jtsec
BEYOND IT SECURITY

2022 Common Criteria Statistics Report

jtsec

BEYOND IT SECURITY

is now part

of Applus laboratories

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WHO WE ARE

jtsec is a company that offers **security evaluation and consultancy** services following the most recognized certifications and standards of the sector (LINCE, Common Criteria, IEC 62443, ETSI EN 303 645 or FIPS 140-3) with a customer centric approach.

jtsec is made up of a team of recognized professionals in the IT security sector One of **jtsec's** main strengths is its ability to innovate in the area of cybersecurity, **developing unique tools** that help the market to smooth the processes of cybersecurity certifications.

Since 2022 we are part of Applus+ Laboratories.

WHY WE EXIST

TOP NOTCH EXPERTS

We support you using our **innovative and exclusive framework** automatizing the process and saving time and money.

YOU ARE UNIQUE

Feel part of our family! Our customers do not face unexpected surprises. From day one, you will know how much the project will cost and that is what you will pay at the end.

TIME TO MARKET

We assure **NO delays**! We are determined to solve your problems, not to create new ones. For every evaluation project, we have an extra engineer available to ensure that the schedule is met.

Introduction

Why this report?

Historically, the Common Criteria Portal web (https://www.commoncriteriaportal.org) has contained the list of evaluated products. Each Certification Body is responsible for sending each new certified product to the web, along with its Certification Report and Security Target.

All this information is provided on the web, which even provides a Statistics section. This section, however, provides no graphical representation of the numbers and there is room for improvement regarding, for example, the evaluation laboratory, evaluation trends regarding the type of products certified (a categorization is provided, but it does not reflect state-of-art in security products), most used protection profiles, assurance levels chosen to meet the certification and other things, so we thought that an "all-in-one" report would be great for the Common Criteria community!

Throughout the different editions International Common Criteria Conference (ICCC) we have been presenting the corresponding reports and analysing the data extracted. Last year we showed this tool in the ICCC2022 with the talk "2022 CC Statistics Report: Will this year beat last year record number of certifications?"

How it is created?

CC Scraper is a python script that analyses automatically the information from the CC portal using OCR capabilities, pdf reading and other features providing a comprehensive statistics report of the CC certifications.

The current version still depends on Common Criteria portal contents, and therefore a mismatch between each CB certified products and the statistics shown in this report may appear if the Certification Bodies do not timely send new updates to the web or the webmaster does not update the product list.

CC Scraper outputs a CSV file from where this report is semi-automatically created.

Contribute!

Feel free to share the results shown in this report, and do not hesitate to tell us any error that you find, we will correct it as soon as possible.

If you want to know a specific statistic or you think that it could be interesting for the community, please share it with us and we will include it in next versions of this report.

Research & Collaboration

At jtsec, we have always believed in innovation and collaboration in the field of cybersecurity. We are true experts in the Common Criteria methodology. We have been working more than 16 years in the methodology. We are program director of ICCC (International Common Criteria Conference), active editors of the methodology in ISO, only Spanish member of the EUCC Ad-hoc WG (European Common Criteria Scheme) and members of the SCCG being advisors of the European Commission in Cybersecurity Certification.

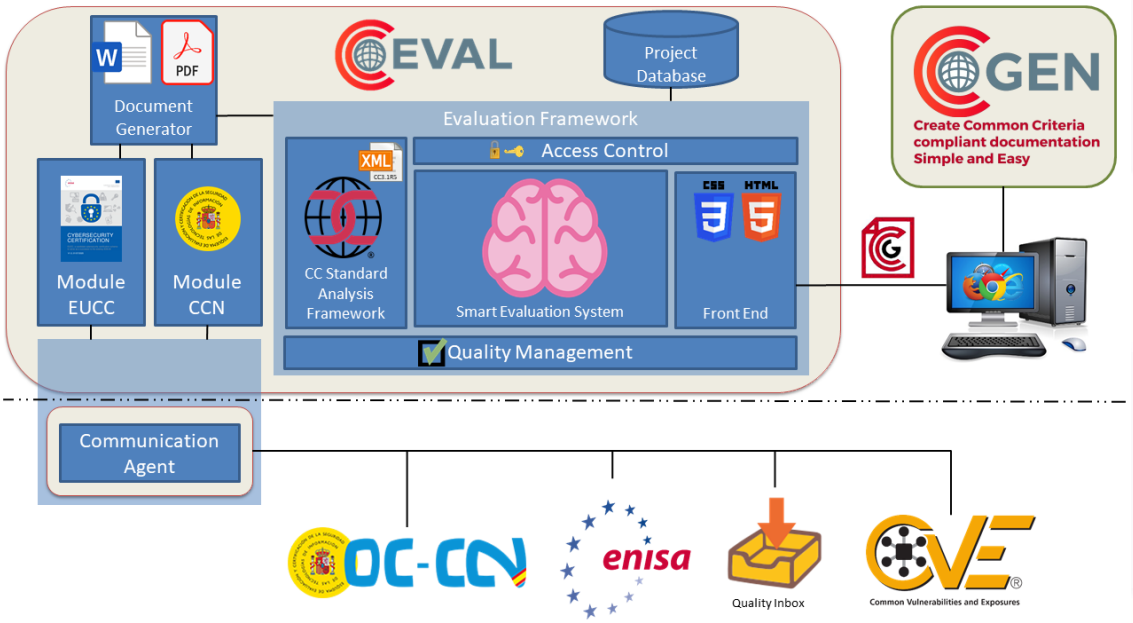
Some of the most important examples of talks related to the CC Methodology are here:

- (EN) **ICCC22** [2022], "Is automation necessary fo the CC survival?"
- (EN) **ICCC22** [2022], "CCCAB Tool — making CABs life easy — chapter 2"
- (EN) **ICCC22** [2022], "2022 CC Statistics Report: Will this year beat last year record number of certifications
- (EN) **ICCC21 [2021],** "Automating Common Criteria" :
- (EN) **ICCC21 [2021],** "2021 CC Statistic Report" :
- (EN) **ICCC21 [2021],** "CCCAB tool, Making CABs Life Easy" :
- (EN) **ICCC 2020** [2020], "*Industrial Automation Control Systems Cybersecurity Certification - Chapter II*"
- (EN) **ICCC 2020** [2020], "*2020 Statistics Report. Is the industry surviving to lockdown?*"
- (EN) **ICCC 2020** [2020], "*Towards creating an Extension for Patch Management for ISO_IEC 15408 & 18045*"
- (EN) **18th CCUF Workshop** [2020], "*Creating cPPs with CCGen*" :
- (EN) **Paris - SC 27 / WG3 meeting** [2019], "*Contribution on SP for Evaluation criteria for connected vehicle information security based on ISO/IEC 15408*" :
- (EN) **Paris - SC 27 / WG3 meeting** [2019], "*Patch Management in ISO/IEC15408 & ISO/IEC18045*"
- (ES) **ICCC 2019 Singapur** [2019], "*2019 Statistics Report. What's Happening in the Common Criteria World?*"
- (EN) **International Common Criteria Conference 2019** [2019], "*Industrial Automation Control Systems Cybersecurity Certification Is CC the Answer?*"
- (EN) **XVII International Common Criteria Conference. Amsterdam** [2018], "*Full Common Criteria Statistics Report with CC Scraper*":
- (EN) **XVII International Common Criteria Conference. Amsterdam** [2018], "*Using Common Criteria for procurement - International Procurement Initiatives*"
- (EN) **ICMC18 International Cryptographic Module Conference. Canada** [2018], "*Spanish Catalogue of Qualified Products: A New Way Of Using CC For Procurement*"
- (EN) **Common Criteria Users Forum. Amsterdam** [2018], "*High EALs, Lightweight Certifications, Low EALs, cPPs - European and American View - Do we understand each other?*"
- (ES) **ICMC16 International Cryptographic Module Conference. Canada** [2016], "*Testing Fault Injection and Side Channel in FIPS: Vision of a Smart Card Laboratory*"
- (EN) **XVI International Common Criteria Conference. UK** [2015], "*Is CC ready to lead the future of mobile Security?*"
- (EN) **XI International Common Criteria Conference. Turkey** [2010], "*Overflowing attack potential: scoring defence-in-depth*"
- (EN) **X International Common Criteria Conference. Norway** [2009], "*Vulnerability Analysis Taxonomy: Achieving completeness in a systematic way*"

jtsec belongs actively to the following associations:

Other Common Criteria tools

CCScraper is not the only tool for Common Criteria developed by jtsec. We have created **CCToolBox** which is composed of two tools: **CCGen and CCEval**. CCGen allows generating all the CC evidences and CCEval allows jtsec to speed up and smooth the evaluation. CCToolBox is a web-based tool framework using the most advanced state-of-art web technologies.



