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Master of Science Thesis

Risk Management in Export Compliance

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Abstract (English)

There is a growing agreement that firms' corporate governance influences their ability to export. Corporate governance largely dependable on export compliance as a framework that supports organizations to mitigate their risks related to export, and provides a secure platform for firms to upgrade their position in the trading world. The objective of the present study (thesis) is to widen concepts and ideas of export control and compliance framework. The research outlines the general structure of export compliance and presents a comprehensive and detailed view of United States of America and European Union as significant powers in the world and brief view of Export control in Pakistan and some other countries. The nature of the risks is explained from the point of view of export compliance. In this study, we reached to dual-use risk and money laundering risk as the main problems in Export Compliance area (program). After explaining risks, we deepen on the process of the risk management. This research has explained however Export compliance is vital on university level. The methodology of this study is documenting analysis with inductive approach.

Secondary data and information has been collected through manuals, export compliance related websites i.e. some American and European websites, guidelines issued by various regulatory bodies, guidance note suggested by various institutes, exports of Export compliance program, legal provisions in legislations of different countries and various research papers were reviewed and their findings were used as a secondary information to develop this paper.

Abstract (SOMMARIO)

Vi è un crescente consenso sul fatto che il governo societario delle imprese influenzi la loro capacità di esportare. Esso è estremamente affidabile per quanto riguarda le conformità delle esportazioni, in quanto è una struttura che supporta le organizzazioni al fine di attenuare i rischi associati all'esportazione e fornisce una piattaforma sicura per le imprese che desiderano migliorare la propria posizione nel mondo commerciale.

L'obiettivo della presente ricerca di tesi è quello di ampliare i concetti di controllo delle esportazioni. La ricerca delinea la struttura generale della adeguatezzadelle esportazioni e presenta una visione completa degli Stati Uniti d'America e dell'Unione Europea, essendo potenze significative nel Mondo.

La natura dei rischi è spiegata, quindi, dal punto di vista della conformità all'esportazione.

In questo studio viene trattato il rischio di duplice uso e di riciclaggio di denaro, come il problema principale nell'area CE. Dopo aver spiegato i rischi, viene approfondito il processo di gestione del rischio. La metodologia utilizzata nell'analisi di questo studio segue l'approccio induttivo.

I dati secondari, invece, sono stati raccolti attraverso manuali, siti web correlati alla conformità delle esportazioni, linee guida emesse da vari organismi di regolamentazione, note di orientamento suggerite da vari istituti, disposizioni legali nelle legislazioni di diversi paesi e vari documenti di ricerca sono stati esaminati e le loro scoperte sono state utilizzate appunto come dati secondari per sviluppare questo documento.

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Chapter1 Introduction

Scope of Thesis

The scope of thesis is very important as this thesis will explain Export and the risk associated to it. It will explain dual use items and how to categorize it. Then it will focus on the importance of export control. How to control export of these items? It will explain risk related to export which is sanctions and penalties. To control and mitigate risks it will draw export compliance framework. It will bring awareness in the company and individuals about the consequences of non compliance program and its sanctions. It explains in deep way the importance of Export compliance also for universities and institutes. The lists of Both US and EU Dual Use goods are explained in detailed way so one can identify the goods very easily whether it needs license for exporting or not.

Purpose

The main purpose of thesis is, this research work will provide essential information concerning U.S., and E.U. export controls, with a pragmatic "how-to" emphasis on importing, exporting and managing defense and dual use (civil and defense) articles subject to these controls; working closely with U.S. and E.U. logistics partners to facilitate supply chain of export controlled goods; and understanding the mutual cost of managing U.S. and E.U. compliance requirements when doing business with international partners. It visualizes how much internal compliance program is needed for company. This research will extend the knowledge of people about the risk associated with export of dual-use items without license. What will be the consequences of exporting dual use items, so the purpose of this research is to Identify and mitigate the organization's potential vulnerabilities by conducting frequent Risk Assessments**.** It will differentiate EU export compliance program from US export compliance program. The other purpose of this research is to provide some basic information to help faculty, academic officers, and university administrators to identify how and when export control issues may arise and how to ensure that the fundamental research and public domain exemptions exist to protect the open transfer and sharing of information in and outside the United States with students, colleagues, and others who are foreign nationals.

Study Questions

- Why a company needs an internal compliance program?
- What are the risks associated with export of dual-use items?
- How to identify goods as dual-use items?
- What is difference between US and EU approach? Who is following which one or other one?
- What is the role of export compliance in universities?

Disposition

This thesis first discusses the study methodology chosen with comments on it. It is later followed by the literature already present which explains the

theory behind relevant aspects of Export control. Later, it presents a basic concept of dual use items and its classification comprehensively followed by the concept of Export Compliance Program, and the connection of both with the Export control. The same chapter also discusses the organizational setup approach. This helps in answering the research questions. The entire chapter of literature provides the framework for analysis when it is compared to the empirical findings from the research conducted within this thesis. In the last part of this thesis, the result collected during the last part of this thesis is presented. The results have been analyzed according to the framework and commented on. The thesis ends with presenting answers to the research questions and conclusions based on the research.

Introduction

Project Management

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project management is accomplished through the appropriate application and integration of the project management process groups, which consist of:

Initiation
Planning
Executing
Monitoring &Controlling
Risk Assessment
Closing[1]

Figure 1: Project Management

Risk Management

In the financial world, risk management is the process of identifying, analyzing and accepting or mitigating uncertainty in investment decisions, and

is therefore connected to the minimization of problems that arise in financial investments.

The main aim of risk management is to guarantee the company.

Risks have different origins such as the unpredictability of financial markets, the risk of bankruptcy of projects, but also legal responsibilities, and problems related to credit, or the possibility of accidents, (or two to natural causes such as disasters or caused by an opponent's attacks) and finally may be influenced by events of uncertain or unpredictable root

There are two main types of events i.e.

- negative events can be classified as risks

Negative risks or '' threats''. The word negative doesn't mean that it will bring negative result and this is most unlikely to the projects managers who are trying their best to avoid it. Example about the negative risk: Delays in the delivery of the project or passing to the planned costs or anything else could affect the objectives of the project is considered a negative risk or "threat."

- Positive events are classified as opportunities.

Positive risks or '' opportunity'' The word positive leads to positive results, and this is a likely risk to all projects managers who are trying to achieve it. Example about the positive risk: ending project before delivering date, or increasing the return on investment ROI.

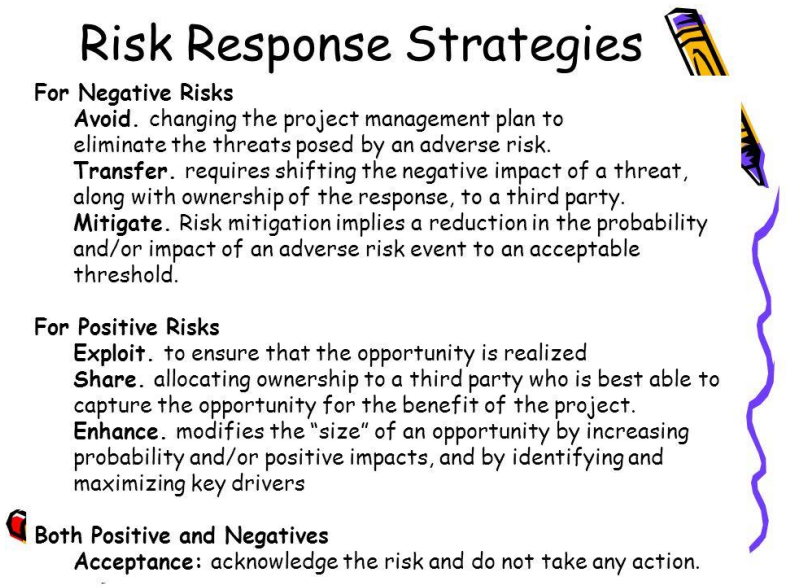


Figure 2: Risk Response Strategies

There are many risk management standards which have been developed and are working which include the Project Management Institute (PMI), the National Institute of Standards and Technology (NIST), actuarial societies, and ISO standards.In the study of project management, definitions, methods and goals are varying in relation to risk management. It is varying in context of security, engineering, industrial processes, financial portfolios, actuarial assessments, or public health and safety. [2]

There are certain strategies which manage threats typically include threat avoiding, probability of threat or reduce the effect of threat, transferring all or

part of the threat to another party, and even retaining some or all of the potential or consequences of a particular threat, and the opposites for opportunities (uncertain future states with benefits).

In Export control we deal with risk associated to it in four steps

- Asses Risk: In this step the problem related to export should be known
- Identify Risk: In the following step risk associated to export should be identified
- Control Risk: Risk related to export can be controlled by to do compliance
- Review Control: export control compliance should be reviewed in order to know how much it is effective.

Figure 3: Risk Management process

Export

The simple definition of export is "Supply of goods and services produced in one country to another country".

Export is the best way for firms or organizations to be successful, to be survived, and promote their economic growth in world. It is the easiest opportunity for all kind of firms, to enter and access foreign markets. But there are many risks associated to export. The west governments rely on the due diligence of exporters to help ensure their national security. Concerns regarding security, homeland and international, as well as the proliferation of weapons of mass destruction and terrorism have heightened.

International agreements limit trade in and the transfer of, certain types of goods and information e.g. goods associated with weapons of mass destruction, advanced telecommunications, arms and torture, and also some art and archaeological artifacts. For example:

- Nuclear Suppliers Group limits trade in nuclear weapons and associated goods (45 countries participate).
- The Australia Group limits trade in chemical & biological weapons and associated goods (39 countries).
- Missile Technology Control Regime limits trade in the means of delivering weapons of mass destruction (35 countries)
- The Wassenaar Arrangement limits trade in conventional arms and technological developments (40 countries).
- Organisation Prohibition Chemical Weapons (OPCW) limits trade in mass weapons convention (192 countries).

The export of normal good is not so risky but there are certain items which are made for civil purposes but it depends on the intention of end user as he can transform or use it for military purposes too.So the diversion of those items for destructive and harmful purposes can most effectively be stopped.

Dual Use

In simple words, "Dual-use items are those which can be used for both civil and military purposes."

More generally speaking, any technology can be refer as dual-use which can satisfy more than one goal at any given time; thus, many expensive technologies which are just for the benefit of civil purposes can also be used to serve military purposes such as GPS and bio medical materials

There are several international arrangements among countries which seek to harmonize lists of dual-use (and military) technologies to control. These include the Nuclear Suppliers Group, the Australia Group, the Missile Technology Control Regime, and the Wassenaar arrangement. Among them the Wassenar arrangement covers conventional arms and dual-use technologies.

1. Nuclear

Nuclear Power Technology is Dual-use technology which can be use for both purposes. Most of technology and materials used in creation of nuclear program have a dual-use capability, in that several stages of the nuclear fuel cycle enables diversion of nuclear materials for nuclear weapons. When, this happens a nuclear power program can become a route resulting to the atomic bomb or a public annex to a secret bomb program.

2. Chemical

The modern history of chemical weapons can be derived back to the chemical industries of the belligerent nations of World War I, particularly that of Germany. Many industrial chemical processes turn out gynogenic mediator stages, final products, and by-products, and any nation with a chemical industry has the potential to make weaponries chemical agents.

3. Biological

There are many biological research and materials which can be use for health purposes but at the same time one can use it for biological weapons too which is disturbing face of these researches and materials.[4]

4. Night vision and thermal Imaging

There are certain high quality imaging systems which have outclass performance and have some quality characteristics including high gain, fine resolution and low noise etc. These are restricted by some countries because of

the fact that these can be use for military purposes in combat missions.

Control

In real world, most industrial states have export controls bodies which bound export of selected dual-use technologies. These controls restrict the export of certain commodities and technologies without the permission of the government. In US the main agency working for investigating violations of export of dual use items is the Bureau of Industry & Security, Office of Export Enforcement. Interagency coordination of export control cases are conducted through the Export Enforcement Coordination Center (E2C2). [5]

Export Control

Export of Dual use items can be controlled to reduce security risks and threats concerning security and proliferation of weapons of mass destruction

So Export control can be defined in simple words as "It is a complicated network of federal agencies and inter-related regulations that govern exports"

Export Controls do regulation of transport and shipment of items, specific software and technology going outside of US or which will work out of US. Due to this control, export of parts of aircraft, chemicals, and minerals can be done by getting license otherwise it is strictly prohibited to do export of these items.

Presently there are two major export control systems working which US export control system and other one is EU export control system. Other countries are following the same approach for their control system. For example Pakistan is following US export control system through its own regulations.

In US the governing body is government but three agencies are working under the government and have authority to issue export license which are DDTC, BIS and OFAC which will be explained in chapter 3 in detailed way. While In EU there is single license agency but there 28 countries and their 28 offices. They follow same rules for issuing license for export but every state can do some amendments in regulation related to same EU common rule

Export Compliance

To control and mitigate those risks, organization needs to be complaint

So it's better to define it in simple words "Export Compliance is a specialized multidisciplinary framework, which provides support to Organizations in Compliance Risk Management, i.e., the risk of legal or administrative sanctions, financial losses or reputation deterioration for failing to comply with laws, regulations, and legislation, codes of conduct and good practice ("laws, regulations and rules")".

Export Compliance covers all activities related to import and export of goods and/or services, tangible and intangible assets (including the transfer of means of payment, which somehow are subject to regulations applicable to transactions between two different states/jurisdictions). The term Organizations

means all Bodies, companies of any nature, associations, both public and private undertakings that have activities falling within the scope of this Charter. The term Export is also intended as import in a broader sense, as an indissoluble operation. [6]

Literature Review

The review of literature was broadly and critically undertaken at the initial stage of this study thesis. The main purpose for this was to gain knowledge and build up a strong theoretical base for this study and achieving the case study objectives. The literature review undertaken encompasses the risks associated with export of Dual-use items and discussion of export compliance with US and EU approach.

Furthermore, literature review also serves as an essential part in the analysis when comparing it to the data collected to later answer the question for this thesis.

The source of literature for this study has been journal articles, books, reports, conference proceedings and internet citations. A lot of academic literature was available for review about all except for EIFEC, which served as a restricting factor and it was pristine in Europe. But in general, literature from other sources on the subject has been complementing.

Over the duration of the study, literature review was repeated at intervals to ensure the up-datedness of the subject. The findings of the literature review led to the next stage of the research framework.

Chosen Study Method

Quantitative research methodology supports experiments and testing by measuring variables to verify or falsify theories and hypothesis. It is used to quantify attitudes, opinions, behaviors, and other defined variables; it requires a large data set and uses statistical analysis to test the hypothesis and validate the research project. On the other hand, qualitative study is primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insights into the problem or helps to develop ideas or hypotheses for potential quantitative research. Qualitative study is also used to uncover trends in thought and opinions, and dive deeper into the problem.

