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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

on enhancing the security of explosives

IMPACT ASSESSMENT

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EXECUTIVE SUMMARY

Explosive devices remain the most used vector in terrorist attacks. They were responsible for the vast majority of the victims of terrorist attacks over the last 50 years. Consequently, enhancing the security of explosives and making the production of explosive devices for terrorists more difficult has been and continues to be a priority for the European Union.

On 25 March 2004, in the immediate aftermath of the Madrid attacks, the European Council, in its Declaration on Combating Terrorism, established as a priority the need *"to ensure terrorist organisations and groups are starved of the components of their trade"*. The European Council noted in particular on this occasion that *"there is a need to ensure greater security of firearms, explosives, bomb-making equipment and technologies"*.

In response, the Commission began to develop a policy on enhancing the security of explosives.

One of the key measures undertaken by the Commission was the setting up of an Explosives Security Experts Task Force (ESETF), composed of private and public sector representatives, with a view to preparing recommendations for actions in the explosives security field. The ESETF completed its work in June 2007 with the identification of 50 recommendations for actions.

The general objective of an EU Action Plan on Enhancing the Security of Explosives would be to reduce the number and potency of terrorist incidents in the EU using explosives. The underlying goal would therefore be to protect society from the threat of attacks using explosive devices while taking into full consideration the multiple areas of economic activity in which explosives and their precursors are used for the benefit of all.

The EU Action Plan would be based on the recommendations made by the ESETF and would be organized under four headings:

- Horizontal Measures – aimed at improving exchanges of information, the development of threat assessments and research.

- Prevention Measures – focusing on awareness raising, control and regulation of precursors, increased control on the market of explosives and pyrotechnic articles, vetting and security measures in explosives facilities and transport and internet-related actions.

- Detection Measures – proposing scenarios, minimum standards, exchanges of information and EU-wide certification, testing and trialling schemes for detection tools.

- Preparedness and Response Measures – including the establishment of an EOD network and liaison with mobile telephone providers on the shutting down of antennas.

Four policy options have been identified concerning the establishment of an EU Action Plan on Enhancing the Security of Explosives. These options have been elaborated based on the recommendations for specific actions set fourth in the ESETF report and group together the various ESETF recommendations depending on their impact:

- Policy Option 1 – Status Quo
- Policy Option 2 – Minimum Option
- Policy Option 3 – Intermediate Option
- Policy Option 4 – Maximum Option

A detailed assessment of the four policy options lead to conclusion that in general terms, Policy Option 4 is the preferred option with the stipulation however that further feasibility studies and consultations need to be taken forward concerning some of the actions identified in Option 4.

1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Organisation and timing

Reference number: 2007/JLS/008

Following the Madrid terrorist attacks of March 2004, the Commission started intensive work on the issue of the security of explosives. Since several services have an interest in the field of the security of explosives, an explosives inter-service group was setup. The group was chaired by DG JLS and included the following services: DG TREN, DG ENTR, DG ENV, JRC and SG.

The inter-service group played a pivotal role in developing the explosives action plan.

The Commission Legislative and Work Programme 2007 states that in the preparation of the Explosives Security Action Plan, the Commission's objective is to stimulate debate and dialogue with all actors involved in the security of explosives. This expertise will be taken into account in the preparation of an EU Action Plan for the enhancement of the security of explosives and firearms.

A significant amount of data-gathering needed for the preparation of this report was undertaken through an external study. The external study constitutes an important basis for this report. The problems, objectives and the assessment of the various policy options were based to a large extent on the final report from the contractor prepared in close consultation with the Commission and on the basis of a desk analysis of appropriate methods and applicable legal documents. The external study and this report have been drafted on the basis of numerous contacts between the Directorate-General for Justice, Freedom and Security and the contractor as well as meetings of an inter-service steering group. The report will be made public on the DG JLS website subject to scrutiny of certain parts for reasons of confidentiality.

A roadmap for this initiative was produced and is publicly available at http://ec.europa.eu/atwork/programmes/docs/clwp2007_roadmap_priority_initiatives.pdf

1.2. Consultation and expertise

All relevant stakeholders have participated and been consulted concerning the development of the Explosives Action Plan. This has been done through the following measures:

- In July 2005, the Commission adopted a Communication on the Security of Explosives which launched a broader debate in the field. The Communication put forward several ideas for action which were undertaken in subsequent years. This included the creation of the Explosives Security Experts Task Force (ESETF).

- The 1st EU Conference on the Security of Explosives has held in October 2006 in Brussels. The event started the implementation of the public-private dialogue as announced in the Commission Communication on enhancing the security of explosives of July 2005.

- The Explosives Security Experts Tasks Force was set up in 2007 to assist the Commission in the preparation of the Action Plan. The ESETF was composed of public and private sector representatives – over 100 in total. The Task Force was divided into four Working Groups, looking at Precursors, Supply Chain, Detection and Public Security Aspects. The first version of the Task Force report, comprising the recommendations prepared by all Working Groups, was submitted to the Commission beginning of May 2007. Following consultation with the Task Force members, a second version was submitted one month later. The work of the Task Force culminated in June 2007 with the submission of a report identifying 50 recommendations for actions designed to strengthen the security of explosives in the EU. This Impact Assessment report analyses all of the measures identified by way of the Task Force recommendations reorganized under three strategic pillars: prevention, detection and response; and one overarching set of measures having a horizontal application. With a view to making the draft Action Plan as clear as possible, some of the original 50 ESETF recommendations were merged into single actions.

- A 2nd EU Conference on the Security of Explosives was held in Braga (Portugal) on 16-17 July 2007 with the participation of around 150 private and public sector representatives. The event was organized jointly by the Commission and the Portuguese EU Presidency. The aim of the conference was to discuss the ESETF recommendations and the draft EU Action Plan. The conference demonstrated strong support for the Commission's activities in the explosives security field.

1.3. The Impact Assessment Board

On 3 September 2007, the Impact Assessment Board of the European Commission delivered an opinion regarding a preliminary version of this Impact Assessment report. In the opinion, the Board in brief stated that the IA report would gain robustness and clarity if the assessment would be focused on the measures with most significant impacts, if the EU value added and right to act are explained for each measure separately, and if the choice of which options to carry forward and which options to hold back for further study is better explained. The Impact Assessment Board further gave the following comments:

(1) The conclusion on which measures to carry forward and which to refer back for further assessment should be made more transparent.

(2) The EU right to act and value added should be demonstrated for every measure.

(3) Measures with significant impacts should be assessed in more detail than measures with minor impacts.

The present version of the Impact Assessment report has been significantly redrafted, with a view to taking these recommendations fully into account. Additional information and modifications to take account of some more detailed comments have also been introduced.

2. PROBLEM DEFINITION

2.1. What are the issues or problems that may require action?

2.1.1. General problem

The main problem which needs to be addressed is the use of explosives and explosives precursors to commit terrorist acts. Explosive devices remain the most used vector in terrorist attacks. They were responsible for the vast majority of victims of terrorist attacks over the last 50 years.

2.1.2. Key concerns

The general problem identified above can further be described by identifying top level issues of concern in four areas:

(1) public security

(2) precursors

(3) supply chain

(4) detection.

These four fields correspond to the specific areas of work within the ESETF. The main problems identified in these areas are set out below. The specific problems falling under these four areas are identified and analyzed in the next section.

2.1.2.1. Public Security Aspects

This area addresses issues relevant to the overall security of the EU and its citizens. It can be, in a sense, considered to have a horizontal 'umbrella' function for the three more specific sectors discussed above.

The two overall problems identified are:

(1) Some Member States have better measures in place to enhance the security of explosives than others. Due the absence or reduction of borders in the EU, terrorists and criminals may engage in 'explosives shopping' or transport explosives from third countries where border control and detection is at a relatively lower level.

(2) Information sharing and cooperation between Member States exists in multilateral and bilateral forms, but seems to be scattered and not covering all countries of the EU. This may lead to important information gaps and a lack of early warning opportunities.

2.1.2.2. The use of precursors

The area of precursors is highly complex, as it not only comprises a high number of substances but also issues in relation to their storage, transport and illicit use to manufacture improvised explosive devices (IEDs). The two overall problems identified are:

(3) Explosives manufactured from precursors have been used in at least eight major terrorist attacks in the past 15 years (including Bali, Oklahoma and London), killing over 500 persons.

(4) There are masses of materials and substances available that can be used to make explosives. There are legitimate reasons for having these in our societies and insufficient knowledge on the availability of materials or substances to substitute these or to make them safer. Some of the alternatives may be very expensive.

2.1.2.3. Supply Chain (storage, transport, traceability)

Supply Chain covers the production of explosives from the beginning to their end use. It thus includes the manufacturing process, storage in the production plant, transactions, transport, storage at the 'customer's' end and the end use of explosives. The process also includes aspects of accounting, record-keeping, licensing and staff vetting. The two overall problems identified are:

(5) Legally produced explosives have been misappropriated from production, storage, distribution and end user sites or purchased unauthorised. Several major thefts of explosives have occurred during the last 10 years.

(6) Manufactured explosives are stored in and moved to many different places, with many different users and providers. Legislation in this area (i.e. the Explosives Directive) is aimed at harmonising safety standards. Security legislation and measures at national level however vary a great deal.

2.1.2.4. Detection

When the prevention activities described above have failed or have been circumvented, it is up to detection tools and practices to limit the risk of terrorist attempts to use explosives. Detection technologies and devices have however substantial limits and will not, at least on the short-medium term, be able to detect all explosives and substances that can be turned into explosives. The five overall problems identified are:

(7) The present likelihood that terrorists illicitly handling and using explosives and precursors are detected may not be sufficient in all locations and even in locations where detection equipment is already deployed.

(8) Purchasers of detection technologies and devices are insufficiently aware and sometimes 'misinformed' about the performance of the equipment and systems and about the best way to deploy and operate these in an efficient and effective way. Producers of such equipment and systems are experiencing difficulties to develop systems that match the needs of their clients.

(9) There is a lack of single market integration with regard to detection technologies. This makes them more costly and not as efficient as they could be.

(10) There are duplications and overlaps in Member States' activities to determine the quality of detection equipment. In addition, there is limited exchange of information among relevant public authorities across the EU on these matters.

(11) Difficulties exist with regard to the rolling out of new solutions and technologies stemming from research onto the market. There is an overall lack of mechanisms which could bring the research results closer to the end user, considering cost-benefits of the solution, operational requirements, etc.

2.2. Analysis of specific problems, their causes and existing situation

2.2.1. Public Security Aspects

2.2.1.1. Specific problems

The following specific problems can be identified:

- There is a lack of an overall EU system coordinating and providing information to relevant national authorities on explosives and explosive incidents.
- There is a lack of networking and coordination in the area of explosives including all Member States.
- Existing information sharing and cooperation activities do not always involve and inform all relevant national departments.
- The EU does not have an Early Warning System in place to inform Member States of imminent threats, thefts, suspicious transactions and other terrorist activity
- There is a lot of information freely available on the Internet on bomb-making
- There is an overall lack of research in the area of explosives, explosive precursors and detection.

2.2.1.2. Scale of the problems and existing action

International and EU level

Since the early nineties, thousands of people across the world have died because of both small and large-scale terrorist bombings. Many more persons were injured. In the EU in that same period, the use of explosives for terrorist purposes accounted for at least 300 deaths and around 2,000 people injured. The TE-SAT[1] report estimates that in 2006 alone, a total of 498 terrorist attacks (overall, not necessarily using explosives) were carried out in the EU. Whilst the majority resulted in limited material damage and were not intended to kill, the failed attack in Cologne (DE) and the foiled London plot demonstrates that terrorists still aim at mass casualties. The report further concludes that a large number of various types of terrorist organisations have an active presence in the EU, some of them directly targeting Member States or Third States interests' in Member States.

One of the factors making it relatively 'easier' for terrorists to strike or prepare attacks is the fact that despite the common EU legislation and action to combat terrorism, in practical security terms some Member States have better measures in place to enhance the security of explosives than others. This has for example led to several cases of 'explosives shopping', such as ETA avoiding the very severe and tight Spanish regulatory and institutional framework by obtaining explosives from another EU country in the Schengen area. However, even the Spanish system was not watertight as the explosives used on the 11 March 2004 bombings originated from a mine in northern Spain. The use of explosives originating outside the EU for terrorist bombings in one of the Member States also shows that despite all external border controls it is still difficult to detect the illegal import of explosives.

There are several mechanisms in place that focus on practical cooperation and information sharing. The most recent and relevant one is the **Explosives Security Experts Tasks Force**, set up in 2007 as a result of the July 2005 Communication on "Measures to ensure greater security in explosives, detonators, bomb-making equipment and firearms". The Task Force assisted in the preparation of the EU Action Plan for the enhancement of the security of explosives, subject of this impact assessment. The multi-stakeholder Task Force including both the public and private sectors concentrated, through four separate working groups, on the issues of precursors, supply chain, detection and public security.

National level

Domestic agencies responsible for general security, safety and internal issues vary greatly between the Member States. Agencies broadly include a combination of Ministries for supply chain matters (e.g. Ministries of Interior, Justice, Industry / Enterprise and Transport), the Ministries of Defence, Interior, Justice and Economy for safety issues and the Ministries of Foreign Affairs, Justice and Interior for international issues. The police, often in the form of specialised bomb squads / centres, are in most Member States involved in detection, general

[1] EU terrorism situation and trend report 2007, Europol, April 2007.

security and safety matters. A number of countries have established inter-agency working groups and / or committees to cooperate and exchange information. Some have joint access to database and other information tools, while others organise regular meetings to coordinate actions.

2.2.2. The use of precursors

2.2.2.1. Specific problems

The following specific problems can be identified:

- Insufficient awareness of staff handling precursors (in the widest sense) in terms of detecting illicit activities and suspicious actions
- Insufficient knowledge on how to modify or restrict the nature of precursors to make their use in manufacturing explosives more difficult.
- Lack of systems to monitor and report on suspicious transactions in B2B (business to business or upstream transactions) and B2C (business to consumer) relations.
- Existing legislation and voluntary actions concerning the storage and transport of precursors does not sufficiently address security issues.

2.2.2.2. Scale of the problems and existing action

A worrying share of terrorist bombings since the beginning of the nineties included the use of precursors turned into explosives. A non-exhaustive list of large-scale terrorist bombings across the globe shows that this use has been stable, if not increasing, over the last 15 years. Together, these eight major incidents listed in the table below caused nearly 500 deaths and more than 3,000 injured.

Table 2.2 – Overview of terrorist bombings using precursors

Year	Location	Death	Injured
1992	St Mary's Axe / Docklands, London, UK	3	0
1993	WTC, New York, USA	6	1000
1993	Bishops Gate, London, UK	1	40
1995	Oklahoma City, USA	168	1000
1996	Canary Wharf / Docklands, UK	0	39
1996	Manchester, UK	0	200
1998	Omagh, Northern Ireland	29	200
2002	Bali nightclubs, Indonesia	202	209
2005	London subway. UK	56	700

It is also important to consider the number of attacks that were unsuccessful (e.g. London both in July 2005 and June 2007) involving Improvised Explosive Devices (IEDs), as well as the high amount of seizures of substances, especially ammonium nitrate fertilizer destined to that end. Little evidence is available but this may well amount to many tons over the past 30 years.

Precursors to explosives

There are hundreds of precursors with explosive potential and thousands that can have an explosive reaction when put together. Many of these are legal to purchase and widely used in everyday life. Many Member States have the ability to identify explosive precursors before and after detonation, but this is often very difficult due to the small samples available post blast and the fact that some precursors cannot be identified when working with samples only.

By the nature of their choice of tactic, many terrorists are most likely interested in chemicals that are high impact (able to cause substantial damage and serious injury to a significant number of people) and feasible to use (easy to deploy / manufacture, difficult to detect and readily accessible). However, especially suicide bombers are known to have used IEDs with a smaller destruction potential, containing only small amounts of dangerous chemicals, which

are even more difficult to detect. Such explosive devices can be produced without using any specific equipment, following bomb recipes on the Internet, and their components are easy to obtain. Contrary to drugs precursors for which the demand and production is constant, the demand of terrorists is usually 'one-off', as attacks only require the 'right' (i.e. a relatively small) quantity of chemicals to be used in a single attack. This makes it even more difficult to identify transactions or any other activity aimed at manufacturing explosives from precursors.

There are additives that can reduce the explosive properties of some of the most dangerous chemicals. Other chemicals could, to some extent, be replaced by less explosive alternatives. There is insufficient knowledge and research in this area to come forward with solutions which are effective and cost-efficient.

Overall, the chemical industry is rather sceptical about the possible application of inhibitors and additives, especially for the upstream market (other industrial producers using the chemicals). As the effect of inhibitors is basically a neutralising one – especially in the case of acids – this would have a strong adverse impact on the utility of the chemical in question as a commodity/intermediate product.

With the high number of chemicals that are being produced and sold throughout the EU, staff working in the industry is not sufficiently aware of which precursors are most dangerous and which transactions should be considered suspicious. Without this knowledge, there is a danger that such transactions, or also, for example thefts, are not reported to the appropriate authorities.

Only a limited number of Member States have put in place systems or activities to monitor B2B and B2C transactions in precursors which may be suspicious. These include policy advice, cooperation with end users, the publication of guidelines and the establishment of a monitoring system. The UK, for example, recently launched the 'Know your Customer' campaign which encourages retailers to consider, on the basis of a series of targeted questions, whether a certain transaction should be reported to the authorities. The campaign refers to a number of very specific chemicals. Similarly, the chemical industry in the UK ("upstream": producers of components and intermediate products) also have a Code of Conduct in place linked to the identification and reporting of suspicious transactions. Substances used predominantly for chemical weapons or drugs (such as acetones), are on the industry's monitoring list.

Relevant **EU legislation** in the area mainly focuses on safety rather than on the security of the products and installations. Instruments such as the **Fertilizers Regulation (EC) No 2003/2003**, the **Reach Regulation (No 1907/2006)** and the **Seveso II Directive (96/82/EC)** all include extensive safety requirements, as well as provisions to improve the protection of human health and the environment, whilst insufficient attention is paid to security issues.

2.2.3. Supply Chain (storage, transport, traceability)

2.2.3.1. Specific problems

The following specific problems can be identified:

- There are great differences in the extent to which Member States have regulated and are enforcing *security* measures concerning the storage and sales of commercial explosives. This includes raw materials used in the manufacture of explosives.

- Despite the Directive on the harmonisation of the provisions relating to the placing on the market and supervision of explosives for civil use and ADR legislative instruments, surveillance, protection and tracking systems for the transport of explosives may not go far enough for security purposes.

- Whilst nearly all Member States have measures in place to vet personnel working with explosives, the level and coverage of the screening varies greatly (from merely checking vocational competences and criminal records to psychological tests and in-depth background checks).

- The labelling of explosives is not undertaken by all Member States and is not carried out in a harmonised way, except in specific relation to intra-community transfers.

- Not all Member States have systems in place to alert producers, distributors and transport companies of regional threats.

2.2.3.2. Scale of the problems and existing action

A high share of terrorist bombings since the beginning of the nineties included the use of commercial explosives (as opposed to IEDs). The origin of most of these explosives is unclear in most cases (i.e. it is not public whether these were explosives legally produced in the relevant geographical zone or whether they were smuggled illegally into the territory). The following, non-exhaustive list of large-scale terrorist bombings across the globe shows that the use of such explosives has been stable over the past 15 years, together causing around 1300 deaths and nearly 5,000 injured.

Table 2.5 – Overview of terrorist* bombings *using commercial explosives

Year	Location	Death	Injured
1993	Bombay car and scooter bombs, India	317	1200

1996	Khobar Towers, Saudi Arabia	19	372
1998	Kenya & Tanzania	224	1000
1999	Moscow flats, Russia	272	400
2000	USS Cole, Yemen	17	39
2002	Limburg oil tanker	1	12
2003	Istanbul, Turkey	28	450
2003	Casablanca suicide bombings, Morocco	41	100
2004	Madrid railway, Spain	191	600
2006	Mumbai railroad, India	190	625

Major incidents or alarm to the general public concerning legal explosives manufactured, transported and stored in the EU are rare. The safety record of the explosives industry is considerably better than most other industries of a similar nature. However, there have been several major thefts of explosives, including the huge amounts of Semtex seized from the ship Claudia in the seventies and several ETA thefts of commercial explosives from quarries and other locations in France.

Explosives industry

The Federation of European Explosive Manufacturers (FEEM) estimates that close to one million tonnes of explosives are detonated every year in Europe for civil purposes. The main clients are:

- The mining industry;
- The quarrying industry;
- Construction and civil engineering, mainly for demolition, land clearance and tunnelling;
- Other industrial uses, such as metal fabrication and activities where rapid force is required (such as air bags).

In terms of scale, the mining and quarrying industries consume the majority of explosives. The market for civil explosives in Europe is relatively small by international standards (see Figure 2.6 below). In 2001 North America consumed around 2.5 million tonnes of explosives

(39% of the global total), and Asia a further 1.3 million tonnes (21% of the global total). The mining and quarrying industries in the EU27 countries accounted for just 8% of global consumption (0.5 million tonnes).

On the basis of the information available, the production of explosives seems to be a relatively stable industrial sector in the EU in the last three years. Ten years ago, the volume produced was substantially lower than in 2005, whilst the total value was relatively higher. According to the impact assessment on the Traceability Directive[2], the European industrial explosives business environment is highly competitive. Overcapacity exists and consumption is not growing. Manufacturers have been and will continue to be forced to rationalize and concentrate their businesses. Further efforts to expand business across national boundaries, especially by larger participants purchasing smaller ones, can be expected.

Transport and storage

With the exception of explosives that are mixed onsite, a great deal of explosives are moved for national and Intra-community trade and for export outside the EU. Whilst it is impossible to find data on internal movements, in 2006 nearly 30,000 tonnes of explosives were transported from one Member State to another and nearly 14,000 tonnes were transported to third countries.

Whilst all Member States have to some extent regulated and made practical arrangements for the storage and transport of explosives, these vary greatly between each other despite EU and national regulatory requirements.

Overall, very few of the measures in place in the EU Member States are based on in-depth risk assessments of the actual storage / production plant. With regard to storage, measures range from special requirements on construction, alarms, record-keeping and fencing to monitoring by guards or surveillance systems and police control. In addition, whilst security requirements may be very strict and regularly monitored in sites where explosives are manufactured, stored and distributed, there seems to be less control on end user sites, such as quarries and construction sites. For example, the explosives used in the Madrid bombings were stolen explosives from a quarry in the northern town of Tineo (Spain) with the help of a Spanish quarryman.

With regard to transport, measures include police escorts, inspections, GPS surveillance, notification to the police, licensing of movements, the use of armed forces (in case of military transports), alerts to border guards in case of cross-border movements, the use of armed private security guards, permanent radio contact and the use of blocking systems. Based on the numbers of EX/II and EX/III vehicles[3] in Sweden (40) and the Czech Republic (50), it is estimated that the total number of vehicles transporting civil explosives is around 450 in the

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2 Impact Assessment Report – proposal for a Commission Directive setting up, pursuant to Council Directive 93/15/EEC, a system for the identification and traceability of explosives for civil uses.

3 EX/II- and EX/III refers vehicles used specifically for the transport of dangerous goods.

EU. Mobile Explosive Manufacturing Units, used for onsite production of explosives, are less prone to thefts. Based on their numbers in the Czech Republic (5) and Sweden (10), their total number is estimated to be relatively low, around 100 in total in the EU.

The arrangements described above have two things in common: a) their focus is often on safety and less on security; and b) difficulties are encountered in the case of small quantities (e.g. up to 10 kilo). The differences between national arrangements have, in a few cases, had a 'displacement' effect. For example, Spain has one of the strictest systems to ensure the security of explosives, due to the presence of E.T.A on its territory. However, in a Europe without borders, it has been relatively 'easy' for this terrorist organisation to steal and / or illegally purchase explosives in other Member States with a less tight regulatory framework and systems of control. Finally, whilst some countries have some form of alert system in place in case of thefts or to retrace lost or stolen explosives, these systems often do not comprise early warnings in case of threats in particular regions or areas.

