

2021 Common Criteria Statistics Report





jtsec
BEYOND IT SECURITY

Index

Index	3
About Us	4
Introduction	5
Research & Collaboration	6
Other Common Criteria tools	7
CC Statistics for 2021.....	9
Statistics for 5 years	16
Historical trends	18

Index



WHO WHO WE ARE



jtsec is a laboratory that offers **security evaluation and consultancy** services following the most recognized certifications and standards of the sector (LINCE, PCI-PTS, PCI-CPoC, Common Criteria, FIPS 140-2, FIPS140-3, IEC62443 4-1 or IEC 62443 4-2 etc.) 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.

jtsec is a reference in the standardization. Being part of different working groups in charge of developing cybersecurity standards, such as ENISA SOG IS successor scheme, IACS, CTN 320 or SCCG, among others.

VALUE 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) and other things, so we thought that an “all-in-one” report would be great for the Common Criteria community!

During the 17th Common Criteria Conference that took place in Amsterdam in 2018, our team presented a tool that could bring a breath of fresh air to this scenario. The tool was improved during 2019 and we managed to make it better, presenting the improvements in the 18th Common Criteria Conference in Singapore, during October 2019. In 2020 we showed this tool in the ICCC2020 with the talk “2020 Statistics Report. Is the industry surviving to lockdown?” and, last year, we used this tools for ICCC21 in the conference :“2021 CC Statistic Report”.

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.

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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 14 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:

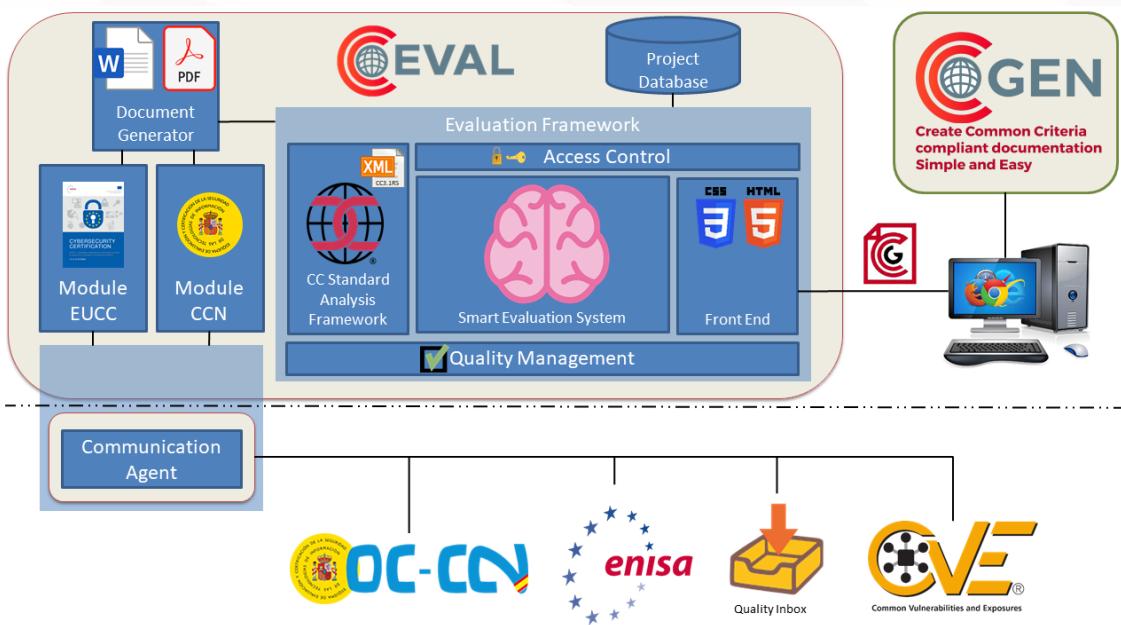
- (EN) ICCC21 [2021], "Automating Common Criteria" .
- (EN) ICCC21 [2021], "2021 CC Statistic Report"
- (EN) ICCC21 [2021], "CC CAB tool, Making CABs Life Easy".
- (EN) ICCC 2020 [2020], "Industrial Automation Control Systems Cybersecurity Certification - Chapter II"
- (EN) ICCC 2020 [2020], "2020 Statistics 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 CCFU 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) XIV International Common Criteria Conference. USA [2013], "Lower EALs Evaluations: Are you kidding me?"
- (EN) XI International Common Criteria Conference. Turkey [2010], "Overflowing attack potential: scoring defence-in-depth"
- (EN) XI International Common Criteria Conference. Turkey [2010], "Evaluating a watermelon: mitigating the threats through the operational environment"
- (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**, **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 like HTML5, CSS3 and AngularJS.



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.

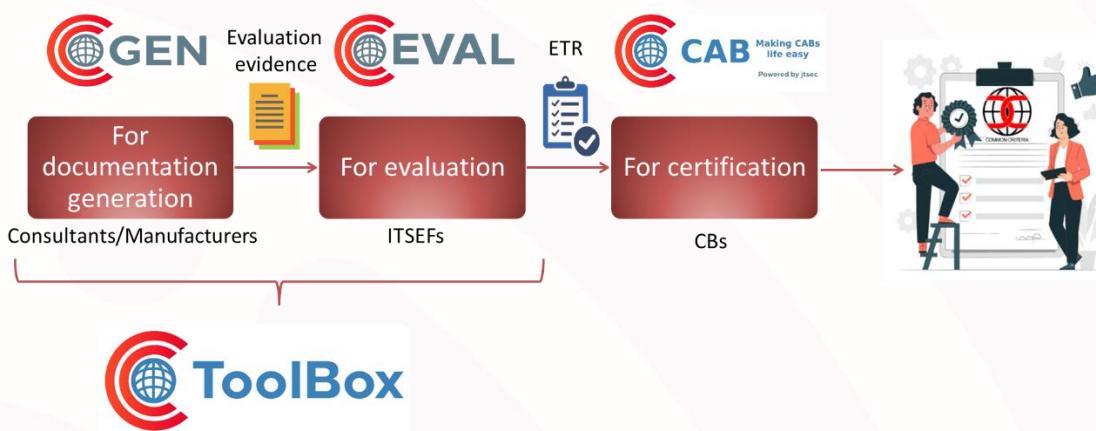
After creating tools for consulting and evaluation, it was still pending to create a tool that would allow the automation of processes of the last step, the validation of the assessment activities by the certification bodies (CAB), which is why the initiative to develop CCCAB arose