In this thesis work, a qualitative method has been adopted. A questionnaire for a survey was developed by European Commission to evaluate the usefulness of these ICP draft guidelines to analyze in analytical way. Interviews have also been conducted to understand how the EIFEC is working in EU on export compliance as compare to Export control in US now days.

The Rationale for Choosing a Mixed Approach

A semi-quantitative approach for this study has been adopted because it

supports triangulation i.e., application of some paradigms of a pure qualitative approach and some from the quantitative approach. This helps the research approach to be abdicative for drawing conclusions. It entertains reasoning that uses both deductive and inductive logics and tends to be more structured and less exploratory than pure qualitative approach.

The study method being non experimental, lets conclusions to be drawn from existing scenarios without analyzing the cause and effect relationship among facts. Data collection using closed questions through a questionnaire of survey and content collection through semi-structured interviews. Due, to limitations of a thesis, some areas have not been included or elaborated on, which are mentioned in the Chapter Future Research Areas.

Data Collection

As part of the semi-quantitative approach, data has been collected through semi-structured interview and questionnaires. Data has been qualified as primary and secondary, the former being results from the study conducted and the latter consisting of literature reviews and knowledge gained from some reports. Basic and important info was collected from Director General of EIFEC through face-to-face interviews in the Turin region. The interview has been conducted in person in his office. The analysis of the interview focused on examining the current situation of consequences of export of dual use items, and to know how many sanctions on export of dual use items are important. Application of implementing export compliance program in the world could bring about a positive change in it and make it peaceful for human.

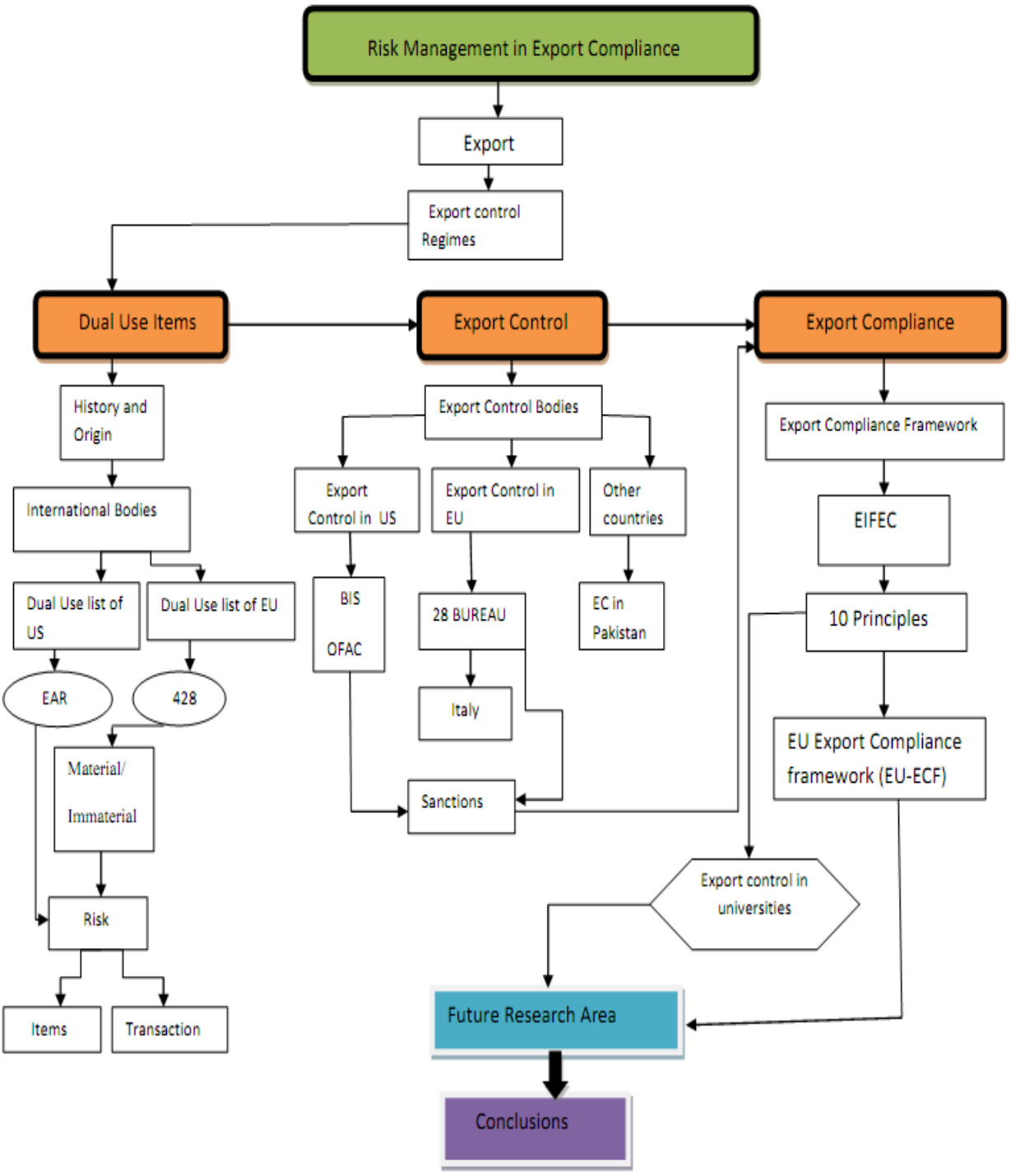


Figure 4: The Research Framework

The methodology used in this study can be depicted using a detail framework as shown below, in the Figure. Discussion on the processes adapted in this thesis is presented later on in coming chapters.

Chapter 2: A Framework for Export Compliance Risk Management

DUAL USE (Problem)

Introduction

A Risk can be defined in common life as an uncertain event that may have a negative impact on the achievement of goals. [8] On other hand, Exports are the supply of company goods/services to other countries customers, so export risks can be defined as events which will adversely affect the success of foreign business up to a certain degree of probability. Risk management plays a significant role that only transcends risk analysis.[9]

The export of certain items depends on two levels of intentions.

- Researchers/Innovators
- End users

Researchers or innovators intended for one purpose but he can't imagine end users can use it for another purposes other than one for which it has made. Equally, a researcher may have no particular end-use in mind. So export of these dual use items is sometime very risky.

Dual-Use

In simple words, "Dual use Items are those items which can be use for both civil and military purposes".

These are the items which are exported to other countries for civil purposes but there is risk that these items can be use for military purposes. In US, the Department of Commerce, Bureau of Industry and Security (BIS) has the authority to control dual use Items which has negative impact on national security issue. Most of Biological materials and industrial equipments are counted as Dual use items and they are part of Commerce Control List (CCL). [10]. The list below are some typical examples of Dual use Items that are mentioned along with their both purposes.

Example	Field	Beneficial use	Malevolent use
Nuclear research	Physics Biomedicine	• Nuclear energy • Radiology	• Nuclear weapons
Viral research (e.g. H1N1, H5N1)	Biosciences	• Public health (prevention) • Biodefence (prevention)	• Bioweapons (terrorism)
Synthetic biology (e.g. new genes, DNA)	Biosciences	• Biomedicine • Genetic enhancement	• Bioweapons
Nanotechnology	Converging fields: • Nanoscience • Bioscience • Information technology • Material sciences	• Biomedicine • Improved consumer goods	• Miniature weapons (nano-drones) • Surveillance society (miniature cameras)
Brain imagery and behaviour monitoring	Biosciences Cognitive psychology	• Biomedicine • Brain scans for criminal behaviour	• Behaviour monitoring and modification
Ethnographic profiling and marketing strategies	Social sciences	• Improved customer service	• Social profiling, marketing, behaviour modification

Figure 5: Examples of dual-use research and innovation, by academic field

These items have specific Export control Commodity number (ECCN) listed in Commerce Control List (CCL). These are classified on the basis of these numbers. That list of items is Dual use list. There are two most common dual use lists. US dual use list and EU dual use list

The US dual list is little different from EU one as some of items are not listed in EU dual use list. These lists are explained in detail way.

US Dual use list
Department of Commerce (Bureau of Industry and Security)

In US, The Export Administration Regulations (EAR)has the authority to check dual use items that are use for civilian purposes but at the same time it has military application.

For export of Dual use items an export license is need which depends on the nature of item, the exporter, the receiver nationality or destination country and application of item

Usually all items or materials which are made in US and or physically located in US are under the control of EAR unless these are not under the jurisdiction of another US agency.

Dual use items that are identified on the Export Administration Regulation's Commerce Control List (CCL) have specific Export Control Commodity Number (ECCN) and which are given on the basis of list mentioned below. Each item has specific ECCN number which mainly consists of five alpha-numeric characters; first a number from technical category, it has been

followed by a letter from product category, then again followed by three additional numbers from unilateral or bilateral category. [11] The dual use list is mentioned below

Dual-use goods ratings

	Control categories
0	nuclear materials
1	materials, chemicals, ‘micro-organisms’ and ‘toxins’
2	materials processing
3	Electronics
4	Computers
5	telecommunications and information security
6	sensors and lasers
7	navigation and avionics
8	Marine
9	aerospace and propulsion
	Sub-categories
A	systems, equipment and components
B	test, inspection and production equipment

	Control categories
C	Materials
D	Software
E	Technology
	Regime origin
0	Wassenaar Arrangement
1	Missile Technology Control Regime
2	Nuclear Supply Group
3	Australia Group
4	Chemical Weapons Convention

Table 1: Dual Use Ratings

Example dual-use classification
2B350.g.3

- category 2 - materials processing
- sub-category B - test, inspection and production equipment
- regime origin 3 - Australia Group
- description 50.g.3 - valves with nominal sizes greater than 10 milimetres, where surfaces in direct contact with chemical(s) being processed or contained are made from:

1. alloys more than 25% nickel and 20% chromium by weight
2. Fluoro polymers
3. glass or vitrified enamel lining

If the product, one is going to export is part of this list then it needs license to do export of this item and he should apply for license.

If an Item is Not on the Commerce Control List - EAR99

However there are certain items which are under the jurisdiction of U.S. Department of Commerce but these are not included in CCL, these are selected

as EAR99. Most of commercial items are selected as EAR99 and usually these items don't need license for export or re-export; However, if these items are exporting to sanctioned or embargoed country then license is required if there is chance of prohibited end use. [12]

EU Dual-Use List of Items and Technology

The common export control regime for dual use item was the concern of 28 member states regarding the products or goods which are moving freely throughout the European geography, sensitive and risky items which exit easily from country which has weaker control over these items. So the importance of establishing common regulation around the Europe arises. These regulations will compelled them to carry discussion in multilateral way, which started in 1991 and it was further continued to 1994and then finally they reach to an agreement. They worked on this process in three phases which will be discussed in Export control in EU here 428/2009 will be discuss which is purely related to Dual use item and it describes dual use list of EU after some amendments.

And within the following December, the Regulation and the Control List were officially published. Since then the EU dual-use export control system has been evolving in three phases as follows.

[The 1st phase]

1. Council Regulation (EC) No 3381/94 of 19 December 1994 setting up a Community regime for the control of exports of dual-use goods and items(Regulation)
2. Council Decision 94/942/CFSP of 19 December 1994 on the Joint Action adopted by the Council on the premise of Article J.3 of the Treaty Union concerning the control of dual-use goods (Control List)

At this point, the Control List was established separately in the form of Joint Action because the Member States wished to retain the right to determine what items to control.

[The 2nd phase]

1. Council Regulation (EC) 1334/2000 of 22 June 2000 setting up a Community regime for the control of dual-use items and technology
2. Council Joint Action 2000/401/CFSP of 22 June 2000 regarding the control of technical assistance associated with certain military end-use

At this time, the Control List was created as Annex I to the Regulation. Other changes made this time from the initial phase were as listed below. Also, a Joint Action regarding technical help associated with military end-use was published separately at the same time.

- The system of Community general export authorization was introduced.
- The items that require a license for intra-community transfer were limited solely to the Annex IV items.
- Military end-use catch-all control was added.
- Intangible technology transfer control was introduced.

[The 3rd phase]

1. Council Regulation (EC) No 428/2009 of 5 May 2009 setting up

a Community regime for the control of exports, transfer, brokering and transit of dual-use items

2. Regulation (EU) No 1232/2011 of the European Parliament and of the Council of 16 November 2011 amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items
3. Regulation (EU) No 388/2012 of the European Parliament and of the Council of 19 April 2012 amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items

The above is the current set of the EU Regulation. The Regulation (EU) No 1232/2011 was issued to amend the Council Regulation (EC) No 428/2009 that was introduced by comprehensively redaction the previous one. And also the Regulation (EU) No 338/2012 was issued to amend the Control List. Major changes made this time were as follows.

- Both brokering control and transit control were introduced in accordance with the UNSCR 1540 adopted in 2004.
- Five types of the Union General Export Authorization (UGEA) were introduced under the Regulation (EU) No 1232/2011.[13]

Assessment of Regulation 428/2009

The EU has done great efforts to integrate all multilateral export control lists in its common EU list of dual use items (Annex I of Dual-Use Regulation 428/2009). The same consolidated list was already employed by several other countries like U.S. However, there are certain differences which already exist between these lists. For instance, there are certain items which are part of U.S. Commerce Control List ("CCL") but these items are not listed in the EU dual use list. As this list was based on the integration of export control regimes so this list is agreed internationally to dual use controls which include the Wassenaar Arrangement, the Missile Technology Control Regime (MTCR), the Nuclear Suppliers' Group (NSG), the Australia Group and the Chemical Weapons Convention (CWC).

Each item in EU common list has specific number which is composed of 5 characters. The primary number is from topical category for the item. The common list is first divided into 10 main categories which will be 11 in future if new EU dual use regulation is implemented. These are further sub divided to 5 types so 2ndalphabet is related to type of item for example (E means Technology), which is further sub divided to 5 groups so third character correspond to multilateral regime pursuant to which the item is controlled (for example 2= Nuclear Supply Group). The remaining two characters show the actual description of particular item.

