International Comparative Study Report on Open Source Software Publication Activities by Governments

Quantitative Analysis of Government Agency Repositories on GitHub

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Note
This document is an English translation based on the Japanese version. If there are any discrepancies, inconsistencies, or contradictions between the translation provided and the Japanese version, the Japanese version shall take precedence.

Executive Summary

Background and Purpose of the Study

In recent years, open source software (OSS) has grown in importance not only for private companies but also for government organizations. Approaches vary across countries: Germany and Estonia legally mandate open-sourcing software developed with public funds, while the United States promotes reuse of administrative systems through OSS disclosure as a federal cost-cutting measure. While research has advanced in qualitative studies focusing on policy frameworks and organizations, international comparisons regarding the actual number and scale of OSS release activities remain insufficient. Japan's international standing in this regard is particularly unclear. Therefore, this report conducted a quantitative analysis using GitHub data, addressing the research question: "How does the number of government OSS releases differ across countries and regions?" This study quantitatively analyzed OSS published on GitHub by governments and public institutions in seven countries (Japan, Estonia, Singapore, Germany, France, the UK, and the US), using multiple metrics such as repository count, pull request count, and star count. It clarifies the characteristics of OSS activities in each country and their relationship with policy.

Key Findings

First, it became clear that there are significant differences in the scale of OSS activities among countries. The UK (approx. 16,000 repositories, approx. 1.9 million pull requests) and the US (approx. 10,000 repositories, approx. 540,000 pull requests) are large-scale, France (approx. 2,400 repositories, approx. 240,000 pull requests) is medium scale, while Japan, Estonia, Singapore, and Germany are classified as small-scale. Examples of Japan's characteristics discernible from the data include approximately 3,800 pull requests for 626 repositories, resulting in a ratio of about 6.1 pull requests per repository—the lowest among the small-scale groups. This indicates a relatively low frequency of development activity via pull requests, reflecting a characteristic emphasis on rigorous review processes and quality control.

Second, a certain temporal overlap was observed between the periods of increased OSS publication and the introduction of OSS-related policies in each country. Increases in OSS releases were seen around the implementation of policies such as the UK's Government Digital Service (2012), the US Federal Source Code Policy (2016), France's Circulaire Ayrault (2012), and Germany's Sovereign Tech Fund initiative (2021). Japan also saw increases around the 2012 e-Government Open Data Strategy and the 2021 establishment of the Digital Agency.

Third, the distribution of technology fields showed both globally common trends and country-specific characteristics. Across the seven countries, administrative services (2,340 items) and data platforms/APIs (1,935 items) were the most published. Country-specific focus areas were also observed: Estonia emphasized data exchange platforms like X-Road, while Singapore focused on smart city-related initiatives. For Japan, OSS publication activities by the Geospatial Information Authority of Japan and the Ministry of Land, Infrastructure, Transport and Tourism in the field of maps and urban information were particularly notable.

Implications for Japan

Although Japan's OSS activities by administrative agencies are smaller in scale compared to the UK, US, and France, active efforts in the field of maps and spatial information by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the Geospatial Information Authority of Japan (GSI) were confirmed. Overall, the number of releases has been increasing since the establishment of the Digital Agency. To accelerate these nascent movements going forward, strategic actions are needed to expand them into more organized efforts.

Outlook

This study is limited to a quantitative approach using GitHub data, excluding OSS release activities on other platforms or those utilizing government-affiliated inner-source initiatives. Furthermore, while it provides an overview of OSS activities in each country, the causal relationship with underlying policies and political trends remains unclear. Moving forward, it is necessary to continuously conduct research

that overcomes these limitations and to accelerate discussions on more concrete measures to promote OSS activities within government.

Table of Contents

Executive Summary **2**
Background and Purpose of the Study 2
Key Findings 2
Implications for Japan 3
Outlook 3
1. Introduction **7**
2. Purpose and Methodology **10**
2.1 Purpose 10
2.2 Research Methodology 11
3. Survey Data **15**
3.1 Japan 16
3.2 Estonia 20
3.3 Singapore 25
3.4 Germany 28
3.5 France 33
3.6 United Kingdom 36
3.7 United States 40
4. Analysis **46**
4.1 Purpose and Overview of the Analysis 46
4.2 Analysis 1: Number of OSS Releases by Country 47
4.3 Analysis 2: Analysis by Time Series 54
4.4 Analysis 3: Classification by Technology Field and Trend Identification 63
4.5 Summary of Analysis 69
5. Summary **71**
6. References **73**
7. Appendix: Threats to Validity **76**
8. Appendix: Python Script **76**
8.1 Python Script (1) 76
8.2 Python Script (2) 80

9. Appendix: Technical Field Classification Method 84
9.1 Classification Method 84
10. Appendix: Government & Public Sector GitHub Repositories 87
10.1 Estonia 87
10.2 France 88
10.3 Germany 92
10.4 Japan 94
10.5 Singapore 98
10.6 United Kingdom 99
10.7 United States 102
11. Appendix: Country-Specific Aggregate Data 112
11.1 Estonia 112
11.2 France 113
11.3 Germany 114
11.4 Japan 115
11.5 Singapore 116
11.6 United Kingdom 117
11.7 United States 118
Colophon 123

1. Introduction

This report aims to conduct an international comparison of the level of interest and commitment to open source software (OSS) within the public sector of various countries. This is achieved by collecting data on the number of OSS repositories observed on the development platform GitHub and related information.

