Access Strategy
MS:	Member State
NFU:	National Farmers Union
NL:	The Netherlands
PT:	Portugal
RFID:	Radio Frequency Identification
RoHS:	Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment
SG:	Secretariat General
SME:	Small and Medium Enterprises
UECBV:	Union Européenne du Commerce du Bétail et de la Viande
UK:	United Kingdom
WEEE:	Waste Electrical and Electronic Equipment

WYSIWYG: What You See Is What You Get

ANNEX II

Detailed list containing information on several research projects supporting the need for this proposal

- In 1998 the Commission launched a large Research project on livestock electronic identification (IDEA). A report was presented in 2002 and demonstrated that the use of electronic identifiers can deliver a substantial improvement in animal identification systems (as long as a number of conditions are fulfilled).

- In 2004 the Commission presented a report to the Council and the Parliament on the possibility of introducing EID for bovine animals[67]. This report demonstrated the benefits and shortcomings of electronic identification with a view to improve animal identification systems.

- In 2009, drawing upon the report but reflecting the technical progress and the latest technological developments, the European Commission launched an external *Study on the introduction of electronic identification (EID) as official method to identify bovine animals within the EU* [68].

- The EU project on *baseline measurement and reduction of administrative costs*'[69], which was launched by DG Enterprise in 2007 aimed among others, at the identification of possibilities to reduce administrative burden for European businesses. Regulation (EC) No 1760/2000 was highlighted as one of the EU legislative acts with a lot of information obligations, therefore the potential for reducing the administrative costs of (paper-based) passports, holding registers and voluntary beef labelling was assessed as part of the study. A full mapping of the current Information Obligations[70] described in Regulation (EC) 1760/2000 can be found in Annex 7.

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67 Report to the Council and the European Parliament on the possibility of introduction of electronic identification for bovine animals (COM(2005)9)

68 http://ec.europa.eu/food/animal/identification/bovine/docs/EID_Bovine_FinalReport_04062009_en.pdf

69 http://ec.europa.eu/enterprise/admin-burdens-reduction/action_program_en.htm

70 EU Information Obligations" (IOs) are requirements imposed on Member States by the Directives

ANNEX III a

Situation of EID with other species

Regulation (EC) No 21/2004 introduced individual traceability for **sheep and goats**. It was introduced as a mandatory element. Electronic tagging was introduced as essential tool for automatic reading of individual identification and recording movement. The rationale for adopting such a system was foremost in response to the Foot-and-Mouth disease outbreak in 2001 which was spread by movements of sheep and caused a huge negative social and economic impact to the Union due mainly to a lack of proper identification system in place at that moment and also to the sheep husbandry system which requires a large number to be identified and register in a very short time (e.g. markets). Electronic tagging was introduced as essential tool for automatic reading of individual identities and recording of movements. More details can be found in a report of the large-scale project launched by the Commission in 1998 on the electronic identification of animals (IDEA)[71]. This project demonstrated that a substantial improvement in ovine and caprine animal identification systems could be achieved by using electronic identifiers for those animals, provided that certain conditions concerning the accompanying measures were fulfiled.

Furthermore, EID had been introduced for **equidae (horses, donkeys)** by Regulation (EC) No 504/2008 and for intra Union movements of **pets (dogs, cats, ferrets)** by Regulation (EC) No 988/2003. With these species the primary aim is that the use of electronic transponders ensures a closer link between the animal and its veterinary documentation.

ANNEX III b

Situation of EID in Third countries

Australia: EID is used in cattle since 2002 NLIS-accredited radio frequency identification devices (RFID) contain microchips encoded with unique numbers linked to the animal's PIC for the property of birth. These numbers are uploaded to the NLIS database by tag manufacturers. In some states, its implementation is compulsory.

Canada: since 2006 policy requires that all cattle permanently leaving their holding of origin are tagged with an approved EID tag as by 1 September 2006. Full enforcement was to start by 31 December 2007.

United States: Michigan's Electronic Identification (EID) Program was launched as a pilot project in November, 2001, as part of the state's bovine tuberculosis (TB) eradication plan. It provides state and federal regulators and the livestock industry with a system for quickly tracking the movement of individual animals from the farm to market. The program was developed and implemented through a grant from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA APHIS).

[71] http://idea.jrc.it

ANNEX IV

Table 1

2.1. Time table of consultation to stakeholders

Date	Concerned body(ies)	Goals
4 May 2009	Working Group on Animal Identification	- Short presentation of the FCEC external study - Short introduction of the start of an Impact Assessment and possible outcomes
12 May 2009	Steering Group of Bovine Identification	- In dept presentation with focus on the cost analysis of the FCEC external study - taking inventory from the stakeholders of the possible consequences of changing the legislation of Regulation (EC) 1760/2000.
15 June 2009	Animal Health Advisory Committee	- Presentation of state of play to the stakeholders
19 June 2009	Inter service steering group (DG AGRI, INFSO, ENTR, JRC, OLAF, TRADE, MARKT, COMP, ENV, BUDG)	- Technical questions of the various DG's where answered - DG ENTR study about administrative burden was discussed
9 July 2009	Steering Group of Bovine Identification	- discussing different options with the stakeholders
April 2010	Advisory Group of beef and veal	-discussion of different options of simplifying beef voluntary labelling with stakeholders as follow-up to the "Stoiber Report".
Last IASG	Sec Gen, DG AGRI (contacts per mail and by phone)	IA

ANNEX V

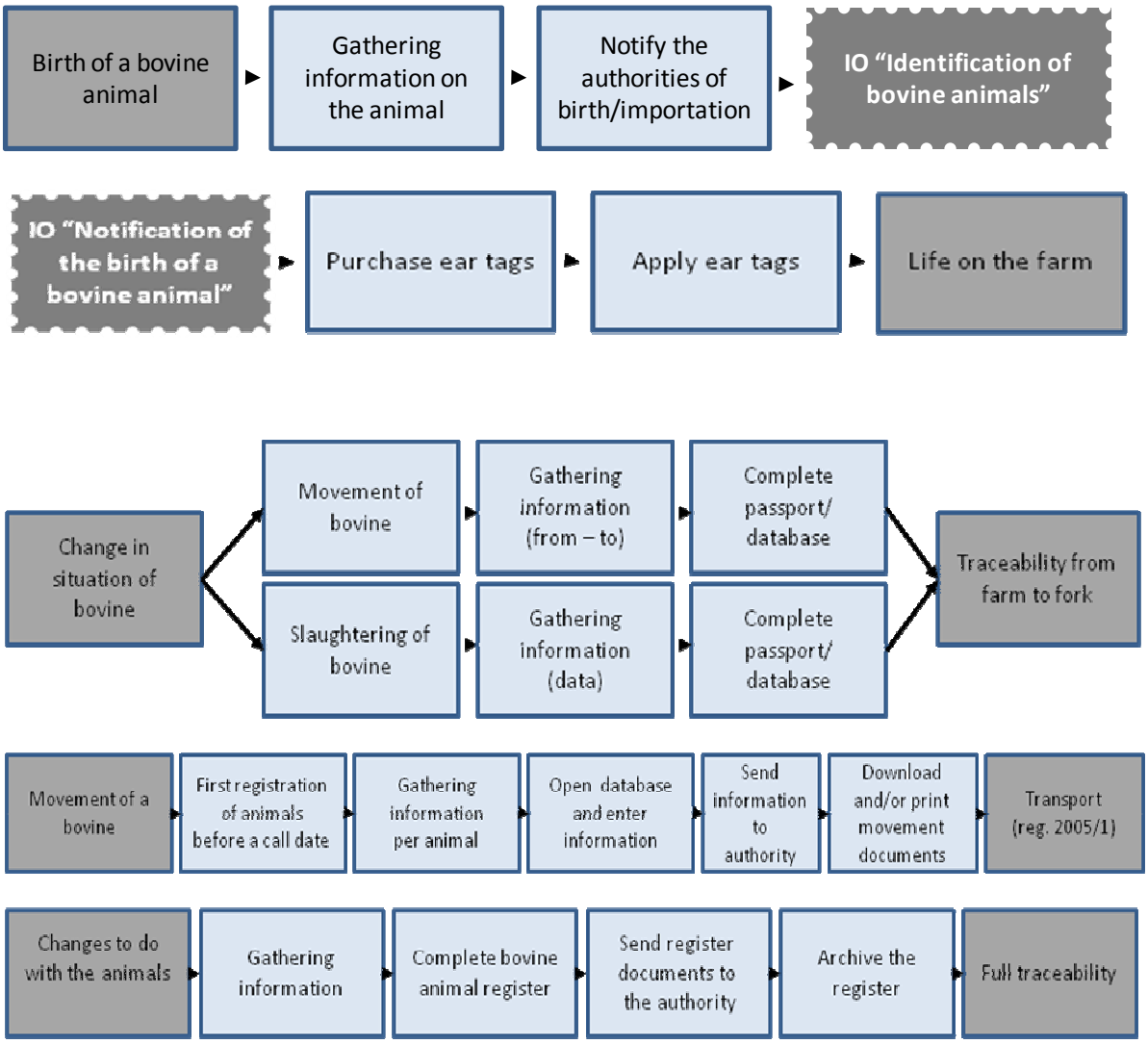

Figure 1. Mapping of the involved IO where the type of tag gives a change in administrative costs [72]

IO: Notification of the birth of a bovine animal
IO: Identification of bovine animals
IO: Completion of an passport
IO: Reporting of movements of bovines to and from the holding
IO: Keeping a register of bovine animals

[72] ENTR study page 86,88

State of play
Identification of bovine animals

Ear tags are employed to identify animals individually. According to Regulation (EC) No. 1760/2000 bovine animals should be identified with two plastic ear tags which must contain at least the name, the code or the logo of the competent authority, two letter country code and a numeric code not exceeding twelve digits. An additional bar code may be authorised by the central competent authorities of the Member States. Furthermore, the replacement ear tags used in the event of ear tag losses may contain a mark with the version number of the replacement ear tag expressed in Roman numerals.

State of play

Computerised national database
Computerised national databases for bovine animals must contain information for each bovine (identification code, date of birth, sex, breed or colour of coat, identification code of the mother or in case of an animal imported from a third country, the identification number given corresponding to the number allocated by the country of origin, identification code of the holding of birth, identification numbers of all holdings on which the animal has been kept, the dates of each change of holding and the date of death or slaughter). The database must be able to supply, at any time, a list of identification numbers for all bovine animals present on a holding, and a list of all changes of holding for each bovine animal, starting from the holding of birth or holding of importation.

Cattle passports
Cattle passports shall be issued for each bovine animal within fourteen days of the notification of birth, or in the case of animals imported from third countries, within fourteen days of the notification of its re-identification by the Member State concerned. Passports may be issued for animals from another Member State under the same conditions. In such cases, the passport accompanying the animal on arrival is surrendered to the competent authority which returns it to the issuing Member State.
During all movements, a bovine animal must be accompanied by a passport. In the case of the death of an animal, the passport must be returned by the keeper to the competent authority. Similarly, when animals are sent to the slaughterhouse, the operator of the slaughterhouse must return the passport to the competent authority. When animals are exported to third countries, the passport must be surrendered by the last keeper to the competent authority of the country from which the animal was exported.

Holding registers
Individual registers must be kept on each holding. The register must contain up-to date information on each animal. Checks by the competent authority must be signed in the register.

ANNEX VI

SUMMARY OF THE TOTAL COSTS OF ALL TASKS

Table 1 ***Distribution of costs between different tasks and operators (mandatory introduction of EID)***[73]

[73] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

Note Option 1 refers to Mandatory Option and Option to 3 to baseline scenario

Summary of the total cost of all tasks (Total yearly cost in EUR)

Cost of regulation with EID, AND e-reading AND e-transfer of data to the competent authorities

	Task 1: Preparatory phase			Task 2: Identification - Tagging (& Retagging)			Task 3: Registration - Reading			Task 4: Notification - Transfer of the read ID to register or database		
	OPTION 1 : E-Eartag	OPTION 1 : Bolus	OPTION 3	OPTION 1 : E-Eartag	OPTION 1 : Bolus	OPTION 3	OPTION 1 : E-Eartag	OPTION 1 : Bolus	OPTION 3	OPTION 1 : E-Eartag	OPTION 1 : Bolus	OPTION 3
Holdings (Big breeders)												
Total EU 27	70.209.273	70.209.273	0	174.472.830	238.039.580	153.348.393	286.050.881	286.882.147	33.250.647	121.696.073	121.696.073	16.625.323
Holdings (Small breeders)												
Total EU 27	75.525.986	75.525.986	0	27.112.370	36.697.860	23.796.451	2.299.402	2.299.402	2.299.402	1.149.701	1.149.701	1.149.701
Markets and Assembly Centers												
Total EU 27	4.494.053	4.494.053	0	0	0	0	7.960.354	8.124.944	32.917.876	1.293.329	1.293.329	16.458.938
Slaughterhouses												
Total EU 27	7.843.317	7.843.317	0	0	0	0	11.750.910	11.832.359	16.289.820	3.672.617	3.672.617	8.144.910
Competent authorities												
Total EU 27	113.703	113.703	0	0	0	0	0	0	0	0	0	0
Overall Total	158.186.331	158.186.331	0	201.585.199	274.737.440	177.144.845	308.061.547	309.138.852	84.757.745	127.811.720	127.811.720	42.378.872

Task 5: Processing of the information received from the sector			Task 6: Removal and recuperation of ID material			Total of all tasks			Delta electronic compared to manual (OPTION 3)	
OPTION 1 : E-Eartag	OPTION 1 : Bolus	OPTION 3	OPTION 1 : E-Eartag	OPTION 1 : Bolus	OPTION 3	OPTION 1 : E-Eartag	OPTION 1 : Bolus	OPTION 3	OPTION 1 : E-Eartag	OPTION 1 : Bolus
0	0	0	0	0	0	652.429.057	716.827.073	203.224.363	449.204.694	513.602.710
0	0	0	0	0	0	106.087.458	115.672.949	27.245.554	78.841.904	88.427.394
0	0	0	0	0	0	13.747.737	13.912.326	49.376.814	-35.629.078	-35.464.488
0	0	0	9.773.892	21.176.766	9.773.892	33.040.735	44.525.058	34.208.622	-1.167.887	10.316.436
0	0	20.302.624	0	0	0	113.703	113.703	20.302.624	-20.188.921	-20.188.921
0	0	20.302.624	9.773.892	21.176.766	9.773.892	805.418.689	891.051.109	334.357.978	471.060.712	556.693.131

Clarification: the above-mentioned information are results of the cost model

Table 2. Time and cost saving per reading (EU average) - FCEC report

Depending on the level of labour costs, electronic identification[74]

Time and cost saving per reading (Big breeders)		
	OPTION 1 : E-Eartag	**OPTION 1 : Bolus**
Manual reading (min)	2,00	2,00
E-reading (min)	0,25	0,30
Time saving per reading (min)	1,75	1,7
Average EU labour cost	15,67 €	15,67 €
Cost saving per reading	**0,46 €**	**0,44 €**

The notification of births, deaths and movements of the 90 million bovine animals results in 146 million regulatory readings per year. This means 1,6 readings per livestock. Based on the figures table 2 the FCEC report calculated the average number of additional non-regulatory readings that would be necessary to compensate higher equipment cost by saving of labour costs.

