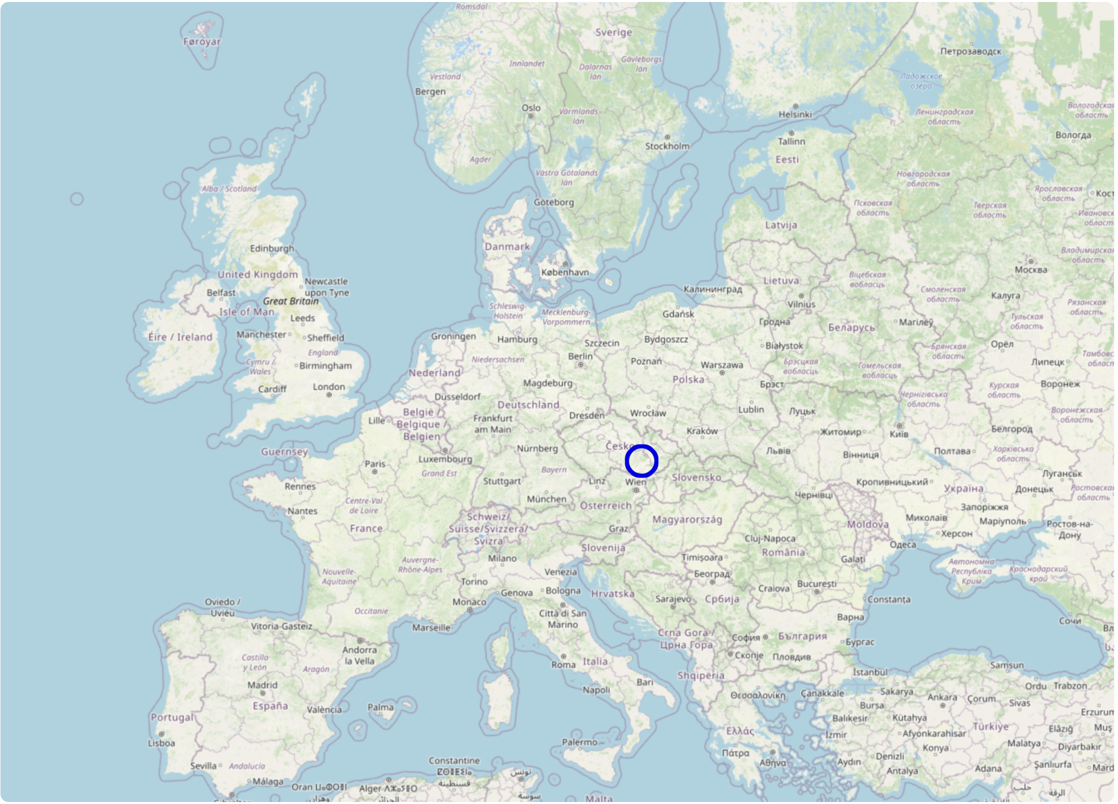
MUNI
FI

Insights from Automated Large-Scale Analysis of Common Criteria Certificates

EU CyberActs conference 2024

Adam Janovsky | adamjanovsky@mail.muni.cz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Sverige
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Stockholm
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Вологда
Göteborg
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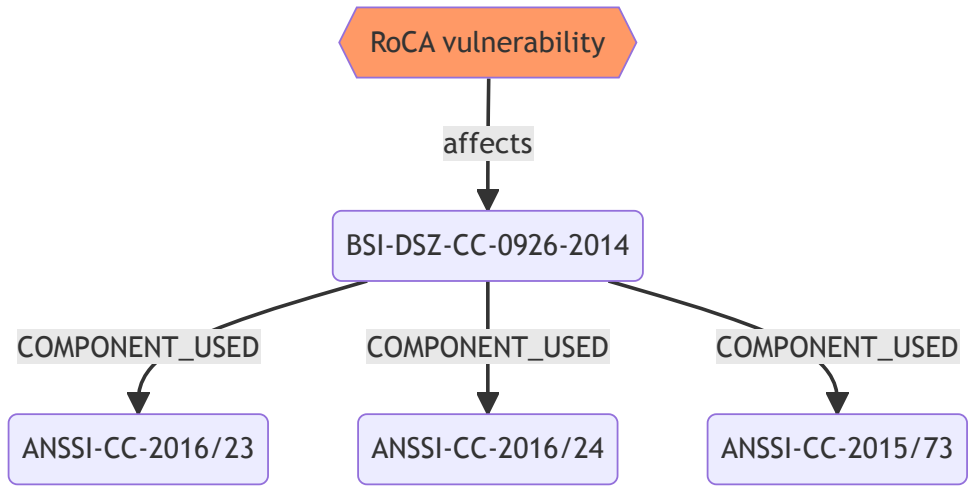
- ⚠ *How many CC-certified products are impacted?*


