

# Space Technologies' Compliance with Export Control Regimes

**Patrick Goergen, Founder & CEO  
Cross Borders <sup>1</sup> & RespectUs, Luxembourg (August 2019)**

Space has always represented a challenging environment for human exploration. While space is not subject to claims of national sovereignty, States are free to explore that expanse existing beyond the Earth and between celestial bodies, and which, everyone knows, is not completely empty. Luxembourg has recently gone the path and aims to contribute to the peaceful exploration and sustainable utilization of space resources for the benefit of humankind. Its vision is built on support for advanced research activities and technological capabilities, drawing on the country's existing expertise in the space sector and its ongoing strategy of economic diversification into future-oriented high-tech industries.

Space technologies have their origin in strategic and military domain. They have now become a key in high technology development, both in the military and civilian fields.

Technologies related to space launch vehicles may also be deployed in ballistic missiles and thus can have a major impact on the proliferation of weapons of mass destruction (WMD). Satellites play a vital role in the crisis management during natural catastrophes, or allow real time communication world-wide. At the same time, satellites may provide all kinds of support to military forces, ranging from gathering intelligence information to issuing early warning of hostile missile launches.

It is therefore not strange that international organizations are controlling and limiting trade and transfers of space technologies, essentially for national and international security <sup>2</sup> reasons. But how do these controls look like? What do space technology companies have to respect in their strategic and daily business, in order not to contravene international and national rules on export control, and to avoid to run a risk for heavy administrative and criminal sanctions <sup>3</sup>?

A reply to these questions requires to have a closer look on the technologies themselves (1), on their possible use (2), on their classification with regard to dual-use (4) and military lists (5), as well as on (6) possible sanctions and other restrictive measures dealing with them. An internal compliance program at the level of the company (8) seems to be the best instrument to achieve and demonstrate compliance with all export control related regulations (3) towards licensing authorities competent to issue authorizations (7).

## **1 - Space technologies may be divided in three main categories**

International and European law do not provide for a legal definition of the term "space technologies". Our approach here is not to provide for a detailed definition of this term, neither of the term "space", but to put them in the context of currently applicable export control regimes.

We could start by considering "space technologies" as technologies designed or intended for use in outer space or on a celestial body or, more general, in a space application.

It remains essential to understand what the term “technology” stands for. It has been defined by the Luxembourg Export Control Law of 27 June 2018 as meaning “any specific information or knowledge that is necessary for the development, production or use of a good, and that is provided by an act of providing services or is transmitted by means of technical documentation or technical assistance”<sup>4</sup>.

This definition is close to the definition in EU Dual-Use Regulation<sup>5</sup> where “technology” means specific information necessary for the development, production or use of goods and takes the form of technical data<sup>6</sup> or technical assistance<sup>7 8</sup>.

Colloquially, the term “technology” is also used synonymously for both physical goods and their underlying technical knowledge. From a legal perspective, however, and especially within the context of export control regimes, there is a clear distinction between a physical good or item and the associated technologies.

Space technologies may be categorized by various characteristics, such as their function, use, size or geographic location. In export control regimes, they are typically divided into three broad categories related to the application of the technology: (1) launch vehicles, (2) spacecraft and (3) ground support equipment.

### **1.1. Launch vehicles**

Launch vehicles are rocket-propelled transportation systems which carry spacecraft and their payloads into outer space. They are part of the launch system, also including launch pad, vehicle assembly and fueling systems, range safety and other related infrastructure.

Space launch vehicles need sufficient thrust to accelerate to very high velocity in order to orbit the Earth without falling back due to gravity and to reach a stable orbit.

Suborbital launch vehicles, including intercontinental ballistic missiles (ICBMs) and sounding rockets, travel at altitudes of 100 km above sea level, which is high enough to reach the edge of outer space. Their trajectory intersects the Earth’s atmosphere, so they will not complete one orbital revolution and not achieve escape velocity.

All launch vehicles are rocket-powered using one or more solid or liquid propellants.

Essential components of a launch vehicle are its propellant tanks, engines, structures, navigation and guidance equipment, separation systems, attitude control and flight data monitoring systems. Launch vehicles may be expendable (for a single use only) or fully or partly reusable.

Space launch vehicle is a state-of-the-art technology possessed by only a small number of advanced countries. It is therefore strictly protected and controlled, as is technology transfer because of its military application.

### **1.2. Spacecraft**

A spacecraft is a vehicle or vessel designed to operate in outer space. Unable to get into space on their own, they require a launch vehicle.

Spacecraft are composed of a platform (called “bus”) and the payload. The platform comprises all the subsystems required to provide and maintain the mandatory electrical and environmental

operations, such as the power supply, communications systems, attitude control, propulsion, thermal control.

The payload is usually attached to the platform and contains the people and instruments that perform the primary mission, for example cargo, passengers, flight crew, scientific experiments or other equipment.

Satellites could be considered part of this category even if, in general, they are objects that orbit the Earth, the moon or another celestial body, while spacecraft are vehicles or devices designed for travel or operation outside the Earth's atmosphere. About 4.000 intact satellites are currently living in orbit around Earth, only 1.800 of them being operational. Between 6.700 and 8.300 additional probes could be added during the next years <sup>9</sup>.

### **1.3. Ground support equipment**

Ground support equipment (GSE) integrates mechanical and electrical equipment. Mechanical GSE comprise spacecraft containers (used for transporting satellites to rocket launch centers), multipurpose trolleys (supporting the spacecraft or dedicated modules during horizontal or vertical integration and providing a table capable of tilting and rotating the spacecraft), lifting devices, handling devices, adapters and panel integration devices, all needed during spacecraft assembly, integration and test activities.

Electrical GSE allows the satellite or space launcher to integrate and validate the electrical functions of the spacecraft. It is composed of an overall check out equipment (OCOE, mainly provided by the spacecraft developer) and several front ends (SCOE) ensuring the interface between OCOE and the spacecraft itself.

Ground support equipment provides for tracking (measuring the position of a spacecraft), telemetry (monitoring the physical conditions of a spacecraft, such as its height, battery voltage or temperature) and command of the platform and the operation and exploitation of the payload.

## **2 - Space technologies may be of "dual-use"**

The term "dual-use" refers to a usage which is both of a civil and a military type. Due to their technical characteristics and unique possible applications, the majority of space technologies is dual use by nature <sup>10</sup>.

The technologies required to manufacture sophisticated weapons, including nuclear weapons and ballistic missiles, are very similar if not identical to those used in developing a launch vehicle. Both use the same propulsion and propellant, they need similar navigation and guidance equipment and consist of one or more stages.

Historically, the first launch vehicles were derived from intercontinental or medium-range ballistic missiles, designed to carry nuclear warheads. Sputnik 1 was launched in 1957 on board a Russian 8K71 rocket, a modified version of the R-7, the world's first ICBM. Explorer 1, the first satellite launched by the United States in outer space in 1958, was carried on a modified version of a PGM-19 Jupiter, the first nuclear tipped, medium-range ballistic missile of the United States Air Force.

Several modern launch vehicles are still derived from ballistic missiles (e.g. the Chinese 3-stage orbital carrier rocket Long March 4). However, the differing needs of space rockets and strategic missiles have caused the development of space launch vehicles and missiles to diverge.

The dual-use character of spacecraft is generally not depending on their capacity to carry weapons, but on their potential end-user application and because single components may be deemed militarily sensitive <sup>11</sup>.

Due to the various fields of application, satellite technologies play an important role in the development and life of modern civil society. Satellite services provide for a global, real-time exchange of information, they monitor Earth's land, oceans, ice packs, clouds and atmosphere or allow us to determine our exact location on the ground.

By contrast, satellite services may also be of great strategic advantage to military and intelligence operations. Communication satellites provide for wireless communication in battlefield situations, navigation satellites guide missiles to their targets and surveillance satellites deliver high resolution photos of enemy territory.

Suborbital spaceflight is important for commercial markets (space tourism, commercial imaging, film & television, fast package delivery), science (microgravity research, atmospheric research) and national security (surveillance, verification of experimental systems).

Single components of a spacecraft with characteristics exceeding certain performance parameters may also be considered dual use. Typically, radiation hardened devices, ultra-high resolution image sensors or certain propulsion systems are considered as militarily sensitive <sup>12</sup>.

Ground support equipment can be used for military purposes as well. This technology can be utilized to provide early-warning of ballistic missiles or to track satellites in Earth orbit. Furthermore, ground support equipment is used to obtain telemetric data of ballistic missile tests and for military communications purposes <sup>13</sup>.

Developing, testing, and delivering nuclear weapons is also closely related to R&D on space technologies. Delivery systems of nuclear warheads can be re-purposed as launch vehicles. Furthermore, certain technologies applied in spacecraft, including structural materials, communications equipment, avionics equipment and certain computers, also find use in nuclear weapons <sup>14</sup>.

Table. 1. Comparison of defense and civil missions.

| Utilizations              | Defense   | Civil  |
|---------------------------|---|--|
| Earth Observation         | <ul style="list-style-type: none"> <li>• Reconnaissance</li> <li>• Surveillance</li> <li>• Evaluation of Attacking</li> </ul>   | <ul style="list-style-type: none"> <li>• Mapping</li> <li>• Resource Exploration</li> <li>• Disaster Monitoring</li> </ul>   |
| Telecommunication         | <ul style="list-style-type: none"> <li>• C4ISR</li> </ul>   | <ul style="list-style-type: none"> <li>• Phone / Fax communication</li> <li>• Internet</li> </ul>  |
| Navigation                | <ul style="list-style-type: none"> <li>• GPS for Military Vehicles</li> <li>• Precision Bombing</li> </ul>  | <ul style="list-style-type: none"> <li>• GPS for Civil Vehicles</li> <li>• Rescue</li> </ul>   |
| Early Warning             | <ul style="list-style-type: none"> <li>• Missile Detection</li> <li>• Missile Tracking</li> <li>• Nuclear Explosion Monitoring</li> <li>• Rocket Tracking</li> <li>• Space Situational Awareness</li> </ul> | <ul style="list-style-type: none"> <li>• Resource Exploration</li> <li>• Weather Observation</li> <li>• Forest Fire Monitoring</li> <li>• Volcano Monitoring</li> <li>• Rocket Tracking</li> </ul> |
| Transportation            | <ul style="list-style-type: none"> <li>• Missile &amp; Rocket Propulsion</li> </ul>   | <ul style="list-style-type: none"> <li>• Rocket Propulsion</li> <li>• ISS Transportation</li> </ul>  |
| Space Situation Awareness | <ul style="list-style-type: none"> <li>• Missile/Satellite/Debris Detection &amp; Tracking</li> <li>• MII/Sat Evacuation</li> </ul>   | <ul style="list-style-type: none"> <li>• Debris Detection &amp; Tracking</li> <li>• Satellite Evacuation</li> </ul>  |

### 3 - Space technologies are critical for export control regimes

Technology export refers to the cross-border transfer of technologies from one entity to another. Such transfer may be tangible, in the form of any type of media, verbally in direct or telephone conversations or visually just by seeing how things are done.

It is the sovereign right of each State to control and regulate cross-border movements of goods, people and services. States usually control and restrict exports of military sensitive technology to critical States, as a mean to promote their national security and foreign policy interests and to prevent the proliferation of sophisticated weapons, such as ballistic missiles or WMD.