[74] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

Table 3. On a EU27 level around 7 additional readings (6.97 E-ear-tag, 7.20 –bolus-) would be necessary. However, as labour costs differ considerably between Member States, this figure varies from less than 2 additional readings per animal (Denmark) to over hundred of additional readings (Bulgaria) see table 5.[75]

Member State	E-Eartag Number of additional readings per LSU of big breeders	Bolus Number of additional readings per LSU of big breeders
EU 27	**6,97**	**7,2**
AT	11,76	12,13
BE	3,65	3,78
BG	137,24	141,29
CZ	8,43	8,7
CY	4,3	4,45
DK	1,74	1,81
EE	16,24	16,73
FI	7,53	7,78
FR	4,21	4,36
DE	4,57	4,72
EL	16,42	16,92
HU	16,78	17,28
IE	6,4	6,6

Member State	E-Eartag Number of additional readings per LSU of big breeders	Bolus Number of additional readings per LSU of big breeders
IT	6,88	7,11
LV	48,61	50,06
LT	56,12	57,79
LU	3,5	3,62
MT	13,03	13,43
NL	3,27	3,39
PL	89,72	92,37
PT	16,54	17,05
RO	69,16	71,22
SI	28,49	29,34
SK	9,04	9,32
ES	9,87	10,18
SE	4,19	4,33
UK	4	4,14

[75] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

ANNEX VII

MINUTES OF THE IA CONSULATIONS

3.1 Consultation of the Working Group on Animal Identification

An x-stage consultation was held via the Working Group on Animal Identification. The first stage (4 May 2009) sought to ascertain stakeholders' perceptions about the nature of the issues identified in the external study about introducing EID and to collect views about possible options to solve them. Also the possible improvements in the field of animal passports and holding registers were briefly discussed.

2.1.1 Copies of the minutes concerning this topic in the meeting:

Main reactions of the participants after the presentation of the external study:

- Ireland foresees some problems with the WYSIWYG approach and it will be difficult to define the costs for introducing this system. They want to have a transitional period.

- JRC mentioned that is difficult to make conclusions out of this report. Different information sources are used and JRC thinks they focussed too much on material- and labour costs.

- Germany wants to know how many MS are involved in the study. Arcadia mentioned that 11 MS are visited and/or emailed. This will include 70% of the bovine population.

- France highlighted the difficulty to react on a report that was not available before. In France they have already a couple of ongoing pilot-studies with positive outcomes. France thinks that there will be a gap between MS who already make use of EID for sheep and goats and MS who make use of the derogation and don't yet make use of EID by sheep and goats.

- The Netherlands want to know if the contractor looked into the fact of implementing EID in farm-management systems. Arcadia answered that the report was focussed on regulatory requirements of Regulation (EC) No 1760/2000 and that not enough data where available to get a more comprehensive picture beyond this.

- EFSA mentioned that they are available for further Risk Assessment in this field.

3.2 Consultation of the Steering Group on Bovine Identification

3.2.1 Meeting 12th of May 2009

On the 12th of May a meeting with the Steering Group on Bovine Identification was held, discussing the current situation and the possible changes in the areas of identification, animal passports and holding registers in the involved MS and for stakeholders as slaughterhouses, farmers and markets- & assembly centres. Also the study of Arcadia about introducing EID was presented in a more in dept way with the view to obtaining early comments from the stakeholders.

3.2.1.1. Copies of the minutes concerning this topic in the meeting:
Main reactions of the participants after the presentation of the external study:
Concerning the topic Electronic Identification:

- IE asked if the possibility exist to introduce the proposed changes for animal passports and holding registers separated from the introduction of electronic identification.
The Commission has a strong preference to keep all supposed changed together and to amend Regulation (EC) 1760/2000 only one time.
- DE was interested in the different approach regarding the introduction of EID in the sheep and goat sector and the bovine sector.
COM answered as follows:
With the Regulation (EC) No 21/2004, a system was established for the identification and registration of ovine and caprine animals. Previously there was no obligation to identify sheep and goats individually. For bovines, already in Council Directive (EC) No 92/102 was described that bovines needed to be individually identified; nevertheless, individual MS already established earlier a system of individual traceability of bovines.
The sheep industry in particular, requires big groups of animals to be read in a very short space of time (e.g. at markets). Electronic tagging is therefore an essential tool for automatic reading of individual identities and recording of movements. Consequently there is decided with the introduction of individual identification for sheep and goats to introduce it with an electronic way of tagging, because that is the only efficient option.
For bovines, individual traceability was already in force since a long period. Introducing electronic devices will improve the efficiency and traceability, it is an added value.
- IE (and later in the meeting UK) mentioned that, because of the unbalanced costs along the chain, it would be difficult for farmers to benefit, and it could sound as an illogical step. To sell it to the farmers, the benefits need to be clearly defined.
Also IE mentioned their current numbering system, which consists actually out of different systems, when going for the WYSIWYG approach will bring a lot of costs for Ireland.

- IFOAM mentioned that organic farmers are all against EID. The possible pollution of this device needs to be considered.

COM agrees that there is at this moment no possibility of recycling the electronic devices

- JRC highlighted that it would not be preferable to have 2 different systems next to each other. In the end it needs to be mandatory, because the maximum benefit will be obtained by a 100% EID system.

COM opts for a voluntary approach with the possibility for self-regulation of the market in the future.

- COPA agrees with the COM in saying that with a start on a voluntary basis, after a few years with help of the market it will become mandatory. Spain agrees later on with the same statement.

- The WYSIWYG approach is extensively discussed.

- NFU wants to know why the ISO standard is used. COM answered that with ISO there is already a code structure and COM will not develop a new standard. In the sheep and goat sector the ISO standard is also used.

- COPA wants readers which are synchronized to read different types of tags from different manufacturers. COM answered that this readers are already on the market.

- UK proposed when an animal leaves the farm, only 1 reading should be necessary either by departure, either by arrival and the information should be exchanged among the involved parties, this will save time and buying equipment.

Animal passports

- FI mentioned the need for a good electronic transfer system before cutting out the passports. And what do we need to know about an animal when it comes to slaughter?
Food chain information is not in central bovine databases, it needs to be communicating with each other.
- COM: there are already 11-15 MS not using passports anymore for movements on national level. The permission is only given when databases are fully operational. COM wants to extend this approach to all MS.

Holding registers

- A discussion is held about what exactly an up to date holding register is. DE mentioned that 7 days is too long for a proper traceability in regard to an animal disease outbreak. It's necessary not to discourage farmers for online updating of the register. To reduce the 7 days will encourage farmers to work online with the holding register and passports.
- NFU proposed to get it back to 3 days. A short period will give a better picture of the real world.

The main conclusions the COM took where:

- In general the stakeholders are in favour of a voluntary basis for the electronic identification
- Coding systems (WYSIWYG) needs further discussion
- Passports: MS should abandon passports at national level when a central database is fully operational
- Holding registers could be included in the central database

3.2.2. Meeting 9th of July 2009

The Commission representative presented the current state of play of the IA and within that presentation the Impact Table which was sent out earlier was discussed. The main discussion points which came up where:

- NFU suggested including the possibility for third parties to do the reading and reporting on behalf of keepers.

COM agrees that future legislation should allow this.

- IE suggested guidelines in which ear electronic identification should be placed.
- BG highlighted that EID equipment is relatively more expensive in countries with low labour costs...

COM responded with reference to the study.

- In IE a few farmers use already EID. They would like to suggest giving different colours to the conventional tag when there is a bolus in the animal so you will not make the mistake that this animal has lost an E-eartag.
- IFOAM is happy with the sentence included about organic farming; they are obviously for a voluntary regime. But they would like to see that the animal protection law and the integrity of the animal should be taken into consideration. They also missed a part which related to electronic waist and the link to (animal) health.

COM agrees that the voluntary regime is the best option for organic farmers and that the electronic waist is definitely taken into account under the area environment.

- Finland highlighted that developments in farm management systems are not a purely negative outcome (they are now negative coloured because there is at the

moment not a lot of direct farm-management applications available for E-eartags or boluses), due to the fact that this is encouraging innovation and research; it can be seen as positive.

- Spain asked to add another area: transports. Currently several pilot studies with the use of GPS in the truck are taking place and in the future should EID (with all the information about weights of the animals) in combination with the new technologies in transport could be used to optimise transport of animals and this could improve animal welfare.

They would also include the view of the consumer in the table; this could be in combination with the areas food safety and food quality.

COM tries to include all these elements into the table.

- Poland raised the issue that they would have a problem when the holding register is only online; not all their farmers have access to internet or even knowledge on using a computer.

COM (IE proposed) answers that when access is not possible, they could make use of a third party or there must be still a possibility to have the holding register on paper.

- UECBV mentioned that the current system works pretty well. The advantages to move to EID should be more explicit. The industry is rather satisfied with the current system but is also in favour of a new regime.

COM: different scenarios are studied– voluntary system is favoured, slaughter industry would not be forced to move towards EID, visible tags would still be used on each animal.

- NL supports the voluntary basis

COM: difficult to evaluate the cost of the voluntary basis, so a mandatory system needs to be studied for the cost calculations.

- Bulgaria wants to know what the rules are in case of ICT.

COM answers that there is currently no interoperable EU database, so standardised exchange of data between MS is not yet operational, therefore Passports are still necessary for ICT.

- UECBV has scepticism concerning the harmonisation of the electronic databases.
- FVE: Is very enthusiastic about the EID concept and wants to encourage using this technique for surveillance programmes and general animal health purposes. They also suggested changing the word costs into investments.
- The WYSIWYG came up by several stakeholders (NFU, IE, and DE). NFU, DE supports the WYSYWYG approach; IE is concerned about the costs in their country to change from their current system to WYSIWYG.

COM: would like to get the figures from the UK where they changed in the system for sheep and goats towards a WYSIWYG approach. It also has to be investigated what the consequences are if one MS has not the WYSIWYG approach. After the meeting IE clarified bilaterally that WYSIWYG would only be problematic for retrospective tagging. Here a solution can be found.

- IT prefers that the holding registers online are not mandatory for farmers. Some farmers are more in favour of paper passports.

COM: the database should reflect the situation on farm. Overall it should be avoided that in the system it is able to manipulate the data.

- FESASS: about the updates in the farm management system: who is going to pay for that?

  The COM answers that financial contributions from the EU budget are not foreseen.
- DE asked for derogation such as in the sheep and goats system. Who has access to these databases (the follow up in case of intra-Union trade)?

COM: databases are kept at national level and fall under the respective legal framework for data protection

- ES mentioned that in the table is written that there is no information coming with the animal into the slaughterhouse, but there is always the Food Chain Information accompanied with the animal which contains a lot of information.
- BG supposed to delete the do nothing scenario, because everybody already agreed in going forward.

COM: the do nothing should be kept to make the comparison (cost calculation) with the other two scenarios.

- NL is in favour of option 2b
- IFOAM wants to exclude option 2a
- PT wants to start with the voluntary regime, but to set a date when the system becomes mandatory, because that's where we are going in the future; he suggested adding a point 2c.

  COM is not in favour of new options, deadlines could also be introduced in the current options
- ESP is also not in a favour to put a deadline on the mandatory implementation.
- UK: request a timetable of the process concerning the study.

COM planned to finish the IA in September. But when it comes to figures about costs savings in the field of holding registers and animal passports and cost of changing to a WYSIWYG approach, solid figures are more difficult to get.

Elements of a legal proposal

- The Commission representative presented the elements of a possible legal proposal that foresee a two step approach: 1. amending Dir. 64/432 and Reg. 1760/2000 at Council/EP-level and 2. to amend Reg. 911/2004 via Comitology (EAGGF)

- PT asked when discussions starts on technical aspects, because this would be of interest because farmers are right now buying equipment for there sheep and goats and it would be an advantage when this equipment is also compatible when it is used for bovines.

COM answered that the technical discussion shall start after co-decision in Parliament and Council, - probably not before end of 2010. However, current standards on sheep-ID could be uses as guidance.