In recent years, recognition has grown that OSS is indispensable for all development projects (Information-technology Promotion Agency, Japan, 2024) . Collaborative creation across organizations and regions through OSS not only reduces software and system development costs within organizations but also generates a virtuous cycle of technology and knowledge across society, yielding economic benefits (Knut & Torben, 2024; Hoffmann, Nagle, Zhou).

This focus on OSS is expanding not only in private organizations but also in government bodies. For example, in Germany, the 2021 coalition agreement stipulated OSS release as a principle for publicly funded software development. As of 2026, the open licensing of software developed within the federal government is mandatory (SPD, Bündnis 90/Die Grünen, & FDP, 2021; Deutscher Bundestag, 2024). In Estonia, the Digital Agenda 2030 established the principle of open licensing for publicly funded software, leading to the development of the administrative data integration platform "X-Road" as an internationally usable framework (Ministry of Economic Affairs and Communications, 2021) .In France, the 2016 Digital Republic Act encourages the preferential adoption of free software in government information system procurement (Legifrance, 2016) . In the United States, the 2016 Source Code Policy mandates that at least 20% of software developed using federal funds be released as OSS (Office of Management and Budget, 2016) .

These national initiatives reflect differing approaches to promotion. The European example is based on the principle that "public sector software developed with public funds should be released under an OSS license." This principle resonates with the "Public Money, Public Code (PMPC)" philosophy promoted by the Free Software Foundation Europe (FSFE), centered in Europe. (Free Software Foundation Europe, 2017) .In contrast, the U.S. approach prioritizes practical benefits, aiming

to reduce development costs within the government.

An overview of these international trends reveals that while the importance of OSS within government organizations is growing worldwide, the scale of activities, objectives, and promotion approaches vary significantly by country. So, how can Japanese government organizations leverage OSS? To promote OSS within Japanese administrative organizations going forward, it is necessary to investigate and analyze the activities of other countries, including their characteristics, and clarify Japan's position and direction. Therefore, this report conducts research with the primary objective of conducting an international comparison of OSS promotion activities within government agencies in Japan and other countries.

Previous research includes studies that internationally surveyed approaches and organizational conditions in public sector OSS projects, as well as research presenting indicators for planning, implementation, and evaluation of OSS utilization in the public sector (Linåker, Lundell, Servant, & Gamalielss, 2025; Muto Linåker, 2024). These international comparisons and efforts to develop indicators based on qualitative research approaches have yielded useful outcomes for government officials. They facilitate the establishment of specialized organizations promoting OSS activities in the public sector, such as OSPOs (Open Source Program Offices), and the creation of domestic and international OSS catalogs. This enables the replication and evaluation of advanced cases in other countries and regions. However, while existing research analyzes policy frameworks and intentions, the actual outputs at the implementation level and the number of activities related to administrative OSS, along with their regional characteristics, remain insufficiently understood. Notably, Japan is scarcely referenced in existing international comparative studies, leaving its position regarding OSS promotion in government unclear. Therefore, this report presents the results of analyzing data collected on GitHub, based on the research question: "How does the number of publicly available administrative OSS differ across countries and regions?"

The structure of this report is as follows. Chapter 2 explains the research objectives and methodology. Chapter 3 outlines the collected data by country and provides one representative example of "public sector OSS" from each country.

Chapter 4 conducts an international comparison from three perspectives—"number of activities," "timeframe," and "technical field"—based on the data organized in Chapter 3. Chapter 5 summarizes the insights gained from this report.

Note that this report presents only direct analytical results based on the survey data and does not include commentary or discussion. Given that the research findings suggest potential for further research and practical application in administrative practice, separate roundtable discussions will be held to explore commentary and discussion from various perspectives. The recordings of these discussions will be made publicly available.

2. Purpose and Methodology

2.1 Purpose

The purpose of this survey is to grasp the overall picture of "the actual state of OSS disclosure by public institutions worldwide," specifically "which institutions in which countries are disclosing what OSS and when." To achieve this purpose, we focus on repositories created by national government organizations on GitHub, the world's largest OSS development platform, as the information collection platform. Note that this survey excludes local governments and targets only central ministries and agencies and nationwide public sector entities.

GitHub was selected as the information collection platform based on the criterion that it allows for the systematic observation of OSS release activities by government agencies worldwide. Indeed, some government agencies utilize open-source platforms other than GitHub. For example, German government agencies publish OSS on GitLab alongside GitHub. Furthermore, the Indian government has established an inner-source platform limited to domestic use, while Estonia and Singapore also differentiate between GitHub and government-managed inner-source platforms. While utilizing inner-source platforms offers advantages like mitigating risks associated with external disclosure by sharing solutions within specific scopes (e.g., government agencies or domestically), their limited accessibility from other countries makes investigating their actual use challenging, exceeding the scope of this study. Thus, while this study acknowledges the existence and significance of OSS platforms and inner-source platforms used by governments, it prioritized data consistency by focusing on observing specific platforms.

Considering the limitations regarding the target platforms mentioned above, the countries selected for this first-year survey were determined through desk research based on the following criteria: "Countries where the majority of activity can be observed on GitHub" and "Countries where advanced examples related to the context of digital government and OSS utilization can be confirmed." As a result, it was decided to conduct the survey in seven countries: Japan, Estonia, France, the United States, Germany, Singapore, and the United Kingdom.

2.2 Research Methodology

2.2.1 Setting Data Collection Items

This survey established the following data collection items based on four perspectives—"activity level," "maturity level," "organizational size," and "project duration"—regarding the OSS activities of government agencies on GitHub.

