

Internet Monitoring Action Project

iMAP Cambodia 2024 Internet Censorship Report

Advocacy Policy Institute (API) and Sinar Project

Published/Produced by **Sinar Project**
team@sinarproject.org
<https://sinarproject.org>

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This Report presents the consolidated results of two projects, the East-West Management Institute, Inc. (EWMI)-funded Internet Monitoring and Action Project (iMAP) (2021-2024), implemented by API, and the USAID-funded Civil Society Support (CSS) Project (2021-2025), implemented by FHI 360 and the International Center for Not-for-Profit Law (ICNL).

About iMAP

The Internet Monitoring Action Plan (iMAP) project aims to establish and support regional and in-country networks focused on monitoring network interference and restrictions to the freedom of expression online, in Myanmar, Cambodia, Hong Kong (China), India, Indonesia, Malaysia, Philippines, Thailand, and Vietnam. In Cambodia, the project focuses on three core activities: 1) fostering the development of a national network of digital activists; 2) strengthening censorship monitoring by improving country-specific test lists; and 3) supporting the monitoring and reporting of ongoing Internet censorship.

About CSS

The Civil Society Support (CSS) project aims to enhance coordination and collective action among Civil Society Organizations (CSOs), improve the supportive environment for civil society, and foster innovative methods to advance civic engagement and coordination in public policy dialogue. CSS supports the API and the Digital Right Working Group (DRWG) to promote fundamental rights and defend internet freedoms and safeguard democracy in Cambodia.

The API supports the Digital Right Working Group, Access to Information Working Group (A2I), Budget Working Group (BWG), Coalition for Partnership in Democratic Development (CPDD), youth network members, as well as community youth volunteers. It aims to increase the necessary knowledge and tools to participate in internet monitoring in Cambodia and advocate for accountability and media transparency.

About API

The Advocacy and Policy Institute (API) is a Cambodian non-governmental organisation active in advocacy, policy influencing, good governance, and civic engagement. Capacity building and dialogue facilitation are at the heart of its efforts towards democratic and sustainable development.

API is unique in Cambodia's civil society landscape as it serves as a connector and facilitator that empowers citizens in their interactions with the government at all levels. Through its grassroots work, API has acquired first-hand experience on policy issues like access to information (A2I). Based on this vast experience, API is in the best position to make the voices of ordinary citizens count in policy-making at the national level. API has also been trying to support government actors to serve citizens according to the law and contribute to an enabling environment for citizens and civil society to express their concerns. Additionally, it has been playing an important role in helping citizens understand their rights, access information, and make use of the opportunities for engagement offered by various laws and government policies.

API's programmes are guided by a human rights-based approach and serve all Cambodians adhering to the values of diversity of gender, sexual orientation, identity, (dis)ability, ethnicity, freedom of faith, and political opinions. At the same time, API is especially committed to supporting the most disadvantaged in their efforts to make their voices heard. More information is available at <https://apiinstitute.org/>.

About Sinar Project

Sinar Project is a civic tech initiative that uses open technology, open data, and policy analysis to systematically make important information public and more accessible to the Malaysian people. It aims to improve governance and encourage greater citizen involvement in the nation's public affairs by making the Malaysian Parliament and Government more open, transparent, and accountable. More information is available at <https://sinarproject.org>.

Internet Censorship Monitoring Tool

The [Open Observatory of Network Interference \(OONI\)](#) is a global community that has measured Internet censorship since 2012. The Open Observatory of Network Interference (OONI) Probe Tool is a non-profit free software for measuring internet censorship. Users can use the [OONI Probe app](#) to [measure](#) the blocking of websites, instant messaging apps, and circumvention tools, as well as measure network performance. It aims to empower the public to independently detect the control of information on the internet.

- OONI offers real-time analysis and open publication of censorship measurements globally. The [OONI Explorer](#) and the [OONI API](#) offer openly available measurement data that can possibly act as evidence, enabling the public to track censorship events around the world.
- OONI also works with [partners](#) to publish [research reports](#) documenting cases of internet censorship around the world. These reports disseminate relevant OONI measurements, and their findings can be used by activists, lawyers, and journalists as part of their work.

This report is based only on data generated from OONI and obtained from volunteers in Cambodia and across the globe running OONI Probe. The goal is to monitor the websites of individual organisations, their partners, and any members that may be blocked at any time, particularly during the national elections and other relevant circumstances.

Abbreviations

ALDR	Alcohol and Drugs
ANON	Anonymization and Circumvention tools
ASN	Autonomous System Number
COMT	Communication Tools
CTRL	Control Content
CULTR	Culture
DNS	Domain Name System
COMM	E-commerce
ECON	Economics
ENV	Environment
FILE	File-sharing
GMB	Gambling
GAME	Gaming
GOVT	Government
HACK	Hacking Tools
HATE	Hate Speech
HOST	Hosting and Blogging Platforms
HUMR	Human Rights Issues
HTTP	Hypertext Transfer Protocol
IGO	Intergovernmental Organisations
ICCPR	International Covenant on Civil and Political Rights
iMAP	Internet Monitoring Action Project
IP	Internet Protocol
ISP	Internet Service Provider
MMED	Media Sharing
MISC	Miscellaneous Content
NEWS	News Media
DATE	Online Dating
OONI	Open Observatory Network Interference

POLR	Political Criticism
PORN	Pornography
PROV	Provocative Attire
PUBH	Public Health
REL	Religion
SRCH	Search Engines
XED	Sex Education
GRP	Social Networking
MILX	Terrorism and Militants
TCP	Transmission Control Protocol
TLS	Transport Layer Security

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Introduction

Sinar Project, the Advocacy and Policy Institute (API), Access to Information Working Group (A2I), Budget Working Group (BWG), Coalition for Partnership in Democratic Development (CPDD), youth network members, and community youth volunteers collaborated on a joint study that aims to promote the freedom of expression online, hold authorities accountable, identify censorship trends, support advocacy, inform the public, enhance internet governance, and promote digital literacy. This study ran from 1 July 2023 to 30 June 2024. Through data collection and analysis of network measurements, the study examines the extent of internet censorship events and uncover trends of internet censorship in Cambodia.

Key Findings

- The OONI Probe Tools recorded a total of 2,440,169 running times while testing 1,940 websites for internet censorship between July 2023 and June 2024, revealing that 65 websites were identified as blocked. The majority of these blocked sites were in the News category, indicating significant censorship in the media sector.
- Among the 65 blocked websites, 29 had content specifically related to Cambodia, highlighting targeted censorship affecting local information access. This suggests a focused effort to control information within the region.
- All identified blocked websites were subjected to DNS blocking methods, reflecting a common censorship technique employed by authorities. This method was prevalent across connections from 31 Internet Service Providers, with Viettel Cambodia (Metfone) being the most significant blocker.
- The report for 2024 noted an increase of over 28 blocked websites compared to the previous year, with a pronounced concentration in the News and Human Rights categories. This trend underscores growing concerns regarding freedom of expression and access to information.

Background

Population in January 2024	17.03 million in Jan 2024 (50.5% female; 25.8% of Cambodia’s people lived in urban contexts ¹)
Internet penetration in September 2022 (% of the population using the internet)	18 million (106.06%) in 2022 on Telecom and Post ² ,
Mobile subscriptions in Sept 2022 (per 100 inhabitants)	116 ³
Freedom on the Net ranking in 2024	43/100; Partially Free ⁴
Religion 2023 (%)	Buddhism: 97.9%, Islam: 1.1%, Christianity: 0.5%, Others: 0.6% ⁵
ICCPR Ratification	Signature: 1980, Ratification/Accession: 1992 ⁶

The Ministry of Telecom and Post and the Ministry of Interior have drafted several digital laws aligned with both the Cambodia Digital Economy and Society Policy Framework and the digital government policy to protect social security, such as the Cybercrimes law, Cyber Security law, Data Protection Law, Domain Name Law, and National Internet Gateway. However, the Civil Society has stated that these draft laws may be used to suppress freedom of expression, personal privacy, and personal security of activists, journalists, independent media outlets, and civil society organisations that actively address the needs of the citizens and the government's improvement.

Sub-Decree On Management and Use of National Domain Names on the Internet

This sub-decree determines the principles, rules, and mechanisms of management and the use of national domain names to promote identity, value, and the existence of national domain names on the internet as well as to encourage the use of national domain names,

¹ Digital 2024: Cambodia. (2024, February 23). Data Reportal - Global Digital Insights. <https://datareportal.com/reports/digital-2024-cambodia?rq=cambodia%20report>

² Internet Subscriptions | Telecommunication Regulator of Cambodia. (n.d.). Internet Subscriptions | Telecommunication Regulator of Cambodia. <https://trc.gov.kh/en/internet-subscriptions/>

³ Mobile cellular subscriptions (per 100 people) - Cambodia. World Bank. <https://data.worldbank.org/indicator/IT.CEL.SETS.P2?locations=KH>

⁴ Cambodia: Freedom on the Net 2024 Country Report. (n.d.). Freedom House. <https://freedomhouse.org/country/cambodia/freedom-net/2024>

⁵ Population of Cambodia 2023 | Religion in Cambodia | Find Easy. (2021, June 6). Find Easy. <https://www.findeasy.in/population-of-cambodia/>

⁶ OHCHR. (2014). STATUS OF RATIFICATION INTERACTIVE DASHBOARD. Ohchr.org. <https://indicators.ohchr.org/>

which then contribute to the provision of transparent public services without discrimination. Article 2 of this sub-decree governs all persons using national domain names on the internet.

The Domain Name sub-decree requires registered companies in Cambodia to use a local domain name, such as .com.kh, for their websites and email addresses. The domain names are valid for one year before they have to be renewed. Businesses have until 1 January 2023 to comply with the regulation. Although the deadline is not strictly enforced,⁷ the law is yet to be run past the Civil Society Organizations. On 31 January 2023, the Ministry of Posts and Telecommunications of Cambodia (MPTC) released Notification No. 178, titled "Use of the Registration of Domain Name (.kh) via Automated System," aimed at streamlining and enhancing the application procedure.