RoCA vulnerability
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BSI-DSZ-CC-0926-2014
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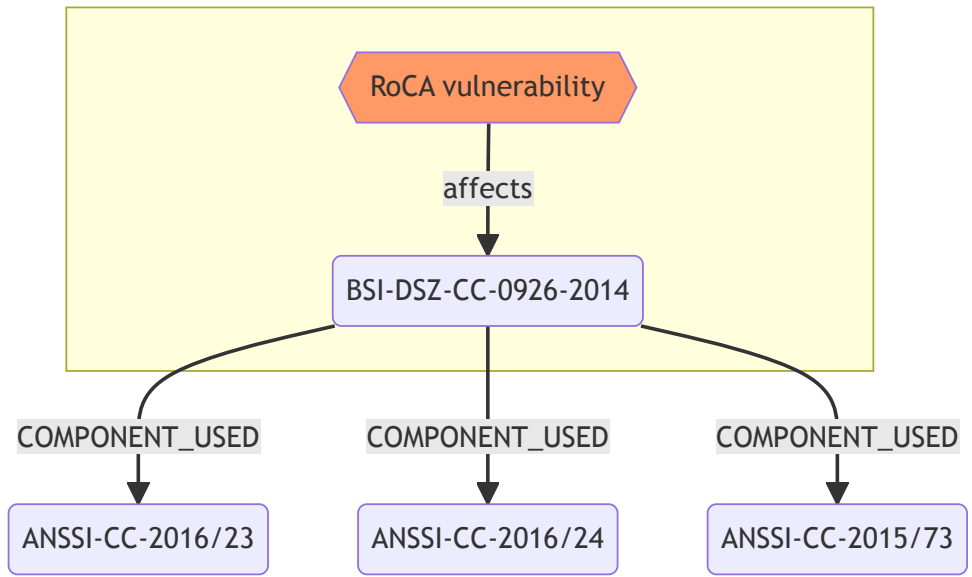
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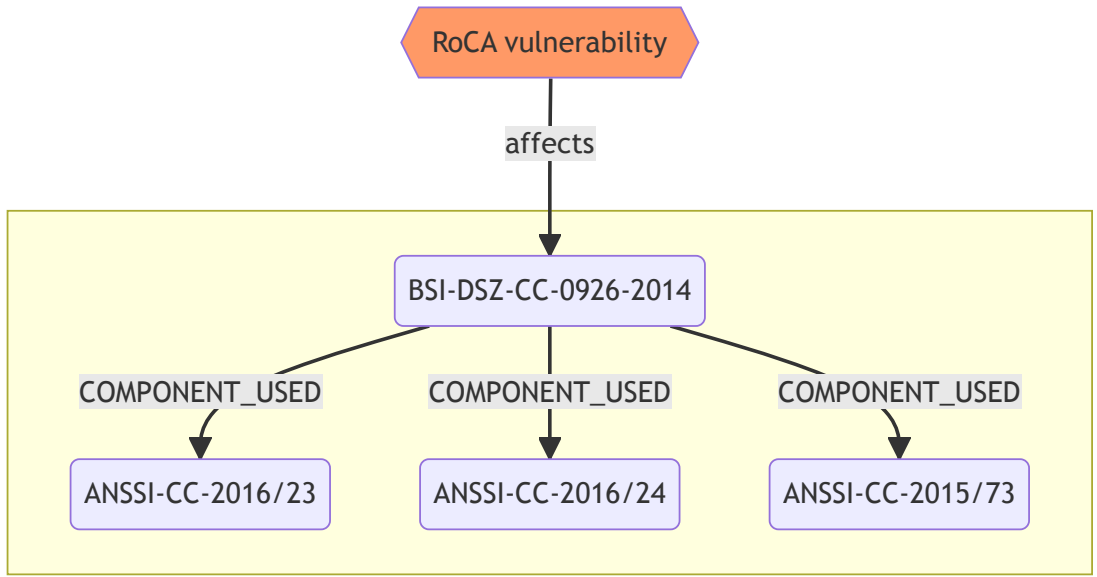
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seccerts.org

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Search and browse through the certificates and our extracted metadata.