CC CAB:

CC CAB 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. CC CAB 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 CC CAB 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 2021

These are the statistics on Common Criteria certifications for 2021. CCScrapper has gathered the latest information about Common Criteria certified products and has generated related statistics up to 2021-12-31.

In 2021, 411* products have been certified, while 388 were certified in 2020. 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.

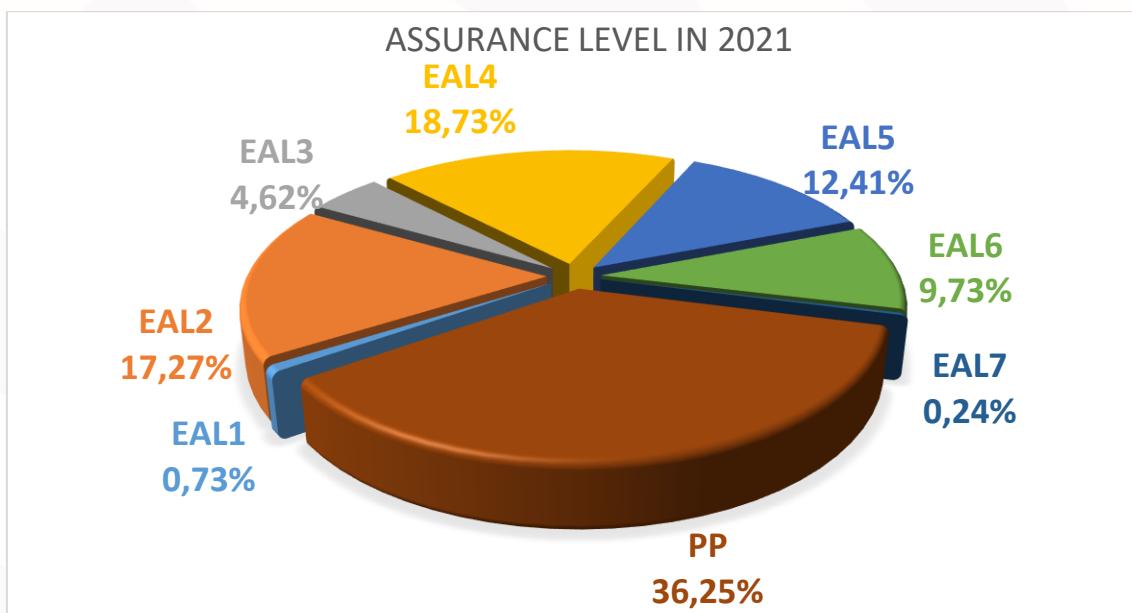
The details on those certifications are provided throughout this report.

Assurance levels

In 2021, 169 high assurance evaluations (EAL4-EAL7) were carried out. Among those, we can find 77 EAL4 evaluations, 51 EAL5 evaluations, 40 EAL6 evaluations and 1 EAL7 evaluation. In total, 41.12% of the certifications were high-assurance.

A total of 93 products were certified using low assurance evaluations (EAL1-EAL3), representing 22.63% of all the evaluations. The most frequent low assurance EAL was EAL2, with 71 certifications, followed by EAL3 with 19 certifications and EAL1 with 3.

On the other hand, the trend to use Protection Profiles on evaluations has been even larger in 2021. Certifications using a Protection Profile with no EAL assigned were very frequent in 2021. In total, 149 products were certified with a Protection Profile without assigned EAL, representing 36,25% of all certifications in 2021.



*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.

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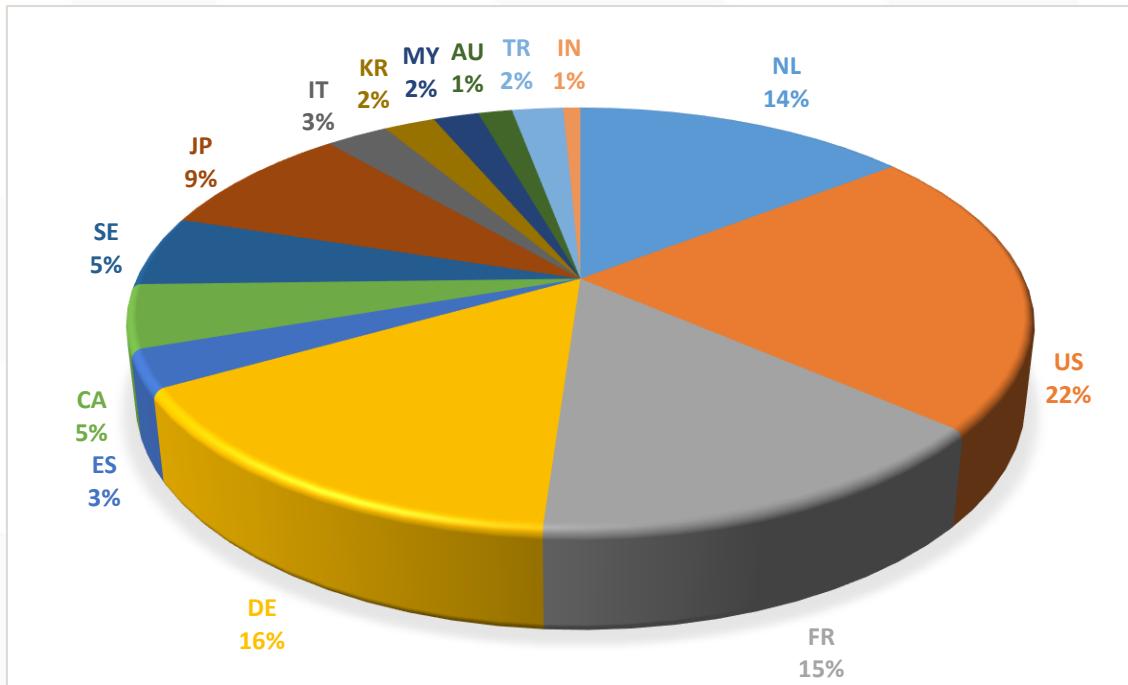