The MPTC shall host and store the data of all ministries and governmental institutions that use national domain names in the national data centre or data centre of the government and provide support to all ministries and governmental institutions to ensure the efficiency and sustainability of the national domain names usage.

Through Article 7, legal persons registered in the Kingdom of Cambodia shall provide electronic addresses containing national domain names as determined in Article 5 of this Sub-Decree at the annual declaration concerning the status of the company at the Ministry of Commerce. Notwithstanding the provision stated in paragraph 1 of this Article, legal persons also have the rights to use other domain names in addition to the national domain names for their commercial operations.

Network Landscape

Through its influence over ISPs in Cambodia, the government has expanded its control over the internet. As implied, internet freedom in Cambodia is increasingly under threat. The five major telecommunication firms that provide both land-based and mobile internet services in Cambodia — Viettel, Smart Axiata, CamGSM, Xinwei Telecom, and Southeast Asia Telecom — are closely affiliated with the Royal Government of Cambodia (RGC) and its officials, and they are likely to provide cover for each other.

The three prominent communication tools in Cambodia are mobile phones, fixed phones, and the internet. According to the newly functioning [Telecommunication Regulators of Cambodia](#) (TRC), [the numbers of subscribers for these services](#) are as follows:

⁷ Ogden, J. (2023, January 29). *Register .kh Domain Names in Cambodia - Cambodia Begins at 40*. Cambodia Begins at 40. <https://www.cambodiabeginsat40.com/?p=41005>

Mobile Phone Subscriptions

Year	Subscribers
2019	21,675,523
2020	20,827,435
2021	19,899,790
2022	19,505,294
2023	21,049,636
2024(June)	21,863,609

Mobile Phone Subscriptions
From the end of June 2024

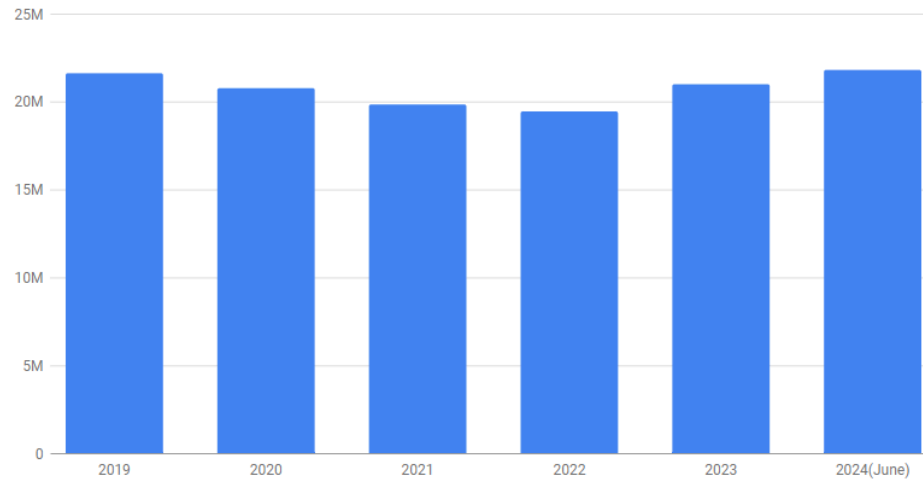


Chart 1: The number of mobile phone subscribers by year. In 2024, the number of users reached 21,863,609, an increase of 813,973 compared to 2023 (source: [Telecommunication Regulators of Cambodia](#)).

Fixed Phone Subscriptions

Year	Subscribers
2019	57,438
2020	49,381
2021	40,296
2022	38,284
2023	32,723
2024(June)	32,311

Fixed Phone Subscriptions
From the end of June 2024

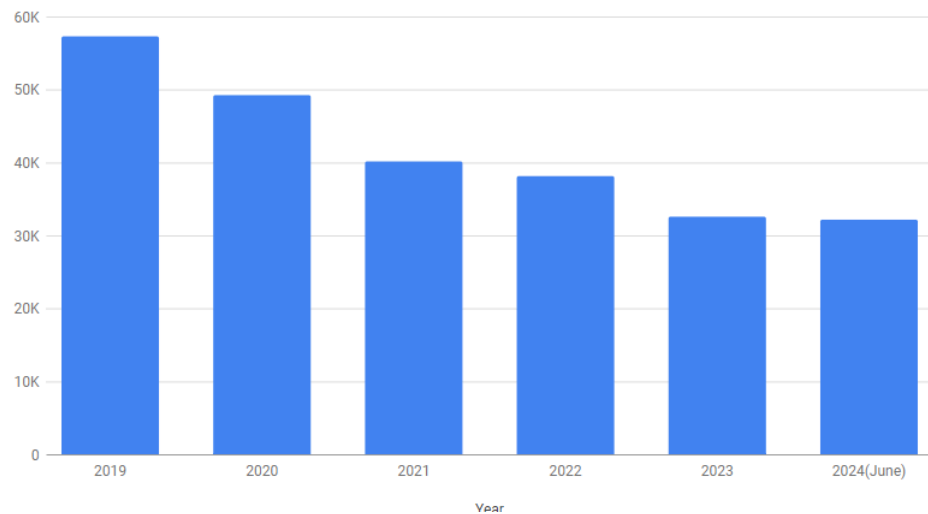


Chart 2: Fixed phone subscriptions in Cambodia have declined annually, with a drop to 32,311 subscriptions in 2024, representing a decrease of 25,127 subscriptions compared to the 57,438 subscriptions in 2019.

Year	Subscribers
2019	16,350,460
2020	16,614,836
2021	17,872,173
2022	17,608,076
2023	19,663,666
2024(June)	20,007,274

Internet Subscriptions (Mobile/Fixed)
From the end of June 2024

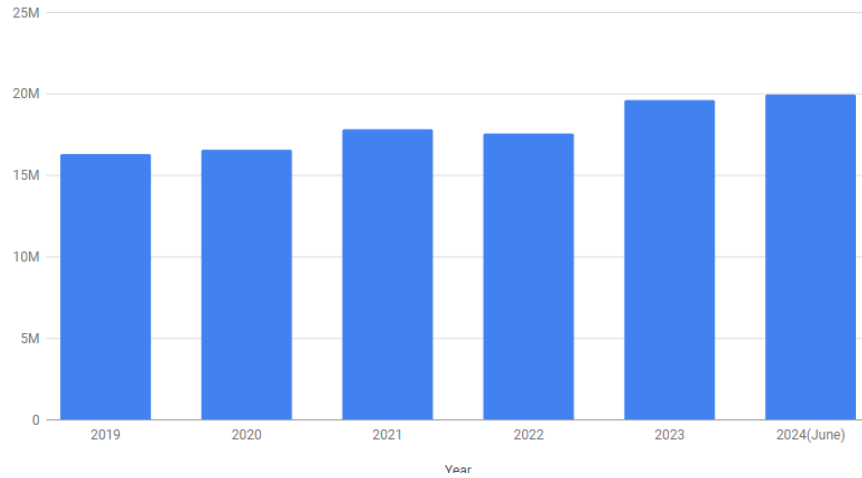


Chart 3: The number of internet subscribers has increased annually, reaching 20,007,274 subscriptions in June 2024, which is an increase of 3,656,814 compared to the 16,350,460 subscriptions in 2019 (source: [Telecommunication Regulators of Cambodia](#)).

Licences

There are 48 companies licensed⁸ to serve telecommunications operations, and some of them have several licences and are grouped by services. The detailed names of the licensed telecom operators are listed in Annex III.

No	Licences	Total
1	International Gateway	2
2	Mobile Phone	4
3	Fixed Phone	7
4	VoIP	9
5	ISP	39
6	Satellite	1
7	Telecom Tower Sharing	3
8	Submarine Cable	2
9	Optical Cable Network	5
10	Toll-Free	1

Table 3: These licences have worked together to provide internet services and phone calls to users (source: [Telecommunication Regulators of Cambodia](#)).

Mobile Companies

The following table shows the major telecommunication providers in Cambodia. We checked the strength of coverage, internet data availability, brand reputation, and customer satisfaction of each company. Viettel, a Vietnamese company run by Vietnam's Ministry of Defense, operates in Cambodia under the name Metfone. It has been a prominent player in the Cambodian mobile market since its establishment in 2009. Smart Axiata is one of Cambodia's leading mobile operators and has been in operation since 2008 in the Kingdom. [Cellcard](#), operated by CamGSM, was established in 1997 and is part of the Royal Group of Companies.

⁸ *List of Active Telecommunication Operators(As of April 2024) | Telecommunication Regulator of Cambodia.* (n.d.). Retrieved June 5, 2024, from <https://trc.gov.kh/en/listofoperators-apr-24/>

No.	Network	Company
1	Metfone	Viettel (Cambodia) Pte., Ltd.
2	Smart	Smart Axiata Co., Ltd
3	Mobitel/ CellCard	CamGSM Co., Ltd.
4	CooTel /SEATEL	Xinwei (Cambodia) Telecom Co., Ltd /Southeast Asia Telecom (Cambodia) Co., Ltd.

Table 4: The top telecommunication businesses in Cambodia.

Instant Messaging

The use of social media platforms are increasing in popularity over recent years. The social media platform Tiktok had a higher increase (1.21%) than other social media sites such as Facebook (0.91%), Instagram (0.91%), and LinkedIn (1.12%).⁹

Year (mil.)	Facebook User	Instagram	TikTok	LinkedIn
Jan 2023	11.75 million	1.84 million	7.4 million	0.50 million
Increase	0.91%	0.91%	1.21%	1.12%

Table 5: Increase in social media users across different platforms.