CONCLUSIONS

COM will continue with drafting the IA and probably just before finalizing the IA, a meeting will be organized (autumn). Additional documents and questions can in the meanwhile be sent by email.

3.3 Consultation of the Animal Health Advisory Committee

At the 12th of June, a state of play concerning the plans amending Regulation (EC) No 1760/2000 was given to the stakeholders of the Animal Health Advisory Committee. UECBV

mentioned to wait for results out of the sheep-sector and after that, implementing EID on mandatory basis, FESASS is a patron of the voluntary approach, because only a voluntary approach should be accepted by the farmers. The CVO of Sweden highlighted that during the Swedish presidency (from July 2009), the amending of this regulation will get attention.

3.4 Excerpt from the Minutes of the Advisory Group for Beef, April 2010

Groupe consultatif de la viande bovine – Réunion du mercredi 21 avril 2010 – Compte rendu

5. Echange de vues sur le système d'étiquetage facultatif de la viande bovine (Règlement 1760/2000).

Le représentant des services de la Commission partage une réflexion portant sur la simplification du régime d'étiquetage volontaire établi par le règlement (CE) no. 1760/2000, tout en supprimant les articles 16 à 18 de ce règlement. La simplification envisagée n'altère aucunement ni la traçabilité, ni l'étiquetage obligatoire, ni l'étiquetage volontaire mais la procédure concernant ce dernier. Elle serait bénéfique pour les opérateurs et pour les administrations. Dès lors, l'étiquetage volontaire relèverait des règles horizontales, moins contraignantes, tout en préservant la fiabilité de l'information transmise aux consommateurs. Les représentants du commerce, après avoir exprimé une réserve, apportent leur soutien à la simplification. Leur réserve est levée grâce aux explications complémentaires apportées par le représentant des services de la Commission. Les représentants de l'industrie appuient la suggestion, sans aucune réserve

Par contre, les représentants du COPA-COGECA :

- refusent une modification des principes arrêtés par le règlement, notamment en ce qui concerne la traçabilité d'origine ;
- en général, ne sont pas contre une simplification de la PAC pour autant que celle-ci bénéficie au producteurs (ex. mise en œuvre de la conditionnalité) mais dans ce cas spécifique d'étiquetage facultatif, il faut bien mesurer le vrai potentiel de simplification technique contre les risques politiques en rouvrant cette « boîte de Pandore » (assurance des consommateurs, manque d'information et de surveillance communautaire sur les dispositifs mis en place dans les Etats membres) ;
- s'interrogent sur la pertinence du calendrier et sur l'absence de coordination avec d'autres services de la Commission et donc de cohérence avec des initiatives en cours d'examen (proposition d'un règlement horizontal sur l'information des consommateurs ; révision de la politique communautaire de la qualité, notamment en ce qui concerne des lignes directrices sur la certification privée de la qualité)

Le représentant des services de la Commission rappelle que l'exercice est au stade de la réflexion et non de la proposition. De ce fait aucun calendrier n'a été établi. Une coordination en vue d'un projet de modification du règlement poursuivant plusieurs objectifs (traçabilité et identification des animaux) n'est pas à exclure. Le débat mérite d'être mieux cadré et clarifié. L'objectif du règlement 1760/2000 n'est pas de traiter la question de qualité du produit

ANNEX VIII

QUALITATIVE OVERVIEW OF CONCERNED AREAS AND POSSIBLE IMPACTS

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
Farmers	- Saving labour costs for registration, reading and transferring to central database - Higher equipment costs - With the use of 1 conventional eartag still the possibility to read manually - Possibility to use EID for management purposes - Organic farmers might have concerns in relation to EID, (animal-integrity), and would prefer voluntary options	- No paper holding register on farm, time saving - Changes only need to be made in the central database instead of in more documents, so lower chance of mistakes - All information is available in central database, so no loss in traceability - Changes in central database of movements are faster in the system processed than via mail to the competent authority: so register will be more up- to-date	- No need for passports when animals are not been traded between MS - Time saving in the field of farm management	All operators who have developed labels under the beef voluntary labelling would continue under the horizontal legal framework of food information to consumers (Reg. 2000/13 or successor) with less administrative burden. A less bureaucratic legal framework could encourage new product quality labels.

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
	- Technical points: guideline on which ear to be tagged/or technique suitable for any ear when tagged with a bolus, how to differentiate between lost bolus? → colour tags - Third party notification - certain farm management systems need to be updated to be compatible with the EID device→ change for innovation and research - Technical specifications similar for other animal species, so equipment is compatible	- Data in Central Database more up to date - Could be included in the farm management system - Third party notification (as already occurred in sheep EID-annex C Regulation (EC) N° 21/2004)		
Slaughterhouses	- could safe labour costs with electronic reading	Less paper work	- No paper work	All operators who have developed labels under the beef

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
	- would benefit more from mandatory option (only one tagging system) - higher costs of removal of bolus (ear tag is equal)	Data base more up-dated	- Only certain Food Chain Information is coming directly with the animal	voluntary labelling would continue under the horizontal legal framework of food information to consumers (Reg. 2000/13 or successor) with less administrative burden. A less bureaucratic legal framework could encourage new product quality labels.
Meat Traders and retailers	-	-	-	All operators who have developed labels under the beef voluntary labelling would continue under the horizontal legal framework of food information to consumers (Reg. 2000/13 or successor) with less administrative burden. A less bureaucratic legal framework could encourage new product quality labels.
Markets & assembly centres	- benefit of faster reading and higher accuracy, saving	-no paper work - Data-base more up-dated	- no paper work	-

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
	labour costs - would benefit more from mandatory option (only one tagging system)			
Competent Authorities/Central Databases	- no manually intervention needed for checking→ labour costs saving - by official's control fast reading of ID - possible change of numbering system by choosing for WYSIWYG approach	- Need to have a full compatible database with excellent back-up-system where farmers can have access to their own data and make changes + secure entry for users - Central database becomes more 'real time'	- Saving costs for paper documents	no administrative procedure on formal approval of voluntary beef labels
Animal welfare	- can be part of an integrated system regarding animal welfare (monitoring of animals conditions, transport) - reduction related to tag losses via the use of bolus	-	-	-

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
Environment	- EID is already in use outside the legal framework of 1760/2000 - Increased use of EID will increase the number of E-tags and total amount of electronic waist	- Save of paper	- Save of paper	-
Competition Internal Market Trade with third countries	- with the use of more electronical devices, the competition between factories will grow, which will lower the price - Due to the demand of the farmers, an integration between the allowed EID devices and farm management systems needs to be developed	-	- Paper passport for intra-Union trade is still necessary till all central databases are compatible with each other - For trade to third countries, paper passport may be still necessary	Voluntary beef labels would be cheaper, in terms of administrative burden, because labels would not require a formal official approval. The administrative practice differed considerably between the Member States which had put operators in some Member States in a competitive disadvantage. This would be remedied. - As beef imports to the EU are also subject to the same voluntary beef labelling

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
				procedure than EU operators, administrative burden would also be removed from importers and processors in third countries.
Animal Health Eradication programs Traceability Practitioners/insemi nators	 - higher accuracy and faster reading - minimum risk of fraud with bolus - higher accuracy	 - Central database need to be as up-to-date as possible - When the central database is save and fully operational, traceability is not changed - Changes in central database of movements are faster in the system processed than via mail to the competent authority: so register will be more up to date	-	-

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
	- easy accurate reading of individual ID			
Fraud	- Bolus is more fraud resistant than eartag		-	-
Food safety, food quality and	- transparent traceability caused higher consumer	-	-	compulsory labelling stays unchanged, voluntary labelling

Concerned areas:	Possible impacts of: Introducing Electronic Identification as official mean of identification	Possible impacts of: Holding register optional when information is available in central database	Possible impacts of: Passports only needed for Intra-Union trade, until central databases are fully exchangeable	Possible impacts of: Dismantling the beef voluntary labelling system
consumers confidence	confidentiality			would fall under the horizontal legal framework of food information to consumers
Transport	- Innovation in the field of GPS systems and combining this technology with EID will optimise the transport for live animals			-

Green: positive outcome
Red: negative outcome
Black: neither negative neither positive outcome

Annex 4. Qualitative analysis of all possible impacts on the different areas regarding amending Regulation (EC) No 1760/2000.

ANNEX IX

TABLE OF ASSUMPTIONS

Types of required actions for EID	Assumptions
1. Preparatory actions - Monitoring of regulation - Distribution of information - Modification of the environment - Training	3.155 euro for markets and slaughterhouses Holdings: 5 hours Markets and slaughterhouses: 10 hours Competent authorities: 300 hours • Costs are only labour costs, for every MS the labour costs are individually defined • Costs are fully taken in year 1
2. Tagging (and retagging) of bovine animals	- application of a bolus will a be a bit more expensive than for ear tags in terms of labour costs
3. Reading of identifiers and registration	- only the big farmers (> 20 animals) have electronic reading equipment (2 pieces) - markets & assembly centres have 1 handset reader and 1 static reader - slaughterhouses have 2 handset readers and 1 static reader - Time saving per reading is in comparison to manual reading: - 1.75 minutes for EID-eartag - 1.70 minutes for boluses - Number of readings required for regulatory purposes is calculated on 1.6 reading per animal per year (EU 27). This number varies a lot within MS, due to the variety in organisation of the sector[76].

[76] Page 77

4. Transfer of information on read identifiers to the register or database	- manual reading will take 1 minute per ID - Electronic reading will costs 10(handheld)/6(static) minutes per week for downloading
5. Processing of the information received from the sector	- CA need 0.85 minute to process 1 ID manually - in a conventionally environment, 50% of all ID is processed automatically, 50% manually - in an automatic environment based on e-reading an e-transfer of information, manual intervention is no longer necessary
6. Removal and recuperation of (E)ID material	- Removing and recuperation of a bolus takes more time than for an (electronic) eartag. - No specific equipment is required for removing the identifiers

Annex 5. Steps and assumptions made in the process of EID.

ANNEX X

EU PROJECT ON BASELINE MEASUREMENT AND REDUCTION OF ADMINISTRATIVE COSTS

Detailed Recommendation on the Food Safety Priority Area

Repeal the provisions regarding the voluntary labelling of beef

Excerpt on beef labelling:

Detailed Recommendation on the Food Safety Priority Area

Repeal the provisions regarding the voluntary labelling of beef

EU PROJECT ON BASELINE MEASUREMENT AND REDUCTION OF ADMINISTRATIVE COSTS

26th June 2009

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An introduction to Administrative Burden reduction

This Recommendation is the culmination of a process of analysis using the EU Standard Cost Model methodology. This is an EU methodology for measuring administrative costs imposed by legislation - both existing and planned. This methodology is based on the Standard Cost Model (SCM) applied in several Member States. Adapted to EU needs and resources, the EU SCM takes into account the fact that EU legislation often replaces 27 different national legislations and thus decreases operating costs at EU level.

The EU SCM breaks down administrative costs imposed by legal acts into components that can be assessed with reasonable accuracy. Those costs are then further differentiated on the basis of 'business-as-usual' (BAU) costs, i.e. costs that a business would incur irrespective of whether there is an Information Obligation (IO), and those costs which are the direct result of regulation. The latter constitute the administrative burden.

The total administrative cost is calculated as P×Q, where:

- Q is the number of times per year (occurrences) that each Information Obligation has to be complied with multiplied by the number of businesses;
- P is the administrative cost per business of complying with the obligation. P is the sum of internal costs, consultancy costs, equipment costs and overheads.

For this project, data for calculation of the administrative cost was collected in a sample of businesses in a limited number of Member States (generally six). These are the 'Measurement Countries'. This data was supplemented by existing, applicable data from Member States which had previously carried out SCM measurement (the 'Baseline Countries'). The data for the remaining EU Member States (the 'Extrapolation Countries') was estimated through extrapolation.

The ensuing Recommendations have been defined as Type I and/or Type II. Distinguishing between Type I and Type II reduction opportunities is useful because this provides all parties involved with a clear view of the ownership of the reductions.

Type I reductions refer to changes at EU level (legal as well as changes to EU level implementing practices) and are clearly owned and adopted at EU level, though they may subsequently require transposition at national level.

Type II refers to changes at Member State level in the way transposition is approached and in implementing measures. They will deliver Improved/Good Practice in Member State transposition and implementation, and thus simplification of the business process at national

level. Type II recommendations are clearly for adoption and implementation by the Member States.

For more information on the Action Programme for Reducing Administrative Burdens in the EU and the EU Standard Cost Model, see http://ec.europa.eu/enterprise/admin-burdens-reduction/home_en.htm.

SUMMARY TABLE

Legislative act	Regulation (EC) No 1760/2000 of the European Parliament and of the Council of 17 July 2000 establishing a system for the identification and registration of bovine animals and regarding the labelling of beef and beef products and repealing Council Regulation (EC) No 820/97.
Information Obligation	"Ad hoc labelling of beef" (Art. 16)
Regulatory origin	EU legislation
Recommendation name	Repeal the provisions regarding the voluntary labelling of beef
Recommendation addressed to:	EU institutions
Scale of the recommendation	Simple change
Target group - Businesses targeted by the information obligation(s)	Operators and organisations marketing beef in the Community
Original population (as-is)	52,976 – number of applications for approval
Affected population (to-be)	52,976 - number of applications for approval
Specifically targeted at Small and Medium Sized Enterprises	No
Current administrative cost	€1.4 million
Current administrative burden	€361,000
Current "business as usual" factor (as-is)	75 %
Future "business as usual" factor (to-be)	0 %

Expected administrative burden reduction in %	100%
Expected administrative burden reduction in euro	€361,000
Source of the recommendation	Ministry of Economic and Business Affairs Denmark, 30 Danish proposals for EU simplification, number 12 (unpublished report)

2. BACKGROUND AND UNDERLYING PROBLEM

2.1. Legal context

The EU integrated approach to food safety aims to assure a high level of food safety, animal health, animal welfare and plant health within the European Union through coherent farm-to-fork measures and adequate monitoring, while ensuring the effective functioning of the internal market. Regulation (EC) No 1760/2000 establishes a system for the identification and registration of bovine animals and regarding the labelling of beef and beef products.[77]

The provisions on beef labelling in Regulation (EC) No 1760/2000 were introduced in the wake of instability in the beef market caused by the BSE ('mad cow disease') crisis. The origin of beef as well as the conditions in which it was produced became important quality criteria and transparency increasingly became a decisive decision criterion for consumers. In order to maintain and strengthen the confidence of consumers in beef, to stabilise the beef market and to avoid consumers being misled, the EU enacted labelling rules which develop the framework in which the information is made available to consumers by sufficient and clear labelling of the product.[78]

Regulation (EC) No 1760/2000 distinguishes between the compulsory and voluntary labelling of beef as described further below. The voluntary system is the source of this IO – "Ad hoc labelling of beef".