A) Activity

OSS activity level can be primarily evaluated by metrics such as "number of repositories," "number of stars," "number of forks," and "number of branches." Activity level relates to how actively an organization publishes OSS and the degree of external interest and reuse it receives. This survey references the following values as observable metrics correlated with activity level.

Number of Repositories (Repositories)

The number of publicly available OSS projects. A higher number indicates that the organization is actively publishing OSS.

Number of Stars (Star)

An indicator showing interest in and popularity of an OSS project. It reflects external attention and usage history.

Number of Forks (Fork)

The number of times others have created derivative developments or reused the project. Indicates the ripple effect of the OSS and its utilization within external developer communities.

Number of Branches

Indicates development diversity and the status of parallel work. Shows an active development structure and simultaneous progress on multiple features.

B) Maturity

Maturity relates to whether the OSS development and operation processes function continuously and the extent to which external improvement proposals and participation are accepted. This survey refers to the following values as observable metrics related to maturity. Higher values for these indicators suggest

the organization's OSS operations may be institutionally and culturally mature, enabling sustained improvement and diverse collaboration. However, factors like the quality, stability, and scope of the software itself also influence these metrics, making it important to interpret multiple indicators holistically.

Issue Count

The volume of interactions between users and developers, such as bug reports and feature requests. This indicates the level of engagement and improvement activities with the external developer community.

Pull Request Count (PR)

The number of code contribution proposals from external and internal sources. This indicates the system's readiness to accept external contributions and the maturity of collaboration.

Number of Contributors

The number of individuals who have contributed code or documentation. A higher number indicates a more open development culture and diverse participation.

C) Organizational Penetration

Organizational scale reflects the extent to which the significance and culture of publishing OSS to a broad range of organizations has permeated administrative OSS activities within each country. This perspective suggests the presence or absence of strategic initiatives such as cross-ministerial OSS promotion and the establishment of unified national-level strategies and frameworks.

Number of Organizations

The number of government organizations participating in OSS activities. This indicates the spread of decentralized OSS promotion and cross-ministerial initiatives.

D) Project Duration

Project duration is a key perspective for evaluating the "sustainability" of OSS

activities. Projects with earlier start dates are more likely to have been maintained and improved over a long period, suggesting that OSS activities are well-established within the organization. Conversely, a high number of recently published projects within an organization suggest that OSS activities are expanding.

First Commit Date

The date each OSS project first published code on GitHub. This provides insight into the project's start date and historical background, serving as important reference information for evaluating the "continuity" of OSS activities.

By collecting data based on the above items, it is possible to broadly observe not only the number of projects but also the degree of collaboration with external developer communities, the extent of reuse, and the level of institutional and cultural maturity.

2.2.2 Implementing Data Collection

Data collection utilized a Python script leveraging the GitHub API. The primary GitHub APIs used, and the information retrieved are shown in Table 2-1.

Table 2-1 Primary GitHub APIs and Retrieved Information Used for Data Collection

GitHub API	Retrieved Information
GET /orgs/{org}/repos	Retrieve list of repositories in an organization
GET /orgs/{org}/members	Get list of organization members
GET /repos/{org}/{repo}/branches	Number of branches
GET /repos/{org}/{repo}/issues?state=all	Number of issues (excluding pull requests)

GET /repos/{org}/{repo}/pulls?state=all	Number of pull requests
GET /repos/{org}/{repo}/contributors	Number of contributors
GET /repos/{owner}/{repo}/commits?per_page=1	First commit date and time

This data was saved in CSV format via script and aggregated/analyzed by country and theme. The script details include verbatim in the main text, ensuring easy reproducibility and expansion to other countries.

The data collection period is as follows.

- First commit date and time: September 16, 2025 - September 26, 2025
- Initial commit date and time: September 30, 2025 - October 3, 2025

2.2.3 Data Analysis

This analysis quantitatively compared the scale and nature of OSS activities using various metrics collected from national government GitHub accounts, including repository count, star count, fork count, issue count, pull request count, contributor count, and first commit date. Based on this data, we organized each country's characteristics from the perspectives of OSS activity level, institutional support, and cultural background, performing grouping and trend analysis.

3. Survey Data

The countries surveyed were selected based on the following two criteria:

1. Visibility of activity on GitHub:

The existence of official government accounts on GitHub where ongoing activity can be continuously observed

2. Digital government advancement:

Ranking highly in the UN E-Government Survey and various digital government assessments

Based on these criteria, the following seven countries were selected.

- Asia
  - Japan (primary focus of the study)
  - Singapore (City-state and smart city pioneer)
- Europe
  - Estonia (e-government pioneer)
  - Germany (Federal system, emphasis on digital sovereignty)
  - France (centralized government, startup-style approach)
  - United Kingdom (GDS founding nation, digital service standards developer)
- North America
  - United States (Federal system, large-scale ecosystem)

While other GitHub-using countries like China and India exist, this study focuses on the above seven nations to maintain analytical consistency.

This section introduces representative government agencies' OSS activities and survey data from each country.

To understand each country's OSS promotion status, it is crucial to grasp the initiatives undertaken by the government agencies responsible for these activities. We highlight representative government agencies in each country, showing trends

in OSS disclosure and related projects. This allows us to concretely confirm how each country utilizes open source and positions it as a digital public good.

3.1 Japan

GitHub Statistics:

- Number of Organizations: 22
- Number of repositories: 626

Multiple ministries and agencies within Japan have begun utilizing and publishing OSS. Expansion is underway across various fields, including API development and the publication of geospatial data.