Internet Censorship Monitoring in Cambodia

Monitoring for internet censorship in Cambodia is done to foster an open and fair digital environment by holding authorities and internet service providers (ISPs) accountable for their actions. By identifying patterns of censorship and its impact on sectors such as news media, social media, and educational resources, it ensures that restrictions are applied fairly and legally. This data can guide necessary reforms and improvements. Additionally, detailed information on censorship practices supports researchers, policymakers, and advocacy groups in developing strategies to protect internet freedoms and enhance regulatory frameworks. Monitoring also raises public awareness of censorship issues, encouraging informed discussions and advocacy for more transparent and equitable practices.

⁹ *Social Media in Cambodia - 2023 Stats & Platform Trends - OOSGA.* (n.d.). OOSGA. <https://oosga.com/social-media/khm/>

Findings on Internet Censorship in Cambodia

Based on data from the Observatory of Network Interference assessed using the [OONI Probe tool](#), we identified websites that are confirmed blocked and anomalies or likely blocked. Confirmed blocked refers to instances where there was confirmed censorship on the website. Anomalies or likely blocked meant that there were some issues in accessing the website, although this may not necessarily confirm censorship and could also indicate problems only on the user's end. Detailed information on the heuristics analysis method can be found in Annex IV.

The blocked websites were identified as follows:

- The annual report from July 2023 to June 2024 showed 2,440,169 running times of the [OONI Probe Tool](#) to 1,940 websites tested to monitor internet censorship. Among these, 65 websites were identified as blocked; this meant that there were issues in accessing the website, but it did not exclude the possibility of problems only on the user's end. The categories with the most blocked websites were News (25 websites), Human Rights Issues (4 websites), File-Sharing (4 websites), and Gambling (1 website). Detailed information on these 65 websites, including their names, blocking periods, blocking methods, and the involved ISPs, can be found in Annex I.
- Out of the 65 blocked or likely blocked websites, 29 blocked websites included content on Cambodia including www.rfa.org, rfa.org, cambodian.dating, camnews.org, ccimcambodia.org, ccimcbodia.org, english.cambodiadaily.com, humanrightsinasean.info, ilabsoutheastasia.org, kamnotra.io, kamnotra.oj, kamnottra.io, khmer.cambodiadaily.com, monoroom.info, vodenglish.news, vodhotnews.com, vodkhmer.news, www.PenhChetMdia.com, www.cambodiadaily.com, www.camnews.org, www.ccimcambodia.org, www.cipl-organization.org, www.clccambodia.org, www.dtn7.com, www.healthcambodia.org, <https://vodkhmer.news/>, www.monorom.info, www.vodkhmer.news, www.ycc.org.kh.
- All 65 identified websites were blocked using DNS blocking methods, with 2,440,169 measurement run times through connections from 31 ASNs or ISPs tested. Viettel Cambodia (Metfone), a VN-owned company, was the top blocker that blocked all these domains. iSeek Communications was the second-highest blocker. Other companies such as M247 Europe SRL, Cogetel Online, Smart Axiata, WiCAM, and EZECOM also blocked several websites.

OONI Probe Testing

In the first half of the reporting period (July to December 2023), 1,199,828 tests were conducted on 1,900 websites with 21 ISPs. It identified 64 blocked sites, 29 of which were relevant to Cambodia. In the second half of the reporting period (January to June 2024), there were 1,240,341 tests on 1,864 websites with 27 ISPs. These led to 58 blocked sites, (21 from the first semester and 3 new ones), including 24 that were also relevant to Cambodia, overlapping with those from the first semester.

	July-Dec 2023	Jan-June 2024	July 2023-June 2024
Measured Run Count (the numbers running count of OONI Probe Tools)	1,199,828	1,240,341	2,440,169
Blocked count (the running count of OONI Probe Tool measurements had been likely blocked/inaccessibility to websites)	3,436	3,053	6,489
Block Rate	0.29%	0.25%	0.27%
Inputs/Websites (the number of website testing)	1900	1844	1,940
Number of websites blocked	64	58	65
Number of websites local and global that displayed content relevant to Cambodia and blocked	29	24	29
Internet Service Providers (such as Vietel Cambodia/Metfone, Ezeecom, and Cellcard)	21	27	31

Table 8: OONI Probe testing results for July to December 2023, January to June 2024, and the entire testing period July 2023 to June 2024.

Internet Censorship Data in 2023 Versus 2024

Here is a comparison of findings obtained from the OONI Probe in 2023 compared to 2024.

	July 2022 - June 2023	July 2023 - June 2024
Measured Run Count (the running count of OONI Probe Tool measurements)	2,530,427	2,440,169
Blocked count (the running count of OONI Probe Tools had been likely blocked/inaccessibility to websites)	1,236	6,489
Inputs/Websites (the number of websites tested)	2,201	1,940
Number of websites blocked	37	65
Internet Service Providers (such as Viettel Cambodia (Metfone), Ezeecom, Cellcard)	24	31

Table 9: The 2024 report identifies over 28 more blocked websites than the 2023 report, with the majority falling within the News and Human Rights categories.

Common Categories of Blocked Websites in 2023 Versus 2024

There were a few key observations when comparing blocking by website category:

- In 2024, the News category was the most frequently tested with 190 websites, and 25 websites were found to be “blocked” or “likely blocked”. These blocks were implemented by ISPs, such as Viettel Cambodia (Metfone) which blocked all websites and iSeek Communications which blocked most of them. Additionally, CAMGSM and Smart Axiata also imposed significant restrictions. Please see details in Annex I. In 2023, 13 websites were found “likely blocked” out of 194 websites tested.
- In 2024, the second most tested category (189 websites) was Human Rights, and 5 out of 189 websites (2.65%) were found “likely blocked”. In 2023, more websites (203 websites) were tested, but only 3 human rights websites were found “likely blocked”.
- In 2024, 57 websites in Gambling and Game categories and 17 websites in Porn were tested, and 1 website in GRM and 2 websites in Porn were found “blocked”. In 2023, 72 websites in Gambling and Game categories and 22 websites in Porn were tested, but no website was found “blocked”.

Website Category	Number of websites tested from July 2022 to June 2023	Number of websites blocked from July 2022 to June 2023	Number of Websites tested from July 2023 to June 2024	Number of websites blocked from July 2023 to June 2024
News (News Media)	194	13	190	25
HUMR (Human Rights)	203	3	189	5
GRM (Gambling)	37	0	28	1
Game (Gaming)	35	0	29	0
PORN (Pornography)	22	0	17	2

Table 10: Popular categories of blocked websites—News, Human Rights, Games, and Pornography—are compared between the 2023 Report (covering July 2022 to June 2023) and the 2024 Report (covering July 2023 to June 2024).

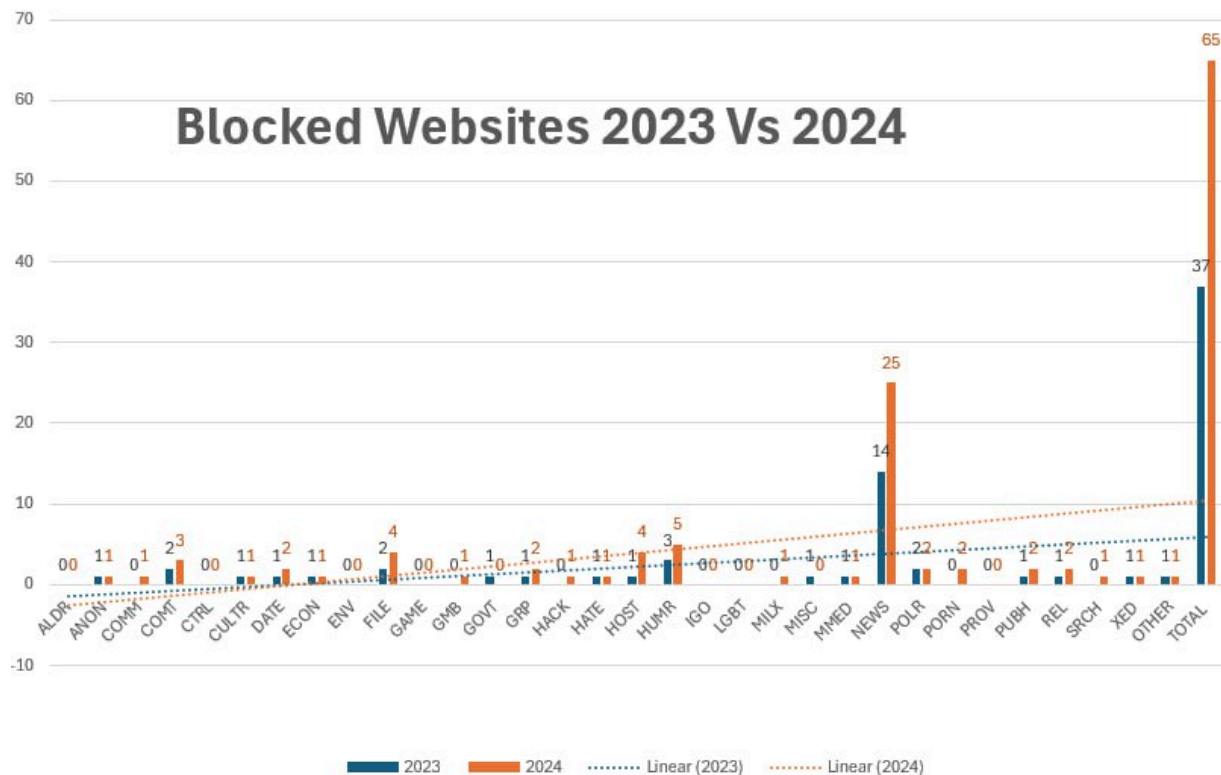


Chart 4: Blocked websites by category 2023 vs. 2024

Blocked Popular Independent Media

In the news category, domains were blocked using DNS methods as most of the measurements show anomalies (in yellow) instead of ok (in green). Viettel Cambodia (Metfone) blocked all websites, while iSeek Communications blocked most of them. Additionally, CAMGSM and Smart Axiata also imposed significant restrictions. These blocked independent news websites included english.cambodiadaily.com, khmer.cambodiadaily.com, vodenglish.news, vodhotnews.com, vodkhmer.news, www.rfa.org, and kamnotra.io.