CCGen:

One of the most problematic issues one may find during the CC documentation creation phase is the constant reappearance of inconsistencies (for example, changing the name of an SFR iteration, the name of an objective or the code of a test). Consultants can lose lot of time, avoiding inconsistencies instead of employ it in creating quality documentation that eases the understanding of the product internals and can pass the evaluation without problems.

With a wizard like Approach, CCGen will guide consultants step by step, taking care of every possible inconsistency in the documentation process, accompanied of expert comments and tips and hints regarding how to easily fulfil the CC standard for a product.

CCEval:

CCEval allows jtsec to write and generate evaluation reports in a very consistent and quick way.

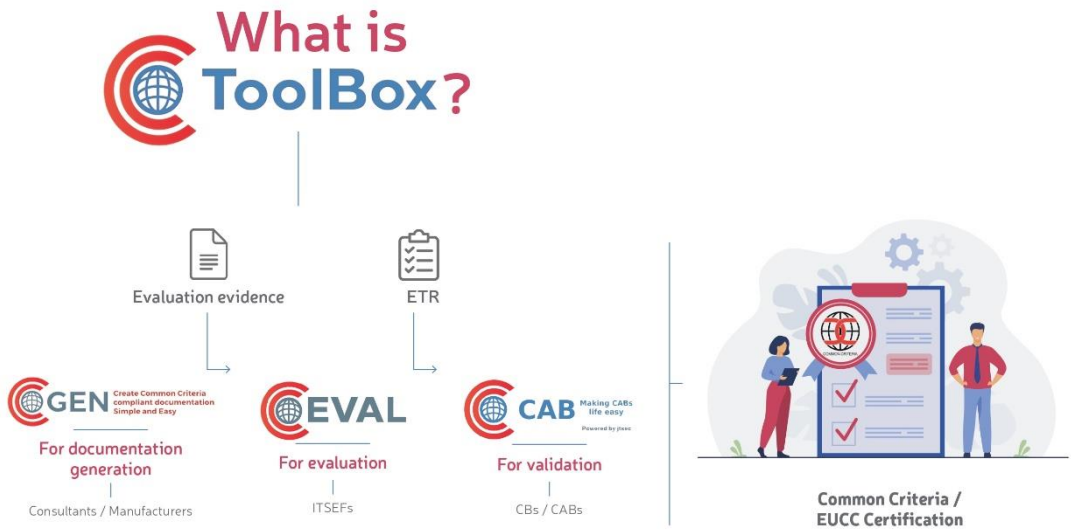
Moreover, if CCGen has generated the documentation, CCEval allows carrying out automatically some evaluation tasks.

This tool is important for two main reasons:

1. Because evaluation reports are validated by the Certification Body and the Appearance of inconsistencies may delay the process in unexpected ways.
2. Because the use of automated tools allows providing the best time-to-market, ensuring that the certification process is always on time.

CCCAB:

CCCAB will allow Common Criteria CABs (Conformity Assessment Bodies) to facilitate the validation and certification process of ICT products, assisting the certifier and reducing the effort and time required in each process. CCCAB is will be key because the workload and specialization required for this type of project means that certification bodies have a high workload per certifying specialist, and the lack of personnel is a major risk for the sector. The development of this tool is funded by the European Commission in the framework of the Connecting Europe Facility (CEF) program. The tool will be released as open source free of charge to all public or private CABs interested in the initiative. The CCCAB project started in April 2021 and will run for a period of two years, so this tool is expected to be available by April 2023.



CC Statistics for 2022

These are the statistics on Common Criteria certifications for 2022. CCScrapper has gathered the latest information about Common Criteria certified products and has generated related statistics up to 2022-12-31.

In 2022, **370** products have been certified, while 399 were certified in 2021. These numbers vary from those published solely in commoncriteriaportal.org, since CCScrapper also takes into account those products published in the web portals of Certification Bodies websites.

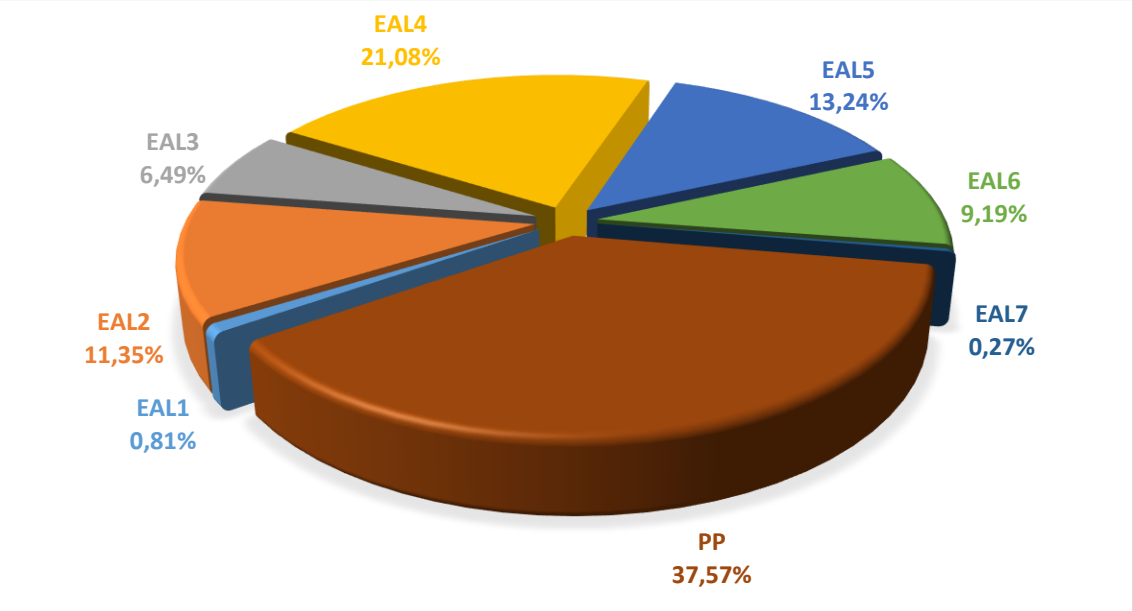
The details on those certifications are provided throughout this report.

Assurance levels

In 2022, 162 high assurance evaluations (EAL4-EAL7) were carried out. Among those, we can find 78 EAL4 evaluations, 49 EAL5 evaluations, 34 EAL6 evaluations and 1 EAL7 evaluation. In total, about 44% of the certifications were high-assurance.

A total of 69 products were certified using low assurance evaluations (EAL1-EAL3), representing 18,65% of all the evaluations. The most frequent low assurance EAL was EAL2, with 42 certifications.

On the other hand, the trend to use Protection Profiles on evaluations has been even larger in 2022. Certifications using a Protection Profile with no EAL assigned were very frequent in 2022. In total, 139 products were certified with a Protection Profile without assigned EAL, representing 37,57% of all certifications in 2022.