Persons handling explosives

Personnel handling or having access to explosives have to undergo a background check in all Member States. However, the level of screening seems to vary. Some countries only check whether the person has the appropriate professional competences to safely handle explosives. Others include a check of criminal records and more far-reaching background checks (mental and physical health, use of substances, etc). Cyprus, for example, mentions the checking of the person's character, which may refer to the use of psychological testing.

Traceability

With regard to the labelling of explosives, it appears that nine countries mark explosives for licensing and record-keeping requirements. Three Member States are operating databases to improve tracking, tracing and record-keeping systems of all explosives. Several countries are considering developing such databases. When asked about marking explosives, many refer to the CE sign for safety standards, as well as to other forms of marking through barcodes, batch numbers, etc. However, existing conventions and regulations covering the transport of dangerous goods such as explosives, allow packages containing these goods, but not the goods themselves, to be traced rapidly. If the original packaging is changed, it is unlikely that the contents can be identified.

In line with the Montreal Convention, all Member States are obliged to use chemical agents to market plastic explosives. Other types of commercial high explosives are not tagged. At the same time, tagging or marking of the actual explosives has its limits, as traces of such taggants remain permanently in the material that exploded. For example, limestone which is first blasted and then turned into concrete will include the taggant of the first explosive used. If this concrete, at a later stage, is blasted again with another marked explosive, it seems that it is no longer possible to identify which explosives were used when. This would imply that in time, traces of different taggants can be found practically everywhere. Some industrial stakeholders also claim that it is highly expensive.

The vast majority of Member States have the ability to identify certain explosives and explosive materials found before and after detonation. Problems highlighted include the difficulties of identifying the type of detonator or explosive used due to the CE instead of national marking and the small samples available post blast.

Legislation

When looking at legislation in place, the most relevant instruments are the **Council Directive 93/15/EEC on the harmonisation of the provisions relating to the placing on the market and supervision of explosives for civil uses**, which imposes a uniform set of manufacturing and quality assurance standards which must be met if a product is to be sold on the European market, and the related **Commission Decision of 15 April 2004 on an Intra-Community transfer of explosives document**, which contains a number of requirements for the transportation of explosives as well as an online document which must be completed by firms wishing to transfer explosives.

Other relevant legislation includes the draft **Directive on the identification and traceability of explosives** and the legislation related to **ADR** which includes specific provisions on explosives. At national level, all EU Member States have transposed the Directives related to explosives for civil use. The majority of Member States have elaborated legal and practical arrangements regarding the licensing or explosives and record-keeping requirements, requiring registration, applications for approval and introduction of security measures onsite.

2.2.4. Detection

2.2.4.1. Specific problems

The following specific problems can be identified:

- Detection technologies and devices cannot detect all explosives and explosives precursors.
- Detection technologies and devices do not always perform in line with the indications given by their manufacturers.
- People purchasing and working with detection technologies and devices are not sufficiently aware of the possibilities and limitations of these instruments.
- Detection technologies and devices are not always used in a strategic, targeted manner.
- Member States exchange little information on the quality and performance of detection equipment and undertake testing, trialling and certification in 'isolation'.
- There are weaknesses in the EU knowledge triangle. Research ideas may not become innovations and it is difficult, at best, to get new products to market.

2.2.4.2. Scale of the problems and existing action

Detection is, in a sense, the last remedy where prevention activities have failed or have been circumvented. Detection tools should help to minimise the risks of terrorists using explosives. Efficient and accurate explosive detection tools are therefore necessary to increase the chances that explosives and substances that can be used to become explosives are identified. Important issues to be addressed in this regard are: overall improvement of detection technologies and their use by operators; the identification of priority areas to improve the strategic and targeted use of detection tools; and lack of EU cooperation / coordination leading to single market obstacles; and difficulties to roll out new solutions and technologies stemming from research onto the market.

The main groups of end-users on the market are:

- Airports, ports, railway stations and railway operators (passengers)
- Freight transporters, warehouses and logistic centres
- Government and public agencies: government buildings, courthouses, public stadiums, border crossings
- Financial institutions
- Operators of critical infrastructure (electricity, oil & gas networks, refineries)

A great number of European public and private actors are purchasing explosives detection equipment they did not have in the past, but there is also a necessity to replace and/or upgrade equipment regularly. The turnover time of such equipment is considered to be on average 3-5 years.

Improvement of detection technologies and their use

Knowledge on the performance of existing equipment and their use should be further improved. Detection technologies and devices may never be able to detect all explosives and all explosives precursors imaginable. Especially the use of the latter to make IEDs is a relatively new phenomenon. Further, operators can miss suspicious objects even if they had been correctly screened. The effective use of screening tools require overall very high skill levels and expertise of the operators.

Finally, end-users do not always employ updated, combined detection equipment. The detection of explosives is more effective if the technologies are combined. This is sometimes not done appropriately. Private operators of freight and/or passenger transport infrastructure, lacking the necessary funds, are not always able to install combined systems that can be further upgraded over time.

The identification of priority areas to improve the strategic and targeted use of detection tools

In addition to the issues related to the reliability and performance of detection tools, there is the challenge of placing the right equipment at the right place. Detection systems in the EU range from relatively 'common' types like X-ray machines and sniff dogs to more sophisticated technologies such as EDS machines, vapour detection, robots and biological detection systems. Most use these technologies at (Schengen) airports and harbours. Some countries have mobile detection units and can therefore make tactical use of their equipment. Especially those Member States with external borders refer to the use of detection technologies at border control posts. Member States are increasingly considering extending the coverage of these technologies to new locations, such as conference venues, railway and underground stations and other public facilities.

The demand for detection systems, as discussed above, has risen substantially in all areas /for all groups of end users. The costs of the equipment are considerable. For example, automated baggage control screening devices at airports can cost up to €1 million each (with a bags throughput of 900-1200 pieces per hour (slower machines are less costly, but have a much lower throughput). Smaller trace detection equipment may cost from €30,000 to 50,000, with a throughput of 30-60 bags per hour. Some personal detection tools that are considered relatively reliable (e.g. CAT) are slower, and do not allow for a quick trespassing of passengers. As already mentioned, detection is most effective when using a combination of solutions, thus making it necessary for users to purchase several tools.

From the above it is clear that, simply from a cost perspective, there is a limit to the amount of detection tools that can be purchased and installed. It is important to map and assess the detection needs and prioritise the placement of detection equipment. At present, often public and private users seem to have adopted a rather ad-hoc approach, placing equipment where the need seemed highest in order to, for example, comply with new legislation, address detection gaps and respond to (perceived) threats or real incidents.

Lack of EU cooperation / coordination leading to Single Market obstacles

The development and acquisition of detection solutions is a complicated and highly expensive endeavour. With the exception of some good practice in the aviation sector Member States' authorities that are purchasing detection equipment often have to rely entirely on the information provided by the producers and on the views of those few other actors, perhaps in other countries or other sectors, that have used the same or similar equipment. Each detection solution has to go through some form of nationally carried out testing and certification procedure, which is often lengthy and complex. Suppliers of detection solutions also face various obstacles. New demands for the detection of an ever increasing number of explosives and specific substances in ever smaller quantities require substantial research and innovation. In an industrial sector reigned by confidentiality (if criminals or terrorist would know what substances detection tools can identify this would defeat the purpose of the tool) producers find it difficult to meet the specific needs of their clients. In order to sell their solutions, they have to go through testing and certification procedures which vary from country to country.

This ambiguity in the results sheds light on the problems in the market of such devices: a major problem with detection equipment is that there is no common and reliable certification and testing in place in Europe. With the exception of detection for aviation purposes, there are no minimum requirements at EU level on the core features of the systems, e.g. what explosives should trace detection equipment identify, or what is the allowed probability of false signals? This unclear situation constitutes an obstacle to the functioning of the Single Market.

2.3. Who is affected, in what ways, and to what extent?

The entire EU society is affected by the identified high level problem as terrorists may strike anywhere and at any time. The availability of explosives and explosives precursors, and the open nature of internal EU borders mean that any EU Member States can be the subject of a terrorist threat.

The problem potentially affects all European citizens, inhabitants of the European Union, the Member State governments and the European Union as a whole. Effects can be both direct (e.g. casualties following a terrorist attack) and indirect (e.g. the disruption of certain services following, psychological damage).

2.4. How would the problem evolve, all things being equal?

The situation within the EU would continue evolving based on trends applicable today:

- Certain Member States would address the explosives security issue comprehensively because of a history of terrorist attacks or because of a perceived threat;

- Certain Member States would address the explosives security issue only to a certain limited degree due to the fact that they would not feel threatened by the possibility of terrorist attacks;

- Information exchange would take place on an ad hoc basis;

- Informal networks would continue to be built.

The above trends would generally improve the explosives security situation within the EU only marginally. Due to the free movement of goods and people within the EU and open internal borders there would continue to be a high risk that dangerous materials could be acquired and used with malicious intent. The lack of a detailed strategy and action plan at EU level would constitute a lost chance in combating terrorism.

2.5. Does the EU have the right to act?

2.5.1. General considerations

The use of explosives to harm innocent citizens has been the most common method used by terrorists to instil fear in populations accustomed to living in democratic, free and open societies. In October 2003 the JHA Council had concluded there was no need to introduce new measures on storage and transport of explosives. However, in the aftermath of the terrorist bombings in Madrid on 11 March 2004 a consensus started to emerge within EU Member States for the need to explore a more harmonised system that would prevent explosives, detonators, bomb-making equipment and fire-arms from falling into the hands of terrorists. In its **25 March 2004 Declaration, the European Council** recognised the "need to ensure terrorist organisations and groups are starved of the components of their trade". In particular it recognised "the need to ensure greater security of firearms, explosives, bomb-making equipment and the technologies that contribute to the perpetration of terrorist outrages". Furthermore, **the revised Plan of Action on Combating Terrorism of June 2004** called upon the Council and the Commission to examine the scope for measures to ensure greater security of explosives (Action 3.6.1).

The Commission, in its **October 2004 Communication** *on Prevention, preparedness and response to terrorist attacks*[4] signalled its intention to present proposals if necessary to ensure the highest possible security level in Europe. Indeed, the **"Hague Program - Strengthening freedom, security and justice in the EU"**, endorsed by the European Council in November 2004, explicitly *invites the Commission to make proposals aimed at improving the storage and transport of explosives as well as at ensuring traceability of industrial and chemical precursors.*

Nevertheless, for each of the measures proposed by the ESETF, considerations of subsidiarity and proportionality need to be considered separately – in other words, no action should be

[4] COM(2004) 698, 20.10.2004.

taken forward at the EU level unless there are good reasons for doing so. Although within the context of the Impact Assessment Report it would go too far to explicitly deal with this issue for all of the proposed actions, the following sections aim at clarifying this point for the main groups of proposed actions.

2.5.2. The added value of the European Union

The European Union is an area of increasing openness and an area in which the internal and external aspects of security are intimately linked. It is an area of increasing interdependence, allowing for the free movement of people, ideas, technology and resources. As a result it is also an area which terrorists may abuse to pursue their objectives and which has already been abused for this purpose. The foiled attacks in London and Glasgow on the 29th and 30th of June were a reminder of the threat. In this context concerted and collective European action, in the spirit of solidarity, is indispensable to combat terrorism.

The added value of the European Union in the explosives security field stems from the role of the EU in facilitating cooperation, funding and legislation.

2.5.2.1. The EU as a catalyst for cooperation

There is a clear need for cooperation at the EU level to co-operate to combat terrorism. Terrorism is international in character, the EU has shared borders and some terrorists can move freely within the EU. There is a strong emphasis in the proposed Action Plan on measures involving cooperation between Member State authorities and other stakeholders. The EU is well placed to lead and to act as a catalyst for this cooperation. In some cases the cooperation concerns the exchange of experience and good practice and in others it involves the exchange of intelligence that could have operational significance. These actions could themselves help reinforce channels for bilateral and multilateral cooperation between Member States. Member States are not all equally affected by the problems of terrorism. In some instances cooperation may only need to involve clusters of Member States facing similar challenges. At the same time international cooperation needs to co-operate extend beyond the EU and some of the actions will involve EU level agencies in this cooperation. Examples of actions involving cooperation at EU level include:

- The early warning system; the detection related scenarios and matrix;
- The bomb data system;
- The database on explosives;
- The conferences/events on the security of explosives;
- The network of experts on detection of explosives;
- The EOD network; and

- The dissemination of research results.

For all of these measures the added value of EU action is clearly demonstrated – in fact the international character of these measures is the core of what makes them effective. Co-operation between law enforcement authorities and exchange of relevant information are all covered under Title VI of the Treaty on European Union. The process of the development of the Action Plan has itself been a cooperative process involving a blend of Member State experts and stakeholders.

Another example of enhanced co-operation which does not immediately require legislative action can be found in the area of detection. Here the rationale for EU involvement is particularly clear – if agreement can be found on the standards and testing and certification schemes for detection equipment, this will benefit all suppliers of such equipment, since they will no longer have to ensure that their equipment meets different standards imposed by different Member States. For the public authorities, the benefits will be that they can be assured that detection levels can be evaluated and compared much better, thus increasing possibilities for comparison and exchange of best practices.

2.5.2.2. The EU as a provider of funding for actions

Some of the actions in the Action Plan involve EU expenditure. The cooperation activities will require EU funding. The actions concerning EU level research will require EU funding (FP7 and Crime Prevention Programme) but normally on a co-funded basis. These programmes have all been adopted on a separate legal basis and they pursue EU wide goals established together with the Member States. Some financial support is likely to be required to stimulate the testing and trialling of detection equipment and systems. Normally such costs would be met by the producers of such equipment. However, there is a strong public policy interest in ensuring that detection equipment and systems work in practice. There may be circumstances in which valid conditions for trialling and testing can only be created by the public sector. There may also be a strong case for keeping performance data on detection equipment and systems confidential to the public sector, in which case it would be unreasonable for manufacturers and suppliers to fund the testing and trialling. The advantage of co-funding from the EU is that the results could inform the strategies and tactics of security agencies across Europe.

2.5.2.3. EU legislation

Twelve of the actions potentially involve the use of EU legislation. Where this is the case, such actions will themselves have to be subject to Impact Assessment, which will have to provide further information on the EU's right to act and the legal basis for doing so. Without going into the detail, it is clear that in some cases the 'normal' rationales for EU legislation will apply. For example, there is a 'single market' rationale for the adoption of EU wide security measures for explosives manufacturers as well as a security rationale (the EU safety standards for explosives have in large part a single market rationale). Similarly, the harmonisation of EU requirements for the licensing and handling of large amounts of pyrotechnic articles could have, in part, a single market rationale. Other actions are closely

linked to existing legislation for example, regulation concerning the transport of explosives and EX/II and EX/III vehicles. It should be emphasised here that many of these topics are already regulated to some extent by EU legislation, as mentioned above in Section 2.2.3.2. (such as Council Directive 93/15/EEC on the harmonisation of the provisions relating to the placing on the market and supervision of explosives for civil uses, Commission Decision of 15 April 2004 on an Intra-Community transfer of explosives document, the draft Directive on the identification and traceability of explosives, the legislation related to ADR which includes specific provisions on explosives and the recent EU directive on pyrotechnic articles, which was adopted by Council on 16 April 2007[5]. There are other actions where legislation may be required but where the rationale is principally to improve security. In these cases, careful account will need to be taken of the potential economic costs that could accrue and the challenges of enforcement. In addition, further simplification of legislation should be pursued whenever possible.

2.5.3. Proportionality

The assessment of proportionality of public policy to combat terrorism is extremely difficult. The arbitrary and apparently irrational nature of terrorism means that its threat and consequences have a disproportionate effect on EU citizens. The fear generated is strong and induces indirect damage to wellbeing way beyond the direct costs of loss of life, injury and property. The reactions of security agencies to terrorism can themselves induce massive costs and inconvenience on EU citizens. In these circumstances the vast majority of the actions in the preferred option are considered to be proportionate. The cautious approach recommended towards those actions where the benefits are uncertain and could potentially be outweighed by the indirect costs they could induce, will ensure that the preferred option is proportionate.

2.5.4. Subsidiarity

The development of the Action Plan has been undertaken in cooperation with Member States and the actions are anticipated to command strong support from them. Most of the actions either require action at the EU level or involve the encouragement and facilitation of approaches where there would be benefit in implementation following a similar path throughout the EU. Responsibility for security will continue to reside at Member State level but there is a strong recognition amongst Member States that where they have developed effective means to address the problems of explosives, they too would benefit from other Member States learning from this experience and where appropriate cooperating and adhering to common approaches.

The subsidiarity principle is satisfied as the measures being undertaken through the EU Action Plan cannot be achieved by any single EU Member State and must therefore be addressed at EU level.

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[5] Directive 2007/23/EC (OJ L 154, 14.6.2007, p. 1).

Fundamental rights are not affected by the EU Action Plan. Any potential interplay will however be analysed in detail when taking up concrete actions under the Action Plan.

3. OBJECTIVES

The objective of an EU Action Plan on Enhancing the Security of Explosives would be to identify and prioritise actions that should be undertaken at EU level and actions that should be taken forward jointly by Member States, in order to combat the use of explosives by terrorists within the EU.

Such an EU Action Plan would cover explosives that are manufactured legitimately and illicitly. It would include measures organized under four strategic pillars:

- Horizontal Measures – aimed at improving exchanges of information, the development of threat assessments and research.
- Prevention Measures – focusing on awareness raising, control and regulation of precursors, increased control on the market of explosives and pyrotechnic articles, vetting and security measures in explosives facilities and transport and internet-related actions.
- Detection Measures – proposing scenarios, minimum standards, exchanges of information and EU-wide certification, testing and trialling schemes for detection tools.
- Preparedness and Response Measures – including the establishment of an EOD network and liaison with mobile telephone providers on the shutting down of antennas.

The following general, specific and operational objectives can be set for the Action Plan.

- General objective:

  GO To reduce the number and potency of terrorist and other criminal incidents in the EU using explosives.

- Specific objectives:

  SO1 To prevent the use of legitimately and illicitly manufactured explosives by terrorists and other criminals;

  SO2 To increase the constraints on the illicit manufacture of explosives by terrorists and other criminals;

  SO3 To reduce the reliability and potency of 'home made' explosives or components manufactured by terrorists and other criminals;

SO4 To increase the probability of detection of terrorists and other criminals illicitly handling and using explosives and precursors;

SO5 To reduce the smuggling of explosives into the EU destined for illicit use by terrorists and other criminals;

SO6 To increase the chances of prevention and intervention opportunities by law enforcement bodies.

- Operational **objectives:**

  – To reduce theft by and the sale of explosives to (potential) terrorists and other criminals;

  – To reduce the supply and quality of information on how to illicitly manufacture explosives;

  – To better monitor the illicit use of explosives and the precursors and components of explosives;

  – To label explosives and the precursors and components of explosives to generate evidence that would lead to the conviction of terrorists and other criminals;

  – To improve the quality of detection and enforce detection standards;

  – To ensure that new detection solutions and technologies from research are rolled out on the market;

  – To increase the application of good practices that improve the security of explosives.

4. POLICY OPTIONS

Four policy options have been identified concerning the establishment of an EU Action Plan on Enhancing the Security of Explosives. These options have been elaborated based on the recommendations for specific actions set fourth in the Explosives Security Experts Task Force (ESETF) report and group together the various ESETF recommendations depending on their impact:

- Policy Option 1 – Status Quo
- Policy Option 2 – Minimum Option
- Policy Option 3 – Intermediate Option
- Policy Option 4 – Maximum Option

The ESETF report identified specific recommendations for actions which were meant to be the basis for the EU Action Plan[6]. These measures were reorganised, and in certain cases merged for the purpose of clarity, under:

- An overarching heading containing measures applicable horizontally;
- Three strategic headings:
  - Prevention
  - Detection
  - Preparedness and response

This organisation is kept throughout this impact assessment.

At this point it should be clarified that the different policy options and the packages of measures contained within them have been structured in this way in order to allow discussion of a limited number of options only, and also to focus the discussion on those issues which are likely to have the most impact. The different options are cumulative – in the sense that each higher numbered option also contains the actions in the lower numbered option(s). This approach was taken to avoid the need to discuss as many options as proposed actions in the action plan. The packages of possible actions which have been included in the different options have been construed on the basis of a *prima facie* assessment of their possible impact – in order to ensure that the measures which can be implemented easily and quickly would in any case be included in the Action Plan, and proposals on which more discussion could be expected would feature in the more elaborate options.

4.1. Policy Option 1 – Status Quo

The first Policy Option implies that no changes are made to the current situation. All actions included are already underway or are planned to happen even in the absence of the Action Plan. The Status Quo is a combination of existing organisations responsible for the provision of strategic assessments on counter-terrorism matters, a research package which includes allocations related to the security of explosives, a legislative acquis concerning aviation security, transport of dangerous goods and the development of the single market of civil explosives and draft legislation in the area of the traceability of explosives for civil use and harmonisation of criminal sanctions on distributing bomb-making experience on the internet.

It should be mentioned that measures also exist at national level. These relate to all aspects of explosives security, ranging from public security aspects, precursors, supply chain and detection. However, as mentioned in section 2 – problem definition, the approaches vary greatly across the EU, with some Member States applying high explosives security standards

[6] The list of ESETF recommendations is found in Annex 2.

in nearly all areas and others having relatively underdeveloped security systems and mechanisms.

OPTION 1 – STATUS QUO
Horizontal measures
Improve the exchange of timely information and best practice
Europol and Eurojust
Strengthen explosives related research
Current FP7 research with regard to detection and public security (e.g. Security Research Call, 1 of Dec 2006)
Prevention measures
Improve the control over explosives available on the market and pyrotechnic articles
Implementation of the Traceability Directive (recommendation 22[7])
Directive on explosives for civil use
Reduce the supply and quality of information on how to illicitly manufacture explosives
Harmonize criminal sanctions for distributing bomb-making experience over the Internet (recommendation 41.)
Improve the security of transport of explosives
ADR legislation and working group on transport
Detection Measures
EU legislation in the area of aviation security

4.2. Policy Option 2 – Minimum Option

The second Policy Option includes a variety of measures which together form a 'package' combining horizontal measures, prevention initiatives, detection measures and actions to increase preparedness and readiness to respond. Based on broad consultations, it is anticipated that a majority of stakeholders would consider these actions 'acceptable' and beneficial, with relatively low costs and risks. The Policy Option has a strong focus on:

- Exchanging information, knowledge and experience, both vertically and horizontally

  The option includes several proposals for the establishment of cooperation and coordination mechanisms in the shape of databases, events, expert groups and networks. Together these would form the knowledge and intelligence base of the Action Plan. The actions proposed do not only concern the horizontal, EU level, but also affect the national level.

- Further existing and launching new research

  Several of the actions include research into new areas and expanding research in already existing areas. Most have a very practical focus, linking the themes to other concrete actions. For example, the research proposed with regard to the detection of IEDs at airports will feed into the actions aimed at improving detection technologies overall.

[7] This number as well as other numbers in the tables contained in section 4 are references to the concrete recommendations for actions put forward in the ESETF report.

- Awareness-raising and alerting options in the precursors supply chain

  Recent events have once more showed the importance of making all actors in the supply chain of precursors and explosives more aware of the potential risks and suspicious transactions. The option includes several actions that relate to campaigns and the development of alert mechanisms.

- Assessments and feasibility studies whether further measures should be undertaken

  The option also includes several actions aimed at assessing the feasibility and launching debates on some of the more 'challenging' initiatives which would be included in the Action Plan. As for the actions that focus on research, they are meant to feed into actions with a more 'operational' focus.