Operators and organisations marketing beef in the Community have to label it in accordance with the provisions of Regulation (EC) No 1760/2000. The labelling requirements apply to everyone selling fresh or frozen beef (including veal), for example slaughterhouses, cutting plants, repackaging centres, meat wholesalers, retailers of meat etc. Article 13 states that the compulsory labelling system should ensure a link between, on the one hand, the identification of the carcass, quarter or pieces of meat and, on the other hand, the individual animal or, where this is sufficient to enable the accuracy of the information on the label to be checked, the group of animals concerned. Labelling means that written information has to be given to customers at the point of sale. This includes information on packaging material and on labels near the product. It also includes information given in advertisements, websites, posters, announcements and leaflets, or information conveyed by pictures or symbols associated with the product. The rules do not apply to beef sold in the form of processed products (for example, sausages, pies, ready-meals or canned beef) or to sales of live calves or cattle.

The labels have to contain the following compulsory information:

- a reference number or reference code ensuring the link between the meat and the animal or animals;
- Member State or third country of birth;

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77 Additionally, Commission Regulation (EC) No 1825/2000 of 25 August 2000 lays down detailed rules for the application of Regulation(EC) No 1760/2000 (see: http://eur-lex.europa.eu/pri/en/oj/dat/2000/l_216/l_21620000826en00080012.pdf).

78 See Regulation 1760/2000/EC, recital (4).

- all Member States or third countries where fattening took place;
- Member State or third country where slaughter took place;
- the approval number of the slaughterhouse;
- the approval number of the cutting hall which performed the cutting operation.

In addition to the compulsory labelling of beef, Article 16 of the Regulation provides for the possibility of providing information above and beyond the compulsory information (voluntary labelling system).[79] If operators want to make use of the voluntary labelling system they have to send a specification for approval to the competent authority of the Member State in which production or sale of the beef in question takes place (IO "Ad hoc labelling of beef"). The competent authorities of the Member States are also allowed to establish specifications to be used in the Member State concerned, provided that they do not makes it compulsory to use them.

The voluntary labelling specifications to be sent for approval to the competent national authority have to indicate:

- the information to be included on the label,
- the measures to be taken to ensure the accuracy of the information,
- the control system which will be applied at all stages of production and sale, including the controls to be carried out by an independent body recognised by the competent authority and designated by the operator or the organisation. These bodies shall comply with the criteria set out in European Standard EN/45011,
- In the case of an organisation, the measures to be taken in relation to any member who fails to comply with the specifications.

The competent authorities approve a system only if they are convinced that the control system will work and the beef can be traced back to the animal. Specifications which provide for labels containing misleading or insufficiently clear information will also be refused.

2.2. Problem description

The voluntary labelling system imposes administrative costs on European operators and organisations marketing beef amounting to €1.4 million. The administrative cost includes 75% of business-as-usual (BAU) costs. Hence the administrative burden imposed on operators amounts to €361,000. This burden results from the approval procedure described above which operators have to go through if they want to add extra product information to their beef labels. The figures seem to be conservative when compared to the results of the

[79] The voluntary labelling system had already been introduced by Regulation (EC) No 820/1997. In Regulation (EC) No 1760/2000 some indications on the origin of the beef were made compulsory.

Danish SCM baseline measurement, where the administrative burden of the voluntary labelling approval procedure amounted to €23 million.[80]

However, figures aside, from the businesses' point of view the voluntary labelling system might be regarded as burdensome as unnecessary and without a corresponding benefit. Given the fact that beef is the only meat that is subject to preventive labelling controls, operators providing beef meat see themselves at a disadvantage compared to marketers of other meat, as the provision of voluntary label indications is not a matter of their choice but needs to be approved by the authorities first. From the perspective of German associations of meat producers the rules on voluntary beef labelling are a barrier to transparent consumer information leading to competition in the market purely on price. As they are restricted in the information they can provide, there can be no competition on quality.[81]

2.3. EU/Member State remit to act

The Recommendation to 'Repeal the provisions regarding the voluntary labelling of beef' is considered as being a 'Type I' recommendation addressed to the EU institutions, as it relates to an amendment to Regulation (EC) No 1760/2000. As far as the Member States enacted national rules to implement or rather substantiate the directly applicable provisions of the Regulation the implementation of the Recommendation on EU level will require amendments to the national law as well. However, as this would be just a consequence of the changes at EU level the recommendation is regarded as pure 'Type I'.

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80 Due to the discrepancy between the Danish baseline data and the EU measurement, stemming from a different measurement approach, the Danish data was regarded as an outlier and not included in the EU SCM measurement.

81 See article reporting on negotiations between German Federal Ministry of Food, Agriculture and Consumer Protection, Organinvent and business associations regarding improvements to the voluntary beef labelling handling in October 2006; www.fleischer-beratung.de/news_allgemein.htm.

3. REDUCTION OBJECTIVE PURSUED AND NATURE OF THE RECOMMENDATION

3.1. Objectives of the intervention

Unlike other meat sectors, the beef industry incurs administrative burden following the voluntary labelling system that from a today's perspective does not seem to be balanced by a corresponding benefit to consumers. Hence, the Recommendation is that the provisions on the voluntary labelling of beef in Regulation (EC) No 1760/2000 (Title II, Section II) be repealed.

The voluntary beef labelling rules have in general proved to serve their initial purpose providing for recovery of the consumer confidence in the quality of beef and veal meat that at the time of and after the BSE crisis. However, after the drastic decrease of beef consumption due to the crisis, the beef market is now stable and the risk to public health has been contained. The objectives of the voluntary labelling can be deemed to have been met.

In addition to this, the main objective of the labelling provisions - the traceability - is ensured by the compulsory labelling elements providing evidence of the origin of the beef and the animal. Labelling in general gives operators the possibility of providing information additional to the compulsory trace information in order to highlight the benefits of their products when compared to those of competitors as well as constituting a basis for making an informed choice at the point of purchase. Hence, the consequences of repealing the provisions on the voluntary labelling system should not be to prohibit the provision of voluntary labelling information, but the removal of the approval procedure.

The approval procedure as it is implemented by the Member States on the basis of the EC provisions is in general an effective preventive control tool ensuring label quality and defending consumers from incorrect and unclear information. However, consumer protection is the main aim of all food labelling rules. And for all other types of meat it is ensured by the horizontal provisions on labelling, presenting and advertising food stuffs[82] without requiring an anticipated approval procedure. Based on the arguments provided above there is no convincing reason why the voluntary labelling indications for beef could not also be sufficiently covered by these horizontal provisions.

It can be assumed that a large number of operators marketing beef will adhere to a labelling system even without the duty to obtain approval. This assumption is supported by the fact that in the meantime labelling systems for eggs, poultry and pork have emerged and are applied by operators as voluntary systems to build up confidence of consumers.

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82 The main horizontal provisions on food labelling are Directive 2000/13/EC of the European Parliament and of the Council on the labelling, presentation and advertising of foodstuffs (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2000L0013:20070112:EN:PDF) and Council Directive 90/496/EEC on nutrition labelling for foodstuffs (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1990L0496:20040109:EN:PDF). In January 2008 the European Commission has adopted a proposal on the provision of food information to consumers combining the two mentioned horizontal Directives into one instrument (http://ec.europa.eu/food/food/labellingnutrition/foodlabelling/publications/proposal_regulation_ep_council.pdf). In addition, the proposal simplifies the structure of the horizontal food labelling legislation in Directive 2000/13/EC, by recasting and replacing provisions already in place under this Directive.

The implementation of the Recommendation will, therefore, not be detrimental to the policy objectives of the European Commission in terms of protection of human or animal health, or the objectives of the labelling provisions.

Repealing the provisions on the voluntary labelling system of Regulation (EC) No 1760/2000 as such is, therefore, an appropriate measure to reduce or in this case abolish administrative burdens.

3.2. Detailed description of Recommendation

The Recommendation to 'Repeal the provisions regarding the voluntary labelling of beef' aims at easing the procedures regarding beef labelling.

This section first describes the current situation ('as-is') before describing the situation which will result from implementing the Recommendation. The following section will then discuss the impact on the Administrative Burden of implementing the Recommendation.

3.2.1. Current situation ('as-is')

As outlined above, operators and organisations that want to provide additional information on their beef labels exceeding the compulsory indications have to apply for permission and send a specification for approval to the competent national authority. Operators can either apply for approval of their own labelling system or as a member of an already approved voluntary labelling system. The application has to show the labelling information the operator wants to give to his customers and explain how he can provide evidence (through his records) that the information is true. Furthermore, the application has to indicate the control system and in the case of an organisation, the measures to be taken in relation to any member who fails to comply with the specifications.

The way and extent to which Member States deal with the IO differs: in the EU-15, the number of approved specifications varies; in the EU-12, voluntary labelling so far is not widely used at all. Furthermore, the handling of applications regarding systems and single indications is different. And, finally, as the EC Regulation does not provide a definition on what voluntary labelling indications requiring approval are *("For labels containing indications other than those provided for in section I of this title (…)"*) the interpretation of the Member States is different. An example in this context is the term "fresh". In Germany, it is not permitted to use this term on beef labels; in Austria, Belgium, France, and the United Kingdom, it can be used without any requirement for approval; in Italy and Luxembourg, it is not covered by beef labelling rules.[83] The Box below provides an example of how such a system operates. It outlines the German interpretation of the voluntary labelling indications requiring approval.

Excursus

Germany is the country where there is a great deal of appreciation for voluntary labelling on the part of operators marketing beef and where the most voluntary labelling systems in Europe are approved and in place (more than 300). In Germany the competent authority – the Bundesanstalt für Landwirtschaft und Ernährung (Federal Agency for Agriculture and Food)

[83] See presentation "Rindfleischetikettierung in Deutschland: Vergangenheit – Gegenwart – Zukunft", last slide, Hilke Kahn, Dr. Kirsten Schneehagen, Organinvent GmbH; https://secure.orgainvent.de/konferenz2007/german/texte_g/fol_d_d.pdf.

has drawn up a manual on beef labelling ("Handbuch Rindfleischetikettierung")[84] providing guidelines *inter alia* on voluntary beef labelling. The guidelines provide a positive list on what voluntary labelling indications requiring approval are and group them into "indications on characteristics of the meat" and "indications on the generating conditions".

Examples for the first group are: breed (Simmental, Charolais, Angus etc.), level of maturity (e.g. minimum three weeks, more than three weeks, delicate etc.) and additional control and documentation (e.g. quality monitored and enhanced documentation). Examples for the second group are: indications on "animal welfare" e.g. indications on stock breeding (extensive systems, pasture management) or animal transport time; indications on feeding: exclusively farm-owned basic rations or no silage feeding; indications on region or local origin; indications on quality assurance or trade name beef programmes.

The handbook indicates what indications require approval and which do not, as well as on the indications that are not subject to approval under this system, but are regulated by other legal areas.

The application procedure is in general a complex process exhibiting differences between the Member States in terms of the forms to be used and documentation to be provided. The applicants have to provide a considerable amount of information and a large number of documents, some of them admittedly only in special cases. The extent to which documentation is required depends on whether the operator applies as a member of an already approved labelling system or for his own labelling system. However, the number of applications in EU-27 is comparatively low as in nine Member States of the EU-12 voluntary labelling of beef is not used as such so far.

Information and documents that have to be provided are listed by way of example[85] below:

- Basic data of the applicant;
- The voluntary labelling information to be included on the label;
- If it is planned to use a trade marketing programme based on the labelling system, the application must cover key words and key sentences that it is planned be published, a leaflet of the programme, a notification on the owner of the programme and if applicable a copy of a contract between applicant and owner of the programme;
- Information on the certified control body who will carry out the checks;
- In case it is planned to use a logo, information on its aim and meaning;
- A label model;
- A description of the system including a list of the market levels (e.g. slaughter, cutting, whole sale etc.), a system description of each relevant market level, an

[84] http://www.ble.de/cln_099/nn_466062/SharedDocs/Downloads/02__Kontrolle__Zulassung/02__Rindfleischetikettierung/Leitfaden__Rindfleischetikettierung,templateId=raw,property=publicationFile.pdf/Leitfaden_Rindfleischetikettierung.pdf

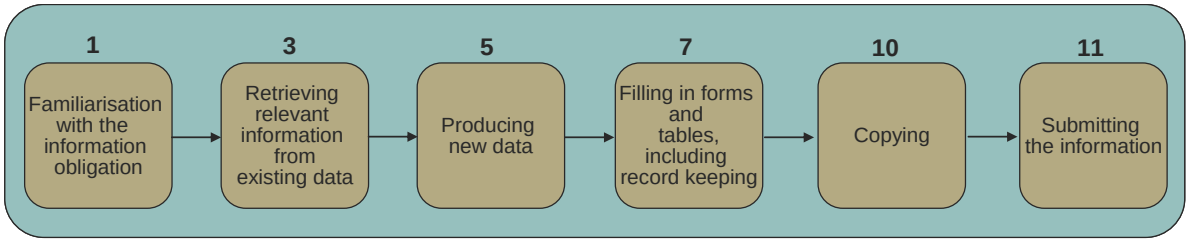
[85] Based on information from France, Germany and Greece.

outline of the interfaces, a documentation of the risk assessment and an outline on how correspondence between the label indication and the production is assured, and by way of example for one animal or one piece of beef all the documents used in the business for shipping and dispatch;

- If applicable, a notification that meat bundles are constituted and a description of the measures taken to ensure homogeneity of the cuts in the bundle;
- Regarding the control system the particulars of the control body that carries out the checks on the labelling system and a copy of the contract with the control body.