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Display existing vulnerabilities in the certified products.

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Explore an interactive graph of references in Common Criteria certificates.

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Analysis

View a part of our results of our analysis of the Common Criteria certificate data.

Infineon Security Controller M7892 A21 with optional RSA 2048/4096 1.02.013, EC v1.02.013, SHA-2 v1.01 and Toolbox v1.02.013 libraries and with specific IC dedicated software (firmware)

⚠ This certificate has known related **CVEs**, which means that the certified product might be vulnerable.

CSV information ?

Status	archived
Valid from	06.02.2012
Valid until	01.09.2019
Scheme	DE
Manufacturer	Infineon Technologies AG
Category	ICs, Smart Cards and Smart Card-Related Devices and Systems
Security level	AVA_VAN.5, EAL5+, ALC_DVS.2
Protection profiles	• PKISKPP, SECURITY_IC_V1.0

Heuristics summary ?

Certificate ID: **BSI-DSZ-CC-0758-2012**

Certification report

Certification report | PDF | TXT

Extracted keywords

- Cryptography
- Device
- Common Criteria
- Security
- Other

File metadata

Title:	Certification Report BSI-DSZ-CC-0758-2012
Subject:	Common Criteria Certification
Keywords:	"Common Criteria, Certification, Zertifizierung, Infineon Security Controller M7892 A21, Infineon Technologies AG"
Author:	Bundesamt für Sicherheit in der Informationstechnik
Creation date:	D:20120214152801+01'00'
Modification date:	D:20120214153307+01'00'
Pages:	44
Creator:	Writer
Producer:	OpenOffice.org 3.2

References

Incoming

- BSI-DSZ-CC-0833-2013 - CardOS V5.0 with Application for QES, V1.0
- BSI-DSZ-CC-0782-2012 - Infineon Security Controller M7892 B11 with optional RSA2048/4096 v1.02.013, EC v1.02.013, SHA-2 v1.01 and Toolbox v1.02.013 libraries and with specific IC dedicated software (firmware)

Heuristics ?

Certificate ID: **BSI-DSZ-CC-0758-2012**

Extracted SARs

ASE_TSS.1, ADV_TDS.4, AGD_PRE.1, APE_REQ.2, AVA_VAN.5, ALC_TAT.2, ADV_FSP.5, ALC_LCD.1, APE_INT.1, ASE_REQ.2, AGD_OPE.1, ASE_ECD.1, ADV_SPM.1, ADV_IMP.1, APE_ECD.1, ALC_DEL.1, ATE_FUN.1, ATE_DPT.3, APE_OBJ.2, ALC_FLR.3, ADV_INT.2, ATE_IND.2, ASE_SPD.1, ALC_CMS.5, ATE_COV.2, ASE_CCL.1, APE_SPD.1, APE_CCL.1, ALC_DVS.2, ALC_CMC.4, ASE_OBJ.2, ASE_INT.1, ADV_ARC.1

CPE matches

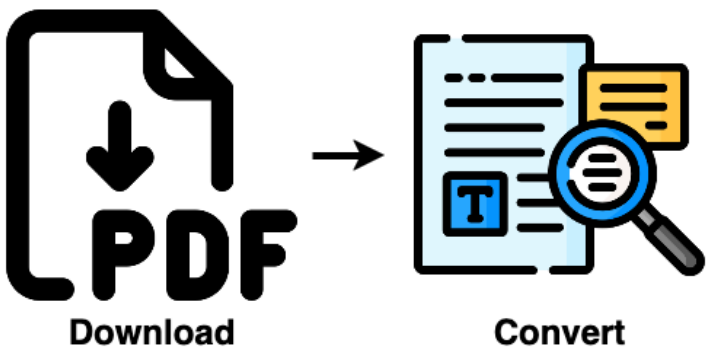
- cpe:2.3:a:infineon:rsa_library:1.02.013:*:*:*:*:*:*:*