Top Certifying Schemes

The top-three certifying schemes in 2021 were United States, Germany and France with 90, 64 and 60 certified products respectively. These were followed by The Netherlands (59), Japan (36) and Sweden (22).



In terms of percentages, Top 3 schemes occupy the 53% of the certifications, while the next three schemes summed 28%.

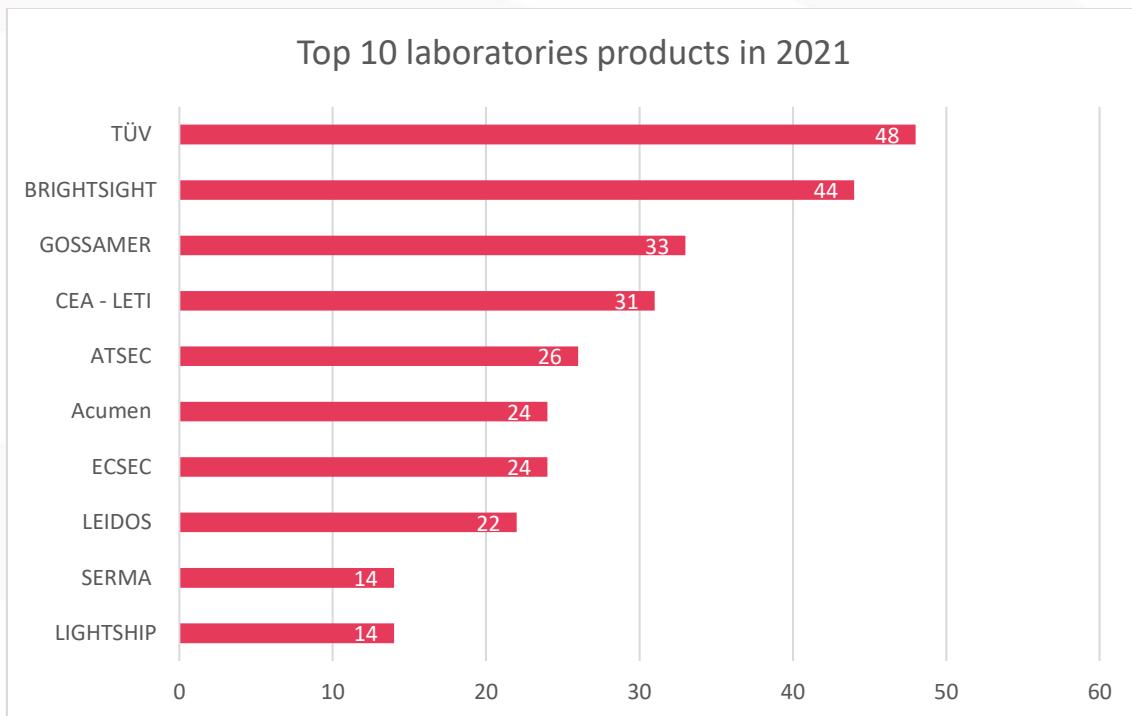


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Top evaluation laboratories

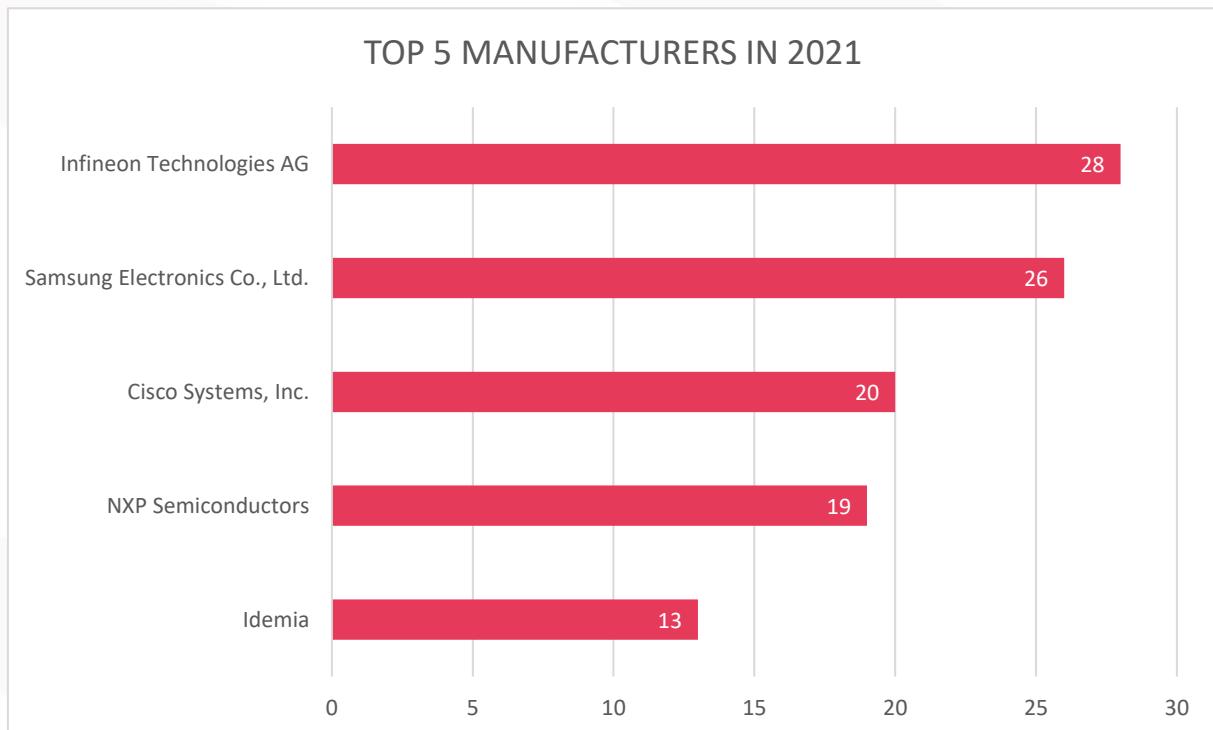
The lab that evaluated the most products during 2021 was TÜV. The German firm took the first place with 48 products evaluated. Brightsight (44), Gossamer (33), CEA-LETI (31) and ATSEC (26) carried out a considerable number of evaluations as well, also in the top 5.



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Top manufacturers



In the manufacturers ladder, we have Infineon Technologies on the first place with 28 certified products. Samsung is in the second place with 26 evaluations, completing the podium we find Cisco Systems with 20 certified products, followed by NXP Semiconductors with 19 and Idemia with 13.