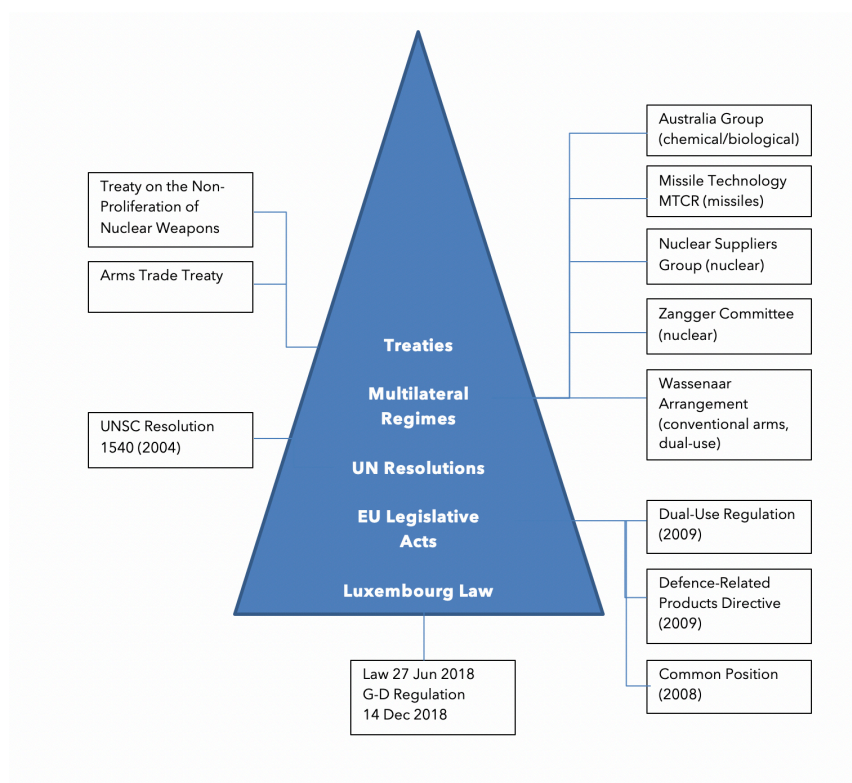
In order to be effective, export control regimes need to be coordinated as extensively as possible at international level.

Numerous international treaties and export control arrangements exist today aiming at the harmonization of national export control regulations and licensing policies. They restrict the spread of sophisticated weapons and establish common rules for the export of dual-use technologies. Furthermore, the United Nations Security Council (UNSC), acting under Chapter VII of the United Nations Charter, imposes arms embargoes or certain obligations upon states with regards to export controls.

There are no international treaties, arrangements or UNSC Resolutions whose specific subject matter is space technology export controls <sup>16</sup>.

However, space technologies usually fall within the scope of national and international export control regulations due to their inherent dual-use nature.

Graph. 2.: International and national export control regulations and regimes



## 4 - Compliance with Rules concerning Dual-Use Items

While national security remains the sole responsibility of each Member State<sup>17</sup>, the European Union has exclusive competence with respect to the common commercial policy<sup>18</sup>. This policy is based on uniform principles, particularly in regard to the achievement of uniformity in measures of trade liberalization, export policy and other trade matters<sup>19</sup>.

Controlling the export of dual-use items is at the forefront of international non-proliferation efforts and therefore is guided by major national security interests. The EC Dual-Use Regulation 428/2009, directly applicable in all EU Member States, has been complemented in the Grand Duchy of Luxembourg by the Law of 27 June 2018 on export control. Both legislative texts, to be read together, form the framework of the obligations exporters of space technologies must respect.

Dual-use items are items, including goods, software and technology, which can be used for both civil and military purposes, and shall include all goods which can be used for both non-explosive uses and assisting in any way in the manufacture of nuclear weapons or other nuclear explosive devices<sup>20</sup>.

To determine if a dual-use item requires a license, it is not sufficient to properly classify the item itself, but it needs a consideration of the transaction which the item is subject to.

### 4.1. Classification

Item classification is about determining whether the items are listed. This is done by comparing the technical characteristics of an item against the EU and possible national dual-use control lists<sup>21</sup>.

It is up to the operator to determine for himself whether his product is likely to be classified as a "dual-use item". For this purpose, the operator must compare the technical characteristics of the product with the criteria contained, for each item listed.

Particular attention must be paid to the classification of dual-use components and spare parts, and to the classification of dual-use software and technology that can be transferred by email or made available via, for instance, a "Cloud" service abroad.

In this context, information should be gathered about the possible misuse of a company's dual-use items in the context of e.g. conventional military or WMD proliferation.

It is always recommended to request information from suppliers about the dual-use classification of materials, components, subsystems that are processed or integrated by your company, including machinery used in the production. But It remains the company's responsibility to check the classification received from the suppliers.

Dual-use items are listed in two different Annexes to the Dual-Use Regulation - Annex I and Annex IV. To check if a company's product, software or technology enters in one of these lists requires a deep analysis, to be done by a technical engineer knowing perfectly the product's features and characteristics and to be validated by the company's export compliance officer.

A good (or a facility) that is not controlled shall be submitted to such a control if it contains a "controlled" component, and if that component is the main element and can in practice be detached and used as a component for other purposes.

#### 4.1.1. Annex I

Annex I to the Dual-use Regulation establishes a common list of dual-use items. The list is based on multilateral export control regimes including the WA and the MTCR <sup>22</sup>. In order to ensure full compliance with international obligations, the list is updated periodically by the European Commission <sup>23</sup>.

Dual-use items are subdivided into 10 categories:

- Category 0 - Nuclear materials, facilities and equipment
- Category 1 - Special materials and related equipment
- Category 2 - Materials processing
- Category 3 - Electronics
- Category 4 - Computers
- Category 5 - Telecommunications and « information security»
- Category 6 - Sensors and lasers
- Category 7 - Navigation and avionics
- Category 8 - Marine
- Category 9 - Aerospace and propulsion

Each item is identified by a (dual-use) code comprising a combination of letters and numbers <sup>24</sup>.

A correlation table <sup>25</sup>, published by the European Commission but with no binding character, provides possible dual-use codes for any particular good on the basis of its CN code <sup>26</sup>.

The Annex I list comprises over 500 dual-use items. Covered are both new and used goods <sup>27</sup>. Components of non-listed goods are subject to trade control when the listed-component is the principal element <sup>28</sup> of the good and can feasibly be removed or used for other purposes <sup>29</sup>.

*Table. 3.: Examples of space technologies listed as dual-use items in Annex I of Regulation 428/2009*

| Category 1<br>Special materials and related equipment   | Category 3<br>Electronics   |
|---|---|
| Certain materials and computer systems which are designed and used for space launch vehicles and sounding rockets <sup>30</sup> | Space-qualified <sup>31</sup> travelling wave tubes <sup>32</sup><br>Space-qualified atomic frequency standards <sup>33</sup>                         |
| Category 4<br>Computers   | Category 5<br>Telecommunications and information security   |
| Certain materials and computer systems which are designed and used for space launch vehicles and sounding rockets <sup>34</sup> | Technology required for the development or production of telecommunications equipment specially designed to be used on board satellites <sup>35</sup> |

| Category 6<br>Sensors and lasers  | Category 7<br>Navigation and avionics  | Category 9<br>Aerospace and propulsion   |
|---|--|--|
| Radar and tracking systems <sup>36</sup><br>Space-qualified solid-state detectors and imaging sensors designed for remote sensing applications <sup>37</sup><br>Cryocoolers <sup>38</sup><br>Laser radars and light detection and ranging equipment <sup>39</sup> | Receiving equipment for GNSS <sup>40</sup><br>Altimeters <sup>41</sup><br>Flight control systems <sup>42</sup><br>High accuracy guidance sets <sup>43</sup> deployed in launch vehicles<br>Space-qualified inertial measurement equipment <sup>44</sup><br>GNSS receiving equipment for military <sup>45</sup> | Sounding rockets capable of a range of at least 300 km <sup>46</sup><br>Space launch vehicles <sup>47</sup><br>Spacecraft <sup>48</sup><br>Spacecraft buses <sup>49</sup><br>Spacecraft payloads <sup>50</sup><br>On-board systems specially designed for spacecraft <sup>51</sup><br>Terrestrial equipment specially designed for spacecraft <sup>52</sup><br>Components, systems and structures therefor <sup>53</sup><br>Rocket propulsion systems <sup>54</sup><br>Launch support equipment <sup>55</sup><br>tagging and separation mechanisms <sup>56</sup> deployed in launch vehicles |

#### 4.1.2. Annex IV

Items mentioned in Annex IV to the Dual-use Regulation are considered the most sensitive in terms of potential contribution to the proliferation of WMD. They are identified by the same designator used in Annex I.

Annex IV is subdivided in two parts:

##### Part I

- Items of stealth technology
- Items of the Community strategic control
- Items of the Community strategic control – Cryptography – Category 5 Part 2
- Items of the MTCR technology

##### Part II

- Items of the Chemical Weapons Convention (CWC)
- Items of the NSG technology

*Table. 4.: Examples of listed space technologies  
in Part II of Annex IV of Regulation 428/2009*

|  |   |
|--|---|
| space launch vehicles and sounding rockets capable of delivering at least a 500 kg payload to a range of at least 300 km <sup>57</sup><br>specially designed production facilities (and its software and technology) for space launch vehicles <sup>58</sup> | rocket propulsion systems and components therefor <sup>59</sup><br>liquid propellant rocket engines <sup>60</sup><br>specially designed production equipment therefor <sup>61</sup> |
|--|---|



Annex IV does not list items of the MTCR technology if:

1. they are transferred on the basis of orders pursuant to a contractual relationship placed by the European Space Agency (ESA) or that are transferred by ESA to accomplish its official tasks;
2. they are transferred on the basis of orders pursuant to a contractual relationship placed by a EU Member State's national space organisation or that are transferred by it to accomplish its official tasks;
3. they are transferred on the basis of orders pursuant to a contractual relationship placed in connection with a EU space launch development and production programme signed by two or more European governments;
4. they are transferred to a State-controlled space launching site in the territory of a EU Member State, unless that Member State controls such transfers within the terms of Regulation 428/2009.

#### **4.1.3. Not listed dual-use items**

The fact that a given product does not fulfill the criteria of Annex I or Annex IV does not mean that any further screening is not necessary. On the view of the transaction which a non-listed item is subject to, an administrative authorization shall be required in certain cases.

#### **4.2. Authorization requirement**

The legal requirement to obtain a governmental authorization does not only depend on the classification of the item with regard their inclusion or not into the Annexes to the Dual-Use Regulation, but also on the type of operation to which the product is subject.

Restricted transactions comprise the (1) export, (2) transfer, (3) transit, (4) brokering of dual-use items, as well as (5) technical assistance and (6) intangible transfer of technology related to such items.

##### **4.2.1. Export**

Export refers to the transfer of tangible Union dual-use items and the re-export of tangible non-Union dual-use items from a EU Member State to a destination situated outside the EU customs territory <sup>62</sup>. For example, the shipment from Luxembourg to a spaceport in the US, Japan or China would fall into that category.

All exports of dual-use items listed in Annex I to the Dual-use Regulation are subject to an authorization requirement, regardless of their intended destination and end-use <sup>63</sup>.