The general process based on the SCM standard activities can be described as follows:

Figure 1: Current business process of "Ad hoc labelling of beef"



By Capgemini/Deloitte/Ramboll Management.

First of all, the applicant has to become familiar with the requirements of the voluntary beef labelling approval procedure (activity 1). He needs to establish which the competent authority is, whether the voluntary information he wants to provide on his label needs to be approved, and what information and documents he has to provide with the application. Guidelines can generally be found on the websites of the competent authorities; in some countries the application form can be downloaded as well. Once he is familiar with the framework he starts to collect the relevant information and documents (activity 3). On the basis of the information retrieved and the documents, he draws up the model label, and if applicable, the graphics of the logo he wants to use and draws up the specification, including all the descriptions listed above (activities 5 and 7). Additionally, he has to create copies of all supporting documents such as contracts, leaflets etc. (activity 10). At the end of the process, the applicant combines all documents and submits the application either on paper or by e-mail to the competent authority.

3.2.2. Future situation ('to-be'):

4. **OPERATORS WILL NO LONGER HAVE TO APPLY FOR APPROVAL OF THE SPECIFICATIONS ON VOLUNTARY BEEF LABELS. THE VOLUNTARY BEEF LABELLING, AS THE LABELLING OF ALL OTHER TYPES OF MEAT, WILL BE COVERED BY THE HORIZONTAL PROVISIONS ON LABELLING, PRESENTATION AND ADVERTISING OF FOODSTUFFS. PROVIDING THEY RESPECT THE HORIZONTAL PROVISIONS, OPERATORS ARE FREE TO PROVIDE ADDITIONAL INFORMATION ON THEIR LABELS IN AS FAR AS THE INDICATIONS ARE CORRECT, COMPREHENSIBLE AND NOT**

MISLEADING TO THE CONSUMERS. HENCE, THE IMPLEMENTATION OF THE RECOMMENDATION WILL NOT HAVE A NEGATIVE INFLUENCE ON THE CONSUMER CONFIDENCE EITHER.

IMPACT

The repeal of the provisions on the voluntary labelling system will lead to a complete discard of the administrative burden related to the IO "Ad hoc labelling of beef" as the IO will be abolished as such and operators will no longer need to send the specifications of the voluntary labelling for approval to the Member State authorities. Hence, there is a 100% reduction in the price ('P') and quantity ('Q'), amounting to a reduction of €361,000 in the administrative burden.

5. THE DETAILS OF THE CALCULATION FOR THE MEASUREMENT AND BASELINE COUNTRIES ARE IN ANNEX 1.

IMPLEMENTABILITY

5.1. Investment costs

The repeal of the provisions on voluntary labelling will not lead to investments costs, for either the public sector or for the operators marketing beef. As only the approval procedure will be removed, the operators can continue with their labelling practices and will not have to invest in label changes.

To the public sector, on the contrary, there will also be a saving as the repeal of the voluntary labelling system will also lead to a decrease in their responsibilities, tasks and costs of the competent national authorities.

5.2. Complexity

There is no technological or process complexity in implementing this Recommendation.

5.3. Political will opportunities & barriers

The political will might depend on the results of a consideration of the different interests of consumer associations and beef industry associations. However, from the Member States' feedback on our recommendations we know that in addition to Denmark who made the recommendation initially, there are at least two other Member States, Sweden and the UK, which would support this recommendation.

The European Commission will have an opportunity to launch debate in the Green Paper on agricultural product quality policy which it is expected to adopt before summer 2009. There is also an opportunity in the general debate on labelling initiated in 2006 by DG SANCO,[86] which included *inter alia* consultation on when an EU-wide approach to labelling is necessary or desirable and what safeguards need to be in place when information is provided voluntarily. Based on the results of the consultation the Commission has adopted a proposal on the provision of food information to consumers as mentioned above.[87]

5.4. Time frame

The recommendation to 'Repeal the approval procedure for the voluntary labelling of beef' is regarded as a relatively simple not a structural change.

6. THE ESSENTIAL STEP IS THE AMENDMENT OF REGULATION (EC) NO 1760/2000, BUT MEMBER STATES MAY NEED TO MODIFY NATIONAL PROVISIONS AS A RESULT.

[86] See e.g. Consultative Document „Labelling: competitiveness, consumer information and better regulation for the EU", DG SANCO, February 2006; http://ec.europa.eu/food/food/ labelling nutrition/betterregulation/competitiveness_consumer_info.pdf

[87] Cf. Opt. Footnote 6.

IMAGE

7. **FROM THE MEASUREMENT ITSELF, THERE IS NO INFORMATION AVAILABLE ON WHETHER AND TO WHAT EXTENT THE "AD HOC LABELLING OF BEEF" IS IRRITATING TO BUSINESSES. NEVERTHELESS, IT IS CERTAINLY THE CASE THAT THE APPROVAL REQUIREMENT FOR VOLUNTARY BEEF LABELLING IS CONSIDERED AS IRRITATING BY THE RELEVANT STAKEHOLDERS IN SEVERAL MEMBER STATES, E.G. IN DENMARK, THE COUNTRY FROM WHICH THE RECOMMENDATION ON ABOLISHING THESE RULES STEMS, AND IN GERMANY, AS INDICATED IN CHAPTER 1.2.**

ANNEX 1 – ASSUMPTIONS FOR IMPACT CALCULATIONS

Detailed calculation assumptions

Table 1: Detailed impact calculation "Ad hoc labelling of beef"

Member State	Current Administrative Burden (€)	New Administrative Burden (€)	Reduction percentage (€)	Reduction (in €)
Belgium	639	0	100	639
Czech Republic	0	0	0	0
France	241,626	0	100	241,626
Greece	76	0	100	76
Malta	33	0	100	33
Spain	897	0	100	897

By Capgemini/Deloitte/Ramboll Management.

G:\Sprenger\2010\IA beef labelling\090626

Full final report: http://ec.europa.eu/enterprise/policies/better-regulation/documents/files/abs_development_reduction_recommendations_en.pdf

ANNEX XI

Access to internet by farmers

Even if it is reported that in certain particular cases (e.g. dairy farms, fattening holdings) farmers are using computers for management purposes, it has to be highlighted that **small breeders still representing a large proportion (76%) of the total number of holdings** in the EU and they are not familiar with the usage of computers for their own management. A 2007 survey in France leads to the conclusion that only about **50% of farms** (147,700 out of 320,600) **are using a computer for professional needs** *but a rapid increase is observed* (+ 200% compared to 2003). The Commission report on Rural Statistical data for 2010 on "internet take up and infrastructure" mention that ADSL internet coverage in rural areas amount to 80-100 % in the EU with only three EU member states (BG, RO, CY) having a coverage >50 %[88]. The percentage of subscription to ADSL in rural areas is close of 20 % for EU 15. This data also confirms the fact that a rapid increase is observed (12 % increase) in EU 15 for the period 2005-2009. It has to be noted that the main benefits are not coming from electronic identification per se but from electronic reading, however these two elements are inter-related in the sense that **electronic identification would be an incentive to move to e-reading** and management of holding registers in a simple database format (e.g. excel). In conclusion, *the key improvement factor would consist of moving to computerised registers at holding level from which a fully computerised dataflow could be established.*

[88] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

Data on internet infrastructure and take-up in the EU (including rural areas) based on The Commission report on Rural Statistical data for 2010

	Context 23 - Internet Infrastructure				Objective 32 - Internet Take-Up in Rural Areas			
	DSL Coverage				% Population having subscribed to DSL Internet			
	12/2009				12/2009			
	Rural	Suburban	Urban	National	Rural	Suburban	Urban	National
BE	100.0	100.0	100.0	100.0	30.3	14.3	18.6	17.1
BG	18.0	73.0	100.0	80.0	0.9	n.a.	5.6	3.9
CZ	85.0	93.0	99.0	92.0	7.2	5.4	12.4	7.5
DK	100.0	100.0	100.0	100.0	11.2	26.5	29.2	22.7
DE	89.9	95.9	99.4	96.7	18.5	29.1	27.7	26.8
EE	80.0	n.a.	100.0	93.9	10.2	n.a.	10.0	10.1
IE	82.0	99.0	100.0	92.7	11.3	18.5	19.3	16.0
EL	60.0	100.0	100.0	91.2	11.6	12.9	19.9	16.9
ES	99.0	99.0	99.0	99.0	15.0	15.8	17.5	16.6
FR	100.0	100.0	100.0	100.0	26.2	27.5	30.3	28.7
IT	85.0	95.0	99.0	96.0	17.4	17.9	21.9	19.9
CY	30.0	96.0	100.0	96.0	2.0	12.9	24.9	20.8
LV	67.0	85.0	99.3	88.7	9.4	6.7	7.9	8.3
LT	68.5	96.7	99.0	88.5	2.8	10.2	8.8	6.9
LU	100.0	100.0	100.0	100.0	27.8	27.9	26.5	27.2
HU	82.2	98.6	100.0	92.8	6.9	7.2	10.6	8.3
MT	0.0	0.0	99.0	99.0	n.a.	n.a.	12.9	12.9
NL	99.0	99.0	99.0	99.0	20.5	20.5	21.0	20.8
AT	83.0	99.2	100.0	94.3	13.6	15.9	16.6	15.4
PL	52.2	76.8	94.1	74.5	2.8	20.0	9.4	8.0
PT	89.0	100.0	100.0	97.5	6.3	7.8	14.3	10.0
RO	45.0	0.0	97.0	73.7	2.8	n.a.	3.9	3.4
SI	83.0	97.0	99.0	92.0	15.9	13.3	12.5	14.1
SK	53.6	88.0	99.8	81.9	4.3	7.2	8.5	6.8
FI	90.0	98.0	99.0	95.7	20.8	22.7	22.9	22.2
SE	91.0	99.0	100.0	98.5	15.8	12.0	25.0	18.3
UK	99.6	100.0	100.0	100.0	24.3	25.0	22.6	23.4

EU27	n.a.	n.a.	n.a.	n.a.	13.4	20.6	20.8	19.2	e-L2
EU15	n.a.	n.a.	n.a.	n.a.	19.0	22.2	23.6	22.4	e-L2
EU12	n.a.	n.a.	n.a.	n.a.	4.0	9.8	8.1	6.9	e-L2

- The delimitation of areas is different from the OECD definition:
- rural: < 100 hab./km²
- suburban: 100 to 500 hab./km²
- urban: > 500 hab./km²

Context 23 - Internet Infrastructure				Objective 32 - Internet Take-Up in Rural Areas			
DSL Coverage				% Population having subscribed to DSL Internet			
Change 2005 to 2009				Change 2005 to 2009			
Rural	Suburban	Urban	National	Rural	Suburban	Urban	National
0.0	0.0	0.0	0.0	15.0	0.9	6.9	4.6
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	17.0	5.0	3.4	7.4	4.7
0.0	0.0	0.0	0.0	3.5	8.4	9.3	7.2
34.9	-2.1	0.4	4.7	14.2	16.4	12.6	14.2
n.a.	n.a.	n.a.	3.9	n.a.	n.a.	n.a.	1.9
25.5	0.5	0.5	10.4	9.1	11.5	12.7	11.1
60.0	100.0	83.0	79.2	11.6	12.9	17.4	15.4
17.0	9.0	8.0	10.0	9.6	5.9	6.6	7.1
12.1	2.0	0.7	3.6	14.4	13.7	14.3	14.2
40.4	7.9	0.2	9.0	12.5	7.6	6.9	8.0
30.0	96.0	0.0	26.3	2.0	12.9	16.8	15.2
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.3
13.9	2.6	0.0	6.3	1.5	6.7	4.6	3.8
0.0	0.0	0.0	0.0	15.5	13.8	11.4	13.0
6.2	11.6	8.0	7.8	5.8	4.1	3.9	4.6
		0.0	0.0			5.5	5.5
0.0	0.0	0.0	0.0	4.9	4.9	5.3	5.2
16.0	1.2	2.0	8.3	9.1	5.7	4.6	6.9
0.3	10.3	26.2	12.2	1.7	14.3	5.6	4.7

10.0	4.0	1.0	4.9	3.2	3.6	0.6	3.1	
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
56.0	53.0	5.0	37.0	11.4	8.8	-0.8	7.7	
28.6	21.4	14.6	21.2	3.5	5.0	5.8	4.8	
12.0	2.0	1.0	5.3	7.0	1.3	-0.4	2.7	
25.0	3.0	1.0	5.0	7.6	-2.1	9.7	4.7	
4.7	0.0	0.0	0.5	13.9	15.4	8.9	11.3	
n.a.	n.a.	n.a.	n.a.	8.0	10.1	8.2	8.6	e-L2
n.a.	n.a.	n.a.	n.a.	12.0	10.6	9.6	10.4	e-L2

ANNEX XIIa

Types of electronic transponders[89]

Concerning means of electronic identification, ear tag, bolus and injectable are the main types of transponders that are used for animal RFID.