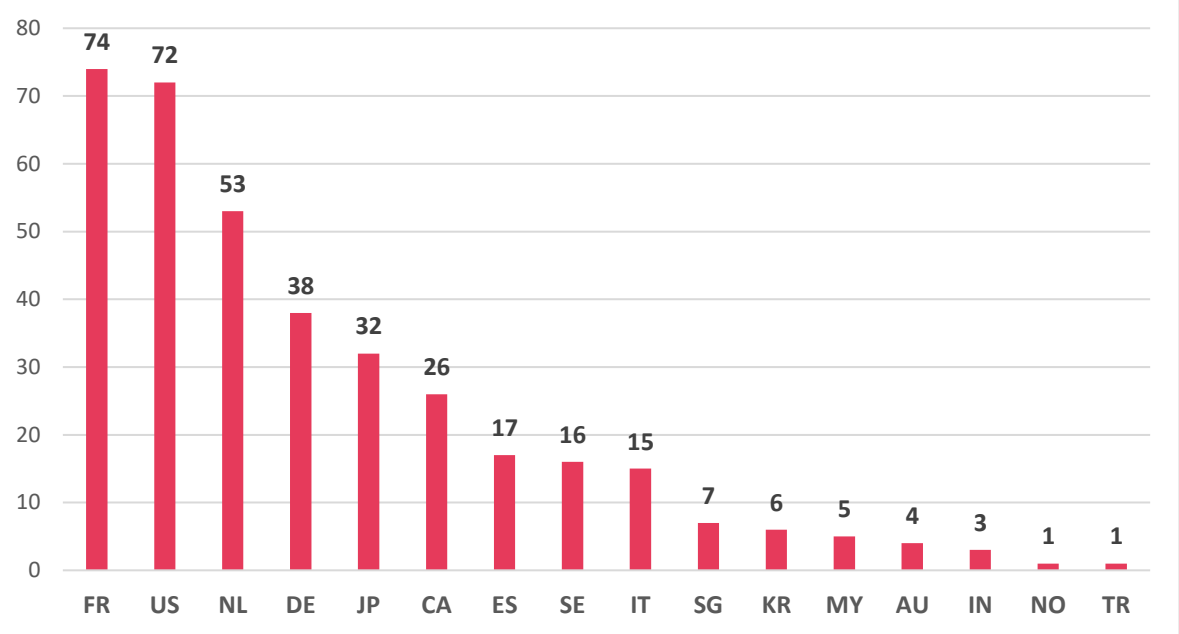


*If a product has been certified under different assurance levels or protection it will be listed in all of them, so the same product could be listed more than once. This fact must be taken into account throughout the report.

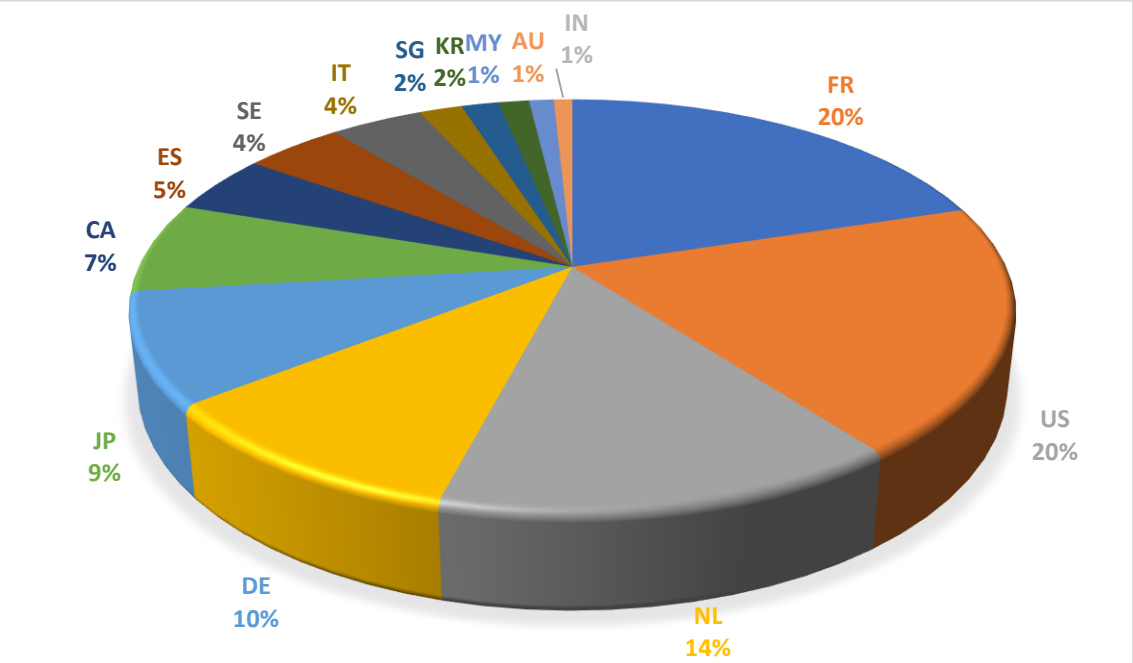
Top Certifying Schemes

The top-three certifying schemes in 2022 were France, United States and Netherlands with 74, 72 and 53 certified products respectively. France thus overtakes the United States as the world leader in the number of Common Criteria certifications.

These were followed by Germany (38), Japan (32) and Canada (26).



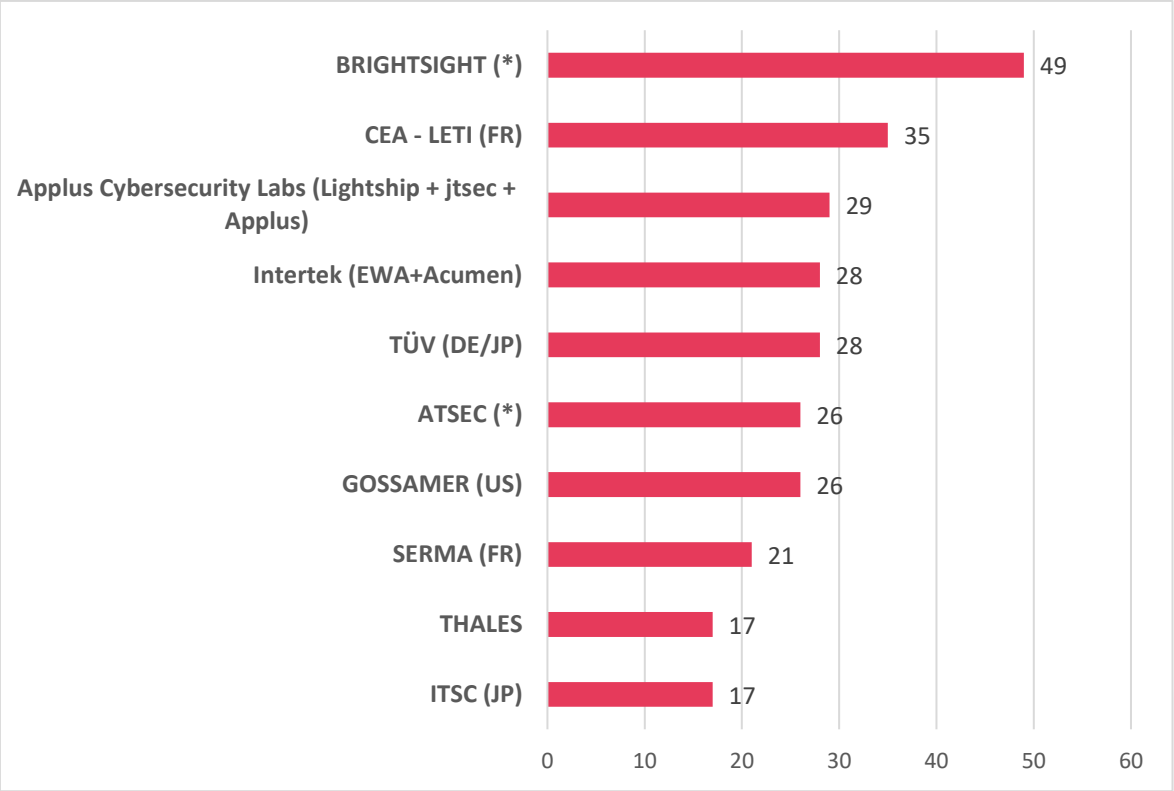
In terms of percentages, Top 3 schemes occupy the 54% of the certifications, while the next three schemes summed 26%. We are proud that Spain is in the 7th position, ahead of strong European countries such as Sweden (8th) or Italy (9th).