Exports of dual-use items not listed in Annex I (this includes items listed in Annex IV) are subject to a "catch-all clause" <sup>64</sup>. Accordingly, an export authorization shall be required in the following cases:

- if the items in question ~~are or may be intended, in their entirety or in part, for use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices or the development, production, maintenance or storage of missiles capable of delivering such weapons, and if (a) the competent authorities of the Member State in which the exporter is established have informed him of such destination~~

- <sup>65</sup>, or (b) the exporter has grounds to suspect such a destination, has informed the ministers and the ministers have informed him that an authorization is required <sup>66</sup>;
- if the purchasing country or country of destination is subject to an arms embargo imposed by a decision or common position adopted by the Council or a decision of the Organisation for Security and Cooperation in Europe (OSCE) or an arms embargo imposed by a binding resolution of the Security Council of the United Nations <sup>67</sup> and if the exporter has been informed by the authorities that the items in question are or may be intended, in their entirety or in part, for a military end-use <sup>68 69</sup>;
  - if the items in question are or may be intended, in their entirety or in part, for use as parts or components of military items listed in the national military list that have been exported from the territory of that Member State without authorization or in violation of such an authorization and if the authorities have informed the exporter of such use <sup>70</sup>;
  - if the exporter is aware or suspects that these items are or may be intended, in their entirety or in part, for the uses referred to in Article 4 (1) of Regulation 428/2009, has informed the ministers who have informed him or his representative of the need to request the authorization <sup>71</sup>;
  - if the exporter has a reason to suspect that the export of the items affect or are likely to affect the national or external security of the country or the safeguarding of human rights, has informed the ministers who have informed him or his representative of the need to request the authorization <sup>72</sup>.

Information in the public domain <sup>73</sup>, basic scientific research <sup>74</sup> and the minimum necessary information for patent applications are exempt from an authorization requirement <sup>75</sup>.

| Operation | Goods listed in Annex I | Goods listed in Annex IV | Goods not listed in Annex I or Annex IV |
|-----------|-------------------------|--------------------------|---|
| Export    | Authorization           | Catch-all                | Catch-all                               |

#### 4.2.2. Transfer

The term "transfer" relates to the movement of tangible dual-use items within the EU <sup>76</sup>. A shipment from Luxembourg to the Guiana Space Centre to the northwest of Kourou in French Guiana, South America, would constitute such a transfer, as French Guiana is a territory of France.

The transfer of items included in Annex IV to the Regulation is subject to an authorization requirement <sup>77</sup>.

Luxembourg has also imposed an authorization requirement on the transfer of dual-use items not listed in Annex IV (this includes items of Annex I and non-listed items) if the final destination of the items concerned is outside the EU customs territory, where, at the time of transfer:

- the operator knows that the final destination of the items concerned is outside the European Union;
- export of those items to that final destination is subject to an authorization requirement in the Member State from which the items are to be transferred, and such export directly from its territory is not authorised by a general authorization or a global authorization;
- no processing or working is to be performed on the items in the EU Member State to which they are to be transferred <sup>78</sup>.

The transfer of a satellite in order to be launched from French Guiana into space would there qualify as requiring a prior authorization.

| Operation | Goods listed in Annex I                          | Goods listed in Annex IV | Goods not listed in Annex I or Annex IV          |
|-----------|--|--------------------------|--|
| Transfer  | Authorization if final destination is outside EU | Authorization            | Authorization if final destination is outside EU |

#### 4.2.3. Transit

“Transit” means the transport of tangible non-Union dual-use items entering and passing through the customs territory of the EU with a destination outside the customs territory<sup>79</sup>. An example would be the transit via Luxembourg to USA of an item shipped from China.

Dual-use items which transit though the EU are, in general, not subject to a license requirement.

However, a license shall be requested<sup>80</sup> for the transit of:

- a non-Community dual-use item listed in Annex I of Regulation (EC) 428/2009, where the items in question are or may be intended, in their entirety or in part, for use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices or the development, production, maintenance or storage of missiles capable of delivering such weapons<sup>81</sup>;
- a dual-use item not listed in Annex I of Regulation (EC) 428/2009, where the items in question are or may be intended, in their entirety or in part, for use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices or the development, production, maintenance or storage of missiles capable of delivering such weapons<sup>82</sup>;
- dual-use items, including those not listed in Annex I of Regulation (EC) 428/2009, intended for a military end-use if the purchasing country or country of destination is subject to an arms embargo imposed by a decision or a common position adopted by the Council or a decision of the Organisation for Security and Cooperation in Europe (OSCE) or an arms embargo imposed by a binding resolution of the Security Council of the United Nations<sup>83</sup>.

Such a transit may be prohibited by the licensing authorities. Before deciding a prohibition, the Government may, in individual cases, subject them to an authorization. An application for authorization shall therefore be required in any case.

| Operation | Goods listed in Annex I | Goods listed in Annex IV | Goods not listed in Annex I or Annex IV |
|-----------|-------------------------|--------------------------|---|
| Transit   | Catch-all               | Catch-all                | Catch-all                               |

#### 4.2.4. Brokering

Brokering refers to the activity of a company which:

- negotiates or arranges transactions for the purchase, sale or supply of dual-use items from a third country to any other third country, or
- sells or buys dual-use items that are located in third countries for their transfer to another third country <sup>84</sup>.

For example, a Luxembourg based space company which orders from a Chinese company the manufacturing of a satellite (or components thereof) and their shipment to the United States could be considered as a broker of dual-use items.

Ancillary services, such as transportation, financial services, insurance or re-insurance, general advertisement and promotion, are excluded from this definition <sup>85</sup>.

In principle, it is allowed to provide brokering services related to dual-use items from the EU customs territory.

However, for certain dual-use items, brokering is subject to a prior Governmental authorization. This concerns:

- dual-use items listed in Annex I of Regulation 428/2009, if the competent authorities of the Member State in which the broker is resident or established have informed that the items in question are or may be intended, in their entirety or in part, for use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices or the development, production, maintenance or storage of missiles capable of delivering such weapons <sup>86</sup>;
- non-listed dual-use items, for use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices or the development, production, maintenance or storage of missiles capable of delivering such weapons <sup>87</sup>;
- dual-use items for military end-use and where the purchasing country or country of destination is subject to an arms embargo imposed by a decision or a common position adopted by the Council or a decision of the Organisation for Security and Cooperation in Europe (OSCE) or an arms embargo imposed by a binding resolution of the Security Council of the United Nations <sup>88</sup>;
- dual-use items not listed in Annex I of Regulation 428/2009 if the broker has grounds for suspecting that these items are or may be intended for use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices or the development, production, maintenance or storage of missiles capable of delivering such weapons <sup>89</sup>.

| Operation | Goods listed in Annex I | Goods listed in Annex IV | Goods not listed in Annex I or Annex IV |
|-----------|-------------------------|--------------------------|---|
| Brokering | Catch-all               | Catch-all                | Catch-all                               |

#### 4.2.5. Intangible transfer of technology

The terms "intangible transfer of technology" refer to:

- transmission, digitally or orally, of documents irrespective of the medium;
- management or remote maintenance of computer networks;
- monitoring of magisterial courses or training, in any form whatsoever;
- study or scientific research activities;
- transmission of knowledge, practical, technical or scientific knowledge and information in any form whatsoever.

This raises the question of the participation into conferences, presentations made over a conference call system, or the use of cloud servers for the exchange of technical documentation, for example.

Not covered is the transfer of technology through cross-border movement of natural persons <sup>90</sup>.

The transfer takes place on the date on which the first act formalizes the entry into relation between the provider and the beneficiary of the know-how, the knowledge or the information transmitted <sup>91</sup>.

The intangible transfer of technology related to dual-use items is subject to a prior Governmental authorization <sup>92</sup>.

The same requirement is applicable where such a transfer contributes or is likely to contribute to proliferation <sup>93</sup>.

No authorization is required where the intangible transfer of technology involves knowledge in the public domain, basis scientific research or the minimum necessary knowledge for patent applications <sup>94</sup>.

| Operation                         | Goods listed in Annex I | Goods listed in Annex IV | Goods not listed in Annex I or Annex IV |
|-----------------------------------|-------------------------|--------------------------|---|
| Intangible Transfer of Technology | Authorization           | Authorization            | Catch-all                               |

## 5 - Compliance with Rules concerning Defence-Related Products

As for dual-use items, national security interests are at stake when it comes to arms control. To the contrary of dual-use items where the European Union has direct legislative competence, defence-related products remain under the competence of the respective EU Member States.

The EC Directive 2009/43 <sup>95</sup> in that field is currently transposed in the Grand Duchy of Luxembourg by the Law of 27 June 2018 on export control.

By analogy with what has been said about dual-use items, the same process must apply in order to determine an authorization requirement, that is a product classification and an assessment of the transaction which the said product is subject to.

## 5.1. Classification

Luxembourg law <sup>96</sup> refers to defence-related products in order to cover 3 different categories <sup>97</sup> of items:

### 5.1.1. Goods included in the Common Military List of the European Union

The Common Military List of the European Union covers military goods as well as software and technology specially designed or modified for the development, production or use of the listed goods.

Goods are listed in 22 different categories <sup>98</sup>. Most relevant for space-related technologies are ML4 (Bombs, torpedoes, rockets, missiles, other explosive devices and charges and related equipment and accessories, and specially designed components therefor), ML10 (Aircraft, lighter-than-air vehicles, Unmanned Aerial Vehicles ("UAVs"), aero-engines and aircraft equipment, related equipment, and components, specially designed or modified for military use), ML11 (Electronic equipment, "spacecraft" and components, not specified elsewhere on the EU Common Military List), ML21 (Software) and ML22 (Technology).

Included are, for example, the following items:

*Table. 5.: Examples of listed space technologies  
in EU Common Military List*

|       |   |       |   |
|-------|---|-------|---|
| ML 4  | rockets, missiles and components therefor, specially designed for military use <sup>99</sup>  | ML 11 | satellite navigation system jamming equipment and specially designed components therefor <sup>100</sup><br>spacecraft <sup>101</sup> (and its components) specially designed or modified for military use <sup>102</sup>  |
| ML 19 | space-qualified <sup>103</sup> accelerator components when specially designed for Directed Energy Weapon (DEW) systems <sup>104</sup><br>space-qualified foils for neutralizing negative hydrogen isotope beams when specially designed for Directed Energy Weapon (DEW) systems <sup>105</sup> | ML 20 | equipment specially designed or configured to be installed in space applications, capable of operating while in motion and producing or maintaining temperature below 103 K (- 170 ° C) <sup>106</sup><br>superconductive electrical equipment (rotation machinery or transformers) specially designed or configured to be installed in space applications, and capable of operating while in motion <sup>107</sup> |
| ML 21 | software for those goods <sup>108</sup>   | ML 22 | technology for those goods <sup>109</sup>   |

The list is updated, once a year, by the Council of the European Union and forms the basis of an amendment of the annex to Directive 2009/43/EC. The most recent version dates 18 February 2019<sup>110</sup>.

### **5.1.2. Environmental modification techniques used for military or other hostile purposes and having widespread, long-term or severe effects as a means of causing destruction, damage or injury to any State**

The said techniques are those defined by the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, adopted on 10 December 1976. They should be able to change the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space, through the deliberate manipulation of natural processes.

There should be no relevance thereto with regard to goods and services dealt with by companies of the space industry.

### **5.1.3. Goods listed in the United Nations Register of Conventional Arms**

These products are listed in 9 different categories<sup>111</sup>. Generally speaking, there should be no relevance for space-related technologies, as this list only concerns heavy and small weapons.

## **5.2. Restricted activities**

### **5.2.1. Exports**

The export (or re-export) of a listed defence-related product is subject to a prior ministerial authorization.

