

Twelfth Meeting of the Chaudfontaine Group

# “Analyzing Strategic Trade Compliance Tools”



Funded by the European Union





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The Chaudfontaine Group is a think tank gathering actors from academia, industry and (European, national, and regional) public authorities dealing with strategic trade control issues.

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## Twelfth Meeting of the Chaudfontaine Group

### “Analyzing Strategic Trade Compliance Tools”

# CHAPTER 1

## Introduction

Global trade flows have seen a huge rise in recent decades. According to the statistics of the World Trade Organization (WTO), as of 2021, world trade volume has increased by roughly forty-three times compared to the level recorded in 1950, when the GATT was created.<sup>1</sup>

This intensification is accompanied by increasing technology transfers – among industries as well as between companies and research organizations –, increasingly complex supply chains and sophisticated channels of distribution, and a changing geopolitical and legal environment.

More particularly, over the last few years, dual-use trade controls have come more to the forefront in the industry as well as in the academic and research sector, even if more gradually for the latter.

One only need think of the US-China commercial war<sup>2</sup> – which saw the (dual-use) semiconductors industry as one of the main battlefields<sup>3</sup> –, the key role of dual-use items in the Russia-Ukraine war – characterized by sanction circumvention via the exploitation of more intricate distribution networks<sup>4</sup> –, as well as in the consequent EU sanctions against Russia – since 2014 the EU imposed an embargo on dual-use items for the military sector, also expanded in 2022 to civilian end-users or uses with very limited exemptions and derogations<sup>5</sup> –, and the modernization of the EU

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<sup>1</sup> WTO, Statistics. “Evolution of trade under the WTO: handy statistics”, [https://www.wto.org/english/res\\_e/statis\\_e/trade\\_evolution\\_e/evolution\\_trade\\_wto\\_e.htm](https://www.wto.org/english/res_e/statis_e/trade_evolution_e/evolution_trade_wto_e.htm).

<sup>2</sup> Larisa Kapustina, *et al.* “US-China trade war: Causes and outcomes.” *SHS Web of Conferences*. Vol. 73 (2020): 01012, EDP Sciences.

<sup>3</sup> See “America takes on China with a giant microchips bill”, *The Economist*, July 29, 2022, <https://www.economist.com/united-states/2022/07/29/america-takes-on-china-with-a-giant-microchips-bill>; Stephen Nellis, Karen Freifeld and Alexandra Alper, “U.S. aims to hobble China’s chip industry with sweeping new export rules”, *Reuters*, October 10, 2022, <https://www.reuters.com/technology/us-aims-hobble-chinas-chip-industry-with-sweeping-new-export-rules-2022-10-07/>.

<sup>4</sup> Austin Wright, “Dual-Use Goods Are Fueling Russia’s War on Ukraine Russia’s advanced military systems are dependent on components from the West”, *Foreign Policy*, November 8, 2022, <https://foreignpolicy.com/2022/11/08/dual-use-goods-are-fueling-russias-war-on-ukraine/>.

<sup>5</sup> Export-Related Restrictions For Dual-Use Goods And Advanced Technologies, Frequently Asked Questions - As of 20 January 2023”, European Commission, [https://finance.ec.europa.eu/system/files/2023-01/faqs-sanctions-russia-export-related-restrictions-russia\\_en.pdf](https://finance.ec.europa.eu/system/files/2023-01/faqs-sanctions-russia-export-related-restrictions-russia_en.pdf).

export control system in June 2021 to better face the new challenges and changes in the security environment – notably, the Recast of the EU Dual-Use Regulation has introduced, inter alia, an enlarged scope of the catch-all provisions and an EU autonomous mechanism for the control of emerging technologies.<sup>6</sup>

All the above-mentioned factors, reflected in these reported recent examples, can make it very challenging to comply with strategic trade control obligations, which would require the identification and a good knowledge of strategic items (*i.e.*, goods, software, and technologies) – in addition to the relevant legislation –, an assessment of destination countries and final users of the items – complicated by the rapid and unpredictable geopolitical changes, and by the global and interconnected distribution network, which makes it harder to prevent diversion – as well as the capacity to monitor and, if necessary, to stop the transfer of the strategic items – very difficult when it comes to technology transfers, especially if occurring via intangible means (*e.g.*, by telephone or e-mail, or other electronic media), or in person (*e.g.*, in the context of a conference or a research project's international cooperation).

These potential difficulties, faced very regularly by export control compliance officer—but not only—, call for the creation of toolbox where the different stakeholders (*i.e.*, public authorities, companies, universities and research organizations) can find some instruments able to assist them in various tasks related to compliance with strategic trade controls' obligations.

The purpose of this collective work is to create an archetype of such a toolbox, describing and analyzing a set of tools which might be helpful to different stakeholders and different scenarios.

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<sup>6</sup> See Articles 5, 8, 9, and 10 of Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast), Official Journal of the European Union (L206/1) of May 20, 2021.

# CHAPTER 2

## Methodology

The XII edition of the Chaudfontaine Group Seminar gathered experts from all around Europe, originating from universities, research organizations, public authorities – both European, national, and regional –, and industry, working on strategic trade control. On this occasion, the Chaudfontaine Group explored a set of (potential) dual-use trade control informative and/or analytical tools that could be useful to the full range of actors involved in strategic trade control compliance, thus, benefiting both third countries as well as EU Member States' stakeholders.

The list of tools is not intended to be exhaustive. The tools were selected by the European Studies Unit of the University of Liège, the organizer of the event, following an inquiry enriched by suggestions of the online export control community. To be selected, the tools had to fulfill the following conditions:

- Accessibility (both conditions are required):
  - o Open access;
  - o Free of charge;
- Functionality:
  - o Informative (i.e., providing information, as opposed to data); and/or
  - o Analytical (i.e., able to elaborate or analyze data).

As for the accessibility, the tool had to be open access, meaning that the product was made fully available for any users to access and use. Additionally, it had to be freely available, with no charges. It could not be a sold or purchased product; it had to be freely usable.

As for the functionality, the tool had to provide either:

- Information, as different from data. For the purposes of this work, data can be understood as a collection of unorganized facts and figures, while information as structured data, which indicate how to understand those facts and figures in context but without any analysis or recommendation; or
- Analysis, so implying the capacity to elaborate the retrieved or received data to offer an interpretation of the information or some recommendations.



Participant were asked to evaluate the tools as being (mostly) informative or (mostly) analytical. To report such an evaluation, the below “evaluation continuum line” was provided to the participants, where each tool is defined as either “solely informative; Predominantly informative; Equally informative & analytical; Predominantly analytical; Solely analytical”.



Before the event, the experts had to explore these tools on their own in order to analyze them so as to ultimately fill a provided matrix.<sup>7</sup> The latter contained practical questions such as what the objectives of the tool were, who financed them, what the geographical and time scope was, how the tool had been developed, whether there anything missing, the overall efficiency, and to whom they might be relevant among the other questions. Besides analyzing a set of proposed tools, the participants were also invited to propose any additional compliance-related tool they might think relevant.

Each participant was a member of a diversified group of experts coming from universities, research centers, public authorities, and the private sector. A set of three/ four tools was distributed to the members of each group – for their prior individual analysis – in order to ensure different perspectives and analysis on every tool. During the plenary sessions of the Seminar, each member had to briefly present one of the assigned tools to the Group, illustrating its purpose and the answers to the matrix. Each presentation was followed by a debate about the utility, efficiency, and other aspects of the tools, also supported by the live use of the instruments in question.

The present publication is the result of the above-mentioned analysis and discussions. Some of the tools analyzed were considered more useful than others, depending also on who is using them and what for: this is the reason why the experts of the Chaudfontaine Group included a chapter proposing some helpful combinations of tools per category of actors, as well as some final recommendations for eventual improvements of the instruments. \_\_\_\_\_

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<sup>7</sup> The full matrix is available in the Annex.

# CHAPTER 3

## Analysis of the strategic trade compliance tools

Following the above-mentioned scrutiny with regard to the accessibility and functionality criteria, the selected tools examined by the group of experts are the following:

- Access2Market;
- ASPI Unitracker;
- China-Europe Academic Engagement Tracker;
- Correlation table between export control classifications and Combined Nomenclature Codes;
- EU and US Consolidated Screening Lists;
- EU Sanctions Map;
- Export Control Handbook for Chemicals;
- Peddling Peril Index;
- Strategic Trade Atlas;
- TARBEL;
- TIM Dual-Use;
- Uliège ESU Dual-Use Assistance App;
- WCO Strategic Trade Control Enforcement Tool app.

In the subsequent sections, each tool is presented in accordance with the referred matrix and Chaudfontaine Group's discussions.

### **Access2Markets**

The Access2Markets portal was created, and is funded, by the European Commission to facilitate market access for small- and medium-sized enterprises (SMEs) beyond EU borders.<sup>8</sup> This single point of entry is a free and comprehensive database that provides interested parties with detailed information regarding all

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<sup>8</sup> European Commission, "Access2Markets", DG Trade website, <https://trade.ec.europa.eu/access-to-markets/en/home>. All websites in this section were last accessed on November 7, 2022.

requirements and formalities that must be met in order to trade with third countries, both goods and services, and to engage in investment or procurement activities. Likewise, SMEs from outside the EU that are interested in trading with member states will also find updated and relevant information to easily conduct all stages of business within the EU. The tool takes special account of the trade agreements that the EU has concluded with third countries in order to enhance the benefits for companies.

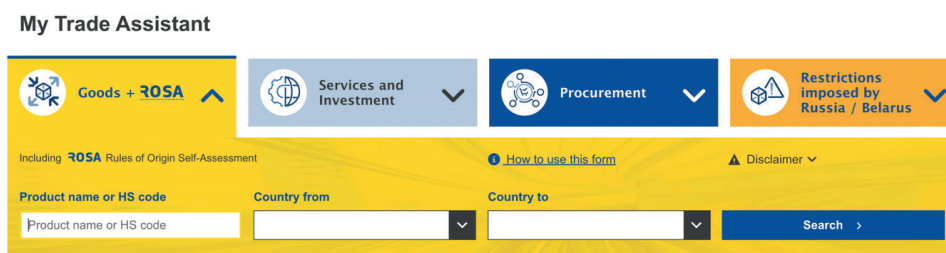


Figure 1 Acces2Markets

Access2Markets is a highly informative tool, insofar as it offers a wealth of information on tariffs, taxes, procedures, formalities, rules of origin, export measures, statistics, trade barriers, and updated knowledge on the currently-in-force trade agreements that may benefit SMEs to manage goods and services trade. In the informative-analytical continuum line, Access2Markets would be “predominantly informative”, because if an experienced trader or stakeholder makes use of this informative tool, it will help them in their analysis of the benefits of trading with specific partners, thus enabling them to form an analytical opinion.



The current site combines two pre-existing databases (the Market Access DataBase and the EU Trade Helpdesk) into a single portal.<sup>9</sup> By building on these two long-standing databases, the current tool offers information to both importers and exporters and avoids redundancies. To enable companies to make informed decisions as quickly and easily as possible, Access2Markets allows them to search for information either by product or by country. In addition, it offers a tool to identify rules of origin, and step-by-step guides for trading goods and services.

<sup>9</sup> Secretaría de Estado de Comercio, “Expira la web de la UE ‘Market Access Data Base’”, *Barreras comerciales*, <https://barrerascomerciales.comercio.gob.es/es-es/noticias/Paginas/EXPIRA-LA-WEB-DE-LA-UE-Market-Access-Data-Base.aspx>.

The sources used to provide results with each search vary on the topic. Thus, for information on tariffs and taxes, the source is either the Taric Database, DG Taxud, Mendel, or DG Trade;<sup>10</sup> information on trade flow statistics is sourced by EUROSTAT (Comext database), and data regarding rules of origin and trade barriers stems from DG Trade.<sup>11</sup> Exporting guides are updated by resorting not only to DG Trade but also to DG Sante. When it comes to information on services and investment, the sources are multiple and of national origin, that is, official databases from the partner countries.<sup>12</sup>

The scope in terms of information is very broad, covering multiple relevant aspects of trade (via detailed guides describing the entire import/export process for trading goods and services, and via the so-called ROSA tool, a self-assessment mechanism regarding the rules of origin of the products) and providing three dynamic search engine forms: “My trade assistant”, which allows SMEs to find information on duties, taxes, product rules, and requirements for trading internationally; “Trade barriers”, which offers updated information on existing obstacles and how to cope with them – also enabling stakeholders to inform on the existence of unidentified barriers<sup>13</sup> – and “Statistics”, which provides data on trade flows through graphs and charts. However, in terms of dual-use items and the specificities related to their trade, Access2Markets has a rather significant loophole. By functioning with HS Codes, this – otherwise very useful – tool oversees the codes applied in the EU Dual-Use Regulation, missing the opportunity to merge both lists and provide specific information on the export control requirements as part of its trade facilitation objectives.<sup>14</sup>

The geographical scope of Access2Markets is again very broad: for imports into the EU, the portal covers all non-EU countries of the world; and for EU exports, it delivers data for over 120 non-EU markets, which, in turn, represent 90% of the EU’s export value for goods.<sup>15</sup> Although Access2Markets stems from two pre-existing databases, it was launched on October 13, 2020, in a context affected by the COVID-19 pandemic. With the aim of paying particular attention to the economic recovery of small businesses from the coronavirus crisis, the European Commission responded to requests from stakeholders and established this *“one-stop-shop to help European firms to make the most of the EU’s network of trade agreements and get the best access to markets, products and inputs they need to grow and to stay competitive”*.<sup>16</sup>

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<sup>10</sup> Mendel Verlag GmbH & Co. KG, Wasserstraße 223, 44799 Bochum, Germany.

<sup>11</sup> European Commission, “Sources & copyright section”, *DG Trade*, <https://trade.ec.europa.eu/access-to-markets/en/content/sources-and-copyright>.

<sup>12</sup> In the specific case of services and investment, the sources are from Canada and the UK and they are subject to their own copyrights policy. <https://trade.ec.europa.eu/access-to-markets/en/services-copyright>.

<sup>13</sup> European Commission, “Market Access complaint form”, *DG Trade*, [https://trade.ec.europa.eu/access-to-markets/en/form-assets/MA\\_Complaint\\_Form\\_202208.pdf](https://trade.ec.europa.eu/access-to-markets/en/form-assets/MA_Complaint_Form_202208.pdf).

<sup>14</sup> Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast), Official Journal of the European Union (L206/1) of May 20, 2021.

<sup>15</sup> European Commission, “Toolbox: welcome”, *DG Trade*, <https://trade.ec.europa.eu/access-to-markets/en/content/welcome-access2markets-market-access-database-users>.

<sup>16</sup> Valdis Dombrovskis, “Commission launches Access2Markets portal to support trade by small businesses” *European Commission Press Release*, November 19, 2022, <https://circabc.europa.eu/ui/group/ed742e6c-12f9-42c2-a1f3-9bc074cc06ea/library/156316cd-0516-4eec-9d47-46522b181a74/details>.