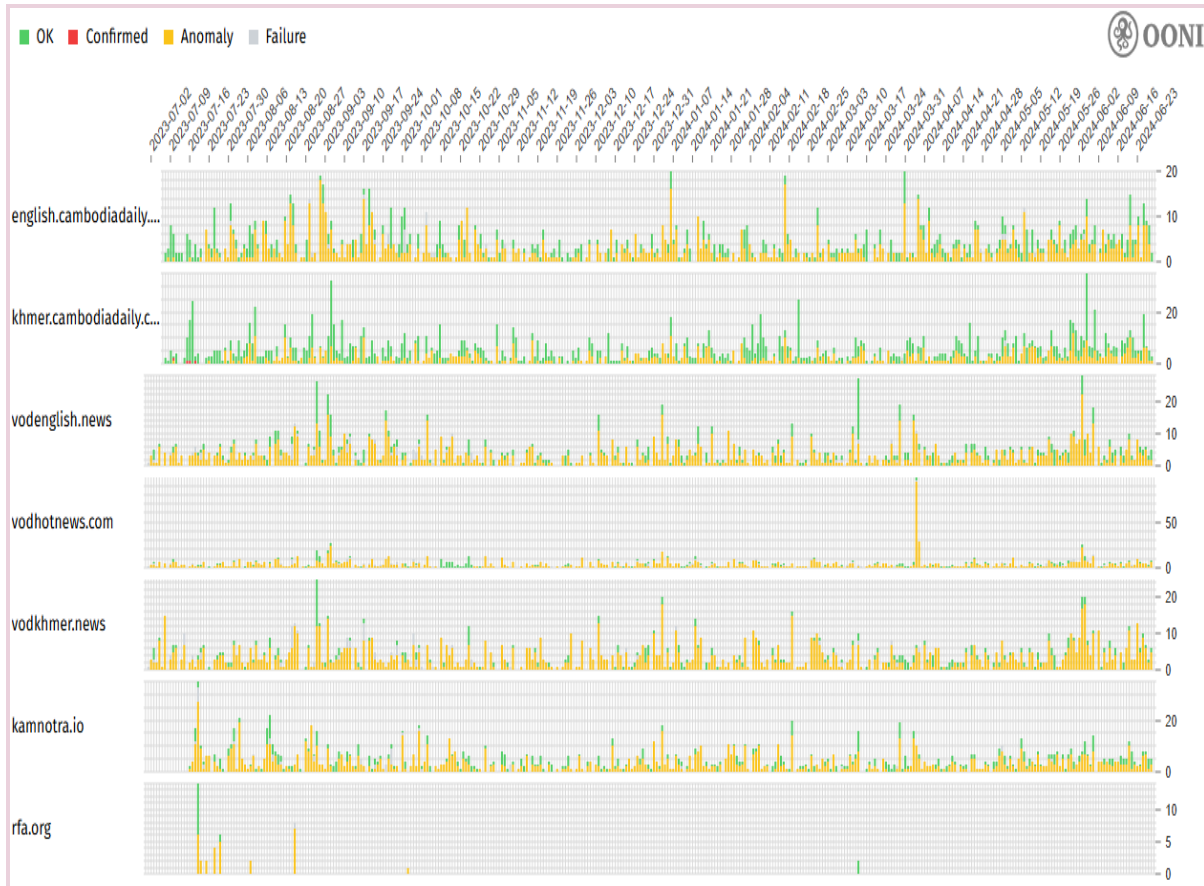


Chart 5: Domains blocked in the news category using DNS methods; most measurements show anomalies (in yellow) instead of ok (in green).

Methods for Blocking Websites

No blockpages are served when a website is blocked in Cambodia, unlike other countries such as Indonesia, Philippines, Vietnam, and Myanmar where blocks are easily detected.

Blocked/Inaccessible Websites and Blocked Rate (%) by Category

The websites were categorised, and the data shows the number of websites in each category, along with their test and block rates. The News category was the most frequently tested, with 190 websites. The second most tested category was Human Rights, which included 189 websites. The third most tested category was Hosting and Blogging Platforms with 135 websites.

Category	Semester1					Semester2					Total				
	Number of websites tested	Number of websites blocked	Percentage of websites blocked	Number of websites likely blocked or inaccessible	Percentage of websites likely blocked or inaccessible	Number of websites tested	Number of websites blocked	Percentage of websites blocked	Number of websites likely blocked or inaccessible	Percentage of websites likely blocked or inaccessible	Number of websites tested	Number of websites blocked	Percentage of websites blocked	Number of websites likely blocked or inaccessible	Percentage of websites likely blocked or inaccessible
ALDR	36	0	0.00%	0	0.00%	36	0	0.00%		0.00%	36	0	0.00%		0.00%
ANON	108	0	0.00%	0	0.00%	120	0	0.00%		0.00%	121	0	0.00%	1	0.83%
COMM	30	0	0.00%	1	3.33%	31	0	0.00%	1	3.23%	31	0	0.00%	1	3.23%
COMT	127	0	0.00%	2	1.57%	131	0	0.00%	3	2.29%	131	0	0.00%	3	2.29%
CTRL	23	0	0.00%	0	0.00%	23	0	0.00%		0.00%	23	0	0.00%		0.00%
CULTR	78	0	0.00%	1	1.28%	82	0	0.00%	1	1.22%	82	0	0.00%	1	1.22%
DATE	22	0	0.00%	2	9.09%	23	0	0.00%	2	8.70%	23	0	0.00%	2	8.70%

ECON	55	0	0.00%	0	0.00%	56	0	0.00%	2	3.57%	56	0	0.00%	1	1.79%
ENV	53	0	0.00%	0	0.00%	53	0	0.00%		0.00%	53	0	0.00%		0.00%
FILE	75	0	0.00%	2	2.67%	75	0	0.00%	4	5.33%	75	0	0.00%	4	5.33%
GAME	28	0	0.00%	0	0.00%	29	0	0.00%		0.00%	29	0	0.00%		0.00%
GMB	27	0	0.00%	0	0.00%	28	0	0.00%	1	3.57%	28	0	0.00%	1	3.57%
GOVT	34	0	0.00%	0	0.00%	35	0	0.00%		0.00%	35	0	0.00%		0.00%
GRP	84	0	0.00%	1	1.19%	83	0	0.00%	2	2.41%	83	0	0.00%	2	2.41%
HACK	43	0	0.00%	0	0.00%	45	0	0.00%	1	2.22%	46	0	0.00%	1	2.17%
HATE	6	0	0.00%	0	0.00%	7	0	0.00%		0.00%	8	0	0.00%	1	12.50%
HOST	134	0	0.00%	2	1.49%	135	0	0.00%	4	2.96%	135	0	0.00%	4	2.96%
HUMR	188	1	0.53%	2	1.06%	189	1	0.53%	4	2.12%	189	0	0.00%	5	2.65%
IGO	15	0	0.00%	0	0.00%	19	0	0.00%		0.00%	19	0	0.00%		0.00%
LGBT	83	0	0.00%	1	1.20%	82	0	0.00%		0.00%	82	0	0.00%		0.00%
MILX	2	0	0.00%		0.00%	3	0	0.00%		0.00%	3	0	0.00%	1	33.33%

MISC	11	0	0.00%	0	0.00%	10	0	0.00%		0.00%	10	0	0.00%		0.00%
MMED	54	0	0.00%	1	1.85%	54	0	0.00%	1	1.85%	54	0	0.00%	1	1.85%
NEWS	185	4	2.16%	11	5.95%	181	3	1.66%	12	6.63%	190	6	3.16%	19	10.00%
POLR	32	0	0.00%	1	3.13%	34	0	0.00%	1	2.94%	35	0	0.00%	2	5.71%
PORN	13	0	0.00%	1	7.69%	17	0	0.00%	2	11.76%	17	0	0.00%	2	11.76%
PROV	16	0	0.00%	0	0.00%	16	0	0.00%		0.00%	16	0	0.00%		0.00%
PUBH	43	0	0.00%	2	4.65%	47	0	0.00%	2	4.26%	47	0	0.00%	2	4.26%
REL	65	0	0.00%	2	3.08%	70	0	0.00%	1	1.43%	70	0	0.00%	2	2.86%
SRCH	41		0.00%	1	2.44%	40	0	0.00%	1	2.50%	40	0	0.00%	1	2.50%
XED	38		0.00%	1	2.63%	0	0	0	0	0	39	0	0.00%	1	2.56%
Uncategorized	111		0.00%	9	8.11%	107	0	0.00%	7	6.54%	134	0	0.00%	1	0.75%

Table 7: The number of websites in each category, along with their test and block rates.

Conclusion and Recommendations

Our findings show that 65 out of 1940 websites were blocked during the mid-2023 to mid-2024 testing period, which is a two-fold increase compared to the 36 websites (out of 2,202) that were blocked in the previous year. Particularly affected were websites disseminating information which could be perceived as a threat to the ruling government. Therefore, it can be concluded that press freedom and internet freedom in Cambodia are continuously under threat. Amongst the blocked 65 websites, which included both local and global websites, 29 websites displayed content relevant to Cambodia.