- **Ear tag:** Electronic ear tag transponders are plastic covered transponders that have to be fixed to the ear of the animal by using a onetime use locking mechanism or that have to be attached to an ear tag in such a manner that it cannot be removed from the tag without damaging it. Farmers already have experience with the application of conventional ear tags. There is no special training necessary for the application of ear tag transponders. The loss rate of ear tag transponders (physical + functional loss) is expected to be a little lower or to be on the same level as the conventional ear tags (up to ~5% a year). An advantage of the ear tag transponders is that in case of non functioning of the reader or of the transponder, the number can be visually read. The ear tags can already be applied at birth of the animal. Ear tag transponders can fraudulently be exchanged with a different ear tag transponder.
- **Bolus:** Electronic ruminal bolus transponders are transponders placed into a high specific gravity container able to be orally administered to ruminants, which remain permanently in the fore stomach. Boluses can only be applied when an animal has a certain weight/age (~ one month). New bolus types that might be applicable at a younger age (one week after birth) are being developed, but only limited experience is available with these new transponders. When applied by an unskilled person the application of a bolus may result in wounding the animal (what in some incidental cases can lead to mortality). The bolus transponder can only be read with a reader. The recovery of a bolus transponder during slaughter is more complex than the recovery of an ear tag transponder. It is possible that by mistake an animal receives two boluses or that the presence of a magnet device to protect against the ingestion of metallic objects may result in non readable ID codes (transponders will respond simultaneously what makes the demodulation of the transponder signal impossible). Identification with bolus transponders is fraud proof because the removal of the bolus transponders is a complex medical intervention. Finally, benefits can also be realised at the level of welfare aspects when using the bolus as it would reduce the number of ear tag to just one, which would reduce the number of ear inflammations.
- **Injectable:** Injectable transponders are small sized transponders that are encapsulated in a biocompatible and non porous material, e.g. glass and which have to be injected into an animal's body. They are widely used for identifying companion animals and horses (12 mm size injectable). These transponders have a limited reading performance. They are also available in 32 mm size with a reading performance comparable to the reading performance of electronic ear tags and boluses used for cattle identification. The application of the injectable transponders in companion animals and horses is performed by a specifically trained person (e.g. a veterinarian). Several experiments have been conducted with injectable transponders for livestock identification, but the recovery of the injectable transponders during slaughter was in some cases a problem. Identification with injectable transponders is fraud proof because the removal of the injectable transponders is a complex medical intervention. The IDEA project demonstrated that only 80% of injectable transponders were recovered and only 52% of these could be successfully read

[89] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

after recovery. The extraction process apparently influences the readability[4]. The post slaughter recovery of injectable transponders is problematic and as a result due to potential risk of implantable transponder entering the food chain it is not possible to recommend the injectable.

ANNEX XIIb

Technical standards for conventional tagging:

The ear tag sets shall be:

- flexible plastic, tamper proof, not reusable, animal friendly, and have non-removable inscriptions
- First tag shall be 45x55 mm with > 5 mm characters size minimum
- The tag set consists of two parts: a male part and a female part.
- Each part of the ear tag shall contain the name/log of the competent authority, has a two letter country code and has an ID code of 12 digits maximum (optionally a bar code can be printed on the tag) named as Alpha numeric coding.
- The second ear tag set can be from other material and additional information is possible.

ANNEX XIII

Type of electronic readers

The RFID readers have to combine two functions: 1) the energy transport from the reader to the transponder and 2) the information transport from the transponder to the reader. The transponder modulates the ID code on the RFID signal. The reader demodulates the bit stream from the RFID signal. There are two main types of readers: *handheld, stationary and portable.*

1- Handheld readers

A reader of the handheld type is during the reading of the transponder positioned in close distance to the (expected) transponder position. In most cases the reader has to be activated by pushing a button. The reader remains activated during a certain period or as long as the user pushes the button. The readers have a display to display the ID code of the animal, although some readers have only a signal light that flashes when a transponder code is read. A handheld reader can have a memory function for storing the ID codes that have been read as well as sophisticated menus for adding information to an ID code. The information can be transferred offline e.g. by a serial line or USB or online with Bluetooth connection. The device is always operated by a battery.

2- Stationary readers

Stationary readers are installed on a fixed position e.g. in a slaughterhouse. The stationary readers have in most cases a connection with a power source and a wired connection to a computer network. Most of stationary readers have a signal light that flashes when reading an ID code but do not have a display. The antenna of the reader has to be positioned in such a way that the transponders of the moving animals are read. Sometimes the antenna is split into two parts, with one part installed on each side of a pass way. Measures have to be taken to prevent that more than one transponder can be in the antenna field of the reader at the same time. The specific conditions in slaughterhouses (e.g. presence of high amount of metal, interfaces due to the various devices used) apparently influence the performance of this type of readers. No concrete data has been collected to validate this hypothesis.

3-Portable readers

A portable reader is used as a stationary reader, but the portable reader can easily be moved to another location.

ANNEX XIV

ISO standards[90]

In close cooperation with the manufacturers of RFID technology and RFID user group organisations ISO has developed standards for animal identification. Before being published the standards have to be approved by national standardisation organisations. The development of a standard takes in most cases several years. Each standard is systematically reviewed every 5 years based on formal procedures available for amending these standards. The animal identification ISO 11784, ISO 11785 and ISO 14223-1..3 standards allow a worldwide trade of animals and the exchange of animal identification related information possible. The ISO 24631-1..4 test procedures help users to select the right products for Their applications by making well defined test results available to all interested parties. This will speed up further introduction of electronic devices, encourage manufacturers to improve on performance, and reduce the costs for separate tests in multiple countries. The ISO 24631-6 safeguards the risk of misinterpretation of animal identification information. A new work item has been initiated for standardising the wired synchronisation of static readers, making the undisturbed use of several readers on one location possible. ISO develops international standards, but does not conduct any conformance testing. Whenever required for ensuring the effective use of specific standards ISO designates a competent body to serve as a maintenance agency or registration authority. In the case of the series of standards on radio frequency identification for animals ISO has designated the Rome-based International Committee on Animal Recording (ICAR) as the registration authority (RA). The responsibilities of the RA include the publishing of test reports on its website (www.icar. org).
The standards are applicable for all animals, so not only for livestock but also for companion animals, zoo animals, endangered species, wild life and fishes. The following standards are available for non advanced LF animal identification:
ISO 11784: Radio frequency identification of animals - code structure The code structure of the transponders is divided into a number of fields:
 Animal bit: indicating if the transponder is intended for animal identification purposes;
 Country code: a 3 digit number referring to the unique ISO 3166 country number (000-899). The use of country coded transponders is restricted to countries that have a competent authority responsible for the registration and granting of ID codes.
It is the responsibility of the competent authority to maintain the uniqueness of the numbers. Countries without competent authority shall not use transponders with a country code. In these countries so called manufacturer coded transponders (900-998) shall be used. The manufacturer of the transponders is in this case responsible for maintaining unique ID codes;
 Identification code: a 12 digit number that is in combination with the country/ manufacturer code unique worldwide for all animals. The idea of the ISO 11784 standard is that the number itself should not carry any information (e.g. like farm number, breeding organisation or region code), because this leads to inefficient use of numbers. Information in relation to the animal shall be stored in databases;
 Retag counter: in some cases an animal loses the tag or the tag does not function anymore. In this case the owner of the animal has the possibility of retagging the animal with the same ID code. The retagging with the same ID code shall be registered in the database and also in

[90] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

the transponder. When issuing a new ID code the retagging number shall be set to ‘0’. At every retagging the retag counter shall be incremented. The retag counter offers 7 retagging possibilities. In case of any further losses, a new number shall be granted to the animal. The use of retagging is only allowed in combination with country coded transponders. In case of a manufacturer code, the user information field should be set to ‘0’;

 User information field: The use of the user information field is only allowed in combination with the country code. The 2 digits field shall be set to ‘00’ in case of a manufacturer coded transponder. When used in combination with the country code the code of the user information field should be coded based on the specifications of the competent authority;

 Trailer bit: this bit shall be set in case information is written in the trailer of the transponder code; otherwise this bit shall be ’0’;

 RUDI-bit: this bit shall be set if a transponder is of the advanced LF transponder type, in case of a non advanced LF transponder the bit shall be ‘0’;

 Reserved field: This field is reserved for future use, all bits in this field should be set to ‘0’.

ISO 11785: Radio frequency identification of animals – air interface.

The air interface allows the use of two different transponder types: full duplex (FDX) and half duplex (HDX). The main difference between FDX and HDX is the moment of information exchange (see 1.2.1). The air interface is standardised in such a way that reading possibilities for HDX and FDX transponders are balanced with a so called dual adaptive protocol. Based upon the situation the listening (reading of the ID code) period for a certain technology (FDX or HDX) can be extended based upon what has been detected by the reader. In the ISO 11785 standard two synchronisation methods are defined. One synchronisation method for handheld readers and one method for wired synchronisation of static readers. For identification systems it is necessary to synchronise readers when two or more of them are used in physical proximity. HDX transponders convey data using two frequencies, one of which is the same frequency as the activation signal. When two readers operate independently the respective activation signals can occur during the periods when other readers are attempting to receive HDX transponder signals. Consequently readers will mutually interfere with others unless ON and OFF periods of the activation signals are synchronised. Synchronised readers transmit activation signals and receive HDX transponder signals in unison and will not interfere with each other. In some application additional transponder features are appreciated. These additional features are the possibility of storing (user) information on the transponders and the possibility of reading information while having several transponders in the field of the reader.

Annex XV

RFID technology-advantages and disadvantages of the different frequencies available The need for EU harmonisation[91]

There are different technologies available to RFID and they differ mainly to the transmission frequency. Each RFID frequency range (**Low Frequency (LF): < 135kHz, RF: 13,56 MHz, UHF: 862 – 915 MHz, Microwave: 2,45 GHz and 5,8 GHz)** meets specific operational considerations of performance, tag form factors and cost. The possibilities of using LF, RF and UHF for bovine animal identification were discussed with RFID manufacturers (supplying LF, RF and UHF products) and RFID experts were consulted.

1.1- Low frequencies (LF) can penetrate almost all materials while not being absorbed. In this range, however, the achievable operating distance is limited. For animal identification purposes LF technology is widely used as the penetration of the signal through living tissue is an important issue. This is important for bolus and injectable transponders but it is also relevant for ear tag transponders, because there are possible situations when body parts of the animal can be in between the reader and the tag to be read. The reading range should be sufficient so that if reader and transponder are close to each other information is exchanged, but on the other hand the reading distance should be limited so that the risk of reading a transponder of another animal is eliminated.
LF identification is suitable for animal application because LF signals are not influenced by body tissue and the achievable reading distances meet the animal RFID requirements. The use of LF identification animal RFID is standardised at worldwide level (ISO 11784 and ISO 11785). However:

- Official livestock schemes are currently implemented in some EU Member States and third countries with ISO 11784 and ISO 11785.
- Only one ISO 11785 transponder of the same technology (FDX or HDX) can be read at the same time (e.g. if two FDX transponders are present in the field of a reader then both transponders will be activated).
- The signal of the transponders will interfere (collisions), resulting in a situation where none of the tags can be read.
- For HDX transponders the situation is the same. In the advanced transponder standards ISO 14223-1..3 an anti collisions mechanism is included (see 1.3).

1.2- The RF/UHF technology is mainly used for item management and very limited experience with RF/UHF on animal identification is available. RF/UHF technology has some advantages. But these advantages are in most cases related to a specific application and are not relevant for all other applications. The nuances related to the claimed RF/UHF technology advantages are the low cost, higher reading distance and the possibility of anti collision. However:

- In a lot of these applications low quality RF or UHF tags are used.
- The higher reading distances can be achieved with a big antenna surface. Using such big antenna in animal application is expected to have a negative impact on the loss rates of the tags.

[91] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

- The reading performance of the RF/UHF transponders can strongly be reduced by a humid environment, e.g. wet manure sticking to the RF/UHF ear tag transponder
- The application of the transponder as an injectable or bolus is not possible because of the impact of humid body tissue.
- The UHF technology is sensitive for reflections (e.g. caused by metal gates). Due to this it can happen that a tag at some distance of the reader is identified while a bad positioned tag closer to the reader is not identified. This can lead to a mismatch between the actual cow number and the number read by a reader.
- A general remark is that the RF/UHF readers are more complex and so more expensive than LF readers.
- There are no worldwide approved standards available for animal identification with RF/UHF technology; The use of RF/UHF is not harmonised worldwide.
- The technology can switch between frequency bands impacting negatively the reading performance
- Readers should be synchronised when more than one reader is used within an area of 1 km²;

1.3- Advanced LF transponders are LF transponders with the following additional feature of storing information in the transponder memory and with the possibility of anti collision. The stored information can be locked (write once, read many) and it is also possible to protect the information with a password. However:

- The anti collision mechanism is time consuming what makes this method a little less suitable for dynamic reading conditions (e.g. group of quick moving small animals).
- The advanced LF transponders are compatible with non advanced LF readers, so the advanced LF transponders can be read with readers intent for reading non advanced LF transponders.
- If a user wants to benefit from the advanced features of the advanced LF transponder a dedicated reader shall be used.
- The anti collision mode of the advanced LF transponders will only work with populations of advanced LF transponders. It will not work in a mixed population of advanced and non advanced LF transponders

1.4 - Microwave allows longer distances than LW while penetration of objects is reduced.