Related CVEs

			CVSS Score			
ID	**Links**	**Severity**	**Base**	**Exploitability**	**Impact**	**Published on**
CVE-2017-15361	C M N	! MEDIUM	5.9		3.6	16.10.2017 17:29

Processing CC artifacts

Processing CC artifacts



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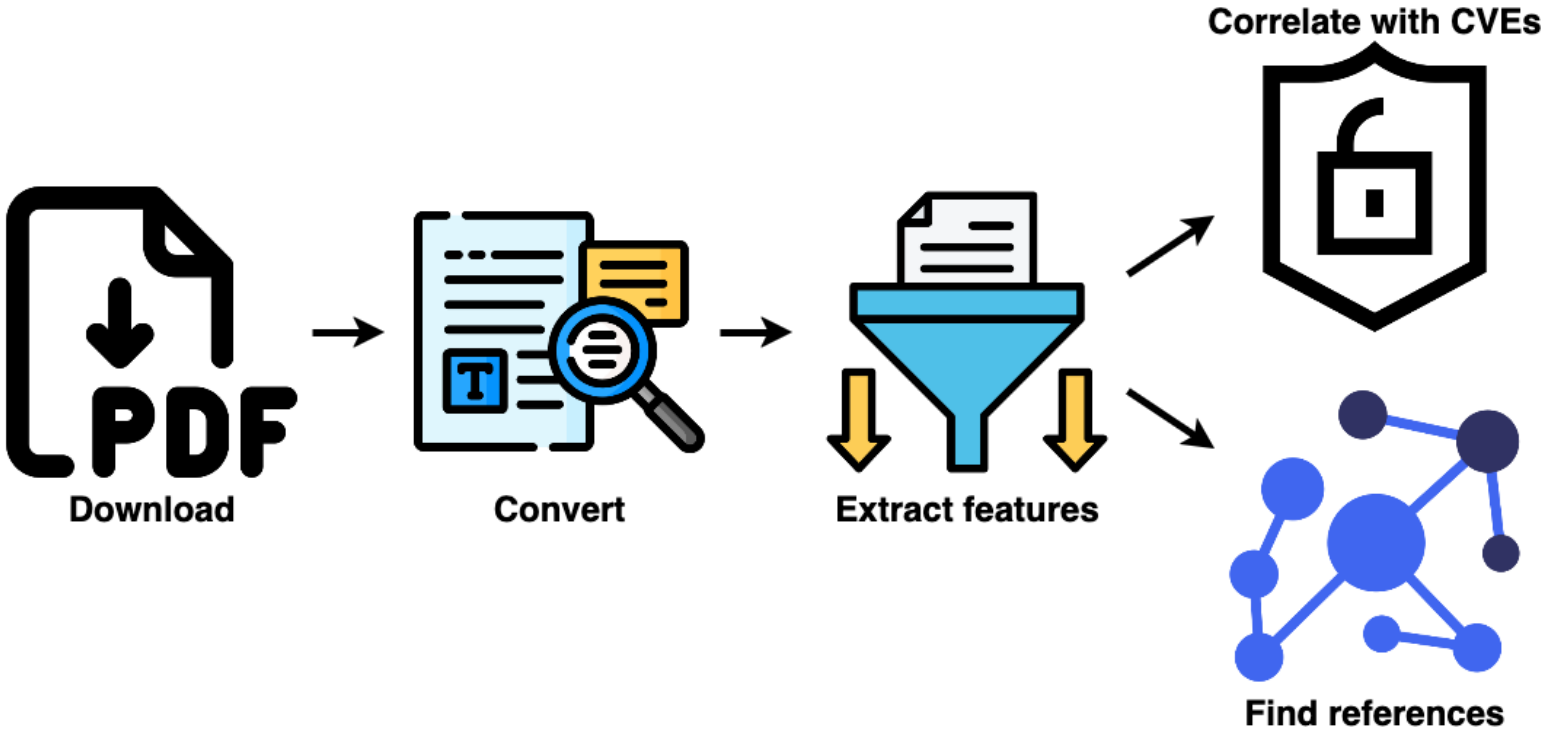

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- Our model achieves 90% precision.