Based on the findings, we present four recommendations:

1. According to the findings of the current study period, the “News” category was the most frequently tested with 190 websites. Of those, 25 websites were blocked or likely blocked. For the Human Rights (HUMR) category, which included 189 websites tested in 2024, 5 websites were likely blocked. This is twice the number of those restricted in 2023, where 13 news websites were found “likely blocked” out of 194 websites tested, and 3 human rights websites were found “likely blocked”. Based on this data, online news and human rights websites are the most frequently blocked websites in Cambodia. Therefore, CSO’s Access to Information Working Group and Digital Rights Working Group urge that the government and internet companies remove the restrictions on the websites, particularly relevant to news websites and enforce the Press Law’s provisions relevant to news websites rather than blocking them.
2. In the present study, 57 websites in the Gambling and Game categories and 17 websites in Porn category were tested. As a result, 1 website in Gambling and 2 websites in Porn were found blocked during the current study period. In the previous year’s report, 72 websites in Gambling and Game categories and 22 websites in Porn were tested, but no website was found blocked. The Access to Information Working Group, Digital Rights Working Group, and Youth Groups in Cambodia urge the government to block relevant websites for online gambling and child pornography in Cambodia, instead of blocking the human rights and environmental activists and organisations’ websites.
3. Based on the analysis and findings of the current report, we reiterate the recommendations made by the Office of the High Commissioner for Human Rights that (Cambodia) to improve and adopt its current and pending legislation, including the Sub-Decree on National Internet Gateway and the amendments to the Press Law, as well as the draft laws on Cyber Security, Cyber Crimes, and Access to Information.
4. The Civil Society urges the government to formulate and enforce its legislations in promoting the exercise of freedom of expression and association to comply with the strict requirements of Articles 19 (3) and 22 of the Covenants on Civil and Political Rights and Convention on Human Rights.

Acknowledgement of Limitations

- **Period of study**

To examine the most recent censorship trends and events, we limited the findings of this study to OONI network measurements collected from 1 July 2023 to 30 June 2024.

- **Vantage points**

Although the network measurements were collected from 24 vantage points in Cambodia, testing using the OONI software was not run consistently across all networks. Due to this, the findings in this report, particularly the confirmed blockings, may not show all the blockings done by the ISPs in the country.

- **Use of domain as a unit of measurement of websites**

In general, “URL” (or in OONI’s terms – input) and “domain” are interchangeable terms used to refer to a website. In the OONI test list, the full URLs are input in the probe to be tested for censorship, similar to a URL starting with “https” or “http” in a browser. The URLs are measured for censorship by [OONI Probe](#) with the [Web Connectivity experiment](#), which is designed to measure whether access to tested URLs is interfered with through DNS tampering, TCP/IP blocking, an HTTP transparent proxy, or through TLS interference. However, when analyzing results on OONI, the reader should be aware that there are differences in the numbers concerning the specific input or domain, as a different volume of measurements may have been collected for a URL (e.g. <https://www.hrw.org/asia/cambodia>) in comparison to a domain (e.g. www.hrw.org).

In the 2023 [report](#), we based our analysis primarily on URLs because they were thought to provide more context on the reason why the web page was blocked and could be categorized more similarly to the [Citizen Lab test lists](#), which are URL format. However, in this 2024 report, we based our analysis on domains, so readers will need to be cautious about making year-to-year comparisons.

- **Differences in numbers with OONI data**

The findings in this report were obtained after further processing the data from OONI. This involved obtaining more confirmed blockings and eliminating false positives through additional heuristics and manual verification by iMAP researchers based on country or local context. While these heuristics will eventually be added to OONI’s fingerprints, OONI will only process them for future testing.

Additionally, iMAP researchers have categorised blocked websites that were not part of the Citizen Lab test lists but were tested on OONI via custom test lists. Hence, the figures in this report may differ from the results on OONI Explorer.

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- **Testing of instant messaging apps and circumvention tools**

The instant messaging apps and circumvention tools are limited to those tested on OONI. Therefore, the results may not reflect the state of censorship of apps more commonly used in individual countries.

- **Inactive websites**

For Cambodia in particular, a large number of websites that were found blocked have been inactive. In these cases, they may have remained in ISPs' block lists even though the domain is no longer in use or replaced.

Contribute to the Study

If you would like to contribute to the OONI measurements, there are several ways to get involved:

- Perform testing on [various platforms](#), both on Mobile (iOS and Android) and Desktop, including on the CLI on Linux platforms. The domains you test can be either randomly selected from the [Citizenlab Test Lists](#) or custom test lists specific to your needs.
- Contribute to the test lists on GitHub or on [OONI](#).
- Translate the OONI Probe to your local language [here](#).
- Participate in community discussions on the [OONI Slack channel](#) or our Volunteers Telegram Channel.

Acknowledgements

We would like to thank Khairil Yusof (Sinar Project) for his supervision and advisory support on the overall iMAP project, as well as Numan Afifi (Sinar Project) for his valuable contributions in copyediting and report design. We would also like to thank the OONI team for their assistance in reviewing the methodology sections.

Additionally, we extend our gratitude to local partners, activists, academicians, researchers, and anonymous users in Cambodia for their assistance in running the OONI Probe.

Annex I: List of Blocked Websites

N	Website/Domain	Category	Method Blocking	Start Date	End Date	Semester1(July-Dec) Measurement	Semester1(July-Dec) Weighted anomaly rate (%)	Semester2(Jan-Jun24) measurement	Semester2(Jan-Jun24) Weighted anomaly rate (%)	Total of Measurement	Total of Blocked Rate	ISP	Owner Website	Status	Ref
1	8kun.top	HOST	DNS Blocking	2023-07-01	2024-06-30	529	88.61%	565	88.66%	1094	85.59%	Viettel Cambodia (Metfone), iseek Communications,	global	active	Link
2	assets.gitlab-static.net	HOST	DNS Blocking	2023-07-01	2024-06-30	559	0.79%	713	24.00%	1272	12.26%	Viettel Cambodia (Metfone)	global	inactive	Link
3	bitcoin-mix.org	COMM	DNS Blocking	2023-07-01	2024-06-30	409	22.25%	429	0.00%	838	19.00%	Viettel Cambodia (Metfone), iseek Communications	global	inactive	Link
4	cambodian.dating	DATE	DNS Blocking	2023-07-01	2024-06-30	477	21.00%	465	0.00%	942	18.00%	Viettel Cambodia (Metfone)	kh	inactive	Link
5	camnews.org	NEWS	DNS Blocking	2023-07-22	2023-07-25	3	30.00%			3	30.00%	Viettel Cambodia (Metfone)	kh	active	Link
6	ccimcambodia.org	HUMR	DNS Blocking	2023-07-07	2024-06-14	14	30.00%	54	95.33%	68	92.26%	Viettel Cambodia (Metfone)	kh	active	Link
7	ccimcbodia.org	POLR	DNS Blocking	2023-07-23	2023-07-23	1	30.00%			1	30.00%	Viettel Cambodia (Metfone)	kh	inactive	Link
8	doh.centraleu.pi-dns.com	HOST	DNS Blocking	2023-07-01	2024-06-30	640	100.00%	691	100.00%	1331	100.00%	Viettel Cambodia (Metfone), CAMGSM, WiCAM, ANGKOR DATA COMMUNICATION, EZECOM, DATA ANGKOR DATA COMMUNICATION, SINET, Today Communication Co.,Ltd	global	unknown	Link
9	english.cambodiadaily.com	NEWS	DNS Blocking	2023-07-01	2024-06-30	750	95.85%	782	86.38%	1532	90.50%	Viettel Cambodia (Metfone), iseek Communications	kh.csv	active	Link
10	eztv.re	FILE	DNS Blocking	2023-07-01	2024-06-30	287	0.91%	376	0.00%	663	0.37%	Viettel Cambodia (Metfone)	global	inactive	Link

11	humanrightsinasean.info	HUMR	DNS Blocking	2023-07-01	2024-06-30	697	100.00%	714	99.46%	1411	100.00%	Viettel Cambodia (Metfone), CAMGSM, WiCAM, ANGKOR DATA COMMUNICATION, EZECOM, Smart Axiata, ANGKOR DATA COMMUNICATION, SINET	kh.csv	active	Link
12	ilabsoutheastasia.org	ECON	DNS Blocking	2023-07-01	2024-06-30	393	85.56%	448	100.00%	841	97.33%	CAMGSM, ANGKOR DATA COMMUNICATION, Today Communication Co.,Ltd	kh.csv	inactive	Link
13	im0-tub-com.yandex.net	SRCH	DNS Blocking	2023-07-02	2024-06-30	666	100.00%	763	100.00%	1429	100.00%	Viettel Cambodia (Metfone), WiCAM, ANGKOR DATA COMMUNICATION, EZECOM, ANGKOR DATA COMMUNICATION, SINET	global	inactive	Link
14	kamnotra.io	NEWS	DNS Blocking	2023-07-16	2024-06-30	806	88.56%	823	91.70%	1629	89.89%	Viettel Cambodia (Metfone)	kh.csv	active	Link
15	kamnotra.io	NEWS	DNS Blocking	2023-07-22	2023-07-22	1	30.00%			1	30.00%	Viettel Cambodia (Metfone)	kh	active	Link
16	kamnotra.io	NEWS	DNS Blocking	2023-09-11	2023-09-11	1	30.00%			1	30.00%	Viettel Cambodia (Metfone)	kh	inactive	Link
17	khmer.cambodiadaily.com	NEWS	DNS Blocking	2023-07-01	2024-06-30	923	66.61%	1064	72.52%	1987	72.85%	Viettel Cambodia (Metfone), iseek Communications	kh	inactive	Link
18	monoroom.info	NEWS	DNS Blocking	2023-07-01	2024-06-30	573	84.92%	577	42.06%	1150	94.58%	CAMGSM, ANGKOR DATA COMMUNICATION, ANGKOR DATA COMMUNICATION	kh.csv	active	Link
19	ocsp.int-x3.letsencrypt.org	ANON	DNS Blocking	2023-07-01	2024-01-05	647	18.00%	12	21.00%	659	18.00%	Viettel Cambodia (Metfone), iseek Communications	global	inactive	Link
20	rfa.org	NEWS	DNS Blocking	2023-07-19	2024-03-14	39	79.13%	2	0.00%	41	79.13%	Viettel Cambodia (Metfone)	kh	active	Link
21	scontent-ams4-1.cdninstagram.com	GRP	DNS Blocking	2023-07-01	2024-06-30	1096	0.20%	1119	1.64%	2215	1.79%	Viettel Cambodia (Metfone), iseek Communications	global	inactive	Link
22	scontent-frt3-2.cdninstagram.com	GRP	DNS Blocking	2023-07-01	2024-06-30	1107	6.00%	1243	17.54%	2350	0.99%	Viettel Cambodia (Metfone), iseek Communications	global	inactive	Link