The scope of the Regulation is outlined in Annex 1 of Regulation No 428/2009 and follows the controlled items according to the WA. The list of division of items are further explained in clear way

Topical Category	Subcategory	Regime origin
0= nuclear materials	A= systems, equipment and components	0= Wassenaar Arrangement
1= materials, chemicals, 'micro-organisms' and 'toxins'	B= test, inspection and production equipment	1=Missile Technology Control Regime
2= materials processing	C= materials	2= Nuclear Supply Group
3= electronics	D= software	3= Australia Group
4= computers	E= technology	4= Chemical Weapons Convention
5= telecommunications and information security		
6= sensors and lasers		
7= navigation and avionics		
8= marine		
9= aerospace and propulsion		

- Category 0 Nuclear materials, facilities and equipment
    1. 0A Systems, Equipment and Components
    2. 0B Test, Inspection and Production Equipment
    3. 0C Materials
    4. 0D Software
    5. 0E Technology

- Category 1 Materials, chemicals, "microorganisms" and "toxins"
    1. 1A Systems, Equipment and Components
    2. 1B Test, Inspection and Production Equipment
    3. 1C Materials
    4. 1D Software
    5. 1E Technology

- Category 2 Materials Processing
    1. 2A Systems, Equipment and Components
    2. 2B Test, Inspection and Production Equipment
    3. 2C Materials
    4. 2D Software

- Category 3 Electronics Category
    1. 3A Systems, Equipment and Components
    2. 3B Test, Inspection and Production Equipment
    3. 3C Materials
    4. 3D Software
    5. 3E Technology

- 4 Computers Category
    1. 4A Systems, Equipment and Components
    2. 4B Test, Inspection and Production Equipment
    3. 4C Materials

4. 4D Software
5. 4E Technology

- 5 Telecommunications and "information security"
    1. 5A1 Systems, Equipment and Components
    2. 5B1 Test, Inspection and Production Equipment
    3. 5C1 Materials
    4. 5D1 Software
    5. 5E1 Technology

- Category 6 Sensors and lasers Category
    1. 6A Systems, Equipment and Components
    2. 6B Test, Inspection and Production Equipment
    3. 6C Materials
    4. 6D Software
    5. 6E Technology

- 7 Navigation and avionics Category
- 8 Marine
- Category 9 Aerospace and Propulsion

Military items

The one of difference between US and EU list was that Member states adopted eight criteria on arms export control with the title of EU Code of Conduct on arm export control on 8 June 1998. This Conduct was then remodeled in best position in 2008. This EU code was designed to make common standards for all states of EU and can be use to make license for arms exports and will show responsibility of member states in transfer of arms to third country. Now days most of member states is doing export of military items related to EU common policy which can be discuss below. But each is able to implement these policies under its own national laws and regulations which are purely based on EU agreements.

1. Council Common Position 2008/944/CFSP of 8 December 2008 process common rules governing control of exports of military technology and equipment

The 1st article EU common rules on arms exports. But the main and important part is Article 2, where the eight criteria of the Code of Conduct are briefly described. In addition, Article 12 refers to the Common Military List separately established as mentioned below. [17]

2. Common Military List of the European Union

Due to importance of stopping the dealing of arms and nuclear materials, EU has issued a list of Military items on 13 June of the year 2000 and modifications was done on time basis regularly. The latest unchanged version was published on EU official Journal site on 6 April 2016. The EU common

policy on arms export controls is made up by the pair of this List and the above Common Position.

3. Directive 2009/43/EC of the European Parliament and of the Council of 6 May 2009 simplifying the terms and conditions of transfers of defence-related products or materials among the Community.

Literally, this call was made to describe the importance of simplifying the terms and conditions of transfer of military items and arms within the territory. Because of that it was required for each states of EU to establish National legislation within due date of June 30, 2011 and it should be enforceable from June 2012.

4. Council Common Position 2003/468/CFSP of 23 June 2003 on the control of arms brokering.

This covers EU common policy of arms brokering services.

Dual-use export authorizations

Before doing export of dual use items exporter needs to do some authorization so to do that, there are four types of export authorizations working in the EU export control regime:

EU General Export Authorizations (EUGEAs)

EU General Export Authorizations (EUGEAs) allow exportation of dual-use items to certain bound destinations under certain bound conditions. There are currently six EU GEAs in place:

- exports to Australia, Canada, Japan, New Zealand, Norway, Switzerland, Liechtenstein, and the United States of America
- export of certain dual-use items to bound destinations
- export when repaired/replacement
- temporary export for exhibition or fair
- telecommunications
- chemicals

- EU001 - exports to Australia, Canada, Japan, New Zealand, Norway, Switzerland (Including Liechtenstein) and the United States
- EU002 - export of certain Dual-Use Items to certain destinations(Argentina, Croatia, Iceland, South Africa, South Korea, and Turkey)
- EU003 - export after repair/replacement
- EU004 - temporary export for exhibition or fair
- EU005 - telecommunications
- EU006 - chemicals

The EU is the issuing authority, the decision to grant a license is completed by the Member State.

National General Export Authorizations (NGEAs)

National General Export Authorizations (NGEAs) can be issued to certain exporters by countries of EU if they are already consistent with existing EUGEAs and do not refer to items listed in Annex IIg of the Regulation.

Global licenses

These kinds of licenses are issuing by genuine authorities to at least one exporter who export many kind of items to the end users of different countries.

Individual licenses

Individual licenses can be issued by some national authorities to one exporter. These licenses cover exports of one or more dual-use items to one end-user or consignee in a third country.[18]

Sanctions for Dual-Use Items

Upto now there are no international legal standards regarding penalties or sanctions for export control of dual use items offenses. But some common necessities are obtained from United Nations Security Council resolutions and also from the international treaties regarding biological, chemical and nuclear weapons. But on other hand countries have chosen a wide range of criminal and administrative penalties related to arms and dual-use trade-related offenses (Table 2). There are bunch of prison sentences and kind of punishments available in different jurisdictions.

For example if someone in Malaysia breaches Malaysian Strategic Trade Act 2010 then consequence of action is death. So death penalty or execution is enclosed for this act as a part of punishment.

On other hand in Austria, there is life time imprisonment for person who does export of nuclear weapon and because of it; lives are lost as a result of its use. In some countries there is subjection of fine for criminal or an administrative penalty, depend on the country legal system and specific provisions related to this issue. For example, the Republic of Korea (ROK, South Korea) created a special provision of obligatory export control training (referred to as an ‘educational order’), as a doable consequence of violations. A wide range of possible prison sentences is available in different jurisdictions.

Administrative Penalties	Criminal Penalties
• Fines	• Fines
• Revocation of licenses	• Prison sentences
• Loss of access to trade facilitation privileges	
• Loss of property rights (confiscation)	
• Closure of a company	
• Change of person legally responsible for exports in a company	
1. Mandatory compliance training	

Table 2: Options of Penalties

Money Laundering

Money Laundering is other problem related to export which is based on transaction.

Money laundering is one of the most common crime related to transaction in the common world which is defined as it is the process by which person pursue to legalize its illegal gain which is accumulated via outlawed activities and it permits criminals to relish the proceeds of their crime. [20]

Process of Money Laundering

Money Laundering is linked with money and transaction. There is no relationship between Money Laundering with items. The process of Money laundering occurs in three stages.

Figure 6: Money Laundering Process

I. Placement

During Placement stage the cash in large amount which is derived from illegal activities change to more portable and less doubtful types by depositing this entire amount in financial system. The mechanism of placement is most vulnerable because cash in large amount is derived from illegal activities and its difficult to hide this large amount.

As a result, the guilty person needs to find a solution to convert this large amount of money into more manageable form.

Examples of Placement include:

- Depositing into bank accounts via tellers, ATMs, or night deposits
- Changing currency to cashier's checks, bankers drafts or other negotiable instruments
- Exchanging small notes/bills for large notes/bills
- Smuggling or shipping cash outside the county

II. Layering

Layering stage starts when funds go inside the financial system. During this stage, creation of web of financial transactions takes place in term of its frequency and volume typically jibe legitimate financial activity.Off-shore financial centers perform an important function in the layering stage. In an attempt to hide its true origins, the funds are often wire transferred into a financial or banking system through offshore accounts. Layering conjointly sometime involves two or more jurisdictions. [24]

Examples of Layering include:

- Sending funds to different onshore and offshore bank accounts
- Creating complicated financial transactions
- Loans and borrowing against financial and non-financial assets

- Letters of credit, Bank Guarantees, Financial instruments, etc.
- Investments and investment schemes
- Insurance products

III. Integration

In the final stage which is called integration. That cleansed money is re integrated in formal sector economic activity. There are a range of financial instruments accustomed to accomplish this task such as letters of credit, bonds, bank notes, bills of lading and guarantees. That money becomes white by buying some businesses in third country

Examples of Integration include:

- Buying businesses
- Investing in luxury products
- Buying commercial property
- Buying residential property

Chapter 3: Export Control (Context)

Export Control

The export of dual use items should be controlled in order to mitigate risk related to country sovereignty. Risks associated are security of country, proliferation of weapons of mass destruction and terrorism. For controlling these exports, many export control systems are working around the globe. Two of them are very well known. US Export control system and EU export control system.

First Export control can be defined in simple words

"There is a complicated network of federal agencies and inter-related regulations that govern exports collectively referred to as "Export Controls".

Export Controls regulate the shipment or transfer, by whatever means, of controlled items, software, technology, or services out of particular country (Termed an "Export").. Most of countries following these two systems with some amendments based on its geography. There are some strict rules and regulations for export in every country control system`

In US the governing body is government and in US system for export of defense items, for dual use items and for export to embargoed countries require license. The importance of U.S. export control regime arises because of national security, economic interests, and foreign policy shape. The main objectives of this export control system was to prevent proliferations of weapons of mass destruction, provide regional stability, implementing anti-terrorism and crime controls, and protecting human rights.

The main purpose of these controls are to restrict exportation of products and services on the basis of type and nature of products and export destination.US government restrictively regulates the export of not just products and equipments but also the technology. Technology mainly includes technical data which is Blue prints and manuals. It also includes design services such as knowledge transfer. One who does training of technical things on US land and transferring the same concept to 3rd countries. Rather than just issuing licenses, US government has maintained certain economic sanctions and embargoes against plenty of countries who violate UN human right rules and support global terrorism. [32]

Export Control in US

In US, most transactions of export don't need any specific approval from the Government. However an exporter must acquire special export permission which is license. These licenses are required for export which has concerned related to national, nuclear non-proliferation, missile technology, chemical and biological weapons, regional stability, crime control or terrorist considerations. In US the governing body is government but under it, there are three main agencies which are controlling export regulations.

- In US the U.S., Directorate of Defense Trade Controls ("DDTC") is working on to control export of defense exports;
- In U.S., Department of Commerce's Bureau of Industry and

Security (“BIS”) control export of "dual-use" technology exports;

- Department of the Treasury’s Office of Foreign Assets Control (“OFAC”) in US regulate and control exports to embargoed and sanctioned countries. [33]

This system is quite complex as at the same time three agencies are working, so the aim of US export control system is to create single license agency which will issue license for the export so scenario will become more simple. So most of the items will count as dual use items and responsibility of ITAR will decrease. It is not sure that if US get success in making single license agency then its system will become better than the EU one as some of EU states have single agency and single list of dual use items. Presently, it is based on the decision of each member states to set and regulate the export license process which is suitable to its geography and their industrial needs.

Another frequently expressed concern relates to the discretion the US government takes over the licensing process. In recent years, the US has adopted an expedited system for exporting items containing certain types of encryption and, as discussed further below, has lessened controls on semiconductor manufacturing equipment, largely as a result of a determination that the goods were being produced outside of the Wassenaar Arrangement.[34]

The US Department of Energy can also grant certain types of licenses for extended periods (such as the widely-discussed nuclear project licenses). But there is kind of lack in EU where EU member states need to be responsive but it’s still not clear through their regulation. Member states can, for example, grant licenses for longer terms if they wish.

Essential Elements of an Effective Export Control System by BIS

An export control system can implement effectively if a country display its national commitment to achieve strict control on export. The first point of this commitment is to make political decision to prohibit international nonproliferation norms, which is clearly explained by mentioned five multilateral regimes, and engage solely in responsible arms transfers.

Second part of commitment is to create a legal authority which control the export of items related to defense and dual use items and technology. The mentioned authority will work based on these six legal principles:

- Comprehensive Controls
- Implementing Directives
- Enforcement Power and Penalties
- Interagency Coordination
- International Cooperation
- Protection against governmental dissemination of sensitive business information. [4]

Third point of commitment is, to provide support to export controls laws and policies a particular country should implement some strict regulatory procedures. These procedures will provide a list of items which has to be controlled and will establish clear lines of authority. The list they provide will be stick to multilateral regime and their associated catch-all controls).These

regulations should be clean and clear and access to get license for exporters should be easy. This authority should review the license request based on regulatory regimes for completeness and clarity. The regulations should encourage transparency and predictability of governmental decision making, and should give sufficient room for exceptions to policy in the interest of the government.

Fourth, proper enforcement measures should be built into the system. Preventive enforcement is essential, and should include established procedures related to export license applications (i.e., screening the proposed item, quantity, end-use and all parties involved in the transaction for any potential export) and compliance mechanisms (i.e., working in partnership with industry to educate them on how and why -- to monitor and control their own export activity). The ability and authority to interdict and investigate illicit exports are necessary to implement an effective export control system. International cooperation can ensure full compliance with export legislation.

US Licensing Process

In US, the Bureau of Industry and Security (BIS) is the agency which control and regulate export of Dual use items, technology or software system. License is needed in such a case when export of these has concern related to national security, foreign policy, short-supply, nuclear non-proliferation, missile technology, chemical and biological weapons, regional stability, crime control, or terrorist act of concern.[35]

The technical characteristics, destination and end user of item are necessary to determine if export of this item needs license. There is particular list which is Commerce Control List (CCL).This list has Export Control Classification Number (ECCN) of products which is simple and easy way to indicate which item needs license for export to certain destinations. However, there are certain items which are under the jurisdiction of US Department of Commerce but they are not part of CCL list, these items are counted as EAR99.

Under EAR99 items there are usually commercial goods or low technical goods and it doesn't need license for export unless it has been exported to sanctioned or embargoed country or to prohibit end user. Usually exporters are strictly prohibited to do export business with person or organization which is part of the mentioned lists: Denied Persons List, Unverified List, Entity List, Specially Designated Nationals List and/or Debarred List. In US the applications for license are processed through an online electronic system called the Simplified Network Application Process - Redesign (SNAPR).[36]

Export of certain encoding technology is possible under license exception EN that has authority to control export and re export of many products, equipments and also related software and technology. It doesn't have authority to authorize export and re export to sanctioned countries like Cuba, Iran, North Korea, Sudan, and Syria.

There is particular encryption registration method, exporter should complete it. This is detailed set of knowledge regarding the history and detail of exporter and about the item which he is exporting. Then this encryption registration is submitted to the Bureau of Industry and Security. After the completion of this process Exporter get authorization to export that particular eligible products(those classified under ECCNs 5A002 a.1,2,5,6, and 9 or b.