There are three main types of **readers**: *handheld, stationary and portable. It is important to note that:*

- measures have to be taken to prevent that more than one transponder can be in the antenna field of the reader at the same time
- the specific conditions in slaughterhouses (e.g. presence of high amount of metal, interfaces due to the various devices used) apparently influence the performance of this type of readers although no concrete data has been collected to validate this hypothesis.
- The antenna of the reader has to be positioned in such a way that the transponders of the moving animals are read.
- The ISO group on animal identification is developing a detailed description of the wired synchronisation. It is expected that a standard (ISO 24631-7) on this subject will become available soon
- Synchronisation is needed when two or more readers are used close to each other

- The quality assurance of transponders (conformance to the ISO 11784 and ISO 11785 standards and performance criteria, tested conform to ISO 24631-3) ***are considered as being crucial*** for achieving good reading performance.

In conclusion, the RFID technique offers a wide range of options and depending of the option chosen, it would meet specific operational considerations of performance, tag form factors (and cost). For instances, LF technology may look as the most suitable technology for identifying bovine animals while the RF/UHF transponder technology has not been proven to be suitable for animal identification. The LF RFID technology is the most suitable technology for identifying bovine animals. Ear tag transponders and bolus transponders are both applicable. The application of a bolus at an age of 20 days or younger is a problem with most of the boluses that are currently used for identifying bovine animals but new bolus types may overcome this difficulty. The use of injectable transponders has to be investigated in relation to the slaughterhouse recovery. The LF animal RFID technology, the testing of the LF RFID technology and the interpretation of the RFID information is standardised at the world level. The advanced LF RFID technology has additional features available that can be beneficial for the bovine sector. RF/UHF is not standardised worldwide, is only applicable as ear tag transponder not as bolus or injectable. In addition, factors like the environment have a strong impact on the reading performance of RF/UHF technology. The anti collision mechanism is also available in the advanced LF transponder technology.

Annex XVI

Overview of EU bovine livestock, markets, assembly centres and slaughterhouses

Information on EU Livestock Information on the **total livestock** (cattle or bovine) per Member State is taken from the EUROSTAT report *'EU Cattle population in December 2007 and production forecast for 2008'* (figures for 2007) and further updated with information received from the national competent authorities (CA)[92]. Abstraction was made of the **imported livestock** as it amounts only to approximately 4.000 heads per year at the EU 27 level[93].

Table 1: Overview of the bovine livestock in the EU[94]: characteristics of livestock and its reproduction

Number of calves/cows			**0,85**			
	Bovine (2007)	Total slaughtered	Dairy cows (2007)	Other cows	Total cows	Total calves to be identified per year
	in 1000	***in 1000***	***in 1000***	***in 1000***	***in 1000***	***in 1000***
Information at EU 27 level	90.474	28.074	24.154	12.314	36.468	34.279
Information per MS						
AT	**1.997**	**706**	**525**	**271**	796	**816**
BE	**2.700**	**824**	**524**	**510**	1.035	**954**
BG	**611**	22	**335,9**	**14**	350	298
CZ	**1.367**	247	**407**	**152**	559	476
CY	**56**	**18**	**24**	**0**	24	**21**
DK	**1.600**	**492**	**551**	**105**	656	**700**
EE	**237**	**56**	**104**	**9**	113	**100**
FI	**915**	**280**	**296**	**45**	341	**350**
FR	**19.900**	5.663	**3.759**	**4.163**	7.921	**7.550**
DE	**12.951**	**3.813**	**4.064**	**725**	4.789	**4.848**

[92] For the Member States for which no more detailed information could be obtained, it was assumed that annual reproduction rate amounts to **85%** (i.e. 85 annually born calves per 100 cows). Regarding the number of **slaughtered animals** per year, information was found in the above mentioned EUROSTAT report on the tonnes of calves, heifers, cows, bullocks and bulls slaughtered in each individual Member State (figures for 2007). From these figures and based on the average carcass weight per bovine category, the number of slaughtered animals per category and in total were determined for each Member State. Again, whenever possible, this information has been further updated with information provided directly from the competent authorities.

[93] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

[94] *Overview of the bovine livestock per EU Member State is available in Annex XVI*

EL	**682**	235	**150**	**145**	295	251
ES	**5.954**	**2.165**	**903**	**1.959**	2.862	**3.482**
HU	**705**	111	**266**	**57**	323	275
IE	**5.902**	1.778	**1.088**	**1.117**	2.205	1.875
IT	**6.268**	**3.112**	**1.839**	**441**	2.280	**1.834**
LV	**380**	**134**	**180**	**15**	196	**159**
LT	**788**	179	**405**	**10**	415	353
LU	**196**	**26**	**40**	**33**	73	**70**
MT	**17**	**6**	**8**	**0**	8	**5**
NL	**4.000**	**1.960**	**1.490**	**89**	1.579	**1.500**
PL	**6.232**	**1.500**	**2.677**	**61**	2.739	**2.244**
PT	**1.426**	330	**305**	**418**	722	614
RO	**2.819**	1.054	**1572,9**	**30,6**	1.604	1.363
SI	**475**	**132**	**117**	**60**	178	**167**
SK	**498**	**82**	**180**	**36**	216	**178**
SE	**1.578**	**421**	**366**	**183**	548	**527**
UK	**10.221**	**2.727**	**1.978**	**1.665**	3.643	**3.269**

The study provided data on the number of Bovine holdings (farms) for the 27 individual Member States. The number of holdings with cattle livestock was taken from the EUROSTAT databases. Moreover, a distinction is made between holdings with up to 20 LSU (Life Stock Units) and holdings with more than 20 LSU. **At least 76 % of the EU holdings were above 20 bovines.**

Data on the total number of **markets & assembly centres** as well as **slaughterhouses,** is available in the table below[95].

Table 2. Data on the total number of markets & assembly centres as well as slaughterhouses per EU MS[96]

	Markets & Assembly centres	**Slaughterhouses**	**Data source**
Information at EU 27 level	5.644	9.847	
Information per MS			
AT	104	**3.800**	Competent Authority

[95] http://circa.europa.eu/irc/sanco/vets/info/data/assembly/assembly.html; Information on the slaughterhouses: http://ec.europa.eu/food/food/biosafety/establishments/list_en.html

[96] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

BE	32	**61**	Competent Authority
BG	19	**13**	Websites
CZ	15	**121**	Websites
CY	0	**1**	Competent Authority
DK	26	**94**	Competent Authority
EE	4	**72**	Competent Authority
FI	0	**40**	Competent Authority
FR	1307	**271**	Competent Authority
DE	854	**989**	Competent Authority
EL	20	**100**	Estimate by FCEC
ES	982	**481**	Competent Authority
HU	17	**81**	Websites
IE	100	**210**	Websites and estimate FCEC
IT	1363	**2.334**	Competent Authority
LV	19	**80**	Competent Authority
LT	0	**56**	Websites
LU	9	**3**	Competent Authority
MT	0	**1**	Competent Authority
NL	51	**237**	Competent Authority
PL	209	**130**	Competent Authority
PT	20	**35**	Websites and estimate FCEC
RO	60	**50**	Websites and estimate FCEC
SI	22	**27**	Competent Authority
SK	72	**138**	Competent Authority
SE	2	**62**	Competent Authority
UK	337	**360**	Competent Authority

ANNEX XVII

Intra-EU trade movements of bovine (Data Commission source: TRACES)

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	Sum:
AT	11	2	1388		542	121014	1		8531		2807	80	62	1224		290590	242	4	63		1711	3092		4155		1231	514	**437264**
BE	12	20			29	164766	87	3	44409	1	83836	928	381	329	49	28998	2	6266	6		991777	99	109	32		5	50	**1322194**
BG		38							824				7139	266		6347					384			45				**15043**
CZ	174489	41657	216	43		102017	10	101	81453		4546	1154	17360	7881		63257	63	38	92	251	76222	13293	438	1702		32086	7961	**626330**
DE	14822	176954	3328	35	10046	222	224	76	181593	4	214838	8911	10606	11159	68	179781	2853	8234	4146		1671010	25662	4037	7745	13	767	1871	**2539005**
DK	204	1525	383		106	42554		458	1121	13	348	1280	3650	585	56	1549	791	2	520		22696	169	733	357	91		319	**79510**
EE	80	23198			2	6572		2	19756	1		134		214		6349	3216		8528	865	56243	4036		802		45		**130043**
ES		1736				36	4		40		203107	1	10132	44		115442					1791	3	15143	53				**347532**
FI						11	6	135						16			1240				1			31				**1440**
FR	6835	75108	2313		1106	63753	55	6	856679		89	6510	86864	6945	937	3983835	281	4070	148		52664	3683	12962	5569		1279	3171	**5174862**
GB		56257			12	365	129	64	43898		39689			1165	62534	11790		12			131509	538	64	46				**348072**
GR	32		34											989														**1055**
HU	74583	3970	679			3467	8		5370		114	2	59667			46169			118	493	14391	424		6671		31322	4764	**252212**
IE		66471	77			106	8		194681		18087	263590	3229	1641	41	222108	76			236	196942	207	111	189		343		**968143**

IT	962	11093	476		150	3608			129074		12182	99	5210	834	112	18	1085	164			17882	1131	299	1996		1287	129	**187791**
LT		38193				10192		99	99681		506			10847		16698			1258		191926	124741		92			83	**494316**
LU	87	72210				38846			602		776		529			1420					29760	1		668			35	**144934**
LV		12232	29		923	59354	146	92	13791		89			316		107	24015	78		105	23031	5683				63	87	**140141**
NL	127	324867	3986		2013	76080	56		11170		53563	19097	5164	4599	97	5379	178	334	520		61	2884	2430	1947		71	280	**514903**
PL	1876	230791	119		1510	31599	15	8	305590		6612	6	25883	6454		669064	26498		20	68	450580		66	1948		5688	2314	**1766709**
PT									217251		96					3229					1							**220577**
RO	5254	75195	455	304	1825	19377			308378		2637	122	76426	20790	36	117526	160	35	32		13914	714		42		13510	7478	**664210**
SE						455	1565	94	176	739		365		23	97	67	583		34		1	1389		6				**5594**
SI	81871					302					79		522	518		38848											15	**122155**
SK	58237	25162			7714	888			2463			1	8500	23787		83287				33	33409	14761	271	202		5938		**264653**
Sum:	**419482**	**1236679**	**13483**	**382**	**25978**	**745584**	**2314**	**1138**	**2526531**	**758**	**644001**	**302280**	**321324**	**100626**	**64027**	**5891858**	**61283**	**19237**	**15485**	**2051**	**3977906**	**202510**	**36663**	**34298**	**104**	**93635**	**29071**	**16768688**

Most important Intra-EU trade movements of bovine (Data Commission source: TRACES)-

I.8 Origin country ISO code	Destination country ISO code	Animal Nbr
NL	BE	324867
RO	ES	308378
PL	ES	305590
AT	IT	290590
IE	GB	263590
PL	BE	230791
IE	IT	222108
PT	ES	217251
DE	FR	214838
ES	FR	203107
IE	NL	196942
IE	ES	194681
LT	NL	191926
DE	ES	181593
DE	IT	179781
DE	BE	176954
CZ	AT	174489
BE	DE	164766
GB	NL	131509
LT	ES	99681
FR	GR	86864
BE	FR	83836
SK	IT	83287
SI	AT	81871
CZ	ES	81453
RO	GR	76426
CZ	NL	76222
NL	DE	76080
RO	BE	75195
FR	BE	75108
HU	AT	74583
LU	BE	72210
IE	BE	66471
FR	DE	63753
CZ	IT	63257
GB	IE	62534
HU	GR	59667
LV	DE	59354

ANNEX XVIII[97]

Traceability means the ability to track any food, feed, food-producing animal or substance that will be used for consumption, through all stages of production, processing and distribution (from the farm to the fork). The EU's General Food Law (Regulation (EC) N° 178/2002) that entered into force in 2002 made traceability compulsory for all food and feed businesses. It requires that all food and feed operators implement special traceability systems. They must be able to identify where their products have come from and where they are going (one step back and one step forward) and to promptly provide this information to the CAs on request. Already in April 1997, in response to the BSE crisis, the Council of the European Union implemented a system of permanent identification of individual bovine animals enabling reliable traceability from birth to death. In the context of animal health traceability means also the ability to trace back and to trace forward animal movements (the concept of "one step-back, one step-forward") relevant from the epidemiology point of view. The Council Regulation (EC) No 820/97 implemented by January 1, 2000 a regime of individual identification of cattle based on the following minimum elements:

1) **Individual animal identification** from birth until harvest (and in some cases until purchase by end-users);
2) **Animal movement records** that trace animals as they are transported and identify both the location of origin and destination of the animal;
3) **Animal termination records** that document the location of each animal's death and the cause; and
4) **A central database** that is able to store the above-mentioned information as well as to quickly trace animals, identify cohorts in the case of disease, and possibly provide valuable management tools for producers.

Bovine identification is based on two ear tags (named in this report as "conventional ear-tags") containing information which is unique for every bovine (individual number) that have been approved by the competent authority based on Regulation (EC) No 1760/2000 and Regulation (EC) No 911/2004. Ear tags may not be removed or replaced without the permission of the competent authority and the allocation, distribution and application of ear-tags are determined by the competent authority. These ear tags shall be applied to each ear within 20 days maximum after birth. An animal imported from a third country shall also receive approved tags within 20 days maximum. Animals from another Member State shall retain their ear tags when imported. Currently, a competent authority of an EU Member State has the possibility of allowing the use of an electronic transponder but in combination with and in addition of the two conventional ear tags, which means two conventional ear-tags plus an electronic transponder which could be placed in the ear or in the stomach (bolus). A more schematic and brief description of the current system in place is available in **Annex V** and includes information and legal requirements in relation to *identification, cattle passports, holding registration and computerised national database.*

On August 14, 2000, subsequent Regulation (EC) No 1760/2000 of the European Parliament and of the Council did enter into force. The objectives are threefold:

1) **The localisation and tracing of animals to veterinary purposes** leading to the effective control and eradication of animal diseases, particularly BSE and FMD;
2) **The traceability of beef for public health reasons**; and

[97] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

3) **To assist with the management and supervision of certain Community aid schemes** in the field of agriculture such as livestock premiums as part of the Common Agricultural Policy (CAP) subsidy schemes.