- Some additional security and detection measures

  Finally, the option includes a limited number of actions with an 'operational' focus, covering the security of facilities and detection.

OPTION 2 - MINIMUM OPTION

Horizontal measures
Improve the exchange of timely information and best practice
Establish an Early Warning System (recommendation 39. and 40.)
Regularly organise an event on the security of explosives (recommendation 50.)
Develop threat assessments
Consider developing specialised threat assessments (no number in ESETF report)
Strengthen explosives related research
Improve the aggregation and spread of research results (recommendation 49.)
Perform further research on: 1 – IEDs; 2 - Chemicals found at an investigation scene; 3 - Detection of explosives and precursors; and 4 - Mobile explosives kits (recommendation 47.)
Perform further research concerning the detection of Improvised Explosive Devices at airports, land and maritime locations (recommendation 31.)
Perform further research to find inhibitors which could be added to precursors (recommendation 48.)
Support further research to find technical solutions to jam mobile phones (recommendation 45.)
Prevention measures
Improve staff awareness and alerting concerning precursors
Public authorities to provide security information to the entire precursor supply chain (recommendation 1.)
Simple means within supply chain to alert national authority (recommendation 2.)
Campaigns to raise staff-awareness all along supply chain (recommendation 3.)
Improve the control over transactions involving precursors
Assessing benefits of creating a scheme for each precursor handled by retail sector, under which all packaging would be labelled with a code specifying subject of registration (recommendation 9.)
Improve the control over explosives available on the market and pyrotechnic articles
Launch debate on the need to review the classification of "desensitized" explosives (recommendation 19.)
Improve the security of explosive facilities
Effective Security Plans/Security Management Systems at all facilities (recommendations 12. and 14.)
Detection Measures
Establish scenario based approach to identifying work priorities
Setup of a working group to develop scenarios and to identify technology requirements (recommendation 23.)
Create matrix of what is desired and currently possible in each scenario (recommendation 24.)
Developing minimum detection standards
Develop mechanisms for the identification and dissemination of good practice in detection systems and use of detection equipment (part of recommendation 25.)
Improving the exchange of information
Ensure that security staff are provided with up-to-date information on new terrorist modi operandi (recommendation 42.)
Assess and improve where necessary the situation as regards the availability of training data and other information/feedback for manufacturers of detection solutions (recommendation 30.)
Create an end-user focused handbook concerning detection (recommendation 33.)
Create a network of experts on the detection of explosives (recommendation 34.)
Establish EU-wide certification, testing and trialling schemes
Develop mechanisms for the identification and dissemination of good practice in detection systems and the use of detection equipment (part of recommendation 27.)
Assess the need for the development of standards concerning certification, testing and trialling processes (recommendation 29.)
Improve the usage of detection technologies in specific locations
Improve and support the use of detection technologies at airports, railway stations and other public facilities (recommendation 31.)
Preparedness and response measures
Improve the exchange of information and best-practices among relevant Member State authorities
Establish a European EOD Network (recommendation 38.)

4.3. Policy Option 3 – Intermediate Option

The third Policy Option is again a mix of horizontal measures, prevention initiatives, detection measures and actions to increase preparedness and readiness to respond. There is, however, a relatively higher focus on actions in the area of prevention. This option includes

all actions under Policy Option 2 with the addition of additional actions deemed to be more sensitive in nature and requiring bigger efforts for implementation.

The overall focus of Policy Option 3 is more operational, with a set of measures built around:

- Regulation of new areas and updating regulatory arrangements in others
- Several actions focus on addressing areas which are currently insufficiently covered or not addressed at all, such as vetting of staff working with explosives, the precursors market and raw materials used to manufacture explosives. Other actions may not result in legislation but constitute otherwise binding requirements, such as the obligation for Member States to keep explosives manufacturers and distributors informed of regional threats.
- Introducing EU schemes and standards
- In the area of detection, the option proposes the development of new, EU-wide schemes to certify and test detection solutions. In addition to increasing the performance of detection systems, these are also aimed at further removing single market obstacles.
- Concrete security interventions
- The option also presents several actions with a practical focus on improving existing standards, such as the initiative to improve the security of Mobile Explosive Manufacturing Units (MEMUs) and of EX/II and EX/III vehicles carrying explosives. Others focus on mobile phone networks and the Internet.

OPTION 3 - INTERMEDIATE OPTION
Horizontal Measures
Improve the exchange of timely information and best practices
Create a European Bomb Data System (recommendations 35.,36. and 37.)
Prevention Measures
Improve the regulation of explosives precursors available on the market
The establishment of a system concerning the regulation of explosives precursors available on the market (recommendation 4.)
Improve the control over explosives available on the market and pyrotechnic articles
Ensure that each Member States has formal systems for authorising, regulating and licensing the manufacture, storage, sale, use and possession of explosives including by private persons (recommendation 21.)
Improve the security of explosives facilities
Introduce an obligation for the relevant national authorities to keep explosives manufacturers and distributors informed as to the regional threat at all times (recommendation 13.)
Raw materials used in the manufacture of bulk explosives and finished product should be periodically accounted for and reconciled as approved by the National Authorities (recommendation 20.)
Improve the security of Mobile Explosive Manufacturing Units (MEMUs) (recommendation 15, 16, 17.)
Improve the security vetting of personnel

All personnel employed in the manufacturing, storage, distribution and use of explosives should be vetted and hold a formal authorisation to have access to explosives (recommendation 11.)
Improve the security of transport of explosives
All EX/II and EX/III vehicles carrying explosives should be equipped with certain security enhancement solutions
These security solutions include (recommendation 18.):
1) be fitted with 24 hour remote monitoring systems
2) be capable of immobilising the engine remotely if safe and applicable subject to the Vienna Convention
3) be fitted with an anti theft system.
4) have sufficiently secure compartments
5) be fitted with a means of communication
6) have a recognised marking affixed to the roof of the vehicle
Reduce the supply and quality of information on how to illicitly manufacture explosives
Part of 41: Limit the spread of bomb-making experience over the internet (recommendation)
Detection Measures
Improving the exchange of information
Create a database containing the specifications of explosives produced within the EU (recommendation 32.)
Establish EU-wide certification, testing and trialling schemes
Create a European wide certification scheme for detection solutions (recommendation 26.)
Create a European wide testing scheme for detection solutions (recommendation 27.)
Create a European wide trialling scheme for detection solutions (recommendation 28.)
Preparedness and response measures
Develop specific preparedness and response measures for terrorist threats using explosives
Create the possibility for relevant law enforcement authorities to request providers to shut down mobile phone antennas in the case of a threat of a terrorist attack (recommendations 44. and 46.)

4.4. Policy Option 4 – Maximum Option

The fourth Policy Option is a mix of prevention initiatives and detection measures, mainly addressing regulatory aspects, recording and reporting mechanisms and standardisation.

The option includes all actions under Policy Option 3 with the addition of measures identified in the ESETF report which can be described as being very ambitious and which require genuine commitment to the process.

Option 4 is ambitious, including a 'package' of measures focusing on:

- Regulation of new areas and updating regulatory arrangements in others
- Several new legislative instruments are included, such as the legal obligation to record the identity of buyers of certain quantities / concentrations of precursors, a ban on selling precursors to minors and harmonisation of legislation in the area of pyrotechnic articles.
- Introducing EU schemes and standards
- New schemes are proposed for the recording of the identity of the buyers of precursors, for reporting on suspicious transactions and for trialling detection solutions. Minimum standards are proposed concerning the security of storage of explosive precursors.

OPTION 4 - MAXIMUM OPTION

Prevention Measures

Improve the regulation of explosives precursors available on the market

Introduce a system for the recording of the identity of the buyer of precursors above certain quantities and/or concentrations (recommendation 7.)

A European minimum standard and industrial guidance by way of an appropriate code concerning the security of storage of explosives precursors (recommendation 8.)

Improve the control over transactions involving precursors

Establish a system of reporting suspicious transactions (recommendation 5.)

A binding system concerning the notification to the relevant national authority of any transactions involving the products on the list which can be considered suspicious (recommendation 6.)

Introduce a complete ban on selling precursors to minors (recommendation 10.)

Improve the control over explosives available on the market and pyrotechnic articles

Harmonise EU requirements for the licensing and handling of large amounts of pyrotechnic articles (recommendation 43.)

Detection measures

Developing minimum detection standards

Develop minimum detection standards (recommendation 25.)

5. ANALYSIS OF IMPACTS

5.1. Introduction

The four Policy Options have been assessed by considering each of the 'actions' in terms of:

- The benefits that might accrue: their contribution to the general policy objective and the six specific objectives. The benefits have been summarised through allocating ratings (from 0 to 5) for the general and each of the specific objectives.

- The financial and economic effects of each action. These have been summarised by classifying them by scale and predictability. Six categories have been used: low costs, predicable (less than 500,000 Euro); medium costs, predictable (between 500,000 Euro and 2.0 million Euro); high costs, predicable (above 2.0 million); low costs but uncertain, (where the action needs to be more clearly defined and some further feasibility work will be required); medium costs but uncertain; and, high costs but uncertain. The costs may be both financial costs to public administrations and costs that may accrue to economic actors. The financial costs have been estimated by reference to analogous actions such as existing networks and databases operating at the EU level. The estimates are necessarily approximate.

- The dependence on other actors to ensure the implementation of the 'actions'. Whilst this is an EU Action Plan, in order to realise the benefits of the actions many non EU level actors would need to be engaged in implementation. Arguably the need to engage others increases the uncertainty that benefits might be realised.

- The potential effects on fundamental rights. These effects are described for each action, where such an effect may exist.

- The potential environmental effects. As for fundamental rights, these effects are only described where they are likely to be significant.

- The need to change or develop EU legislation. As for the fundamental rights and the environmental effects, these are only mentioned where such need is anticipated. In a number of cases the need for EU legislation is a distinct possibility, but may not be required.

Each Policy Option and its individual actions are considered in turn. Given the high number of actions proposed, it is impossible within the scope of this report to provide individual assessments of all actions in the report – which focuses on the assessment of the most important actions. All of the individual actions are however considered in more detail in Annex 1.

5.2. Policy option 1 – The status quo

5.2.1. Assessment by action

There are 7 'actions' in this Policy Option. Each of these is only mentioned briefly here – a more detailed assessment is provided in Annex 1.

5.2.1.1. Horizontal measures

Improve the exchange of timely information and best practices

Strengthen explosives related research

5.2.1.2. Prevention measures

Ensure the identification and tracing of explosives based on the system proposed in the Commission Directive on the identification and traceability of explosives for civil use (Traceability Directive).

Council Directive 93/15/EEC on the harmonisation of the provisions relating to the placing on the market and supervision of explosives for civil uses

ADR legislation and working group on transport

Harmonise criminal sanctions for distributing bomb-making experience over the Internet

5.2.1.3. Detection measures

EU legislation in the area of aviation security

5.2.2. Overall assessment of Policy Option 1

The first policy option includes 7 actions which are likely to be implemented regardless of whether an EU Action Plan is developed. The 7 actions would most likely have a relatively small effect on the general objective of reducing the number and potency of terrorist incidents using explosives. This would be so because the measures would not address the core of the problem which is the availability and easy access to explosives and explosive precursors.

The fact that terrorist attacks using explosives have been committed in the EU in recent times confirms that existing measures and initiatives may be insufficient.

5.3. Policy option 2 – Minimum option

5.3.1. Assessment by action

There are 24 'actions' in this Policy Option. Each of these is briefly considered in turn. A more detailed assessment is provided in Annex 1.

5.3.1.1. Horizontal measures

Establish an Early Warning System (recommendations 39. and 40.)

The system would mainly help to increase the chances of preventing the use of explosives as it would ensure direct and continuous exchanges of information and coordination between the Member States as to threats, thefts, suspicious transactions and new modi operandi.

Regularly organise an event on the security of explosives (recommendation 50.)

The events would help to increase the overall knowledge on the security of explosives and enable networking between all stakeholders in the field. There would be scope for involving other, more focused, networks (e.g. the detection experts, EOD units) that are active in the field.

Consider developing specialised threat assessments (no number in ESETF report)

It is difficult to identify the benefits or the potential financial and economic effects of this action without additional details as to what the action will cover. If its concerns specialised assessments on the threat of explosives, it would help to increase the chances of prevention and intervention and help to reduce the number and potency of terrorist and other criminal incidents in the EU using explosives.

Improve the aggregation and spread of research results (recommendation 49.)

The action would help to increase the overall knowledge in the field of explosives security and avoid overlaps and duplication of research efforts. This would have an overall positive impact on the objective to reduce the number and potency of terrorist and other criminal incidents in the EU using explosives.

Perform further research on: 1 – IEDs; 2 - Chemicals found at an investigation scene; 3 - Detection of explosives and precursors; and 4 - Mobile explosives kits (recommendation 47.)

Further research would have a positive impact if it is targeted at exploring and developing methods for testing and trialling practical solutions to reduce the use of explosives and explosives precursors by terrorists and other criminals. Research in the area of IEDs is very useful as there is little literature and research undertaken on this type of explosives which is being increasingly deployed. Research into chemicals found at an investigation scene is also necessary, as shown by the fact that after the 7/7 2005 attacks in London, it took more than two weeks to make the sites to be investigated safe to enter. Research into detection is useful, but what is equally important is to ensure the roll out of the results to the market. Finally, with regard to the mobile kits, some may already be in use and research should focus on their further development.

Perform further research to find inhibitors which could be added to precursors (recommendation 48.)

Provided the action builds on ongoing and past research, it could help to increase constraints on illicit manufacture of explosives and prevent their use by terrorists and criminals, by reducing the number of precursors that can be used to produce IEDs. Various actors from the chemical industry have stressed that it is very difficult to identify inhibitors which would not affect the performance of the precursors especially in the case of precursors for industrial use.

Perform further research concerning the detection of Improvised Explosive Devices at airports, land and maritime sites (recommendation 31.)

Especially in the light of their increased use, research to enable a better detection of IEDs would certainly be beneficial to prevent the use of explosives by terrorists and criminals and to increase the probability of detection. It would be a very challenging task as it implies the identification of an extremely large number of substances.

Support further research to find technical solutions to jam mobile phones (recommendation 45.)

When considering that mobile phones have been used several times to set off explosives, research to better understand how to jam mobile phones in a safe and secure way would help to reduce the number of terrorist and other criminals using explosives in the EU and the potency of their attacks. It will also contribute to prevention and intervention opportunities. The precise scope of the actions should be identified in more detail.

5.3.1.2. Prevention measures

Public authorities to provide security information to the entire precursor supply chain (recommendation 1.)

National awareness-raising has already proved helpful in preventing the use of explosives by terrorists and other criminals, constraining the illicit manufacture of explosives, and increasing the probability of detection and of prevention and intervention.

Simple means within the supply chain to alert national authority (recommendation 2.)

The benefits of this action are high, as proven by 'Operation Crevice' where a staff member of a public self-storage facility realised, through a discussion with friends, that the 600 kg of ammonium nitrate fertilizer found could be used to develop an IED. The agricultural supplier who had sold the fertilizer said that the young man who had bought it had claimed it was for his garden, admitting however that he knew the quantity purchased was far in excess of the amount needed.

Campaigns to raise staff-awareness all along the supply chain (recommendation 3.)

It is essential that recommendations 2 and 3 are implemented together, as they depend on each other. The impact of recommendation 3 is the same as recommendation 2. As mentioned above, there have been instances where public and business awareness has been decisive in

alerting the authorities to a potential conspiracy or intention to cause an explosion. This includes the failed suicide attacks in 2005 on the London Underground where a rubbish cleaner noted a large amount of empty acetone bottles which helped to identify the flat used by the bombers to make their IEDs.

Assessing benefits of creating a scheme for each precursor handled by retail sector, under which all packaging would be labelled with a code specifying the subject of registration (recommendation 9.)

The benefits of this action are not clear at this stage as the assessment may conclude that the creation of such a scheme would not have the desired effects. It seems that only if such labelling was carefully coordinated with the recording of the corresponding sales there might be a benefit. But it may prove difficult to ensure uniformity in the introduction and enforcement of such a system.

Launch debate on the need to review the classification of "desensitized" explosives (recommendation 19.)

The debate is useful to raise awareness and to increase knowledge. Excluding these types of explosives from the list of dangerous goods could have a very negative effect should terrorists and other criminals be able to reconvert such material into potentially dangerous compounds.

Effective Security Plans/Security Management Systems at all facilities (recommendation 12. and 14.)

Pre-emptive measures will help to prevent thefts and incidents at explosives facilities, which have indeed occurred in the recent past. It is stressed that measures are equally important in countries with lower threat levels as the theft of explosives is a cross-border issue (e.g. ETA stealing from quarries in France). The action would bring substantial benefits in terms of preventing the use of explosives by terrorists and increasing the chances of prevention and intervention opportunities by law enforcement bodies. As such it would help to reduce the number of terrorists and other criminals using explosives and the potency of their attacks.

5.3.1.3. Detection Measures

Setup of a working group to develop scenarios and to identify technology requirements (recommendation 23.)

This action is to consider at a strategic level the origin and nature of threats concerning IEDs, manufactured explosives, targets, perpetrators etc. The development of scenarios will be beneficial to ensure the targeted and strategic use of detection equipment systems, thus increasing the probability of detection and the chances of prevention and intervention opportunities.

Create a matrix of what is desired and currently possible in each scenario (recommendation 24.)

The assessment is the same as for action implementing recommendation 23 above. The actual content of the matrix would be a national responsibility, while it would be beneficial to discuss how to develop the matrixes and what items to include.

Develop mechanisms for the identification and dissemination of good practice in detection systems and use of detection equipment (part of recommendations 25 and 27.)

Whilst the industry may not be ready for minimum standards (which are proposed in the original recommendation 25), there would be scope in first identifying good practice and lessons learnt with regard to existing detection systems and standards, for example in the aviation sector. Such exchanges could contribute to increasing the probability of detection and the chances of prevention and intervention opportunities.

Ensure that security staff are provided with up-to-date information on new terrorist modi operandi (recommendation 42.)

Ensuring that security staff are immediately updated regarding any new terrorist TTPs (Tactics, Targets and Planning) is important and will have a positive impact in terms of increasing the chances of prevention and intervention opportunities, as shown by the liquid explosives precursors alert started in the UK. The EWS could be used as a source. Rather than re-creating what already exists, it would be beneficial to carry out an audit of Member States to establish exactly what communication structures are already in place for the sharing of such information.

Assess and improve where necessary the situation as regards the availability of training data and other information/feedback for manufacturers of detection solutions (recommendation 30.)

Feedback to manufactures is essential to enhance the quality of detection, thus increasing the probability of detection of terrorists and other criminals handling and using explosives and increasing the chances of prevention and intervention.

Create an end-user focused handbook concerning detection (recommendation 33.)

The handbook would provide advice to end users, in the form of a user manual on detection systems in general. It should not include information on the performance of the detection system that could be useful to anyone trying to avoid explosives material being detected. Regular updates would be required, and for this purpose it may be best to use a virtual tool.

Create a network of experts on the detection of explosives (recommendation 34.)

The network of experts would increase knowledge-sharing and exchanges of experiences in the area of detection, thus helping to increase the probability of detection of terrorists and other criminals and improving the chances of prevention and intervention. Any proposed networking activity should be based on existing cooperation initiatives, where these are in place.

Assess the need for the development of standards concerning certification, testing and trialling processes (recommendation 29.)

Especially in view of the actions that relate to the actual development of certification, testing and trialling schemes, this action is very useful as it would assess the need and the feasibility of such processes. There is little impact on the objectives through the needs assessment itself, but its consequences could contribute to an increase in the probability of detection of terrorists and other criminals handling and using explosives and explosives precursors.

Improve the use of detection technologies at airports, railway stations and other public facilities (recommendation 31.)

The precise scope of the measure should be further developed. Given the overall higher level of regulation and coordination, it is likely that lessons can be learned from the aviation sector. It is evident that overall security measures and the use of detection could be improved in other sectors, particularly in harbours and at 'high-risk' public facilities, as this would increase the probability of detection of terrorists and other criminals and improve the chances of prevention and intervention.

5.3.1.4. Preparedness and response measures

Establish a European EOD Network (recommendation 38.)

The EOD network would increase information and knowledge sharing, through the identification of best practices, the organisation of joint training and the dissemination of information relevant to all EOD units. Perhaps more importantly, it would help to build mutual trust. It should build on existing cooperation models. Positive impacts are expected on objectives related to the prevention of the use of explosives by terrorists and other criminals, the detection of terrorists illicitly handling and using explosives and explosives precursors and the prevention and intervention opportunities by law enforcement bodies.

5.3.2. Overall assessment of Policy Option 2

Of the 24 actions, the action judged to be most effective with respect to the overall objective is the introduction of security plans and management systems at all explosives facilities. There are five actions that are rated as '3' with respect to their effectiveness in contributing to the general objective. They are: establishing an early warning system: establishing simple means within the precursors supply chain to alert national authorities of suspicious transactions; campaigns to raise awareness of staff all along the precursors supply chain; ensuring that security staff using detection equipment are provided with up to date information on terrorist modus operandi; and, establishing a European EOD network.

Two of the actions in this Policy Option are of a character that no contribution to the general objective 'to reduce the number and potency of terrorist incidents using explosives' is likely to accrue immediately. Both involve the assessment of needs and preliminary investigation.

Together, the combination of actions in this Policy Option would contribute positively to all of the specific objectives. The impact would be greatest with respect to specific objective 6, followed by specific objectives 1 and 4. The impact would be least with respect to specific objective 5.

The majority of the 'actions' in this Policy Option have low and predictable costs. Only 5 of the actions have uncertain costs and in only one case is the action anticipated to have high and uncertain costs. This particular action is the introduction of security plans and management systems at all explosives facilities which is considered to be likely to be the most effective. The costs are likely to accrue to in particular, users of explosives in countries where hitherto security standards have been relatively low. Other 'actions' where the costs are uncertain and likely to be medium are: consideration of developing specialised threat assessment; and, campaigns to raise staff awareness all along the supply chain. The latter is assessed as being one of the most effective of the actions in this option.

One action may require a change to EU legislation. Four actions may impact on fundamental rights. Finally, some environmental effects are anticipated as a result of 11 actions.

The majority of actions in this Policy Option have a low dependency on non EU actors hence implementation should be relatively straightforward and could take place in the short term.

5.4. Policy option 3 – Intermediate option

5.4.1. Assessment by action

There are 14 actions in this Policy Option over and above those in Policy Option 2. Each of these is briefly considered in turn. A more detailed assessment is provided in Annex 1.

5.4.1.1. Horizontal measures

Create a European Bomb Data System (recommendation 35, 36 and 37.)

The creation of a European Union Bomb Data System, managed by Europol for the benefit of EOD and other security officials in the Member States is likely to have a positive impact, as it would increase information sharing and strengthen the capacity of Member States to act fast in response to incidents. As an example, the use of hydrogen peroxide for the bombings in the UK shows the potential benefits of such central information systems – if Member States have timely access to information on such modus operandi it may help to prevent further criminal use of this product and swift checks for suspicious transactions at national level. Overall, the action would contribute to increasing the probability of detection, reducing smuggling of explosives (if the database logged information on incidents around the world) and increase the chances of prevention and intervention opportunities.

5.4.1.2. Prevention Measures

The establishment of a system concerning the regulation of explosives precursors available on the market (recommendation 4.)

Especially in view of the increased use of IEDs, in principle, any of the issues listed under this action could have a positive impact on enhancing security, as it would reduce the 'choice' of precursors that can be used to produce such 'homemade' explosives. As such, it would contribute to the prevention of the use of explosives by terrorists and other criminals, increase the constraints on their illicit manufacture and reduce their reliability and potency. The system will include the establishment of a Standing Committee. Further details of the system are required before the wider impacts could be ascertained.

Ensure that each Member State has formal systems for authorising, regulating and licensing the manufacture, storage, sale, use and possession of explosives including by private persons (recommendation 21.)