This tool is thus clearly relevant to a wide set of actors. First of all, it is relevant both to SMEs that want to internationalize and for those that already trade in the international market and want to ensure they are up to date. Therefore, stakeholders in the industrial sector who want to make the most of EU trade agreements can receive valuable help from Access2Markets. Likewise, national authorities in charge of monitoring, facilitating, or advising on trade transactions are also very active users of this tool, turning to it on a daily basis to make sure they are up to date on the trade situations in the more than 120 countries with which the EU trades.<sup>17</sup>

The overall efficiency of the tool with respect to its objective is high, given the detailed, comprehensive, and updated nature of the information it provides on the markets of all EU Member States and on other markets from around the world. Its intuitive format and its availability in 24 EU languages help navigate what otherwise could have ended up being a complicated tool. User-friendliness is guaranteed insofar as it is free, responsive (optimized for phones and tablets), and adapted to different levels of experience and knowledge about trade. However, when taken in the context of strategic trade controls, Access2Markets has room to improve its positioning.

### **ASPI Unitracker**

The Australian Strategic Policy Institute (ASPI) and its International Cyber Policy Center (ICPC) have developed an online tool aimed at exploring links between the People's Liberation Army (PLA) or security agencies and universities in China. The role of Chinese universities and research institutes in promoting the proclaimed civil-military integration – also known as civil-military fusion – has been at the forefront of discussions and recent developments in the West, not least due to revealed export control violations and concerns about human rights violations, in particular against political dissidents and repressed minorities, primarily of Uyghurs in Xinjiang.<sup>18</sup> Western governments, industry, and research establishments have a legitimate interest in protecting their intellectual property, commercial secrets, and counter interference in their research and innovation activities from wherever these might arise, as well as to consider the ethical and security implications of their research outputs. While seeking technological supremacy and promoting synergies between civilian and military technologies forms part of the national strategy of several countries, including the US and the EU, in China promoting research and development and ensuing research collaborations seems to be inextricable from the national strategy for civil-military fusion. According to the policy brief report accompanying the Tracker, at least 15 civilian universities have been implicated in cyberattacks, illegal exports, or espionage.<sup>19</sup>

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<sup>17</sup> Author's interview with Public Official responsible for market internationalization, Government of Spain, October 14, 2022.

<sup>18</sup> Alex Joske. "Exploring the military and security links of China's universities", *ASPI*, November 25, 2019, <https://www.aspi.org.au/report/china-defence-universities-tracker>.

<sup>19</sup> Joske. "Exploring the military and security links of China's universities".

In this context, the China Defense Universities Tracker – in brief, the Tracker – offers a database that sorts various institutions of the Chinese defense ecosystem (PLA-linked institutions, security/intelligence institutions, leading defense industry conglomerates and civilian universities) into categories of “very high, high, medium or low risk”. This catalogue is searchable by institution name and type (i.e., defense, civilian, industry) and it determines the level of risk posed by the listed organizations, factoring in their security credentials, inclusion in an entity list, and past incidents of espionage or export control violation.<sup>20</sup>

The catalogue is complemented by an interactive map illustrating the main supervising agencies for defense-related research in China and their connections with the various research organizations falling under their competence and analyzed by the Tracker. The different organizations are represented by nodes with color coding indicative of the risk they pose.

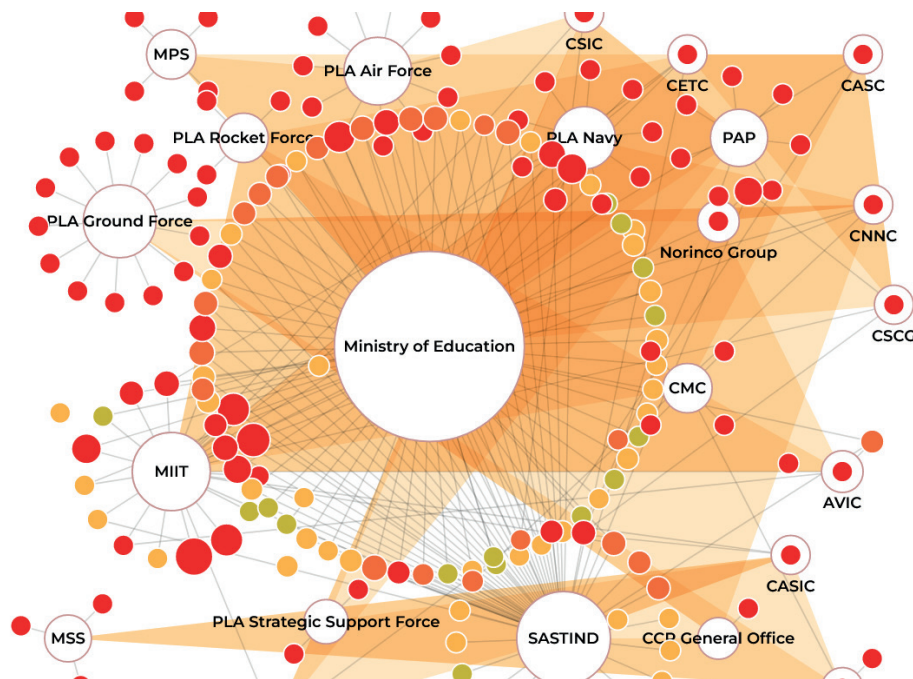


Figure 2 ASPI Unitracker-Chinese research entities illustrated by risk level

The user can access the full information/analysis which has been made available by the Tracker for each organization by clicking the node. This information constitutes practically the organization’s profile and highlights the reasons that led to the classification of an organization under a certain level, such as:

- Major defense labs, location, and aliases;
- Supervising agencies and subsidiaries;

<sup>20</sup> Security credentials allow their holders (universities and companies) to participate in different levels of classified defence and security research and development projects and are indicative of the involvement of civilian universities in such research and of the possible sensitivity of the work they undertake. Security credentials are divided into three tiers roughly equivalent to top secret, secret and confidential clearances.

- Main sector (i.e., civilian, military) and main research areas;
- Defense and security links (designated defense areas, economic espionage & misconduct, end-user lists);
- Noteworthy international collaborations (if any).

The Tracker also provides the possibility to search by research field and view universities that have been found carrying out work in a particular area, such as cybersecurity, specifically for defense purposes.<sup>21</sup> Indeed, over 165 laboratories in civilian universities that were primarily established to work on defense science and technology are identified and grouped as per the Chinese government categorization.<sup>22</sup>

Finally, a report clarifying the rationale behind the tool, including its main findings as well as case studies and recommendations for risk-based approaches when universities engage with PCR entities, is available on the website.<sup>23</sup> The user can also make use of the terminology section that is very useful with regard to navigating through the different categorizations and to understanding the role and functions of the supervising agencies such as the State Administration of Science, Technology and Industry for National Defense (SASTIND), or what a “designated defense research area” is.

ASPI is a non-partisan think tank funded by the Australian government with the objective to not only provide fresh ideas on Australia’s defense, security, and strategic policy choices, but also to harness strategic thinking internationally. The ASPI annual budget relies primarily on funding from the Australian government, but also includes funding from foreign governments, the private sector, and civil society. Indeed, the Tracker was supported with funding from the US Department of State’s Global Engagement Center.

The Tracker can be considered an analytical tool as it not only provides a searchable catalog of Chinese research entities associated with a certain level of risk, but it also sketches the profiles of the organization under examination considering main types of research, public information on economic espionage and incidents of misconduct (e.g., known connections to human rights abuses and export control violations) as well as inclusion in end-user lists of various governments such as the US Government Entity List and Japan’s End-User List administered by METI. This would lead us to rate the tool as “predominantly analytical” in the informative-analytical continuum line.



<sup>21</sup> Please see the section “Explore entities by field of defence research” of the Unitracker.

<sup>22</sup> Please see the section “Defence Laboratories” of the Unitracker.

<sup>23</sup> The report is accessible at the following link: <https://www.aspi.org.au/report/china-defence-universities-tracker>.

The research for the Tracker was undertaken over the course of 2019 and further updates were introduced in 2021. Each profile mentions the date of the latest update.

The analyses provided are well-supported with references and so applies for the accompanying report. However, assessing the completeness of information would require a closer examination and special linguistic skills as the references made originate primarily from online Chinese language resources.<sup>24</sup>

This is a research-intensive effort aimed at “identifying key indicators of defense and security links at each university and developing reliable methods for evaluating those links”, as stated in the methodological part of the Tracker. Even though when examining the different profiles, the choice made each time to assign a university under a certain level of risk appears to be well-justified, it would have been better to clarify how different defense and security links are assessed across the different organizations. Clarifying, for instance, if all indicators are of equal importance or have different weights would be useful, acknowledging, however, that the Tracker is based on qualitative analytical methods.

With a view to improving the current tool and analysis, the Tracker research team acknowledges that the tool is far from comprehensive. For instance, while 12 of China’s largest defense conglomerates are included in the database, their hundreds if not thousands of subsidiaries have not been publicly catalogued.<sup>25</sup> Likewise, the tool does not include information on the Chinese Academy of Sciences and its dozens of subordinate research institutes, many of which are involved in defense research.<sup>26</sup> Focusing on expanding the number of relevant organizations covered by the tool is a reasonable way forward. Moreover, redefining or assessing the scope and relevance of the Tracker could benefit from cross-checking with further sources of information, either publicly available or confidential (e.g., notified denials).

In conclusion, one can argue that the Tracker is a valuable and user-friendly tool for university administrative staff and researchers that wish to consider security risks when partnering with Chinese entities. Its utility further extends to risk assessment conducted by governments and industry compliance officers as it contains information on the peculiarities and risks inherent to the Chinese research and innovation ecosystem. Research integrity and security implications of legitimate research activities is a very important topic in view of a volatile geostrategic context and national strategies emphasizing the concept of strategic autonomy. In the EU in particular, the intersection of human rights abuses and dual-use items constitutes one of the focuses of the new dual-use regulation, while recent initiatives have attempted to specify the legal and ethical obligations of universities engaging in international collaborations.<sup>27</sup> Besides, the EU’s strategic outlook on China characterizes the country as a “cooperation partner and a systemic rival”.

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<sup>24</sup> Admittedly the use of Chinese language primary sources is a sound approach given the objectives and scope of the tool. The research team also clarifies that resources have been archived using Wayback Machine and archive.today.

<sup>25</sup> “About”, China Defence Universities Tracker, <https://unitracker.aspi.org.au/about/>.

<sup>26</sup> “About”, China Defence Universities Tracker, <https://unitracker.aspi.org.au/about/>.

<sup>27</sup> Commission Recommendation (EU) 2021/1700 of 15 September 2021 on internal compliance programs for controls of research involving dual-use items C/2021/6636, OJL 338; and European Commission, Directorate-General for Research and Innovation, Tackling R&I foreign interference: staff working document, Publications Office of the European Union, 2022.



### **China-Europe Academic Engagement Tracker**

The China-Europe Academic Engagement Tracker is a database providing information about the interactions between European academic institutions and Chinese entities. Its aim is to help understand the nature and volume of these interactions, providing a record of them, and improving their transparency.<sup>28</sup> More specifically, besides mapping the collaborations among the above-mentioned actors, the tool provides information on the specific character of such interactions by indicating specific significant characteristics.

The tool was created in 2022 by the Central European Institute of Asian Studies (CEIAS) – a think tank dedicated to research into Asia-related topics and the Central European engagements with Asia – and partners from the investigated countries. However, it is not clear who financed the tool as the official website does not provide specific information in this regard.<sup>29</sup>

What is clearly stated in the official website is the methodology. Apart from building on previous CEIAS' research, the methodology used to create the Tracker relies on data that have been collected from various open sources. The first step in the methodology consisted of gathering data through Freedom of Information Act (FOIA) requests, which helped to outline the scope and outcomes of cooperation with Chinese entities, as well as to evaluate the financial flows between them.<sup>30</sup> The FOIA requests also served to assess the transparency of public academic institution regarding interactions with Chinese entities. In order to broaden the scope of this information, the second step of the methodology consisted of juxtaposing the collected data with the media coverage. The website does not provide further information on these data or their specific source. Furthermore, when possible, the creators relied on publicly disclosed contracts. Finally, to cross-reference the collected data, the China Defense University Tracker by ASPI was used. Therefore, the CEIAS tracker also indicates the risk level of a Chinese entity as assigned by the ASPI Tracker.

Regarding the geographical scope, at the point of its launch, the CEIAS tracker covered 11 European countries (with their Chinese partners), namely Austria, Bulgaria, Czechia, Georgia, Germany, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia. According to a media article, the tool maps over 2,300 links between the European academic institutions and their Chinese partners.<sup>31</sup>

Concerning the time scope, no information is provided on the official website. By conducting some research in this regard, it seems the interactions may date back a relevant number of years. It is not clear, however, whether the interactions analyzed are only those ongoing or whether, for each organization, all the interactions with Chinese entities over the years have been mapped.

<sup>28</sup> "About", China-Europe Academic Engagement Tracker, <https://academytracker.ceias.eu/about>.

<sup>29</sup> "About", China-Europe Academic Engagement Tracker, <https://academytracker.ceias.eu/about>.

<sup>30</sup> "Where applicable; otherwise similar approaches were used if possible". Source: China-Europe Academic Engagement Tracker, "About", <https://academytracker.ceias.eu/about>.

<sup>31</sup> Lucia Yar, "Slovak academia increases cooperation with Chinese counterparts", *Euractiv*, July 4, 2022, [https://www.euractiv.com/section/politics/short\\_news/slovak-academia-increases-cooperation-with-chinese-counterparts/](https://www.euractiv.com/section/politics/short_news/slovak-academia-increases-cooperation-with-chinese-counterparts/).

In terms of the scope of the tool, it seems that it gathered data concerning any kind of scientific collaboration, specifying which particular topic they focused on and the link type (e.g., student exchange, formal cooperation agreement, joint research project, informal ties). The interface is very user-friendly. It basically shows the map of the EU countries covered that can be clicked in order to show the list of European organizations which have been mapped in the selected country. By clicking on one of these European organizations, a list of the Chinese entities' partners (e.g. universities, research institutes, or state institutes) will appear, and for each collaboration the institution type of the partner, link type, areas of cooperation, date of the establishment of the cooperation, if the link is contract-based, and whether the contract has been disclosed are indicated. With regard to the strategic

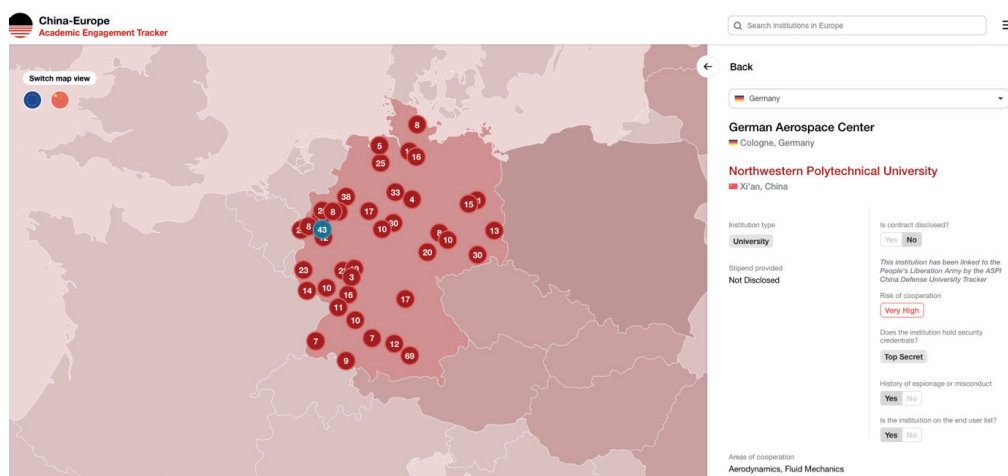


Figure 3 CEIAS Tracker - Illustration of collaborations between German and Chinese research entities

trade compliance objectives, the tool seems to be relevant and efficient as long as it gathers and centralizes different information such as cooperation between EU-Chinese entities, the nature of the cooperation and, most importantly, it also includes the results of the ASPI Unitracker, which is a tool that is being increasingly used in export control compliance, especially for research organizations.<sup>32</sup>

In general, the quality of information seems to be good by considering its source (e.g., FOIA); however, it is not comprehensive, and some caveats in this respect has been stated in the methodology, as published on the official website.