ECCN 5B002, and equivalent software and technology classified under 5D002 and 5E002) to eligible "private-sector" end-users (an individual or firm not acting on behalf of or owned or controlled by a foreign government). It is then the responsibility of exporter to either submit a self classification of products he is exporting or allow BIS to check the nature of products and classify them.

The U.S. Department of Commerce (EAR)

The Department of Commerce, through the U.S. Bureau of Industry and Security (BIS), administers the Export Administration Regulations (EAR) The EAR controls the export or transfer of "dual-use" items.. In general, any item created on the surface of U.S., or made outside the U.S. but with U.S. parts, technology, software, or know-how will be subject to regulation under the EAR unless the item is solely under another agency's jurisdiction (e.g., ITAR controlled). In US almost every item inside the country is related to EAR but only little number of items require license for export.

In addition to controlling dual-use items, the EAR additionally prohibits U.S. participation in certain restrictive trade practices and foreign boycotts. The anti-boycott provisions of the EAR prohibit any U.S. person or business from participating in any non-U.S. sanctioned foreign boycott. One of the examples of the types of restrictive trade practices that are considered "participation" in a boycott embrace being asked to:

- refuse to have interaction in a exceedingly business transaction dealing with the boycotted country
- agree to not use certain "black-listed" suppliers
- provide info relating to current customers
- refuse to use or otherwise discriminate against any U.S. person on the basis of nationality or origin
- It should be certified that shipment doesn't contain items from a boycotted country .[37]

The International Traffic in Arms Regulations (ITAR)

US Department of states operated The International Traffic in Arms Regulations (ITAR) and the aim of this agency is to control the export of defense articles, defense services and technical data related to defense. ITAR has classified a special list which called "US Munitions List" or "USML". This particular list cover 21 categories which include chemical weapons, biological weapons, vehicles, missiles and electronics but it's not that much specific as compared to EAR CCL. Department of State has responsibility to determine items in a list which have military nature. Military items are defined as items which are designed and made for killing and are used for defending against death in military war. Also satellites and technology related to satellite are controlled by ITAR which is based on congressional expansion of ITAR jurisdiction 1999. So for items which are part of USML listed items License is required for its export.

Items Controlled Under the ITAR

The USML is designed to categorize types of equipments as defense articles and data and services related to defense.

. This list (USML) divides the items and data into 21 categories, which are listed below.

- Category I: Firearms, Close Assault Weapons and Combat Shotguns
- Category II: Guns and Armament
- Category III: Ammunition / Ordnance
- Category IV: Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines
- Category V: Explosives and Energetic Materials, Propellants, Incendiary Agents, and their Constituents
- Category VI: Surface Vessels of War and Special Naval Equipment
- Category VII: Ground Vehicles
- Category VIII: Aircraft and Related Articles
- Category IX: Military Training Equipment and Training
- Category X: Personal Protective Equipment
- Category XI: Military Electronics
- Category XII: Fire Control, Range Finder, Optical and Guidance and Control Equipment
- Category XIII: Materials and Miscellaneous Articles
- Category XIV: Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment
- Category XV: Spacecraft Systems and Related Articles
- Category XVI: Nuclear Weapons Related Articles
- Category XVII: Classified Articles, Technical Data and Defense Services Not; Otherwise ,Enumerated
- Category XVIII: Directed Energy Weapons
- Category XIX: Gas Turbine Engines and Associated Equipment
- Category XX: Submersible Vessels and Related Articles
- Category XXI: Articles, Technical Data, and Defense Services Not Otherwise Enumerated

Exports under the ITAR

In US, ITAR control export of tangible items as well as transfer of intangible materials which are technology or information.

. There are a lot of examples related to export under ITAR: [38]

Tangible Exports and Transfers

- Shipping or taking a defense article or technical data out of the United States (this includes the electronic download of technical data from a server in the U.S. to a laptop located outside of the United States).
- Transferring title or ownership of a defense article to a foreign person, in, or outside the United States.
- The re-export or re-transfer of defense articles from one foreign person to another, not previously authorized (i.e., transferring an

article that has been exported to a foreign country from that country to a third country).

- Transferring the registration, control, or ownership to a foreign person of any aircraft, vessel, or satellite covered by the USML, whether the transfer occurs in the United States or abroad.

Intangible Exports

- Disclosing technical data to a foreign person, whether in the United States or abroad, through oral, visual, or other means.
- Performing a defense service for a foreign person, whether in the United States or abroad.

Office of foreign Assets Control (OFAC)

The Office of Foreign Assets Control (OFAC) is third license issuing agency which has responsibility to control and enforce all US sanction and embargoes program, also there are certain different activities which may or may not be prohibited without a specific government authorization or license. This sanction program can be described in three categories:

- "Comprehensive" – Under Comprehensive program, every kind of interactions and activities are prohibited with countries that are part of this program which include export and import to these countries, financial transaction to these countries and any of kind of services is not provided to countries which are part of this sanction program. Interactions to Comprehensive sanction countries are prohibited in any case. However only informational materials are allowed which allow occurrence of certain transactions. Countries which are part of comprehensive list are Iran, Cuba etc
- "Limited" – Some of activities are limited under Limited sanction programs. These activities are importation of items. The countries which are part of limited sanction program are Burma, North Korea etc.
- "Regime or List-Based" – Regime or List-Based sanctions are targeted against specific individuals identified by the Treasury Department and referred to as Specially Designated Nationals (SDNs) or are targeted against specific groups of people usually associated with a governmental body or regime.

Below is a table of the countries currently under U.S. sanction along with an indication of the sanction program in place. [39

COMPREHENSIVE	LIMITED	REGIME/LIST
Cuba	Burma/Myanmar	Balkans/Yugoslavia
Iran	Ivory Coast (Cote d'Ivoire)	Belarus
Sudan	North Korea	Congo (Democratic Republic)
	Syria	Liberia
		Iraq
		Zimbabwe

Table 3: Countries under US sanctions

Penalties for Non-Compliance with Export Controls

The consequences are very severe for those who do export of items without compliance. Exporter faces certain fines and sanctions for non-compliance with export controls and can be levied at both the individual as well as the organization. No one is allowed to do export of items, information, technology or software contrary to U.S. export control laws

If a person or an organization violate the rules under EAR, can impose civil penalties of $10,000 to $120,000 per violation and criminal penalties of $50,000 to $1 million per violation, it may impose prison of up to 10 years too.

Those who violate under the ITAR regulations may cause civil penalties of $500,000 per violation and in the case of criminal activities the fine may impose up to $1 million per violation and it may impose prison of up to 20 years.

For those who violates OFAC regulations can impose civil penalties of $250,000 per violation

Export Control in European Union(EU)

The European Union (EU) is a political and economic union of 28 states or countries which are facing fundamental problems which shows importance of its existence. It is working as a single market in which movement of goods, services, capital, and people in free way between EU states. Every country within EU is independent but they can do trading under certain common rules which are established in accordance with the agreement between them. As such, the 28 member nations have given up part of their sovereignty to the EU institutions, where many decisions are made at the European level, and the common EU Regulation on dual-use export controls is no exception as it came into being through such mechanism.

The background

Articles 113 and 223 of the Treaty of Rome

The importance of establishing a community level export system was accepted in 1990s by EU member states when they reach to an idea of materialization common market throughout EU. Although importance of export control arise when in 1991 Persian Gulf war a disturbing fact was revealed that countries like Germany, UK, and France were involved in destabilizing exports to the particular region. So the initial aim of the EU member states was to set up common policy for the export of arms. However due to these efforts for three years, in 1994 they reach to issue the common Regulation on the exports of dual-use goods and technologies, they did further progress up to 1998 and establish Code of Conduct on arms exports which included eight export control criteria. The outcome between dual-use items and military items is different; the reason is because they lay in the difference of the articles of the Treaty of Rome that was applied in each decision. As to export controls on dual-use items, Member States agreed that they were within the scope of "common commercial policy" stipulated in Article 113, thus gave up the competence to the EU. As to arms export controls, on the other hand, they argued to the last that the matter directly related to each country's national security interests and therefore Article 223 is applied, thus never relinquished national competence.[40]

[Article 113]

After the transitional period has ended, the common commercial policy shall be based on uniform principles, particularly in regard to changes in tariff rates, the conclusion of tariff and trade agreements, the achievement of uniformity in measures of liberalization, export policy and measures to protect trade such as those to be taken in case of dumping or subsidies.

[Article 223]

The provisions of this Treaty shall not debar the application of the following rules:

- it's not obligatory for Member state to supply information, the disclosure of which it considers contrary to the essential interests of its security;
- Any EU Member State may take proper steps which are considered important for the protection of the essential interests which are connected with the production of or trade in arms, munitions and war material; these steps will not have any bad affect competition in the common market regarding products which are not intended for specifically military purpose.

The EU's common export control system for dual-use items

EU competence and EU Regulation

For Dual use items, The EU export control system is somewhat "common commercial policy" which is working under the EU's exclusive competence. Therefore, it is governed by a "Regulation" that is legally binding by itself. In other words, the EU Regulation is a supranational existence, thus the EU citizens must comply with it at the instance when it comes to effect. For reference, there are six policy areas that come under the EU competence, and

common commercial policy is one of them.

EU Regulation and national legislation

EU export control system is not fully depending upon EU 21 competence but it is based on "the principle of subsidiary," while it is the principle of Union to take action upon those activities which is under its exclusive competence. The actions taken by Union are more effective than the actions which are taken at national, regional, or local level. In simple words, building of EU export control system for the export of dual use items is fully based on "shared competence". This system legally bound EU and its member states in the concerned areas.

First, the important point is Council Regulation (EC) No 428/2009 (the EU Regulation) describe the framework of dual use export control based on EU's common policy. The essence of the Regulation is only as follows.

1. Common control list (Articles 3 and 15(1))
2. Exports that require authorization (Articles 3 (controlled items) and 4 (non-controlled items))
3. Brokering service control (Article 5)
4. Transit control (Article 6)
5. Intra-community transfer control (Article 22)
6. Licensing (Article 9)

Second, each Member State is allowed to do amendments in Regulation based on its geography and issue its own national export laws and regulations related to EU Regulation. Actually the essence of regulations is all controlled by national legislation in real such as the administrative authority, licensing system, penalties, and other regulatory procedures. Also each EU member state is free to adopt provisions of its own export control unilaterally, which are also covered by the same.

1. Each Member State may adopt an optional clause in the EU Regulation at its discretion.
2. Each Member State may establish own control list in addition to Annex I to the EU Regulation.
3. Each Member State may adopt unique control provisions in addition to the EU Regulation.
4. Each Member State may adopt the system of National General Authorization. [40]

The main problem in shared competence program is the hype between the EU competence and the national competence. In reality the national security policy of nation is national competence by itself, though there is framework defined by EU's Common Foreign and Security Policy. But still there are some countries of EU like Germany they have added some more control sets and implementing it based on its national policy. EU Regulation by itself is varying from state to state due to their national policies.

For dual use items the export control system of each member state is purely based on EU regulation as well as national legislation. But the export control system of these EU states is not completely harmonized instead of presence of EU regulation. These are implemented by EU states independently and these countries issue licenses and regulate law by itself. Up to now there are 28 states in EU and in simple words there are 28 offices in EU as export contol system.

Problems in the current EU export control system

As a result of these regulations, still in EU export control system there is still existence of various problems. Generally, the competitive field within the EU is not leveled but rather unleveled, and this creates a problem not only of competition but also of international security.

1. The EU Regulation interprets differently from state to state which is a problem. But the main problem is, in the Member states these regulations are implementing differently because Regulation by itself gives considerable degree of discretion to each member state. These states will decide in what way these principles are implemented in practical way.
2. The fact that makes the issue more complicated is that some Member states have implemented export control provision in addition to EU regulation. For example Germany and UK implement some other provisions to regulation to catch all control; some of the states are controlling some extra items which are additional to annex I, these states are France, Germany, UK, Italy and Latvia; Some states are making a mandatory rule for exporters to establish an ICP if he likes to use General Authorization or when he is going to apply for individual license, these states are Austria, Bulgaria, Denmark, Hungary, Finland.
3. Some of the Member States have their own National General Authorizations (like OGEL of the U.K.), including states Austria, France, Germany, Greece, Italy, the Netherlands, Sweden, and the U.K. While the other states do not have this kind of authorization. The main problem is even the conditions (type of the authorizations, scope of eligible destinations and items, etc.) of such authorizations themselves differ from country to country.
4. Other problem related to it was condition of licensing was different among Member states. Also, the sharing of information about license denying is not that much sufficient among the Member states. Because of this particular problem, sometime it happens that one country of union denies a license application for an export of a product to a customer, while at the same another state would later issue a license for an export of the same product to the same customer. [40]

The EU export control reform project

As these problem was critical and to solve and exclude out these problems, EU commission is now observing to reform a project which give solution of these problems as part of the 3-year review required by Article 25 of the EU Regulation. The initial step of this reformation was to do a survey and for that the commission issued a paper called Green paper through which comments were collected from concerned authorities, industries, research institutions and academia in 2011. The process was carried on up to 2014 and they published a report with title name “The Review of export control policy: ensuring security and competitiveness in a changing world”. The commission was then undertaken by one of the Swedish institute name as the Stockholm International Peace Research Institute (SIPRI) with the cooperation of

ECORYS, It was done for Impact Assessment. The working aim of ECORYS is to do collect data project. Another thing after establishing commission was to give proposal of revised EU Regulation. The surety was given that new Regulation will be applied in very little time. if it takes longer time. The controls under the new Regulation are expected to become more EU-wide, reducing the elements of national discretion, and adding some new control concepts.

Sanctions of EU on Different Countries

Iran

Iran is facing sanctions from long time .Due to overthrow of the Shah in 1979; Iran faced international sanction for the very first time. But they started to face sanctions in very wide range since 21st century. EU imposed sanctions further on the oil, gas, petrochemical, and insurance, reinsurance, banking, and shipping sectors in 2010. In 2006, due to Iranian refusal of give a way to its Uranium enrichment Program, the UN Security Council passed Resolution 1696 because of the threat that may be in future Iran will have capability to produce nuclear weapons.. These so-called targeted UN sanctions were augmented by a multitude of other non-UN-mandated sanctions against Iran, including a total EU embargo on Iran's oil sector and a freeze of assets of Iran's Central Bank since 2012.

Iran has been notoriously apt at circumventing these sanctions, leaving licensing countries such as the UK concerned about its intentions regarding exports of sensitive and dual-use products and technologies. By detailed review it shows that Iran should be the country which has received most export license refusal in the span from 2006 to 2011.

China

China is considered as one of the most denied export license country and there is still subjection of partial EU arms embargo Just from 2006 to 2011 UK government denied a total of 124 China export licenses which was destined for end use.