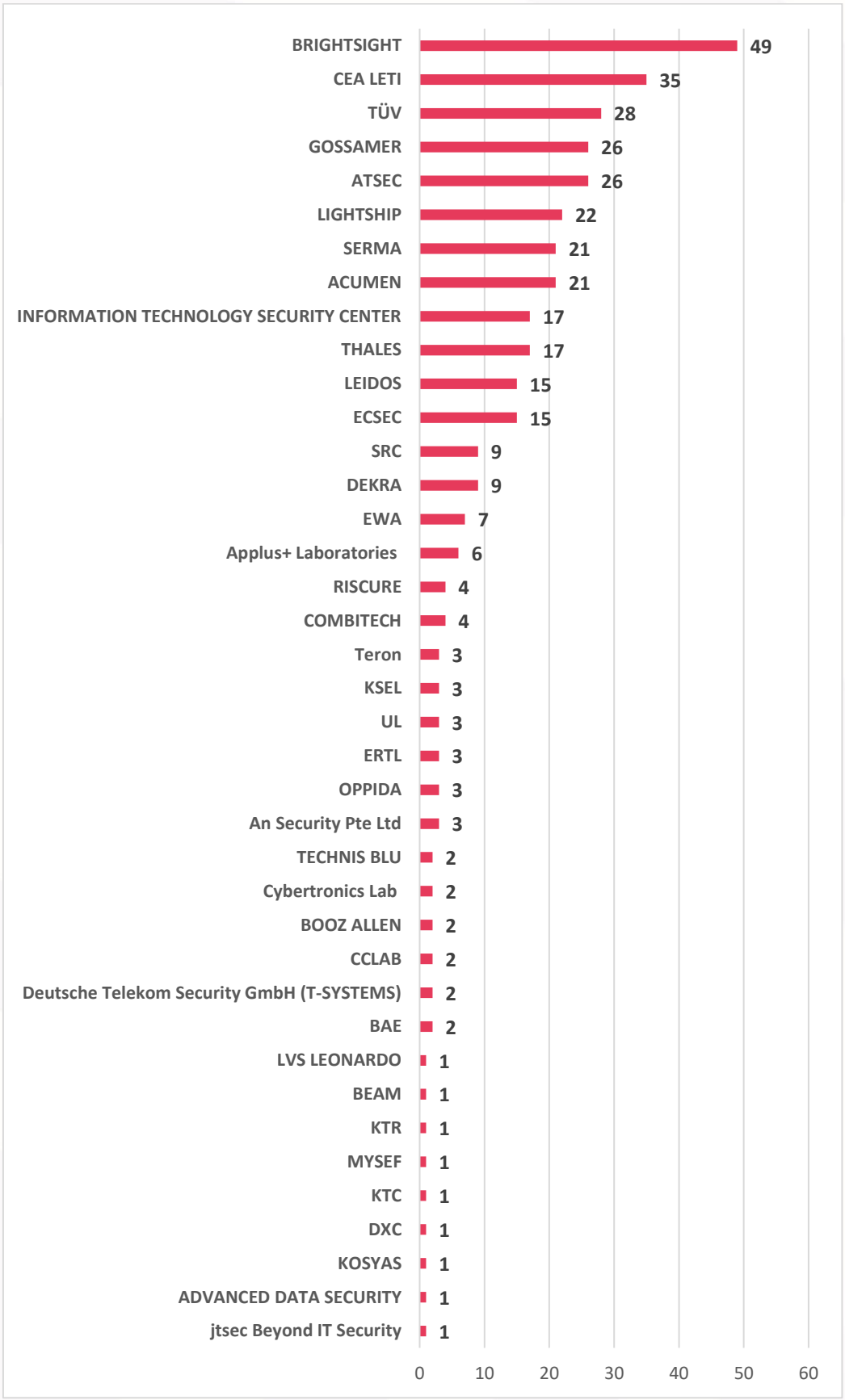
Top evaluation laboratories

The lab that evaluated the most products during 2022 was Brightsight. The Dutch firm took the first place with 49 products evaluated, CEA-LETI (35) is in the second place, Applus Cybersecurity Labs (Lightship + jtsec + Applus) (29) completes the podium. Intertek (EWA+Acumen) and TÜV (28), Gossamer (26) and ATSEC (26) carried out a considerable number of evaluations as well, also in the top 7.

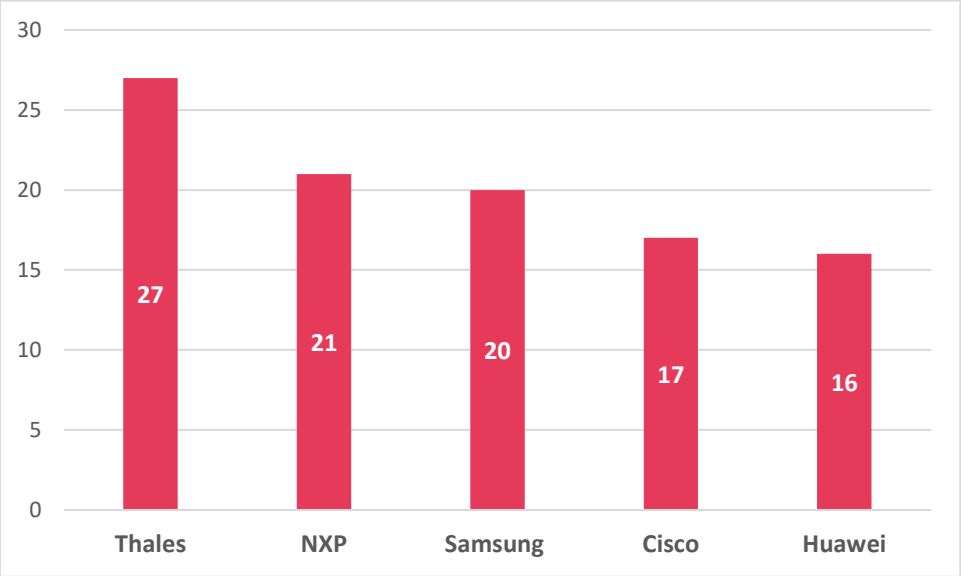
Then we can find SERMA with 21 certifications. ITSC and Thales complete the top 10, both with with 17 evaluations.



Evaluation laboratories in 2022



Top manufacturers



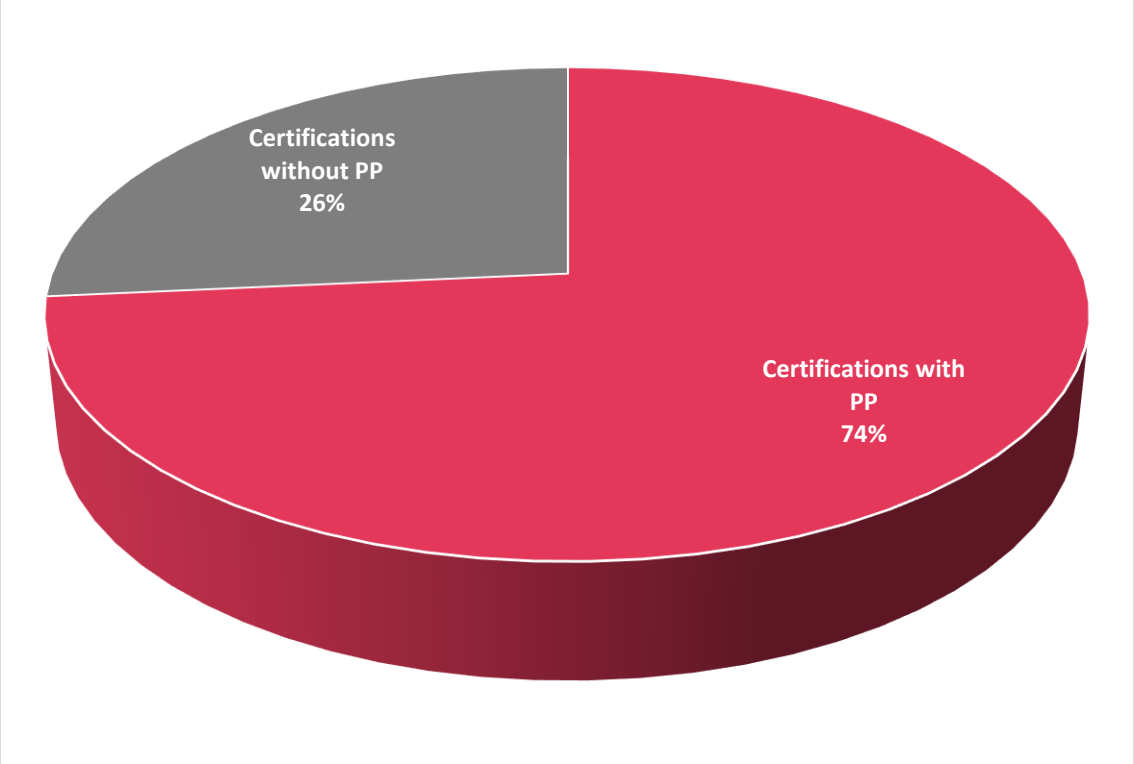
In the manufacturers ladder, we have Thales on the first place with 27 certified products, Thales has certified products in four countries (France, Norway, The Netherlands and Singapore), last year they certified 21 products (6 less than 2022). NXP Semiconductors is in the second place with 21 evaluations, 7 less than 2021 (28 evaluations), completing the podium we find Samsung with 20 certified products, followed by Cisco with 17 and Huawei with 16.