The same authorization requirement applies for military equipment which is not on the list of defence-related products<sup>112</sup> where:

- the exporter has reason to suspect that the equipment is or may be intended, on whole or part, to contribute to the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons, or other nuclear explosive devices, or the development, production, maintenance or storage of missiles delivering such weapons;
- the exporter has reason to suspect that the export or material affects or is likely to affect the national or external security of the Grand Duchy of Luxembourg or the safeguarding of human rights;
- the ministers have informed the exporter that the equipment may be intended, in whole or in part, to contribute to the development, production, handling, operation, maintenance, storage, detection, the identification or dissemination of chemical, biological or nuclear weapons, or other nuclear explosive devices or the development, production, maintenance or storage of missiles capable of delivering such weapons;
- the buyer or destination country is subject to an arms embargo imposed by a decision or common position adopted by the Council of the European Union or a decision of the Organization for Security and Cooperation in Europe (OSCE) or imposed by a binding

resolution of the United Nations Security Council and if the ministers have informed the exporter that the equipment in question is or may be intended, in whole or in part, for a military end-use;

- the ministers have informed the exporter that the material in question is or may be intended, in whole or in part, for use as parts or components of defence-related products which have been exported from the territory of the Grand Duchy of Luxembourg without an authorization or in infringement of such authorization.

No ministerial authorization shall be required <sup>113</sup>:

- for the purposes of passing <sup>114</sup> through the Grand Duchy of Luxembourg;
- where the supplier and the recipient are government bodies or part of the armed forces;
- where supplies are made by the European Union, NATO, International Atomic Energy Agency or other intergovernmental organizations for the performance of their tasks.

The export to a recipient located in a third State to the European Union of environmental modification techniques is prohibited <sup>115</sup>.

| Operation | Goods listed on EU Common Military List | Environmental modification techniques | Goods listed in UN Conventional Arms Register | Goods not listed |
|-----------|---|---------------------------------------|---|------------------|
| Export    | Authorization                           | Prohibition                           | Authorization                                 | Catch-all        |

### 5.2.2. Imports

The import of a listed defence-related product is subject to a prior ministerial authorization.

By way of an exception, the import by a recipient located in the Grand Duchy of Luxembourg originating from a third State to the European Union of environmental modification techniques is prohibited.

| Operation | Goods listed on EU Common Military List | Environmental modification techniques | Goods listed in UN Conventional Arms Register | Goods not listed |
|-----------|---|---------------------------------------|---|------------------|
| Import    | Authorization                           | Prohibition                           | Authorization                                 | No restriction   |

### 5.2.3. Transit

The transit of a listed defence-related product is subject to a prior ministerial authorization.

By way of an exception, the transit by the territory of the Grand Duchy of Luxembourg of environmental modification techniques is prohibited.



| Operation | Goods listed on EU Common Military List | Environmental modification techniques | Goods listed in UN Conventional Arms Register | Goods not listed |
|-----------|---|---------------------------------------|---|------------------|
| Transit   | Authorization                           | Prohibition                           | Authorization                                 | No restriction   |

#### 5.2.4. Transfer

The transfer of a listed defence-related product is subject to a prior ministerial authorization.

For certain products and certain destinations, general transfer authorizations of the Grand Duchy of Luxembourg (AGTF001 to 004) may be used by the supplier. In such a case, a prior registration with OCEIT shall be required by using the declaration form. The general transfer authorizations of the Grand Duchy of Luxembourg (AGTF) are not time limited.

No ministerial authorization shall be required:

- for the purposes of passing through the Grand Duchy of Luxembourg;
- where the supplier and the recipient are government bodies or part of the armed forces;
- where supplies are made by the European Union, NATO, International Atomic Energy Agency or other intergovernmental organizations for the performance of their tasks;
- where the transfer is necessary for the implementation of an armament cooperation program between Member States of the European Union;
- where the transfer is linked to humanitarian aid in the case of a disaster;
- where the transfer is made as a donation in an emergency;
- for a transfer of defence-related products from the Grand Duchy of Luxembourg with as final destination Belgium or the Netherlands.

The transfer of environmental modification techniques is however prohibited.

| Operation | Goods listed on EU Common Military List | Environmental modification techniques | Goods listed in UN Conventional Arms Register | Goods not listed |
|-----------|---|---------------------------------------|---|------------------|
| Transfer  | Authorization                           | Prohibition                           | Authorization                                 | No restriction   |

#### 5.2.5. Brokering

The definition of “brokering” in the context of defence-related products is slightly different from that regarding dual-use items. Brokering means here <sup>116</sup> the activity of:

- negotiating or organizing transactions which may involve the transfer of defence-related products from a third country to another third country;
- purchasing, selling or transferring defence-related products from a third country to any other third country;

- exporting defence-related products from the territory of the Grand Duchy of Luxembourg or that of another Member State of the European Union;
- providing auxiliary services such as the provision of technical assistance, the activity related to the conclusion of a lease, gift, loan or deposit relating to the transfer of the concerned products, transportation services, financial, insurance and re-insurance services, general advertising, and promotion.

The exercise of a brokering activity in connection with defence-related products shall be subject to authorization <sup>117</sup>.

From a geographical point of view, this concerns:

- the exercise on the territory of the Grand Duchy of Luxembourg of the brokering activity in relation to defence-related products;
- any brokering activity in relation to defence-related products where the export of such products is from the territory of the Grand Duchy of Luxembourg or through the territory of the Grand Duchy of Luxembourg;
- any brokering activity in relation to defence-related products, where the brokerage activity is exercise outside the territory of the Grand Duchy of Luxembourg by a broker established on the territory of the Grand Duchy of Luxembourg, who operates from the Grand Duchy of Luxembourg or whose center of main interests is located in the Grand Duchy of Luxembourg

<sup>118</sup>.

The brokering of environmental modification techniques is again prohibited <sup>119</sup>.

| Operation | Goods listed on EU Common Military List | Environmental modification techniques | Goods listed in UN Conventional Arms Register | Goods not listed |
|-----------|---|---------------------------------------|---|------------------|
| Brokering | Authorization                           | Prohibition                           | Authorization                                 | No restriction   |

#### 5.2.6. Technical assistance

The provision of technical assistance is prohibited where it is linked to certain military end-uses <sup>120</sup>.

This prohibition concerns any operator (natural or legal person residing or established in the Grand Duchy of Luxembourg) who provides, directly or indirectly, technical assistance, including in an oral form,

- outside the European Union
- for the benefit of a national of a country other than a Member State of the European Union,

in the form of:

- instruction
- training
- transmission of working knowledge or skills
- consulting services

related to

- repairs
- development
- manufacture
- assembly

- testing
- maintenance, or
- any other technical service

where

- it is or may be intended to contribute to the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices, or the development, production, maintenance or storage of missile capable of delivering such weapons; or
- the country of destination is subject to an arms embargo decided by a common position or joint action adopted by the Council of the European Union, or a decision of the Organization for Security and Cooperation in Europe, or imposed by a binding resolution of the United Nations Security Council, and, if such technical assistance is or may be related to a military end-use.

No prohibition applies to technical assistance provided to Australia, Canada, Japan, New Zealand, Norway, Switzerland and the United States of America. No prohibition applies, as well, for technical assistance where it takes the form of transferring information that is in the public domain or constitutes basic scientific research, or for technical assistance where it is in oral form and not related to one or more export control regime, bodies and treaties <sup>121</sup>.

#### 5.2.7. Intangible transfer of technology

The intangible transfer of technology related to defence-related products is subject to a prior Governmental authorization <sup>122</sup>. The same requirement is applicable where such a transfer contributes or is likely to contribute to proliferation <sup>123</sup>.

As for dual-use items, no authorization is required where the intangible transfer of technology involves knowledge in the public domain, basis scientific research or the minimum necessary knowledge for patent applications <sup>124</sup>.

| Operation                         | Goods listed on EU Common Military List | Environmental modification techniques | Goods listed in UN Conventional Arms Register | Goods not listed |
|-----------------------------------|---|---------------------------------------|---|------------------|
| Intangible transfer of technology | Authorization                           | Authorization                         | Authorization                                 | Catch-all        |

## 6 - Compliance with Rules related to Sanctions and Embargoes

The restrictive measures of the European Union, together with the sanctions adopted by the United Nations Security Council, are preferred instruments for imposing coercive measures on third countries. Luxembourg is responsible for taking the necessary steps to implement the decisions of the Security Council and, as a Member State of the European Union, must also implement European restrictive measures by adopting the necessary legislation or implementing measures.

Measures have different forms, depending on the objectives pursued and their expected efficiency:

- diplomatic sanctions (expulsion of diplomats, severance of diplomatic relations, suspension of official visits);
- the suspension of cooperation with a third country;
- boycott of sport or cultural events;
- financial sanctions (freezing of funds or economic resources, prohibition of financial transactions, restrictions on export credits or investments);
- prohibition of flights;
- restrictions on admission; and
- trade sanctions (restrictions on the export and import of certain goods and resources, including arms embargoes and embargoes on equipment that may be used for internal repression).

Arms embargoes are aimed to stop the flow of weapons and military equipment to conflict areas or regimes that may be used for internal repression or aggression against a foreign country. They usually include a ban on the sale, supply, transfer or export of armaments and related materials of any kind, including weapons and ammunition, military vehicles and equipment, paramilitary equipment and spare parts, as well as a prohibition on providing financing, financial assistance and technical assistance, brokerage services and other services related to military activities and the supply, manufacture, maintenance and use of weapons and equipment related of any type.

An embargo on dual-use items is applied on a case-by-case basis, particularly where there are risks associated with the manufacture of weapons of mass destruction.

The implementing measures taken by the Grand Duchy of Luxembourg have been adopted by the Grand-Duke Regulation of 14 December 2018. Annex 1 indicates the Luxembourg national measures necessary to apply the measures decided by the Council to the Grand Duchy of Luxembourg.

Updates to the EU restrictive measures are regularly implemented by twice-a-year modifications of Annex 1 <sup>125</sup>.

*Table. 6.: Overview on the currently applicable restrictive measures for dual-use items and defence-related products*

| Operation                | Countries under restrictive measures   |
|--------------------------|--|
| Dual-Use Items           |  |
| Export                   | Korea (Democratic People's Republic), Iran, Myanmar / Burma, Russia (Federation of), Syria   |
| Import                   | Korea (Popular Democratic Republic), Iran  |
| Brokering                | Iran, Russia (Federation of)   |
| Defence-Related Products |  |
| Export                   | Belarus, Congo (Democratic Republic), Korea (Democratic People's Republic), Terrorist groups, Iran, Lebanon, Libya, Myanmar/Burma, |

|                      |  |
|----------------------|--|
|                      | Central African Republic, Russia (Federation of), Sudan, South Sudan, Yemen, Zimbabwe  |
| Import               | Iran, Lebanon, Russia (Federation of), Syria   |
| Brokering            | Congo (Democratic Republic), Terrorist groups, Iran, Lebanon, Central African Republic, Sudan, South Sudan   |
| Technical assistance | Belarus, Congo (Democratic Republic), Korea (Democratic People's Republic), Terrorist groups, Iran, Lebanon, Libya, Myanmar/Burma, Central African Republic, Russia (Federation of), Sudan, South Sudan, Yemen, Zimbabwe |

## 7 - Authorizations

The authorizations foreseen by export control regimes are issued by administrative authorities, in Luxembourg by one respectively two member(s) of the Government. The Law of 27 June 2018 and its Grand Duke Regulation of 14 December 2018 are giving rules for the application and issuing process.

### 7.1. Applications

#### 7.1.1. Submission

Operators must submit applications for an authorization to OCEIT <sup>126</sup> using the case-specific application form <sup>127</sup>.

The application may be made by mail or electronically (if the operator has previously obtained OCEIT's approval).