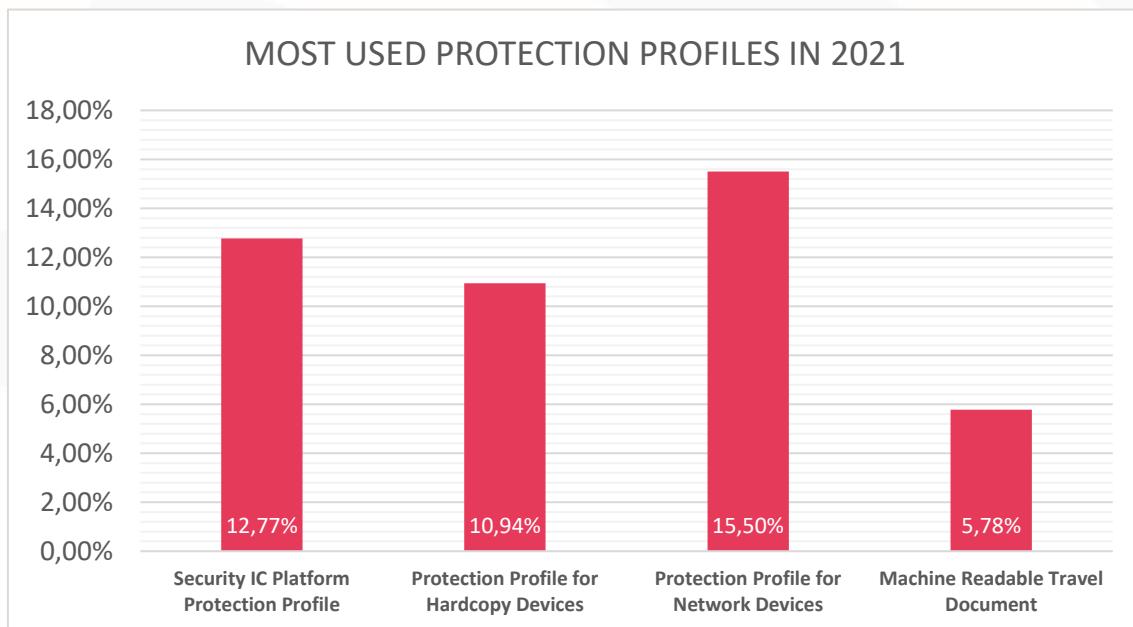
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Protection profiles

In 2021, 149 products out of 411 were certified using a Protection Profile.

The statistic for top used PPs shows that the Protection Profile for Network Devices was the most used in 2021 (15,5% of the total PP certifications), with compliance to it. It is followed by Security IC Platform PP with a total of 12,77%. On the third place, we can find 10,94% product certifications used the Protection Profile for Hardcopy Devices. On the fourth place, 5,78% Machine Readable Travel Document, (above Protection Profile for Application Software, which ranked fifth)

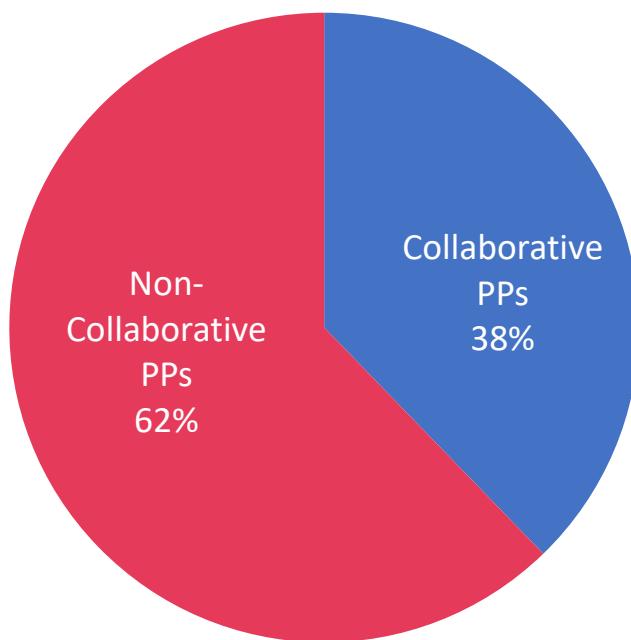


The use of Collaborative Protection Profile was very popular during 2021, representing 38% of total Protection Profile compliant certifications.