Many countries where there has been or continues to be an active threat from terrorism already have strict controls on the storage, sale and possession of explosives, both commercial and military. It is therefore more a case of ensuring that all Member States adopt the best practice found in these countries. This would be beneficial as the theft of explosives is a cross-border problem. As most of the stolen explosives have been legally produced and are of the commercial type, often taken from factories or mining quarries, most focus should be placed on end users, as security measures in this area appear to be lower than those put in place for manufacturers. The impacts would relate to the prevention of the use of explosives by terrorists and other criminals and an improvement of the chances of prevention and intervention.

The financial and economic costs are expected to be medium. Countries that already have extensive formal systems in place would not be negatively affected by this action, but authorities of countries with less developed systems may have to invest substantially. Placing increased security requirements on end users may entail high financial and economic costs. If EU-wide requirements were to be proposed there may be a need to be a change of EU legislation.

Introduce an obligation for the relevant national authorities to keep explosives manufacturers and distributors informed as to the regional threat at all times (recommendation 13.)

Full awareness of the level of threat would be beneficial, and could prevent the use of explosives and increase the chances of prevention and intervention. Regional threat assessments do not exist at present and the efficacy of developing such a concept has yet to be proven. Unless there is a very specific threat, the use of regional alerts is unnecessary. It should also be taken into account that manufacturers and distributors may require a long response time. Threat levels are a national responsibility and various countries have different systems in place, it may be challenging to streamline these to ensure that response plans are adequate and useful for all.

Raw materials used in the manufacture of bulk explosives and finished product should be periodically accounted for and reconciled as approved by the National Authorities (recommendation 20.)

Little information is available on the use of raw materials in terrorist attacks. However, higher attention to these materials would be beneficial as they can be used to make bombs. The action could therefore prevent the use of explosives and increase the chances of prevention and intervention. However, the feasibility of requiring authorities to take an active role in reconciliation and approval of quantities is likely to be low.

It is difficult to estimate the financial and economic costs of the action. It is likely that costs would be small in Member States which already have existing high quality requirements in place. Medium to high costs may have to be incurred by countries which have to substantially improve their systems, develop new procedures and allocate human resources for control and enforcement.

Improve the security of Mobile Explosive Manufacturing Units (MEMUs) (recommendation 15, 16 and 17.)

There are few known cases of thefts of MEMUs and the benefits of this measure might therefore be limited. Most countries that use MEMUs have modern vehicles and good security measures already in place. For example, the UK has specific guidelines for MEMUs and Sweden uses sophisticated anti-theft systems. Due to the potential risk of theft of such a vehicle there is scope in further improving their security. Some industrial stakeholders have pointed out that alternative security measures may achieve the same effect. Finally, several manufacturers indicated that it is practically impossible to correctly record the amount of explosives produced as there is always residue left in the units.

The number of MEMUs in the Member States is estimated at 105. The financial costs for improving their security would be low, amounting to approximately 500,000 Euro, including their ongoing guarding. There would be a possible need for EU legislation should it be decided to integrate the requirements in transport related legislation.

All personnel employed in the manufacturing, storage, distribution and use of explosives should be vetted and hold a formal authorisation to have access to explosives (recommendation 11.)

Most Member States have vetting requirements in place for persons handling explosives. The UK, for example, requires a license for the acquisition of explosives, while in Sweden a license is needed for handling them. While it would be a good action to increase the security of explosives, thus preventing the use of explosives by terrorists and other criminals and increasing the probability of detection, prevention and intervention, vetting may prove difficult to establish at a uniform level. While at present some countries carry out extensive background checks and psychological tests of employees, others only pay scarce attention to such concerns, often only requiring a declaration that the person in question has not committed any related crimes. It should also be noted that in the last 10-20 years most

problems with regard to staff have occurred at the 'lower' levels of the industry (e.g. quarries, construction sites) where an enormous number of people are employed, there are high levels of staff turnover and low vetting requirements overall. Finally, the effect of vetting could be questioned as it is likely that people with terrorist intentions would make sure they had a clean background if they wished to acquire explosives through being employed by manufacturers, distributors or users of explosives.

The financial and economic costs of the action are potentially very high but impossible to estimate at this stage. Costs for a single vetting procedure vary from 20 to 2000 Euro. The number of persons that could be affected could run into hundreds of thousands if expanding the vetting to sectors such as construction. It will therefore be important to establish who should be vetted, who should carry out the vetting and who should pay for it. The economic effects are likely to impact on both administrations and industries (which may charge for vetting). Some possible fundamental rights issues could arise depending on the content and criteria used for vetting and to whom the information generated were available. Principles of data protection and non-discrimination should in all cases be observed.

All EX/II and EX/III vehicles carrying explosives should be equipped with certain security enhancement solutions (recommendation 18.)

Thefts of such vehicles have occurred in the past and increasing their security will therefore have its benefits, especially in ensuring a similar level of security across the EU. The action will help to prevent the use of explosives by terrorists and other criminals, increase the probability of detection and enhance prevention and intervention opportunities. Some industrial stakeholders have pointed out that alternative security measures may achieve the same effect. The benefits of the remote immobilisation proposal have also been questioned.

Limit the spread of bomb-making experience over the internet (part of recommendation 41)

Limiting the spread of bomb-making information and experience is very difficult. Given that websites where such information may be found are frequently visited and in light of the use of such information by terrorists, it would be a proactive and beneficial measure to reduce the use of IEDs. It would contribute to constraining the illicit manufacture of explosives, prevent their overall use and reduce their reliability and potency.

5.4.1.3. Detection Measures

Create a database containing the specifications of explosives produced within the EU (recommendation 32.)

The collection of data on commercially produced explosives would have a positive impact as it would help with the fast identification of the products and their source. This would facilitate ongoing investigations, thus increasing the probability of detection of terrorists and other criminals. There may however be issues of commercial confidentiality, as manufacturers may be reluctant to share all details of their products (perhaps just the necessary information for forensics and detection, but this could make the database less useful).

Create a European wide certification scheme for detection solutions (recommendation 26.)

At present, some certification takes place, following testing, at the level of the individual Member States, particularly in the aviation sector, whilst other countries do not have certification procedures in place. An EU-wide certification scheme would enable detection equipment companies to access the EU market as a whole as opposed to having to apply to each country. This would in principle be beneficial in terms of creating economies of scale, single market integration and resolving delays between ordering and obtaining well-functioning equipment. It would be important to learn from the lessons with regard to detection standards in aviation security.

The financial costs for setting up a scheme in terms of administrative expenses, human resources and expert inputs would be medium. However, given the scale of the industry and the increasing investments in detection, there would be economic cost-efficiencies for companies in the longer term as the system would accept a product for all EU27. Reduced administrative costs could accrue in the longer term for Member States as each would no longer need to go through a certification procedure. There is a possible need to change EU legislation.

Create a European wide testing scheme for detection solutions (recommendation 27.)

As under the action implementing recommendation 26, testing is at present mainly undertaken by the individual Member States, while other countries do not have sufficient resources to launch their own testing schemes. An EU-wide scheme would therefore be beneficial, as Member States could share testing data and pool testing costs. This could offset development costs and help stimulate innovations and improvement, thus contributing to increased detection probability and increased prevention and intervention opportunities. In some sectors requiring detection, public authorities are best placed to undertake testing and trialling, as they have easier access to explosives.

Create a European wide trialling scheme for detection solutions (recommendation 28.)

The benefits of creating this scheme are similar to those described directly above. EU wide trialling would enable Member States to share information and data and would improve the overall effectiveness and quality of detection. However, the performance of detection equipment is difficult to trial and measure in all contexts (e.g. large-scale outdoor events).

5.4.1.4. Preparedness and response measures

Create the possibility for relevant law enforcement authorities to request providers to shut down mobile phone antennas in the case of a threat of a terrorist attack (recommendation 44. and 46.)

Mobile phones have been used as firing switches in two ways. The Madrid cell did not utilise the network, but the time alert system on the phone itself. Other groups across the world e.g. in Chechnya, South Africa, Iraq and Northern Ireland have sought to initiate IEDs by dialling

a mobile phone that in turn would set off a detonator. Counter-measures involving phone networks are highly complex and technical. In order to function effectively, measures must be developed and put in place with the network providers as pre-planned contingency plans. It is important for national authorities to first liaise with their network providers to agree on specific plans.

5.4.2. Overall assessment of Policy Option 3

Two of the 14 actions are assessed as '3' with respect to their contribution to the general objective. They are: the establishment of a system concerning the regulation of explosive precursors; and, activities to limit the spread of bomb making experience over the internet. In combination the actions contribute to all of the specific objectives but only one action contributes to specific objective 5, to reduce the smuggling of explosives into the EU for illicit use by terrorists.

The costs of most of the actions in this Policy Option are uncertain. In one case, the formal vetting of all employees involved in the manufacture, storage, distribution and use of explosives, the costs are both uncertain and high and the anticipated contribution to the general objective is low.

Seven of the additional actions may require changes to EU legislation. Four additional actions may impact on fundamental rights. Environmental effects are expected as a result of 2 additional actions.

The dependency on other actors to implement the additional actions in this Policy Option is higher than in Policy Option 2.

Since Policy Option 3 includes the measures set out in Policy Option 2, it should be underlined that the impacts of the actions included in Policy Option 2 will remain unchanged. In other words, the 14 additional actions included in this option will not influence these impacts.

5.5. Policy option 4 – Maximum option

5.5.1. Assessment by action

There are seven 'actions' in this Policy Option that are additional to those in Policy Option 3. Each of these is briefly considered in turn. A more detailed assessment is provided in Annex 1.

5.5.1.1. Prevention Measures

Introduce a system for the recording of the identity of the buyer of precursors above certain quantities and/or concentrations (recommendation 7.)

The overall awareness of staff in businesses selling precursors is critical and there have been a number of instances in different countries where public and business awareness has been

decisive in alerting the authorities to a potential conspiracy to cause an explosion by a terrorist group. The introduction of a system to record the identity of the buyer might therefore not only assist in the detection of purchases after an incident, but also to make sellers more alert. The recording could also act as a deterrent. The action would therefore contribute to the prevention of the use of explosives by terrorists and criminals, increase the constraints on the illicit manufacture of explosives and reduce the liability and potency of IEDs as terrorists and criminals may decide to use alternative (less strong) precursors which are not subject to recording.

The financial and economic costs of developing such a recording system may be high, as every seller would have to invest some time in record-keeping. Whilst on an individual level this is minor, the number of sellers is very large across the EU. There are some potential fundamental rights issues as it could affect data protection principles – however processing of personal data would always have to take place in accordance with existing data protection legislation.

A European minimum standard and industrial guidance by way of an appropriate code concerning the security of storage of explosives precursors (recommendation 8.)

Standards and codes in the storage of explosives precursors would indeed increase security, thus contributing to the prevention of the use of explosives by terrorists and criminals, increasing the constraints on the illicit manufacture of explosives and reducing the liability and potency of IEDs. However, the feasibility of accomplishing successful implementation may be questionable as a broad range of end-users would have to abide by the standards. It is important to first define 'storage', which could potentially cover a huge area, from farmlands to shop storage spaces. It is worthwhile noting that small-scale actors are indeed a potential target of terrorists: the 400 litres of peroxide that was used for the UK 21/7 2005 attacks constituted half of what was available in the shops in England. It was all bought from 3-4 retailers.

The financial costs for implementing and enforcing standards or a code would have to be assessed separately, but it is estimated that they would be high. Authorities and industries in certain Member States might find it easier to introduce these than other Member States, with less suitable infrastructure and less financial resources. EU legislation could be needed should it be decided to make the standards legally binding across the EU. There are possibly environmental impacts from additional security measures for storage (e.g. fencing).

Establish a system of reporting suspicious transactions (recommendation 5.)

The action would both increase the overall awareness of sellers and put in place concrete measures to facilitate reporting with a specialised authority. Likewise, authorities and law enforcement bodies would be kept continuously informed of the purchase potentially dangerous precursors. It would thus have a positive impact on preventing the use of explosives by terrorists and criminals, increasing the constraints on the illicit manufacture of explosives and reducing the liability and potency of IEDs. In the UK, such benefits can be illustrated by the case of Mohammed Sidique Khan and his fellow 7/7 (2005) bombers, who

purchased a significant quantity of peroxide and acetone precursors for the construction of their TATP rucksack bombs.

It is important to establish a clear definition of 'suspicious transactions'. Several existing industrial and national definitions can be used as an example (e.g. the guidelines of the Chemical Industries Association and the Know Your Customer campaign). The system could for example a) follow the concept used to detect terrorist financial transactions i.e. all transactions above a certain quantity / concentration have to be reported, then analysed and assessed. Alternatively, it could b) be 'front-loaded', relying upon the trader to make the decision as to what is suspicious or not. More research would be needed to fully explore the viability of these two options. The system should not be strictly based on transaction restrictions but also on the purchase of combinations of substances which are suspicious. Finally, due account should also be taken of precursors that can be used to create low explosives. It will be important to combine the system with awareness-raising (e.g. actions implementing recommendations 1-3).

The financial and economic costs of reporting systems could vary greatly. Some start-up costs would be involved to set up the authority to which producers and sellers should report to, including equipment and training of staff. The costs would be high in the case of system a) mentioned above. The obligation to report on every transaction going beyond a certain threshold would put a high strain on traders (in terms of human resources needed for reporting) and would entail very high administrative costs to analyse and assess all transactions. The costs are low when the decision to report on a certain transaction is left to the trader as in b) above, as it will require less time of those that are selling the products. In addition, the administrative costs will also be reasonable as the number of transactions reported is likely to be much lower. Depending on the extent and use of the information contained in the system it could affect fundamental rights related to data protection principles – however all processing of personal data would need to take place in accordance with existing data protection legislation.

A binding system concerning the notification to the relevant national authority of any transactions involving the products on the list which can be considered suspicious (recommendation 6.)

The benefits and possible downfalls of the notification system are similar to the reporting system. However, the establishment of a binding system could be less beneficial and even be counter-productive. It would have a more 'negative' connotation as it would imply that those not reporting could potentially be prosecuted. A system based on voluntary inputs is likely to create more 'goodwill' than one that is imposed on traders.

As mentioned under the action implementing recommendation 5 above, the financial and economic costs could vary greatly. A binding system would however automatically entail relatively higher costs for enforcement (e.g. controls whether all producers and traders are reporting correctly, fining those that are not, etc).

Introduce a complete ban on selling precursors to minors (recommendation 10.)

Whilst sensible and beneficial, the action may prove very difficult to enforce and may have a relatively low impact (the precursors will be purchased by adult terrorists instead). Equivalent great efforts to prevent the sale of fireworks, alcohol and cigarettes to juveniles and minors in most Member States testify to the challenges faced.

The financial costs of the introduction of the ban are estimated to be low. There could be some economic effects for retailers but these are expected to be minor. There are possible environmental and safety benefits.

Harmonise EU requirements for the licensing and handling of large amounts of pyrotechnic articles (recommendation 43.)

Pyrotechnic articles have been used in the past to develop IEDs, for example the case of David Copeland who created a homemade explosive that killed six persons from black powder obtained from fireworks. The market is deregulated in several Member States, such as the UK which since 10 years no longer requires a licence for producing and handling pyrotechnic articles. In addition, their size and potency is increasingly making them similar to explosive devices. The action could thus prevent the use of explosives by terrorists and other criminals, increase the constraints on their illicit manufacture and reduce the reliability and potency of explosive devices.

The financial costs would be high for administrations and enterprises, relating to the development or further elaboration of licensing systems, control, enforcement and compliance. The action would also have economic effects as the production and storage of such articles could become more expensive. At the same time there may be single market benefits. Some environmental and safety benefits could accrue.

5.5.1.2. Detection measures

Develop minimum detection standards (recommendation 25.)

Minimum detection standards may help to increase the overall quality of detection systems, thus increasing the probability of detection as well as prevention and intervention opportunities. It would be important to learn from the experiences in the field of aviation security, where a framework regulation (No 2320/2002), adopted in 2003, made the security measures set out by the European Civil Aviation Conference (ECAC) compulsory within the EU. The Annexes to the Regulation set out common basic standards for aviation security, laying down performance criteria and acceptance tests for detection equipment. The standards also relate to what screening and other control processes should be used, which items should be checked and skills requirements for staff. Standards should be precise whilst still leaving flexibility to take account of different contexts. Alternative measures, such as the sharing of good practices and the use of product information sheets could be equally beneficial without setting minimum standards.

The development of minimum detection standards could be undertaken at a low costs. However, the financial costs for their implementation would be medium, including

administrative costs, expert inputs and costs for companies. For legally binding standards EU legislation would have to be developed.

5.5.2. Overall assessment of Policy Option 4

All of the seven actions added under Policy Option 4 would make a positive contribution to the general objective. Two of these actions are rated as '3' with respect to their effectiveness with regard to the general objective. They are: the establishment of a system of reporting suspicious transactions; and, harmonising EU requirements for the licensing and handling of large amounts of pyrotechnic articles. However, in both cases the costs are likely to be both high and unpredictable.

Five additional actions may require changes to EU legislation. Three additional actions may affect fundamental rights. For two additional actions, environmental effects are anticipated.

Indeed the costs of all bar one of the additional 'actions' in this option are both high and uncertain. In three cases the impact on the general objective is assessed as '1' hence relatively minor.

Since Policy Option 4 includes the measures set out in Policy Options 2 and 3, it should be underlined that the impacts of the actions included in Policy Option 2 and 3 will remain unchanged. In other words, the 7 additional actions included in this option will not influence these impacts.

5.6. Overall assessment

Taken in combination the 45 actions in the Action Plan contribute to the specific objectives as follows:

- SO1 Prevent the use of legally and illicitly manufactured explosives: (overall rating 51)
- SO6 Increase the chances of intervention (overall rating 45)
- SO4 Increase the probability of detection of terrorists illicitly handling and using explosives and precursors (overall rating 43)
- SO2 Increase the constraints on the illicit manufacturing of explosives (overall rating 31)
- SO3 Reduce the reliability and potency of IED (overall rating 23)
- SO5 Reduce the smuggling of explosives into the EU for illicit use by terrorists (overall rating 4)

With the exception of the low emphasis on activities related to the illicit importing of explosives there is a good balance in the contributions of the actions to the specific objectives.

6. THE PREFERRED POLICY OPTION

6.1. Challenges in identifying the preferred option

The identification of the preferred option in this Impact Assessment poses several special challenges. In particular:

- The Action Plan: The subject of the Impact Assessment is an Action Plan containing 45 separate actions. Some of these are preliminary in nature. Others are yet to be defined precisely and each is intended to impact on the underlying problem in different ways. Many are expressed as recommendations rather than actions. The links between particular actions and the achievement of objectives are often indirect. Some costs, particularly the indirect costs to economic actors are potentially very high and difficult to predict. Some of the actions, particularly those that lead to subsequent legislation could themselves be the subject of future Impact Assessments.

- The nature of the problem: The number of terrorist incidents involving explosives within the EU has been low. There are many, but an unknown number of, plots that might have led to terrorists using explosives that did not occur. The characteristics of the threat from terrorism have, and will continue to change. There is concern that there could be marked increases in incidents that, by the nature of the motivation for them and the means of execution, could be both more devastating and difficult to prevent than hitherto (for example, suicide bombers protesting against 'western society'). This concern influences the public policy priority afforded to security and preventive measures.

- The role of the EU: The primary responsibility for security rests with Member States. Indeed, many of the actions are dependent on the 'voluntary' cooperation of Member States and agencies at other levels. Bilateral and multilateral cooperation between Member States, not necessarily involving the EU is and will remain important in achieving the general objective. Some actions and interventions are however best undertaken at the EU level.

- The role of Impact Assessment: the purpose of Impact Assessment is to inform public policy making and the choice between broad Policy Options. However, the Action Plan includes most of the plausible actions that could be taken at the EU level to address the problems identified. Very few of the actions are alternatives. The Impact Assessment process can only to a limited extent 'second guess' the usefulness of individual actions within the Action Plan. These actions have been the subject of detailed discussion by security experts and stakeholders from the explosives, chemicals and detection industry. Also, account needs to be taken of the interrelationships between the individual actions and their sequencing. One of the advantages of an Action Plan is that it should enable a coordinated approach and maximise the potential for synergies between actions.

However, it is evident from the assessment of Policy Options undertaken in section 5 and supported by the assessment of the individual actions in Annex 1 that some actions are likely to be more cost effective than others.

6.2. The preferred option

Given the difficulties outlined in section 6.1 above, this impact assessment report recommends that all of the actions proposed by the ESETF should be included in the Action Plan – without however committing the Commission already at this stage to full implementation of all actions. This can be further explained as follows.

All of the actions in Policy Option 2 should be included in the preferred Policy Option. Of those additional actions included in Policy Option 3 all should be included in the preferred Policy Option with the following reservations. Further feasibility studies are required to identify the parameters of: a system concerning the regulation of explosives precursors; procedures for formal licensing and vetting of those handling explosives; and, the accounting of raw materials used in the manufacture of explosives.

In general terms Policy Option 4 is the preferred option with the stipulation however that further feasibility studies and consultations need to be taken forward concerning some of the actions identified in Option 4. There are a number of actions within Policy Option 4 that have high and uncertain costs and have been assessed as being only 'moderately' effective. These actions may have merit but before they are pursued further feasibility and assessment work is needed. Of those actions included in Policy Option 4 only the introduction of a complete ban on selling precursors to minors should be immediately pursued, subject to an assessment of the feasibility of enforcing such a ban. The remaining actions should be subject to feasibility work.

The analysis of impacts has also shown that certain measures would require further development in order to work out the details of the proposed measures and their specific impacts. It is therefore suggested that the Action Plan should clarify that on the points where further feasibility work still needs to be carried out, the Commission is only committing itself to pursuing such feasibility work, not necessarily to any subsequent implementation. Any possible implementation would necessarily be dependant on the results of the feasibility work. Table 6.1. below provides more detail on which of the measures identified should be subject to more feasibility work.

An analysis of the impacts of the particular measures identified by the Explosives Security Experts Task Force has shown that no single measure from among those set out in the Task Force report would be sufficient by itself to achieve the general objective of reducing the number and potency of terrorist and other criminal incidents in the EU using explosives. When combined however, these measures would address in a comprehensive fashion the security of explosives in the European Union and would significantly contribute to achieving all of the policy objectives identified above under Section 3. It should be noted here as well that there have been no indications that some of the measures proposed could interfere with each other in a negative way – rather it is the cumulative effects of the actions which is expected to increase the overall effectiveness of the measures taken together.

The work of the Explosives Security Experts Task Force, the Explosives Security conferences organised by the Commission and more broadly the entire process of public-private dialogue concerning the security of explosives have contributed to the elaboration of a comprehensive set of measures concerning the security of explosives. None of the measures identified in the Explosives Security Experts Task Force report should be disregarded as they are an emanation of the expectations of civil society and relevant public authorities in the EU. Consequently, these measures should be included in the Action Plan in full, although as

indicated above, further feasibility work should be taken up concerning certain actions. This should be clearly indicated in the Action Plan.