The application (or the declaration) shall be signed by a person authorized to commit the applicant. By this signature, the applicant certifies the accuracy of the information provided in the application and that of the content of any documents attached to it. He / she undertakes as well to provide the goods concerned with a destination in accordance with his / her application.

Operators must supply the competent authorities with all relevant information required for their applications, in particular on the end-user, the country of destination and the end-use of the relevant items.

#### 7.1.2. Supporting documents

The supporting documents to be attached to the application are the following:

- Detailed explanatory letter of the operation
- End-use certificate
- Invoice / Proforma invoice (or sales agreement)
- Recent extract from RCS (less than 3 months)

Additional case-specific documents are respectively indicated in the application form.

### **7.1.3. Deadlines for reply**

Any application shall be acknowledged by OCEIT. In case of an incomplete application, the applicant shall be informed of the need to provide additional documents and any consequences for the period for processing the application.

The application for authorization shall be processed within 60 working days of the day on which the file is complete. This 60-days period may be extended for a maximum of 30 working days. The extension and its duration shall be duly reasoned and notified by OCEIT before the expiry of the initial period.

In the absence of a reply within the period provided for, the application for authorization shall not be considered as granted.

## **7.2. Authorizations**

### **7.2.1. Licensing authorities**

All authorizations are issued by the Minister responsible for Foreign Trade.

A second signature shall be required, this time from the Minister responsible for Foreign Affairs, in the case of export, transit, transfer, brokering, technical assistance or intangible transfer of technology relating to dual-use items or defence-related products <sup>128</sup>.

### **7.2.2. Type**

The basic type of authorization is the individual authorization. It is granted to an individual operator covering an operation for a specified quantity of goods and taking place in one or more phases <sup>129</sup>.

Global authorizations are granted to the operator for a type or category of goods valid for transactions with one or more specified customers in one or more third countries <sup>130</sup>. They require an internal compliance program to be implemented and executed <sup>131</sup> (more hereto in Section 8 below).

General authorizations may be published on a national and European level.

The Grand Duchy of Luxembourg has published general authorizations for the transfer of defense-related products <sup>132</sup>. They offer a highly simplified procedure and are reproduced in the template registration forms indicated in Annex 7 of Grand Duke Regulation of 14 December 2018. They may be used by suppliers upon the condition to register with OCEIT using the form. Registration shall be automatic and notified <sup>133</sup> by OCEIT to the supplier at the latest within 10 working days following the receipt of the registration form.

No national general authorizations have been issued by the Luxembourg Government for dual-use items <sup>134</sup>.

EU General Export Authorizations (EU001 to EU006) <sup>135</sup> for dual-use items have been issued directly by the European Union. Each EU GEA contains a precise list of covered destinations, a specific list of items that may be exported to those destinations and a set of conditions of use, which must be

adhered to when exporting under the particular authorization. Exporters using EU GEAs must notify their use to OCEIT using a registration form <sup>136</sup>. The use of EU GEAs may be prohibited by licensing authorities where they have a “reasonable suspicion” about an exporter’s ability to fully comply with the terms of the EU GEA or with export control legislation in general <sup>137</sup>.

Certain goods and technologies deployed in outer space are covered by EU001, EU003 and EU004.

EU GEA 001 <sup>138</sup> covers the export of most dual-use items of Annex I <sup>139</sup> to Australia, Canada, Japan, New Zealand, Norway, Switzerland, Liechtenstein and the US. Excluded are all items listed in Annex IV, such as rocket propulsion systems and staging and separation mechanisms, which can also be used in missiles.

EU GEA 003 <sup>140</sup> concerns exports of most items listed in Annex I <sup>141</sup> to 24 destinations, where the relevant item was initially exported from the EU under a valid license and later re-imported into the EU for the purpose of maintenance, repair or replacement.

EU GEA 004 <sup>142</sup> covers the same items and destinations as EU GEA003 for the temporary export for exhibitions and fares.

In deciding whether or not to grant an export authorization or an authorization for brokering services, the competent authorities shall take into account all relevant considerations, including obligations under the relevant international non-proliferation regimes, export control arrangements and existing sanctions and arms embargoes, considerations of national foreign and security policy and considerations about intended end-use and the risk of diversion <sup>143</sup>.

### 7.2.3. Duration of validity

Authorizations shall be valid <sup>144</sup>:

|          | Individual authorization | Global authorization |
|----------|--------------------------|----------------------|
| Validity | 1 year                   | 3 years              |
| Renewal  | 6 months                 | 18 months            |
| Total    | 1.5 years                | 4.5 years            |

### 7.2.4. Post-authorization obligations

The operator shall transmit to OCEIT, at the latest 10 working days after the expiry date, the obsolete authorization which is in his / her possession <sup>145</sup>. The operator shall report to OCEIT the loss of any authorization document <sup>146</sup>.

The operator must comply with the special conditions contained in the authorization <sup>147</sup>.

The exporter shall provide OCEIT by 31 January of each year with information on exports made on the basis of the general or global export authorization during the previous year <sup>148</sup>.

The operator shall keep detailed and complete registers of operations carried out pursuant to the authorization <sup>149</sup>. These registers shall contain the commercial documents, such as invoices, manifests, transport documents or other shipping documents <sup>150</sup>.

The operator shall keep the registers for a period of 10 years from the end of the calendar year in which the transaction took place. He / she shall present them to the licensing authorities at their request during that period <sup>151</sup>.

The operator shall provide, without delay, at the first request of the Government or OCEIT, the elements and documents necessary to verify the conformity of the operation carried out or foreseen <sup>152</sup>.

## **8 - Internal Compliance Program (ICP)**

Taking into consideration rapid scientific and technological advancements, the complexity of today's supply chains and the ever-growing significance of non-State actors, effective trade controls depend to a great extent on the awareness of companies and their active efforts to comply with trade restrictions.

To this end, it is recommended that companies put in place a set of internal policies and procedures, also known as an Internal Compliance Programme (ICP), to ensure compliance with EU and Luxembourg trade control laws and regulations on dual-use items and defence-related products <sup>153</sup>.

Such an ICP program is necessary to be granted global authorizations <sup>154</sup>, which requires to show that the company is applying proportionate and adequate means and procedures to ensure compliance with Export Control regulations, and especially the Dual-Use Regulation <sup>155</sup>. This requirement is confirmed for intangible transfer of technology <sup>156</sup> and for the receipt of defence-related products <sup>157</sup>.

The most important aspect of developing an ICP, is to keep it relevant to the company's organization and activities, and to make sure that internal processes are easy to understand and follow, and capture the day-to-day operations and procedures. The individual requirements and characteristics of an ICP will depend on the size, structure and scope of the company's specific business activity, but also on the strategic nature of its items and possible end-uses or end-users, on the geographic presence of its customers and on the complexity of internal export processes.

In order to tailor the ICP to the size, the structure and scope of the business, and, especially, to the company's specific business activity and related risks, it is recommended to start with a risk assessment to determine its specific trade risk profile. It will help the company to become aware of what parts of its business need to be covered by the ICP and target the ICP to the company's specific circumstances.

The risk assessment should carefully assess the product range, customer base and business activity that are or could be affected by dual-use trade control. It should identify relevant vulnerabilities and risks so that the company can incorporate ways to mitigate them under the ICP. Even though this risk assessment cannot identify all vulnerabilities and risks your company may face in future, it will give the company a better base to develop or review its ICP.

The outcomes of this risk assessment will affect the necessary actions and appropriate solutions for developing or implementing the company's specific compliance procedures. A company may try to benefit as much as possible from the advantages of global, group-wide ICP solutions, but must always comply with all applicable EU and Member State laws and regulations.



Where there is, by essence, no generally suitable template for an ICP, 7 core elements are identified as cornerstones for a company's tailor-made ICP. We will concentrate on the different steps of building such an ICP. If, among the company's goods or technologies, there are some to be qualified as defence-related products, it is clear that these products should as well be considered for the ICP.

Without entering too much into detail for the expectations and content of an ICP, we hereafter reproduce the steps as outlined by the European Commission in its recent EU Guidance on ICPs. The drafting, implementation and execution of such an ICP, which, well understood, must not be limited to dual-use items, but to all products manufactured, integrated, sold and shipped by the company, requires a specific working approach which mobilizes several departments of the company with the assistance, if needed, of specialized and experienced export control compliance consultants and/or advisors.

### **8.1. Top-level management commitment to compliance**

- Develop a corporate commitment statement stating that the company complies with all EU and Member State dual-use trade control laws and regulations.
- Define the management's specific compliance expectations and convey the importance and value placed on effective compliance procedures.
- Clearly and regularly communicate the corporate commitment statement to all employees (also employees with no role in dual-use trade control) in order to promote a culture of compliance.

### **8.2. Organisation structure, responsibilities and resources**

- Determine the number of trade control staff, taking into account legal and technical aspects which need to be covered. Entrust at least one person in the company with the company's trade compliance and ensure that an equally qualified substitute can assume the task in case of absence (such as sickness, holiday and so on). Depending on the average volume of orders, this person may only have to handle tasks relating to dual-use export control on a part-time basis.
- Clearly identify, define and assign all compliance related functions, duties and responsibilities, possibly in an organisational chart. Clearly identify back-up functions whenever possible.
- Make sure that the internal organisational structure for trade control is known throughout the organisation and that the internal records of these assignments are routinely updated and distributed to employees. Make the contact details of the responsible person for trade control questions known within the company. If trade control duties are being outsourced, the interface to and the communication with the company needs to be organised.
- Define the knowledge and skills needed by legal and technical trade control staff. Job descriptions are recommended.
- Make sure that trade control staff is protected as much as possible from conflicts of interest. Depending on the size of the company, the responsibility for compliance may be laid down at a suitable department or division. For example: person(s) making the final decision whether goods can be shipped, are not part of the sales department, but part of the legal department. Allow this staff to function as expert advisors to guide company decisions resulting in compliant transactions.
- Document and distribute the set of policies and procedures addressing trade controls to all relevant personnel.
- Compile the documented policies and procedures and consider the format of a compliance manual.

### 8.3. Training and awareness raising

- Provide compulsory, periodic training for all trade control staff to ensure they possess the knowledge to be compliant with the regulations and the company's ICP.
- Ensure via training that all concerned employees are aware of all relevant trade control laws, regulations, policies, control lists and all amendments to them as soon as they are made public by the competent authorities. If possible, consider customised trainings.
- Develop general awareness raising for all employees and dedicated training activities for e.g. purchasing, engineering, project management, shipping, customer care and invoicing.
- Consider, whenever appropriate, to make use of national or EU training initiatives for dual-use trade control.
- Incorporate lessons learnt from performance reviews, audits, reporting and corrective actions, whenever possible, in training or export awareness programs.

### 8.4. Transaction screening process and procedures

#### Item classification

- Item classification is about determining whether the items are listed. This is done by comparing the technical characteristics of an item against the EU and national control lists. If applicable, identify whether the item is subject to restrictive measures (including sanctions) imposed by the EU or the EU Member State in which your company is established.
- Understand that dual-use or military items, whether a physical product, software or technology, could require a license for various reasons.
- Pay particular attention to the classification of components and spare parts, and to the classification of software and technology that can be transferred by email or made available via, for instance, a "Cloud" service abroad.
- Gather information about the possible misuse of dual-use items in the context of e.g. conventional military or WMD proliferation. Share this information within the company.
- It is recommended to request information from supplier(s) about the dual-use (or military) classification of materials, components, subsystems that are processed or integrated by your company, including machinery used in the production. It is still the company's responsibility to check the classification received from the supplier(s).
- As required by Article 22 (10) of the EC dual-use Regulation (EC) No 428/2009, mention – with a reference to the relevant legislation – in the commercial documents relating to intra-EU-transfers that the transaction involves listed dual-use items and are subject to controls if exported from the EU.