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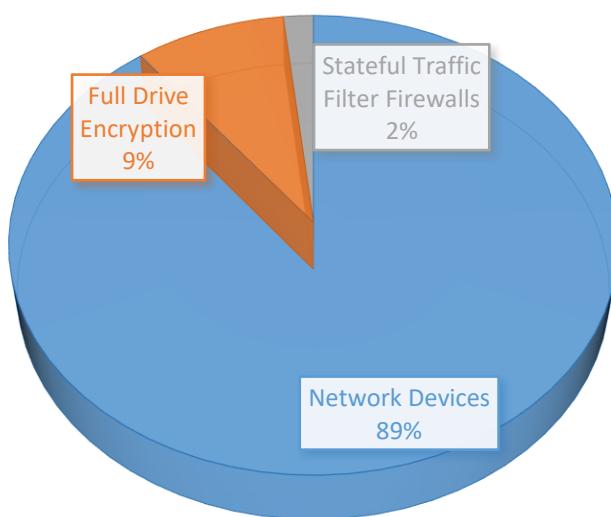


COLLABORATIVE PPS VS NON-COLLABORATIVE PPS



Among the Collaborative Protection Profiles, Network Devices Collaborative PP was by far the most significant: 89% of products certified in compliance with a Collaborative PP declared compliance with this protection profile.

COLLABORATIVE PROTECTION PROFILES USED IN 2021

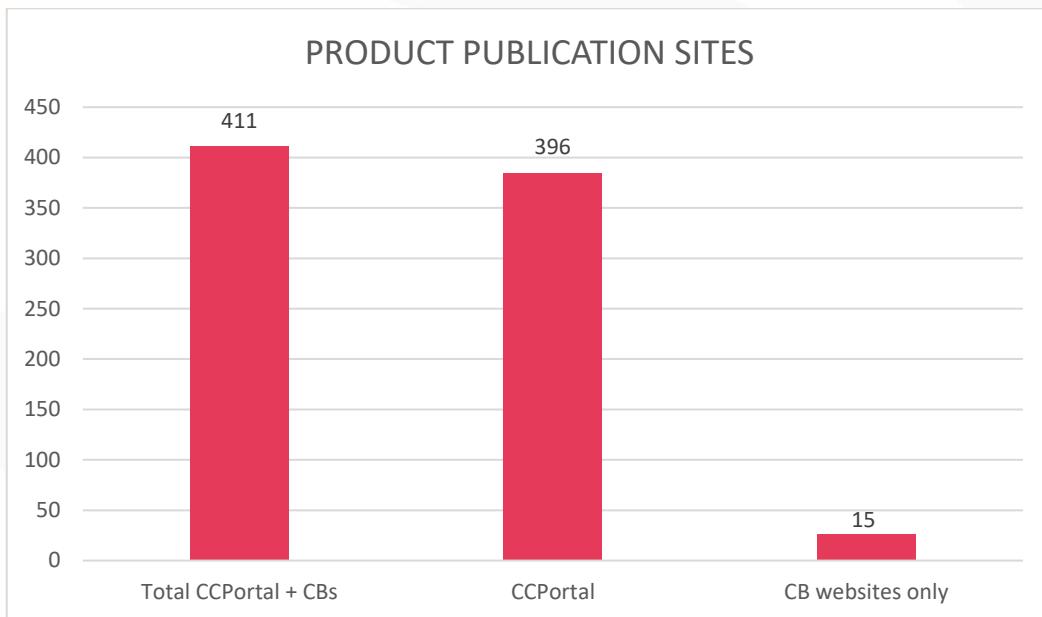


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CCScrapper statistics vs Common Criteria Portal statistics

CCScrapper has counted 411 products certified in 2021. However, if we check the statistics of Common Criteria Portal, 396 are reported as certified during 2021. This is because the data gathered by CCScrapper include those products that are also published in the web portals of the different Certification Bodies. 15 products out of 411 were reported only in the websites of the different Certification Bodies and not in commoncriteriaprotoal.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.