3.1.1 Ministry of Land, Infrastructure, Transport and Tourism (Project PLATEAU)

GitHub Statistics (Total):

- Repositories: 103
- Stars: 1,025
- Forks: 163
- Branches: 409
- Issues: 42
- Pull requests: 115
- Contributors: 448

Project PLATEAU promotes the utilization of 3D urban space models as open data across diverse fields such as urban planning, disaster prevention, and traffic simulation. The project is designed with collaboration between local governments, private companies, and research institutions as a prerequisite, and active pilot testing and joint development are underway. Its high-precision 3D urban models, which include building shapes and terrain information, serve as reference cases for building digital twins of cities both domestically and internationally. Improvements based on user feedback are continuously implemented, making it a notable,

pioneering initiative in the open sharing of spatial information.

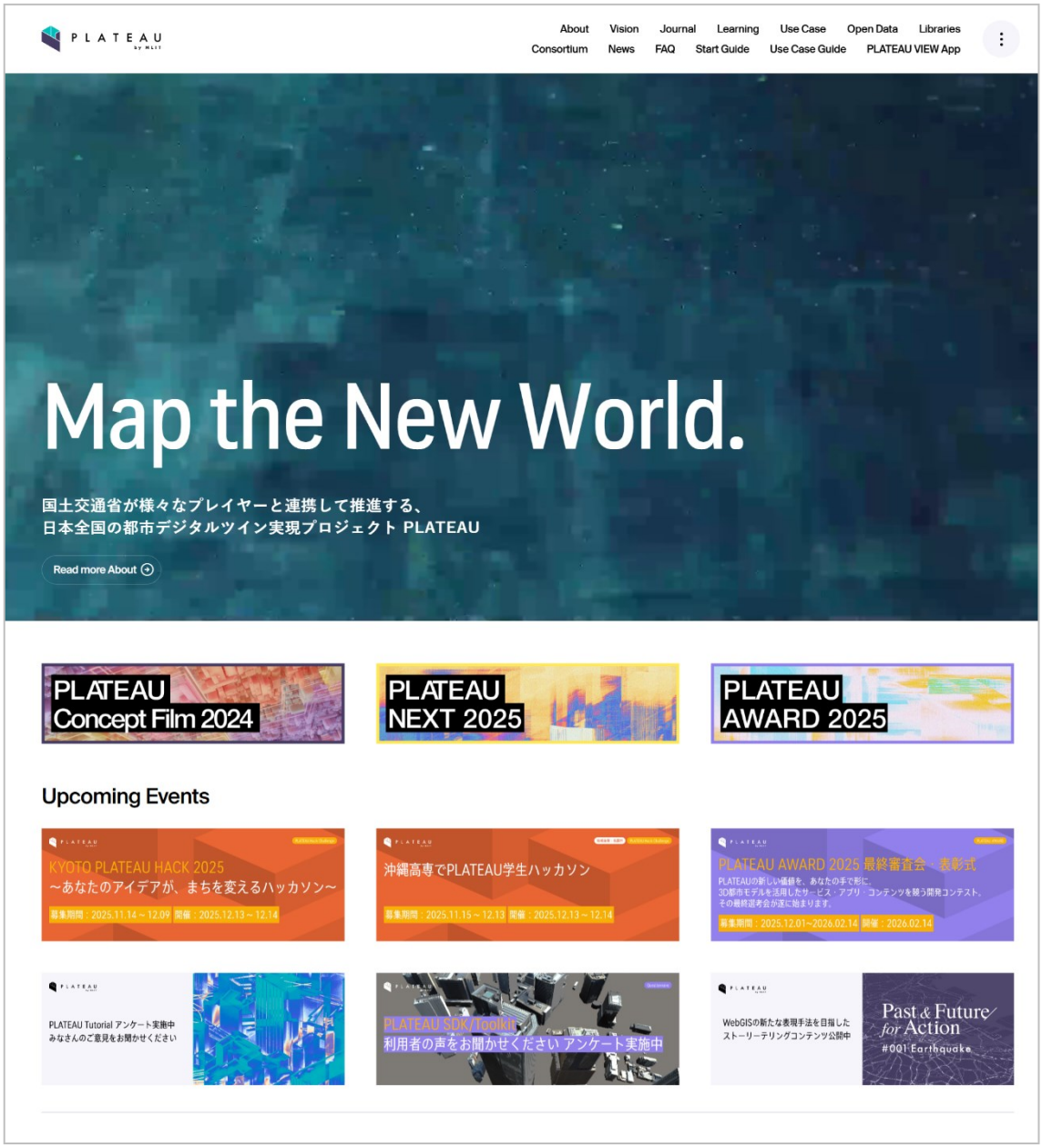

Figure 3-1 Project PLATEAU

(Ministry of Land, Infrastructure, Transport and Tourism, n.d.)

3.1.2 Geospatial Information Authority of Japan (gsi-cyberjapan)

GitHub Statistics (Total):

- Repositories: 108
- Stars: 1,336
- Forks: 864
- Branches: 189
- Issues: 182
- Pull requests: 111
- Contributors: 267

The Geospatial Information Authority of Japan (GSI) is the most active open-source contributor in Japan for the development and publication of geospatial information. It has released numerous map data sets and Geographic Information System (GIS) tools, which are increasingly being reused by local governments and research institutions. Visualization tools for elevation data and topographic maps are expected to be utilized in disaster prevention, urban planning, and education. Collaboration with external developers is also progressing, making it a model for promoting open data in the geospatial field. Technologically, it is recognized for its stable operation and continuous improvement efforts.