#### Transaction risk assessment

##### Checks on embargoed, sanctioned or sensitive destinations and entities

- Ensure that none of the involved parties (intermediaries, purchaser, consignee or end-user) are subject to restrictive measures (sanctions) by consulting the up-to-date sanctions lists.

##### Stated end-use and involved parties screening;

- Know your customers and their end-use of your products.
- Consult the information provided by your competent authority for EU and national rules and requirements concerning end-use statements. Even without a national obligation to submit a correctly filled-out and signed end-use statement, an end-use statement may be a useful means to check the reliability of the end-user/consignee and the information can be used to determine if an authorisation is required for non-listed dual-use items where there are stated end-use concerns under the terms of Article 4 of Regulation (EC) No 428/2009.
- Be vigilant for diversion risk indicators and signs about suspicious enquiries or orders e.g. assess if the stated end-use is consistent with the activities and/or markets of the end-user.

##### Diversion risk screening

- Be vigilant for diversion risk indicators and signs about suspicious enquiries or orders.
- Pay particular attention to the catch-all controls for non-listed dual-use items, if the stated end-use and involved parties screening or the diversion risk screening provide information of concern under the terms of Article 4 of Regulation (EC) No 428/2009.

**'Catch-all' controls for non-listed dual-use items**

- Ensure that the company has procedures in place to determine if it is "aware" that there is information of concern about the stated end-use (under the terms of Article 4 of Regulation (EC) No 428/2009). If the exporter is "aware", the company ensures that no export occurs without notifying the competent authority and without having received the competent authority's final decision.
- For cases in which the exporter is being "informed" by the competent authorities that there is information of concern about the stated end-use (under the terms of Article 4 of Regulation (EC) No 428/2009), then the company needs to have procedures in place to ensure the swift flow of information and the immediate stop of the export. It must be ensured that the export does not occur without having received an authorisation by the competent authority.

**License determination and application, including for brokering, transfer and transit activities**

- Ensure that the company has the contact details of the competent export control authority.
- Gather and disseminate information about the range of license types (including individual, global and general licenses) and controlled activities (including export, brokering, transfer and transit), and about the license application procedures relating to the applicable EU and national dual-use trade controls.
- Be aware of less obvious controlled types of export (such as export via the 'Cloud' or via a person's personal baggage) and of dual-use trade control measures for activities other than export, such as technical assistance or brokering.

**Post-licencing controls, including shipment control and compliance with the conditions of the authorisation**

- Before the actual shipment, there should be a final check that all steps ensuring compliance were duly taken. This is a good moment to check if items are correctly classified, if "red flags" have been identified, if the screening of entities was effectively performed and if there is a valid licence for the shipment.
- A final transaction risk assessment is necessary in case of a change of relevant legislation in the meantime, for example if the commodity is now a listed dual-use item or the end-user is now sanctioned.
- Implement a procedure in which items can be stopped or put on hold when any of the requirements are not met, or when any 'red flags' are raised. The items should only be released by a person with responsibility for compliance.
- Ensure that the terms and conditions of the licence have been complied with (including reporting).
- Be aware that any changes to the exporting company's details (such as name, address and legal status), to the details of the end-user and/or intermediaries and to the details of the authorised items may affect the validity of your license.

**8.5. Performance review, audits, reporting and corrective actions**

- Provide for random control mechanisms as part of daily operations to monitor the trade control workflow within the company to ensure that any wrongdoings are detected in an early stage. Another approach is to use the "four eyes principle", where trade control decisions are reviewed and double-checked.

- Develop and perform audits to check the design, adequacy and efficiency of the ICP.
- Make sure to include all aspects of the internal compliance programme into the audit.
- Ensure that employees feel confident and reassured when they raise questions or report concerns about compliance in good faith.
- Establish whistleblowing and escalation procedures to govern the actions of employees when a suspected or known incident of dual-use trade non-compliance has occurred. Third parties may be given this option as well.
- Document any suspected breaches of national and EU dual-use control legislation and the associated corrective measures in writing.
- Take effective corrective actions to adapt the export control operations or the ICP according to the findings of the performance review, the ICP system audit or the reporting. It is recommended to share these findings, including the revision to procedures and corrective actions with dual-use trade control staff and management. Once the corrective actions have been implemented, it is recommended to communicate the amended procedures to all employees concerned.
- A dialogue with the competent authority can contribute to damage control and possible ways to strengthen the company's export control.

## **8.6. Recordkeeping and documentation**

- Verify the legal requirements for recordkeeping (period of safekeeping, scope of documents, etc.) in the relevant EU and national legislation of the EU Member State where the company is established.
- In order to make sure that all relevant documentation is at hand, consider determining the record retention requirements in contracts with intermediaries, including freight forwarders and distributors.
- Create an adequate filing and retrieval system for trade control. Both for paper and electronic systems, performant indexing and search functionalities are essential.
- Ensure that export control related documents are maintained in a consistent manner and can be made available promptly to the competent authority or other external parties for inspections or audits.
- It is recommended to keep a record of past contacts with the competent authority, also in relation with end-use(r) controls for non-listed dual-use items and in case of technical classification advice.

## **8.7. Physical and information security**

### **Physical security**

- Ensure, according to the company's risk assessment, that controlled dual use items are secured against unauthorized removal by employees or third parties. Measures that could be considered include, for example, physically safeguarding the items, the establishment of restricted access areas and personnel access or exit controls.

### **Information security**

- Establish basic safeguarding measures and procedures for secured storage of and access to controlled dual-use software or technology in electronic form, including antivirus checks, file encryption, audit trails and logs, user access control and firewall. If applicable to your company, consider protective measures for uploading software or technology to the "Cloud", storing it in the "Cloud" or transmitting it via the "Cloud".

## Notes

<sup>1</sup> [www.crossborders.lu](http://www.crossborders.lu)

<sup>2</sup> In Luxembourg law, “external security” means the security of foreign States or international or supra-national organizations with which the Grand Duchy of Luxembourg pursues common objectives on the basis of an international treaty (Law of 27 June 2018 on export control, Article 2.12.). “National security” means the independence and sovereignty of the State, the security and functioning of the institutions, the fundamental rights and freedoms, the security of persons and property, the scientific and technical potential or the economic interests of the Grand Duchy of Luxembourg (Law of 27 June 2018 on export control, Article 2.13.).

<sup>3</sup> Administrative penalties include a prohibition, limited to 6 months or definite, to carry out one or more activities, as well as any other restrictions on the activity, and a suspension for a maximum of 6 months from the use of a general EU or national authorization or a global authorization (Law of 27 June 2018 on export control, Article 54). Penal sanctions include imprisonment for a term of 8 days up to 10 years and/or a fine of 251 to 1.000.000 euros (which may be increased to 4 times the amount subject to the offense in case of non-compliance with a restrictive measure) (Law of 27 June 2018 on export control, Articles 57-61).

<sup>4</sup> Law of 27 June 2018, Article 2.14.

<sup>5</sup> 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, OJ L 134 of 29 May 2009, p. 1, last modified by the Commission Delegated Regulation (EU) 2018/1922 of 10 October 2018, OJ L 319 of 14 December 2018, p. 1

<sup>6</sup> Technical data may take forms such as blueprints, plans, diagrams, models, formulae, tables, engineering designs and specifications, manuals and instructions written or recorded on other media or devices such as disk, tape, read-only memories (Regulation 428/2009, Annex I, section Definitions, V° Technology)

<sup>7</sup> Technical assistance may take forms such as instructions, skills, training, working knowledge and consulting services and may involve the transfer of technical data (Regulation 428/2009, Annex I, section Definitions, V° Technology)

<sup>8</sup> Regulation 428/2009, Annex I, section Definitions, V° Technology

<sup>9</sup> Loren Grush, As satellite constellations grow larger, NASA is worried about orbital debris, 28 September 2018, <https://www.theverge.com/2018/9/28/17906158/nasa-spacex-oneweb-satellite-large-constellations-orbital-debris-lex>

<sup>10</sup> Maximilian Trautinger, The Export Control Regime on Outer Space Technologies, 2015, referring to Michael C. Mineiro, The Dilemma of National Security and International Cooperation in Outer Space: Space Technology Trade and Proliferation Controls and their Impact on Global Civil Space Cooperation, 2011, 14

<sup>11</sup> Maximilian Trautinger, *supra*, EN 10, referring to Michael C. Mineiro, *supra*, EN 10, 15

<sup>12</sup> Maximilian Trautinger, *supra*, EN 10, referring to Michael C. Mineiro, *supra*, EN 10, 20

<sup>13</sup> Maximilian Trautinger, *supra*, EN 10, referring to Péricles Gasparini Alves, The Transfer of Dual-Use Outer-Space Technologies: Confrontation or Cooperation? (2000) 38

<sup>14</sup> Maximilian Trautinger, *supra*, EN 9, referring to Michael I. Yarymovych, Evolution of U.S. Expendable Launch Vehicles, in: Hans Mark (ed.), Encyclopedia of Space Science & Technology Vol. 1 (2003) 619, 625ff.

<sup>15</sup> Yasuo Otani, Yoshiaki Ohkami, Naohiko Kohtake, Tomoaki Sakurai, Dual-Use Concept on Civil and Defense Uses of Outer Space, Yasuo Otani, Yoshiaki Ohkami, Naohiko Kohtake, Tomoaki Sakurai, 2011, downloaded [https://www.jstage.jst.go.jp/article/tastj/10/ists28/10\\_Tv\\_1/\\_pdf-char/ja](https://www.jstage.jst.go.jp/article/tastj/10/ists28/10_Tv_1/_pdf-char/ja) (13 Aug 2019)

<sup>16</sup> Maximilian Trautinger, *supra*, EN 10, referring to Michael C. Mineiro, *supra*, EN 10, 35

<sup>17</sup> Treaty on the European Union 2009, Article 4 (1)

<sup>18</sup> Treaty on the European Union 2009, Article 3.1.e.

<sup>19</sup> Treaty on the Functioning of the European Union 2009, Article 207

<sup>20</sup> Regulation 428/2009, Article 2.1.

<sup>21</sup> Commission Recommendation (EU) 2019/1318 of 30 July 2019 on internal compliance programmes for dual-use trade controls under Council Regulation (EC) No 428/2009, OJ L 205, 5 August 2019, p. 15–32

<sup>22</sup> Regulation 428/2009, Annex I

<sup>23</sup> The latest update results from the Commission Delegated Regulation (EU) 2018/1922, OJ L 319 of 14 December 2018, p. 1

<sup>24</sup> Each dual-use item is classified by an alphanumeric reference structured as follows: Number – Letter – Number – Number – Number (for example, 1 C 350 or 5 A 002). The first digit (from 0 to 9) refers to the goods category. The letter (from A to E) is related to the nature of the goods (A for equipment, assemblies, components; B for testing, inspection, control, production equipment; C for materials and material; D for software; E for technologies)). The second digit (from 0 to 4) refers to the non-proliferation group initiating the control (0 for Wassenaar Arrangement 1 for MTCR, 2 for NSG, 3 for Australia Group, 4 for Chemical Weapons Convention). The last 2 digits refer to the technical characteristics that make it possible to identify the good (for example, threshold, power, number of axes of rotation). For any administrative and customs procedure, the alphanumeric entry must be completed by the corresponding sub-labels (for example 1 C 351 a 1). A product may, because of its technical characteristics, be classified in several categories. No category predominates over another.