India

India has faced a good quantity of export license refusal which was revealed by examining the map. But by thorough review of yearly study reveals that number of refused licenses has declined steadily over the period of the study.

Due to 1990,s nuclear test India has faced broad sanctions. The high number and changing pattern is likely a result of the US nuclear deal with India and gradual reengagement with the country by the West following its nuclear test-based estrangement. [42]

New Italian rules for dual-use export control and sanctions

Italian Council of Ministers approved a first and primary draft legislative decree adapting national legislation to EU rules on September 15, 2017. This draft concerns export of dual-use items, export of items or goods which can be used for restrictive measures and for torture against third country. The draft legislation is presently under review by the competent parliamentary

committees amongst other things, the draft legislative decree provides for:

- The creation of the special kind of license which is same, using in Germany for export control which is called Zero License. It is special kind of document which is issued by Ministry of Economic Development based upon the request of Exporter to know about item whether it is part of dual use item or it doesn't need any kind of authorization;
- National rules about the control and safe transit of dual use items in detailed way based on rules established by Council Regulation (EC) No 428/2009;
- a consistent set of penalties (either monetary or non-pecuniary) applicable to infringements of the provisions each of Regulation (EC) no. 428/2009 and of the EU laws and regulations regarding restrictive measures against third countries.[19]

Competent Authorities in different Countries

Member State	Licensing Office	Government web site related to export of dual use items
	GREECE Contact point: G. Archontaki Tel. +30 2103286047/56/22/21 Fax +30 2103286094 E-mail: e3c@mnec.gr	
HUNGARY	Hungarian Trade Licensing Office Authority of Defence Industry and Export controls Magyar Kereskedelmi Engedélyezési Hivatal Haditechnikai és Exportellenőrzési Hatóság Németvölgyi út 37-39. 1124 Budapest HUNGARY Tel. +36 14585583 Fax +36 14585869 E-mail: eei@mkeh.gov.hu	www.mkeh.gov.hu
IRELAND	Licensing Unit Department of Jobs, Enterprise and Innovation 23, Kildare Street Dublin 2 IRELAND Contact: Claire Pyke Tel. +353 16312530 E-mail: claire.pyke@djei.ie, exportcontrol@djei.ie	http://www.djei.ie/trade/marketaccess/exports/index.htm
ITALY	Ministry of Economic Development Direction General for International Trade Policy	http://www.mincomes.it/dualuse/dualuse.htm

Figure 7: Competent National Authorities

Export Controls in Other Countries

The countries other than US and EU states around the globe are further subdivided into two categories

- when it comes to export controls: countries that are members of the main export control regimes
- countries that are not part of export control regimes

Countries in the first category which are member of any of the export control regime are the manufacturers of high tech goods and products. . These countries are bound by the same international commitments as the EU, although implementation is varying somewhat different from EU commitment.

The second groups of countries, which are not part of any export control regimes; don't manufacture dual use items and commodities. Still some of these countries are involved in proliferation but the risk is primary which is just from transit and transfer of goods. It's not from the export of domestic manufactured goods. These countries are restricted to implement export, restriction by resolution 1540, and because of that few countries from this category are making extraordinary progress toward improvement of implementation, such as Malaysia and the UAE.

There are three main countries which are kind of exception to this category. The including countries are China, India, and the Eastern and South East European States.

China has done a lot of progress in exporting items in very little time and become one of the best producers of dual use goods but still it is part of only NSG in the export control regimes. This is because China is still lacking in implementing Export control, although the reality is somewhat opposite of it. China has taken some important steps to strengthen its implementation of export controls one of them is they create single license agency for export. They are implementing new law in near future too. Implementation of Chinese non proliferation control will improve china market to EU from European perspective. However at the same time they will recognize challenges and proliferation risks with the country.

India is another example of this category which is progressing well and a substantial dual use items producer, but still India is not a part of any of five export control regimes. India has become sympathetic country to international export control regimes after NSG has decided of exemption to supply goods to India and recently they have applied for joining MTCR which is initial step of joining all five of the regimes. They are trying to make its control system based on international standards but still its list is not harmonized with that of export control regimes. [43]

There are some of the East and the South East European states which are member of EU or they have applied for membership. Most of these countries are genuine producers of most manufactured commodities; also the ports of these states are used for shipment. The implementation of rules and regulations are varying according to countries. As most of them are member of export control regimes so the membership is varying country by country. The politics of these countries are beyond the control of EU, otherwise they are making

efforts to give surety that each state of EU will be member of export control regimes. The same plan is under observation for those countries which are hopeful to be part of European Union in future.

Export Control in Pakistan

STRATEGIC EXPORT CONTROL DIVISION (SECDIV)

Pakistan is one of the countries which are nuclear power but still it is not part of any of the export control regimes. Sill it is doing very well to pursue its commitment to non proliferation of weapons of mass destruction. To guarantee safety and security on the export of sensitive goods and services, Pakistan has created comprehensive legislative, restrictive and implementation. Pakistan is following US export control system with little changes based on its geography. Because of the importance of controlling the export of these items, National Assembly and Senate of Pakistan in September 2004 passed Export Control Act. The act was restricting the export of items and technology which were someone related to Nuclear and Biological Weapons. This act was signed by the President of Pakistan and ordered the force to implement this act from particular day. This act was crucial step for strengthening the export of certain technologies which were sensitive associated with nuclear and biological weapons and the way of its transporting. The main point of the Export control act 2004 includes:

1. Controls over export, re-export, trans-shipment and transit of goods, technologies, material and equipment associated with nuclear and biological weapons and missiles capable of delivering such weapons.
2. Prohibition on diversion of controlled goods or products and technologies.
3. Wide jurisdiction (also includes Pakistanis visiting or working abroad).
4. Comprehensive Control and management Lists and catch-all provisions.
5. Licensing and record-keeping provisions.
6. The Act stipulates that licenses for the export of goods and technologies for peaceful applications may be approved unless the Government determines that the export would be in dispute to the provisions of this Act.
7. Penal provisions: Up to 14 years imprisonment and Rs. 5 million fine or both, and on conviction, confiscation or arrogation of offender's property and assets, wherever they may be.
8. The Right of appeal is provided to resolve grievances.

According to this act, Lists of goods and technologies were issued first which was subjected to regulatory control. It was first notified in 2005 (S.R.O 1078 (I)/2005) and then it was then further revised (S.R.O. 1142(I)/2016). The list issued based on this act was related to other export control regimes, Five mentioned regimes are Nuclear Suppliers Group (NSG), The Missile Technology Control Regime (MTCR) and Australia Group (AG). The responsibility of reviewing of this act was given to a standing Joint Working Group (JWG), their duty was to look after development of technologies on both national and international level and they will observe the changes and modifications based on the changes made by other international non-

proliferation regimes.

Government of Pakistan has made another brilliant step by making the Strategic Export Control Division (SECDIV) in 2007 as a part of the Ministry of Foreign Affairs (S.R.O 499 (I)/2009) and gave it authority to control export. For observing the implementation of Export control Act 2004, Government of Pakistan established an Oversight Board. Its duty was to observe the formation and functioning of SECDIV. The notification of licensing and enforcement were done in 2009. These rules set out complete procedures for licensing, enforcement, investigation, prosecution, and implementation of the Act.

SECDIV are undertaking many outreach and awareness raising activities for the promotion of self regulation and compliance of this act. Trade goods Identification Training is conducted for capacity building of the relevant enforcement agencies.

The progress of Pakistan in Export control is going up rapidly and because of that NSG has declared Pakistan as voluntary adherence to its guidelines. Pakistan has shown keen interest from long time to be part of any of the five export control regimes i.e. NSG, MTCR, AG and Wassenaar Arrangement (WA) etc. [44]

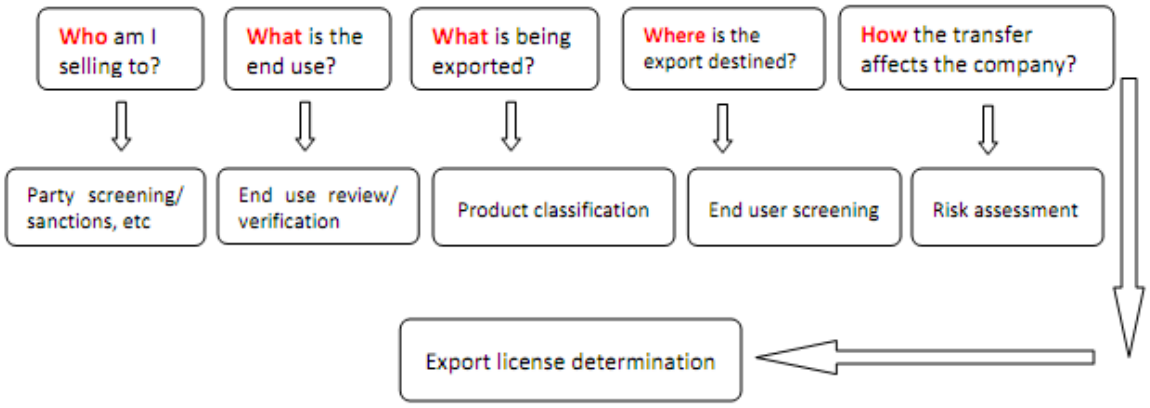
Export and Export Control

The definition of Export in term of Pakistan Export Control Act is "The transportation or shipment of any kind of commodities or technology outside from the land of Pakistan". Export also includes transfer of Products and technology within territory of Pakistan with clear knowledge that these particular items and technology will be transferred to some unauthorized people or organization outside the territory of Pakistan.

Export control is the restrictions of Pakistani Government on the export in Pakistan or outside the territory of Pakistan. These restrictions will be on the export of goods, materials, equipment, technologies, software. Eventually, it controls sharing of information and materials which are transferred to other countries by any mode of transport.

Compliance Procedures

ICP is intended to institute a system of safeguards to prevent sale/transfer of sensitive goods technologies, software and information to unauthorized entities. Have procedures in place to guard against transfer/pilferage/theft/diversion of tangible and intangible sensitive goods and technologies at all stages including demonstration/exhibitions, manufacturing, production, transportation, marketing, post-shipment verification, etc. In conducting screening for a proposed transaction, the questions identified in the following diagram may be deliberated:-[45]



Commodity Classification

Classification of items in the list is somewhat like that of EU and US one. Classification of Commodity is very critical to make correct export decision. Dual use items have been classified based on SECDIV control lists, this list has been reviewed periodically. Entity's export control department must be aware of the latest edition of control lists, promulgated through Statutory Regulatory Order and, also posted on SECDIV web page. Each item which is part of SECDIV control list has specific number which is called Control Lists Classification Number (CLCN).

According to SECDIV control lists these good and technology are categorize in ten categories, these are then subdivided into list of specific items. These items are further sub categorize into five product groups, based on these divisions, each item has got specific classification number called Control lists Classification Number (CLCN). An example of how to classify an item is given in figure given below

A team of particular experts was designed with consult to Export Control Department to identify the classification of commodity in most appropriate way. These exports will use the standard format which has been developed by department of Export Control. If there is uncertainty in the entity of items classification then the issue may be raised with SECDIV using the form in the below figure. [44]

Annex-III

Control Lists Classification

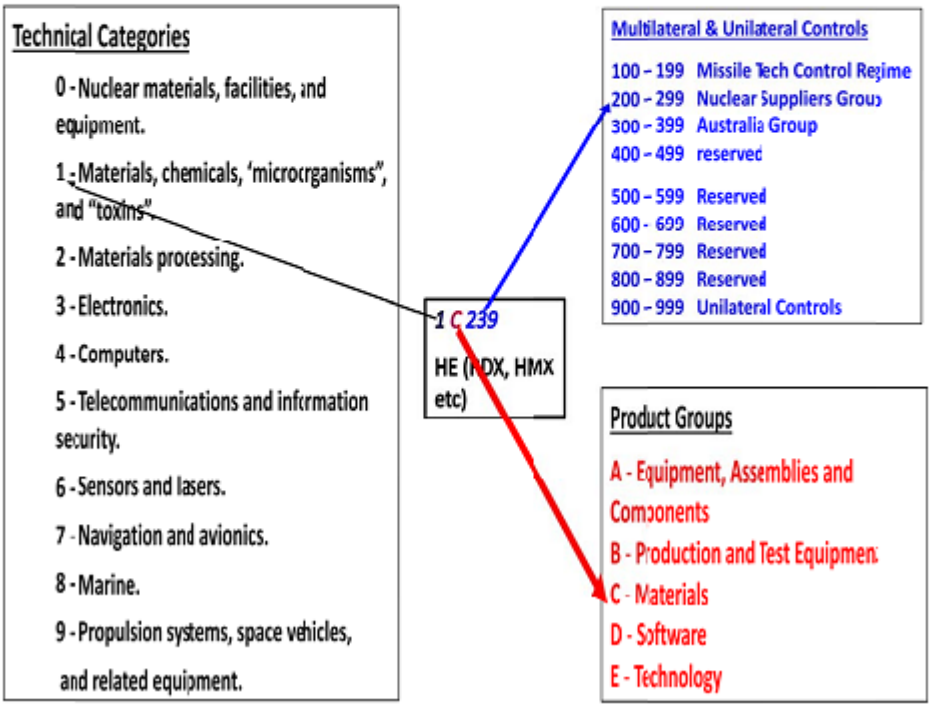


Figure 8: CONTROL Lists Classification of Pakistan

Catch All Controls

There are many items, technology, software and data which are not part of SECDIV list but there is possibility that these can be use in proliferation of weapons of mass destruction and if the end user is doubtful or the delivery system is not verified then in these cases exporter will require export license under 'Catch-All' control. This license is provided in Article 5 (3) of the Act.

It's obligatory for exporter to notify the concerned authority about the goods and technology if he is in doubt that the part or full particular items and technology has concerned with nuclear or biological weapons or missiles capable of delivering such weapons.

An authorization is also required for the export of items which are not part of listed items. The authorizing authority is either Government of Pakistan or SECDIV. This authorization is needed in a case when competent authority informs the export about the nature of items and makes him sure about the consequences of exporting without license.

Benefits of Compliance Program for Academic/Research Institutions

Export control laws regulate the export or transfer of goods, information and technology. The scope of the regulation is quite vast and wide and it has enclosed almost all kind of commodities which may use as dual use items and has military application and may be workable in the fields of science, engineering, science, and technology and apply to research, analysis, and other academic activities regardless of the method of transfer/export. The consequences for both individual and organization in case of non compliance are quite severe and it may include fines and sometime in addition of long term prison.