Table 6.1 – Summary and contents of preferred policy option

Objectives **Options and actions**	**Included in preferred option? Comments**
OPTION 2 - MINIMUM OPTION	
Horizontal measures	
Improve the exchange of timely information and best practice	
39. and 40. Establish an Early Warning System	yes
50. Regularly organise an event on the security of explosives	yes
Develop threat assessments	
No ESETF recommendation number: Consider developing specialised threat assessments	yes
Strengthen explosives related research	
49. Improve the aggregation and spread of research results	yes
47. Perform further research on: 1 - IEDs 2 - Chemicals found at an investigation scene 3 - Detection of explosives and precursors 4 - Mobile explosives kits	yes
31. Perform further research concerning the detection of Improvised Explosive Devices at airports, in particular for hold luggage	yes
48. Perform further research to find inhibitors which could be added to precursors	yes
45. Support further research to find technical solutions to jam mobile phones	yes
Prevention measures	
Improve staff awareness and alerting concerning precursors	
1. Public authorities to provide security information to the entire precursor supply chain	yes
2. Simple means within supply chain to alert national authority	yes
3. Campaigns to raise staff-awareness all along supply chain	yes
Improve the control over transactions involving precursors	
9. Assessing benefits of creating a scheme for each precursor handled by retail sector, under which all packaging would be labelled with a code specifying subject of registration	Feasibility work should consider alternative means to achieve objective
Improve the control over explosives available on the market and pyrotechnic	

articles	
19. Launch debate on the need to review the classification of "desensitized" explosives	yes
Improve the security of explosive facilities	
12. and 14. Effective Security Plans/Security Management Systems at all facilities	yes
Detection Measures	
Establish scenario based approach to identifying work priorities	
23. Setup of a working group to develop scenarios and to identify technology requirements	Yes
24. Create matrix of what is desired and currently possible in each scenario	yes
Developing minimum detection standards	
Part of 25 and 27: Develop mechanisms for the identification and dissemination of good practice in detection systems and use of detection equipment	Should be considered as possible alternative to minimum standards
Improving the exchange of information	
42. Ensure that security staff are provided with up-to-date information on new terrorist modi operandi	yes
30. Assess and improve where necessary the situation as regards the availability of training data and other information/feedback for manufacturers of detection solutions	yes
33. Create an end-user focused handbook concerning detection	Feasibility work should consider alternative means to achieve dissemination objective
34. Create a network of experts on the detection of explosives	yes
Establish EU-wide certification, testing and trialling schemes	
29. Assess the need for the development of standards concerning certification, testing and trialling processes.	yes
Improve the usage of detection technologies in specific locations	
31. Improve the use of detection technologies at airports, railway stations and other public facilities.	yes
Preparedness and response measures	
Improve the exchange of information and best-practices among relevant Member State authorities	
38. Establish a European EOD Network	yes
OPTION 3 - INTERMEDIATE OPTION	
Horizontal Measures	

Improve the exchange of timely information and best practices	
35, 36 and 37. Create a European Bomb Database	yes
Prevention Measures	
Improve the regulation of explosives precursors available on the market	
4. The establishment of a system concerning the regulation of explosives precursors available on the market	yes, but impact and costs dependent upon the actual system. Feasibility work required
Improve the control over explosives available on the market and pyrotechnic articles	
21. Ensure that each Member States has formal systems for authorising, regulating and licensing the manufacture, storage, sale, use and possession of explosives including by private persons.	yes, but feasibility work required
Improve the security of explosives facilities	
13. Introduce an obligation for the relevant national authorities to keep explosives manufacturers and distributors informed as to the regional threat at all times	yes
20. Raw materials used in the manufacture of bulk explosives and finished product should be periodically accounted for and reconciled as approved by the National Authorities.	yes, but feasibility work required
15., 16., 17. Improve the security of Mobile Explosive Manufacturing Units (MEMUs)	yes
Improve the security vetting of personnel	
11. All personnel employed in the manufacturing, storage, distribution and use of explosives should be vetted and hold a formal authorisation to have access to explosives.	yes, but feasibility work required
Improve the security of transport of explosives	
18. All EX/II and EX/III vehicles carrying explosives should be equipped with certain security enhancement solutions These security solutions include: 1) be fitted with 24 hour 2) be capable of immobilising the engine remotely if safe and applicable	yes
Reduce the supply and quality of information on how to illicitly manufacture explosives	
Part of 41: Limit the spread of bomb-making experience over the internet	yes
Detection Measures	
Improving the exchange of information	
32. Create a database containing the specifications of explosives produced within the EU	yes
Establish EU-wide certification, testing and trialling schemes	

26. Create a European wide certification scheme for detection solutions	depends in part on results of recommendation 29 to assess need for standards
27. Create a European wide testing scheme for detection solutions	depends in part on results of recommendation 29 to assess need for standards
28. Create a European wide trialling scheme for detection solutions	depends in part on results of recommendation 29 to assess need for development of standards
Preparedness and response measures	
Develop specific preparedness and response measures for terrorist threats using explosives	
44. and 46. Create the possibility for relevant law enforcement authorities to request providers to shut down mobile phone antennas in the case of a threat of a terrorist attack	yes
OPTION 4 - MAXIMUM OPTION	
Prevention Measures	
Improve the regulation of explosives precursors available on the market	
7. Introduce a system for the recording of the identity of the buyer of precursors above certain quantities and/or concentrations.	Feasibility work should be undertaken
8. A European minimum standard and industrial guidance by way of an appropriate code concerning the security of storage of explosives precursors	Feasibility work should be undertaken, likely to require Impact assessment
Improve the control over transactions involving precursors	
5. Establish a system of reporting suspicious transactions.	Feasibility work should be undertaken
6. A binding system concerning the notification to the relevant national authority of any transactions involving the products on the list which can be considered suspicious	Feasibility work should be undertaken
10. Introduce a complete ban on selling precursors to minors.	yes, but feasibility work required to assess likelihood of enforcement
Improve the control over explosives available on the market and pyrotechnic articles	

43. Harmonise EU requirements for the licensing and handling of large amounts of pyrotechnic articles	Feasibility work should be undertaken, likely to require Impact assessment
Detection measures	
Developing minimum detection standards	
25. Develop minimum detection standards	Feasibility work should consider alternative means of improving quality of detection equipment.

7. MONITORING AND EVALUATION

Monitoring the implementation of the Action Plan will be critical to the success of the initiative.

The monitoring and evaluation of the Action Plan will in one respect be straightforward. The general objective is clear and it is easy to measure whether or not it has been achieved. However, if the number of incidents involving terrorism and their potency declined this would not necessarily be attributable to the Action Plan. In the same light, should the numbers and severity of incidents radically increase, this would not necessarily signal that the Action Plan was not successful either. The Action Plan is not designed to address the root causes of terrorism, rather it is constructed to reduce and ideally prevent the harm that arises from acts of terrorism. Indeed the rationale for the Action Plan is greatest should the drivers of and motivations for terrorism strengthen.

In other respects there are important challenges in creating and applying a monitoring and evaluation regime. In particular:

- At the level of general and specific objectives a number of useful indicators can be defined that would provide a basis for monitoring. These are indicated in Table 7.1. However, there are no published statistics pertinent to these indicators and care and effort is required in order to assemble information to inform these indicators. Some of the most useful information is not in the public domain. The problem assessment section of this report illustrates some of the information and sources available.

- The Action Plan contains 45 actions. Some of these themselves would require very careful monitoring and evaluation. This is particularly the case for the actions that may generate significant economic costs and those actions where the links between the intervention and the achievement of the general and specific objectives are complex and indirect. Examples of the former type of actions where the costs are assessed as high and uncertain include (14) vetting all personnel (including users) involved in explosive and (7) systems for identifying the buyers of all precursors (above thresholds to be defined). Examples of the latter type of action where the links are complex include the actions that are designed to foster improvements in detection equipment and systems that may involve significant public financial support (yet to be determined).

Table 7.1 Objectives, potential indicators and sources of information

Objectives	Potential indicators	Sources and methods
General Objective: To reduce the number and	The numbers of incidents of terrorism using explosives	Europol, EOD units, Press reports

Objectives	Potential indicators	Sources and methods
potency of terrorist incidents in the EU using explosives.	The lives lost, injuries and costs of damage to property of terrorist incidents using explosives.	Estimates from official and other sources.
	The indirect effects of terrorism on delays, disruption and loss of liberties.	Estimates from official and other sources.
Specific objective: To prevent the use of legitimately and illicitly manufactured explosives by terrorists;	Numbers of plots thwarted.	Rough estimates can be constructed from records of trials
	Number of unsuccessful terrorist incidents (for example, explosions not occurring as planned).	Europol, EOD units, Press reports, records of trials
	Instances of thefts of explosives	Europol, EOD units, Press reports, however, reliable data is not likely to be available in the public domain
To increase the constraints on the illicit manufacture of explosives by criminals and terrorists	Numbers of plots, and unsuccessful and successful incidents using illicitly manufactured explosives.	Such an indicator would be of particular value if it distinguished between different types of explosives.
	Instances of terrorists possessing of precursors	Some information available from press and trial reports. Other information not in the public domain
To reduce the reliability and potency of 'home made' explosives or components manufactured by criminals and terrorists	Number of unsuccessful terrorist incidents (for example, explosions not occurring as planned)	Europol, EOD units, Press reports, records of trials
	The lives lost, injuries and costs of damage to property of terrorist incidents using explosives.	Estimates from official and other sources.
To increase the probability of detection of terrorists illicitly handling and using explosives and precursors	Detections of explosives and precursors	Press reports, records of trials. Estimates from official and other sources.
	Detections leading to prosecutions	Records of trials
To reduce the smuggling of explosives into the EU destined for illicit use by terrorists	Seizures of explosives at EU borders.	Press reports, police records.
	Detections of illicit explosives at borders	Press reports, police and border control records
To increase the chances of prevention and intervention opportunities by law	Detections of explosives and precursors	Reliable data may be difficult to obtain.
	Reports received of suspicious transactions	Evidence has to be interpreted with caution. The public's level of suspicious

Objectives	Potential indicators	Sources and methods
enforcement bodies		is likely to vary as will the numbers of false alerts.
	Plots thwarted by law enforcement bodies	Reliable data difficult to obtain. Trial records, pending prosecutions and information on the grounds for suspects being detained provide relevant information.

Given the importance of the topic and the EU Action Plan, which will need to be discussed within Council as well, regular monitoring of the state of implementation of the action plan should be foreseen, as well as an evaluation mechanism. Both of these measures must be proportionate and take account of the fact that an evaluation of all actions proposed will not be effective. A scoreboard-like system for monitoring the implementation of the action plan would probably be the best solution. In those cases where legislative measures are proposed these should also contain their own evaluation systems in line with general Commission policy on this point.

In order for this to work, each Member State should, on an annual basis, provide to the Commission information concerning progress in the implementation of this action plan. Based on the Member State reports, the Commission will regularly assess the progress made in the implementation of the Action Plan, with a view to identifying what further measures need to be taken and selecting new priorities.

As a final procedural point it should be mentioned here that this Impact Assessment report is not intended to serve as an ex-ante evaluation as required under the financial procedures established by the Commission.

ANNEX 1 – DETAILED ASSESSMENT OF POLICY OPTIONS

Policy option 1 – Status quo

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Effects on fundamental rights	Environmental effects
Horizontal Measures													
Objective 1: Improve the exchange of timely information and best practices													
Europol / Eurojust					2		2				2	No new issues	No new issues
Objective 3: Strengthen explosives related research													
Current FP7 research with regard to detection and public security (e.g. Security Research Call 1 of Dec 2006)					2							No new issues	No new issues
Prevention measures													
Objective 4: Improve the control over explosives available on the market and pyrotechnic articles													
Ensure the identification and tracing of explosives based on the system proposed in the Commission Directive on the identification and traceability of explosives for civil use (Traceability Directive).	22	Commission /MS	The implementation of the Traceability Directive would have a medium impact on the objective of decreasing the number and potency of terrorist and other criminal incidents in the EU using explosives. It would specifically contribute to preventing the use of legitimately and illicitly manufactured explosives by terrorists and other criminals. It	The measure would entail a medium cost for manufacturers, as it requires adapting current packaging methods to include the new information. Costs may further increase if the traceability requirements are not the same as those requested by third countries. Such costs are likely to be	2	2					2	No new issues	No new issues

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Effects on fundamental rights	Environmental effects
			would also increase the chances of prevention and intervention opportunities by law enforcement bodies. The explosives covered by the Traceability Directive are ready to use commercial explosives. The information gathered by way of the draft Directive will be incorporated in the electronic data system set up by certain EU Member States and is intended to help exchange information about thefts and to prevent malicious use. Industrial actors indicated that it would be important to 'streamline' the coding with developments in third countries and if possible introduce a globally used tracing method. Increasingly third countries (e.g. USA and Brazil) are also putting in place traceability requirements.	charged on the clients.									
Council Directive 93/15/EEC on the harmonisation of the provisions relating to the placing on the market and supervision of explosives for civil uses					1							No new issues	No new issues
Objective 7: Improve the security of transport of explosives													
ADR legislation and working group on transport					1	1						No new issues	No new issues
Objective 8: Reduce the supply and quality of information on how to illicitly manufacture													

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Effects on fundamental rights	Environmental effects
explosives													
Harmonize criminal sanctions for distributing bomb-making experience over the Internet	Part of 41	MS/ Commission	The recent trial of the three persons in the UK that distributed material from Al-Qaeda, constituted the first case in history that people were convicted for the distribution of terrorist information. Harmonisation of criminal sanctions will make the EU a less attractive place to distribute such information from, but is unlikely to reduce the phenomenon. The measure proposed only addressed the persons that ensure the distribution (i.e. placing it on a server and making sure it continues to work). It does not affect those that put the information together, nor does it inhibit users from downloading it. Distribution is indeed probably the only activity which can realistically be identified.	Low cost, involving the negotiation, adoption, and implementation of legislation. Higher costs will be incurred for enforcement and sentencing.	1		1	1				No new issues	No new issues
Detection Measures													
EU legislation in the area of aviation security					3	2			2		2	No new issues	No new issues

Policy option 2 – Minimum option

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S 2	S 3	S 4	S 5	S 6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Horizontal Measures														
Objective 1: Improve the exchange of timely information and best practices														
Establish an Early Warning System concerning explosives Such a system would be used in order to exchange information concerning: Immediate threats; Theft of explosives (any kind); Theft of detonators; Theft of precursors; (to be discussed) Suspicious transactions; Discovery of new modi operandi The system should be available in particular to Member States public security authorities (national contact points), Europol and all operational EOD units.	39 40	Commission/ MS/ Europol	Similar systems exist but they do not cover the whole EU (e.g. G6) and are mainly used at national level. The creation of an EU-wide system would therefore be beneficial, provided it is based on good practice and lessons learned in other systems. Inevitably, with such sensitive information, some 'practitioners' in the field of counter-terrorism may rather relay such information informally and bi-laterally to a foreign colleague they trust, rather than placing it in a central information system, There are many examples of the benefits of EWS. For example, it would have been extremely useful if all Member States had been instantly informed of the theft of 8.5 tonnes of explosives from a quarry in Plevin, France in 1999, to alert their police forces and other relevant actors. It is important that the information is handled	Low to medium costs, some efficiencies if linked to other systems (e.g. the European Bomb Database). Costs would include setting up the system, organising exchanges of information (virtual or face-to-face). Ongoing information inputs would be required from Member States. The additional costs, bearing in mind that most inputs are in place and ensured by Member States (e.g. EOD units) are estimated at: Set-up and organisation: 250,000 euro Internal staffing: 2 FTE, totalling 100,000 euro per year Inputs: average 25 days per Member State per year at an average fee of 400 euro, totalling 270,000 euro per year	3	2			2		3	No	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			appropriately and the amount of classified sensitive information kept at a minimum.	Outputs: (e.g. reporting, dissemination, analysis) 4 reports of 20,000 euro, totalling 80,000 euro. Total: 700,000 euro for the first year, 450,000 for the following years.										
Regularly (every two years) organise an event on the security of explosives covering all relevant issues. Such an event/conference should involving officials from both the public and private sectors where relevant.	50	Commission	Such a regular meeting by experts in this field would be beneficial and would lead to both greater knowledge of developments and networking. The meetings would need to involve the other, more focused networks that are active (e.g. detection experts, EOD units) The meetings will also serve to monitor the action plan and to increase public awareness. Not possible to define at this stage which objectives will be most affected – this will depend on the focus of the events.	Low cost, related to organisation and coordination, logistics, travel and subsistence and some expert fees. Preparatory work: (e.g. background document, briefing of speakers, programme outlines, invitation process, etc): 50,000 euro per event Logistics: (e.g. travel, subsistence, conference rooms): approximately 1,000 euro per person. Total: Based on an event of 200 persons, 250,000 euro per event.	2	1	1	1	1	1	1	No	No	Possibly, some environmental costs (flights and other transport) like any other event of this type.
Objective 2: Develop threat assessments														
Consider developing specialised threat assessments on explosives	NEW	MS/Europol/ Council	Difficult to estimate the impact without additional clarifications as to what these assessments will cover. In addition, most of it could be covered by the EWS. Would it perhaps be	Not possible to assess costs.	1						1	No	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S 2	S 3	S 4	S 5	S 6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			more correct to rephrase the action as follows: Specialised assessment on the threat of explosives?											
Objective 3: Strengthen explosives related research														
Improve the aggregation and spread of research results both at EU level as well as at national level across the EU Member States	49	MS/ Commission	Depending on the quality and outcomes of the research, the action would help to increase the overall knowledge in the field of explosives security and avoid overlaps and duplication of research efforts. Higher scoring possible but not at this stage	Low cost, related to dissemination and coordination. Coordination and dissemination: (including identification of research and compilation of contact lists of people whom should receive the information): 0,5 FTE totalling 25,000 euro. In the long term, some positive economic benefits could occur as new research would be more targeted and all Member States could benefit from results.	1	1	1	1	1	1	1	No	No	No
Perform further research on improvised explosive devices and their properties Perform further research on dealing with big amounts of chemicals found at a scene under investigation. Such research would assist EOD experts Perform further research on the	47	MS/ Commission	Additional research to enhance the security of explosives will have a positive impact as it will help to find practical solutions to reduce the use of explosives by terrorists. The benefits are however highly dependent on the specifics of the research. Specific comments on the research areas proposed are: 1. IEDs: earlier there was no literature / research on this type of manufacturing of	1. Location-wise it may be costly as these tests have to be undertaken in isolated environments. 2. Location-wise it may be costly as these tests have to be undertaken in isolated environments. 3. High cost, especially with regard to detection technologies. It could be	2	2	2	1	2	1	1	No	No	Yes, environmental costs due to the use of chemicals, explosives and the need to develop or adapt laboratories. However, such effects will be limited

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S 2	S 3	S 4	S 5	S 6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
detection of explosives and precursors including through the use of additives. Enhancing both detectability and traceability should be considered. Perform further research on mobile explosives testing kits.			explosives as it had never occurred. It is therefore very important to increase knowledge. However, there are so many ways to create an IED that a clear focus is necessary. 2. The 7/7 (London) attacks showed that it took more than two weeks to make the sites to be investigated safe to enter. The action should rather say scenes containing unstable rather than big amounts of chemicals. The MET has developed a training programme which teaches police officers to be aware of such materials. 3. Mobile kit may already exist. It will be important to base research on existing experience.	partly industry driven. 4. Further research to improve the kits would not be very expensive. It can be industry driven. The exact costs for research depend on the allocations made for the different research themes and the projects selected. A total of 1,400 million euro is available through the FP7 for security research overall.										given the fact that such research must take place within well controlled environments.
Perform further research to find inhibitors which could be added to precursors to explosives to prevent them being used to manufacture explosive devices	48	MS/ Commission	Potentially a positive impact. Ongoing and past research exists and should be built upon. Various actors from the chemical industry have however indicated that it is very difficult to identify inhibitors which do not affect the performance of the product, especially in the case of precursors produced for industrial use.	Research is not extremely expensive on single precursors, but the variety of chemicals that should be addressed is huge. The exact costs for research depend on the allocations made for the different research themes and the projects selected. A total of 1,400 million euro is available through the FP7. In addition, the actual	2	2	2					No	No	Yes, environmental costs due to the use of chemicals

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
				implementation / insertion of inhibitors to precursors may be immensely expensive.										
Perform further research concerning the detection of Improvised Explosive Devices at airports, in particular for hold luggage	31	MS/ Commission	Research to better detect IEDs will have a positive effect. Little research has been done so far. It is a very challenging area as it implies the identification of an extremely high number of substances.	Medium to high costs to finance research in this area, as it concerns a huge variety of chemicals. The exact costs for research depend on the allocations made for the different research themes and the projects selected. A total of 1,400 million euro is available through the FP7.	2	2			2			No	No	No
Support further research in order to find technical solutions for Member State authorities to jam mobile phone signals in critical areas	45	MS/ Commission	Research to better understand the effects of jamming mobile phone signals and to identify 'secure' ways of doing this will have a positive effect. It will also help to research the shutting down networks (see also actions 44 and 46 for more information) Too vague to rate.	Low to medium cost to finance research in this rather complicated area and to elaborate suitable solutions. The exact costs for research depend on the allocations made for the different research themes and the projects selected. A total of 1,400 million euro is available through the FP7.	2							No	Possibly, the respect of private and family life which includes communi-cations.	Possibly, telephone masts transmitting certain ultrasounds to jam signals.
Prevention Measures														
Objective 1: Improve staff awareness and alerting concerning precursors														
Public authorities to provide security information to the entire precursor supply chain, from	1	MS	Awareness-raising is important and has proved to help prevent terrorist attacks. The	The costs for the provision of such information are likely to be high, as it needs to be	2	2	2		2		2	No	No	Possibly, some environmenta

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S 2	S 3	S 4	S 5	S 6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
manufacturers to the retailers, first responders (police, fire-departments, bomb-squads) and educational establishments to focus attention on products of concern.			concept of 'security information' is to be clarified. The information is to be adapted to the type and level of actors. Additionally, as well as public and business awareness, it is indeed critical that first responders are provided with information regarding such precursor products, which may otherwise be overlooked during normal routine searches, enquiries or activities.	tailor-fit to address all sorts of different actors and updated continuously. From a cost-perspective, it may be more efficient and effective to concentrate on those stakeholder groups where such information can make a real impact. Cost estimate based on six different stakeholder groups (manufacturers, transport companies, wholesale, retail, first respondents and youth): Research and information collection (preparatory work): 50,000 euro Preparation of 6 security information packages: 120,000 euro Dissemination: 20,000 euro Reviews on need for updates: 30,000 euro Costs per MS: 220,000 euro Central coordination and guidance: 50,000 euro Total EU27: 5,990,000 euro in the first year, 1,400,000 euro in the following years.										l costs for printing and distribution.

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Simple means should exist for anyone within the supply chain to alert the relevant national authority if they see a transaction or theft which they suspect to have been made with the intention of illegally fabricating explosives.	2	MS	Actions 2 and 3 need to be implemented together, as they depend on each other. The usefulness of these measures is high - The lack of concern by certain suppliers of potential explosive precursors is worrying. This can be summed up in the example of Operation Crevice during 2004. The conspirators had purchased 600kgs of ammonium nitrate fertiliser to construct improvised explosive devices and were keeping it in a unit at a public self-storage facility. The agricultural supplier who had sold the fertiliser said the young man who had bought it claimed it was for his garden. He admitted that he knew the quantity was far in excess of the amount needed in this circumstances but he had sold it anyway and informed no-one of the unusual circumstances. During the PIRA bombing campaign against the UK mainland (see McGladdery 2006), the Metropolitan Police established Operation Rainbow to systematise the counter terrorism response to changes in the threat level. Part of the response involved raising awareness amongst storage providers, lorry hire companies, accommodation	The costs for the establishment of an alert system are low to medium. They would involve some start-up costs relating to the development of a central coordination unit, the creation of specific phone lines and, more importantly, the training from authorities to deal with the alerts. Unit set up costs: 20,000 euro Staffing: 1 FTE (registering alerts, providing information, etc) totalling 50,000 euro Total EU27: 1,890,000 euro in the first year and 1,350,000 in the following years.	3	3	3		3		3	No	Possibly, as 'over-enthusiastic' or xenophobic reactions of certain supply chain members could affect principles of data-protection and non-discrimination	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			letting agencies and landlords, providing them with appropriate police contact numbers and details. Operation Rainbow continues today and has been expanded to provide a similar coverage to the ongoing terrorist threat from violent jihadist groups or individuals. The operation could be utilised as a suitable model on which to base a similar wider operational network across the Member States (MS). A potential hurdle to overcome with this recommendation would to identify and nominate a suitable "national central agency" to carry out this work. In may need to be created in MS that do not have this capability											
Campaigns should be conducted to raise staff-awareness of the threat all along the supply chain amongst manufacturers, formulators, distributors and retailers of precursors.	3	MS	The awareness of staff in such businesses is critical and there have been a number of instances in different countries where public and business awareness has been decisive in alerting the authorities to a potential conspiracy to cause an explosion by a terrorist group. For example, in the past, important information was received from the public concerning such preparations by the Provisional Irish Republican Army (PIRA), in	The costs for an information campaign are low to medium, depending on the type of campaign (e.g. leaflets and posters or using television as a medium) and its coverage. The campaigns should be based on the research and information collected under action 1, to save costs. No further estimate is possible without knowing the type of campaigns (posters, flyers, website, television and radio,	3	3	3		3		3	No	Only if the consequences of such campaigns are as described above.	Possibly, some environmental costs for printing and distribution.