The next ones in the list, although they are not represented in this chart with 10 or more certifications are Idemia (12), STMicroelectronics (12) and Infineon (11).

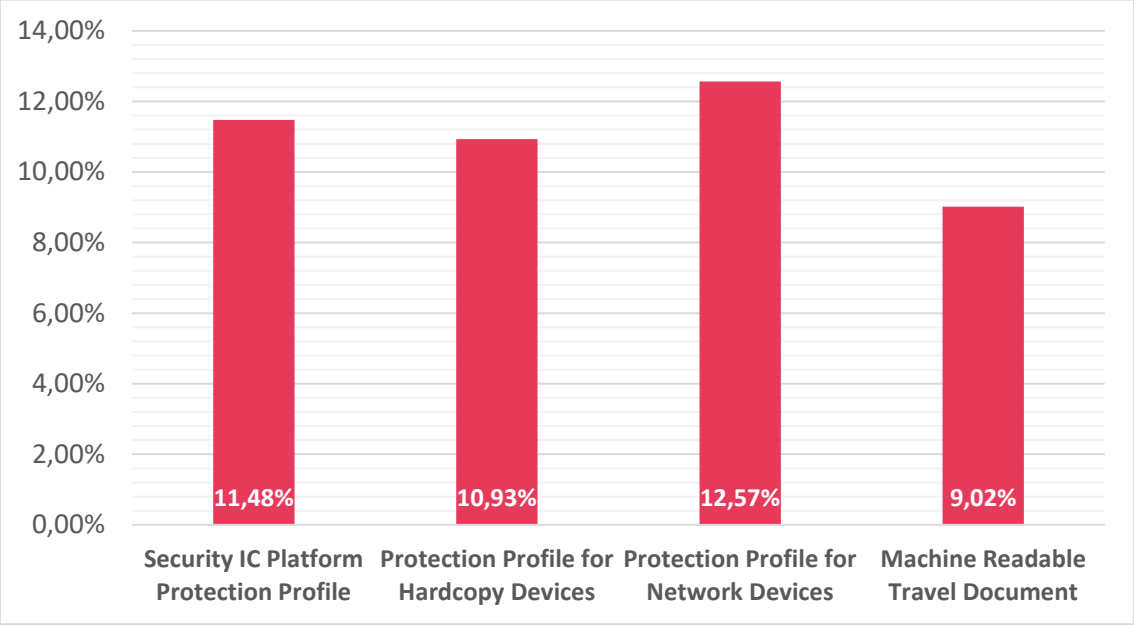
We are are particularly pleased that Ceragon Networks Ltd. has been included in the list of Common Criteria certified developers, as its product NetMaster R21B00 - Build 1028 has passed the EAL 2 assessment. This product has been evaluated in our lab.

Protection profiles

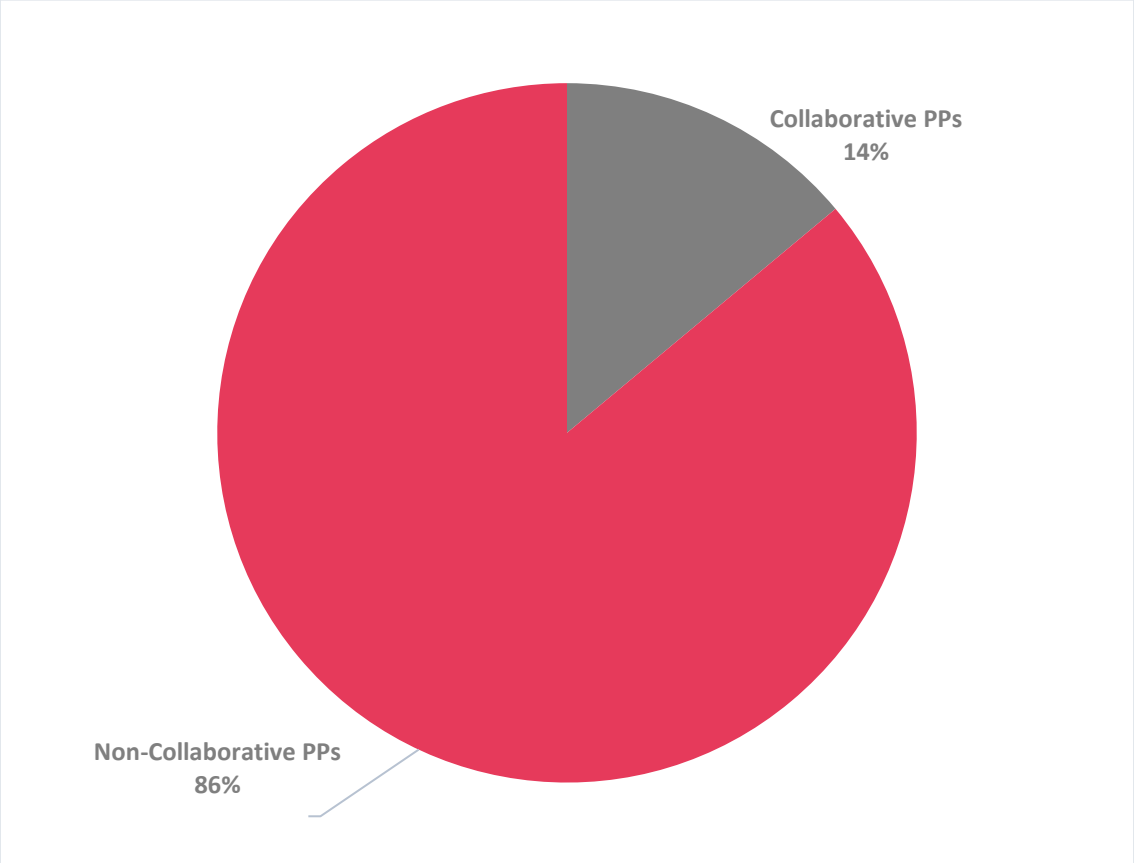
In 2022,272 products out of 370 were certified using a Protection Profile (with or without EAL assigned), representing the 74% of the certifications in that year.