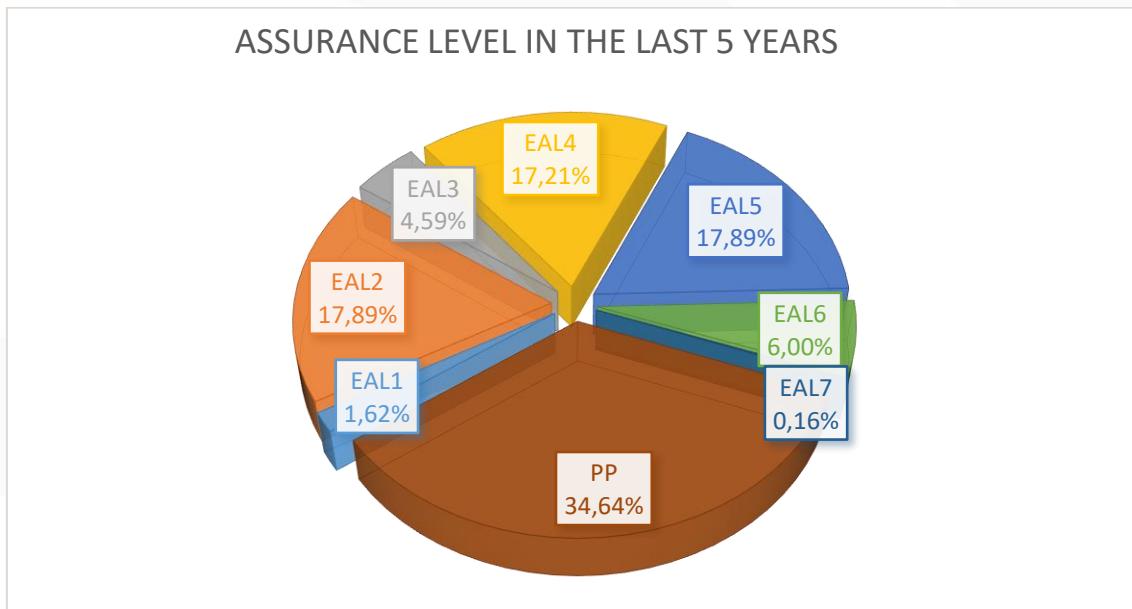
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Statistics for 5 years

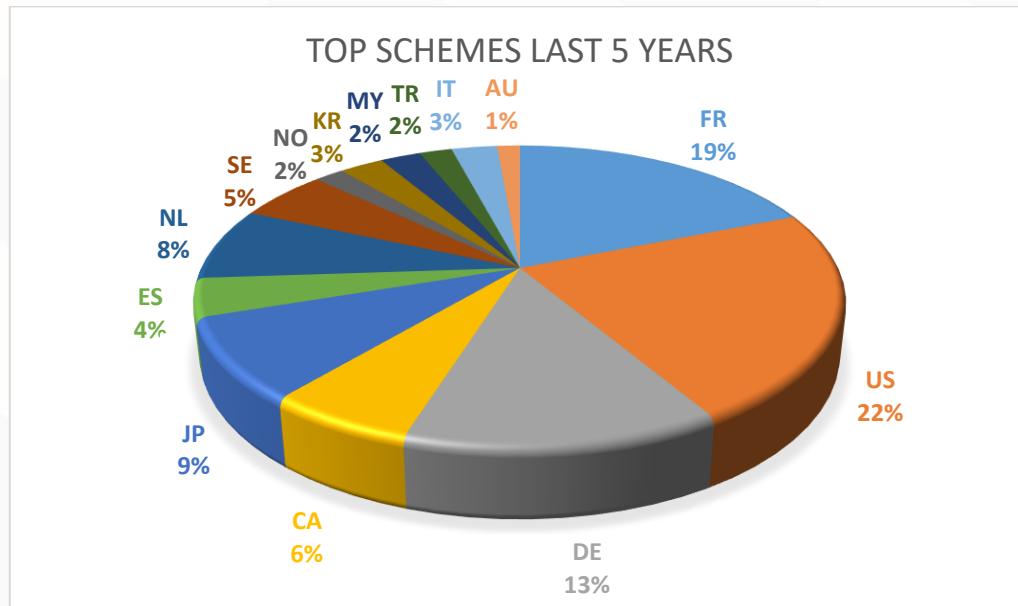
This section contains the trends in the last 5 years of Common Criteria, including products with certificate issued between 2017 and 2021, both included.

Most used assurance levels



The trend during the last 5 years indicates that about 34,64% of the products are certified as PP-compliant (with no EAL assigned). EAL2 (17.89%) was the most used low assurance EALs (24.1%), while high EALs (41.26%) were very frequent with EAL5 being the most used.