The main objective and aim of the Compliance program is to do commitment to carry on educational, research and different other activities in compliance with all relevant laws and regulations. Some significant benefits of an effective compliance program are as follow:

- Instituting a culture that does not tolerate the illegal or unjust behavior.
- Increasing the chance of early detection of an unlawful activity or conduct.
- Risk Minimization or reduction
- Enhance reputation, efficiency, and improve outcomes.
- Avert consequences of non-compliance.
- May reduce or mitigate penalties in case of inadvertent violation.
- Contribute to national security and foreign policy interests.

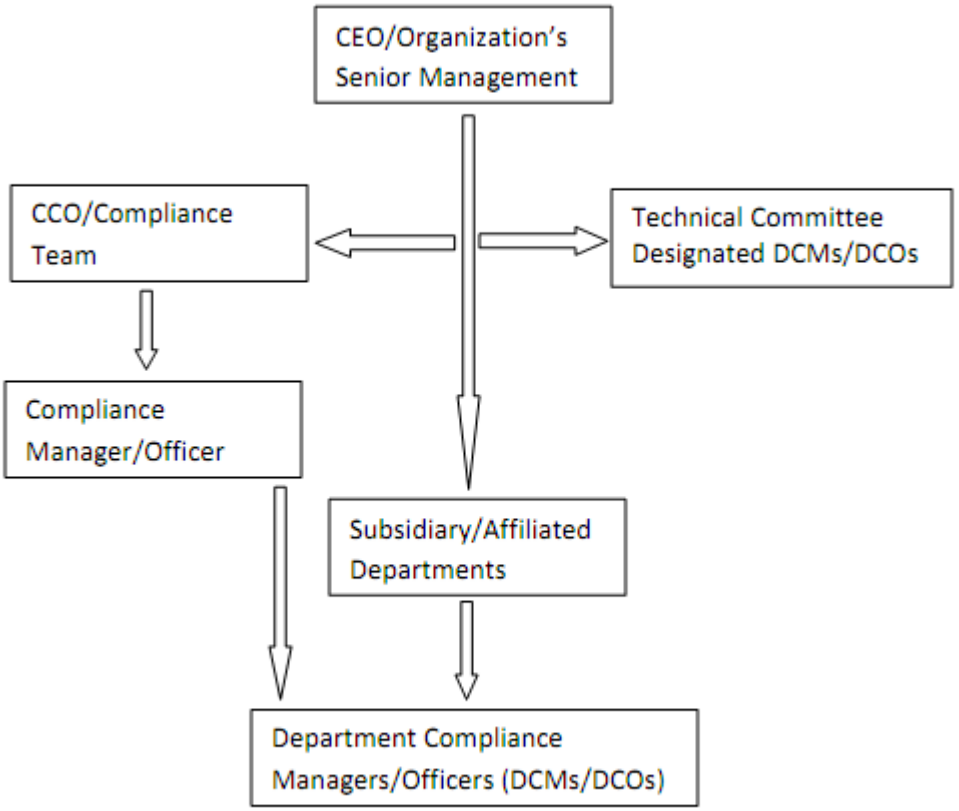


Figure 9: Generalized ICP Framework of Pakistan

8. **Offences and penalties.**—(1) Any person who contravenes any provision of this Act or any order, rules and regulations framed thereunder, or provides false information concerning matters governed by this Act to any of the agencies responsible for administering this Act, shall be guilty for an offence punishable on conviction by imprisonment for a term which may extend to fourteen years, or with fine not exceeding five million rupees or both, and on conviction offender's property and assets, wherever they may be, shall be forfeited to the Federal Government.

(2) Any person who attempts to commit or abets the commission of an offence under this Act shall be proceeded against in the manner as if he had committed such an offence.

(3) In case the offence is not serious for criminal proceedings, administrative actions, which may be determined from time to time, shall be taken against the individuals contravening any provision of this Act.

Figure 10: Pakistan Export Control Act 2004

Chapter 4: Export Compliance (Solution)

Export Compliance

In order to control and mitigate risk associated to export as result of sanctions and punishments, organization need to have framework to be compliant. First step in Framework will be identification of beneficiaries and then it will determine to constitute risk related to export compliance.

In simple dictionary, Export Compliance is defined as "The specialized multidisciplinary framework that provides support to Organizations in Compliance Risk Management, i.e., the risk of legal or body sanctions, financial losses or reputation deterioration for failing to comply with laws, regulations, and legislation, codes of conduct and good practice ("laws, regulations and rules")".

The importance of Export Compliance is, it is covering all the activities and processes related to import and export of all kind of commodities and services. It also includes every kind of assets including tangible and intangible one. In the scope of Organization, all bodies, all kind of companies having any kind of nature and include public and private one is falling in term of organization. The term Export is also supposed as the import in exceedingly broader sense, as an indissoluble operation.

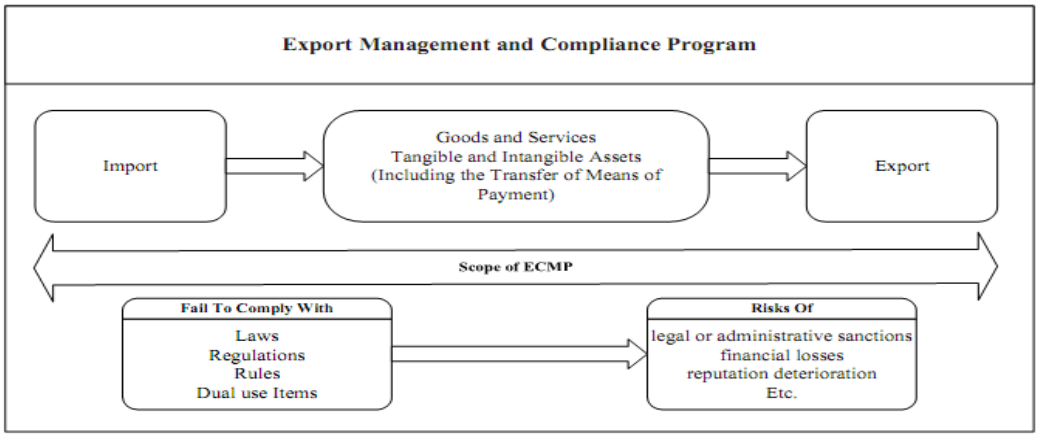


Figure 11: Export Compliance Framework in an organization

Export Compliance in Companies

Export Compliance is applicable in all kind of companies and because of that it is important for companies to take many crucial steps to get on prime of Export management Compliance. For company to be compliant, there framework should contain at least these five mentioned elements.

These companies can do work based on compliance in two ways by offering single standard or by establishing complete set up of entire Export Control Compliance.

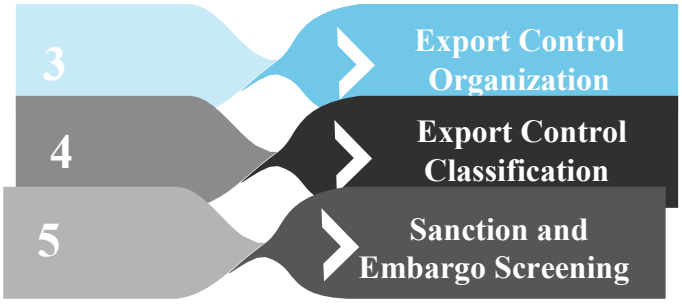


Figure 12: Export Control Compliance

Modular services include:

1. Export Control Risk Assessment: In first step ,company can determine major risks by doing risk assessments or reviews
2. Policy and Procedures: In the 2nd step, the process of evaluation and set up of export policy and procedure occur. This step includes training and awareness as well.
3. Export Control Organization: Compliance program development, organizational design, Export Compliance function, roles & responsibilities
4. Export Control Classification: classification of merchandise and licensing management, supported by automation
5. Sanction and Embargo Screening: trade automation and management solutions, in line with the company's policy and embedded at intervals within the organization

Principles and Values of Export Compliance

There are five Values of export compliance which has to be followed by organization to be compliant.

1. Transparency

   All organizations need to act and communicate with EU, member states control systems and all concerned stakeholders in very transparent way during the operating of Export Compliance Policy. They also have to communicate with above all in each activity of organization at the time of financial, economic and legal ("Commitment to Transparency").
2. Compliance

   All the organization has to confirm and has to be compliant with all EU regulations and with rules and regulations of particular EU member states where the import and export process is taking place. ('Commitment to Export Compliance').
3. Accountability

   All Organizations should act as accountable in a way that they should be responsible and will acknowledge the impact of their policies. They will have to be accountable in sense that impact of their actions and decisions should be transparent.

4. Consistency

   All Organizations will show consistency based on their actions and statements. These Organizations must apply practices, principles and methods of Export Compliance Principles. Organizations will give surety about all rules and behaviors followed in all activities of organizations in same way like mentioned in Export Compliance principles. The changes in it will be disclosed in one case when change is made in Export compliance method.

5. Effectiveness

   To pursue Organization's Export Compliance purpose, Organizations will give surety to use all its resources which include labor, resources and commodities and services in the best way as possible.

   There are certain businesses which already part of Export market while there are some businesses that are in mood to start export in near future, there are some important steps for these businesses to follow to be ensure that they are in compliance with EU or US regulations based on country. The Five points discussed in last topic is initial point for implementation of an export compliance plan. [46]

EIFEC (European Institute for Export Compliance)

For companies which are under the territory of EU, they need to follow regulation made by EU to make themselves in compliance with EU regulations. They should follow the standards applied by EU. In EU, EIFEC (European Institute for Export Compliance) is an independent and not profitable organization which is responsible for making standards. These are followed by both public and private organizations, EU universities, firms and other related bodies, sometimes applied on individual too.

In very simple word, EIFEC is the Export Compliance international body maker of EU and its duty is to set standards. They were first making standards for only Europe but now they are making standards for the entire world. The aim of this European organization is to market a good international culture of compliance with the relevant Export rules at intervals the money, economic, industrial, educational and associative system of personal and public sector.

EIFEC objectives are to propagate among associated Organization concerned in Export / international Trade behaviors of excellence through an effective implementation of the specialized compliance management framework supported International Export Compliance Standards (EIFEC EC1001 series).

This Code stems from the EIFEC EC1001.01:2011 CEC international customary (Code of Export Compliance): it differs for a few relation to EU jurisdiction and nomenclature and is meant just for easier understanding at intervals the EU context. The worldwide relevance of the quality continues to be an equivalent and remains unchanged.

The Code provides Organisations with an internationally accepted and easily available set of standardized principles and best practices to frame and structure the way in which they understand, govern, administer, implement, evaluate and communicate their Export Compliance.

The main values of these principles and best practices are their comprehensive coverage and the flexibility of their application and are

primarily intended to be used by Organisations to develop an accountable and strategic approach to Export Compliance and understand, manage and improve their Compliance performance and risk management.

Those who attach to the present self-regulatory
Code can thence notice all basic principles, values, practices and international Standards helpful for implementing effective specialized compliance management programs in line with EU and national Member
States rules, also like world organization, US and everyone the opposite main international Export management systems.

Beneficiaries

In this Framework, included bodies are all organizations, companies, both public and private associations which are purely according to EIFEC. [46]

The Framework for Export Compliance

Given the complexity of the overall external context (Organisations have to comply with many regulatory requirements, such as export controlling legislation, customs procedures, tax and contract laws, transport regulations etc.), Organisations in all industries are required to implement an Export compliance program, and the recommendations herein should be applied to all subjects dealing with Export-related activities.

Export Compliance is the specialized Risk management framework that supports operational governance compliance with regulatory requirements and Organisations' own policies for international trade.

Monitoring and maintaining Export Compliance is not just to keep the regulators happy, but it is the most important procedure for any Organisation to avoid or mitigate potential legal civil and criminal proceedings, fines, penalties and imprisonment, to preserve its ethical health, support its long-term prosperity, protect the good name (reputation) of the Organisation and foster its values.

The EU Commission has set strategic priorities in the field of Export Controls ("EU Export Control Policy Review"), where is stated that Compliance efforts should be recognized through the facilitation of control and fast-track Export processes by setting clear private sector compliance standards for the use of simplified mechanisms as a substantial privilege granted to reliable exporters.

To be deemed "reliable", the Organisation shall guarantee a steady compliance with the law, implementing a suitable Export compliance program by setting up consistent organisational and workflow structures, operating procedures, general awareness raising, chain of responsibility, regular audits etc. which can ensure observance of all restrictions, licensing prerequisites and other main duties.

An efficient Export compliance program will also improve operational effectiveness and avoid unnecessary work and the related waste of working time.

The European Institute for Export Compliance (EIFEC) has the mission to foster international security through managing and promoting the EU EXPORT COMPLIANCE FRAMEWORK. EU-ECF framework provides innovative solutions to the most critical challenges in a global marketplace becoming a complicated arena for businesses to navigate. Major events have produced legislations and regulations at international and national level; the complexity of legal frameworks is shaping the way organizations do their business.

In a globally integrated world, efficient export compliance is only possible with cooperation at a European and international level. The EU Governments rely on the due compliance of exporters to help ensure that all laws are abided. [6]

The strategic Response is the specialized multidisciplinary EU Export Compliance Framework (EU-ECF) that supports the organization's business objectives, identifies the boundaries of legal and ethical behavior, and establishes a system to alert management when the organization is getting close to (or crossing) a boundary or approaching an obstacle that prevents the achievement of a business objective.

EU-ECF includes:

- The EU Code of Export Compliance (EU-CEC), which set the principles, the best practice and Standards for the import/export industry to be adopted by EU and not EU organizations.
- The EU Export Compliance Guide Lines (EU-ECGL) for implementing the EU-CEC.
- EU Certified Export Compliant Organization certification (EUC/ECO) to verify the proper EU Export Compliance behaviors and processes.
- The EU Export Compliance Register (EU-ECR) with the purpose to enhance the implementation of EU Export Compliance best practice. A register for organizations and self-employed individuals engaged in EU import/export and policy implementation has been activated.
- The EIFEC Registration Number (ERN) is attributed to identify organizations or persons to ensure their traceability on an EU level. This prevents abuse and allows establishing the identity of the Certified Organization simply. [46]

The EIFEC EC1001 Standards which are series are principles-based standards to help organizations become more accountable, transparent and after all competitive. They address issues affecting governance, export models and organizational strategy, as well as providing operational guidance on export management and stakeholder engagement.

EIFEC by strategic alliance with leading Academic Entities, promotes the culture of sound Export Compliance practice, and accredits third parties to perform and enhance Compliance professional activities.

Code of Practice

By adopting this code, Organizations aim to implement the Principles

given above; therefore they will develop, adopt and put into operation Export Compliance policies and procedures that uniquely address their specific requirements.

