A Repository of Actionable Information on the Internet of Things

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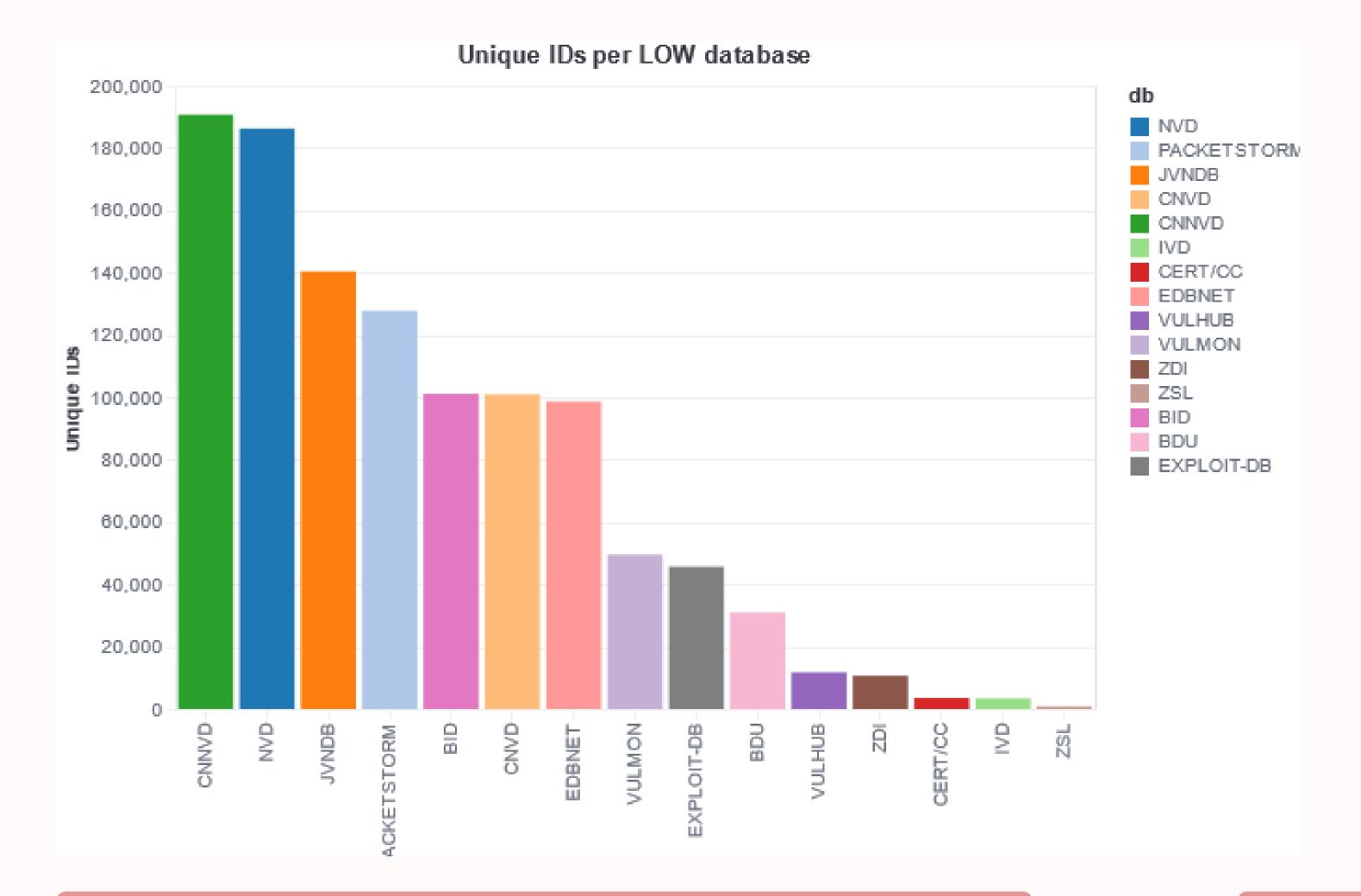
Abstract

The poster presents the process of creating a database containing publicly available information about vulnerabilities and exploits affecting the Internet of Things devices. Over 100 unique sources of different types were analysed (structured databases, vendor bulletins, reports, blogs or individual websites). The extracted information was standardised, aggregated, correlated and enriched to provide a rich source of actionable information related to IoT. This information is extremely useful not only to device users, but also to CSIRTs (Computer Security Incident Response Teams) and network owners.

Database creation Filtering High DB Mid DB Low DBs Raw DBs identification and the information correlating and enhancing and harvesting presentation selection of valuable is standardized then aggregating of information selecting the most information from sources of information - for example, the information reliable information the sources and about related to vulnerabilities vulnerabilities saving them in the names of the from various about every and exploits so-called raw corresponding vulnerability and and exploits sources about databases fields are unified a vulnerability exploit or an exploit and some supplementary information is added Trust Metainformation extraction management

Information sources		
Short Name	Full Name	Type of database
BID	SecutiryFocus Bugtraq	Vulnerability/Exploit
CERT/CC	Carnegie Mellon University CERT Coordination Center	Vulnerability
CNNVD	Chinese National Database of Information Security	Vulnerability
CNVD	China National Vulnerability Database	Vulnerability
Exploit-DB	Exploit Database by Offensive Security	Exploit
IVD	ICS Vulnerability Database	Vulnerability
JVNDB	Japan Vulnerabilities Notes Database	Vulnerability
NVD	National Vulnerability Database	Vulnerability
Packet Storm	Packet Storm Security	Vulnerability/Exploit
Vulmon	Vulmon Vulnerability Search Engine Vulnerability	Vulnerability
VUL-HUB	VUL-HUB Information Security Vulnerability Portal	Vulnerability
ZDI	Zero Day Initiative	Vulnerability
ZSL	Zero Science Lab	Vulnerability