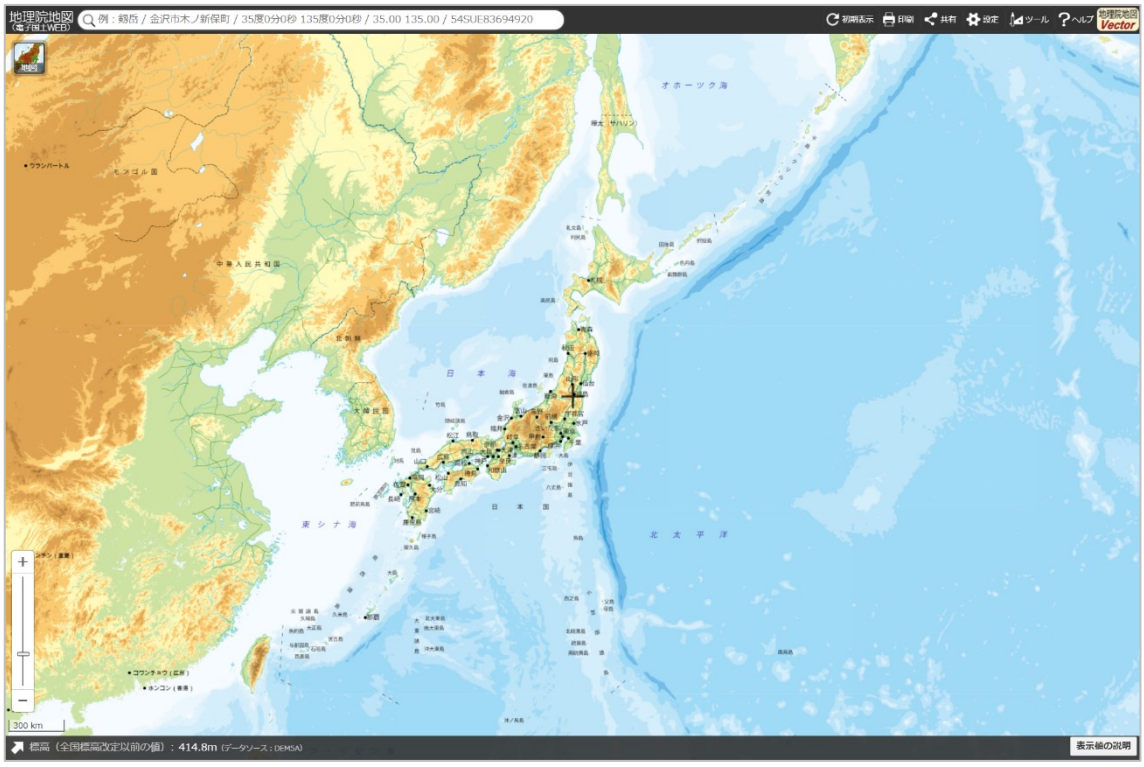

Figure 3-2 Geospatial Information Authority Map

(Geospatial Information Authority of Japan, n.d.)

3.1.3 Digital Agency (digital-go-jp)

GitHub Statistics (Total):

- Repositories: 7
- Stars: 1,043
- Forks: 127
- Branches: 37
- Issues: 170
- Pull requests: 884
- Contributors: 33

The agency conducts highly concentrated and high-profile open-source activities for a limited number of projects. Development primarily focuses on areas directly improving public services, such as streamlining administrative procedures and establishing API infrastructure. Initiatives like the Government API Catalog and Myna Portal integration tools serve as reference cases for government agencies in other countries from the perspectives of reusability, transparency, and standardization. External improvement proposals and technical collaboration are active, with concentrated efforts by a small number of developers yielding significant results.

Figure 3-3 Design System (Illustrations and Icon Assets)

(Digital Agency (Government of Japan), n.d.)

3.2 Estonia

GitHub Statistics:

- Number of Organizations: 6
- Number of repositories: 196

Specializing in core e-government technologies, it achieves high completion rates and citizen usage through a small, elite project team.

3.2.1 E-government building blocks (e-gov)

GitHub Statistics (Total):

- Repositories: 91

- Stars: 140
- Forks: 181
- Branches: 287
- Issues: 337
- Pull requests: 905
- Contributors: 748

E-gov is the core organization supporting Estonia's e-government infrastructure, building systems that enable citizens to complete administrative procedures such as resident registration, tax payments, and medical records entirely online. Through a secure authentication system linked to national IDs, it achieves both convenience and security in public services. Nearly the entire population utilizes electronic IDs, creating a rare global model where every day administrative tasks are completed digitally. This system is widely referenced in other countries' e-government development efforts.