<sup>25</sup> <http://ec.europa.eu/trade/import-and-export-rules/export-from-eu/dual-use-controls/>

<sup>26</sup> The CN code is based on the Harmonized Commodity Description and Coding System (HS), an internationally recognized nomenclature of standardized product classification developed by the World Customs Organization. The CN

code is an eight-digit code which makes up the statistic commodity number used for export and intrastate. The TARIC code contains 2 more digits, revealing information about anti-dumping, duty suspension or tariff quotas.

<sup>27</sup> Regulation 428/2009, Annex I, General Note 3

<sup>28</sup> In judging whether the component is to be considered the principal element, it is necessary to weigh the factors of quantity, value and technological know-how involved and other special circumstances which might establish the controlled component(s) as the principal element of the goods being procured (Regulation 428/2009, Annex I, General Note 2).

<sup>29</sup> Regulation 428/2009, Annex I, General Note 2

<sup>30</sup> Regulation 428/2009, Annex I, position 1A102 (resaturated pyrolyzed carbon-carbon components designed for space launch vehicles or sounding rockets)

<sup>31</sup> Certain sensitive items designed, manufactured or qualified through successful testing for operation at altitudes greater than 100 km above the surface of the Earth, are identified as "space-qualified". A determination that a specific item is "space-qualified" by virtue of testing does not mean that other items in the same production run or model series are "space-qualified" if not individually tested (Regulation 428/2009, Annex I, Section Definitions, V° Space-qualified)

<sup>32</sup> Regulation 428/2009, Annex I, position 3A001.b.1.a.4.c. (travelling-wave vacuum electronic devices, being devices based on helix, folded waveguide, or serpentine waveguide circuits, or derivatives thereof, being space-qualified)

<sup>33</sup> Regulation 428/2009, Annex I, position 3A002.g.1. (Atomic frequency standards, space-qualified)

<sup>34</sup> Regulation 428/2009, Annex I, position 4A101 (analogue computers, digital computers or digital differential analysers, which are ruggedized and designed or modified for use in space launch vehicles or sounding rockets)

<sup>35</sup> Regulation 428/2009, Annex I, position 5E001.b.1.

<sup>36</sup> Regulation 428/2009, Annex I, position 6A108.a. (radar and laser radar systems designed or modified for use in space launch vehicles or sounding rockets, which include terrain contour mapping equipment, scene mapping and correlation equipment, doppler navigation radar equipment, passive interferometer equipment, imaging sensor equipment)

<sup>37</sup> Regulation 428/2009, Annex I, position 6A002.a.1. (space-qualified solid-state detectors) and 6A002b2b (monospectral imaging sensors and multispectral imaging sensors, designed for remote sensing applications, specified for operation in the wavelength range exceeding 400 nm but not exceeding 30 000 nm, providing output imaging data in digital format and being space-qualified)

<sup>38</sup> Regulation 428/2009, Annex I, position 6A003.d.1. (space-qualified cryocoolers)

<sup>39</sup> Regulation 428/2009, Annex I, position 6A008.j.1. (laser radar or light detection and ranging (LIDA) equipment, being space-qualified)

<sup>40</sup> Regulation 428/2009, Annex I, position 7A105.a. (receiving equipment for navigation satellite systems, designed or modified for use in space launch vehicles or sounding rockets)

<sup>41</sup> Regulation 428/2009, Annex I, position 7A106 (altimeters of radar or laser radar type, designed or modified for use in space launch vehicles or sounding rockets)

<sup>42</sup> Regulation 428/2009, Annex I, position 7A116 (flight control systems, designed or modified for use in space launch vehicles or sounding rockets, which includes (a) pneumatic, hydraulic, mechanical, electro-optical or electro-mechanical flight control systems (including by fly-by-wire and fly-by-light systems), (b) attitude control equipment, (c) flight control servo valves)

<sup>43</sup> Regulation 428/2009, Annex I, position 7A117 (guidance sets, capable of achieving system accuracy of 3,33 % or less of the range (e.g., a CEP of 10 km or less at a range of 300 km)

<sup>44</sup> Regulation 428/2009, Annex I, position 7A003.d.2. (inertial measurement equipment or systems, providing acceleration measurements or angular rate measurements, in more than one dimension, and being space-qualified)

<sup>45</sup> Regulation 428/2009, Annex I, position 7A005 (Global Navigation Satellite Systems (GNSS) receiving equipment, (a) employing a decryption algorithm specially designed or modified for government use to access the ranging code for position and time, or (b) employing adaptive antenna systems)

<sup>46</sup> Regulation 428/2009, Annex I, position 9A104

<sup>47</sup> Regulation 428/2009, Annex I, position 9A004.a.

<sup>48</sup> Regulation 428/2009, Annex I, position 9A004.b. "Spacecraft" means active and passive satellites and space probes (Regulation 428/2009, Annex I, Section Definitions, V° Spacecraft)

<sup>49</sup> Regulation 428/2009, Annex I, position 9A004.c. "Spacecraft bus" means equipment that provides the support infrastructure of the spacecraft and location for the spacecraft payload (Regulation 428/2009, Annex I, Section Definitions, V° Spacecraft bus).

<sup>50</sup> meaning equipment, attached to the spacecraft bus, designed to perform a mission in space (e.g., communications, observation, science (Regulation 428/2009, Annex I, Section Definitions, V° Spacecraft payload). Regulation 428/2009, Annex I, position 9A004.d.

<sup>51</sup> Regulation 428/2009, Annex I, position 9A004.e. To be listed, the system must have any of the following functions: command and telemetry data handling (including bus data management, storage and processing), payload data handling (including payload data management, storage and processing), or attitude and orbit control (including sensing and actuation to determine and control the position and orientation of a spacecraft).

<sup>52</sup> Regulation 428/2009, Annex I, position 9A004.f. This includes simulators specially designed for verification of operational procedures of spacecraft, as well as telemetry and telecommand equipment specially designed for (a) telemetry data processing of frame synchronization and error corrections, for monitoring of operational status (also known as "health and safe status") of the spacecraft bus, or (b) command data processing for formatting command data being sent to the spacecraft to control the spacecraft bus.

<sup>53</sup> Regulation 428/2009, Annex I, position 9A010. This includes (a) components and structures, each exceeding 10 kg and specially designed for launch vehicles manufactured using any listed material, (b) components and structures, specially designed for launch vehicle propulsion systems manufactured using any listed material, (c) structural components and isolation systems, specially designed to control actively the dynamic response or distortion of spacecraft structures, (d) pulsed liquid rocket engines with thrust-to-weight ratios equal to or more than 1 kN/kg and a response time (the time required to achieve 90 % of total rated thrust from start-up) of less than 30 ms.

<sup>54</sup> Regulation 428/2009, Annex I, position 9A005 (liquid rockets propulsion systems) and 9A007 (solid rocket propulsion systems having (a) total impulse capacity exceeding 1,1 MNs, (b) specific impulse of 2,4 kNs/kg or more, when the nozzle flow is expanded to ambient sea level conditions for an adjusted chamber pressure of 7 MPa; (c) stage mass fractions exceeding 88 % and propellant solid loadings exceeding 86 %, (d) components specially designed for solid rocket propulsion systems, (e) insulation and propellant bonding systems, using direct-bonded motor designs to provide a strong mechanical bond or a barrier to chemical migration between the solid propellant and case insulation material)

<sup>55</sup> Regulation 428/2009, Annex I, position 9A115 (launch support equipment, as follows: (a) apparatus and devices handling, control, activation or launching, designed or modified for space launch vehicles or sounding rockets, (b) vehicles for transport, handling, control, activation or launching, designed or modified for space launch vehicles or sounding rockets)

<sup>56</sup> Regulation 428/2009, Annex I, position 9A117 (staging mechanisms, separation mechanisms and interstages)

<sup>57</sup> Regulation 428/2009, Annex IV, position 9A004 and 9A104

<sup>58</sup> Regulation 428/2009, Annex IV, position 9B116, 9D101, 9E001, 9E002, 9E101 and 9E102

<sup>59</sup> Regulation 428/2009, Annex IV, position 9A005, 9A007.a. and 9A008.d.

<sup>60</sup> Regulation 428/2009, Annex IV, position 9A105.a., 9A106.c., 9A108.c., 9A119

<sup>61</sup> Regulation 428/2009, Annex IV, position 9B115

<sup>62</sup> Regulation 428/2009, Article 2.2.. Law of 27 June 2018, Article 38 (1)

<sup>63</sup> Regulation 428/2009, Article 3.1.. Law of 27 June 2018, Article 38 (1).

<sup>64</sup> Regulation 428/2009, Articles 3.2. and 4. Law of 27 June 2018, Article 38 (1)

<sup>65</sup> Regulation 428/2009, Article 4.1.. Law of 27 June 2018, Article 38 (1)

<sup>66</sup> Regulation 428/2009, Article 4.4.. Law of 27 June 2018, Article 38 (1)

<sup>67</sup> Regulation 428/2009, Article 4.2.. Law of 27 June 2018, Article 38 (1)

<sup>68</sup> “Military end-use” means: (a) incorporation into military items listed in the military list of EU Member States; (b) use of production, test or analytical equipment and components therefor, for the development, production or maintenance of military items listed in the military list of the EU Member States; (c) use of any unfinished products in a plant for the production of military items listed in the military list of the EU Member States.

<sup>69</sup> Regulation 428/2009, Article 4.4.. Law of 27 June 2018, Article 38 (1)

<sup>70</sup> Regulation 428/2009, Article 4.3.. Law of 27 June 2018, Article 38 (1)

<sup>71</sup> Regulation 428/2009, Article 4.4.. Law of 27 June 2018, Articles 38 (1) and 45 (1)

<sup>72</sup> Law of 27 June 2018, Article 45 (2)

<sup>73</sup> defined as technology or software which has been made available without restrictions upon its further dissemination (Regulation 428/2009, Annex I, section Definitions, v° “In the public domain”). Copyright restrictions do not remove technology or software from being in the public domain.

<sup>74</sup> defined as experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena or observable facts, not primarily directed towards a specific practical aim or objective (Regulation 428/2009, Annex I, section Definitions, v° “Basic scientific research”)

<sup>75</sup> Regulation 428/2009, Annex I, General Technology Note (GTN)

<sup>76</sup> Regulation 428/2009, Article 22

<sup>77</sup> Regulation 428/2009, Article 22.1.

<sup>78</sup> Regulation 428/2009, Article 22.2.. Law of 27 June 2018, Article 44

<sup>79</sup> Regulation 428/2009, Article 2.7.

<sup>80</sup> No prohibition or authorization shall be required for the transit of dual-use items dispatched without transshipment or change of means of transport. No transshipment or change of means of transport shall be deemed to be the discharge, for the purpose of securing the cargo, of goods in a shop or aircraft, provided that such goods are re-embarked on the same ship or aircraft.

<sup>81</sup> Regulation 428/2009, Article 6.1.. Law of 27 June 2018, Article 43(1)

<sup>82</sup> Regulation 428/2009, Article 6.3.. Law of 27 June 2018, Article 43(2)

<sup>83</sup> Regulation 428/2009, Article 6.3.. Law of 27 June 2018, Article 43(2)

<sup>84</sup> Regulation 428/2009, Article 2.5.

<sup>85</sup> Regulation 428/2009, Article 2.5.

<sup>86</sup> Regulation 428/2009, Article 5.1.