Number of unique IDs in low databases



Database architecture CNVD NVD Y Bing FFF packet storm Data collection Data aggregation and correlation VARIOT Data filtering IoT devices database OTWARTE DANE IoT Vulnerability and Exploit Database data.europa.eu

SEARCH ENGINE CONFIGURED METAINFORMATION EXTRACTION TO GENERATE RESULTS ABOUT IOT AND GENERATING TRUST VALUE **VULNERABILITIES** extraction of metainformation from the · obtaining unstructured information obtained entries, using the information about vulnerabilities of IoT devices collected in the VARIoT database and (such as articles or blog entries) from NLP, ML/Al techniques search engines · defining trust value for obtained entry

Data publication

Search engine

PUBLICATION OF NEWS ABOUT IoT

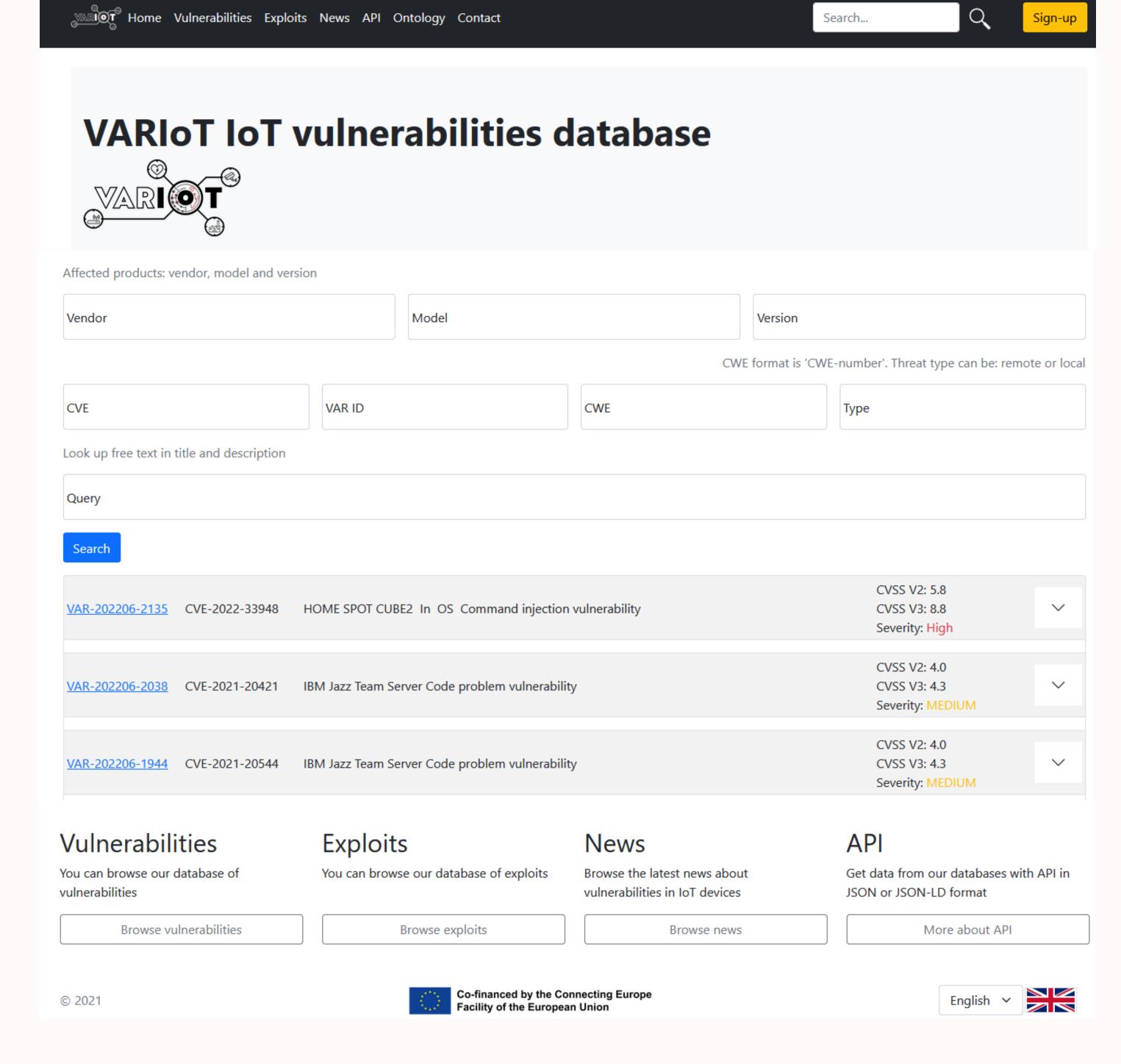
DEVICES' VULNERABILITIES

· publishing the most interesting

www.variotdbs.pl

information available on the website

The repository is accessible through its dedicated portal: https://www.variotdbs.pl/, as well as through the European Data Portal: data.europa.eu and through the Polish Open Data Portal: https://dane.gov.pl/en.



Our websites









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