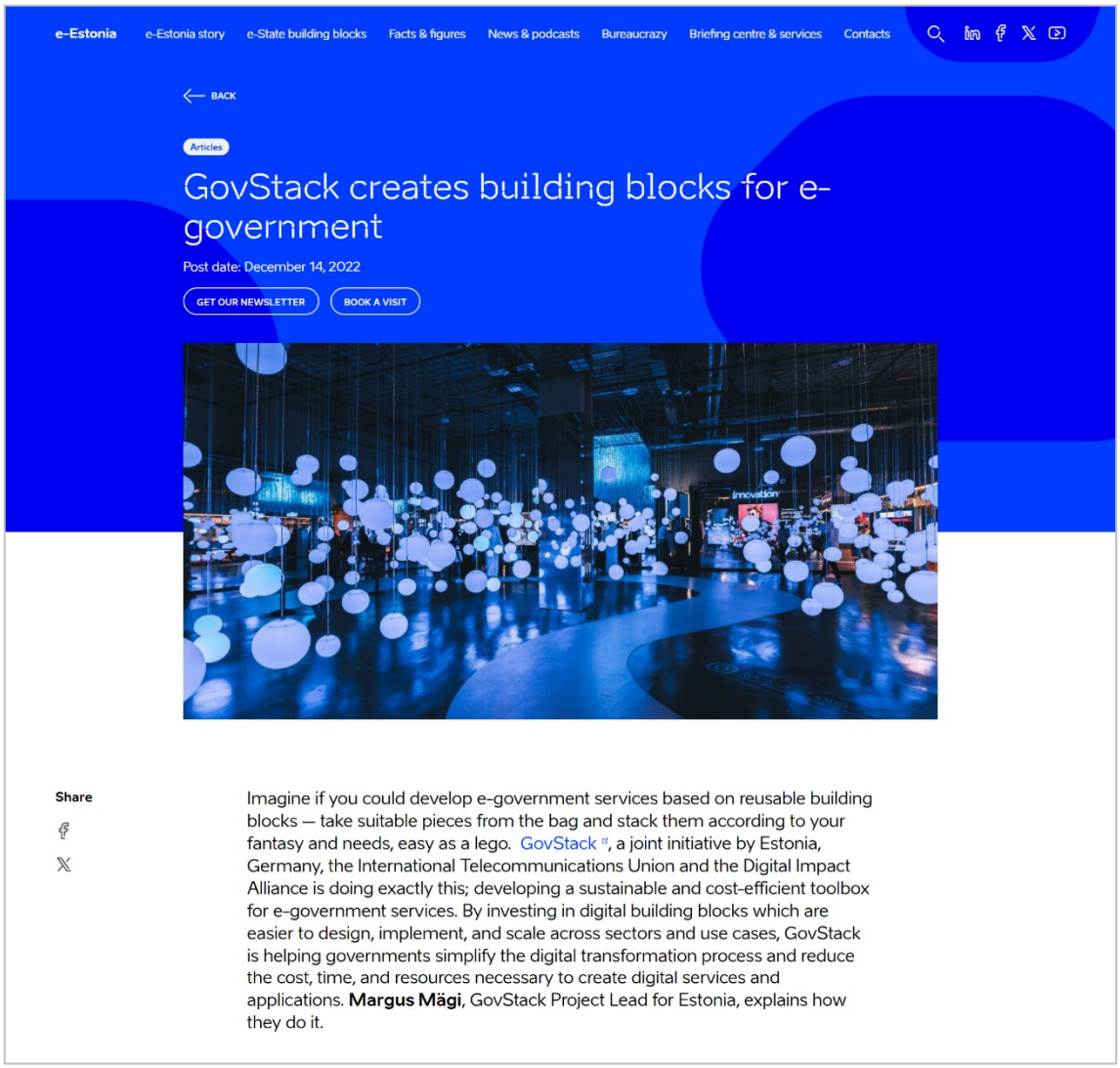

Figure 3-4 E-government building blocks

(e-Estonia, n.d.)

3.2.2 Open Electronic Identity (open-eid)

GitHub Statistics (Total):

- Repositories: 69
- Stars: 1,002
- Forks: 531
- Branches: 236
- Issues: 640
- Pull requests: 4,906

- Contributors: 531

Open-eid is a project providing the technological foundation for Estonia's electronic ID and digital signature systems. It maintains libraries and tools supporting secure identity verification, electronic signatures, and encrypted communications, widely integrated into public and private services. Being open source ensures transparency and reliability, with high compatibility with international technical standards. As an advanced initiative in the field of electronic authentication, it attracts attention from government agencies and engineers worldwide.