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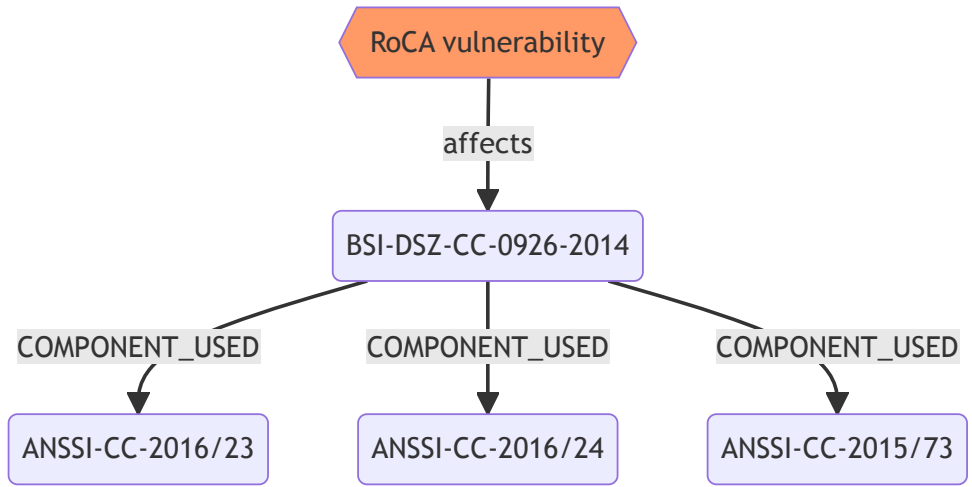
4. Use natural language processing to label the edges with context.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Ecosystem insights: general trends

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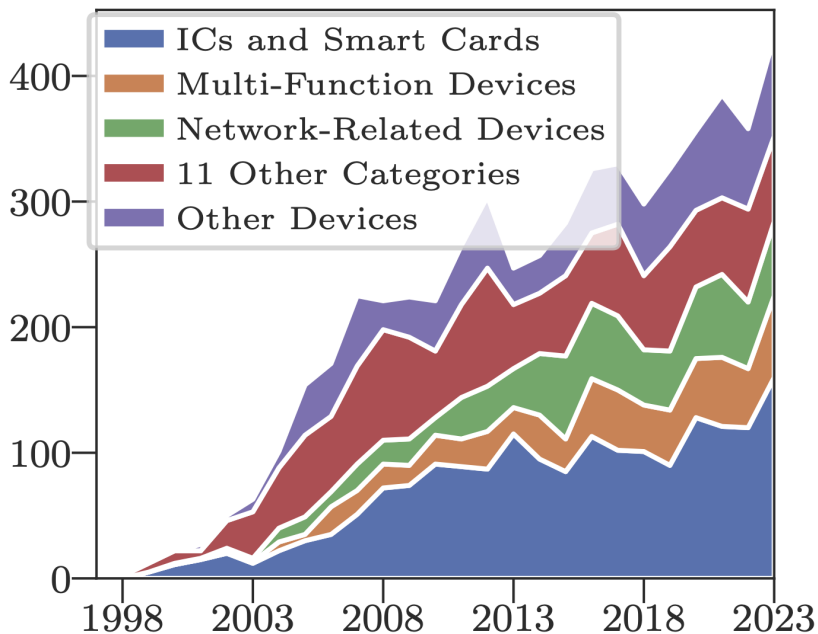

Figure: number of issued certificates.