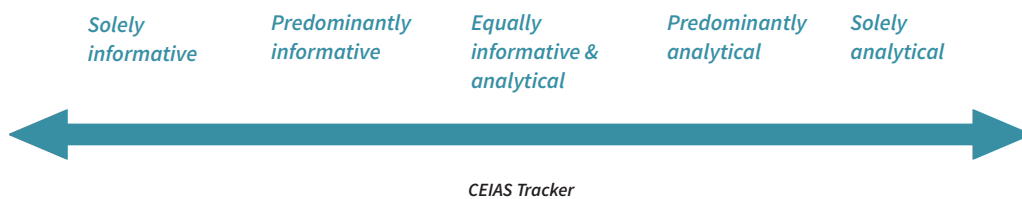
The tool can be useful first to export control officers in research organizations as well as in business companies, as long as they can gather further information on the end-user when screening a transaction. It can also be used by researchers before engaging in any collaboration in order to better know the Chinese entity with which they are considering having interactions. Then, the tool can also be used by the competent authorities, specifically licensing and customs, so as to better assess the transactions and assess the end-user, among other things.

<sup>32</sup> China Defence Universities Tracker, <https://unitracker.aspi.org.au>.

In conclusion, the tool seems to have considerable potential, especially if thinking about extending the geographical scope as well as including further elements in the analysis that can better help to depict the nature and sensitivity of the interactions. The database misses further and specific information on joint publications, patents, and other publicly available outcomes of the cooperation (*see Chapter 5 on recommendations*).

The open data quality may be an issue. Interestingly, on the website there is a section called “crowdsourcing” through which everyone can provide information on something they may think the authors missed.<sup>33</sup> In this respect, the person is asked to provide the link to the information, among other things. No further information on this section is provided.

The tool can be considered as equally informative & analytical as long as it provides a structured overview of the cooperation between some EU-Chinese entities as well as the results of ASPI’s Unitracker analysis, thus allowing for further analysis and interpretations.



### **Correlation table between export control classifications and CN Codes**

The “Correlation table between export control classifications and Combined Nomenclature Codes”, informally called the “TARIC Correlation Table”, as the name suggests, associates the customs codes used to classify commodities, i.e., Combined Nomenclature Codes (hereinafter CN codes) to the dual-use control codes used to classify the dual-use items requiring an export authorization, i.e., Export Control Classification Number (hereinafter ECCN).<sup>34</sup>

The CN codes are based on the Harmonized Commodity description and Coding System, generally referred to as the “Harmonized System” (HS), which is an international nomenclature developed by the World Customs Organization (WCO) whose objective is the harmonization of customs and trade procedures<sup>35</sup> – “[t]he system is used by more than 200 countries and economies as a basis for their Customs tariffs and for the collection of international trade statistics”.<sup>36</sup> The ECCNs are set by the EU Dual-Use Control List, Annex I to EU Dual-Use Regulation 2021/821,

<sup>33</sup> “Crowdsourcing”, China-Europe Academic Engagement Tracker, <https://academytracker.ceias.eu/about>.

<sup>34</sup> The tool is available at: [https://trade.ec.europa.eu/doclib/docs/2022/january/tradoc\\_160003.xlsx](https://trade.ec.europa.eu/doclib/docs/2022/january/tradoc_160003.xlsx), published on January 7, 2022.

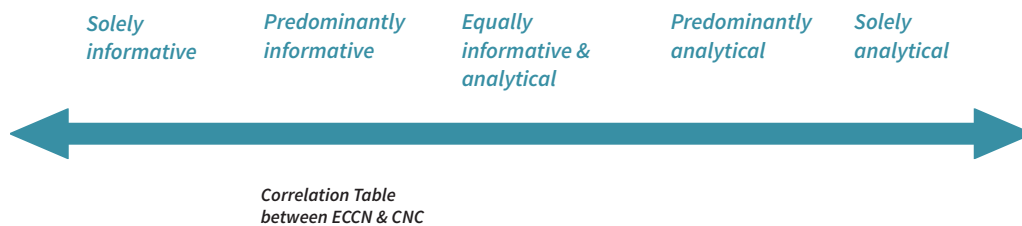
<sup>35</sup> European Commission, DG TAXUD, The Combined Nomenclature: [https://taxation-customs.ec.europa.eu/customs-4/calculation-customs-duties/customs-tariff/combined-nomenclature\\_en](https://taxation-customs.ec.europa.eu/customs-4/calculation-customs-duties/customs-tariff/combined-nomenclature_en).

<sup>36</sup> WCO website: <http://www.wcoomd.org/en/topics/nomenclature/overview/what-is-the-harmonized-system.aspx>

in alignment with international obligations and decisions agreed by the multilateral export control regimes (WA, MTCR, NSG, AG).<sup>37</sup>

The tool does not provide any information on its development or financing. Although it is possible to deduce from the publication link that the Correlation table is made available in an Excel sheet form by DG TRADE – generally, immediately after the publication of the updated EU Dual-Use Control List<sup>38</sup> –, thanks to some exchanges with the EU Commission technical experts, we know that the correlation table between CN codes and ECCNs has been developed by DG TAXUD, unit B5 – previously called unit A4 –, and is updated annually in order to take into account the evolution of both the Combined Nomenclature and the EU Dual-Use Control List. However, after receiving Europe Direct’s answers to the questions we sent, it was clarified that “all these correlations are included in the TARIC database by the TARIC service of DG TAXUD.<sup>39</sup> The correlation table is an Excel extraction of this data”. Therefore, DG TAXUD only makes such information publicly available in the form of TARIC measures, consultable on the online TARIC database<sup>40</sup>, whereas the developed Correlation table is then published as such by DG TRADE as guidance. The table, in the current version and all available previous versions, is also freely available in the CIRCABC database.<sup>41</sup> Concerning the financing of the tool, such information is not specified in the tool. Europe Direct service reported that “[t]he TARIC service of DG TAXUD is in charge of this table. No specific budget finances the work on this table. The work is carried out by DG TAXUD staff and falls therefore under the Commission budget”.<sup>42</sup>

Concerning the “informative-analytical” nature of the tool, the TARIC correlation table is mainly informative. Yet, the correlation between CN codes and ECCNs is not perfect.<sup>43</sup> The CN codes’ scope is generally much broader than the ECCNs’ and, as a result, CN codes might include non-dual-use items. Thus, the correlation table between the two types of classification is actually the result of a significant analysis requiring extensive technical expertise. For this reason, on the “informative-analytical” scale, the tool can be defined as “predominantly informative”.



<sup>37</sup> Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast), JO L 206 du 11.6.2021, p. 1–461; Commission Delegated Regulation (EU) 2023/66 of 21 October 2022 amending Regulation (EU) 2021/821 of the European Parliament and of the Council as regards the list of dual-use items C/2022/7424, OJ L 9, 11.1.2023, p. 1–252.

<sup>38</sup> For instance: [https://trade.ec.europa.eu/doclib/docs/2022/january/tradoc\\_160003.xlsx](https://trade.ec.europa.eu/doclib/docs/2022/january/tradoc_160003.xlsx).

<sup>39</sup> The European information network designated by the European Commission to answer EU citizens' questions.

<sup>40</sup> TARIC database: [https://ec.europa.eu/taxation\\_customs/dds2/taric/taric\\_consultation.jsp?Lang=en](https://ec.europa.eu/taxation_customs/dds2/taric/taric_consultation.jsp?Lang=en).

<sup>41</sup> CIRCABC, Dual use correlation table, [https://circabc.europa.eu/ui/group/0e5f18c2-4b2f-42e9-aed4-dfe50ae1263b/library/c3d06bd7-6ef0-4771-bbd7-f92b976ae9a0?p=1&n=10&sort=modified\\_DESC](https://circabc.europa.eu/ui/group/0e5f18c2-4b2f-42e9-aed4-dfe50ae1263b/library/c3d06bd7-6ef0-4771-bbd7-f92b976ae9a0?p=1&n=10&sort=modified_DESC).

<sup>42</sup> The TARIC service of DG TAXUD can be reached at the following address: TAXUD-DDS-Taric@ec.europa.eu.

<sup>43</sup> Renaud Chatelus, and Pete Heine. "Rating correlations between customs codes and export control lists: Assessing the needs and challenges." Strategic Trade Review, vol. 2, no 3, (2016): 43-67.

Speaking of scope, the correlation table covers the entirety of the EU Dual-Use Control List's 10 categories. However, it might be worth noting that the dual-use technology controls reported in the Correlation table (*i.e.*, ECCNs under subcategory E of the EU Dual-Use Control List) are associated with the CN codes (*i.e.*, customs codes) related to the tangible support (potentially) containing the controlled technology. To give an illustration of this, CN code 4901100000, which correlates to ECCN 1E001, is described in the HS Nomenclature as "Printed books, brochures, leaflets and similar printed matter, whether or not in single sheets", but what is controlled from a strategic trade perspective is not the paper book itself but rather the sensitive data and information it contains.<sup>44</sup> Thus, it is the tangible support which might be called "the container" (*e.g.*, the book) that can be detected by customs authorities via the CN codes, yet not all of these containers have a sensitive "content" (controlled dual-use technology). This uncertainty related to the "container" and the difficulty in verifying its content explains why technology controls are a real challenge for customs (without mentioning the intangible transfers of technology which cannot be controlled by customs authorities).

Although this study did not assess the comprehensiveness of the table, all CN codes potentially corresponding to dual-use controlled items are supposed to be listed in the correlation table along with the concerned ECCNs. Considering the mentioned divergence between the two types of classifications, sometimes the same CN code is associated with various ECCNs and *vice versa*.<sup>45</sup>

In terms of geographic coverage, the tool is mainly addressed at EU member states whose trade control systems use the EU Dual-Use Control List's classification (ECCNs) and whose customs classification of goods is based on the CN codes. Still, the EU Dual-Use Control List has been adopted (either partially or in its entirety) by numerous countries, so becoming an international standard, while the first six digits of CN codes are actually the same as the HS codes which are used, as previously mentioned, by more than 200 countries and economies.<sup>46</sup> Consequently, all the countries having adopted the EU Dual-Use Control List and being members of the Harmonized System could still use this correlation table as a form of guidance by taking into account only the first six digits of the CN codes.

In terms of being beneficial to users, the tool is mainly relevant to enforcement and licensing authorities. The correlation table can be useful in customs and license application procedures as a first-level classification and risk assessment (targeting/profiling) filter. An item whose CN(HS) code would be listed in the table could be an indicator that triggers a deeper analysis of the transaction. Moreover, following the same logic, it could also be used for audits and clearance purposes, which might lead to investigations of strategic trade control violations. Finally, the tool could also be interesting from an academic perspective, offering semi-structured data which could be very useful for research and certain statistical purposes.

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<sup>44</sup> "Technology" according to the General Technology Note for the "development" or "production" of equipment or materials specified in 1A002 to 1A005, 1A006.b., 1A007, 1B or 1C."

<sup>45</sup> For instance, CN code "7503009000" might correlate to both 1C002 or 1C003, and ECCN "2A101" corresponds to CN codes "8482101000, 8482109000, 8482800000".

<sup>46</sup> Quentin Michel, and Sylvain Paile. Research on countries that have adopted the EU dual-use control list, *European Studies Unit of the University of Liège*, 2021: <https://www.esu.ulg.ac.be/research-on-countries-that-have-adopted-the-eu-dual-use-control-list/> (accessed on 15 November 2022).

In conclusion, the TARIC correlation table is a helpful, always up-to-date guidance, correlating the totality of the EU dual-use control codes to the concerned CN(HS) codes. As such, the tool is complete, and its quality is quite high. Nevertheless, despite the quality of the work, the information provided is only approximate due to the nature of the data available, characterized by varying discrepancies between the CN and ECCN codes, justified by differences in customs and trade control classification's requirements, level of detail, type of criteria, and specifications.<sup>47</sup> Concerning the format, the Excel sheet form might be useful for further elaboration of the data; however, it is not very user-friendly. For a good understanding of the data, it would be necessary to use, both separately and contemporaneously, the TARIC code and EU Dual-Use Control List for the descriptions of the items. Some important elements which are missing from the tool are the mentions of the relevant legal references for the listed CN and ECCN codes, which are both regularly modified, as well as an explanatory note or disclaimer about the approximative correlation between the two classifications.

	A	B	C
1	<b>CN Codes 2022</b>	<b>TARIC Footnote for SAD</b>	<b>Dual Use Codification</b>
2	2404120000	DU546	1C450 b1
3	2404920000	DU546	1C450 b1
4	2612101000	DU017	0C001
5	2612109000	DU017	0C001
6	2612201000	DU017	0C001
7	2612209000	DU017	0C001
8	2620999500	DU017	0C001
9	2707100000	DU068	1C111
10	2707200000	DU068	1C111
11	2707300000	DU068	1C111
12	2707400000	DU068	1C111
13	2707500000	DU068	1C111
14	2707999900	DU068	1C111
15	2710122100	DU068	1C111
16	2710122500	DU068	1C111
17	2710123100	DU068	1C111
18	2710124100	DU068	1C111
19	2710124500	DU068	1C111
20	2710124900	DU068	1C111
21	2710125000	DU068	1C111

Figure 4 Correlation Table between the Combined Nomenclature codes and the Export Control Classification Numbers

### EU and US Consolidated Screening Lists

#### Consolidated list of persons, groups and entities subject to EU financial sanctions

The “Consolidated list of persons, groups and entities subject to EU financial sanctions” (EU Consolidated List) is a resource maintained by the European Commission (Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA)). The Consolidated List consists of a dataset. The purpose of the List is to facilitate the application of financial sanctions and,

<sup>47</sup> Chatelus, and Heine. "Rating correlations between customs codes and export control lists".

specifically, asset freezes. A precursor of the List was established by the Credit Sector Federations in a database which the European Commission later took responsibility for maintaining (and, consequently, the funding involved in its preparation, publication/circulation, and maintenance).<sup>48</sup> Since 2017, the European Commission has provided this resource online by way of publishing consolidated lists of financial sanctions consisting in asset freezes, in various file formats.<sup>49</sup> The tool is strictly informative. Accordingly, in the informative-analytical continuum line, it would be “solely informative”.