<sup>87</sup> Regulation 428/2009, Article 5.2.. Law of 27 June 2018, Article 42 (1), item 1

<sup>88</sup> Regulation 428/2009, Article 5.2.. Law of 27 June 2018, Article 42 (1), item 2

<sup>89</sup> Regulation 428/2009, Article 5.3.. Law of 27 June 2018, Article 42 (2)

<sup>90</sup> Regulation 428/2009, Annex I, General Technology Note (GTN)

<sup>91</sup> Law of 27 June 2018 on export control, Article 46 (4)

<sup>92</sup> Law of 27 June 2018 on export control, Article 46 (1)

<sup>93</sup> Law of 27 June 2018 on export control, Article 46 (2). “Proliferation” means any act that contributes to the manufacture, acquisition, development, possession, export, transshipment, transfer, brokering, storage and use of

chemical, biological or nuclear explosive devices and missiles capable of serving as a vehicle for such weapons, including dual-use technologies and items used for non-legitimate purposes, contrary to an international treaty binding the Grand Duchy of Luxembourg (law of 27 June 2018 on export control, Article 2.11.)

<sup>94</sup> Law of 27 June 2018 on export control, Article 46 (3)

<sup>95</sup> Directive 2009/43/EC of the European Parliament and of the Council of 6 May 2009 simplifying terms and conditions of transfers of defence-related products within the Community, OJ L 146 of 10 June 2009, p. 1

<sup>96</sup> Law of 27 June 2018 on export control, Article 22

<sup>97</sup> The Law of 27 June 2018 (Article 22 (1), item 4) foresees a fourth category of defence-related products: goods which may be used for internal repressive purposes or the use of which poses a direct threat to public order or national or external security, the list of which is established by a Grand Duke Regulation. However, no good is currently in that category list, as no Grand Duke Regulation has been published to that effect.

<sup>98</sup> ML1 - Smooth-bore weapons with a calibre of less than 20 mm, other arms and automatic weapons with a calibre of 12,7 mm (calibre 0,50 inches) or less and accessories, as follows, and specially designed components therefor. ML2 - Smooth-bore weapons with a calibre of 20 mm or more, other weapons or armament with a calibre greater than 12,7 mm (calibre 0,50 inches), projectors and accessories, as follows, and specially designed components therefor. ML3 - Ammunition and fuze setting devices, as follows, and specially designed components therefor. ML4 - Bombs, torpedoes, rockets, missiles, other explosive devices and charges and related equipment and accessories, as follows, and specially designed components therefor. ML5 - Fire control, and related alerting and warning equipment, and related systems, test and alignment and countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories therefor. ML6 - Ground vehicles and components. ML7 - Chemical or biological toxic agents, 'riot control agents', radioactive materials, related equipment, components and materials. ML8 - Energetic materials, and related substances. ML9 - Vessels of war (surface or underwater), special naval equipment, accessories, components and other surface vessels. ML10 - Aircraft, lighter-than-air vehicles, Unmanned Aerial Vehicles ('UAVs'), aero-engines and aircraft equipment, related equipment, and components, specially designed or modified for military use. ML11 - Electronic equipment, 'spacecraft' and components, not specified elsewhere on the EU Common Military List. ML12 - High velocity kinetic energy weapon systems and related equipment, as follows, and specially designed components therefor. ML13 - Armoured or protective equipment, constructions and components. ML14 - Specialised equipment for military training or for simulating military scenarios, simulators specially designed for training in the use of any firearm or weapon specified by ML1 or ML2, and specially designed components and accessories therefor. ML15 - Imaging or countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories therefor. ML16 - Forgings, castings and other unfinished products, specially designed for items specified by ML1 to ML4, ML6, ML9, ML10, ML12 or ML19. ML17 - Miscellaneous equipment, materials and libraries, and specially designed components therefor. ML18 - Production equipment and components. ML19 - Directed Energy Weapon (DEW) systems, related or countermeasure equipment and test models, and specially designed components therefor. ML20 - Cryogenic and superconductive equipment, and specially designed components and accessories therefor. ML21 - Software. ML22 - Technology

<sup>99</sup> Common Military List of the European Union, category ML 4

<sup>100</sup> Common Military List of the European Union, category ML11.b.

<sup>101</sup> defined as "active and passive satellites and space probes" (Common Military List of the European Union, section Definitions, V° "Spacecraft")

<sup>102</sup> Common Military List of the European Union, category ML 11.c.

<sup>103</sup> defined as "designed, manufactured, or qualified through successful testing, for operation at altitudes greater than 100 km above the surface of the Earth" (Common Military List of the European Union, section Definitions, V° "Space-qualified")

<sup>104</sup> Common Military List of the European Union, category ML 19, Note 2.h.

<sup>105</sup> Common Military List of the European Union, category ML 19, Note 2.k.

<sup>106</sup> Common Military List of the European Union, category ML 20.a.

<sup>107</sup> Common Military List of the European Union, category ML 20.b.

<sup>108</sup> Common Military List of the European Union, category ML 21

<sup>109</sup> Common Military List of the European Union, category ML 22

<sup>110</sup> See Notice of 16 May 2019 published in Official Journal of the Grand Duchy of Luxembourg A364 of 27 May 2019. The updated list is published in Official Journal of the European Union C95 of 12 March 2019, p. 1-35

<sup>111</sup> Battle tanks; Armoured combat vehicles; Large-calibre artillery systems; Combat aircraft; Attack helicopters; Warships; Missiles and missile launchers; Small arms (revolvers and self-loading pistols, rifles and carbines, sub-machine guns, assault rifles, light machine guns); Light weapons (heavy machine guns, hand-held under-barrel and mounted grenade launchers, portable anti-tank guns, recoilless rifles, portable anti-tank missile launchers and rocket systems, mortars of calibres less than 75 mm)

<sup>112</sup> Law of 27 June 2018, Article 34 (1)

<sup>113</sup> Law of 27 June 2018, Article 24 (3)

<sup>114</sup> "Passing" means the carriage of defence-related products via one or more member States of the European Union other than the Member State of origin and the Member State of destination (Law of 27 June 2019, Article 24 (2))

<sup>115</sup> Law of 27 June 2018, Article 23, item b)

<sup>116</sup> Law of 27 June 2018, Article 31 (2)

<sup>117</sup> Law of 27 June 2018, Article 31 (1)

<sup>118</sup> Law of 27 June 2018, Article 31 (1)



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<sup>119</sup> Law of 27 June 2018, Article 31 (1)

<sup>120</sup> Law of 27 June 2018, Article 37 (1)

<sup>121</sup> Australia Group, Missile Technology Control Regime (MTCR), Nuclear Suppliers Group (NSG), Wassenaar Arrangement, Zangger Committee and Chemical Weapons Convention

<sup>122</sup> Law of 27 June 2018 on export control, Article 46 (1)

<sup>123</sup> Law of 27 June 2018 on export control, Article 37 (2)

<sup>124</sup> Law of 27 June 2018 on export control, Article 46 (3)

<sup>125</sup> The initial Regulation of 14 December 2018 has first been amended on 1 February 2019.

<sup>126</sup> Contact: Ministère de l'Economie, Office du contrôle des exportations, importations et du transit (OCEIT), 10-21 Boulevard Royal, L-2449 Luxembourg, Phone (+352) 22 61 62, Email [oceit@eco.etat.lu](mailto:oceit@eco.etat.lu).

<sup>127</sup> Applications forms, on the basis of the templates indicated in Annexes to the Grand Duke regulation of 14 December 2018, are available in [Guichet.lu](http://Guichet.lu).

<sup>128</sup> Law of 27 June 2018, Article 15

<sup>129</sup> Regulation 428/2009, Article 2.8.. Law of 27 June 2018, Article 16 (1)

<sup>130</sup> Regulation 428/2009, Article 2.10.. Law of 27 June 2018, Article 16 (1)

<sup>131</sup> Law of 27 June 2018, Article 5

<sup>132</sup> Law of 27 June 2018, Article 9. Grand Duke Regulation of 14 December 2018, Annexes 7 and 8

<sup>133</sup> A template of the notification is in Annex 8 to Grand Duke Regulation of 14 December 2018.

<sup>134</sup> Law of 27 June 2018, Articles 9 (2) and 41 (1)

<sup>135</sup> Regulation 428/2009, Article 9. Law of 27 June 2018, Articles 9 to 16, 38 to 45. Grand Duke Regulation of 14 December 2018, Articles 5, 6, 10 (2) and Annexes 17 and 18

<sup>136</sup> The template has been published in Annex 17 of Grand Duke Regulation of 14 December 2018

<sup>137</sup> Regulation 428/2009, Article 9.1.

<sup>138</sup> Regulation 428/2009, Annex IIa

<sup>139</sup> with the exception of items indicated in Annex IIg to Regulation 428/2009

<sup>140</sup> Regulation 428/2009, Annex IIc

<sup>141</sup> Excluded are all goods listed in Annex IV, certain optical sensors and any software and technology.

<sup>142</sup> Regulation 428/2009, Annex II d

<sup>143</sup> Regulation 428/2009, Article 12. Law of 27 June 2018, Article 7 (1)

<sup>144</sup> Law of 27 June 2018, Article 13 (1)

<sup>145</sup> Law of 27 June 2018, Article 13 (2)

<sup>146</sup> Law of 27 June 2018, Article 13 (2)

<sup>147</sup> Law of 27 June 2018, Article 13 (3)

<sup>148</sup> Law of 27 June 2018, Articles 39 (3), 40 (2) and 41 (2)

<sup>149</sup> Law of 27 June 2018, Article 48 (1)

<sup>150</sup> Law of 27 June 2018, Article 48 (2)

<sup>151</sup> Law of 27 June 2018, Article 48 (3)

<sup>152</sup> Law of 27 June 2018, Article 49

<sup>153</sup> This section is based on the European Commission Recommendation (EU) 2019/1318 of 30 July 2019 on internal compliance programmes for dual-use trade controls under Regulation (EC) No 428/2009. No specific guidance has, until today, been published by Luxembourg authorities.

<sup>154</sup> Law of 27 June 2018, Article 5 (“The operators submitting an application for a global authorization shall have an internal compliance program, as well as any supporting documents justifying the implementation and execution of such a program which ensures the implementation of Regulation (EC) No 428/2009.”)

<sup>155</sup> Regulation 428/2009, Article 12.2. (“ When assessing an application for a global export authorization, Member States shall take into consideration the application by the exporter of proportionate and adequate means and procedures to ensure compliance with the provisions and objectives of this Regulation and with the terms and conditions of the authorization. ”). The proposed recast of Regulation 428/2009 foresees that “ Global export authorizations shall be subject to the implementation, by the exporter, of an effective internal compliance programme.” (Proposal COM/2016/0616 final, Article 10.4.)

<sup>156</sup> Grand Duke Regulation of 14 December 2018, Article 11 (“ Applications for an intangible transfer of technology shall be accompanied by: ... 2. a description of the measures implemented or to be implemented to ensure information security, both at the level of the provider of the know-how and of the relationship between provider and recipient of the know-how; ... 4. identification of risks associated with the transfer operation; and 5. a detailed presentation of the organizational, human and technical resources implemented to address these risks. ”)

<sup>157</sup> Law of 27 June 2018, Article 25 (3) (“ The reliability of the recipient (of defence-related products) ... shall be assessed according to the following criteria: ... 6. a description ... of the internal compliance program or the transfer and export management system implemented in the undertaking. This description shall provide details of the human, organizational and technical resources allocated to the management of transfers and exports, the chain of responsibility in the undertaking, internal audit procedures, awareness-raising and staff training, physical and technical security measures, traceability of transfers and exports, as well as the modalities of the control exercised by the administrator over the staff of the units responsible for exports and transfers ... “ )