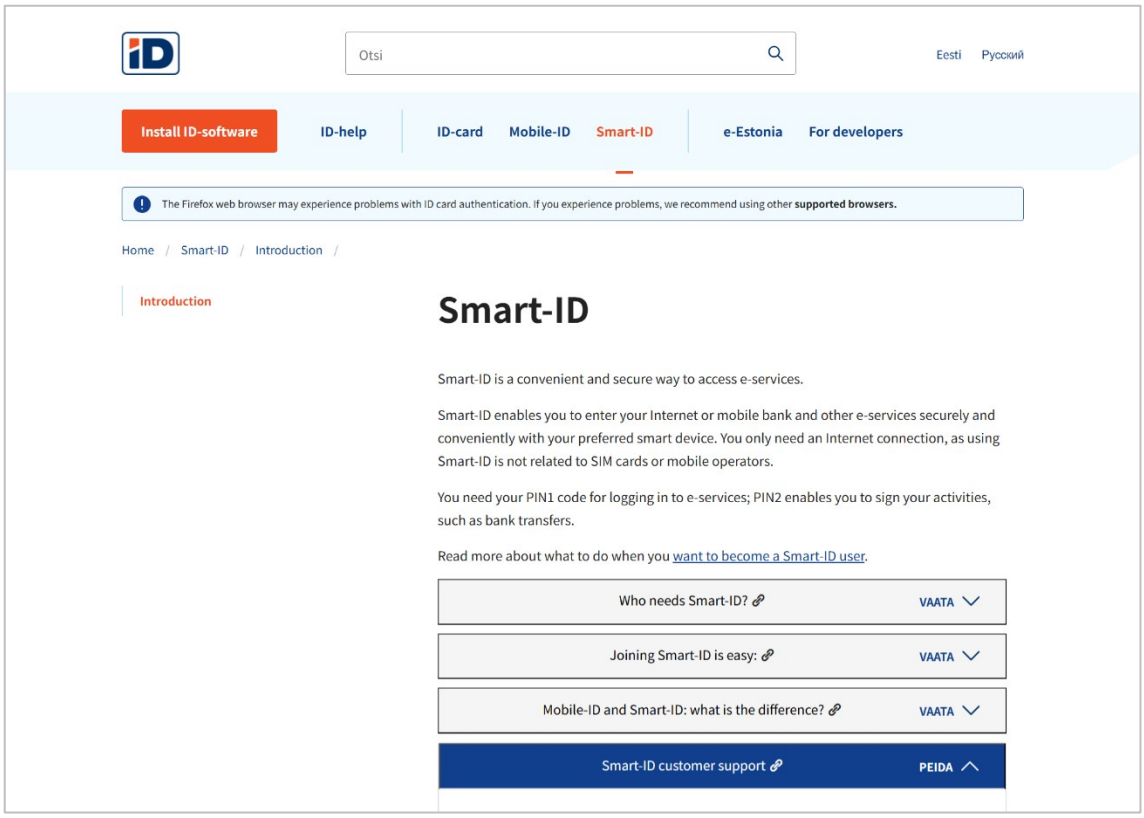

Figure 3-5 Smart-ID

(e-Estonia, n.d.)

3.2.3 Information System Authority (ria-ee)

GitHub Statistics (Total):

- Repositories: 11

- Stars: 184
- Forks: 94
- Branches: 50
- Issues: 10
- Pull requests: 236
- Contributors: 46

The Information System Authority is the core agency responsible for developing, operating, and maintaining the Estonian government's information systems, supporting the technological foundation of the digital government. It oversees national information security measures, cyber incident response, and technical support for ID cards and mobile ID, providing infrastructure that underpins public trust. It also manages the "X-Road" platform, ensuring the interoperability of administrative services and enabling secure data exchange between government agencies. In recent years, it has also focused on enhancing the convenience of citizen services, such as developing the mobile app for the eesti.ee portal.

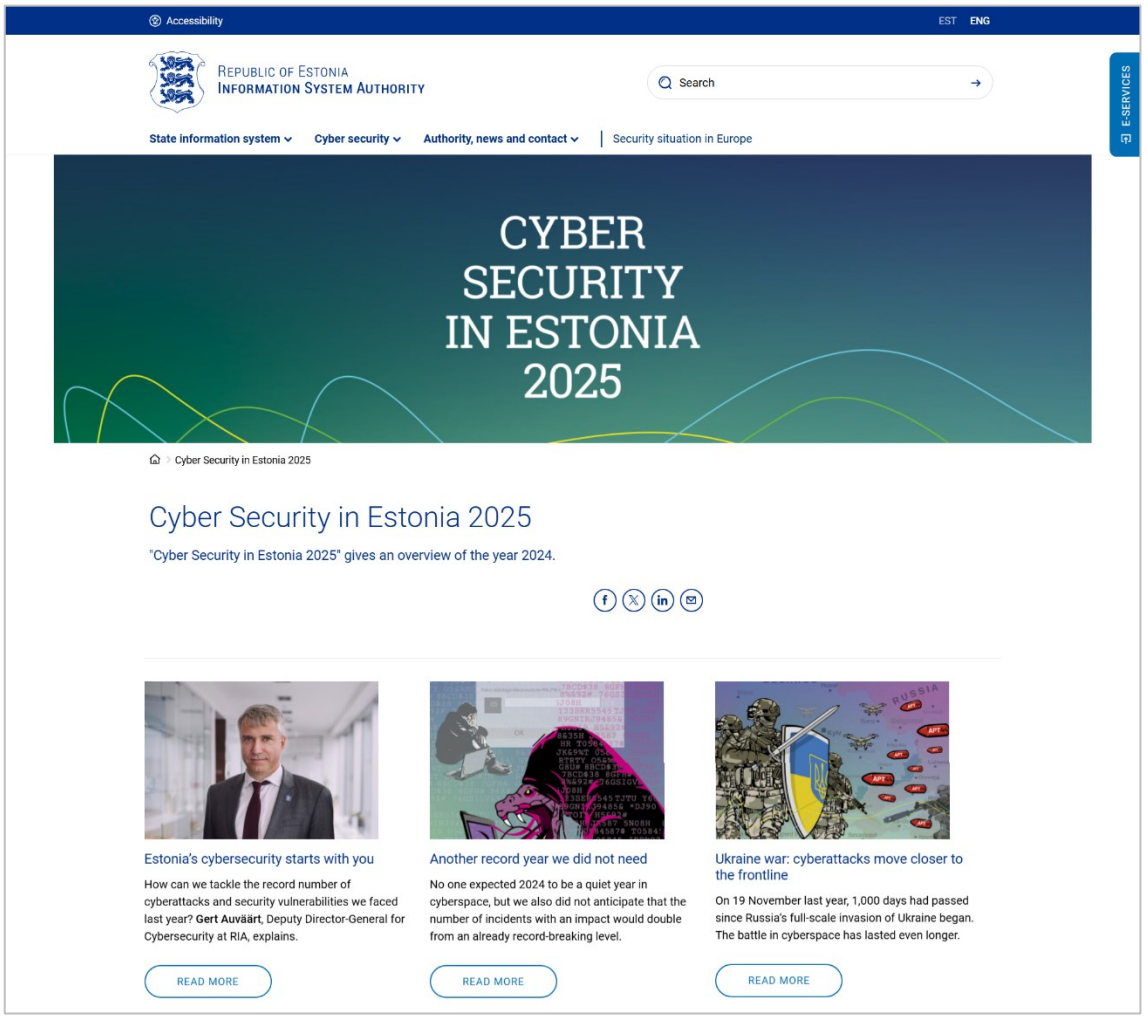

Figure 3-6 Cyber Security in Estonia 2025

(Information System Authority (RIA), n.d.)