Ecosystem insights: general trends

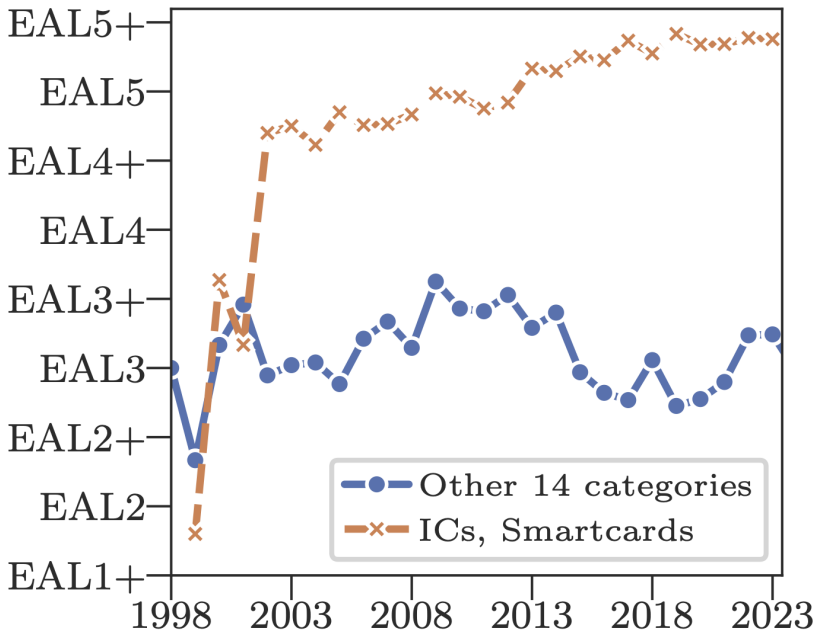

Figure: average EAL in time.

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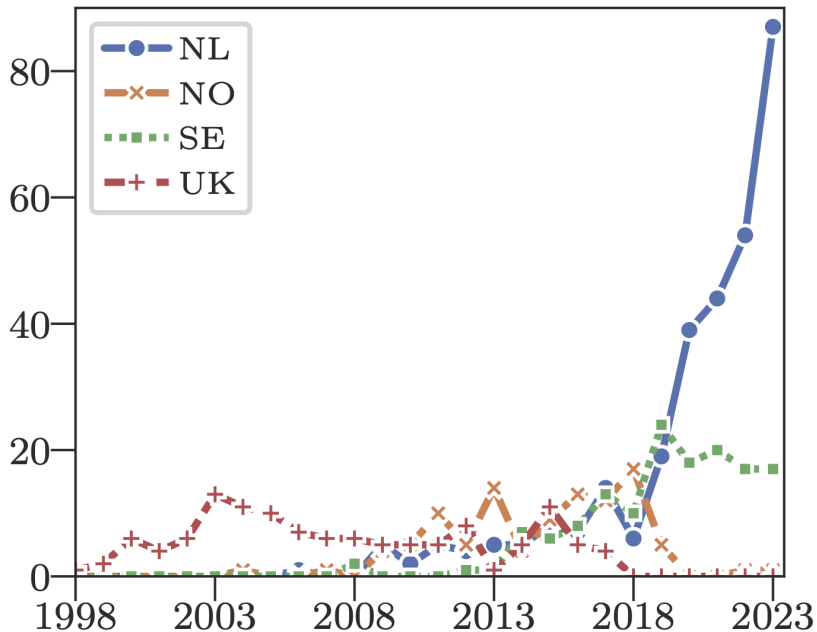

Figure: emerging national schemes.

Ecosystem insights: weaknesses, the usual suspects

CWE-ID	CWE name	# CVEs
CWE-119	Buffer overflow	892
CWE-20	Improper Input Validation	487
CWE-200	Sensitive information exposure	349
CWE-264	Access control error	316
CWE-787	Out-of-bounds Write	297
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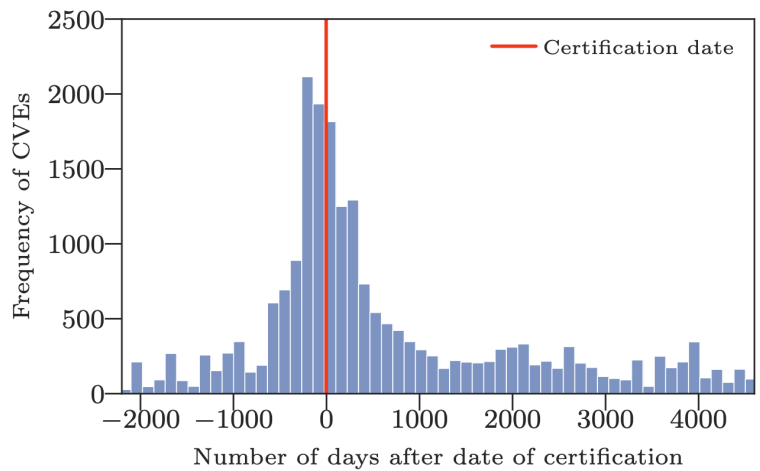

Figure: Product lifecycle.