There does not appear to be much information publicly available about the exact methods of this tool’s construction. However, given the responsibility of DG FISMA and the entirely informational nature of the List, it appears to be wholly an exercise in representation of information derived from official legal instruments. On this point, it is nevertheless important to note that the European Commission has emphasized that only the legal texts published in the Official Journal of the European Union can be relied upon to be fully authentic. With regard to the scope, the List covers all restrictive measures adopted at the EU level with respect to financial measures consisting of asset freezes, inclusive of all relevant locations worldwide and the relevant sanction review periods.<sup>50</sup>

In terms of users, the List is of relevance to economic operators and authorities involved in applying and screening for the application of financial sanctions and, specifically, asset freezes. This is a complex area of regulation and, in relation to sanctions packages under review/expansion, the monitoring of relevant information can become unwieldy at national level. Therefore, much like consolidated Regulations, a compilation from a trusted source is a welcome addition to the user’s toolbox. However, the lack of legal authority inherent in the list may give certain users pause. Overall, when one considers the efficacy of this tool with respect to its stated purpose (facilitating the application of financial sanctions and, specifically, asset freezes), in simple terms, it does its job well. By providing a consolidated dataset in this area of regulation, the European Commission may contribute to more streamlined and efficient application of such sanctions. When considered purely as a dataset, its availability in various file formats is also useful. However, it is fair to say that this tool forms part of a broad approach by the European Commission to assist target users. In terms of ease of access (requiring an EU login), presentation and ease of use (searching), the tool could potentially benefit from some further attention or, indeed, could be developed alongside other tools into a screening suite of sorts, with additional functionality (for example, “fuzzy name searching”).

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<sup>48</sup> DG FISMA, “Consolidated list of persons, groups and entities subject to EU financial sanctions” (overview). Available: <<https://data.europa.eu/data/datasets/consolidated-list-of-persons-groups-and-entities-subject-to-eu-financial-sanctions?locale=en>>.

<sup>49</sup> Available online from the European Commission (account required): <https://webgate.ec.europa.eu/fsd/fsf#!/files> (last accessed on November 29, 2022).

<sup>50</sup> For further, interactive, details regarding geography and links to the Official Journal of the EU texts involved, users may also wish to consult the online tool, “EU Sanctions Map” (<https://www.sanctionsmap.eu/#/main>), which is provided and maintained by the European Commission in tandem with the Consolidated List and other datasets pertaining to restrictive measures.

#### United States Consolidated Screening List

The United States Consolidated Screening List (CSL) is a list of parties for which the United States (US) maintains restrictions on certain exports, re-exports, or transfers of items.<sup>51</sup> The CSL consolidates multiple export screening lists of the US Departments of Commerce, State, and Treasury. The CSL comprises a suite of tools, including a search engine, datasets (lists) and an interface for the reading of certain datasets. This tool is intended to assist industry in conducting electronic screens of potential parties to regulated transactions and was developed by the US Government.<sup>52</sup> It is hosted online by the US International Trade Administration. Again, this tool is strictly informative in nature.

There does not appear to be much information publicly available about the exact methods of the CSL's construction. However, similar to the EU Consolidated List, this tool is an exercise in representation of information derived from official legal instruments within the remit of the aforementioned US Government departments. The CSL includes lists of denied individuals and entities, non-proliferation sanctions, the US Arms Export Control Act (AECA) debarred list, and the Sectoral Sanctions Identifications (SSI) List, with all relevant locations and periods being addressed.

The CSL is of relevance to all economic operators involved in potentially controlled activities subject to the lists consolidated on the platform. Given the complexity of the areas of regulation involved, the availability of these datasets from the national authorities in the US is undoubtedly welcome to the relevant stakeholders. The CSL would appear to ably meet its stated aim of assisting industry in conducting electronic screening of potential parties regarding certain regulated transactions, given the multifaceted approach enabled by the search facility and the file-reading interface provided on the platform.

It is this functionality which really lends itself to the CSL's user-friendliness. The information provided is clear and broken down into various lists, as derived from the relevant government departments. While its presentation is simplistic, this approach in fact lends clarity to the user. Compared with the EU Consolidated List, the CSL would seem to offer more in terms of potential user engagement, with its purpose-built search facility (including "fuzzy name searching" capabilities) and the interface provided on the platform to read datasets in particular file formats. Were the CSL to be improved upon, perhaps attention could be drawn to the potential for more powerful and streamlined analytical functions, which could, for example, deliver greater ease of use in terms of trend analysis and other research endeavors.

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<sup>51</sup> United States International Trade Administration, "Consolidated Screening List" (overview), <https://www.trade.gov/consolidated-screening-list> (last accessed on November 29, 2022).

<sup>52</sup> United States International Trade Administration, "Consolidated Screening List".



### Search the Consolidated Screening List (CSL)

Search all [the screening lists](#) at one time by filling in the search boxes below.  
 If you get too many results, try including more information to the additional fields. If you get too few results, try searching one field at a time.

**Name**  
 Search for an entity's name or one of its alternative names.

**Fuzzy Name**  
 When set to "off", the spelling of the Name you search for must be correct to get results. When set to "on", the spelling for the Name you search for may be slightly off from the exact spelling. Check the score for each result to determine how close a match it is to the entity's name or its alternative names. A score of 100 is an exact match. Results are returned with the highest scores first. Fuzzy search filters out the following common words: co, company, corp, corporation, inc, incorporated, limited, ltd, mrs, ms, mr, organization, sa, sas, llc, university, and univ.  
 For example, 'Water Corporation' returns the same results as 'Water' because 'Corporation' is one of the common words.

Off

**Address**  
 Search for the street address, city, province, and postal code of an entity.

**Sources**  
 Choose which of the screening lists that you want to search.

Select...

**Countries**  
 Choose which countries that you want to search. Note, the Nonproliferation Sanctions and ITAR Debarred lists do not include the country with an entity. If you choose to search for entities by country then you will not be searching these two lists.

Select...

Figure 5 US Consolidated Screening List's search interface



### EU Sanctions Map

The EU Sanctions Map is a digital map that is set to visualize information on restrictive measures adopted by the EU (including transposition of UN sanctions), in a way that is “simple, comprehensive, and user-friendly”.<sup>53</sup>

The tool was developed during the Estonian Presidency of the Council of the European Union, and was launched on September 29, 2017, during the Tallinn Digital Summit. The declared aim of the EU Sanctions Map was “to share up-to-date information digitally, simply and in a user-friendly fashion regarding sanctions implemented in the EU”, bringing foreign policy closer to the citizens while making “EU sanctions policies more transparent and comprehensible to the public”.<sup>54</sup>

<sup>53</sup> For a video introduction to the tool: EU2017EE, *YouTube*, “The EU Sanctions Map - simple, comprehensive and user-friendly”, URL: <https://www.youtube.com/watch?v=QzXwivh6MJg>, accessed on December 4, 2022.

<sup>54</sup> Aili Vahtla, “Estonia Launches EU Sanctions Map”, *ERR.ee*, September 29, 2017, <https://news.err.ee/633354/estonia-launches-eu-sanctions-map>.

Estonia’s “digital contribution” to the EU starts from understanding that sanctions are a foreign policy instrument that are being employed more and more frequently, but “information is scattered over hundreds of legal texts, references and links, and retrieving the latest version requires specialized knowledge.”<sup>55</sup>

After the end of the Estonian presidency, in January 2018, the sanctions website was handed over by the Estonian Foreign Minister, Sven Mikser, to the High Representative of the European Union for Foreign Affairs and Security Policy, Federica Mogherini.<sup>56</sup> It has since been managed by the European Commission.<sup>57</sup>

The tool is informative and partly analytical. In the informative-analytical continuum line, the EU Sanctions Map can be categorized as “predominantly informative”.



As the name suggests, sanctions applied by the EU are shown on a world map: from the main page, it is possible to see a gray planisphere from which certain countries stand out in blue. Users can find information on restrictive measures, either in the map or on the list of restrictions.

An original system of symbols has been developed to “visualize information otherwise hidden in complex legal acts”. By clicking on one of the highlighted countries, a series of icons identify the type of measures that are applicable: arms embargoes, restrictions on the import or export of dual-use or military items, financial sanctions, measures against persons, etc. By clicking on “legal acts” or “guidelines”, it is possible to access links to underlying regulations and explanatory notes where available.

From the top bar, it is also possible to see the list of competent authorities in charge of sanctions implementation and the TARIC database.

The tool was later developed to include the “Consolidated List of Travel Bans” and the “Consolidated list of Financial Sanctions”, as well as to access the new Sanctions Whistleblower tool.

<sup>55</sup> Vahtla, “Estonia Launches EU Sanctions Map”.

<sup>56</sup> *The Baltic Course*, “Estonia gifts Sanctions Map to EU Commission”, December 12, 2017, <http://www.baltic-course.com/eng/Technology/?doc=135846>.

<sup>57</sup> It is our understanding that in 2017 the tool was handed over to the Foreign Policy Instruments Service of the European Commission and that the tool is currently managed by the Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA).

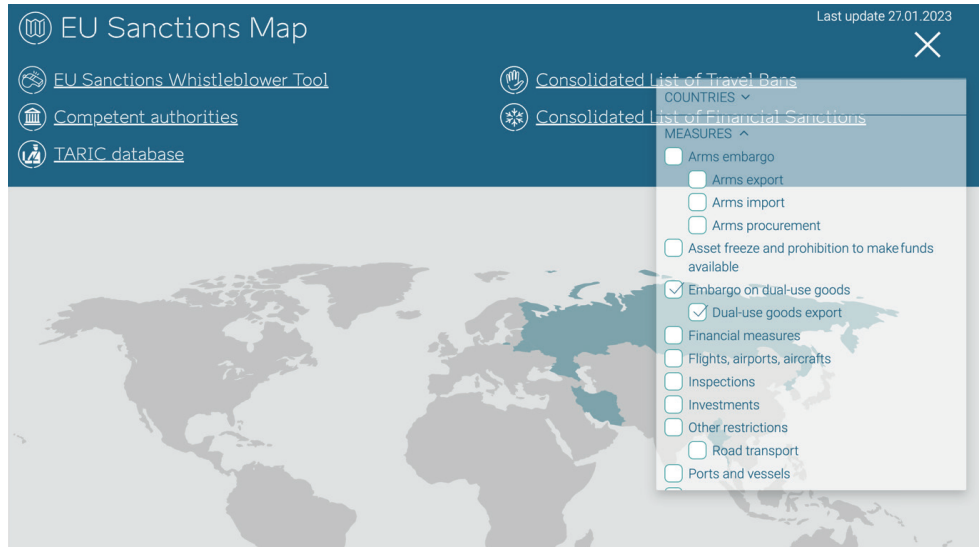


Figure 6 EU Sanctions Map

The digital map fulfils its original objectives of establishing a web-based tool, open source, easily readable and accessible. It has the merit of concentrating information in a highly visual platform that also has the merit of being very accurate, as it is updated a maximum of 24 hours after the publication of decisions concerning sanctions in the Official Journal. Updates are also posted on the map's Twitter feed.

Widely recommended on the websites of embassies and trade associations, it is largely in use by Export Control competent authorities and economic operators (notably by exporters in their due diligence procedures). A well-known and highly utilized tool by industry, it can benefit the exporter community in general as the regulatory context evolves and becomes more complex, as they strive to gain easy-to-access and updated information on any restrictions applicable to their transactions. In this sense, the Sanctions Map is adapted to raise general awareness, promote knowledge about the scope of sanctions, and help divulgate applicable restrictions.

### **Export Control Handbook for Chemicals**

The Export Control Handbook for Chemicals (EHC) gathers several lists of chemicals subject to export controls imposed by EU regulations or by the Chemical Weapons Convention.<sup>58</sup>

The scope of the handbook includes the following legal instruments:

- The Dual-use regulation, (EC) No 428/2009;<sup>59</sup>
- The Chemical Weapons Convention;<sup>60</sup>
- Chemicals with military applications, 2008/944/CFSP;<sup>61</sup>
- Hazardous chemicals, (EU) No 649/2012;<sup>62</sup>

<sup>58</sup> Filippo Sevini, and Xavier Arnés-Novau. *Export Control Handbook for Chemicals (2021 edition)*. European Commission, Joint Research Centre (JRC), 2021, <http://data.europa.eu/89h/8f0d4fa2-110d-4c05-b2a8-ecd3addbf16b>.

<sup>59</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 (Recast) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02009R0428-20191231>.

<sup>60</sup> The Chemical Weapons Convention Treaty; <https://www.opcw.org/chemical-weapons-convention/download-convention>.

<sup>61</sup> Common Military List of the European Union ST/5470/2020/INIT; [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020XG0313\(07\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020XG0313(07)).

<sup>62</sup> Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02012R0649-20200901>.

- Chemicals included in the anti-torture regulation, (EU) No 2019/125;<sup>63</sup>
- Chemicals subject to sanctions for certain countries (Syria, DPRK and Iran);
- Chemical precursors of explosives, (EU) No 2019/1148;<sup>64</sup>
- Chemical precursors of psychotropic and narcotic substances, (EC) No 111/2005.<sup>65</sup>

Using the Handbook, the stakeholders can, swiftly, consult and confirm if the export of a chemical product needs an authorization or is prohibited under Union Sanctions regimes.

Each chemical, through its commercial designation, is correlated with the following data:

- CAS number;<sup>66</sup>
- Legislation of reference;
- 8 digits code (CN code) used for Customs export declarations.<sup>67</sup>

Furthermore, the ECHC also introduces all the Union regulations under which the export of chemicals is controlled, giving relevant information on the grounds and scope of each legal regime.

**Table 2.** Chemicals subject to the dual-use regulation

ECN	Chemical name	CAS number	CN code
OC001	Diammonium heptaoxodiuranate; (NH <sub>4</sub> ) <sub>2</sub> U <sub>2</sub> O <sub>7</sub>	7783-22-4	2844.30.91
OC001	Disodium heptaoxodiuranate; Na <sub>2</sub> U <sub>2</sub> O <sub>7</sub> ·H <sub>2</sub> O	13721-34-1	2844.30.91
OC001	Thorium acetate	13075-28-0	2844.30.91
OC001	Thorium benzoate	N/A	2844.30.91
OC001	Thorium bromide; ThBr <sub>4</sub>	13453-49-1	2844.30.91
OC001	Thorium carbide; ThC <sub>2</sub>	12012-16-7	2844.30.91
OC001	Thorium chloride; ThCl <sub>4</sub>	10026-08-1	2844.30.91
OC001	Thorium fluoride; ThF <sub>4</sub>	13709-59-6	2844.30.91
OC001	Thorium formiate	N/A	2844.30.91

*Figure 7 Export Control Handbook for Chemicals*

<sup>63</sup> Regulation (EU) No 2019/125 of the European Parliament and of the Council of 16 January 2019 concerning trade in certain goods which could be used for capital punishment, torture or other cruel, inhuman or degrading treatment or punishment <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02019R0125-20200527&qid=1610983638632>.