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			relation to the purchase and storage of Ammonium Nitrate fertilizer, which was then mixed with Fuel Oil to produce ANFO (Ammonium Nitrate and Fuel Oil). More recently (the trial of the 21/7 failed suicide bomb attacks on the London Underground and a bus), individual members of the public had concerns regarding the bulk purchasing of Peroxide and Acetone. It was not until after they were contacted by the police who had already arrested the conspirators that they voiced these concerns. Information from a London rubbish cleaner who had noted a large number of empty Acetone bottles in 2005, which helped identify the flat used by the bombers to make their TATP (Tri-Acetone, Tri-Peroxide) explosives. However, attention needs to be given to a wider pool of people who may come across explosive precursors during their business. A recent example again occurred during Operation Crevice. A female staff member of a self-storage company joined some former colleagues for an evening out, when one of them mentioned the storage of Ammonium Nitrate fertilizer by the PIRA in the 1990s. She then recalled that a group of Asian males had stored 600kgs of this	etc).										

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			fertilizer in their self-storage facility. As a consequence, the police were contacted. This provided a critical piece of intelligence and hard evidence in an operation which later led to the arrest and subsequent conviction of the group for conspiring to cause explosions. Targets allegedly were the 'Blue-Water' shopping centre in Kent and the MoS Nightclub, London, amongst others.											
Objective 3: Improve the control over transactions involving precursors														
Assessing the benefits of creating a scheme for each precursor handled by the retail sector, under which all packaging would be labelled with a code specifying that the purchase of the substance may be subject to registration The possibility of designing a European symbol to indicate that the product for retail sale is subject to registration could be considered.	9	MS/ Commission	The assessment may conclude that creating additional labelling requirements may not have the desired impact. Only if such labelling was carefully coordinated with the recording of the corresponding sales it might prove useful, but again it may prove difficult to ensure uniformity in the introduction and enforcement of such a system across the various Member States. Lessons and experience may be obtained from the existing systems in place, regarding the transport and storage of hazardous materials (HAZMAT) in the UK. The outcome of the assessment may be that there are no particular benefits.	Low cost for study assessing the benefits of such a scheme, around 100,000 euro. High costs if all products would have to be uniformly labelled across the EU. The amount of products to be labelled for handling by the retail sector is very high.	0							Possibly, if the labelling would be the same EU wide.	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Objective 4: Improve the control over explosives available on the market and pyrotechnic articles														
Launch a debate on the need to review the classification of "desensitized explosives" This should be done with a view to making sure that future transport regulations (GHS-system) continue to cover such substances.	19	Commission/ MS	The debate is very useful – excluding these type of explosives from the list of dangerous goods could have a very negative effect as terrorist would be able to reconvert such material into potentially dangerous compounds.	Low costs on the short-term as the action concerns starting a debate. Low costs also in the longer term as this would not mean a change from the present situation (current transport regulations cover the substances). The debate could be supported by one event at 250,000 euro (see also action 2) and the development of a consultation website (20,000 euro), totalling 270,000 euro.	1	1						No	No	No
Objective 5: Improve the security of explosives facilities														
Introduce effective Security Plans/Security Management Systems at all explosives facilities (manufacturing, storing, distributing and using) Ensure that the levels of necessary access prevention and detection provisions in fixed storage facilities should be proportional to the risk and should be subject to a standard	12 14	MS	Most manufacturing, storage and distribution sites in Member States have security plans and management systems in place. These often include 'interlocking series of in-depth security measures'. It may prove a challenge to bring security plans and measures up to the same level in all EU countries, thus ensuring a 'universal' level of security across the EU.	The measure may be costly for end users as these are often not required to have effective security plans and management systems in place. Nearly all producers, storage facilities and distribution channels are already required by law to have such measures in place.	4	4					2	Possibly, if EU-wide statutory require-ments would be put in place	No	Possibly, some environmental costs if the systems would require putting in place additional security measures (e.g. fencing, etc).

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S 2	S 3	S 4	S 5	S 6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
classification.			It is stressed that pre-emptive measures are equally important in countries with a low level of threat as the theft of explosives is a cross-border issue. Making measures proportional may lead to terrorists focusing on those countries with relatively lower security levels. This is illustrated by the ETA thefts in France. In addition, consideration must be given to the issues of what the classifications should be, who inspects and classifies each facility and who is in overall charge in each MS of the scheme. Once more, will it be voluntary or statutory? Finally, as already highlighted for similar measures proposed, it will be particularly difficult to put in place security plans and management systems in end user sites (e.g. quarries and construction sites using explosives) were currently no or little security measures may be required by Member States. The action may have a negative impact on S5.										
Detection Measures														
Objective 1: Establish a scenario based approach to identifying														

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
work priorities in the detection field														
Setup a working group tasked with developing and discussing detection related scenarios, and then identifying detection technology requirements for the scenarios. The working group would be composed of Member State and Commission representatives.	23	Commission/ MS	The working group that is proposed will need to have clear objectives and work well-defined terms of reference in order to ensure that it does not lose its relevance and momentum over time. This action is to consider at a strategic level the origin and nature of threats. IED, manufactured explosives, targets, perpetrators etc. Whilst it is certainly beneficial to develop detection scenarios, this would mainly be the responsibility of national authorities, with the help of experts. It could be useful to exchange information and share experiences with regard to the building of scenarios and the identification of detection technologies, but less advantageous to discuss in detail the content of the scenarios themselves (as these should be confidential and strictly refer national contextual issues). It would be highly important to link the working group to all other networking activities proposed in the Action Plan	Low costs to set up a working group and to ensure regular communication opportunities (meetings, virtual exchanges, etc). Set up and preparatory work: (e.g. background study, identification of experts, etc): 50,000 euro. Creation website / virtual forum: 20,000 euro Inputs to scenarios : 10 days per Member State at 400 euro. Logistics for meetings: (e.g. travel, subsistence, conference rooms): approximately 1,000 euro per person. Total: Based a working group of 30 persons: 208,000 euro (for one year of activity). Potential economic benefits on the longer-term, due to a more appropriate and efficient use of detection systems.	2				2		2	No	No	Possibly, some environmental costs (flights and other transport) in case of meetings.
Create a matrix of what is desired and of what is currently	24	Commission/ MS	Same assessment as for Measure 23 above. The	Low costs to develop matrixes, mainly related	2				2		2	No	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
possible in terms of the detection of explosives for each of the scenarios created by the working group.			content of the matrix would be a strictly national responsibility, while it would be beneficial to discuss how to develop such matrixes, what items to include depending on the indications in the scenarios, etc.	inputs such as internal human resources and external expert involvement. Expert inputs for the development of the matrixes: 10 days per Member State at 400 euro, totalling 108,000 euro. Potential economic benefits on the longer-term, due to a more appropriate and efficient use of detection systems.										
Objective 2: Developing minimum detection standards														
Develop mechanisms for the identification and dissemination of good practice in detection systems and the use of detection equipment	Part of 25		The industry may not be ready for minimum standards – more innovation and investments are needed. In addition, the detection area is extremely wide, what kind of standards would that be? And why are they minimum – a set of standards would be better. It would be useful to first identify good practice and lessons learnt in existing detection systems, for example in aviation security which is a more developed area which is using standards for detection.	The network of detection experts discussed under action 34 could assist in the identification of good practice in detection systems and their use. Each of the 10 experts could be requested to input 10 days at 400 euro to map and analyse good practice, thus totalling 40,000 euro. A similar exercise could be launched each year.	1				1		1	No	No	No
Objective 3: Improving the exchange of information														

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Ensure that the security staff (in particular at airports) are provided on a continuous basis with up-to-date information on relevant parts of new terrorist modi operandi or other appropriate threat information. For airport security, this should complement the obligations for training security staff set out in §12.2 of the Annex to the EU Regulation 2320/2002 establishing common rules in the field of civil aviation security	42	MS	Ensuring (airport) that security staff is immediately updated regarding any new terrorist TTPs (Tactics, Targets and Planning) is essential and will have a positive impact in terms of increasing the security of explosives. The EWS could be used to extract relevant information from. However, much as in the case of an EU Bomb Database, rather than re-creating what already exists, it would be beneficial to carry out an Member State audit to establish exactly what communication structures are already in place for the sharing of such information. These can, if needed, be expanded and further developed. Inevitably, with such sensitive information, most 'practitioners' in the field of counter-terrorism may rather relay such information informally and bi-laterally to a foreign colleague they trust, rather than placing it in a central information system, where access is inevitably wider. It will also be important to focus on security staff at international train stations and ferry points, as these have less security measures in place and may also be subject of a	Low cost for setting up appropriate communication channels and protocols, including the designation of contact persons. Set-up cost: 1,000 euro per Member State Inputs: 0.2 FTE per year per Member State Total: 297,000 euro for the first year and 270,000 euro for the subsequent years.	3	2			3		2	No	Possibly, if the information identified specific groups or communities this could affect principles non-discrimination	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S 2	S 3	S 4	S 5	S 6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			terrorist attack.											
Assess and improve where necessary the situation as regards the availability of training data and other information/feedback for manufacturers of detection solutions	30	Commission/ MS	Feedback to manufacturers is very important. The concept of 'training' makes little sense in this context, but providing manufacturers with operational data (i.e. what actually happens) would help them to improve the performance of their equipment.	Low cost to collect and prepare feedback and data to manufacturers, e.g. in the form of reports and statistics.	2				2		1	No	No	No
Create an end-user focused handbook concerning detection	33	Commission/MS	The handbook would provide advice to end users, in the form of a user manual on detection systems in general. It should not include information on the performance of the detection system that could be useful to anyone trying to avoid explosives material being detected. Regular updates would be required, and for this purpose it may be best to use a virtual tool. An analogous document is currently in use for aviation security. The handbook would enhance the strategic and targeted placement of detection tools, thus increasing the probability of detection of terrorists and other criminals and improving the chances of prevention and intervention. As a virtual tool, which can also be easily updated, in combination with the larger	Low cost related to the development and updating of the handbook. Some inputs from external experts and manufacturers of detection technologies. Development of the handbook: 50,000 euro Expert inputs to its development: 20 days at 400 euro, totalling 8,000 euro Annual updates: 20,000 euro. Total: 78,000 euro for the first year and 20,00 for the subsequent years.	2				2		1	No	No	Possibly, some environmental costs in case of printing.

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			virtual European Bomb Database (also including action 32 above) it would be a relevant and useful product. There may be benefit in carrying out an assessment of the needs of the future users of the handbook.											
Create a network of experts on the detection of explosives	34	Commission/ MS	Any proposed networking activity should be based on existing cooperation initiatives, where these are in place. It would also be important to ensure that the network does not work in 'isolation' and adopts a very practical focus. Regular encounters with other networks should be organised (e.g. working group of experts for the development of detection scenarios, the network of EOD units and the wider conferences on explosives) and vertical working groups should be organised combining detection experts with bomb experts, industry, etc.	Low costs to set up a network, identifying appropriate experts and organise regular (virtual) meetings. Some inputs for expert fees for the preparation of reports, etc. Set up and preparatory work: (e.g. briefing materials, identification of experts, etc): 50,000 euro. Creation website / virtual forum: 20,000 euro Annual inputs: 20 days per expert at 400 euro Summary reporting and analysis: 10,000 per report, two reports per year. Logistics for six meetings: (e.g. travel, subsistence, conference rooms): approximately 1,000 euro per person. Total: Based on a network of 10 persons: 180,000 for the first year and 130,000 euro	2	1			2		1	No	No	Possibly, some environmental costs (flights and other transport) in case of meetings.

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
				for the following years.										
Objective 4: Establish EU-wide certification, testing and trialling schemes														
Develop mechanisms for the identification and dissemination of good practice in detection systems and the use of detection equipment	Part of 27 (same as Part of 25)			See Part of 25 above.	1				1		1	No	No	No
Assess the need for the development of standards concerning certification, testing and trialling processes.	29	Commission/ MS	Assessing the need for the development of such standards is useful – only the results of the assessment will tell. It will be important to learn from existing (national) standards that are already in place at national level, e.g. for laboratory testing, certification, etc.l	Low costs to launch a feasibility study and ensure that the lessons are integrated in the work programme. Estimated costs for feasibility study: 100,000 euro.	1				1			No	No	No
Objective 5: Improve the usage of detection technologies in specific locations														
Improve the use of detection technologies at airports, railway stations and other public facilities. Further developments in this field should be supported. The situation should be evaluated and assessed on a continuous basis, and updated as the need arises.	31	Commission/ MS	The measure proposed is very generic, as it is not clear what this would entail. Given the overall higher level of regulation and coordination, it is likely that lessons can be learned from the aviation sector. It is indeed evident that overall security measures and the use of detection is much lower in other sectors, particularly in harbours and	Difficult to estimate the cost level as the action is very generic. However, increasing the number of detection systems in airports, railway stations and public facilities would entail a very high cost as the equipment is very costly and as they require well-trained staff. These costs may in some cases outweigh the benefits.	2	1			2		2	No	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S 2	S 3	S 4	S 5	S 6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			'high-risk' public facilities. Unfortunately, any such increase in detection technologies and measures introduced, there is almost invariably a concomitant impact on the time taken for security checks, the flow of passengers / visitors, and consequently the effectiveness of the transport networks. This was most recently observed during the disruption of air transport caused by the increased security measures introduced following Operation Overt in the summer of 2006. This plot involved an alleged conspiracy by a group of British violent jihadists to smuggle liquid explosives onboard a number of trans-Atlantic flights, with the intention of downing these aircraft in a coordinated, mass casualty suicide attack. Rigid airport security measures, including the questioning of passengers while queuing, and the hand searching of hold luggage, along with the standard Rapiscan X-raying of such luggage, are standard practice in Israel, but this necessitates a minimum three hour check in period, and its intrusiveness may not be acceptable to the public in many of the Member	Evaluations and assessments of the need for detection technologies would constitute a low cost, as these would mostly likely concern launching and updating studies. Costs for feasibility studies for each sector: 100,000. Based on a coverage of four sectors (airports, railway stations, harbours, high-profile public places) the total costs would be 400,000 euro.										

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			States. Concerns have been raised that cargo carried in passenger aircraft is not subject to the same screening as passenger luggage also stored within the cargo hold. Clearly this undermines the whole purpose of aviation security screening, with potentially devastating results, and is a loophole that needs to be closed. Consequently cargo must be subjected to the same level of security screening as hand and hold luggage in passenger aircraft. Finally, however, one must take account of the extremely low numbers of explosives and explosive materials which are actually being found by using detection technologies and of the high costs involved.											
Preparedness and response measures														
Objective 1: Improve the exchange of information and best-practices among relevant Member State authorities														
Establish a European EOD Network The system should facilitate information sharing and trust building. It should contribute to	38	MS/Europol/ Commission	The network would be beneficial provided it is based on existing cooperation models (also bilateral and more informal forms of networking) and remains flexible. It would	Medium cost depending on the activities of the network, the number of meetings organised and the outputs expected (e.g. reporting, training sessions,	3	3			3		2	No	No	Possibly, some environmental costs (flights and other transport) in

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
the identification of best practice, the organisation of joint training exercises, and keeping EOD units up to date concerning the latest developments of relevance to the sector. The network should be made available to all EOD-Units (police, governmental and military) dealing with explosives with the MS. The use of EU funding to establish the network should be assessed.			particularly favour information sharing and trust building, which are two items which are at present underdeveloped.	dissemination0 It would indeed be beneficial to support the start-up phase of the network through EU funding, as these may be relatively high. Set up and preparatory work: (e.g. background study, setting up coordination structures, etc): 200,000 euro. Creation website / virtual forum: 20,000 euro Inputs to identification of best practice and other activities: 20 days per Member State at 400 euro. Central coordination, organisation of training sessions, preparation of updates and reporting: 100,000 euro. Logistics for meetings: (e.g. travel, subsistence, conference rooms): approximately 1,000 euro per person. Total: Based on a network of 27 persons: 543,000 euro for the first year and 323,000 for the subsequent years.										case of meetings.

Policy option 3 – Intermediate option

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Horizontal Measures														
Objective 1: Improve the exchange of timely information and best practices														
Create a European Bomb Data System The system should provide a common EU instrument enabling authorised governmental bodies at EU and Member States level to have 24/7 access to relevant information on incidents involving explosive devices. At least all operational EOD units in the Member States should have access to the database. Other competent authorities in the Member States should also be given access in line with national law. Competent units or bodies of the Member States should be strongly obliged to provide all necessary information for inclusion in the database.	35 36 37	Commission /Europol/MS	It is important to clarify whether the action proposes a wider system or 'just' the development of the European Bomb Database. The creation of a European Union Bomb Database, managed by Europol for the benefit of EOD and other security officials in the Member States can have a positive impact. The system should be linked to the Early Warning System (EWS) mentioned under action 39 above to avoid overlaps of information and to identify gaps. The use of hydrogen peroxide for the bombings in the UK shows however the benefits of putting in place EWS and other central information systems – if Member States had timely access to this information it may help to prevent the criminal use of this product. Rather than 're-inventing the wheel', it may be worth	Low to medium costs involving setting up the database, ensuring its integration with other systems, putting in place high security levels preventing access by non-authorised parties and ongoing updating. Inputs from Member State authorities and other designated actors to insert information. Cost efficiencies on the long term: provided the database includes information on incidents around the globe, it will help Member States to quickly access centralised information for issues occurring in third countries rather than having to rely on bilateral intelligence collection. Set-up and organisation: 200,000 euro (database, virtual access, sedurity) Internal staffing: 1.5 FTE,	2				2	1	1	Possibly, to make information inputs compulsory.	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			checking across the EU to establish exactly what other Bomb Databases exist, and what formal and informal communication links already exist between various EOD units in the Member States. For example, at Scotland Yard, within the Metropolitan Police Counter-Terrorist Command (CTC), there is an extensive Bomb Data Centre, with a wealth of information and years of experience (as does its counter-part in Ireland). Similarly, there is an Israeli National Police Bomb Data Centre in Tel Aviv. This situation must also occur in other Member States e.g. France, Germany, Italy. Clearly, as well as police and EOD units with their Explosives Officers (EXPOs) and Bomb Databases, attention would need to be given to the various Member States military EOD units and the expertise developed by their Ammunition Technical Officers (ATO) if they act in this capacity to support the police. Making the inputs compulsory would certainly increase the benefits of the system. Some Member States may not wish to input a high extent of detail in the system or would not have sufficient resources to	totalling 75,000 euro Inputs: average 20 days per Member State per year at an average fee of 400 euro, totalling 216,000 euro per year Outputs: (e.g. reporting, analysis) 4 summary reports of 10,000 euro, totalling 40,000 euro. Total: 531,000 for the first year, 313,000 euro for the following years.										

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			provide inputs. Some financial support could be envisaged. The scoring of S5 only applies if the database includes information about incidents around the globe.											
Prevention Measures														
Objective 2: Improve the regulation of explosives precursors available on the market														
The establishment of a system concerning the regulation of explosives precursors available on the market. Such a system should include the establishment of a Standing Committee of Experts tasked with identifying the risks associated with various precursors and recommending appropriate actions to the Commission. The Committee should consider the following issues: Development of suitable additives and promotion of the use of these additives to precursors in order to prevent their use in explosives, when it is technically possible. Restrictions on concentration	4	Commission/ MS	There is no information on what the wider outline of this system would be. In addition to the establishment of a Standing Committee, what else would the system include? In principle, any of the issues listed could have a useful impact on enhancing the security of homemade explosives and IEDs. Note that point 4 would be redundant if the recording of transactions etc as mentioned in recommendation 7 would be put in place.	The costs of any decision that the Committee would make, i.e. developing the system that regulates precursors, would be potentially enormous, especially when such measures are both applied downstream (to retailers and end users) and upstream (to other manufacturers and industrial users). The chemical sector has an economic important position in several Member States. The impacts of any such measures on EU and national economy would have to be subject to separate feasibility study. In addition, the impact on the effectiveness of such 'dual purpose' chemicals in their primary industrial role will	3	2	3	3				Possibly, only as a con-sequence of subsequent decisions (e.g. to introduce a ban concentrated acids).	No	Some subsequent decisions could actually lead to environmental and safety benefits (e.g. lower concentrations of chemicals, bans on concentrated acids)

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
concerning the sale of certain precursors to end-users. A complete ban on concentrated strong acids to EU consumer markets (non-professional markets) when a substitute giving an equal use is technically possible: sulphuric, hydrochloric and nitric acids in particular. Introduction of a voluntary market surveillance scheme for ammonium nitrate fertilizers and restricting the sale of high nitrogen fertilizers to the general public. Limiting the availability of pure nitromethane to the general public. It should be available to industrial customers via a suitable customer qualification scheme. Restrictions on access of the general public to unphlegmatized sodium chlorate (weed killer). The work of the Committee should take into account the detailed measures proposed in Annex 2 of the Explosives Security Experts Task Force report.				have to be assessed. Many industrial representatives expressed their doubts as to the technical feasibility of changing the nature of a number of chemicals. Set up and preparatory work: (e.g. background study, identification Committee members, etc): 50,000 euro. Expert inputs: 10 days per issue (6 issues in total) per expert (10 experts). Preparation of recommendations on each issue (summary and analysis): 20,000 euro per issue. Logistics for 4 meetings: (e.g. travel, subsistence, conference rooms): approximately 1,000 euro per person. Total: Based a Committee of 10 persons: 270,000 euro (for one year of activity).										
Objective 4: Improve the control over explosives available on the														

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
market and pyrotechnic articles														
Ensure that each Member States has formal systems for authorising, regulating and licensing the manufacture, storage, sale, use and possession of explosives including by private persons. This shall apply to companies as well as to non-commercial activities.	21	MS/ Commission	Many countries where there has been or continues to be an active threat from terrorism already have strict controls on the storage, sale and possession of explosives, both commercial and military. It is therefore more a case of ensuring that all Member States, particularly the newer ones, adopt the best practice found in these countries, which is beneficial. Also, private persons are in a few countries exempt from licensing requirements. It would be beneficial to always include private persons in the formal authorisation, regulation and licensing processes. Again, most focus should be placed on end users, as security measures in this sector appear to be much lower than those put in place for manufacturers. With regard to the storage of explosives, most of the stolen explosives have been legally produced and are of the commercial type, often taken from factories or mining quarries (Gander 1989). A classic example of the latter is the theft of 8.5 tonnes of explosives from a quarry in Plevin, France in 1999, during a joint operation between the	Low to medium costs. Countries that already have extensive formal systems in place will not financially suffer of this action. However, in countries where such systems are underdeveloped, authorities will have to substantially invest in setting up procedures for licensing, authorising and regulating the whole supply chain. Companies will most likely be charged for the additional procedures. As mentioned earlier, placing high security requirements on end users may entail a high cost, as their use and possession is not as regulated as for the other sectors.	2	2			1		1	Possibly, if EU-wide procedures were to be proposed.	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			Basque separatist ETA and the Breton ARB, which was later used in a series of fatal bombings (Baud 2003). Interestingly, the historical IRA was traditionally associated with the theft and use of quarrying dynamite.Recently the PIRA is increasingly linked with both the military grade plastic explosive, Semtex, produced in Czechoslovakia and shipped to them by Libya in vast quantities in vessels such as the MV. Claudia, Marita Ann and the Ecksund (Moloney 2002). As well as using it as an explosive on its own, it was also used to initiate the detonation of the much larger quantity of 'homemade' explosive (usually Ammonium Nitrate and Fuel Oil (ANFO) employed in the lorry bombi attacks in London in the early 1990s and Manchester in 1996 (Harnden 2000) . Likewise, ETA have regularly stolen and utilised the Spanish produced quarrying explosive known as "Goma 2 ECO" for their bomb attacks (Alexander et.al. 2001). This widely used commercial explosive was also in the Madrid train bombings of April 2004 by the violent jihadist Madrid cell, who traded a quantity of drugs											