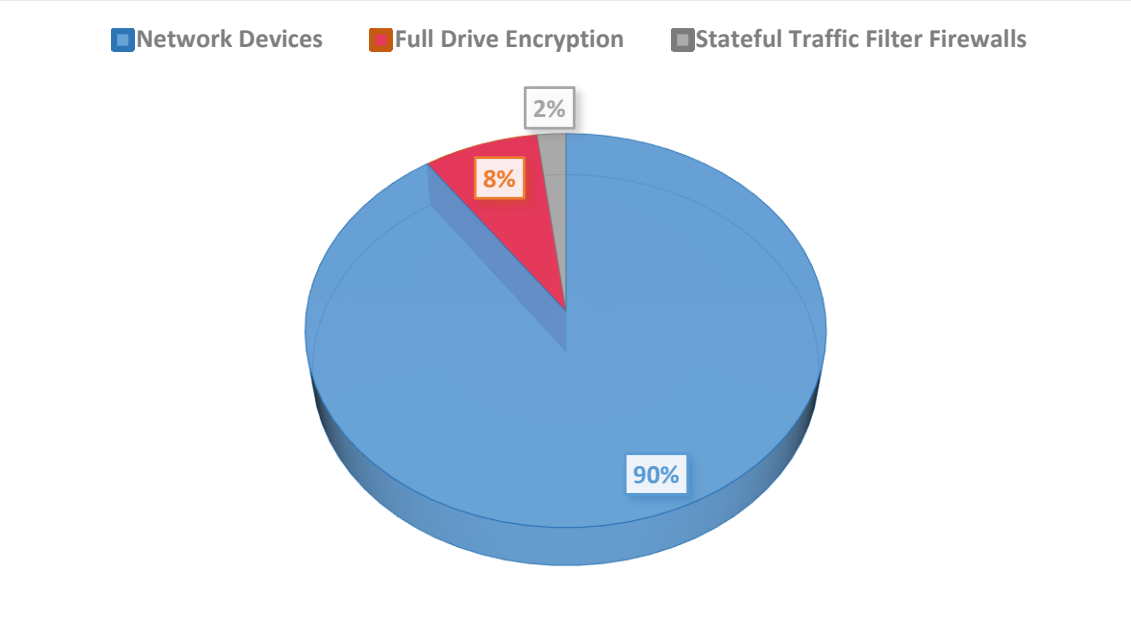
The statistic for top used PPs shows that the Protection Profile for Network Devices was the most used in 2022, with 46 products certified with compliance to it. It is followed by Security IC Platform PP with a total of 42 products. On the third place, we can find 40 product certifications used Hardcopy Device Protection Profile. On the fourth place, 30 certifications used the Protection Profile for Machine Readable Travel Document (above Protection Profile for Application Software, which ranked fifth with 15, far away from the top 4)



The use of Collaborative Protection Profile was popular during 2022, representing 14% of total Protection Profile compliant certifications.

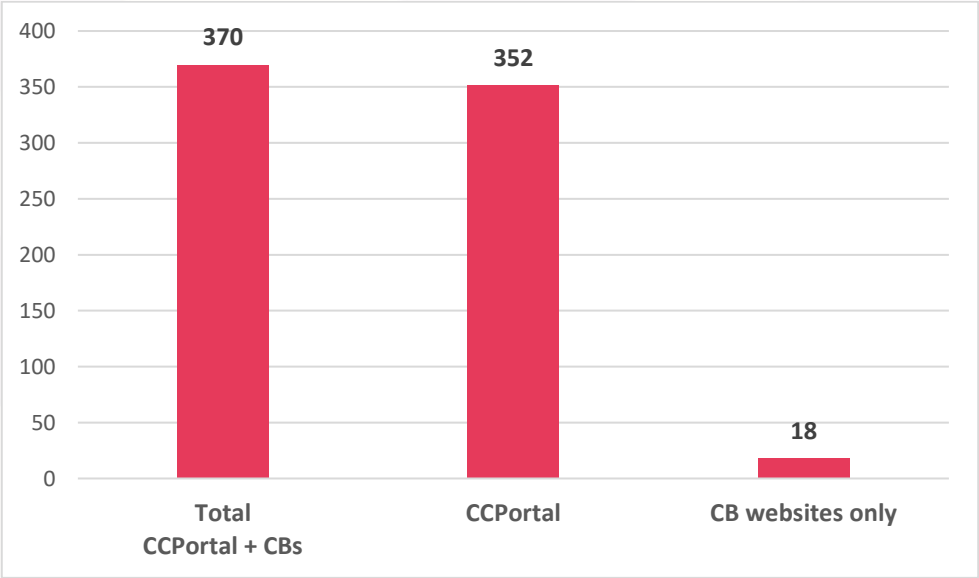


Among the Collaborative Protection Profiles, Network Devices Collaborative PP was by far the most significant: 90% of products certified in compliance with a Collaborative PP declared compliance with this protection profile.



CCScraper statistics vs Common Criteria Portal statistics

CCScrapper has counted 370 products certified in 2022. However, if we check the statistics of Common Criteria Portal, only 352 are reported as certified during 2022. This is because the data gathered by CCScrapper include those products that are also published in the web portals of the different Certification Bodies. 18 products out of 370 were reported only in the websites of the different Certification Bodies and not in commoncriteriaportal.org.

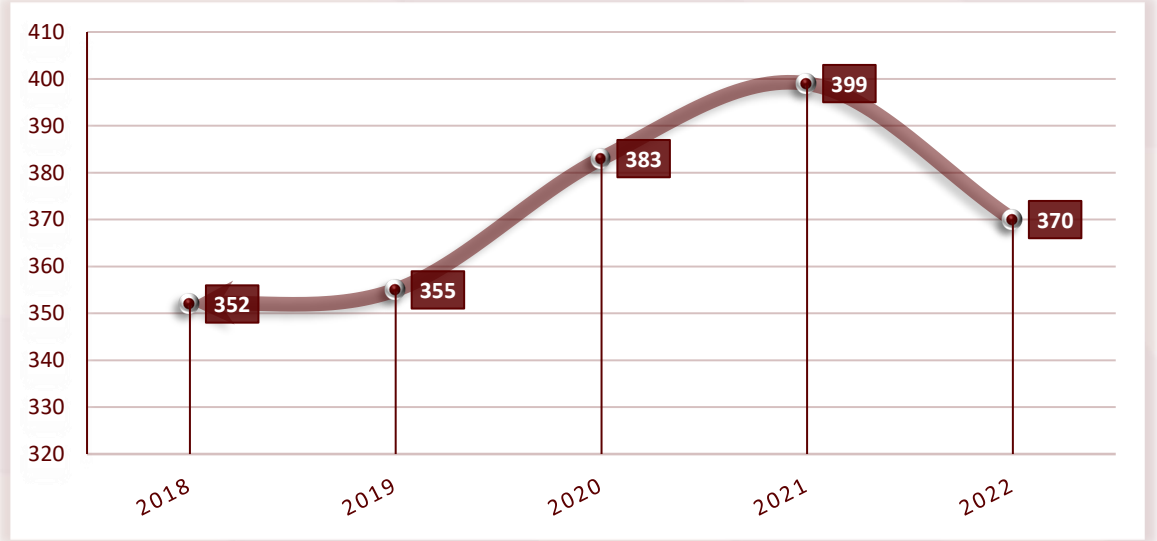


Among them, some products were duplicated, meaning the same product was reported multiple times either in Common Criteria Portal and/or in their respective Certification Body Portal. In Common Criteria Portal, some products are reported multiple times for different categories. This case is not common in the websites of Certification Bodies, nonetheless, one duplicated product was found in one of those websites. CCScrapper takes care of this situation and correlates the duplicated information, in different websites or on the same website, in a smart way.

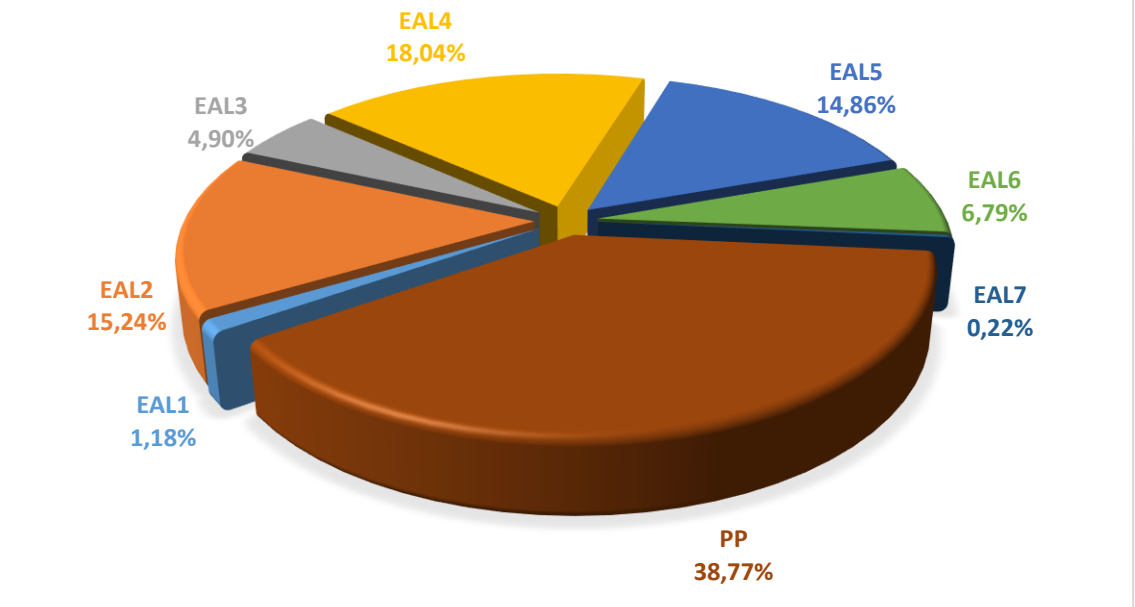
Statistics for 5 years

This section contains the trends in the last 5 years of Common Criteria, including products with certificate issued between 2018 and 2022, both included.