<sup>64</sup> Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32019R1148>.

<sup>65</sup> Council Regulation (EC) No 111/2005 of 22 December 2004 laying down rules for the monitoring of trade between the Union and third countries in drug precursors; <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02005R0111-20210113&qid=1610958098123>.

<sup>66</sup> Chemical Abstract Service is a division of the American Chemical Society and it is a source of chemical information, <https://www.cas.org/about-us>; "The CAS registry number (7), or CAS number, is a unique numerical identifier assigned by the Chemical Abstracts Service (CAS) to every chemical substance described in the open scientific including organic and inorganic compounds, minerals, isotopes and alloys." In Xavier, Sevini, *Export Control Handbook for Chemicals*, p.7, <https://publications.jrc.ec.europa.eu/repository/handle/JRC124421>.

<sup>67</sup> "The Combined Nomenclature (CN) is an annually amended customs system established on the basis of the Harmonized System. Each traded commodity, including chemicals, is identified by an 8 digit-CN code used in the Single Administrative Document (SAD) for Customs declaration purposes" in Xavier, Sevini, *Export Control Handbook for Chemicals*, p.6; <https://publications.jrc.ec.europa.eu/repository/handle/JRC124421>.

The researchers Dr. Xavier Arnes-Novau and Dr. Filippo Sevini, of the European Commission Joint Research Center (JRC) developed the tool as a technical report. The report was published by the JRC in 2019.<sup>68</sup>

A second edition of the ECHC was published in 2021 following the revision of the technical report in order to update and embrace more information, notably “adding more regulations foreseeing different forms of export controls on chemical”.<sup>69</sup>

The ECHC was financed and produced by the Joint Research Center, European Commission.<sup>70</sup> One can consider the ECHC as a predominantly informative tool: it provides the necessary information for the users to perform directly their assessment, i.e., the interpretation of whether a chemical’s export is subject to restrictions or sanctions from the European Union.



The ECHC was built as a repository of all chemicals subject to export control measures, listed on Union regulations and on the CWC.<sup>71</sup>

With the compiled information, researchers built metadata charts correlating the chemical designation with other references like CAS number or CN code.

The ECHC is a relevant tool to all stakeholders involved in export controls, but mainly to exporters, and governmental entities like licensing agencies or customs.

The ECHC is also very user-friendly: the information provided is easy to interpret and to apply to concrete cases.

The Handbook is so user-friendly that one using it for the first time immediately perceives the full extent of the usage, identifying whether a chemical is export controlled or otherwise.

The format published online, as a pdf file, is perfect to consult and, which is a plus, the online format respects the basic environmental safeguards of paper-saving.

<sup>68</sup> Filippo Sevini, and Xavier Arnés-Novau. *Export Control Handbook for Chemicals (2019 edition)*. European Commission, Joint Research Centre (JRC), 2019, <http://data.europa.eu/89h/79ec4d26-f7cf-4558-8551-0c55b1050996>.

<sup>69</sup> Sevini, and Arnés-Novau. *Export Control Handbook for Chemicals (2021 edition)*, Acknowledgements.

<sup>70</sup> Sevini, and Arnés-Novau. *Export Control Handbook for Chemicals (2021 edition)*.

<sup>71</sup> Sevini, and Arnés-Novau. *Export Control Handbook for Chemicals (2021 edition)*, pp.7-8.

### *Peddling Peril Index*

The Peddling Peril Index (PPI) is an index to evaluate the effectiveness of strategic trade controls (STCs). It ranks the national STCs throughout the globe to determine STC systems' respective strengths and weaknesses and to monitor their development.<sup>72</sup>

The authors of PPI accentuated the importance of the global prevention of dangerous nuclear undertakings and that STC can mitigate the risks related to the smuggling of weapons of mass destruction and their means of delivery. In this sense, it remains critical to be aware of the adequacy of the control system at the national and global levels because of its weak elements, as exploited by proliferators.<sup>73</sup>

This need motivated the Institute for Science and International Security (ISIS) to build the evaluation system of STCs to allow nations to have a basis to diminish the gaps in the control systems and improve them.

The PPI does not include information about the funding of the index; however, considering the “Credits and Acknowledgments” section, the index is a result of “thousands of hours of methodological research, data collection, and analysis by ISIS staff, past and present”, meaning that ISIS finances the PPI.<sup>74</sup>

The PPI is essentially an analytical tool based on the methodology to evaluate the STCs (including five super-criteria weighted by impact levels, and sub-criteria.). Based on total PPI rank, tier ranking, and ranking by cluster analysis, the index provides recommendations on how to improve the PPI scores and, in general, the priority recommendations to governments and industries on improving STCs.



The PPI was proposed at the workshop in 2015 involving ISIS experts. The name of the index was proposed by Mark Dubowitz as a follow-on to Albright's 2010 book, *Peddling Peril*, on illicit nuclear trade and the A.Q. Khan network that operated out of Pakistan.<sup>75</sup>

<sup>72</sup> David Albright et al., *The Peddling Peril Index (PPI) 2021/2022: Ranking National Strategic Trade Control Systems*, Institute for Science and International Security, September 2021.

<sup>73</sup> David Albright et al., *The Peddling Peril Index*.

<sup>74</sup> David Albright et al., *The Peddling Peril Index*.

<sup>75</sup> David Albright et al., *The Peddling Peril Index*.

The tool has been developed based on open-source data such as 1540 Matrices, Financial Action Task Force (FATF) evaluation reports, and countries' legislations translated into English. Additionally, interviews were conducted with experts from 60 countries, which focused on gaining information from people with specific, direct knowledge of countries' trade control systems and their implementations.<sup>76</sup>

The methodology has been grounded on developing the indicators for every sub-criterion to assess the control system's elements within the dedicated super-criteria. Then, using the weighted factor for each sub-criterion, the possible raw points (900 in total) were scaled to weighted possible points (in total 1300), which is a PPI. In the final step, the scaled, weighted percentage was calculated to be equal to 100.<sup>77</sup> Figure 8 represents the general content of PPI.<sup>78</sup>

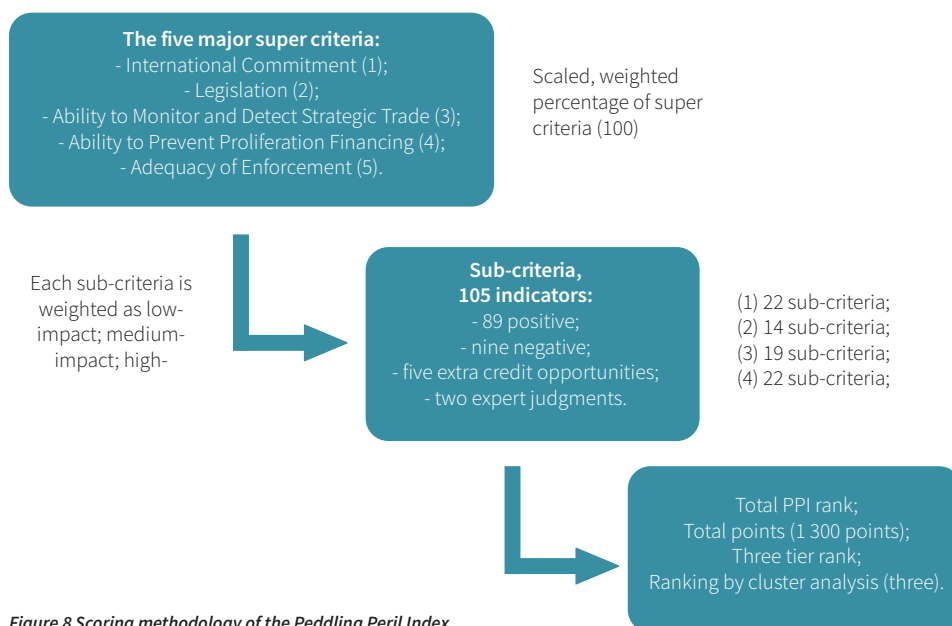


Figure 8 Scoring methodology of the Peddling Peril Index

Additionally, the PPI provides three tiers pertaining to the categorization of similar countries depending on the specificity for more relevant comparisons. The tiers are supplier countries, transshipment countries with limited supply potential, and other states.<sup>79</sup>

Also, the authors provided a cluster analysis using the Python programming language, putting similar countries into the same cluster. There are four clusters: Cluster 1 (Group 1) includes the ranks 1 to 46; Cluster 2 (Group 2) consists of the ranks 47 to 102; Cluster 3 (Group 3) has the ranks 103 to 177; and Cluster 4 (Group 4) includes the ranks 178 to 200.<sup>80</sup>

<sup>76</sup> David Albright et al., *The Peddling Peril Index*.

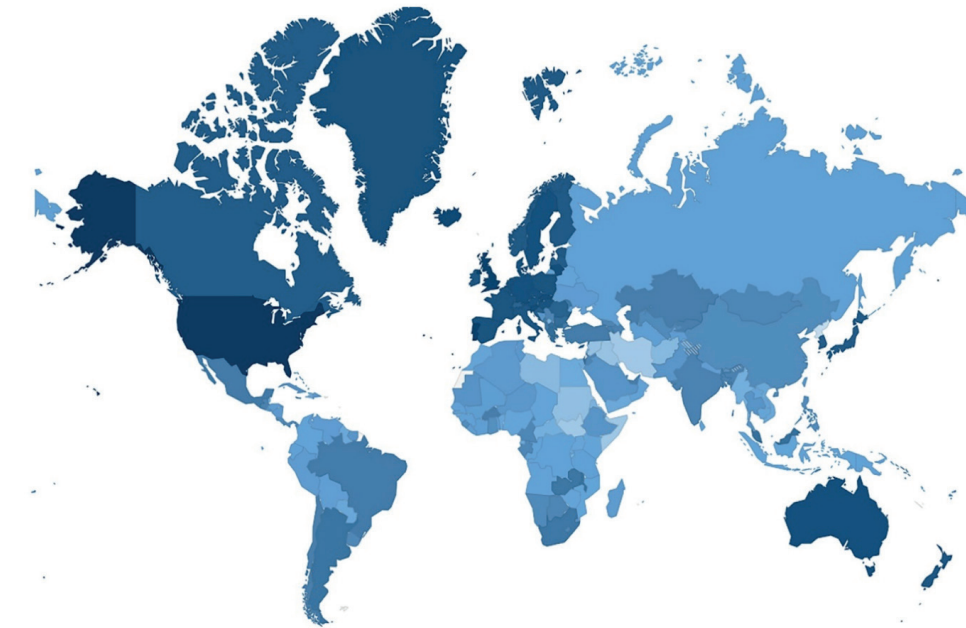
<sup>77</sup> David Albright et al., *The Peddling Peril Index*.

<sup>78</sup> David Albright et al., *The Peddling Peril Index*.

<sup>79</sup> David Albright et al., *The Peddling Peril Index*.

<sup>80</sup> David Albright et al., *The Peddling Peril Index*.

The PPI covers 200 nations, territories, and entities.<sup>81</sup> Moreover, it also provides three evaluations of control systems as of 2017, 2019/2020, and 2021/2022.<sup>82</sup>



**Figure A.1.** The strength of export control systems around the world, according to the PPI scoring.

**Key:** ■■■■■■  
 Dark blue = highest points (maximum available 1,300; actual maximum reached 1,027)  
 Light blue = lowest points (negative points possible; lowest actual score -349)

*Figure 9 Peddling Peril Index's map*

The tool is relevant for broad stakeholders. National authorities and industries might be interested in PPI to understand the weaknesses and strengths of control systems and to implement a bulk of recommendations to improve the control systems. Researchers can examine control systems and develop recommendations, projects, and course materials. Donor countries can identify the outreach dimensions.

The PPI is the most disputable index among experts for several reasons, such as critics of the applied methodology, its clarity, and the accuracy of the results. Also, expert judgment is considered subjective.

However, all the drawbacks of the PPI have been highlighted by the authors. They pointed out that the primary purpose of the PPI is “to maximize the use of open-source data and minimize the use of expert judgment, which can be subjective, although this was not possible to do completely”.<sup>83</sup> At this point, the open data quality appears to be an issue (for example, the information in 1540 Matrices).

<sup>81</sup> David Albright et al., *The Peddling Peril Index*.

<sup>82</sup> Peddling Peril Index, revisions 2017, 2019/2020 and 2021/2022, accessed 23 November 2022, <https://isis-online.org/ppi>.

<sup>83</sup> David Albright et al., *The Peddling Peril Index*.



The PPI is a complex index that attempts to determine the criteria of STC effectiveness by evaluating its essential elements, which is quite challenging considering the extensive structure of the control system. In these terms, such an index benefits actors of the global STC system, even though this does not appear to be evident at first glance. In addition, the PPI has relevant recommendations to enhance the export control systems.

The PPI has limitations regarding the clarity of the methodology, mainly about the selected super-criteria and sub-criteria. Some of them are out of the STC's scope. The index does not provide the list of experts who carried out the judgment, the criteria on which the experts' judgment was rendered, and the questions asked in the interviews. The PPI has a less user-friendly format.

#### Strategic Trade Atlas

The Strategic Trade Atlas (STA), initially published in 2016 (only country-based view), was and still is the first and only macroscopic graphical and available representation of world trade flows (exports and imports) classified under Harmonized System (HS) codes associated by the World Customs Organization (WTO) with strategic commodities.<sup>84</sup> Strategic goods are “goods of militarily strategic value, including dual-use goods”.<sup>85</sup>

STA's trade data's use for strategic trade control can “enhance the effectiveness and efficiency of strategic trade control efforts.”<sup>86</sup>

The very first STA was arranged in 2014 during the preparatory phase for WCO Operation Cosmo to respond to the challenge of targeting strategic trade. As a working draft document, STA was shared with the participants of Operation Cosmo. In 2016, a country-based view of STA was published. A fundamental revision (country- and commodity-based) of STA with improved trade indicators and visualizations was developed within the second Operation Cosmo and published in 2018.<sup>87</sup> Since 2020, STA has been published as a single book, including country- and commodity-based views.<sup>88</sup>

Three authors developed STA from three institutions: Cristina Versino from the European Commission, Joint Research Centre, Pete Heine from Pacific Northwest National Laboratory, and Julie Carrera from Argonne National Laboratory.<sup>89</sup>

According to the Acknowledgement part, “the work presented in this book was carried out under the Agreement between the European Atomic Energy Community and the United States Department of Energy (US DOE) in the field of nuclear materials

<sup>84</sup> European Commission - Joint Research Centre, Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas 2015-2019: country- and commodity-based views*, Publications Office of the European Union, 2021, <https://data.europa.eu/doi/10.2760/717373>.