Organizations shall decide which Export Compliance measures are appropriate and related to the nature of their Export activities, since several factors, such as Organization's size, end-use, and sensitivity of products, geographic location of business and customers, relationships with business partners, volume of trades, product restrictions and complexity of national export procedures, actually influence how an Organization structures its operational activity (External and Internal Context)7 .

Instead of this, there are certain key elements that are recommended to all organizations because they work as a foundation for the accountability of any Organisation.

By establishing the best Export Compliance practices from the beginning, each organisation will have a program or set up that evolves and grows along with the business, and has the ability to adapt to regulatory changes. [46]

There are 10 most important key elements which are identified by people which are experts in Export Compliance: The following are the 10 Key elements or principles, which are identified by major experts in Export Compliance: Governments, Regulatory Bodies, Banks, Institutions and special professionals. They are the foundations of this Code.

10 Principles of Export Compliance

There are ten most important principles which should be followed by any organization to be compliant with EIFEC. The following ten principles are mentioned below

1. Management Commitment to Compliance
2. Export Compliance Administration Program / Procedures
3. Appointment of Person in charge
4. Risk Assessment
5. Written European Export Compliance Administration Program (EUECAP)
6. Information and Training
7. Record Keeping
8. Compliance Monitoring and auditing/ assessment
9. Handling/ reporting Compliance problems /Corrective actions
10. Integration with quality management practices

1. Management Commitment to Compliance

Top Management of organization shall make a firm, strong commitment to comply with the letter and spirit of applicable laws.

In order to ensure adherence to export laws and regulations, foster and nurture a widespread Organization culture of compliance, the Top

Management shall actively:

•prepare and adopt an Export Compliance Commitment Statement formally – this statement shall be written in clear and concise way, formatted consistently with other management policy statements;

- widely circulate the Export Compliance Commitment Statement to the attention of all employees involved in Export activity in any form suitable for the Organisation, conveying the authority of the Chairman, Chief or other Decision Makers and giving clear indication of the Export Compliance policy of the Organisation (internal context);

- communicate the Statement to all parties concerned (contractors, consultants, interns, freight forwarders, distributors, sales representatives, joint venture partners and any other stakeholder directly or indirectly involved in the Export activity) and promote it as an essential condition to do business with the Organisation (external context);

- ensure that appropriate organisational officials (either internal or external) are designated with the responsibility for the Export Compliance Program (Roles and Responsibilities);

- promote a real and permanent connection between the Organisation's core values and the Export Compliance Program.[46]

2. Export Compliance Administration Program

Organisations shall draw up an effective and operate a group of formal written compliance policies and procedures (ECAP) for the business involved that mirror as best practices illustrated in this Code and provide enough safeguards at each key step in the Export process management.

3. Appointment of person(s) in charge

It's the responsibility of everyOrganisation to appoint its own Export Compliance Officer (ECOF), who is mostly responsible for compliance issues. Selection of the ECOF among its own employees ought to be foremost natural and simple solution. Wherever necessary, however, duties concerning Export Compliance might be delegated to an external Export Compliance Officer,however even therefore an internal register, recording all responsibilities associated with every stage of Export Compliance, shall be maintained and updated as necessary.[46]

4. Risk Assessment and Treatment

Organisations shall determine vulnerabilities in their trade method so as to forestall risks of export laws violations.

First of all, Organisations shall draw the flow of their Export method to capture it during a comprehensive, elaborate manner and outline in small stages procedures for daily operational and organisational implementation by workers that may be concerned within the Export activity.

Charting the method ought to begin from the step wherever the Transanction begins (i.e. receipt of order). It shall be followed it the entire manner through, up to completion, and determine every action and call purpose.

According to this method flow-chart, the person(s) responsible of managing every totally different step shall be clearly known.

Key steps of Risk Assessment and Treatment

Process design:

- prepare the Flow Chart of the Export / trade / Transactions process;
- detect the vulnerabilities in the process to determine the risk of Export laws violation;
- define the screenings to handle the vulnerabilities;
- determine the frequency of checks to be performed throughout the flow process;
- determine "stop," "hold" and/or "cancel" criteria to prevent Transactions from moving forward when checks fail;
- determine "release" criteria for Transactions that have been stopped and submitted to further review.

Key procedures:

- classification of all Items that can be exported, in order to establish if they are subject to any restriction as for export law (Item Risk);

- Export Authorization determination: determine if Items require a license/authorization, by evaluating Jurisdiction and Classification (i.e. nature of goods/services, customers and final destinations); determination should be supported using an Item and Country Decision Table (ICDT), to be prepared, developed and maintained. Organisation must verify the license application process/mechanism;

- screening of all third parties involved in any Transaction, so to prevent the Organisationfrom doing business with prohibited/restricted entities, by using an appropriate screening tool/process (Customer / Third Party Risk);

- tracing of the paths of all document files that form the entire Transaction story and their (physical and/or digital) location. [46]

5. Information and Training

Export regulations and laws often change, and products and their end - users are continually evolving: procedures shall be put in place for acquiring details of changes/updates made in legislation and disseminating them to relevant personnel.

Training and competence needs of staff in relation to Export Compliance shall be assessed and fulfilled.

Education and training activities shall be documented and retained.

A knowledge-base will be created and updated on a regular basis. It shall include a reference list of sources of information and contacts for advice.

Consultations with experts and national competent authorities shall be promoted immediately when changes in the international political stability of some importing countries can involve risks of no-compliance.

6. Record Keeping

- Organisations shall maintain all managed activities records which is been covered by export legislation for at least the minimum period required by law.

- Organisations shall establish a policy about time, mode, place and safeguards for maintaining and storing records.

- Organisations shall designate staff and allocate them responsibilities for record keeping. All these procedures should be documented

7. Audit

Organisations shall protect the integrity of ECAP with the verification of operational compliance procedures within all the Organisation Export-related divisions and locations reflect the written compliance procedures and are consistent with current export regulations.

Organisations shall conduct at planned intervals internal audits of the Export Compliance program, to maintain reference standards set in compliance Procedures.

According to the size and complexity of the Organisation, the audit may be either a self- audit carried out according to a simple checklist of questions or delegated to a central auditing function or third party qualified professionals.

Undergoing regular independent certification by internationally accredited bodies according to Export Compliance system Certification (based on EIFEC International Standard EC1001 series) enhances a strong effect of external credibility and Compliance performance.[46]

8. Handling Non Compliance Issues

Corrective and disciplinary actions shall be planned for cases of non-compliance with company policies and procedures, or incidents contrary to export laws.

In case of doubt about a suspicious order, Organisations should consult Export Compliance experts and, by notifying their suspicions to National authorities, can obtain advice and guidance in the light of the more comprehensive information available.

Organisations shall establish a policy to handle non-compliance issues.

The policy shall include – inter alia – provisions for:

- taking action for control and correction;
- evaluating and implementing actions to eliminate the root causes of non-compliance issues;
- reviewing the effectiveness of action taken;
- making changes to the Export Compliance management system, if necessary;
- exchanging information with the relevant authorities (e.g. notifying suspicious Transaction requests, forwarding voluntary declarations etc.).

All employees shall know their specific responsibilities and how they can help their Organisation to identify suspicious requests and orders.

They need to be well informed on indicators of possible Export laws violation and procedures shall be set up to provide them with clear guidance concerning what actions they shall take in the event of suspected incidents of Export-related noncompliance.

The Top Management shall also foster a safe environment for employees who raise questions or concerns about compliance, and make sure that they are and remain as independent as possible, protecting the whole Export Compliance staff, as far as possible, from any conflict of interests.[46]

9. Maintain your Export Compliance Manual

The Organisation shall collect and organise all drawn up operational and organisational policies and procedures into a formal written Export Compliance manual.

Depending on the size of the Organisation and the extent of its Export business, the written manual could range from a few to a lot of pages, but it has to be anyway relevant to the Organisation, easy to understand and well-known by all employees.

In order to be properly maintained, the manual shall be reviewed periodically (at least once a year) to ensure it is always kept up-to-date, and considering that many changes in the Organisation or in the Export regulations may require its revisions even before the periodic review timetable (Continual improvement).

10. Integration with Quality Management practices

Organisations should ensure that:

- All procedures and practices for the management of Export Compliance regulations are integrated with any corporate Quality Management system applicable to them;
- Within Quality Management practices, EC procedures are treated in the same manner and with equal importance as other organisational procedures;
    - in the case of AEO certified Organisations (or equivalent), convergence and integration with Export Compliance Program in form and substance are guaranteed, as appropriate to the complexity of the Organisation itself.[52]

Four Cornerstones of Export Control (Actors)

Figure 13: Four cornerstones of Export Control

Export Control is not a black and white situation

The interactions of the "four cornerstones" can lead to a situation in which:

- Transactions are "business as usual"
- Transactions are allowed, but still, it requires careful consideration
- Transactions can be allowed after being approved by the government
- Transactions cannot be proceed

Product Controls

Annex 1 Dual Use

The new European Dual-Use List is set out in Annex I to the regulation and replaces the existing Annex I of Council Regulation (EC) No 428/2009 as of 31 December 2014

Concretely:

1. Control is mainly based on changes on a global scale (e.g. US reform)
2. 10 dual use categories have been covered by 400 revisions, mainly to the notes
3. Addition and/or specification of various dual-use items were foreseen such as graphite, frequency changers, machine tools, viruses/toxins, integrated circuits and explosives
4. Changes based on recent experience: IT intrusion software ('spyware'); telecom & "internet surveillance" equipment
5. Removal of low risk or very common products

Products and & End-Use

Chemical exports

Companies should always be aware when sometimes activities are done in a sensitive region. Products could be misused, even though they might not be controlled by export controls body. Companies should be aware of consequences if transactions contain any red flags including unclear parties, suspicious quantities etc

Following a chemical attack in Syria, a number of European Companies got bad publicity althoughthe transactions were allowed at the time. [47]

Appendix 2

COMMON RISKS	TOOLS TO MITIGATE RISKS
Export without a license	Develop a License Determination Matrix
Unauthorized release of sensitive information or controlled technology	Understand Deemed Exports and Technology Control Plan, view the online training module
Servicing items located outside the U.S.	Develop a License Determination Matrix
Weak or no compliance structure	Build more decision making tools, check lists, automate processes, assign roles and responsibilities
Lack of communication within the organization	Develop Training Program and Written SOPs Get Senior Management Involved
Poor relationships with export facilitators	Publication: Freight Forwarder Guidance Review of Compliance Activities, Shipping Documents Conduct audits of Electronic Export Information AES Best Practices
No or underdeveloped export clearance procedures	Create Export Authorization Process
Unknown End-User or End-Use	Develop Screening Process Publication: Know your Customer Request an end-use statement Use Consolidated Screening List
Unaware of Diversion Risk	Use Destination Control Statement Publication: Best Practices for Transshipments
Violating Anti-boycott Laws	Detect and Report Anti-boycott issues

Figure 14: Export Compliance Risks and ways to mitigate

Decision Tree of Export Control

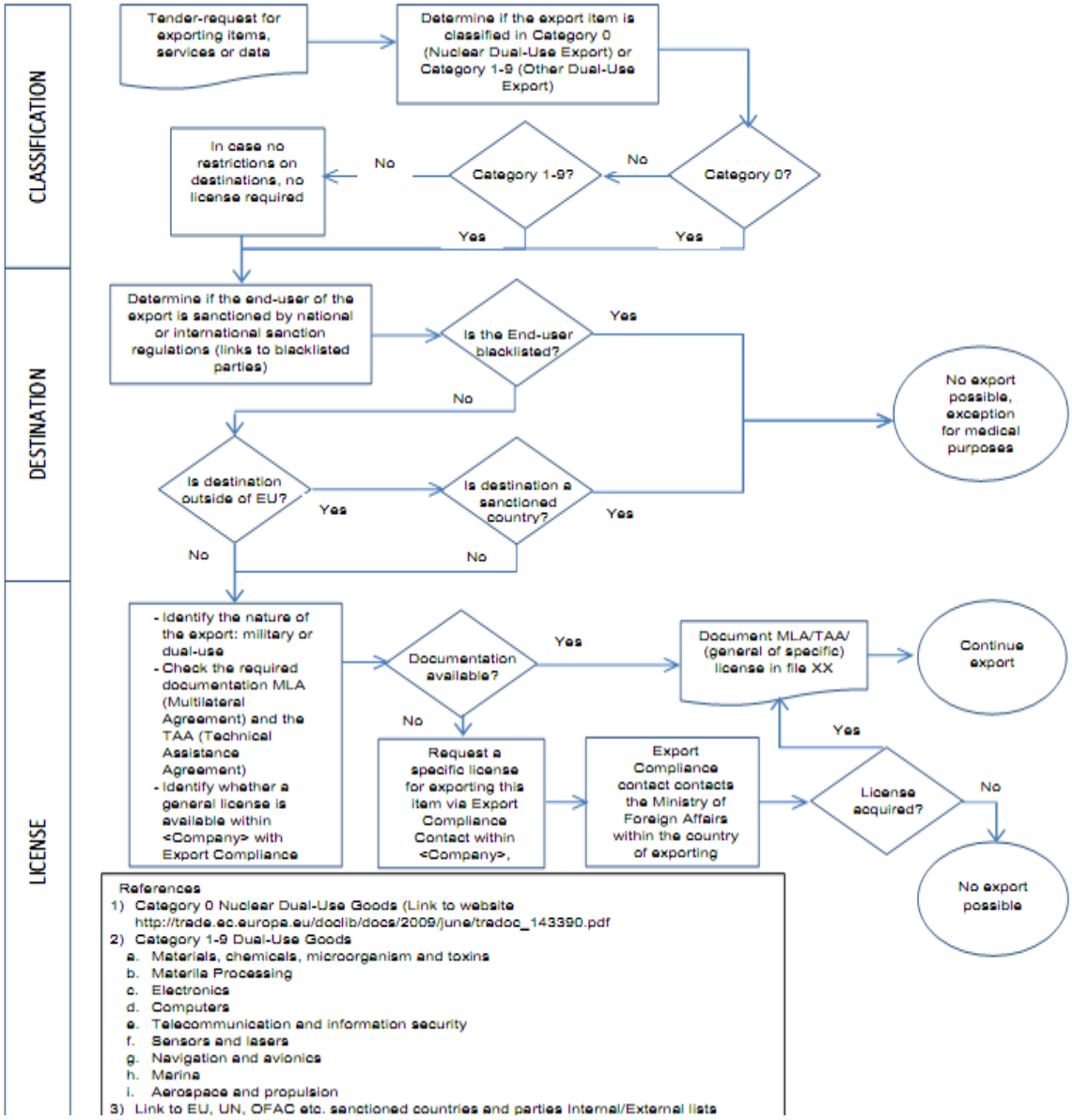


Figure 15: Decision Tree of Export Control

Export Compliance in Universities

EXPORT CONTROLS AND UNIVERSITY RESEARCH

We have discussed the importance of export control and export compliance for organizations but these are important for research institutes and universities too which are places from where the ideas of most innovative items and technology come. So Export Compliance is very important for these institutes too.