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			with a criminal group in return for a supply of the previously stolen explosives (Vidino 2006).											
Objective 5: Improve the security of explosives facilities														
Introduce an obligation for the relevant national authorities to keep explosives manufacturers and distributors informed as to the regional threat at all times Response plans should be developed tuned to the level of alert present.	13	MS	In principle, full awareness of the level of threat would be beneficial. However, at present assessments of regional threats do not exist. The efficacy of developing a new concept, that of a "regional level of threat" remains unproven. Unless there is a very specific threat, the use of regional alerts is unnecessary. It should also be taken into account that explosives manufacturers and distributors may not be able respond fast to alerts either. Threat assessments are a national responsibility. Various countries have different systems, which do not necessarily link the level of threat with a set level of alerts and responses. For example, in the UK there are various threat levels, but the alert level and responses are kept separate. In France, the Vigipirate system matches various threat levels to a	If based on existing systems in the Member States, costs are likely to be low. Some start-up costs would be required to set up communication and coordination channels with companies, making sure that the right persons will receive the information on the threat. The indirect costs to companies might be medium, especially when a response is required (e.g. a stop on transport, access prevention in production sites, etc).	1	1					1	No	Possibly, if the information on threats identified specific groups or communities this could affect principles non-discrimination	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			'traffic light' response scale, with specific pre-planned response measures introduced at each level (DGPN 2005). Finally, the wording of the measure could be changed to increased threat – there is no need to inform actors on the threat level when this is at a low level. If the threat is higher, manufacturers and distributors would be advised to increase their security measures as they see fit.											
Raw materials used in the manufacture of bulk explosives and finished product should be periodically accounted for and reconciled as approved by the National Authorities. This applies to all factories manufacturing bulk explosives. The relevant periods should not be long so that any losses, thefts and inconsistencies are recognized as quickly as possible.	20	MS	Higher attention on raw materials is beneficial. Accounting and reconciling systems already exist However, the feasibility of requiring authorities to take an active role in reconciliation and approval of quantities of raw materials appears to be low.	It is difficult to estimate the costs of the measure without knowing their extent. Low costs in many Member States as these systems are already existing and of high quality. Medium to high costs for countries which have to substantially improve their systems, develop new procedures and allocate human resources for control and enforcement.	1	1					1	No	No	No
Improve the security of Mobile Explosive Manufacturing Units (MEMUs) The following specific actions should be undertaken: Each MEMU should have at	15, 16, 17	Commission/ MS	There are little known cases of thefts of MEMUs and the benefits of this measure could therefore be limited. Most countries that use MEMUs have modern vehicles and good security measures already in place. For example,	The number of MEMUs in the Member States is relatively low. For example, there are 5 units in the Czech Republic and 10 units in Sweden, the latter, in 1998, the country with a 15% market share	1							Possibly, if there is a need to integrate these requirements in transport	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
least two independent systems for recording the amount of explosives produced Each MEMU should be fitted with process locks to prevent unauthorised use Loaded MEMUs should be parked on a site which is guarded or monitored when they are not in use.			the UK has specific guidelines for MEMUs and Sweden has anti-theft systems in place. However, the Member States indicated that there are alternative ways to make the units more secure, such as camera surveillance on the vehicles and other types of locks. The ones proposed are not necessarily considered the most appropriate. Finally, several manufacturers indicated that it is practically impossible to correctly record the amount of explosives produced as there is always residue left in the units.	concerning the manufacturing of explosives (ranking third, after Germany with 22% and Spain 21%). In addition, in some Member States onsite mixing is not allowed. The costs for improving their security would be relatively low, as the units are very expensive and in high demand. In addition, in many countries the security measures already include those proposed in the Action Plan. Average additional cost per MEMU: 10,000 euro (including monitoring and guarding). The average number of MEMUs is estimated at 7 per country. When calculating that they would be used in 15 Member States, the total costs for improving their security would be around 1,050,000 euro. Ongoing monitoring and guarding would cost around 500.000 euro per year.								related legislation.		
Objective 6: Improve the security vetting of personnel														
All personnel employed in the manufacturing, storage, distribution and use of	11	MS	Most Member States have vetting requirements in place for persons handling	Some initial data: Sweden: 20 major manufacturers – both commercial and	1	1			1		1	No	Possibly, depending on the content /	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
explosives should be vetted (external checks by relevant national authorities under applicable national regulations) and hold a formal authorisation to have access to explosives.			explosives. The UK, for example, requires a license for the acquisition of explosives, while in Sweden a license is needed for handling them. While it would be a good measure to increase the security of explosives, vetting may prove difficult to establish at a uniform level. While at present some countries carry out extensive background checks on an employee, others only pay scarce attention to such concerns, often only requiring a declaration that the person in question has not committed any related crimes. These different concepts of vetting is highlighted by the example of the UK, where there are two key levels of vetting. "Negative vetting" involves basic background database checks on the individual to ensure they do not have detrimental criminal convictions or a County court judgement against them, while "Developed vetting" entails active investigation through detailed enquiries and interviews of family, friends and employers. While the latter gives a greater level of certainty and hence level of clearance, the process is expensive and time	military. Most companies are not very large, around 50-200 staff members, with some exceptions of up to a 1000 – 2000. Around 2,000 licenses have been given for storage, most of which are end users (but also manufacturers, storage facilities and transport companies). Czech Republic: Five companies are manufacturers. Up to 50 involved in storage. Up to 10 involved in distribution. Up to 200 companies are using explosives. Employees directly dealing with explosives are between 1000 and 1200. The financial and economic costs of the action are potentially very high but impossible to estimate at this stage. Costs for a single vetting procedure vary from 20 to 2000 euro. The number of persons that could be affected could run into hundreds of thousands when expanding it to sectors such as construction. It will therefore be important to establish who should be vetted, who should carry out the vetting and who should pay for it. The economic									criteria used for vetting and to whom the information is disseminated to, this could affect data protection and non-discrimination principles.	

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			consuming. When expanding such a measure across the Member States, it is important to clarify who should carry vetting out – the government or private sector? Who will pay for it? Will the manufacturers, distributors etc be asked to pay the costs for the vetting of their staff? More importantly, in the last 10 - 20 years very few incidents have happened at the top of the supply chain (i.e. production , storage, distribution), sectors which already have many security obligations in place. Most problems occur at the bottom levels of the industry (e.g. quarries, construction sites) where the number of people employed is enormous and where staff turnovers are high. It may be practically unfeasible to place vetting requirements on these kinds of companies. Finally, the effect of vetting in reducing thefts etc is questionable. It is likely that people with bad intentions will make sure that their background is clear. The scoring is low as a vetting system covering so many levels / types of employment has a high potential for flaws	effects are likely to impact on both administrations and industries (which may have to charge it through to their customers).										

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Objective 7: Improve the security of transport of explosives														
All EX/II and EX/III vehicles carrying explosives should be equipped with certain security enhancement solutions These security solutions include: be fitted with 24 hour, remote monitoring systems (e.g. GPS based systems), that are monitored by an appropriately resourced monitoring station. The Monitoring systems (including the Monitoring Station) must reliably enable where technically possible: Vehicle location to be identified Alarm activation if vehicle is moved from specified location at certain times Alarm activation if specified compartments are opened at certain times and/or at unauthorised locations. A duress and/or a panic alarm facility. be capable of immobilising the engine remotely if safe and applicable subject to the Vienna Convention	18	Commission/ MS	Thefts of such vehicles have occurred in the past and increasing their security is therefore a sensible option, especially to ensure a similar level of security across the EU. Various manufacturers that are also responsible for transporting explosives have pointed out however that the list of solutions is not exhaustive and does not necessarily include the most suitable measures. Some quoted for example the use of camera surveillance on the vehicles. A number of actors also questioned the benefits of remote immobilisation, as this was considered a potentially dangerous option without ensuring that the vehicle in a relatively 'safe' area.	The number of vehicles in use is relatively low (40 in Sweden, 50 in Czech Republic, two countries that together have an important share in the EU explosives market). The vehicles are used very frequently, totalling around 4,000 trips annually. Most Member States have already various security enhancement solutions in place, many including the ones proposed in the Action Plan. Adding more solutions (which are estimated to amount to a maximum of 2,000 euro per vehicle) would imply a low cost, especially because the vehicles are already very expensive. When estimating that the average number of vehicles is 30 per country and that they are used in 15 Member States, the total costs for improving their security would be around 900,000 euro.	2	1			2		1	Possibly, if there is a need to integrate these requirements in transport related legislation.	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
be fitted with an anti theft system. have sufficiently secure compartments for explosives be fitted with a means of communication have a recognised marking affixed to the roof of the vehicle, to a specified size and description.														
Objective 8: Reduce the supply and quality of information on how to illicitly manufacture explosives														
Limit the spread of bomb-making experience over the Internet Non-legislative option including cooperation with ISP, international bodies and education initiatives.	Part of 41		Limiting the spread of bomb-making information and experience is very difficult. It would however be a proactive and positive measure to reduce the use of IEDs. The measure would entail intensive cooperation with providers. For example, YouTube removes up to 50 suspicious video messages per day. If they would assist enforcement bodies identifying who put such messages forward this would strongly favour the identification of distributors.	The financial costs for cooperating would be low, including communication, coordination, reporting and some form of campaigns. It is not possible to provide an estimate as the action as it stands is rather vague.	3	2	3	2				No	Possibly, if the cooperation includes the provision of personal data, thus affecting data protection principles.	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Detection Measures														
Objective 3: Improving the exchange of information														
Create a database containing the specifications of explosives produced within the EU The database(s) would target specifications of explosives needed by the forensic community and by the experts on detection.	32	Commission/ MS	The collection of data on commercially produced explosives could be a helpful exercise. It should also be considered whether military explosives should be included. There may however be issues of commercial confidentiality issues, as manufacturers could be reluctant to share a high extent of detail on their products (perhaps just the necessary information for forensics and detection, but this could make the database less useful).	Low cost to set up and maintain a database. Some inputs from companies as to the specifications of their explosives, which would also be minimal. Set-up and organisation: 50,000 euro (database, virtual access, security) Internal staffing: 0.5 FTE, totalling 25,000 euro Inputs: average 5 days per Member State per year at an average fee of 400 euro, totalling 54,000 euro per year Outputs: (e.g. reporting, analysis) 4 summary reports of 5,000 euro, totalling 20,000 euro. Total: 149,000 for the first year, 99,000 euro for the following years. Potentially medium financial and economic costs for manufacturers to update the information and commercial	2				2		1	No	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
				confidentiality risks.										
Objective 4: Establish EU-wide certification, testing and trialling schemes														
Create a European wide certification scheme for detection solutions	26	Commission/ MS	At present, some certification takes place, following testing, at the level of the individual Member States, particularly in the aviation sector, whilst other countries do not have certification procedures in place. An EU-wide certification scheme would enable detection equipment companies to access the EU market as a whole as opposed to having to approach every single country. This would in principle be beneficial in terms of creating economies of scale, single market integration and resolve delays between ordering and obtaining well-functioning equipment. Similar to the concerns raised under action 25, a scheme would only work if the overall performance of detection material was good. Other options than certification might be available. It would be important to learn from the lessons with regard to	Investment in security related capital items at airports (in 18 MS) has risen significantly for the responding airports during 2000 and 2002; rising from €32m to €179m. 70% of investments made by the airports in 2002 were for equipment related acquisitions (i.e. EDS, x-rays, CCTV, biometric scanners, etc). The remaining 30% was mainly for terminal related redevelopments. Medium set-up costs to create the scheme in terms of administrative expenses, human resources and expert inputs. Cost-efficiencies once the system will certify detection solution for all EU27. Reduced administrative costs for Member States as these do no longer have to go through national certification procedures, reduced costs for companies as these do not have to apply for a certificate in 27	2				2		2	Possibly, EU legislation might be required	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			detection standards in aviation security.	different countries.										
Create a European wide testing scheme for detection solutions Under the scheme relevant authorities and institutes would be able to exchange test results.	27	Commission/ MS	As for action 26, testing is at present mainly undertaken by the individual Member States, while other countries do not have sufficient resources to launch their own testing schemes. An EU-wide scheme would therefore be beneficial, as Member States could share testing data and pool testing costs. This could offset development costs and help stimulate innovations and improvement, thus contributing to increased detection probability and increased prevention and intervention opportunities. In some sectors requiring detection, public authorities are best placed to undertake testing and trialling, as they have easier access to explosives. It would be important to learn from other cooperation in the area of testing (e.g. some progress has been made in the aviation sector).	The financial costs for creating a scheme are estimated to be medium. However, it would be essential to ensure that projects have a strong focus on development (rather than on research only) in order to develop new products for the market. Positive economic effects in the longer term as the scheme would reduce administrative and production costs.	2				2		2	No	No	Possibly, some environmental costs for transport and handling of explosives / chemicals
Create a European wide trialling scheme for detection solutions Such a system should be supported by an EU programme and should allow for conducting performance trials under realistic	28	Commission/ MS	The benefits of the action are similar to those described under actions 26 and 27. EU wide trialling would enable Member States to share information and data and would improve the overall effectiveness and quality of	The financial costs for creating a scheme are estimated to be medium. Some costs could be offset by the manufacturers. In the longer term, the economic effect would be positive as it would reduce administrative	2				2		2	No	No	Yes, environmental costs due to the need for specific laboratories and facilities to trial

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
conditions in same or similar scenarios.			detection. However, the performance of detection equipment is difficult to trial and measure in all contexts (e.g. large-scale outdoor events).	and development costs										equipment under different conditions
Preparedness and response measures														
Objective 2:Develop specific preparedness and response measures for terrorist threats using explosives														
Create the possibility for relevant law enforcement authorities to request providers to shut down mobile phone antennas in the case of a threat of a terrorist attack In a situation where there are reasons to believe that mobile phones will be used as firing switches, the responsible law enforcement authorities should be able to request providers to shut down relevant antennas. Relevant experiences, skills and best practices should be exchanged among the Member States via the EOD-Units network in this area.	44 and 46	MS/(Commission)	It would be important for national authorities should to first liaise with their network providers to agree on specific plans. Shutting down networks may have serious collateral effects. Mobile phones have been used as firing switches in two ways. The Madrid Cell did not utilise the network, but the time alert system on the phone itself. However, other groups across the world e.g. in Chechnya, South Africa, Iraq and Northern Ireland have sought to initiate IEDs by dialling a mobile phone that in turn would set off a detonator. Counter-measures involving phone networks are highly complex and technical. In order to function effectively, measures must be developed	Low cost related to liaison between authorities and providers. Significant costs could arise from the application of this possibility.	1	1		1			1	Possibly, if EU wide regulations were introduced	Possibly, the respect of private and family life which includes communications.	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	GO	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			and put in place with the network providers as pre-planned contingency measures.											

Policy option 4 – maximum option

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
Prevention measures														
Objective 2: Improve the regulation of explosives precursors available on the market														
Introduce a system for the recording of the identity of the buyer of precursors above certain quantities and/or concentrations. The records should be available to the law enforcement authorities on request or provided to the national contact point in case of suspicious transactions. All relevant data protection rules should apply. The relevant quantities and/or concentrations would be set based on the work of the Standing Committee of Experts.	7	MS/ Commission	The awareness of staff in such businesses is critical and there have been a number of instances in different countries where public and business awareness has been decisive in alerting the authorities to a potential conspiracy to cause an explosion by a terrorist group. The introduction of a system to record the identity of the buyer might therefore not only assist in the detection of purchases after an incident, but also to make sellers more alert. The recording could also act as a deterrent.	The financial and economic costs of developing such a recording system may be high, as every seller would have to invest some time in record-keeping. Whilst on an individual level this is minor, the number of sellers is enormous across the EU. There are some potential fundamental rights issues as it could affect data protection principles - however processing of personal data would always have to take place in accordance with existing data protection legislation.	1	1	1	1				No	Yes, depending on the use of the information recorded this could affect data protection principles.	No
A European minimum standard and industrial guidance by way of an appropriate code should be defined concerning the security of storage of explosives precursors It should not be in conflict with other Regulations.	8	MS/ Commission	While standards and codes in the storage of explosives precursors would indeed increase security, the overall impact and the feasibility of their implementation is questionable. It is important, first, to define what is meant by 'storage',	The costs for implementing European minimum standards would be high. Effective enforcement would be extremely costly. Whilst authorities and large industries in the wealthier Member States might be able to introduce such standards, smaller	1	1	1	1				Possibly, if a decision was taken to make the standards legally binding across the EU.	No	Possibly, some environmental costs for additional security measures for storage (e.g. fencing).

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			which could potentially cover a huge area, from farmlands to shop storage spaces. How can standards or a code of conduct be developed for such a wide variety of actors, especially for small users such as farms? It is worthwhile noting that small-scale actors are a potential target of terrorists: the 400 liters of perioxide that was used for the 21/7 attacks (the failed attempts in London) constituted half of what was available in the shops in England. It was all bought from 3-4 retailers. To date, most explosive precursors have been legally purchased by terrorists. By increasing the security standards of storage places and placing restrictions or bans on transactions, there is a possibility that determined individuals or groups would seek to obtain such materials from illegal 'black market' sources. Finally, it would be important to clarify whether any such code would be voluntary or statutory, imposed by EU legislation or by national legislation?	companies and precursor users may have the financial resources or suitable infrastructure available to achieve such a level of security.									
Objective 3: Improve the control over transactions involving														

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
precursors														
Establish a system of reporting suspicious transactions. Depending on the substance, certain concentrations and/or quantities should be subject to transaction restrictions.	5	MS/ Commission	The measure could be beneficial. It would be important to establish a clear definition of 'suspicious transactions'. Several existing industrial and national definitions can be used as an example (e.g. the guidelines of the Chemical Industries Association and the Know Your Customer campaign). In the UK, the benefits of a system can be illustrated by the case of Mohammed Sidique Khan and his fellow 7/7 (2005) bombers, who purchased a significant quantity of Peroxide and Acetone precursors for the construction of their TATP rucksack bombs, which they later used in attacks on the London Underground and a bus, (see Intelligence & Security Committee Cm 6785 2006). The system will require the establishment and enforcement / policing of certain standards, which could be maintained at an overall high level across the EU. The system could for example a) follow the concept used to detect terrorist financial transactions i.e. all transactions above a certain	The estimated costs of a reporting system can vary greatly. Some start-up costs are involved to set up the authority to whom producers and sellers should report to, including equipment and training of staff. The costs are high in case the system would look like option a) mentioned in the assessment of benefits. The obligation to report on every transaction going beyond a certain threshold will put a high strain on traders (in terms of human resources needed for reporting) but will most of all entail very high administrative costs to check all transactions. The costs are low when the decision to report on a certain transaction is left to the trader (see option b), as it will require less time of those that are selling the products. In addition, the administrative costs will also be reasonable as the number of transactions reported is likely to be much lower. In this case, as calculated under action 1 above, the system will cost around 890,000 euro in the first year and 1,350,000 in	3	3	3	3				No	Yes, depending on the extent and the use of the information recorded this could affect data protection principles - however all processing of personal data would need to take place in accordance with existing data protection legislation.	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			quantity / concentration have to be reported, then analysed and assessed. Alternatively, it could b) be 'front-loaded', relying upon the trader to make the decision as to what is suspicious or not. More research would be needed to fully explore the viability of these two options. The system should not strictly be based on transaction restrictions but also on the purchase of combinations of substances which are suspicious. It will be important to combine the system with awareness-raising (e.g. actions 1-3).	the following years. The introduction of transaction restrictions will also have an economic impact on the retail sector.										
A binding system should be created concerning the notification to the relevant national authority of any transactions involving the products on the list which can be considered suspicious A "code of conduct", similar to the EC code for drug precursors, should be developed, for industry and retailers, identifying the behaviours which may give rise to suspicion.	6	MS/ Commission	Most of the benefits and disadvantages of the system itself are discussed under action 7 above. As mentioned earlier, the system could be advantageous in alerting Member States and their law enforcement authorities to the purchase of potentially dangerous precursors utilized in the construction of 'home-made' High Explosives (HE). However, the cases of the extreme right wing 'lone-wolf' terrorists, David Copeland in the UK and Eric Rudolph in the USA during the later 1990's, must be recalled. The former used black powder, obtained by emptying fireworks that were legally	As mentioned under action 5, the costs of a system could range from low to high depending on the reporting requirements that would be put in place. A binding system would automatically entail a relatively higher cost as one has to take into account the additional administrative costs of enforcement (e.g. controlling whether all producers and traders are effectively reporting correctly, fining or prosecuting those that are not, etc).	2	2	2	2				Yes, if there would be regulation making the notification procedures legally binding across the EU.	Yes, depending on the extent and the use of the information recorded this could affect data protection principles.	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			obtained and freely available, while the latter constructed home made 'pipe bombs' from Low Explosive (LE) powder. Both men were responsible for a number of fatalities (Kushner 2003). However, the establishment of a binding system is likely to be less favourable and can even be counter-productive. It would have a 'negative' connotation as it would imply that those not reporting could potentially be prosecuted. A system based on voluntary inputs and coders would therefore create more 'goodwill' than a system which is imposed on traders.											
Introduce a complete ban on selling precursors to minors.	10	MS/ Commission	The action may prove very difficult to enforce and have relatively low impact (the precursors will be purchased by adult terrorists). Equivalent great efforts to prevent the sale of fireworks, alcohol and cigarettes to juveniles and minors in most Member States testify the challenges faced. Finally, bearing in mind that a major ingredient of the TATP bombs used in the 21/7 attempted attacks in London was "Chappati flour", how comprehensive could such a lost of precursors be?	Low costs, with some financial impacts on retailers but likely to be minor.	1	1	1	1				Yes	No	Some environmental benefits especially in terms of safety.
Objective 4: Improve the control over explosives available on the														

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
market and pyrotechnic articles														
Harmonise EU requirements for the licensing and handling of large amounts of pyrotechnic articles The lack of any harmonised approach towards licensing schemes to handle large quantities of pyrotechnic articles means that it is possible to handle such materials without regulatory oversight as long storage and transport requirements are met. Such a security gap should be closed.	43	Commission/ MS	Further licensing requirements for pyrotechnic articles would have a positive effect given that the use of these articles for the development of an IED constitutes a real risk. It would increase IED explosives security, particularly when considering that David Copeland constructed the lethal homemade IEDs that killed six people by utilising black powder obtained from fireworks (see also measure 7). In the UK the fireworks market was deregulated around 10 years ago. It is no longer necessary to have a license for producing and handling pyrotechnic articles. Their size has increased, making them similar to explosive devices.	High cost for Member State authorities and companies, relating to the development (or elaboration) of licensing systems, control, enforcement, compliance, administrative procedures etc.	3	2	3	2			2	Yes	No	Some environmental benefits especially in terms of safety.
Detection Measures														
Objective 2: Developing minimum detection standards														
Develop minimum detection standards These standards should be updated as technology evolves	25	Commission/ MS	Minimum detection standards would help to increase the overall quality of detection systems, thus increasing the probability of detection as well as prevention and intervention opportunities. It would be important to learn from the	The process of developing minimum detection standards can be undertaken at a medium cost. Some administrative costs to cover negotiation and publication, as well as some expert inputs to steer	1				1		1	Yes	No	No

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			experiences in the field of aviation security, where a framework regulation (No 2320/2002), adopted in 2003, made the security measures set out by the European Civil Aviation Conference (ECAC) compulsory within the EU. The Annexes to the Regulation set out common basic standards for aviation security, laying down performance criteria and acceptance tests for detection equipment. The standards also relate to what screening and other control processes should be used, which items should be checked and skills requirements for staff. Some issues to take into account are: Setting 'vague', wide standards will not make a lot of difference as they could be interpreted in different ways. Setting very precise standards would not leave much space for flexibility and take account of different contexts. Standardisation may be useful if most current solutions worked very well, but often equipment does not perform as it should. The drastically increased demand for detection since 9/11 has led to detection production companies not investing	the work.										