<sup>85</sup> Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas*.

<sup>86</sup> Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas*.

<sup>87</sup> WCO Strategic Trade Control Enforcement Implementation Guide, <http://www.wcoomd.org/en/topics/enforcement-and-compliance/instruments-and-tools/guidelines/wco-strategic-trade-control-enforcement-implementation-guide.aspx>.

<sup>88</sup> In previous revisions of STA, two books presented separately the country- and commodity-based views.

<sup>89</sup> Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas*.

safeguards and security research and development, Action Sheet 57 on Collaboration on Trade Analysis and Visualization” and the supports of authors by other fundings and agreements.<sup>90</sup>

The STA is an equally informative & analytical tool that provides strategic trade data regarding the HS codes’ list associated with strategic commodities extracted from BACI by the Center for International Prospective Studies (CEPII) and represented in graphical and interactive formats.<sup>91</sup>

The STA justifies the methodology of the trade data provided in different views (country-, commodity-based and commodity × country matrix) in the book and online format (country-, commodity-based and country-based view for mobile)<sup>92</sup> – it also provides CSV files of strategic trade data. Each STA revision includes trade data for five years.<sup>93</sup>

The trade is based “on data originally reported to and made publicly available by the United Nations Statistical Division [UN Comtrade Database], then processed to reconcile trade asymmetries by the Centre d’Etudes Prospectives et d’Informations Internationales (CEPII)”.<sup>94</sup> Trade data in the STA has a two-year lag because of the BACI database. “[...] BACI trails UN Comtrade with a two-year lag”.<sup>95</sup>



*A country-based view provides:*

- the trade flows on the top 25 HS groups (presented in order and can comprise several HS codes) of exported or imported strategic commodities by the country and by exported (imported) value and quantity by the country to (from) the world;
- for corresponding HS groups, the value and quantity exported (imported) by the country to (from) the world are expressed as percentages of the country’s total export (import) in strategic HS groups;
- normalized revealed comparative advantage index (NRCA) for exports and imports in value and quantity, associated with the comparative advantage of the country (exports) or dependence on commodity (imports);
- maintop destinations;
- country’s world ranking for export and import value in HS codes associated with strategic commodities;

<sup>90</sup> Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas*.

<sup>91</sup> Base pour l’Analyse du Commerce International (BACI) by CEPII, accessed 2 December 2022, [http://www.cepii.fr/CEPII/en/bdd\\_modele/bdd\\_modele\\_item.asp?id=37](http://www.cepii.fr/CEPII/en/bdd_modele/bdd_modele_item.asp?id=37).

<sup>92</sup> Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas*. The online format is available at the following link: <https://public.tableau.com/app/profile/strategic.trade.atlas>.

<sup>93</sup> The last STA revision of 2021 includes trade flows for 2015-2019.

<sup>94</sup> Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas*.

<sup>95</sup> A Practical Guide to Trade Policy Analysis. 2012. World Trade Organisation, accessed 2 December 2022, [https://www.wto.org/english/res\\_e/publications\\_e/wto\\_unctad12\\_e.pdf](https://www.wto.org/english/res_e/publications_e/wto_unctad12_e.pdf).

- country's export-import balance by value in HS codes associated with strategic commodities expressed as a percentage;
- country's export-import value in HS codes associated with strategic commodities is expressed as a percentage of the country's trade in all items;
- country's export-import trend by value in HS codes associated with strategic commodities over five years.

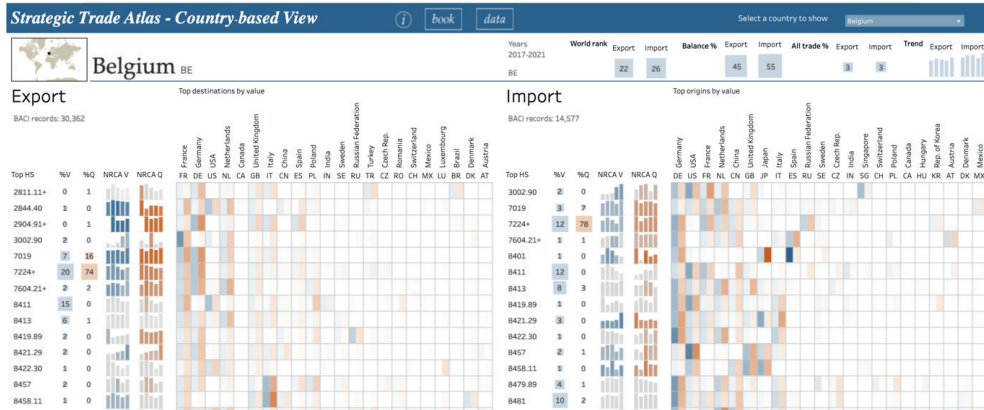


Figure 10 Strategic Trade Atlas's country-based view

A commodity-based view provides:

- top 25 exporters and importers by value and quantity for the HS group, listed by decreasing trade value;
- for corresponding countries, value and quantity exported (imported) by the government to (from) the world, expressed as the percentage contribution of the country's export (import) to the world trade in the HS group;
- the matrix of export-import flows between top exporters and top importers;
- the world's value and quantity of trade in the HS group expressed as a percentage of the world's trade in all commodities;
- NRCA indices.

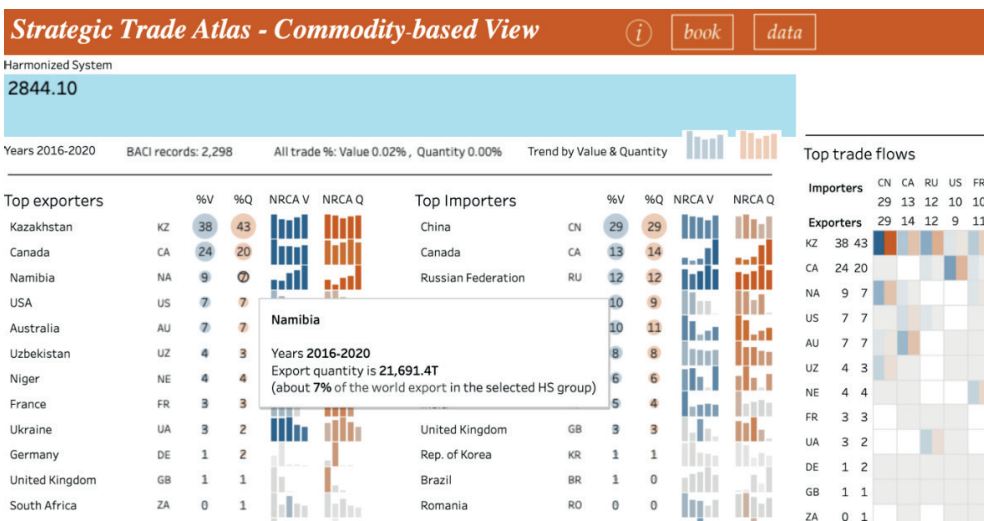


Figure 11 Strategic Trade Atlas's commodity-based view

A *commodity × country matrix* provides all exports of the strategic commodity groups by all countries, which allows for the comparison of the level of exports for different HS commodities measured worldwide.<sup>96</sup>

The last STA revision covers 179 countries.<sup>97</sup>

The tool is more relevant to academia than industry because it provides aggregated information on HS codes for five last years but with two years' lag, while for industry and customs authorities, trade data should be up to date and with more dedicated HS codes. The STA might be informative in some applications for trade facilitation institutions and outreach programs of donor countries.

The quality of strategic trade data is high because it is based on high-quality trade statistics sources and has a user-friendly interactive format, whereas the hard copy of STA requires the user to spend some time understanding the methodology and be able to read the elaborated information.

The STA has some drawbacks due to the following reasons:

- Two-year gap in trade data;
- In the HS, there are no codes dedicated explicitly to dual-use goods, thus the STA cannot accurately reflect trade flows of strategic goods;
- Groups of HS codes in STA are broad and include non-strategic commodities, and a share of associated dual-use items in the HS codes remains unknown;
- The STA reflects only the tangible strategic items trade flow.

### **TARBEL**

TARBEL is a user-friendly web application of the Federal Public Service Finance (Belgium) to consult measures related to the Belgian customs tariff. It can be accessed freely and without the need to register.<sup>99</sup>

The Belgian Customs tariff contains the classification of goods in the Combined Nomenclature (CN) codes and descriptions, and the European Union and Belgian national measures (non-tariff measures, tariff measures, and national taxes). It forms the basis of the Belgian declaration and customs clearance system, called the 'PaperLess Douane en Accijnzen' (PaperLess Customs and Excise) or 'PLDA'.

TARBEL is predominantly an informative tool, financed and maintained by the Federal Public Service Finance (Belgium), with two sources of data. One source is the data from the EU Customs Tariff (TARIC) database, covering all measures relating to EU customs tariff, and commercial and agricultural legislation. This TARIC data is updated daily, and is directly integrated into the TARBEL database. The other source

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<sup>96</sup> Cristina Versino, Pete Heine, and Julie Carrera, *Strategic trade atlas*.

<sup>97</sup> The book revision of STA includes 179 countries with more than 200 trade records, while the online version includes more countries with less than 200 trade records.

<sup>98</sup> For the purpose of this article, TARBEL Production v.5.0.15 was consulted on 17 November 2022.

<sup>99</sup> Official website of TARBEL: <https://eservices.minfin.fgov.be/extTariffBrowser/>.

is the data with national Belgian national measures (non-tariff measures, tariff measures, and national taxes). This is updated in accordance with a change in any of the national measures included.

TARBEL consists of the following sections: Tariff Consultation, Meursing,<sup>100</sup> News, Help, and Frequently Asked Questions. The Tariff Consultation Section has a Tariff Browser functionality to search for the nomenclature codes and duty rates, and also other data such as Legal Notes, Binding Tariff Information, and Classifications. Historical data can be retrieved as far back as 1 January 1970. The search functionality allows for text searches on codes and descriptions and can be fine-tuned via additional selectors (such as trade type and country of origin or destination). Additional searches are also possible via geographical areas (countries, regions, and groups), licenses, certificates, and similar documents required for import/export declarations, tariff quotas and footnotes. Footnotes provide additional information.

The screenshot displays the TARBEL Tariff Consultation interface. At the top, there are language selection options (NL, FR, DE, EN) and the website's official information (www.belgium.be). The main header includes the logo of the Federal Public Service Finance and the text 'TARBEL (Production v.5.0.15)'. Below the header is a navigation menu with 'HOME', 'TARIFF CONSULTATION', and 'MEURSING'. The main content area shows 'Simulation date: 2023-02-10' and 'Last update date: 2023-02-09'. The 'TARIFF BROWSER' section contains four search criteria: 'Trade type', 'Goods nomenclature code', 'Country of origin/destination (only for measures)', and 'Additional information', each with a dropdown menu and a corresponding search button.

**Figure 12 TARBEL's Tariff Consultation**

TARBEL is a useful tool for professionals who must deal with Belgian customs formalities, including freight forwarders, customs declarants, logistics/customs staff, importers, and exporters. A large part of TARBEL is identical to TARIC, which is a multilingual database. TARBEL is available in Dutch and French, and in German and English (limited content versions).

This tool can support exporters dealing with listed and non-listed dual-use items included in the EU control list.<sup>101</sup> Concerning possible license requirements for a listed dual-use item, footnote CD464 is the most relevant. It mentions: “If the goods declared are described in footnote “DU” linked to the measure, an export authorization must be presented according to Regulation (EU) 2021/821 of the European Parliament and of the Council and its amendments.” For instance, CN code 8485 10 00 00 refers to footnote DU137, which in turn refers to “goods 2B009 from the dual use list”. Through these footnotes, TARBEL includes a degree of additional guidance that may help exporters in overcoming misunderstandings in relation to the basic Correlation Table with CN codes and dual-use classification numbers, as provided by the European Commission.

<sup>100</sup> The Meursing code is an additional code required for import or export of goods containing certain types of milk and sugar.

<sup>101</sup> Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (OJ L 206, 11.6.2021, p. 1).

HOME ▾ | **TARIFF CONSULTATION** ▾ | MEURSING | DAILY NEWS | HELP ▾ | FAQ

### MEASURES

**8485 10 00 00**  
Section XVI - (Chapters 84 & 85) - Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles  
NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES; PARTS THEREOF  
Machines for additive manufacturing  
- **By metal deposit**

Supplementary unit: p/st

Country of origin/destination: A  
Trade type: E

Non-tariff measures (Regulation)

EU/BE Geographical area

Export authorization (Dual use) C

Footnotes Regulation

CD464 R0066/23  
DU137  
DU139  
DU145

If the goods declared are described in footnote "DU" linked to the measure, an export authorisation must be presented according to Regulation (EU) 2021/821 of the European Parliament and of the Council and its amendments.

[Tariff measures](#)  
No measures found

Figure 13 TARBEL Tariff Browser results for CN code 8485 10 00 00

In relation to export controls and sanctions, the tool is useful in four ways:

1. Based on the CN code, one can check if this CN code appears in the correlation table and thus support navigation from the CN code to the dual-use classification numbers, as outlined in the EU dual-use control list or the set of country-specific restricted measures (sanctions).
2. Export control and sanction-related measures are arranged per country, so one can see for a specific destination whether the export control or sanction-related measures apply or not.
3. If a DU footnote is available, then there is an overview of possible authorizations codes that are relevant for the actual customs declaration file. These codes include X060–Individual Export Authorization, Article 12(1)(a) of the Regulation (EU) 2021/821 of the European Parliament and of the Council–or X061–Union General Export Authorization No EU001, ANNEX II A, referred to in Article 12(1)(d) of the Regulation (EU) 2021/821 of the European Parliament and of the Council – or Y901 – Product not included in the dual use list.
4. The tool can be used for historical search purposes, and as such it can help to understand since when a CN code has been linked to dual-use classification numbers, and vice versa.



### TIM Dual-Use

The TIM Dual-Use Web Platform (hereinafter TIM DU) is a web-based platform that allows for mapping the transfers of potential dual-use and emerging “technology” – to be understood as defined in Annex I to EU Dual-Use Regulation – occurring between research and academic institutions, and the mapping of a country’s R&D international cooperation networks related to dual-use with EU funding.<sup>102</sup>

<sup>102</sup> “TIM Dual-Use”, European Commission - Joint Research Centre, University of Liege - European Studies Unit, [https://knowledge4policy.ec.europa.eu/text-mining/tim-dual-use\\_en](https://knowledge4policy.ec.europa.eu/text-mining/tim-dual-use_en).

TIM DU was designed to be – and indeed is – essentially analytical, as it is a data mining tool, mining raw information from other sources – platforms, in the first instance – with the objective of presenting information that is refined according to the specific inquiry made by the user. At the same time, the platform offers a lot of information such as lists of documents, organizations, authors, or countries. In this respect, in the informative-analytical continuum line, the platform can be classified as “predominantly analytical”.