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- Average smartcard reaches 2 other certified products.

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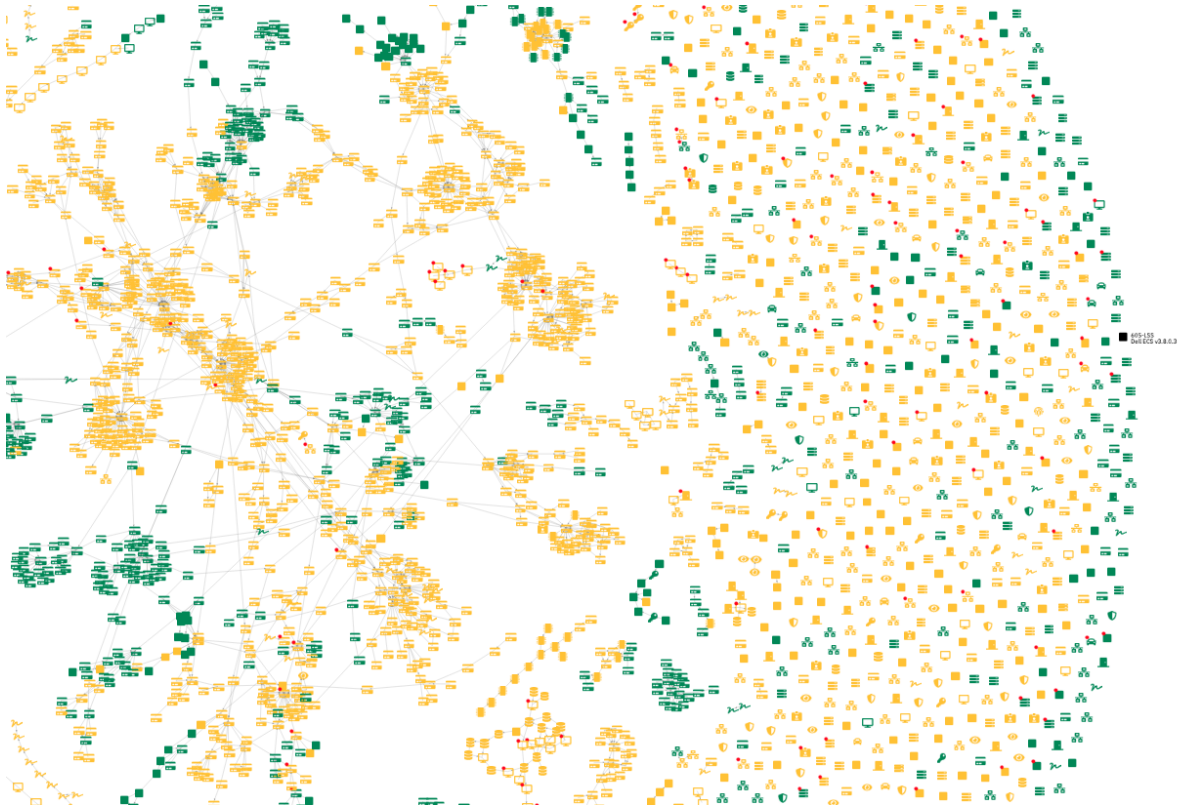