Total certified products

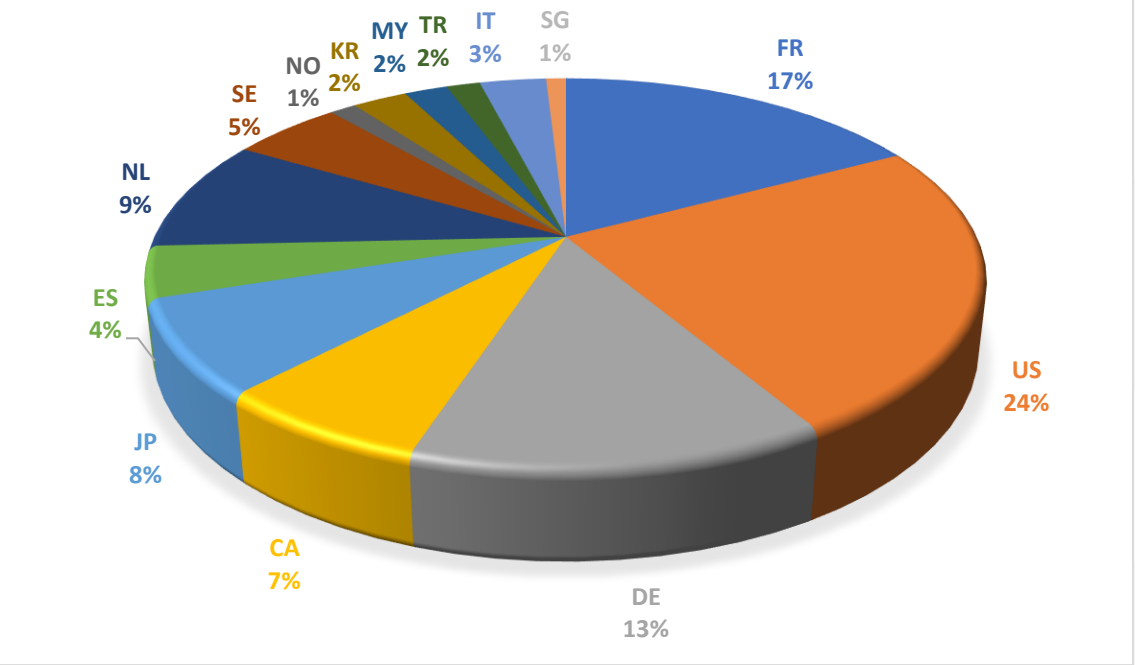


Most used assurance levels



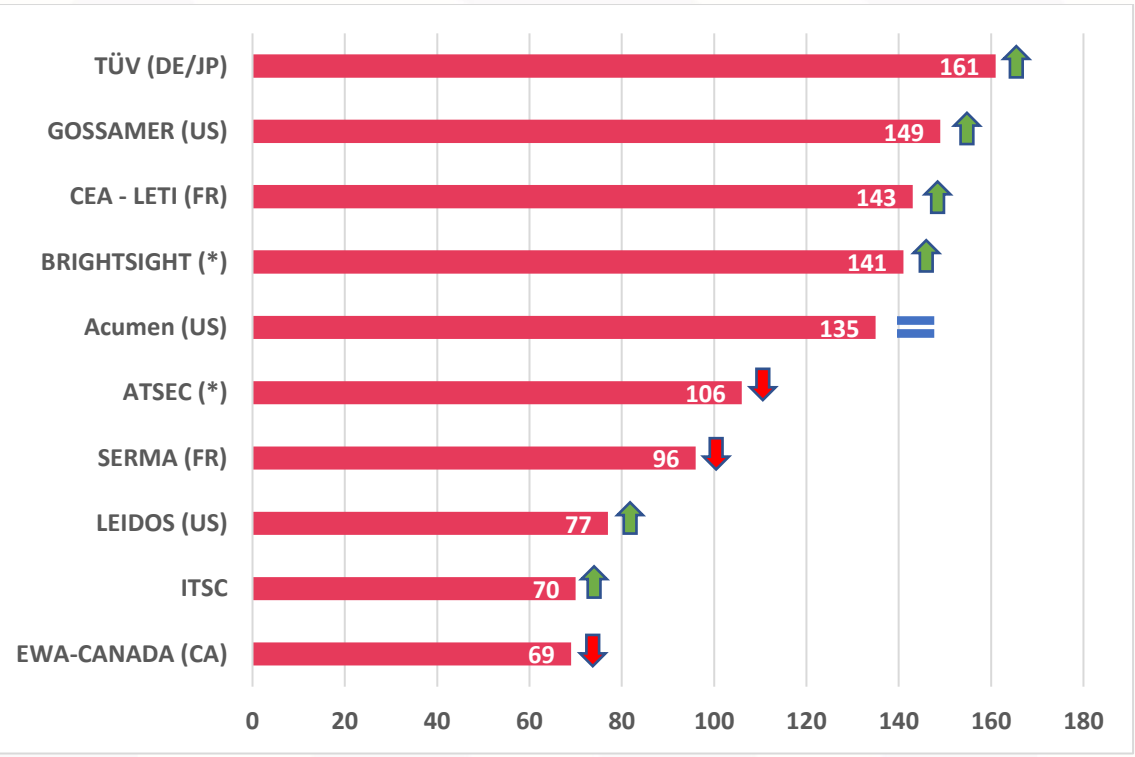
The trend during the last 5 years indicates that about 38.77% of the products are certified as PP-compliant (with no EAL assigned). EAL2 (15,24%) was the most used low assurance EALs (21,37%), while high EALs (39,91%) were very frequent with EAL4 being the most used.

Top certifying schemes



The American scheme is the one with most certifications during the last 5 years (24% out of total each one) followed by France (17%) and Germany (13%) in the podium. The Netherlands (9%), Japan (8%) and Canada (7%) are in the top 6 during that time. After them, we can find Sweden (5%) and Spain (4%).