23	secure.flickr.com	MMED	DNS Blocking	2023-07-02	2024-06-30	745	1.49%	892	24.12%	1637	18.42%	Viettel Cambodia (Metfone), M247 Europe SRL	global	inactive	Link
24	site.voicepulse.com	COMT	DNS Blocking	2023-07-01	2024-06-30	728	18.60%	852	24.00%	1580	18.51%	Viettel Cambodia (Metfone), iseek Communications, M247 Europe SRL,	global	inactive	Link
25	stubes.info	NEWS	DNS Blocking	2023-07-01	2024-06-30	818	12.00%	1040	21.00%	1858	9.00%	Viettel Cambodia (Metfone), iseek Communications	global	inactive	Link
26	vodenglish.news	NEWS	DNS Blocking	2023-07-01	2024-06-30	764	95.95%	796	83.61%	1560	89.00%	Viettel Cambodia (Metfone)	kh.csv	active	Link
27	vodhotnews.com	NEWS	DNS Blocking	2023-07-01	2024-06-30	740	88.66%	858	94.54%	1598	93.40%	Smart Axiata, ANGKOR DATA COMMUNICATION, Today Communication Co.,Ltd	kh.csv	active	Link
28	vodkhmer.news	NEWS	DNS Blocking	2023-07-01	2024-06-30	733	100.00%	788	94.51%	1521	95.88%	Viettel Cambodia (Metfone), iseek Communications, CAMGSM	kh.csv	active	Link
29	www.PenhChetMdia.com	NEWS	DNS Blocking	2023-09-09	2023-09-09	1	0.00%			1	0.00%	Viettel Cambodia (Metfone)	kh	inactive	Link
30	www.alqassam.ps	MILX	DNS Blocking	2023-07-01	2024-06-29	495	3.83%	429	5.45%	924	4.18%	Viettel Cambodia (Metfone)	global	inactive	Link
31	www.appzplanet.com	FILE	DNS Blocking	2023-07-01	2024-06-30	334	29.11%	519	67.74%	853	57.29%	Viettel Cambodia (Metfone)	global	unknown	Link
32	www.cambodiadaily.com	NEWS	DNS Blocking	2023-07-01	2024-06-30	698	95.18%	1026	94.54%	1724	94.12%	iseek Communications, Viettel Cambodia (Metfone)	kh.csv	active	Link
33	www.camnews.org	NEWS	DNS Blocking	2023-07-01	2024-06-30	784	95.01%	1140	97.29%	1924	95.45%	iseek Communications, Viettel Cambodia (Metfone)	kh.csv	active	Link
34	www.ccimcambodia.org	POLR	DNS Blocking	2023-07-01	2024-06-30	728	97.60%	763	94.69%	1491	95.19%	iseek Communications, Viettel Cambodia (Metfone)	kh.csv	active	Link
35	www.change.org	HUMR	DNS Blocking	2023-07-01	2024-06-30	473	0.00%	579	73.94%	1052	54.39%	Viettel Cambodia (Metfone)	global	active	Link
36	www.cipl-organization.org	CULTR	DNS Blocking	2023-07-01	2024-06-30	398	18.00%	551	0.00%	949	18.00%	Viettel Cambodia (Metfone), iseek Communications	kh.csv	inactive	Link
37	www.clccambodia.org	HUMR	DNS Blocking	2023-07-01	2024-06-30	557	0.00%	526	4.83%	1083	1.55%	Viettel Cambodia (Metfone)	kh.csv	active	Link
38	www.dtn7.com	NEWS	DNS Blocking	2023-07-01	2024-06-30	746	98.26%	871	90.33%	1617	90.07%	Viettel Cambodia (Metfone), iseek Communications	kh.csv	active	Link

39	www.eurogrand.com	GMB	DNS Blocking	2023-07-01	2024-06-30	465	98.84%	482	100.00%	947	97.14%	WiCAM, ANGKOR COMMUNICATION, ANGKOR COMMUNICATION, Today Communication Co.,Ltd	DATA DATA	global	inactive	Link
40	www.freexpression.org	NEWS	DNS Blocking	2023-07-01	2024-06-30	3502	0.82%	2901	2.35%	6403	1.16%	, Viettel Cambodia (Metfone), iseek Communications,		global	active	Link
41	www.getrevue.co	HOST	DNS Blocking	2023-07-01	2024-06-30	520	89.78%	752	100.00%	1272	95.26%	M247 Europe SRL, WiCAM, ANGKOR COMMUNICATION, Today Communication Co.,Ltd	DATA	global	inactive	Link
42	www.healthcambodia.org	PUBH	DNS Blocking	2023-07-01	2024-06-30	786	18.83%	882	24.00%	1668	18.45%	Viettel Cambodia (Metfone), iseek Communications Cogetel Online, M247 Europe SRL		kh.csv	inactive	Link
43	www.hon.ch	PUBH	DNS Blocking	2023-07-02	2024-06-30	734	1.85%	891	24.00%	1625	18.53%	Viettel Cambodia (Metfone), M247 Europe SRL		global	inactive	Link
44	www.islamdoor.com	REL	DNS Blocking	2023-07-01	2024-06-30	431	20.00%	601	64.23%	1032	55.91%	Viettel Cambodia (Metfone), iseek Communications Smart Axiata,		global	inactive	Link
45	www.itsyoursexlife.com	XED	DNS Blocking	2023-07-01	2024-06-30	468	100.00%	507	87.60%	975	92.50%	WiCAM, ANGKOR COMMUNICATION, Cambodia EZECOM, SINET	DATA Viettel (Metfone),	global	unknown	Link
46	https://vodkmer.news/	NEWS	DNS Blocking	2023-07-01	2024-06-30	733	100%	788	94.51%	1779	10.13%	Viettel Cambodia (Metfone), iseek Communications, M247 Europe SRL, WiCAM		kh	inactive	Link
47	www.ksn-news.com	NEWS	DNS Blocking	2023-07-01	2024-06-30	725	9.65%	837	1.40%	1562	3.86%	Viettel Cambodia (Metfone)		unknown	unknown	Link
48	www.metacafe.com	NEWS	DNS Blocking	2023-07-01	2024-03-21	773	10.83%	313	89.19%	1086	29.14%	Viettel Cambodia (Metfone)		unknown	inactive	Link
49	www.monorom.info	NEWS	DNS Blocking	2023-07-01	2024-06-30	784	14.07%	851	21.53%	1635	12.04%	Viettel Cambodia (Metfone), iseek Communications, M247 Europe SRL		kh	inactive	Link

50	www.mywebcalls.com	COMT	DNS Blocking	2023-07-01	2024-06-30	732	99.55%	759	100.00%	1491	99.14%	Viettel Cambodia (Metfone), WiCAM, EZECOM, ANGKOR COMMUNICATION, SINET, Today Communication Co.,Ltd	DATA	global	inactive	Link
51	www.nazi-lauck-nsdapao.com	HATE	DNS Blocking	2023-07-01	2024-01-21	433	21.24%	55	20.00%	488	21.20%	Viettel Cambodia (Metfone), iSeek Communications, WiCAM		unknown	inactive	Link
52	www.oic-oci.org	REL	DNS Blocking	2023-07-01	2024-06-30	452	100.00%	655	99.93%	1107	100.00%	Viettel Cambodia (Metfone), WiCAM, ANGKOR COMMUNICATION, EZECOM, Today Communication Co.,Ltd	DATA	global	inactive	Link
53	www.on-instant.com	COMT	DNS Blocking	2023-07-01	2024-06-30	782	0.55%	757	65.90%	1539	45.22%	Cogetel Online, Viettel Cambodia (Metfone)		global	inactive	Link
54	www.pof.com	DATE	DNS Blocking	2023-07-01	2024-06-29	411	100.00%	414	100.00%	825	100.00%	Viettel Cambodia (Metfone), Cogetel Online, WiCAM, ANGKOR COMMUNICATION, EZECOM, ANGKOR COMMUNICATION, AS131178, SINET, Today Communication Co.,Ltd	DATA DATA	global	unknown	Link
55	www.rarbg.to	FILE	DNS Blocking	2023-07-01	2024-06-30	440	22.64%	541	90.91%	981	74.44%	Viettel Cambodia (Metfone)		global	inactive	Link
56	www.rasmeisampovmaes.com		DNS Blocking	2023-09-09	2023-09-09	1	30.00%			1	30.00%	Viettel Cambodia (Metfone)		unknown	inactive	Link
57	www.repubblica.com	NEWS	DNS Blocking	2023-07-01	2024-06-30	2489	8.94%	2509	0.63%	4998	5.00%	iSeek Communications, Viettel Cambodia (Metfone)		global	active	Link
58	www.rfa.org	NEWS	DNS Blocking	2023-07-01	2024-06-30	12073	89.71%	12405	91.81%	24477	89.98%	EZECOM, Smart Axiata, iSeek Communications, Viettel Cambodia (Metfone)		global	active	Link
59	www.ruf-ch.org	NEWS	DNS Blocking	2023-07-01	2024-03-22	3677	18.70%	1276	34.02%	4953	17.44%	Viettel Cambodia (Metfone)		unknown	unknown	Link