Measure / action	Rec. no	Competent body	Assessment of benefits	Financial and economic effects	G 0	S1	S2	S3	S4	S5	S6	Need to change EU legislation	Effects on fundamental rights	Environmental effects
			sufficiently in innovation but focusing on fast production / delivery instead. The sector may benefit from other types of (additional) measures. In the Cosmetic industry, for example, companies use a product information sheet, which can be accessed by authorities. If the product does not perform in line with the indications on the sheet, its sales can be suspended. Good practices could also inform the development of standards.											

ANNEX 2 – LIST OF ESETF RECOMMENDATIONS

Number	Recommendation
	The public authorities should provide security information to the entire supply chain, from manufacturers to the retailers, first responders (police, fire-departments, bomb-squads) and educational establishments to focus attention on products of concern.
	Simple means should exist for anyone within the supply chain to alert the relevant national authority if they see a transaction or theft which they suspect to have been made with the intention of illegally fabricating explosives. Each party within the supply chain must inform the relevant national authority in the event of any theft or loss of the aforementioned products at concentrations in excess of those identified in Annex 2 (of the ESETF report). The relevant national authorities are required to inform their national central agency which is responsible for gathering this information.
	Campaigns could be conducted to raise staff-awareness of the threat all along the supply chain amongst manufacturers, formulators, distributors and retailers.
	A system should be established concerning the regulation of explosives precursors available on the market.
	Development of suitable additives and promotion of the use of these additives to precursors in order to prevent their use in explosives, when it is technically possible.
	Restrictions on concentration concerning the sale of certain precursors to end-users.
	A complete ban on concentrated strong acids to EU consumer markets (non-professional markets) when a substitute giving an equal use is technically possible: sulphuric, hydrochloric and nitric acids in particular.
	Limiting the availability of pure nitromethane to the general public. It should be available to industrial customers via a suitable customer qualification scheme.
	Restrictions on access of the general public to unphlegmatized sodium chlorate (weed killer).
	A system of reporting suspicious transactions should be established, comparable to existing systems for drugs precursors or suspicious financial transactions. Depending on the substance, certain concentrations and/or quantities must be subject to transaction restrictions.
	A binding system should be created concerning the notification to the relevant national authority of any transactions involving the products on the list which can be considered suspicious.
	The sale of any product on the list, above the quantities and/or concentrations indicated, must be recorded, including recording the identity of the buyer to be proven by a nationally accepted means of identification. The records must be available to the law enforcement authorities on request or provided to the national contact point in case of suspicious transactions. All relevant data protection rules should apply.
	A European minimum standard and industrial guidance by way of an appropriate code should be defined concerning the security of storage of explosives precursors on the list. It must not be in conflict with other Regulations.
	For each product on the list which is handled by the retail sector, all packaging must be labelled with a code specifying that the purchase of this substance may be subject to registration (subject to further verification).
	No substance on the list of explosives precursors should be sold to minors.
	All personnel employed in the manufacturing, storage, distribution and use of explosives should be vetted (external checks by relevant national authorities under applicable national regulations) and hold a formal authorisation to have access to explosives.

	Effective Security Plans/Security Management Systems should be operational at all explosives facilities (manufacturing, storing, distributing and using).
	It should become obligatory for the relevant national authorities to keep explosives manufacturers and distributors informed as to the regional threat at all times. Response plans should be developed tuned to the level of alert present.
	The levels of necessary access prevention and detection provisions in fixed storage facilities should be proportional to the risk and should be subject to a standard classification.
	Mobile explosives manufacturing units (MEMUs) should have at least two independent systems for recording the amount of explosives produced.
	Mobile explosives manufacturing units (MEMUs) must be fitted with process locks to prevent unauthorised use.
	Loaded mobile explosives manufacturing units (MEMUs) should be parked on a site which is guarded or monitored when they are not in use.
	All EX/II and EX/III vehicles carrying explosives shall be equipped with the security enhancement solutions identified below.
	Consideration should be given to materials that are classified as “desensitized explosives”. A review of the classification of these substances should be performed.
	Raw materials used in the manufacture of bulk explosives and finished product should be periodically accounted for and reconciled as approved by the National Authorities.
	Member States should have formal systems for authorising, regulating and licensing the manufacture, storage, sale, use and possession of explosives including by private persons.
	Identifying and tracing of explosives should be implemented in accordance with the proposed Directive on the identification and traceability of explosives for civil use (Traceability Directive).
	A government level working group should be created which would first discuss scenarios and then requirements for the scenarios.
	A matrix of what is desired and of what is possible today should be developed for each scenario.
	Minimum detection standards should be determined at government/EU legislative level and updated as technology evolves.
	Create a European wide certification scheme.
	Create a European wide testing scheme and a system where relevant authorities and institutes could exchange the test results.
	Create a mechanism supported by a programme within the EU, where performance of trials under realistic conditions in same or similar scenarios would be possible.
	Assess the need of the certification, testing and trialling processes for standards.
	Assess and improve where necessary the situation as regards the availability of training data for manufacturers of detection solution and feedback.
	Given the threats of Improvised Explosive Devices to security in general and airport security in particular, measures aimed at improving the usage of detection technologies should be contemplated, in particular for hold luggage. Research in this area should be supported. In addition, cargo which is transported on a passenger plane should be subject to the same security procedures as hand and hold luggage.
	A database or databases containing the specifications of explosives produced within the EU could be created.
	Create an end-user focused handbook.

	Create a network of experts on the detection of explosives.
	A European Bomb Data System should be created and promoted at Europol and in the Member States in order to provide for a common EU instrument enabling authorised governmental bodies at EU and Member States level to have 24/7 access to relevant information on incidents involving explosive devices. Europol should be urged to continue its efforts to involve Member States in discussions and possible decisions on a future system. Possibilities for obtaining EU financing for the development of the database both at Europol and in the Member States must be thoroughly explored.
	At least all operational EOD units in the Member States should have access to the database. Other competent authorities in the Member States should also be given access in line with national law.
	Competent units or bodies of the Member States should be strongly obliged to provide all necessary information for inclusion in the database.
	An EU network of EOD-Units should be established. Possibilities to obtain EU funding for the establishment and to ensure continuity of the network should be explored.
	An Early Warning System (EWS) for explosives related incidents should be established, taking account of existing systems and experiences, including the G6 system.
	All competent authorities in the Member States, including all operational EOD units, should have access to the EWS.
	Criminal sanctions should be harmonized for distributing bomb making experience across the internet. Non-legislative options to deal with the issue should also be investigated further. EU wide programmes on this topic would be beneficial.
	Security staff at airports should be provided on a continuous basis with up-to-date information on new terrorist modi operandi or other relevant threat information.
	In addition to the new requirements included in the new Directive on this issue, harmonised EU requirements should also be applicable for licensing and handling of large amounts of pyrotechnic articles.
	If there are reasons to believe that mobile phones will be used as firing switches, the responsible law enforcement authorities should contact providers to shut down relevant antennas.
	Further research is recommended in order to find technical solutions for Member States' authorities to jam mobile phone signals in critical areas.
	An exchange of experiences, skills and best practices should take place through the European EOD-units network.
	The research needs identified above should be taken into consideration by the European Commission when establishing the working programmes for security related research.
	Research should be performed to find inhibitors which could be added to precursors to explosives to prevent them being used to manufacture explosive devices.
	Improve the aggregation and spread of research results both at EU level as well as at national level across the EU Member States.
	The European Commission should regularly (every two years) organise an event on the security of explosives covering all relevant issues. Such an event/conference should continue involving top officials, both public and private sector's practitioners could share experience, knowledge and best practices. It could be accompanied by issue specific workshops and seminars and supported by a newsletter. The issues covered could be policy, regulation, trade and research relevant.

ANNEX 3 – SUMMARY ASSESSMENT TABLE

Cost and predictability assessment Low, predictable: <500,000 euro Medium, predictable: >500,001 - <2,000,000 euro High, predictable: >2,000,000 euro Low, uncertain: Feasibility work needed, costs potentially low Medium, uncertain: Feasibility work needed	Reduce the number and potency of terrorist incidents using explosives	Prevent the use of legally and illicitly manufactured explosives	Increase the constraints on the illicit manufacturing of explosives	Reduce the reliability and potency of IEDs (and IED components)	Increase the probability of detection of terrorists illicitly handling and using explosives and precursors	Reduce the smuggling of explosives into the EU for illicit use by terrorists	Increase the chances of prevention and intervention opportunities by law enforcement bodies	**Cost and predictability assessment**	**Dependence on other actors**	**Need to change EU legislation**	**Effects on FR**	**Env effects**	**Preferred option**
Objectives	**GO1**	**SO1**	**SO2**	**SO3**	**SO4**	**SO5**	**SO6**						
Options and actions													
OPTION 1 – STATUS QUO													
Horizontal measures													
Improve the exchange of timely information and best practice													
Europol and Eurojust	2		2				2	low predictable	medium	No new issues	No new issues	No new issues	
Strengthen explosives related research													
Current FP7 research with regard to detection and public security (e.g. Security Research Call 1 of Dec 2006)	2							medium, predictable	medium	No new issues	No new issues	No new issues	
Prevention measures													
Improve the control over explosives available on the market and pyrotechnic articles													
Implementation of the Traceability Directive (action 22)	1		1					Assessed by way of a separate impact assessment		No new issues	No new issues	No new issues	
Directive on explosives for civil use													
Reduce the supply and quality of information on how to illicitly manufacture explosives	1												

Harmonize criminal sanctions for distributing bomb-making experience over the Internet (action 41)	1		1	1			1	low, predictable		No new issues	No new issues	No new issues	
Improve the security of transport of explosives													
ADR legislation and working group on transport	1	1						Cannot be assessed at this time		No new issues	No new issues	No new issues	
<u>Detection Measures</u>													
EU legislation in the area of aviation security	3	2			2		2	Cannot be assessed at this time		No new issues	No new issues	No new issues	

OPTION 2 - MINIMUM OPTION													
Horizontal measures													
Improve the exchange of timely information and best practice													
39. and 40. Establish an Early Warning System	3	2			2		3	Medium, predictable	Medium	No	No	No	Yes
50. Regularly organise an event on the security of explosives	2	1	1	1	1	1	1	Low, predictable	Low	No	No	Possibly	yes
Develop threat assessments													
No rec number: Consider developing specialised threat assessments	1						1	Medium, uncertain	Low	No	No	No	yes
Strengthen explosives related research													
49. Improve the aggregation and spread of research results	1	1	1	1	1	1	1	Low, predictable	Low	No	No	No	yes
47. Perform further research on: 1 - IEDs 2 - Chemicals found at an investigation scene 3 - Detection of explosives and precursors 4 - Mobile explosives kits	2	2	2	1	2	1	1	High, predictable	Medium	No	No	Yes	yes
31. Perform further research concerning the detection of Improvised Explosive Devices at airports, in particular for hold luggage	2	2			2			High, predictable	Medium	No	No	No	yes
48. Perform further research to find inhibitors which could be added to precursors	2	2	2					High, predictable	Medium	No	No	Yes	yes
45. Support further research to find technical solutions to jam mobile phones	2							Low, predictable	Medium	No	Possibly	Possibly	yes
Prevention measures													
Improve staff awareness and alerting concerning precursors													
1. Public authorities to provide security information to the entire precursor supply chain	2	2	2		2		2	High, predictable	High	No	No	Possibly	yes
2. Simple means within supply chain to alert national authority	3	3	3		3		3	Medium, predictable	High	No	Possibly	No	yes

3. Campaigns to raise staff-awareness all along supply chain	3	3	3		3		3	Medium, uncertain	High	No	Possibly	Possibly	yes
Improve the control over transactions involving precursors													
9. Assessing benefits of creating a scheme for each precursor handled by retail sector, under which all packaging would be labelled with a code specifying subject of registration	0							Low, predictable	Low	Possibly	No	No	Feasibility work should consider alternative means to achieve objective
Improve the control over explosives available on the market and pyrotechnic articels													
19. Launch debate on the need to review the classification of "desensitized" explosives	1	1						Low, predictable	Low	No	No	No	yes
Improve the security of explosive facilities													
12. and 14. Effective Security Plans/Security Management Systems at all facilities	4	4					2	High, uncertain	High	No	No	Possibly	yes
<u>Detection Measures</u>													
Establish scenario based approach to identifying work priorities													
23. Setup of a working group to develop scenarios and to identify technology requirements	2				2		2	Low, predictable	Low	No	No	Possibly	Yes
24. Create matrix of what is desired and currently possible in each scenario	2				2		2	Low, predictable	Low	No	No	No	yes
Developing minimum detection standards													
Part of 25 and 27: Develop mechanisms for the identification and dissemination of good practice in detection systems and use of detection equipment	1				1		1	Low, predictable	Low	No	No	No	Should be considered as possible alternative to minimum standards
Improving the exchange of information													

42. Ensure that security staff are provided with up-to-date information on new terrorist modi operandi	3	2			3		2	Low, predictable	High	No	Possibly	No	yes
30. Assess and improve where necessary the situation as regards the availability of training data and other information/feedback for manufacturers of detection solutions	2				2		1	Low, uncertain	Low	No	No	No	yes
33. Create an end-user focused handbook concerning detection	2				2		1	Low, predictable	Low	No	No	Possibly	Feasibility work should consider alternative means to achieve dissemination objective
34. Create a network of experts on the detection of explosives	2	1			2		1	Low, predictable	Low	No	No	Possibly	yes
Establish EU-wide certification, testing and trialling schemes													
29. Assess the need for the development of standards concerning certification, testing and trialling processes.	0							Low, predictable	Low	No	No	No	yes
Improve the usage of detection technologies in specific locations													
31. Improve the use of detection technologies at airports, railway stations and other public facilities.	2	1			2		2	Low, predictable	Low	No	No	No	yes
<u>Preparedness and response measures</u>													
Improve the exchange of information and best-practices among relevant Member State authorities													
38. Establish a European EOD Network	3	3			3		2	Medium, predictable	Medium	No	No	Possibly	yes
Total score Objectives Option 2	**47**	**30**	**14**	**3**	**35**	**3**	**31**						
Average score Objectives Option 2 (24 actions)	**2,0**	**1,3**	**0,6**	**0,1**	**1,5**	**0,1**	**1,3**			**EU legislation**	**Effects on FR**	**Env effects**	

Total score Cost and predictability asssessment					**Low, predictable**	**13**	**57%**	**No**	**No**	**No**	
					Medium, predictable	**3**	**13%**	**23**	**20**	**13**	
					High, predictable	**4**	**17%**	**Possibly**	**Possibly**	**Possibly**	
					Low, uncertain	**1**	**4%**	**1**	**4**	**9**	
					Medium, uncertain	**2**	**9%**	**Yes**	**Yes**	**Yes**	
					High, uncertain	**1**	**4%**	**0**	**0**	**2**	
Total score Dependance on other actors					**Low**	**13**	**46%**				
					Medium	**6**	**21%**				
					High	5	18%				

OPTION 3 - INTERMEDIATE OPTION													
Horizontal Measures													
Improve the exchange of timely information and best practices													
35, 36 and 37. Create a European Bomb Database	2				2	1	1	Medium, predictable	High	Possibly	No	No	yes
Prevention Measures													
Improve the regulation of explosives precursors available on the market													
4. The establishment of a system concerning the regulation of explosives precursors available on the market	3	2	3	3				Low, predictable	Low	Possibly	No	Possibly positive	yes, but impact and costs dependent upon the actual system. Feasibility work required
Improve the control over explosives available on the market and pyrotechnic articles													
21. Ensure that each Member States has formal systems for authorising, regulating and licensing the manufacture, storage, sale, use and possession of explosives including by private persons.	2	2			1		1	Medium, uncertain	High	Possibly	No	No	yes, but feasibility work required
Improve the security of explosives facilities													
13. Introduce an obligation for the relevant national authorities to keep explosives manufacturers and distributors informed as to the regional threat at all times	1	1					1	Medium, uncertain	Medium	No	Possibly	No	yes
20. Raw materials used in the manufacture of bulk explosives and finished product should be periodically accounted for and reconciled as approved by the National Authorities.	1	1					1	Medium, uncertain	High	No	No	No	yes, but feasibility work required
15., 16., 17. Improve the security of Mobile Explosive Manufacturing Units (MEMUs)	1							Medium, predictable	Medium	Possibly	No	No	yes

Improve the security vetting of personnel													
11. All personnel employed in the manufacturing, storage, distribution and use of explosives should be vetted and hold a formal authorisation to have access to explosives.	1	1			1		1	High, uncertain	High	No	Possibly	No	yes, but feasibility work required
Improve the security of transport of explosives													
18. All EX/II and EX/III vehicles carrying explosives should be equipped with certain security enhancement solutions These security solutions include: 1) be fitted with 24 hour 2) be capable of immobilising the engine remotely if safe and applicable subje	2	1			2		1	Medium, predictable	Medium	Possibly	No	No	yes
Reduce the supply and quality of information on how to illicitly manufacture explosives													
Part of 41: Limit the spread of bomb-making experience over the internet	3	2	3	2				Low, uncertain	Medium	No	Possibly	No	yes
<u>Detection Measures</u>													
Improving the exchange of information													
32. Create a database containing the specifications of explosives produced within the EU	2				2		1	Medium, uncertain	Low	No	No	No	yes
Establish EU-wide certification, testing and trialling schemes													
26. Create a European wide certification scheme for detection solutions	2				2		2	Medium, uncertain	Low	Possibly	No	No	depends in part on results of recommendation 29 to assess need for standards

27. Create a European wide testing scheme for detection solutions	2				2		2	Medium, uncertain	Low	No	No	Possibly	depends in part on results of recommendation 29 to assess need for standards
28. Create a European wide trialling scheme for detection solutions	2				2		2	Medium, uncertain	Low	No	No	Yes	depends in part on results of recommendation 29 to assess need for development of standards
<u>Preparedness and response measures</u>													
Develop specific preparedness and response measures for terrorist threats using explosives													
44. and 46. Create the possibility for relevant law enforcement authorities to request providers to shut down mobile phone antennas in the case of a threat of a terrorist attack	1	1		1			1	Low, uncertain	Medium	Possibly	Possibly	No	yes
ADDITIONAL SCORE OPTION 3	**25**	**11**	**6**	**6**	**14**	**1**	**14**						
Average score Objectives Option 3 (14 actions)	1,8	0,8	0,4	0,4	1,0	0,1	1,0			**EU legislation**	**Effects on FR**	**Env effects**	
Total score Cost and predictability asssessment					Low, predictable			**1**	**8%**	No	No	No	
					Medium, predictable			**3**	**25%**	7	10	11	
					High, predictable			**0**	**0%**	Possibly	Possibly	Possibly	
					Low, uncertain			**2**	**17%**	7	4	2	
					Medium, uncertain			**7**	**58%**	Yes	Yes	Yes	
					High, uncertain			**1**	**8%**	0	0	1	
Total score Dependance on other actors					Low			**5**	**42%**				
					Medium			**5**	**42%**				
					High			**4**	**33%**				
TOTAL SCORE OPTION 3 (including OPTION 2)	**72**	**41**	**20**	**9**	**49**	**4**	**45**						

Average score Objectives Option 3 including Option 2 (38 actions)	**1,9**	**1,1**	**0,5**	**0,2**	**1,3**	**0,1**	**1,2**						
Total score Cost and predictability asssessment					**Low, predictable**			**14**	**35%**				
					Medium, predictable			**6**	**15%**				
					High, predictable			**4**	**10%**				
					Low, uncertain			**3**	**8%**				
					Medium, uncertain			**9**	**23%**				
					High, uncertain			**2**	**5%**				
Total score Dependance on other actors					**Low**			**18**	**45%**				
					Medium			**11**	**28%**				
					High			**9**	**23%**				

OPTION 4 - MAXIMUM OPTION													
Prevention Measures													
Improve the regulation of explosives precursors available on the market													
7. Introduce a system for the recording of the identity of the buyer of precursors above certain quantities and/or concentrations.	1	1	1	1				High, uncertain	High	No	Yes	No	Feasibility work should be undertaken
8. A European minimum standard and industrial guidance by way of an appropriate code concerning the security of storage of explosives precursors	1	1	1	1				High, uncertain	High	Possibly	No	Possibly	Feasibility work should be undertaken, likely to require Impact assessment
Improve the control over transactions involving precursors													
5. Establish a system of reporting suspicious transactions.	3	3	3	3				High, uncertain	High	No	Yes	No	Feasibility work should be undertaken
6. A binding system concerning the notification to the relevant national authority of any transactions involving the products on the list which can be considered suspicious	2	2	2	2				High, uncertain	High	Yes	Yes	No	Feasibility work should be undertaken
10. Introduce a complete ban on selling precursors to minors.	1	1	1	1				Low, uncertain	High	Yes	No	Possibly	yes, but feasibility work required to assess likelihood of enforcement
Improve the control over explosives available on the market and pyrotechnic articles													
43. Harmonise EU requirements for the licensing and handling of large amounts of pyrotechnic articles	3	2	3	2			2	High, uncertain	High	Yes	No	Possibly positive	Feasibility work should be undertaken, likely to require Impact assessment
Detection measures													
Developing minimum detection standards													

25. Develop minimum detection standards	1				1			Medium, uncertain	Medium	Yes	No	No	Feasibility work should consider alternative means of improving quality of detection equipment.
ADDITIONAL SCORE OPTION 4	**12**	**10**	**11**	**10**	**1**	**0**	**2**						
Average score Objectives Option 4 (7 actions)	1,7	1,4	1,6	1,4	0,1	0,0	0,3			**EU legislation**	**Effects on FR**	**Env effects**	
Total score Cost assessment					Low, predictable			**0**	**0%**	No	No	No	
					Medium, predictable			**0**	**0%**	2	4	4	
					High predictable			**0**	**0%**	Possibly	Possibly	Possibly	
					Low, uncertain			**1**	**14%**	1	0	3	
					Medium, uncertain			**1**	**14%**	Yes	Yes	Yes	
					High, uncertain			**5**	**71%**	4	3	0	
Total score Dependence on other actors					Low			**1**	**14%**				
					Medium			**1**	**14%**				
					High			**6**	**86%**				
TOTAL SCORE OPTION 4 (including OPTION 2 and 3)	**84**	**51**	**31**	**19**	**50**	**4**	**47**						
Average score Objectives Option 3 including Options 2 and 3 (45 actions)	1,9	1,1	0,7	0,4	1,1	0,1	1,0						
Total score Cost and predictability assessment					Low, predictable			**14**	**30%**				
					Medium, predictable			**6**	**13%**				
					High, predictable			**4**	**9%**				
					Low, uncertain			**4**	**9%**				
					Medium, uncertain			**10**	**21%**				
					High, uncertain			**7**	**15%**				
Total score Dependence on other actors					Low			**19**	**40%**				
					Medium			**12**	**26%**				
					High			15	32%				