Top certifying schemes

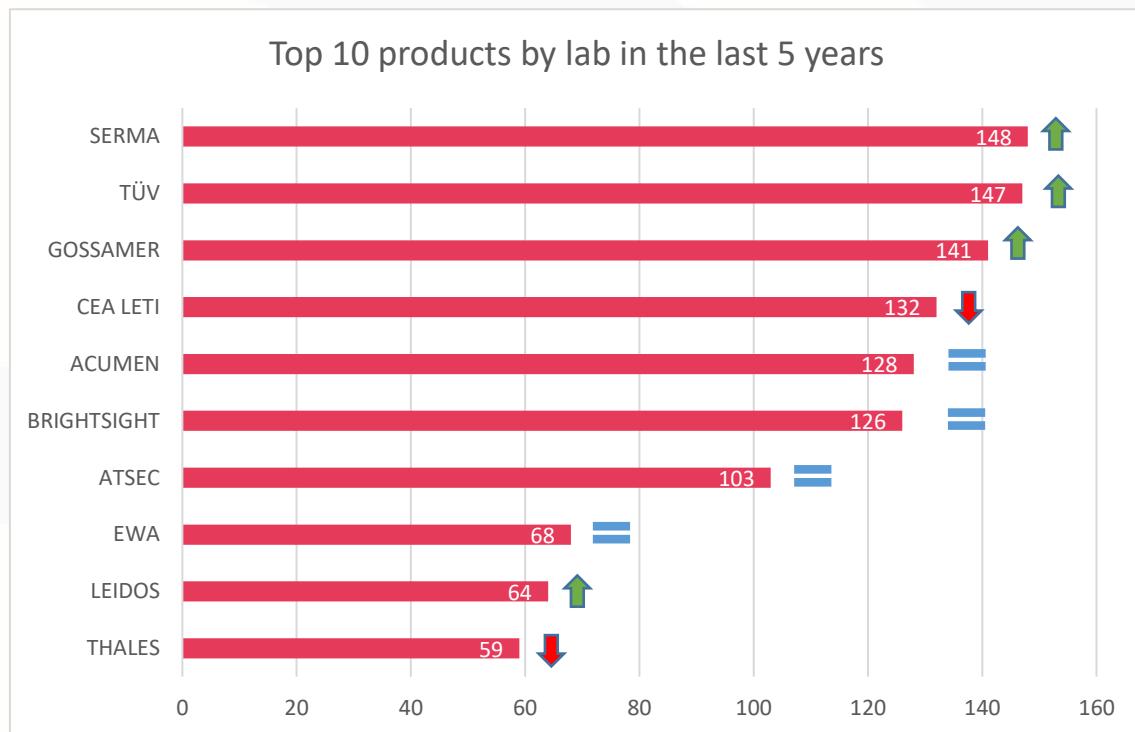


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US (22%) and France (19%) schemes were the ones with most certifications during the last 5 years followed by Germany, Japan and the Netherlands were in the top 5 during that time. Spain, with 4%, was the fifth European scheme with most certification and the eighth in the world.

Top laboratories



The trend for top laboratories is quite different to that in 2020 with variations in the order of the top 5 labs. SERMA, TÜV and Gossamer are the winners, followed by CEA-LETI and Acumen. Positions 6 to 10, completing the top ten, just one significant difference with 2020, Leidos has overtaken Thales.

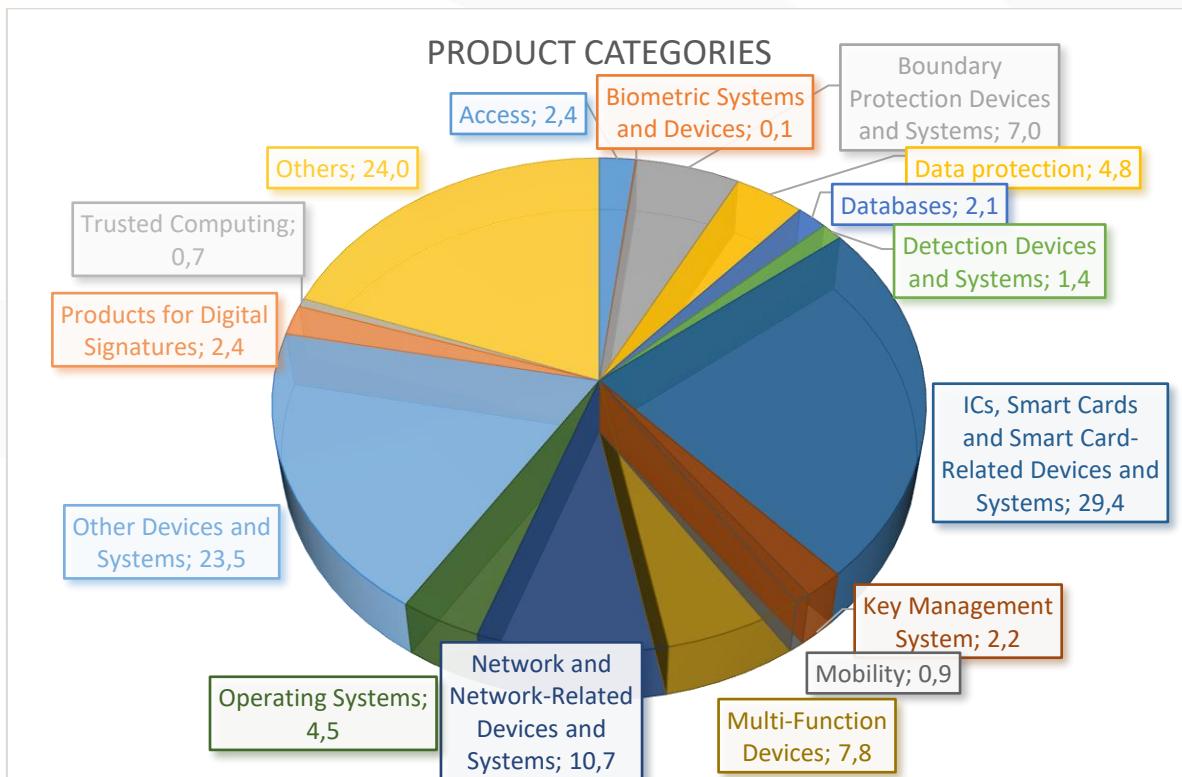
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Historical trends