Top laboratories

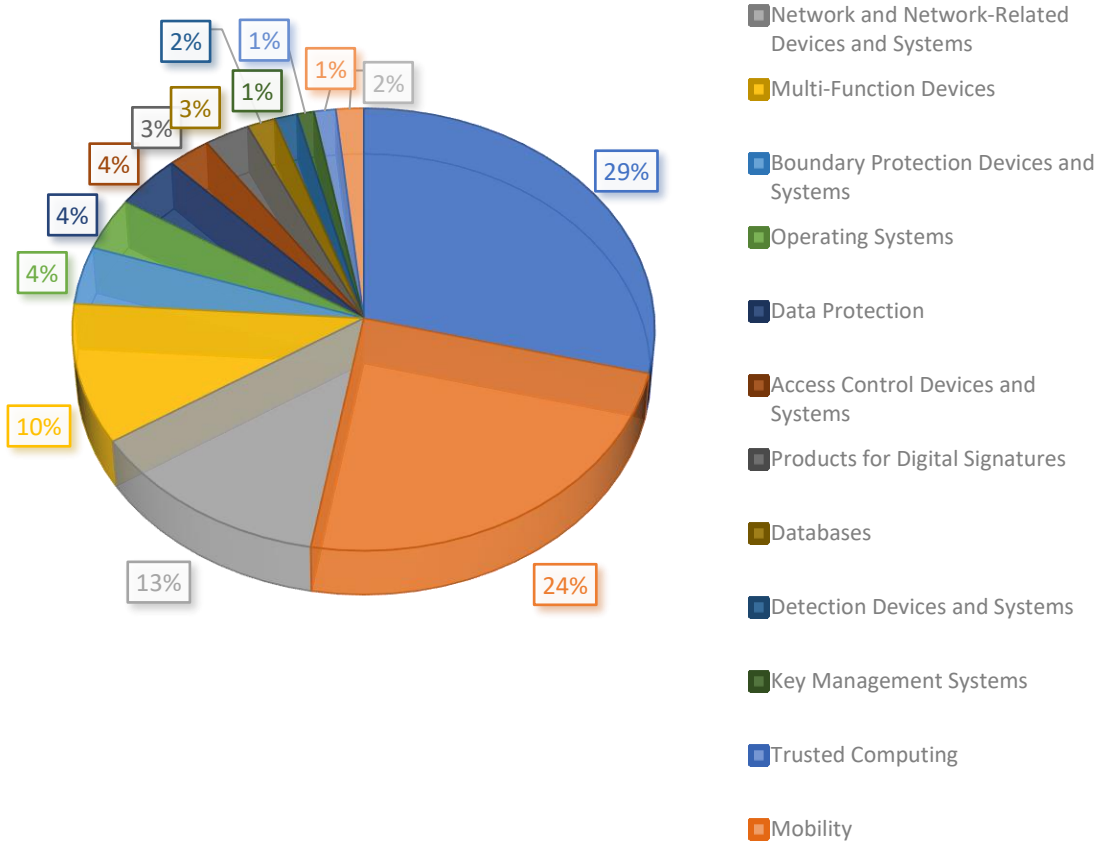


The trend for top laboratories is very similar to that in 2021.: TÜV, CEA-LETI and GOSSAMER are in the podium, followed by Acumen and Brightshight. ATSEC, SERMA LEIDOS, ITSC and EWA complete the top 10.

Historical trends

This section contains historical trends from the very beginning of Common Criteria. Archived products (products where the certificate status is no longer valid) are included for the sake of completeness.

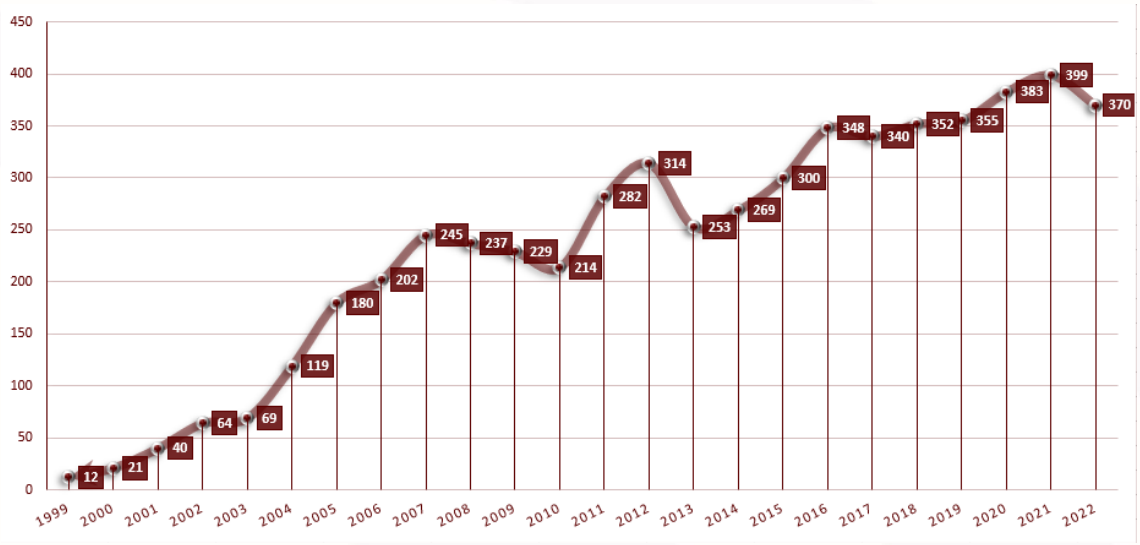
Product categories



High-security ICs, smartcards and similar devices are the top certified category, with 29% of the total number of certifications. Network and multi-function devices, as well as other devices and systems complete the top-4, which mainly correspond to lower EALs.

Other varied categories add up to 12% of the total: Boundary Protection Devices and Systems, Operating Systems and Data. After them we can find Products for Digital Signatures, Acces Control Devices and Systems with 3%

Total number of certified products by year:



The overall historical shows that Common Criteria certifications have been growing from 2018 to 2021, being the latest the year with the most certifications in history. However, in 2022 we have noticed a slight decrease, suggesting that the number of certifications has stabilized, although it is still the third year with the most certifications after 2021 and 2020.

We will have to analyse the reasons for this decrease, some of them may be:

- Lack of capacity of the laboratories or certification bodies to manage a greater number of certifications.
- Unavailability of some manufacturers to undertake Common Criteria certification, either due to time, cost or any other reason.
- Creation of other cybersecurity standards that are eating up market share.
- Certifications are delayed until EUCC is published.

Cybersecurity Services

Jtsec Beyond IT Security (Spain) and Lightship Security (Canada and USA) has recently joined Applus+ Laboratories. Together we offer a wide range of cybersecurity services:

COMMON CRITERIA FASTER & EASIER

Accredited Laboratories

Evaluations up to **EAL 6+**

cPP & NIAP PP evaluations

SOG-IS Technical Domains

Accredited laboratories under the Spanish, Canadian and US Schemes

Automation Tools

CCToolBox: an automation platform for CC documentation generation, evaluation and validation

Greenlight: a conformance automation platform for CC testing

ACCREDITED FOR 20+ CERTIFICATION SCHEMES

FIPS 140-3

NVLAP accredited and recognized by the CMVP.

LINCE & CPSTIC LISTING

Accredited for Lince Evaluations. Support for products listing in the Spanish CPSTIC catalog.

PAYMENT SCHEMES

Accredited by EMVCo, PCI-PTS and other payment schemes. SE, Platforms, Cards, POS & Mobile Apps evaluations

IOT & INDUSTRIAL SCHEMES

First accredited ETSI EN 303 645 laboratory for consumer IoT.

IECEE CB accredited lab for IEC 62443-4 industrial cybersecurity.

Accredited for SESIP Evaluations for IoT platforms.

Accredited lab for PSA Certified for IoT chips, software and devices.

INDEPENDENT SERVICES

✓ **Vulnerability assessments:** Thread Analysis & Risk Assessment, Design Review (source code included), Vulnerability Analysis & Pen Testing

✓ **Gap Analysis**

✓ **Site Audits**

✓ **Product Life Cycle Evaluation**

Applus+ Laboratories is a division of the Applus+ Group that provides testing and certification services from a network of multidisciplinary laboratories in Europe, Asia, and North America. Our cybersecurity laboratories support developers of ICT products, components, and systems to demonstrate the compliance of applicable requirements and standards in cybersecurity. With our cutting-edge facilities found worldwide, and technical expertise across industries such as aerospace, defense, automotive, payment, identification and telecommunications, our services facilitate market access at the speed of development.

www.appluslaboratories.com | itlabs@applus.com

jtsec joined Applus+ Laboratories in 2022. A cybersecurity lab based in Granada, Spain, deeply involved in standardization committees at European and international level. jtsec specializes in evaluations for Common Criteria and Lince schemes, and has developed automated tools that facilitate paperwork activities for developers, consultants, labs and certification bodies. It is also an accredited lab for key industrial and IoT standards.

www.jtsec.es | hello@jtsec.es

Lightship Security joined the Applus+ group in 2022. Founded in Ottawa, Canada, Lightship is an accredited Common Criteria and FIPS 140 laboratory that specializes in accelerating Protection Profile conformance for the NIAP Product Compliant List (PCL). They developed an industry-leading test automation platform that codifies their extensive experience to drive certification results for speed, thoroughness and quality that was previously not possible.

www.lightshipsec.com | info@lightshipsec.com