Universities and colleges are facing some challenges regarding balance in national security and economic vitality in relation with academic freedom, researches and publication in unrestricted way, and export control is clear solution to these challenges. It is important for researchers and administrators of university to have information that export laws apply on these researches. It should be noticed that these regulation doesn't have any impact on the normal activities of university up to some extent. In this part of thesis we will study EAR and ITAR regulations in brief way in relation to university purposes. This part of study will explain and present the representation of issues of export control which encounter universities research. This part will elaborate in clear way to apply the EAR or ITAR, it will explain to apply particular regulation to the exact scenario, will identify the issues, and discuss possible choices of action and their possible impact.[48]

All the important actors of institute including administration, staff and students are connected to state regulations which are imposing restriction of access, participation, restriction on the particular items transfer and information which are somewhat related to state security, foreign policy, anti-terrorism or non-proliferation. In these situations, the university community will deal with US export control regulations in US and with EU export control regulations in EU.

In U.S., technological innovation has huge impact on US security and its economic interests. Foreign students and researchers have huge contribution in US leading edge technologies which include technology related to defense in partnership with US and its students in university affiliated laboratory. US policymakers have accepted the contribution of foreign national students and researchers, but the main problem related to it is returning back of these students to home as the model of these items are in mind of these researchers and transfer of these items or technology to their home countries could have huge consequences for US national interests like defense etc. because of that the U.S. export control agencies put the responsibility on universities to understand the situation and comply with the regulations.

What do Export Controls usually cover?

In the case of universities, control is applied to export of items, information and software in the following specific area:

- Chemical, Biotechnology, and Biomedical Engineering
- Materials Technology
- Remote Sensing, Imaging, and Reconnaissance
- Navigation, Avionics, and Flight Control
- Robotics
- Propulsion System and Unmanned Air Vehicle Subsystems
- Telecommunications/Networking
- Nuclear Technology
- Sensors and Sensor Technology
- Advanced Computer/Microelectronic Technology
- Information Security/Encryption
- Laser and Directed Energy Systems
- Rocket Systems
- Marine Technology

University Activities Excluded From or Not Subject to Export Control

The restrictions on particular items, technology etc are mentioned above are under the export control regulations but along with these, there are certain kind of info and data which has been excluded or exempted from the scope of regulatory oversight by EAR and ITAR. These exclusions are applied to universities research and instructional activities. There are kind of variation among the regulation according to terminology. But at most of the time it includes information which is already published or part of catalog listed courses. Most of university activities and institutional research are not in the circle of export control as these research and activities are under these exclusion. However there are certain activities which don't fall under these exclusions. The exclusions that most often apply to university activities are covered in the following paragraphs, while university activities that are subject to export control are covered in the following section.

Publicly, Available (EAR); Public Domain (ITAR); or Information and

Informational Materials (OFAC)

"Information and Informational Materials" are generally excluded from the licensing requirements of most, if not all, of the OFAC country sanctions. The exclusion applies to "publications, films, posters, phonograph records, photographs, microfilms, microfiche, tapes, compact disks, CD ROMs, artworks, and news wire feeds."

The EAR contains exclusion similar to OFAC's provision. However, the EAR goes on to exclude additional items as not subject to the EAR because they are publicly available technology and software. Publicly available technology and software include those items that are already published or will be published; arise during, or result from, fundamental research; are educational, or are included in certain patent applications. [49]

In general, information is published when it becomes accessible to the interested public in any form, including:

- publication in periodicals, books, print, etc., available for general distribution for free or at cost;
- readily available at libraries open to the public or university libraries;
- patents and open patent applications available at any patent office; or
- Release at an open conference, meeting, seminar, trade show, or other gathering open to the public.

Fundamental research and educational information are discussed in more detail, below.

As discussed previously in this manual, the ITAR control the export of defense articles, which by definition includes any technical data designated in the USML. Information in the "public domain" is excluded from the scope of control of the ITAR (unless provided as part of a defense service) by its exclusion from the definition of technical data. In the ITAR "public domain" means "information which is published and which is generally accessible or available to the public". The definition provides a list of ways information may be considered generally accessible or available to the public, including:

- Through sales at newsstands and bookstores;
- Through subscriptions which are available without restriction to any individual who desires to obtain or purchase the published information;
- Through second class mailing privileges granted by the U.S. Government;
- At libraries open to the public or from which the public can obtain documents;
- Through patents available at any patent office;
- Through unlimited distribution at a conference, meeting, seminar, trade show or exhibition, generally accessible to the public, in the United States;
- Through public release (i.e., unlimited distribution) in any form (e.g., not necessarily in published form) after approval by the cognizant U.S. government department or agency; [49]
- Through fundamental research

Interesting fact is that ITAR just identify publication through public release but they don't

have ability of publication recognition by any electronic mean i.e. Internet. Information released during meeting and conferences are considered as in public domain in US.

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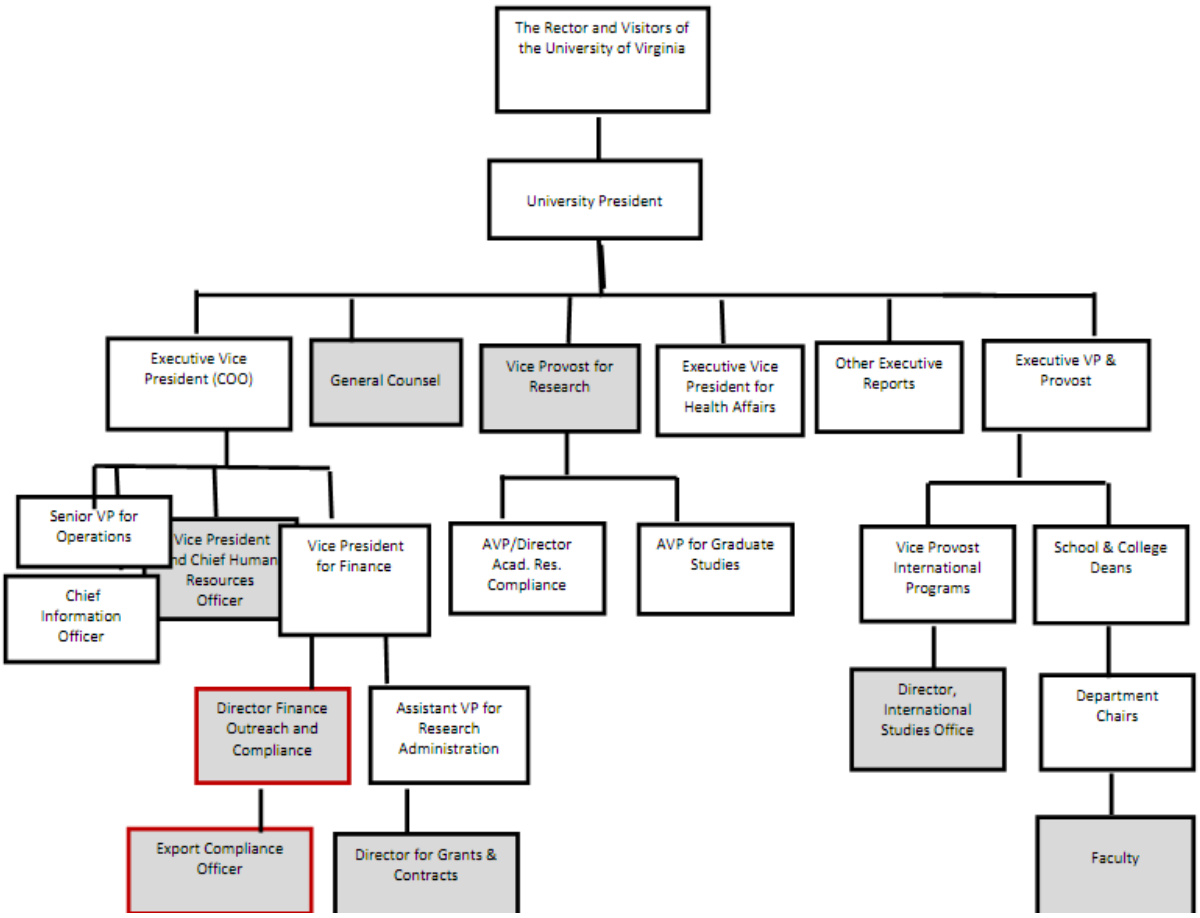

Figure 16: Organizational structure

Note: Boxes with gray background indicate the Key Cooperating Offices & Roles identified in the Organizational chart. The boxes outlined in red indicate the individuals who are empowered to apply for export licenses and other authorizations on behalf of the University.

Sanctions on Universities

EAR provides following sanctions

Willful Violations

University

If university exports dual use material or information unintentionally then a fine of up to the greater of $1,000,000 or five times the value of the exports for each violation.

Individual

A fine of up to $250,000 or imprisonment for up to ten years, or both, for each violation for a person who unintentionally export material or info without being licensed.

Knowing Violations

University

If university exports dual use material or information knowingly without permission then a fine of up to the greater of $50,000 or five times the value of the exports for each violation.

Individual

If individual takes information related to export control knowingly then a fine of up to the greater of $50,000 or five times the value of the exports or imprisonment for up to five years, or both, for each violation. [50]

What is coming in?	What are we doing?	What is going out?
Incoming Information • Publically available information is NOT controlled • Sponsor's proprietary information MAY be controlled • Sponsor provided export controlled information IS controlled **Incoming Physical Items** • Physical items DO NOT qualify for the FRE and are subject to export • Most basic, commercially available goods do not require an export license	Research IS subject to export controls when there are, • **Publication** restrictions • **Participation** restrictions based on nationality • **Dissemination** restrictions, limiting who can access Activities occurring outside the US MAY be controlled. Examples, • Field research abroad • Foreign Shipments	**Outgoing Information** • Publically available information is NOT controlled • Information resulting from a non-FRE project, it MAY be controlled **Outgoing Physical Items** • All physical deliverables created DO NOT qualify for the FRE and are subject to export

Figure 17: Research Considerations

Examples:

3 different scenarios of information is discussed based on examples

If incoming information is public without particular university restrictions, then output is not controlled.

If incoming information is public with a particular publication restriction, then output may be controlled.

If incoming information is export controlled, regardless university actions, then output is controlled.

How can one know if his research is controlled?

Export Control Exclusions

Educational Information Exclusion

Those information or technology which are part of teaching or issued by university as a course catalogue and university laboratories are considered as educational information and these will not be subjected to export controls.

Fundamental Research Exclusion (FRE)

There is term used called Fundamental Research Exclusion (FRE) which means the export control regulations gives permission to US universities to allow students, researchers, faculty etc from other countries to take part in fundamental research projects without getting any license. This give permission to US universities to share technology or software that was created with the help of foreign nationals as a result of fundamental research to use it in US or in their respective countries, which was intended to be published without getting any license.

Fundamental research is an important definition for universities. Fundamental research is basic or applied research in science, engineering, or mathematics, the results of which ordinarily are published and shared broadly within the scientific community, and for which the researchers have not accepted restrictions for proprietary or national security reasons.

The importance of FRE is very high because it's allow purely university based research otherwise it could be controlled by any of ITAR or EAR. Most of university research is included as fundamental and under FRE these are excluded from export controls. However the below table will explain in simple words, what will be qualify and what will not be qualify as Fundamental Research Exclusion (FRE). [51]

Does Qualify	Does Not Qualify
Software	Tangible Items
Information resulting from research	Input information (work done prior)
	ITAR defense services

Table 4: Fundamental Research Exclusion

Chapter 7Conclusion and Future Research Area

Conclusion

At the end of the thesis, it is possible to draw the conclusion on the objectives achieved and on the appliance of the methodologies adopted throughout this study. This study has described Export Compliance as a standard for trading and world of export. It draws a framework which elaborates how to control and manage risks related to export. In this way to have secured export operation, regulation will be in concern with Export Compliance. Then in US, International Traffic in Arms Regulations (ITAR) issued by the U.S. State Department and administered by the Office of Defense Trade Control, Export Administration Regulations (EAR) issued U.S. Bureau of Industry & Security, and the Office of Foreign Assets Control Regulations (OFAC) issued by the Department of Treasury's Office provide detailed information about working of Export Compliance as well as warn the organizations about the consequences of not following the regulations

These all offices are working on controlling the export of Dual use items. Dual-Use Items, products, and technologies are normally used for civilian but these can be used for military purposes too. The export of these items without license is crime and it may cause sanctions and punishments for organizations. Finally, consequences including punishments and sanctions for non-complying with regulations are bestowed.

After defending concepts and responsible organizations, thesis built a framework for managing risks related to export compliance. The risk explained by this study can be control and mitigate with the help of sanctions and punishments. To exclude out these risks, organizations require building a framework which will define beneficiaries and then it determines to constitute risks related to export compliance.

European Institute for Export Compliance (EIFEC) is also another organization which aimed to facilitate exporting in export compliance violations.

The development and adoption of EIFEC export compliance standards have influenced the governments to contemplate it not solely as an instrument for major enterprises however as a management instrument simple deployable and versatile for being safely active in international markets.However, proportionate to

the dimensional and operational quality of organizations, associate instrument will be and applied even by the tiniest organization; still, export compliance is associate rising issue that considerations any ventures in any nation. Non-compliance with international regulations faces enterprises with trouble consequences that may jeopardize their future activity and existence. This analysis has answered to all queries supported by some facts and points. It shows what proportion export compliance is very important in universities, so this could be instructed in each university.

Future Research Area

This thesis has covered most of important points but still the Export Control Compliance is very vast topic related to all countries in the world and still many points has to be discussed in the future. Wikipedia page will be very efficient if one work on it.

In order to fully understand how export control is managed today and their transition to a compliance program, the compliance program need to be translated for the entire world, modified and developed. It should include the roles and responsibilities of people involved and how the program is handled.

This thesis has discussed the subject of implementation of rules and sanctions of EU and US export control program. A topic for future research can be focusing on implementing same kind of rules and sanctions in developing countries.

A delimitation of this thesis has been exploring Export control concept in universities of US and some of European universities. It can further be of interest to study further if these concepts can be studied in universities of Asia and Africa so the youth will know the importance of compliance program.

The thesis recommends for future that the Export Control Reform Initiative work closely with universities and other stakeholders to specifically address the deemed export provisions and vigorously support the spirit and letter of the fundamental research exclusion.

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