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



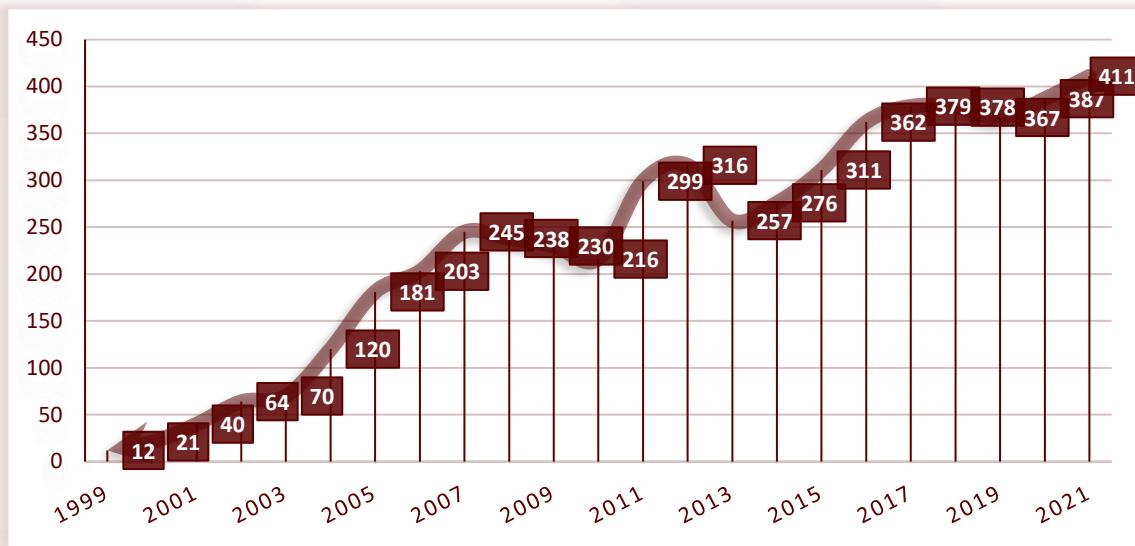
High-security ICs, smartcards and similar devices are the top certified category, with 29,4% of the total number of certifications. Network and multi-function devices, as well as other devices and systems complete the top-4, which mainly correspond to lower EALs.

Other varied categories add up to 12,1% of the total, some of them are: Access Control Devices and Systems, Products for Digital Signatures and Databases, Detection Devices and Systems, Key Management Systems, Trusted Computing or Mobility.

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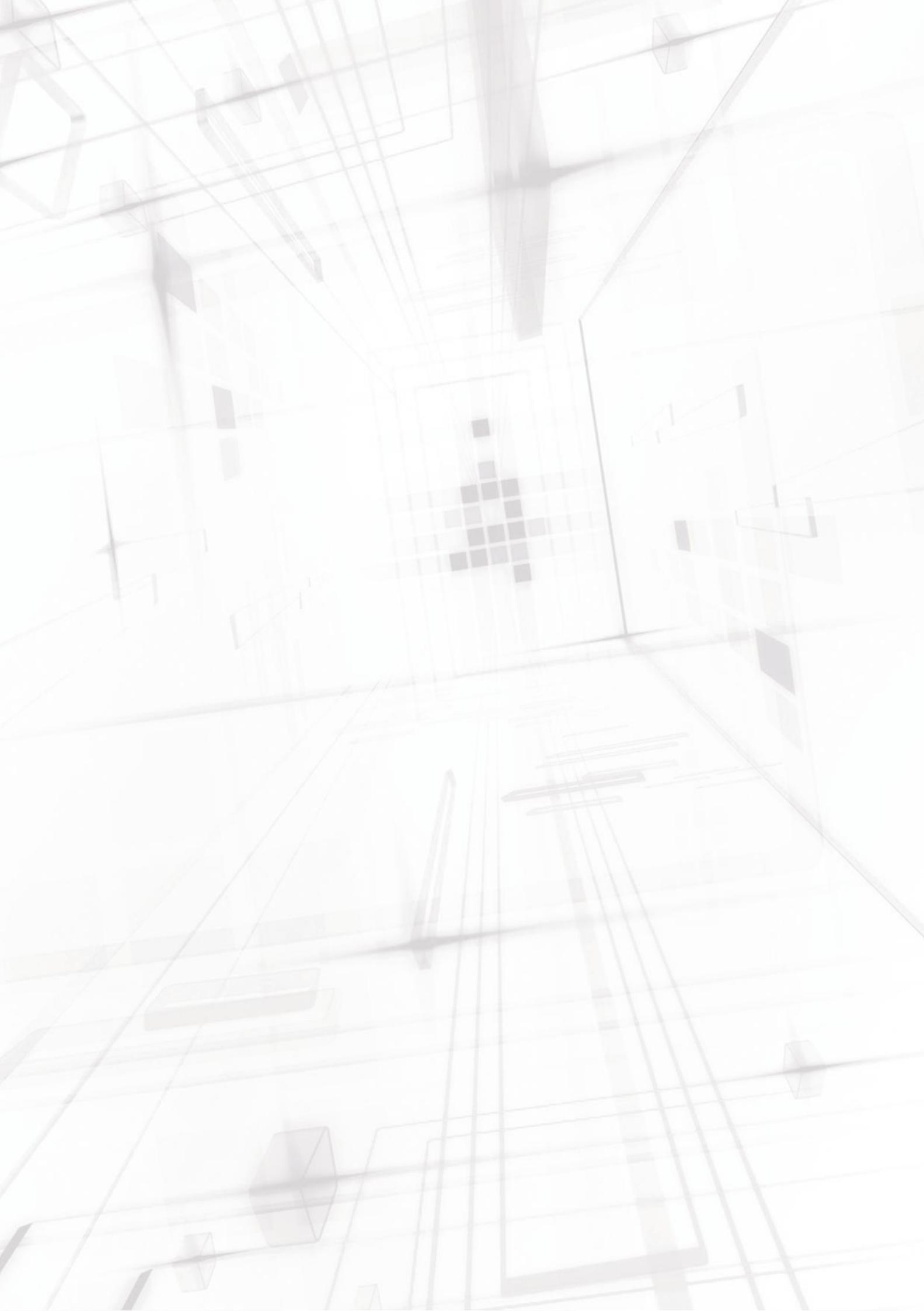
Total number of certified products by year:



The overall historical trend is upwards without a doubt, although it has stabilized over the past five years. 2021 is the year with the highest number of Common Criteria certifications in history, surpassing for the first time, the 400 certifications per year mark.

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Career

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