The platform was built from the more global data mining platform “TIM Analytics”<sup>103</sup> – developed by the Competence Center on Text Mining and Analysis of the European Commission’s Joint Research Centre (Unit JRC.I.3 Text and Data Mining) – and which is part of the EU Commission’s platform for evidence-based policymaking, named Knowledge4Policy (K4P), the aim of which is “to bridge the science-policy gap by bringing together evidence for policy from scientists across Europe, to policymakers across Europe”.<sup>104</sup> More specifically, the development of TIM DU from this global instrument focuses on three main sources: the international scientific publications repository SCOPUS, the European Patent Office’s platform PATSTAT, and the EU-funded projects’ platform CORDIS.<sup>105</sup> SCOPUS is known as “the largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings. Delivering a comprehensive overview of the world’s research output in the fields of science, technology, medicine, social sciences, and arts and humanities”.<sup>106</sup> It is the main platform presenting references for international scientific publications, containing notably more than 87 million documents.<sup>107</sup>

Did you know that Scopus covers...

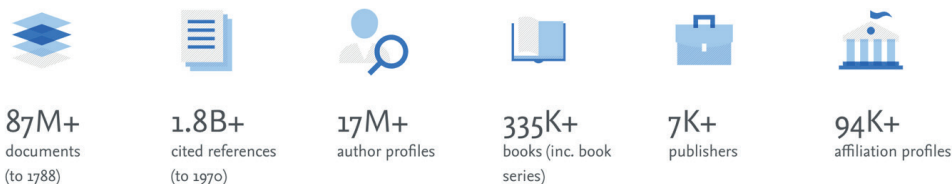


Figure 14 TIM Dual-Use’s sources - SCOPUS’s coverage

<sup>103</sup> Knowledge for policy, Text Mining and Analysis Competence Centre, About TIM, [https://knowledge4policy.ec.europa.eu/text-mining/about\\_tim\\_en](https://knowledge4policy.ec.europa.eu/text-mining/about_tim_en).  
<sup>104</sup> Knowledge for policy website: [https://knowledge4policy.ec.europa.eu/home\\_en](https://knowledge4policy.ec.europa.eu/home_en).  
<sup>105</sup> TIM sources: <https://knowledge4policy.ec.europa.eu/sites/default/files/About%20TIM%20datasources.pdf> (accessed 1 February 2023).  
<sup>106</sup> Elsevier, What is Scopus about?, [https://service.elsevier.com/app/answers/detail/a\\_id/15100/supporthub/scopus/related/1/](https://service.elsevier.com/app/answers/detail/a_id/15100/supporthub/scopus/related/1/) (accessed 1 February 2023).  
<sup>107</sup> Elsevier, Scopus content, <https://www.elsevier.com/solutions/scopus/how-scopus-works/content> (accessed 1 February 2023).

The PATSTAT platform contains “about 25 million patents from 90 countries worldwide”.<sup>108</sup> The Community Research and Development Information Service (CORDIS) is “the European Commission’s primary source of results from the projects funded by the EU’s framework programs for research and innovation, from FP1 to Horizon Europe”.<sup>109</sup> It presents all the relevant projects, even if these involve partners from EU third countries.

The three instruments, within their respective areas, are international and widely acknowledged references. However, SCOPUS and PATSTAT do not capture – or pretend to capture – exhaustively and universally all scientific publications and patents, while CORDIS has all project information held by the European Commission from previous and current EU programs.

The TIM DU data-mining tool retrieves information from the databases listed above to present it as a set of data in accordance with the query formulated by the user. The tool is structured around the categories of the dual-use items, among the 10 categories of the EU dual-use control list,<sup>110</sup> or the emerging technologies,<sup>111</sup> among 8 categories created by the developers. The queries composing the datasets have been made public and can be consulted in the “Dataset Info” window. The engine proposes a set of filters to adjust the search of the information (e.g., organization, country, type of document, author’s name, or timeframes). Its scope, in terms of geography, is universal and extends, in terms of time, from 1996 up to date (the databases are updated approximately every six months). TIM DU’s “Global dual-use queries” even offer the possibility of mapping an entire country or organization for all datasets in a single category or emerging technology all together at once in order to provide a global view on the potential of a country or organization in a comprehensive manner. However, it appears that the huge amount of data to process slows down the elaboration process.

The tool presents the output information in the form of a documents list (e.g., of articles, patents, EU-funded projects), aggregated data graphs, or maps of the connections between the different entities or countries involved in the transfers of technology, or on the nature of the sources of information.

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<sup>108</sup> TIM sources: <https://knowledge4policy.ec.europa.eu/sites/default/files/About%20TIM%20datasources.pdf>.

<sup>109</sup> Cordis website, <https://cordis.europa.eu/about>.

<sup>110</sup> Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast), Official Journal of the European Union (L206/1) of 11 June 2021, updated.

<sup>111</sup> “Additive manufacturing”, “Artificial intelligence”, “Biotechnology”, “Blockchain”, “Cyber-surveillance”, “Nanotechnology”, “Quantum technology”, “Smart materials”.



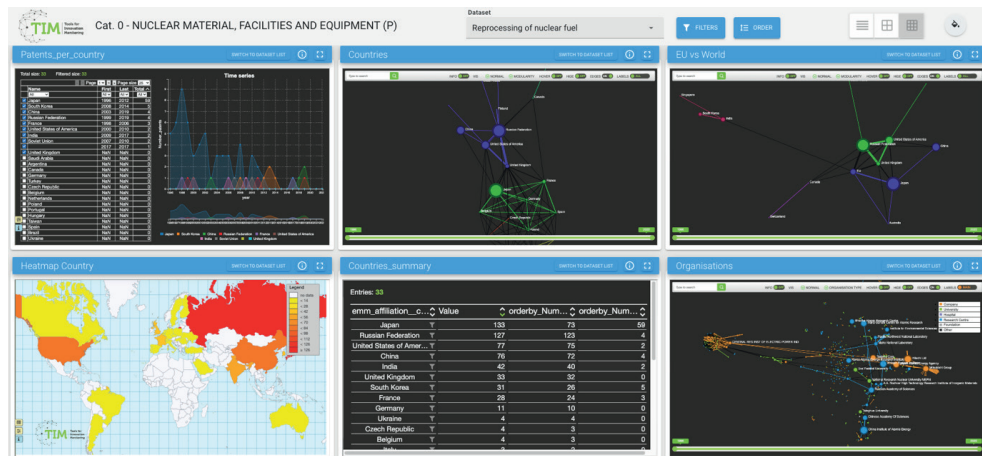


Figure 15 TIM Dual-Use - Dataset "Reprocessing of nuclear fuel"

The tool could be relevant to all stakeholders dealing with potential transfers of dual-use and emerging technologies. For licensing authorities and enforcers, it may contribute to ex-ante and ex-post surveillance of a transfer of technology. To providers of outreach support, it offers the possibility of mapping the transfer potential of a given country. To operators of technology, such as academic and research centers, it may facilitate the conduct of due diligence, in that respect, as well as the identification of areas for targeted awareness-raising activities to reinforce internal compliance.

The quality of the raw information on which the searches are based (i.e., SCOPUS, PATSTAT, CORDIS) is objectively high and its relevance vis-à-vis the objective of the tool is not particularly questioned. In addition, the TIM DU engine is very efficient. The search by keyword, completed with combinations of Boolean operators, is very effective, though, naturally, it can be always refined. However, the tool could be improved to make it more user-friendly, as the format of the results pages is overloaded with information.

In conclusion, TIM DU is a fairly valuable tool. As its object is to map the transfers of information and technology between academic and research institutions, at which it is very efficient. Although the methodology cannot be exhaustive – for example, not all scientific publications are published in SCOPUS – and the tool concentrates on the academic and/or scientific potential transfers of dual-use and emerging technology – but not the intra-company transfers or the hosting of foreign students and researchers, for instance –, the tool provides a reliable indication of the transfer potential of a given entity. To strive for exhaustiveness, other academic databases – yet to be identified – could be mined, for instance, or databases covering other languages than English. Finally, one must stress that the transfers and information exchange occurring within the academia/research institutes are only a part of the scope of the potential technology transfers and, therefore, provide limited sources for mapping.

### Uliège ESU Dual-Use Assistance App

The Uliège ESU DU Support App is a tool designed to help researchers assess the possible sensitivity of their research. The application allows for the assessment of the extent to which research is compatible with European dual-use legislation. The tool guides researchers through certain questions to be sure that their research does

not require export control authorizations. In the opposite case, when a control might be necessary, it redirects to an *ad hoc* form enabling them to submit a description of their research to their home university to help them with any compliance. ULiège, UMONS, UCL, and ULB universities are the current target audiences for this app; however, the creators of the app have invited other institutions that are interested to join their efforts.<sup>112</sup>

This application was created and financed by the European Studies Unit of the University of Liege.<sup>113</sup>

The tool is solely analytical since it processes researchers' responses to questions and provides guidance for further steps.<sup>114</sup>



The European Studies Unit has developed the application to raise awareness and strengthen the outreach on the risk of academic proliferation in three Belgian universities. However, the initiative is ready for expansion, as based on other universities' interest.

The ULiège ESU DU assistance App is based on evaluating the potential risk of academic proliferation by allowing a researcher to answer a set of questions. Initially, the application starts by collecting general information such as the full name, research unit to which a researcher is attached, email address, and phone number. The questions then turn to the research itself, asking for a research project description, past or ongoing works, and/or collaborations related to research. The following questions require a researcher to list the items, including software and technology, involved in their research as defined in Annex I to EU Regulation 2021/821; the type of software, technology, information, or products that might result from the researcher's study; the list of people who will have access to it (internal national/non-national staff, external visitors); the type of dissemination of research results; and also to verify the EU Sanctions map to be sure that the research complies with imposed sanctions.

<sup>112</sup> European Studies Unit. *We are pleased to announce the release of the new version of the dual-use assistance application*, accessed 30 January 2023, <https://www.esu.ulg.ac.be/discover-our-new-assistance-application-for-the-evaluation-of-sensitive-dual-use-research/>.

<sup>113</sup> European Studies Unit. *We are pleased to announce the release of the new version of the dual-use assistance application*, accessed 30 January 2023, <https://www.esu.ulg.ac.be/discover-our-new-assistance-application-for-the-evaluation-of-sensitive-dual-use-research/>.

<sup>114</sup> ULiège ESU DU assistance App, <https://www.esu.ulg.ac.be/quillforms/du-form-uliege/>.

Ultimately, the application offers two possible scenarios. In case of no concerns about potential export controls related to dual-use, the researcher can be informed that their research does not seem to have any proliferation risk. In the instance of any potential concern, however, the researcher is invited to complete the provided application form and contact the university unit responsible for compliance with dual-use-related export control obligations.

For now, the target group of the applications is four universities in Belgium (ULiège, UMONS, UCL, and ULB).

3 → **Is the end-user a country listed in the EU [sanction map](#)? \***

*End user : Entity to whom the items is destined unless otherwise specified  
(meant as the first recipient of items in the country of final destination)*

Yes  A No  B

OK > press Enter ↵

Figure 16 ULiège ESU Dual-Use support App

With regard to the time scope, there are no real limitations. According to the application's content, it can cover ongoing or past research. The EU Dual-Use Control List, which is required to be consulted during the interactive questionnaire, is updated every year and, following its publication, the reference to the EU Control List in the app is amended accordingly.

The tool is especially relevant for representatives of academia and research institutions.

The ULiège ESU DU Support App represents an excellent initiative to prevent academic proliferation. The quality and logic of the questionnaire is a cost-effective filter allowing the universities' units in charge of dual-use issues to be contacted in case of research having any potential dual-use-related proliferation risk. However, although the format is well designed and user-friendly, there is no contact information or information about the application (objectives, methodology, who, and how the application was created), nor any background information.

#### **WCO Strategic Trade Control Enforcement Tool app**

The Strategic Trade Control Enforcement Tool (STCE) is a mobile application developed in 2016 and supported by the STCE Program of the World Customs Organization (WCO).<sup>115</sup> It consists essentially of a system allowing the Harmonized

<sup>115</sup> "WCO STCE tool" downloaded from the App store on December 14, 2022.

System code, UN number, or CAS number of an item to be identified by introducing a series of numbers (Code) or a series of letters (Name). Its objective is to help front-line Customs Officers to quickly identify strategic goods subject to control through CAS number, HS code, UN code or illustrating images and strategic indicators.<sup>116</sup>

The tool is not an official product of the WCO: “[h]owever, it was produced with the spirit of the WCO’s members to enhance the implementation of the WCO STCE Program”.<sup>117</sup> No information is available regarding its financing or development except the name of the company that developed it. In addition, the tool seems to be operated by Vietnamese Customs, in that the contact email provided in the app is an official address of the Vietnamese governmental authorities.<sup>118</sup>

The WCO STCE tool is predominantly informative. It elaborates the numbers or letters inserted in the search box by the user and provides the references of the goods when matching a HS code, CAS number or UN number.

For instance, by typing “33” in the code search box, the app gives no result for HS codes and CAS number but displays 14 hits for the UN references that correspond to radioactive material and a category B biological substance. The information provided consists of the UN reference (UN 3327), the name of the goods (radioactive material) and the category (nuclear).

If the user enters “saxitoxin” in the name search box, they will get two hits for HS, UN, and CAS references. Again, the information provided by the tool is limited to the reference number (HS 3002.90, CAS 35523-89-8), the name (Saxitoxin), and the category (chemical).



The tool includes a larger number of strategic items – notably, those listed by the NSG, MTCR, the Australia Group, and Wassenaar Arrangement seem to have been integrated. Unfortunately, very little information is available on how the app has been developed and which lists have been compiled. It is also unclear how, and if, the references have been updated since its creation in 2016. Various HS codes correlated to dual-use codes cannot be found in the app, for which use it seems preferable to insert the first two or four digits of an HS code, and only later narrow the search among the displayed matches.

<sup>115</sup> “WCO STCE tool” downloaded from the App store on December 14, 2022.

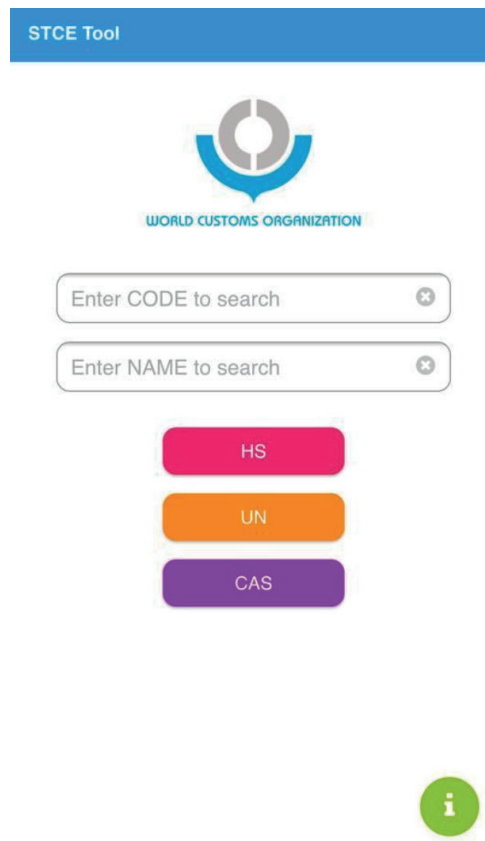
<sup>116</sup> App store description of the WCO STCE Tool, <https://apps.apple.com/in/app/wco-stce/id1479067653>.