60	www.securityfocus.com	HACK	DNS Blocking	2023-07-02	2024-03-20	384	96.52%	177	100.00%	561	97.18%	CAMGSM, WICAM, ANGKOR DATA COMMUNICATION	unknown	inactive	Link
61	www.serials.ws	FILE	DNS Blocking	2023-07-01	2024-06-30	349	0.00%	486	34.33%	835	24.25%	Viettel Cambodia (Metfone)	global	unknown	Link
62	www.vodkhmer.news	NEWS	DNS Blocking	2023-07-17	2024-06-14	18	51.00%	98	95.50%	116	93.33%	Viettel Cambodia (Metfone)	kh	active	Link
63	www xnxx.com	PORN	DNS Blocking	2024-05-28	2024-06-30			95	94.29%	95	94.29%	EZECOM	global	inactive	Link
64	www.xvideos.com	PORN	DNS Blocking	2023-07-01	2024-06-29	353	100.00%	435	93.33%	788	92.47%	iSeek Communications, Viettel Cambodia (Metfone)	global	inactive	Link
65	www.ycc.org.kh	HUMR	DNS Blocking	2023-07-01	2024-06-30	793	18.00%	945	21.00%	1738	15.00%	iSeek Communications, Viettel Cambodia (Metfone)	kh.csv	inactive	Link

Annex II: Autonomous System Numbers (ASNs) List

No.	ASNs	ASN Name	ASN Registration Country
1	AS23673 AS24325	Cogetel Online	KH
2	AS24478	AngkorNet	KH
3	AS38901	EZECOM	KH
4	AS38623	Viettel (Metfone)	KH
5	AS38893	Clicknet	KH
6	AS17976	TeleSURF / Mobitel	KH
7	AS24492	WiCam	KH
8	AS17726	CamNet	KH
9	AS45348	Chuan Wei	KH
10	AS18014 AS24441	City Link	KH
11	AS38209	Camintel	KH
12	AS131186 AS131203	MekongNet	KH
13	AS45498	Smart Mobile	KH
14	AS38235	MekongNet IXP	KH
15	AS24567	WirelessIP	KH
16	AS45339	BeyondTel	KH
17	AS7712	CIDC IT	KH
18	AS17981	Cambo Technology	KH

No.	ASNs	ASN Name	ASN Registration Country
19	AS45429	DTV Star	KH
20	AS38600 AS45281	Hello	KH
21	AS9902 AS23868	NeocomISP	KH
22	AS38286	PPCTV	KH
23	AS45124	Finder IXP	KH
24	AS38723	Star-Cell	KH
25	AS45465	Flash Tech	KH
26	AS131178	Opennet	KH
27	AS131207	S.I Net	KH
28	AS38579	CB	KH

Annex III: Glossary

DNS	<p>DNS, which stands for Domain Name System, maps domain names to IP addresses.</p> <p>A domain is a name that is commonly attributed to websites (when they're created), so that they can be more easily accessed and remembered. For example, twitter.com is the domain of the Twitter website.</p> <p>However, computers can't connect to internet services through domain names, but based on IP addresses: the digital address of each service on the internet. Similarly, in the physical world, you would need the address of a house (rather than the name of the house itself) in order to visit it.</p> <p>The Domain Name System (DNS) is what is responsible for transforming a human-readable domain name (such as ooni.org) into its numerical IP address counterpart (in this case:104.198.14.52), thus allowing your computer to access the intended website.</p>
HTTP	<p>The Hypertext Transfer Protocol (HTTP) is the underlying protocol used by the World Wide Web to transfer or exchange data across the internet.</p> <p>The HTTP protocol allows communication between a client and a server. It does so by handling a client's request to connect to a server, and the server's response to the client's request.</p> <p>All websites include an HTTP (or HTTPS) prefix (such as http://example.com/) so that your computer (the client) can request and receive the content of a website (hosted on a server).</p> <p>The transmission of data over the HTTP protocol is unencrypted.</p>
Heuristics	<p>Heuristics obtain further confirmed blockings other than that which are detected based on OONI blocking fingerprints. More detailed explanation can be found here.</p>
ISP	<p>An Internet Service Provider (ISP) is an organization that provides services for accessing and using the internet.</p> <p>ISPs can be state-owned, commercial, community-owned, non-profit, or otherwise privately owned. Vodafone, AT&T, Airtel, and MTN are examples of ISPs.</p>
Middle boxes	<p>A middlebox is a computer networking device that transforms, inspects, filters, or otherwise manipulates traffic for purposes other than packet forwarding.</p> <p>Many Internet Service Providers (ISPs) around the world use middleboxes to improve network performance, provide users with faster access to websites, and for a number of other networking purposes.</p>

	<p>Sometimes, middleboxes are also used to implement internet censorship and/or surveillance.</p> <p>The OONI Probe app includes two tests designed to measure networks with the aim of identifying the presence of middleboxes.</p>
TCP	<p>The Transmission Control Protocol (TCP) is one of the main protocols on the internet.</p> <p>To connect to a website, your computer needs to establish a TCP connection to the address of that website.</p> <p>TCP works on top of the Internet Protocol (IP), which defines how to address computers on the internet.</p> <p>When speaking to a machine over the TCP protocol you use an IP and port pair, which looks something like this: 10.20.11:8080.</p> <p>The main difference between TCP and (another very popular protocol called) UDP is that TCP has the notion of a “connection”, making it a “reliable” transport protocol.</p>
TLS	<p>Transport Layer Security (TLS) - also referred to as “SSL” - is a cryptographic protocol that allows you to maintain a secure, encrypted connection between your computer and an internet service.</p> <p>When you connect to a website through TLS, the address of the website will begin with HTTPS (such as https://www.facebook.com/), instead of HTTP.</p>

A comprehensive glossary related to OONI can be accessed here:
<https://ooni.org/support/glossary/>.

Annex IV: Methodology

Data

Data computed based on the heuristics for this report can be downloaded here: <https://github.com/Sinar/imap-data> whereas aggregated data can be downloaded from [OONI Explorer](#).

Coverage

The iMAP State of Internet Censorship Country Report covers the findings of network measurement collected through Open Observatory of Network Interference (OONI) [OONI Probe App](#) that measures the blocking of websites, instant messaging apps, circumvention tools and network tampering. The findings highlight the websites, instant messaging apps and circumvention tools confirmed to be blocked, the ASNs with censorship detected and method of network interference applied. The report also provides background context on the network landscape combined with the latest legal, social and political issues and events which might have an effect on the implementation of internet censorship in the country.

In terms of timeline, this second iMAP report covers measurements obtained in the one-year period from 1 July 2023 to 30 June 2024. The countries covered in this round are Cambodia, Hong Kong (China), Indonesia, Malaysia, Myanmar, Philippines, Thailand, India, and Vietnam.

How are the network measurements gathered?

Network measurements are gathered through the use of [OONI Probe app](#), a free software tool developed by [Open Observatory of Network Interference \(OONI\)](#). To learn more about how the OONI Probe test works, please visit <https://ooni.org/nettest/>.

iMAP Country Researchers and anonymous volunteers run OONI Probe app to examine the accessibility of websites included in the [Citizen Lab test lists](#). iMAP Country Researchers actively review the country-specific test lists to ensure up-to-date websites are included and context-relevant websites are properly categorised, in consultation with local communities and digital rights network partners. We adopt the [approach taken by Netalitica](#) in reviewing country-specific test lists.

It is important to note that the findings are only applicable to the websites that were examined and do not fully reflect all instances of censorship that might have occurred during the testing period.

How are the network measurements analysed?

OONI processes the following types of data through its [data pipeline](#):

Country code

OONI by default collects the code which corresponds to the country from which the user is running OONI Probe tests from, by automatically searching for it based on the user's IP address through their [ASN database](#) the [MaxMind GeoIP database](#).

Autonomous System Number (ASN)

OONI by default collects the Autonomous System Number (ASN) of the network used to run OONI Probe app, thereby revealing the network provider of a user.

Date and time of measurements

OONI by default collects the time and date of when tests were run to evaluate when network interferences occur and to allow comparison across time. UTC is used as the standard time zone in the time and date information. In addition, the charts generated on OONI MAT will exclude measurements on the last day by default.

Categories

The 32 website categories are based on the Citizenlab test lists: <https://github.com/citizenlab/test-lists>. As not all websites tested on OONI are on these test lists, these websites would have unclassified categories.

No.	Category Description	Code	Description
1	Alcohol & Drugs	ALDR	Sites devoted to the use, paraphernalia, and sale of drugs and alcohol irrespective of the local legality.
2	Religion	REL	Sites devoted to discussion of religious issues, both supportive and critical, as well as discussion of minority religious groups.
3	Pornography	PORN	Hard-core and soft-core pornography.