ANNEX XIX

Table 8: Total cost of identifying bovine animals (including retagging in case of loss) per technology and scenario: MANDATORY OPTION (in 1000 euros)[98]

	OPTION 3 : E-Eartag and conventional identifier						**OPTION 3 : Bolus and conventional identifier**					
	One-off regularisation			**Transitional approach**			**One-off regularisation**			**Transitional approach**		
	Equipment cost	**Labour cost**	**Total cost**	**Equipment cost**	**Labour cost**	**Total cost**	**Equipment cost**	**Labour cost**	**Total cost**	**Equipment cost**	Labour cost	**Total cost**
Total EU 27	**261**	**132**	**393**	**134**	**67**	**202**	**369**	**142**	**511**	**211**	**64**	**275**
AT	5,92	3,14	**9,05**	3,12	1,66	**4,78**	8,36	3,37	**11,72**	4,86	1,59	**6,45**
BE	6,75	4,97	**11,72**	2,97	2,49	**5,46**	8,35	5,34	**13,69**	3,63	2,36	**5,99**
BG	3,66	0,08	**3,74**	2,80	0,05	**2,85**	7,61	0,09	**7,70**	6,54	0,05	**6,58**
CZ	3,40	0,52	**3,92**	1,48	0,26	**1,74**	4,19	0,56	**4,75**	1,80	0,25	**2,05**
CY	0,14	0,05	**0,19**	0,06	0,03	**0,09**	0,17	0,05	**0,22**	0,07	0,03	**0,09**
DK	4,29	4,27	**8,57**	2,05	2,32	**4,37**	5,25	4,59	**9,84**	2,45	2,24	**4,69**
EE	0,69	0,08	**0,77**	0,36	0,04	**0,40**	0,94	0,09	**1,03**	0,53	0,04	**0,57**
FI	2,46	1,69	**4,15**	1,18	0,87	**2,05**	3,20	1,81	**5,02**	1,60	0,83	**2,44**
FR	51,09	35,38	**86,47**	23,23	18,20	**41,42**	63,24	38,01	**101,24**	28,41	17,38	**45,79**
DE	33,41	22,62	**56,03**	15,28	11,57	**26,86**	41,89	24,30	**66,18**	19,22	11,04	**30,26**
EL	1,92	0,65	**2,57**	0,97	0,33	**1,30**	2,69	0,69	**3,38**	1,49	0,31	**1,80**
HU	1,97	0,27	**2,24**	0,98	0,14	**1,12**	2,67	0,29	**2,96 7**	1,43	0,13	**1,5**
IE	14,80	10,33	**25,13**	6,53	4,97	**11,51**	19,16	11,10	**30,27**	8,83	4,67	**13,50**
IT	15,78	7,46	**23,24**	7,00	3,48	**10,49**	21,15	8,02	**29,17**	10,18	3,24	**13,42**
LV	1,53	0,12	**1,64**	0,99	0,06	**1,06**	2,71	0,13	**2,84**	2,05	0,06	**2,11**
LT	3,63	0,24	**3,87**	2,53	0,13	**2,66**	6,86	0,25	**7,11**	5,48	0,13	**5,60**
LU	0,49	0,33	**0,81**	0,21	0,16	**0,37**	0,59	0,35	**0,94**	0,25	0,16	**0,40**
MT	0,04	0,01	**0,05**	0,02	0,00	**0,02**	0,05	0,01	**0,06**	0,02	0,00	**0,03**
NL	10,12	7,04	**17,16**	4,52	3,61	**8,13**	12,36	7,56	**19,93**	5,36	3,44	**8,80**
PL	23,52	2,30	**25,82**	14,79	1,16	**15,95**	41,57	2,47	**44,04**	30,67	1,10	**31,77**
PT	4,26	0,81	**5,07**	2,27	0,43	**2,70**	5,96	0,87	**6,82**	3,46	0,42	**3,88**

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RO	20,35	0,80	**21,15**	16,40	0,45	**16,85**	44,96	0,86	**45,82**	40,03	0,44	**40,47**
SI	1,62	0,29	**1,91**	0,95	0,14	**1,10**	2,69	0,31	**3,00**	1,85	0,14	**1,99**
SK	1,37	0,14	**1,51**	0,68	0,07	**0,74**	1,89	0,15	**2,04**	1,02	0,07	**1,09**
ES	18,92	7,26	**26,18**	10,59	4,35	**14,94**	24,47	7,79	**32,26**	14,05	4,30	**18,35**
SE	3,96	3,02	**6,98**	1,75	1,48	**3,24**	5,05	3,24	**8,29**	2,29	1,40	**3,68**
UK	24,85	18,37	**43,21**	10,54	8,86	**19,40**	30,91	19,73	**50,64**	13,02	8,33	**21,35**

ANNEX XX

Overview of additional benefits and qualitative considerations of EID

Whereas the paragraph **6.3.1.1** has presented the costs of regulation of the introduction of EID as an official method to identify bovine animals within the European Union, the study [99] consider other impacts worth to be mentioned, such as benefits for **veterinarian acts, official controls and the benefits of the introduction of EID as an official method on dairy and fattening farms.**

Other additional benefits to be considered:

- **Benefits for veterinarian acts**: Identification of animals is extremely important for inseminations as it is first of all important to inseminate the correct animal. Also for reproduction insemination treatments, it is crucial to dispose of the correct ID information. A transponder will secure accuracy in 100% of cases and time may be saved if a reader is available. If the farmer is equipped with a reader this one can be used, but better than this, if the veterinarian has an e-reading equipment, he can store all information on date and conditions of insemination. A 2009 Danish study considers that 25 seconds can be saved per female animal on a yearly basis. As the number of calves/year is evaluated at 34 Mio for the complete EU 27 MS, cost saving can be estimated at a little bit more than 4 Mio €. This figure does not include the cost of buying any reading equipment by the veterinarian. Additional to reproduction acts, the same veterinarians can benefit from EID for treatments and medication use in term of time saving, accuracy of the data and storing data on individual animals. The same Danish study, estimated that up to 90 seconds can be saved per year and per animal leading to an additional cost saving of about 6 Mio €. Is assumed that only 20% of the total bovine population is concerned by veterinarian acts. These cost saving will only profit to the veterinarians and not to the keepers as individual acts are paid on a flat price regardless how much time has been spent on the given act.
- **Animal welfare obligations**: In an effort to increase animal welfare conditions; obligations to farmers, transporters and traders may be facilitated by electronic tagging. EID can then be considered as part of an integrated system regarding animal welfare. As for example, EID can be used for the monitoring of animals transport conditions and any other event based on obligations of Council Regulation (EC) No 1/2005. No relevant figures can be presented here.
- **Official's control:** According to Commission Regulation (EC) No 1082/2003 establishing the minimum level of controls to be carried out in the framework of the system for the identification and registration of bovine animals, MS have to inspect at least 5% of their holdings if the MS has a fully operational national database in place, 10% of the holdings in other cases. During the controls, CAs have to identify animals and therefore a fast accurate reading as well as automated documentation increases their efficiency. The competent authorities in a region in Italy, where electronic identification of all bovines continued since the start of the IDEA project, estimate that **the time savings in their controls at farms and slaughterhouses are around 45%**. A 2009 Danish study indicates that about 1 minute can be saved per controlled animal. These two elements lead to a cost saving of about 1 Mio € yearly if 5% of the animals are controlled.

[99] *The Study on the introduction of EID as official method to identify bovine animals within the EU,* http://ec.europa.eu/food/animal/identification/bovine/docs/EID_Bovine_FinalReport_04062009_en.pdf

- **Benefit of EID on dairy and fattening farms with existing identification equipment**. Transponders are already in use for dairy farms management and to a less extend in fattening farms in the EU. Costs and benefits depend largely on the type of identification equipment which has to be replaced. Actually, in most cases **neck belt transponders** are used for this purpose (see point 3.1.2 of this report on the i*mpact of EID on dairy and beef farms*). Electronic ear tags would work with majority of the existing equipment even if it is reported that about 40% of equipment is not ISO compliant. However, certain practical elements have to be considered like which ear will be tagged with the electronic ear tag,. Neck collars have a long time life and can be used on several animals. If we consider that a given neck collar can be used on 3 dairy cows, cost savings are estimated at about 10 €/animal.

Finally, it can be mentioned that EID brings the following main advantages to those who invest in IT by purchasing appropriate RFID reading equipment, computer software and internet connections:

- Unambiguously identified animals leading to **better data accuracy;**
- Easy reading and **less errors in notification** could lead to **reduced notification time** and bring the national database closer to "real-time";
- Tracing back and forward can be done in hours rather than days leading to **improved management in case of disease outbreak;**
- **Facilitate CAs controls** for ID but for other control purposes as well;
- Improved **traceability for consumers**;
- Cost savings in other farm management areas linked to multi-purpose use of the system;
- Security of operators;
- Reduction of **data transfer costs** leading to less paper work for both operators and CAs;
- Trade competitive advantage relative to those that are not able to provide top level traceability assurances to customers and in managing and responding to animal disease or related outbreaks;
- EID provides incentives to share production and marketing information with upstream and downstream actors in the value chain leading to improved transfer of product liability.

ANNEX XXI

***The impact of the use of RFID transponders in dairy automation*:** on a high percentage of West European farms transponders are used for dairy farm process control. In most cases neck belt transponders are used for this purpose. However, neck belt transponders cannot simply be exchanged by e.g. ear tag or bolus RFID: the technology used for farm management is not necessarily compatible to the ISO11784 and ISO 11785 animal identification. The signal produced by the RFID tags will be less powerful so more sophisticated readers are necessary for having the same reader performance. In milking parlours with milk recording, when introducing RFID different scenarios are applicable for farms that use transponders for farm process control purposes:

- The systems are used next to each other (neck belt transponders+ EID transponder) and RFID is used only for traceability purposes. There is a small chance that the signal of the neck belt transponder is in some situations disturbed by the RFID tag (bolus or ear tag). Farmers will not have any advantage of the RFID.
- The farm process control uses only RFID. The electronics of the readers for farm automation shall in most cases be updated and in some cases the equipment must be repositioned. It is expected that most applications will eventually work if ear tag transponders are used.[100]. Farmers have to invest to update their reader equipment, after a few years they will benefit from using RFID transponders as they will not have to buy expensive neck belt transponders anymore.

The impact of the use of RFID transponders in beef and veal automation: beef and veal farmers do not have the same high level of farm automation than in dairy. If all animals are identified with a RFID tag (bolus or ear tag) the weight information can easily be linked with the animal ID. The use of animal ID makes the composition of groups with different weight classes easier and also it is possible to link breeding information to individual animals. The selection of animals can be automated by using selecting gates equipped with RFID. An online connection with a database will make possible the use of different sources of information for the selection process.

In conclusion, the use of the RFID transponders for farm automation is beneficial for beef farming. However, for dairy farms that already have a high degree of automation there will be no or very limited advantages in switching over to animal RFID.

[100] The use of bolus transponders for farm automation systems has to be investigated, because it is expected that several problems have to be solved before it can be successfully applied

ANNEX XXII[101]

The link between visual and electronic numbers: using the "Alpha numeric" coding (currently used for conventional tagging) for the EID transponders is not possible. Countries that have a visual alpha numeric coding and that want to use the same numbering visually and electronically shall convert the alpha numeric code into a decimal code (e.g. the 11 digit visual number system will be translated in a 15 digit electronic numbering system). The costs of this adaptation should be a key consideration for OPTION 2 [102] and OPTION 3. During the interviews, UK CAs' representatives mentioned that adapting the national system for sheep and goats for printing numbers on new e-tags has been a cost of 3 Mio £. Different options can be considered:

- The visual numbers on the ear tags can be the same as (or related to) the electronic transponder numbers (the "What You See Is What You Get" (WYSIWYG) option)
- or two different numbering systems can be used independent of each other. The two independent numbers are linked to each other in a relational database.

The What You See Is What You Get (WYSIWYG) option has the advantage that an animal has only one number. Nowadays most manufacturers use One Time Programming (OTP) transponders. The codes of these transponders are programmed (and locked) by the distributor. There is no cost difference between the pre programmed transponders and the OTP transponders. The use of two different numbers has the advantage that the database link between the two numbers can be used as an additional safety measure (fraud tracing). Therefore a conversion table must be available in every reader. Readers that can only read and display the transponder code will be worthless in non WYSIWYG schemes.

A large majority of CAs and farmers representatives want to use the WYSIWYG approach, meaning having the same unique number in the electronic identifier and visible on the ear tag[103]. This approach would lead to a need to translate the maximum 12 digit visual ear tag numbering system into a 15 digit electronic numbering system.

[101] FCEC report "Study on the introduction of EID as official method to identify bovine animals within the EU"

[102] C. Saa, M.J. Milan, G.Caja and J.J. Ghirardhi (2005). "Cost evaluation of the use of conventional and electronic identification and registration systems for the national sheep and goat populations in Spain". The cost of building, running, and maintaining of a national database for sheep and goats in Spain has been estimated to be the same as the "Simogan" cattle database currently in use, which corresponds to a total of 46 Mio € over a 6,5 year period.