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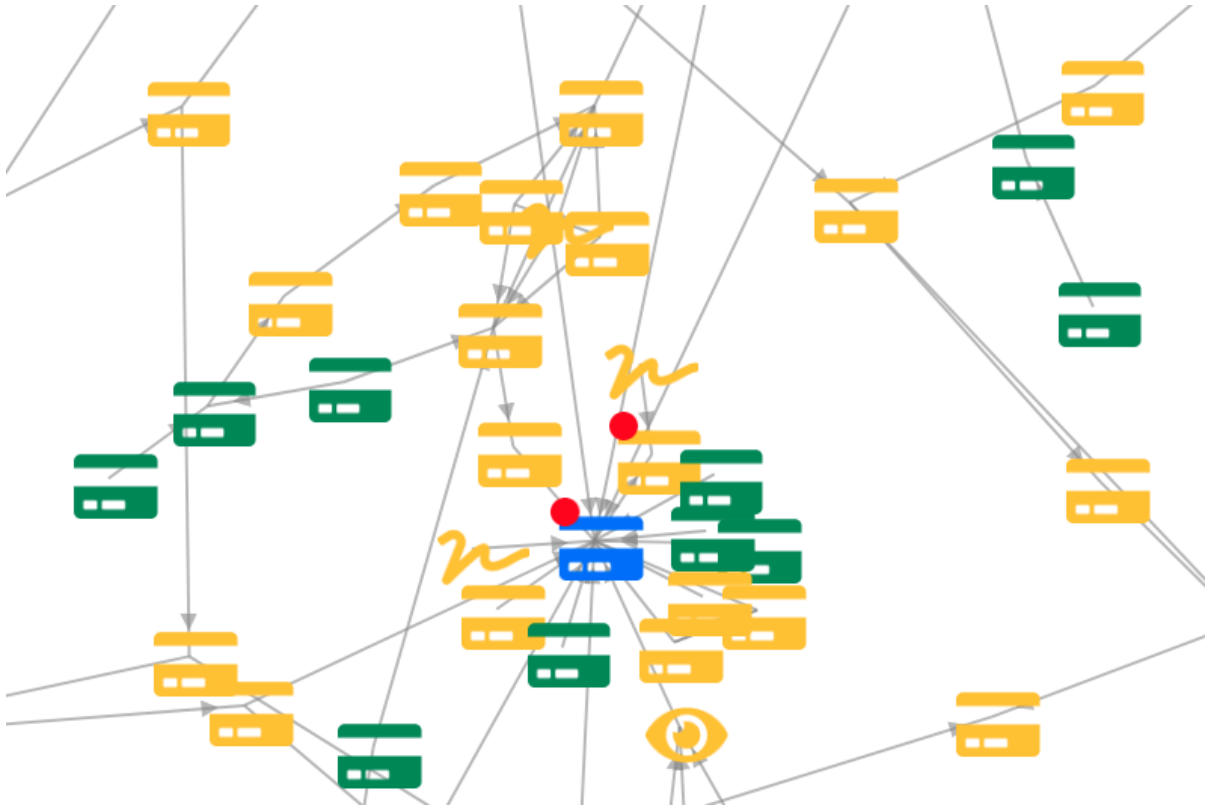

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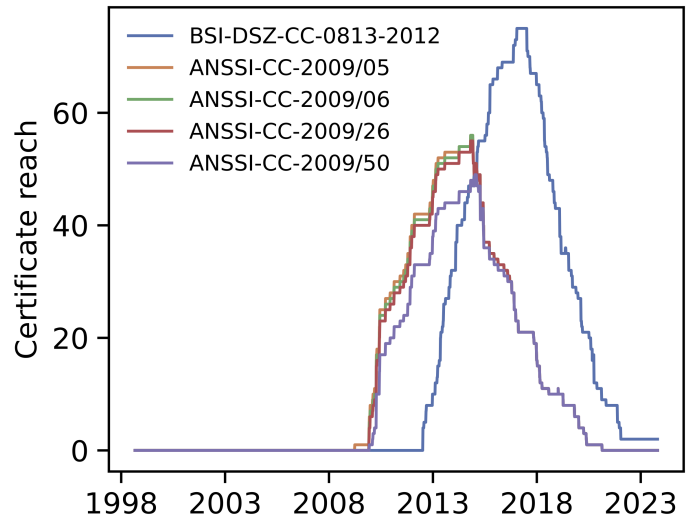

Figure: Top-5 popular ICs.

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- RoCA is no outlier, it is an expected value!

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Slides at ajanovsky.cz/euca.pdf