No.	Category Description	Code	Description
4	Provocative Attire	PROV	Websites which show provocative attire and portray women in a sexual manner, wearing minimal clothing.
5	Political Criticism	POLR	Content that offers critical political viewpoints. Includes critical authors and bloggers, as well as oppositional political organizations. Includes pro-democracy content, anti-corruption content as well as content calling for changes in leadership, governance issues, legal reform. Etc.
6	Human Rights Issues	HUMR	Sites dedicated to discussing human rights issues in various forms. Includes women's rights and rights of minority ethnic groups.
7	Environment	ENV	Pollution, international environmental treaties, deforestation, environmental justice, disasters, etc.
8	Terrorism and Militants	MILX	Sites promoting terrorism, violent militant or separatist movements.
9	Hate Speech	HATE	Content that disparages particular groups or persons based on race, sex, sexuality or other characteristics
10	News Media	NEWS	This category includes major news outlets (BBC, CNN, etc.) as well as regional news outlets and independent media.
11	Sex Education	XED	Includes contraception, abstinence, STDs, healthy sexuality, teen pregnancy, rape prevention, abortion, sexual rights, and sexual health services.
12	Public Health	PUBH	HIV, SARS, bird flu, centers for disease control, World Health Organization, etc
13	Gambling	GMB	Online gambling sites. Includes casino games, sports betting, etc.
14	Anonymization and circumvention tools	ANON	Sites that provide tools used for anonymization, circumvention, proxy-services and encryption.
15	Online Dating	DATE	Online dating services which can be used to meet people, post profiles, chat, etc
16	Social Networking	GRP	Social networking tools and platforms.

No.	Category Description	Code	Description
17	LGBT	LGBT	A range of gay-lesbian-bisexual-transgender queer issues. (Excluding pornography)
18	File-sharing	FILE	Sites and tools used to share files, including cloud-based file storage, torrents and P2P file-sharing tools.
19	Hacking Tools	HACK	Sites dedicated to computer security, including news and tools. Includes malicious and non-malicious content.
20	Communication Tools	COMT	Sites and tools for individual and group communications. Includes webmail, VoIP, instant messaging, chat and mobile messaging applications.
21	Media sharing	MMED	Video, audio or photo sharing platforms.
22	Hosting and Blogging Platforms	HOST	Web hosting services, blogging and other online publishing platforms.
23	Search Engines	SRCH	Search engines and portals.
24	Gaming	GAME	Online games and gaming platforms, excluding gambling sites.
25	Culture	CULTR	Content relating to entertainment, history, literature, music, film, books, satire and humour
26	Economics	ECON	General economic development and poverty related topics, agencies and funding opportunities
27	Government	GOVT	Government-run websites, including military sites.
28	E-commerce	COMM	Websites of commercial services and products.
29	Control content	CTRL	Benign or innocuous content used as a control.
30	Intergovernmental Organizations	IGO	Websites of intergovernmental organizations such as the United Nations.
31	Miscellaneous content	MISC	Sites that don't fit in any category (XXX Things in here should be categorised)

IP addresses and other information

OONI does not collect or store users' IP addresses deliberately. OONI takes measures to remove them from the collected measurements, to protect its users from [potential risks](#). However, there may be instances where users' IP addresses and other potentially personally-identifiable information are unintentionally collected, if such information is included in the HTTP headers or other metadata of measurements. For example, this can occur if the tested websites include tracking technologies or custom content based on a user's network location.

Network measurements

The types of network measurements that OONI collects depend on the types of tests that are run. Specifications about each OONI test can be viewed through its [git repository](#), and details about what collected network measurements entail can be viewed through [OONI Explorer](#) or through [OONI's measurement API](#).

In order to derive meaning from the measurements collected, OONI processes the data types mentioned above to answer the following questions:

- Which types of OONI tests were run?
- In which countries were those tests run?
- In which networks were those tests run?
- When were tests run?
- What types of network interference occurred?
- In which countries did network interference occur?
- In which networks did network interference occur?
- When did network interference occur?
- How did network interference occur?

To answer such questions, OONI's pipeline is designed to answer such questions by processing network measurements data to enable the following:

- Attributing measurements to a specific country.
- Attributing measurements to a specific network within a country.
- Distinguishing measurements based on the specific tests that were run for their collection.
- Distinguishing between “normal” and “anomalous” measurements (the latter indicating that a form of network tampering is likely present).
- Identifying the type of network interference based on a set of heuristics for DNS tampering, TCP/IP blocking, and HTTP blocking.
- Identifying block pages based on a set of heuristics for HTTP blocking.
- Identifying the presence of “middle boxes” within tested networks.

According to OONI, false positives may occur within the processed data due to a number of reasons. DNS resolvers (operated by Google or a local ISP) often provide users with IP addresses that are closest to them geographically. While this may appear to be a case of DNS tampering, it is actually done with the intention of providing users with faster access to websites. Similarly, false positives may emerge when tested websites serve different content depending on the country that the user is connecting from, or in the cases when websites return failures even though they are not tampered with.

Furthermore, measurements indicating HTTP or TCP/IP blocking might actually be due to temporary HTTP or TCP/IP failures, and may not conclusively be a sign of network interference. It is therefore important to test the same sets of websites across time and to cross-correlate data, prior to reaching a conclusion on whether websites are in fact being blocked.

Since block pages differ from country to country and sometimes even from network to network, it is quite challenging to accurately identify them. OONI uses a series of heuristics to try to guess if the page in question differs from the expected control, but these heuristics can often result in false positives. For this reason OONI only says that there is a confirmed instance of blocking when a block page is detected.

Upon collection of more network measurements, OONI continues to develop its data analysis heuristics, based on which it attempts to accurately identify censorship events.

The full list of country-specific test lists containing confirmed blocked websites in Myanmar, Cambodia, Hong Kong, Indonesia, Malaysia, Philippines, Thailand, and Vietnam can be viewed here: <https://github.com/citizenlab/test-lists>.

Verifying OONI measurements

Confirmed blocked OONI measurements were based on fingerprints recorded here <https://github.com/ooni/blocking-fingerprints>. These fingerprints are based on either DNS or HTTP blocking. Fingerprints recorded as confirmed blockings are either those implemented nationally or by ISPs.

Hence, heuristics as below were run on raw measurements on all countries under iMAP to further confirm blockings.

Firstly, IP addresses with more than 10 domains were identified. Then each of the IP address was checked for the following:

Does the IP in question point to a government blockpage?					
Yes	No, page timed out or shows Content Delivery Network (CDN) page.				
↓	↓				
Confirmed blocking	What information can we get about the IP by doing a whois lookup?				
	Government entity	Local ISP ¹⁰	CDN ¹¹ / Private IP		
	↓	↓	↓		
	Confirmed blocking	Likely Blocked or Inaccessible	Do we get a valid TLS certificate for one of the domains in question when doing a TLS handshake and specifying the SNI		
			Yes	No, there were blocking fingerprints found.	No, timed out
			↓	↓	↓
			False positive	Confirmed blocking	Sampled measurement is analyzed on OONI Explorer.

When blocking is determined, any domain redirected to these IP addresses would be marked as ‘dns.confirmed’.

¹⁰ In the case of India, there was [evidence](#) of popular websites hosting their site on the ISPs network for quicker loading times as the ISPs sometimes offer such edge networking services, hence websites redirected to local websites not marked as blocked.

¹¹ In general, websites redirected to popular CDN such as CloudFlare, Amazon, Google, etc. are marked as not blocked.

Secondly, HTTP titles and bodies were analyzed to determine blockpages. This [example](#) shows that the HTTP returns the text ‘The URL has been blocked as per the instructions of the DoT in compliance to the orders of Court of Law’. Any domain redirected to these HTTP titles and bodies would be marked as ‘http.confirmed’.

As a result, false positives are eliminated and more confirmed blockings are obtained.

In the [2022 report](#), only confirmed blockings based on OONI or new fingerprints were reported.

For this round of reporting in 2023, we had also further identified confirmed blockings by verifying blockings shown in news reports with OONI measurements. This is because there were blockings that could be not identified using the DNS or HTTP fingerprints. Typically, these websites were redirected to an unknown or bogon IP address, or had other unknown errors which are ambiguous on whether they are true or false positives of censorship. Hence, based on the news reports where the blocked websites were cited, confirmed blockings were further found by comparing available measurements on OONI. In particular for this study, we would mark them as confirmed blockings if there are more than 30 measurements and have an anomaly rate of more than 1% throughout the one-year period of study, in addition to manually checking the OONI measurements by cross-checking across networks, countries and time periods.

For this round of reporting in 2024, the confirmed blockings were further consolidated based on OONI’s existing fingerprints and heuristics processed on the data during the coverage period, in addition to taking into account a weighted anomaly ratio, measurement count and past analysis of the country. In summary, these were the rules applied to obtain this year’s list of confirmed and likely blockings.

Confirmed blockings		Likely blockings or inaccessible
Malaysia	Confirmed by OONI only	None
Myanmar	<ul style="list-style-type: none"> Confirmed by heuristics (govt block page) Confirmed by OONI (govt block page) 	High weighted anomaly ratio and confirmed by news report/ block notice
Thailand	<ul style="list-style-type: none"> Confirmed by heuristics (govt block page) Confirmed by OONI (govt block page) 	High weighted anomaly ratio
Philippines	<ul style="list-style-type: none"> Confirmed by heuristics (govt block page) Confirmed by OONI (govt block page) Confirmed by news report/ block notice 	High weighted anomaly ratio
India	<ul style="list-style-type: none"> Confirmed by OONI with at least 5 counts Confirmed by heuristics (govt block pages) 	High weighted anomaly ratio
Indonesia	<ul style="list-style-type: none"> Confirmed by OONI with at least 5 counts Confirmed by heuristics (govt block pages) 	High weighted anomaly ratio
Vietnam	<ul style="list-style-type: none"> Confirmed by heuristics (govt block page) Confirmed by news report/ block notice 	<ul style="list-style-type: none"> High weighted anomaly ratio Confirmed by OONI (due to being ISP redirects)
Cambodia	<ul style="list-style-type: none"> Confirmed by news report/ block notice 	<ul style="list-style-type: none"> High weighted anomaly ratio Confirmed by OONI (due to being ISP redirects)
Hong Kong	None	High weighted anomaly ratio

Weighted anomaly ratio: It is calculated by finding the ratio of the Anomaly and Confirmed counts over the total measurements per ASN factoring weights based on number of measurements per domain and per ASN. A high anomaly ratio is when the P90 of the anomaly ratio of a domain exceeds 90%.