<sup>117</sup> App store description of the WCO STCE Tool.

<sup>118</sup> Provided contact email address: namVT2@customs.gov.vn.

The WCO website contains almost no references and information dedicated to the STCE tool. The only information available on the internet is the website where the application can be downloaded.

The STCE tool consists of a compilation of lists of items potentially related to three references systems considered. For certain items, descriptions and pictures are also available. This description describes its potential uses, its sensitivity, and also its usual mode of shipment. For example, a “cold isostatic press” is referred to as a very heavy press shipped individually on wood pallets and steel banding. It is considered strategic as it can contribute to the production of nuclear explosive device parts. The press has a “thick-walled pressure chamber closed on one end and having a threaded closure plug on the other end”. It is worth several hundred thousand USD. Pictures of several models are also available.



*Figure 17 WCO's Strategic Trade Control Enforcement Tool*

As presented, it is mainly useful for front-line custom agents looking for and checking a specific reference while knowing the name of the substance or a related reference. It might also be potentially valuable for operators looking for HS, UN, or CAS codes while completing a license application.

When available, the description and pictures of the items might be useful to other categories of public authorities like investigators or prosecutors, but potentially also for the trade control community who are not always aware of strategic items' characteristics.

If we considered that the objective of the tool is only informative in nature, it is rather efficient and further provides the reference codes that the user might be searching for. The app allows a certain level of uncertainty by returning all hits matching the sequence of letters or numbers entered in the search box. However, it does not provide potential hits if the user enters a sequence of letters or numbers that include a potential error. For instance, the following sequence “saxi” will provide the two references for “saxitoxine”, but the sequence “saxitoxine” will not return any hits.

Bearing in mind its audience, the app provides what it is made for and no more. More information on the list of references, its updates, and information on trade labels would be useful in terms of strengthening the confidence that the export control community might have in the STCE tool. \_\_\_\_\_

# CHAPTER 4

## Recommendations for tools' improvement

On the basis of the tools' analysis developed in Chapter 3, certain recommendations can be offered to potentially improve the quality of the examined tools and/or the user experience of such. The recommendations, presented individually per each tool in bullet points, are presented below.

### **Access2Markets**

- Take more into account from the strategic trade control perspective.
- Consider including the EU dual-use items Regulation list (Annex I EU Regulation 2021/821), and not only the HS code lists, in its portal.
- Reframe the need for authorizations when transferring certain dual-use items as trade facilitation.

### **ASPI Unitracker**

- Expand the number of relevant organizations covered by the tool.
- Redefine or assess the scope and relevance of the Tracker, which could benefit from cross-checking with further sources of information, whether publicly available or confidential (e.g., notified denials).

### **China-Europe Academic Engagement Tracker**

- With a view to better serving the strategic trade compliance objectives, the tool could be refined by gathering and using other data than that from the FOIA, publicly available contracts, and the ASPI tracker. Its relevance in export control compliance could be increased significantly by including data retrieved through the TIM DU tool. Such data would concern publications, patents, and collaborations with other entities worldwide and hold information on this collaboration over the years (with a very wide timeframe). This way, it may better serve to screen a specific export control case and provide additional relevant information to this end than that currently provided by the Tracker.
- Furthermore, the project team may consider designing and using survey questionnaires to be addressed to the research organizations analyzed in order to gather further information and primary sources on several issues (e.g., does the organization have an internal program to comply with export control rules? Has the organization ever applied for an authorization under Regulation 2021/821? Any refusal?).

- Finally, the project team might consider including or relying on other partners from other EU countries in order to consistently increase the geographical scope of the tool, with the potential aim to cover the entire EU.

### ***Correlation table between export control classifications and Combined Nomenclature Code***

- Visibility of the tool: Making the tool more visible and accessible by making it available on the DG TRADE website (for instance, in the section “Help for exports and importers > Exporting dual-use items”), as well as on other relevant websites.
- Legal references: Adding mentions of the legal basis from which the data are derived to the tool (updated TARIC code and Annex I to EU Dual-Use Regulation).
- Explanatory note: Adding an explanatory note to the tool that describes the tool’s content and how to use it, as well as a disclaimer regarding the (mis) match of the scopes of the CN codes and ECCNs.
- Another suggestion that might improve the interactivity and user-friendliness of the tool would be to connect each CN code and ECCN to the concerned section of the legal basis via hyperlinks.

### ***EU and US Consolidated Screening Lists***

#### Consolidated list of persons, groups and entities subject to EU financial sanctions

- Providing a consolidated dataset in this area of regulation, the European Commission may contribute to more streamlined and efficient application of such sanctions.
- When considered purely as a dataset, its availability in various file formats would also be useful.
- In terms of ease of access (requiring an EU login), presentation and ease of use (searches), the tool could potentially benefit from some further attention or, indeed, could be developed alongside other tools into a screening suite of sorts, with additional functionality (for example, “fuzzy name searching”).

#### United States Consolidated Screening List

- Attention could be drawn to the potential for more powerful and streamlined analytical functions, which could, for example, deliver greater ease of use in terms of trend analysis and other research endeavors.

### ***EU Sanctions Map***

- Although very visual and intuitive, the EU Sanctions Map shows a number of ambiguities in the use of certain pictograms that summarize the measures applicable to a country. One example is the image indicating “vigilance”, which does not appear to be sufficiently detailed to understand the type of alert being conveyed. Overall, the tool could be more modern and clearer in terms of data visualization.
- The tool has only been developed in English and is not meant to take into account sanctions imposed by other countries, nor to include any reference to eventual unilateral restrictions imposed by Member States. While it is updated in a timely manner, it is understood that it is maintained largely in a manual fashion. It could be explored whether the information visualized on the map could be pulled directly from the legal acts published in Eur-Lex.



- The tool is largely informative and only presents the current state, without the possibility of being able to track back to sanctions adopted, and then subsequently lifted, in the past. It could be explored whether past regimes could be integrated in a way that they would be clearly separable from the presently applicable measures. This may make the tool more appropriate to research and analysis.

### **Export Control Handbook for Chemicals**

- Updating the content, taking into consideration the recent changes to the legal regimes of the European Union, in particular, Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021, setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast).
- Extending the scope of ECHC to alloys potentially controlled for export control purposes, and which are classified with CAS numbers as well.
- Publishing a pocket/electronic app version to be used on a daily basis, by governmental agency officers, like Customs.

### **Peddling Peril Index**

- Providing more explanations about the subcriteria's levels of impact.
- Clarifying the methodology of the interviews conducted among experts from different countries (e.g., adding a list of experts and their expertise, criteria on the basis of which experts provided their judgment of the control systems, and the interview questions).
- Verifying the quality of open-source data.
- Providing a more user-friendly format, perhaps an interactive (online) format.
- Providing information on the rankings of countries under each sub-criterion (might be possible using an online format).
- Explaining how super-criteria are weighted differently (i.e., is there any explanation of the rationale for the choice? Why does “proliferation financing” have the largest weight? How has this been defined?).
- Providing some “adjustment mechanism” in case countries are unable to achieve 100 percent of the available points for “force majeure” (e.g., a country in a location where there is no relevant nuclear-weapon-free zone).

### **Strategic Trade Atlas**

- In STA, the list of HS codes associated with strategic commodities was classified by the WTO within the framework of Operation Cosmo. However, the list of HS codes only partially reflects the scope of strategic items. This is why we recommend reconsidering the list of HS codes in the STA by selecting the group of HS codes with a more dual-use nature based on the customs trade statistics and license-issued statistics. This more dedicated list of HS codes could provide countries with the ability to derive trade statistics from the national statistics authorities and obtain more up-to-date trade flows, which help to solve the issue of year gaps in trade data at the country level.
- In addition, it would be very beneficial for users of the STA to have access to the interactive formats of the STAs of the 2014-2018 and 2015-2019 revisions. Currently, the only available interactive format is for 2016-2020. This would allow for more precise data and avoid the rounding of volume and quantity by using the scale on each STA's hard copy (country-based view) page.

**TARBEL**

- Although it is not the objective of TARBEL to fine-tune the correlations between CN codes and dual-use classification numbers, its utility could be increased significantly, as with TARIC, if there were more targeted correlations between CN codes and dual-use classification numbers so that dual-use items could be more precisely linked to CN codes (for instance, via an extra set of digits in the CN code).

**TIM Dual-Use**

- Continuously monitoring the emergence and availability of sources of data that could complement those already available (e.g., other databases of academic publications or databases in other languages than English that could be incorporated into TIM DU).
- Offering the possibility to directly access or map the CORDIS data related to EU projects involving dual-use items, since this self-assessment of the dual-use characteristic is part of every project proposal.
- Constantly seeking to fine-tune the formulation of the queries through the adjustment of the keywords and Boolean operators by technical experts.
- Simplify the layout of the results page in order to facilitate their reading by users.
- Connecting TIM DU to other objective-focused platforms of informative or analytical natures and integrating these into more global solutions or search engine tools, such as web-based solutions adapted to the specificities of technology transfer operators or to authorities.

**Uliège ESU Dual-Use App**

- It is recommended to provide some background information about the application and contact details or technical support contacts in case of any issues with the site while a researcher is completing the form or answering the questions. The background information might allow researchers to understand the importance of preventing academic proliferation and so contribute to researchers' awareness.

**WCO Strategic Trade Control Enforcement Tool app**

- Providing more information on the list of references, its updating, and information on trade labels would be useful in terms of increasing the confidence that the export control community might grant to the STCE tool.
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# CHAPTER 5

## Combinations of tools

This chapter proposes to draw attention to the potential of combinations in the use of the tools explored in the previous chapters. The objective is to illustrate their respective relevance in the different situations encountered by actors and stakeholders of dual-use trade controls. In contrast, the present chapter is also an opportunity for the reader to prospectively define the areas or tools that are yet to be covered or created to complete the existing toolbox.

The following scenarios have been identified:

- Mapping countries' transfer potentials
- Item identification/classification
- Risk analysis (end-user, country destination assessment)
- Trade control processing formalities

### ***Possible combinations of tools for mapping countries' transfer potential***

#### *Country's potential in dual-use items' transfers*

The use of the following combination of instruments might be useful in terms of mapping a country's dual-use transfer potential globally:

- Strategic Trade Atlas (STA)
- Peddling Peril Index (PPI)
- TIM DU
- ASPI Unitracker
- Correlation Table between CN codes and ECCNs

Specifically, this combination allows for:

- Identifying the sectors (STA, TIM DU, ASPI Unitracker) and even some of the companies (TIM DU, ASPI Unitracker) involved in dual-use technology in a specific country;
- Highlighting the risks of potential diversion that might arise for the country's national system (PPI, STA);
- Displaying the country's trends of tangible trade as well as intangible transfers of dual-use goods and technologies together (STA, Correlation table between CN codes and ECCNs, TIM DU, ASPI Unitracker).

*Country's potential in dual-use technology transfers*

The combined use of the following instruments might be valuable in terms of mapping the potential of intangible technology transfers from a given country:

- TIM DU
- ASPI Unitracker
- CEIAS Tracker

Specifically, this combination allows for mapping the transfer of sensitive technology by collecting data such as publications, patents, EU-funded projects (TIM DU), as well as cooperation agreements, especially with Chinese entities (ASPI Unitracker, CEIAS Tracker).

Such mapping could illustrate the importance of national technology transfers, the diversity of the scope of transfers of technology, the trend in technology transfers (TIM DU), and the risk presented by technology transfers (ASPI Unitracker, CEIAS Tracker), displaying the mapped country's involvement in technology transfers with "proliferation concern" countries (TIM DU, CEIAS Tracker).

***Possible combinations of tools per items identification/classification***

The following tools could be used in combination to complement each other's functionalities:

- WCO STCE Tool
- TARBEL
- Correlation Table between CN codes and ECCN
- Export Control Handbook for Chemicals (ECHC)

Specifically, starting from a dual-use code it would be possible to retrieve an item's correlated HS code (Correlation Table, ECHC) and then obtain further information on its potential uses, its sensitivity, and its usual mode of shipment (WCO STCE Tool), or potentially some additional guidance that might help exporters avoid misunderstandings (TARBEL).

***Possible combinations of tools per risk analysis (end-user, country destination assessment)***

The joint use of the following tools could offer a more comprehensive view from a risk analysis perspective:

- EU Sanctions Map
- PPI
- STA
- TIM DU
- ASPI Unitracker
- Consolidated Screening Lists

More particularly, the aggregated employment of the above listed tools could assist in the assessment of the geopolitical situation of the destination country or end-user (EU Sanctions Map, Consolidated Screening Lists) and the risk of diversion, considering the solidity of the country's trade control system (PPI), the usual trade flow (STA), and technology transfers of the country or entity (TIM DU, ASPI Unitracker, CEIAS Tracker), as well as its dual-use potential (TIM DU, STA, PPI).

For research organizations in particular, another helpful tool to add to the combination would be the Uliège ESU app, which could help to guide researchers through the various steps of the assessment process.

### ***Possible combination of tools per trade control processing formalities***

A last suggestion that might add additional value to the individual use of the presented tools in terms of facing trade control processing formalities is the combined utilization of:

- Access2Markt
- TARBEL

While Access2Market can be very helpful in terms of indicating trade legal opportunities and advantages around the world, providing the necessary information about the procedures one must follow, TARBEL would indicate whether some export control obligations apply to the concerned goods in its DU footnote (for further details, see the dedicated section in Chapter 3).

## Annexes

### Evaluation Question Matrix

Tool's name	
Question	Comprehensive answer
1	Is the tool informative and/or analytical?
	Do you use it?
2	<i>No/Yes (for what)</i>
	Who developed the tool?
3	<i>Entity, source/link of this information</i>
4	Is there some information provided on how the tool has been built? Please specify which kind of information and where it can be found.
	<i>Source/link of this information</i>
	How the tool has been developed?
5	<i>Sources, data used, justification of the methodology</i>
	Who finance it?
6	<i>Source/link of this information</i>
7	What is the time scope?
8	What is the geographical scope?
9	What is the scope/coverage in terms of information?
10	Who the tool is relevant to?
	Please assess the efficiency of the tool.
11	<i>Quality of information, format, user-friendliness</i>
12	Is something missing in the tool?

## Summary Table of the Strategic Trade Compliance Tools

Solely informative	Predominantly informative	Equally informative & analytical	Predominantly analytical	Solely analytical
	Access2Markets			
			ASPI Unitracker	
		CEIAS Tracker		
	Correlation Table between ECCN & CNC			
EU & US Consolidated Screening Lists				
	EU Sanctions Map			
	Export Control Handbook for Chemicals			
				Peddling Peril Index
		Strategic Trade Atlas		
	TARBEL			
			TIM Dual-Use	
				Uliège ESU DU Assistance App
	WCO STCE App			

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