3.3 Singapore

GitHub Statistics:

- Number of Organizations: 5
- Number of repositories: 483

Emphasizes collaboration with citizens, promoting policy transparency and public service improvements through OSS.

3.3.1 Open Government Products (opengovsg)

GitHub Statistics (Total):

- Repositories: 128
- Stars: 1,461
- Forks: 451
- Branches: 1,848
- Issues: 2,664
- Pull requests: 26,567
- Contributors: 1,177

Open Government Products is the organization spearheading the Singapore government's open-source strategy, developing numerous tools to enhance transparency in public services and encourage citizen participation. Systems are in place enabling citizens to view and utilize election information, public budgets, policy proposals, and more, thereby supporting democratic decision-making. Development is publicly available on GitHub, fostering active external suggestions for improvements and technical feedback. Its design philosophy emphasizes collaboration with citizens.

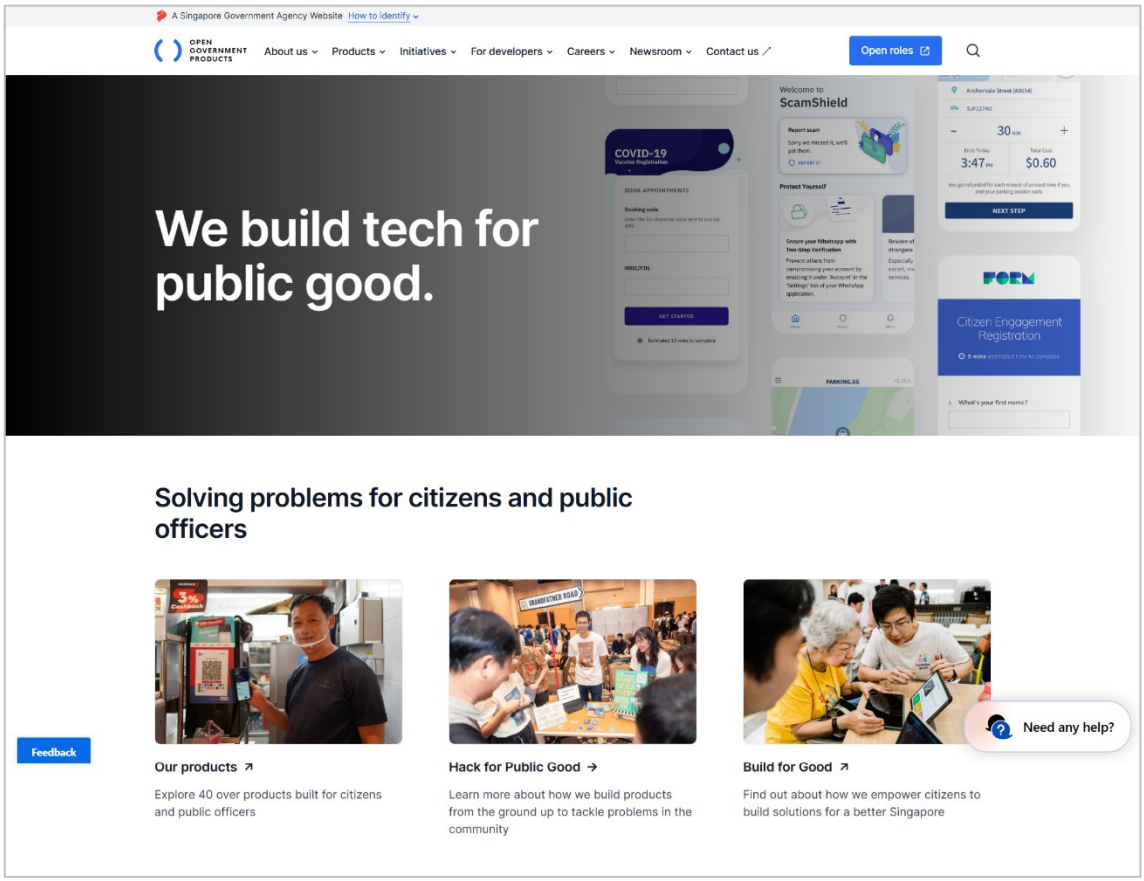

Figure 3-7 Open Government Products

(Government of Singapore, n.d.)

3.3.2 Government Technology Agency of Singapore (GovTech)

GitHub Statistics (Total):

- Repositories: 175
- Stars: 577
- Forks: 394
- Branches: 2,092
- Issues: 377
- Pull requests: 4,816
- Contributors: 1,298

GovTechSG, as the technology arm of the Singapore government, plays a central role in the Smart Nation initiative. It drives the advancement and efficiency of public

services through the adoption of AI, IoT, and cloud technologies. Key projects include TraceTogether (contact tracing app) and SingPass (digital ID), supporting services closely integrated into citizens' daily lives. Its development framework balances technical reliability with policy alignment, earning high international recognition.

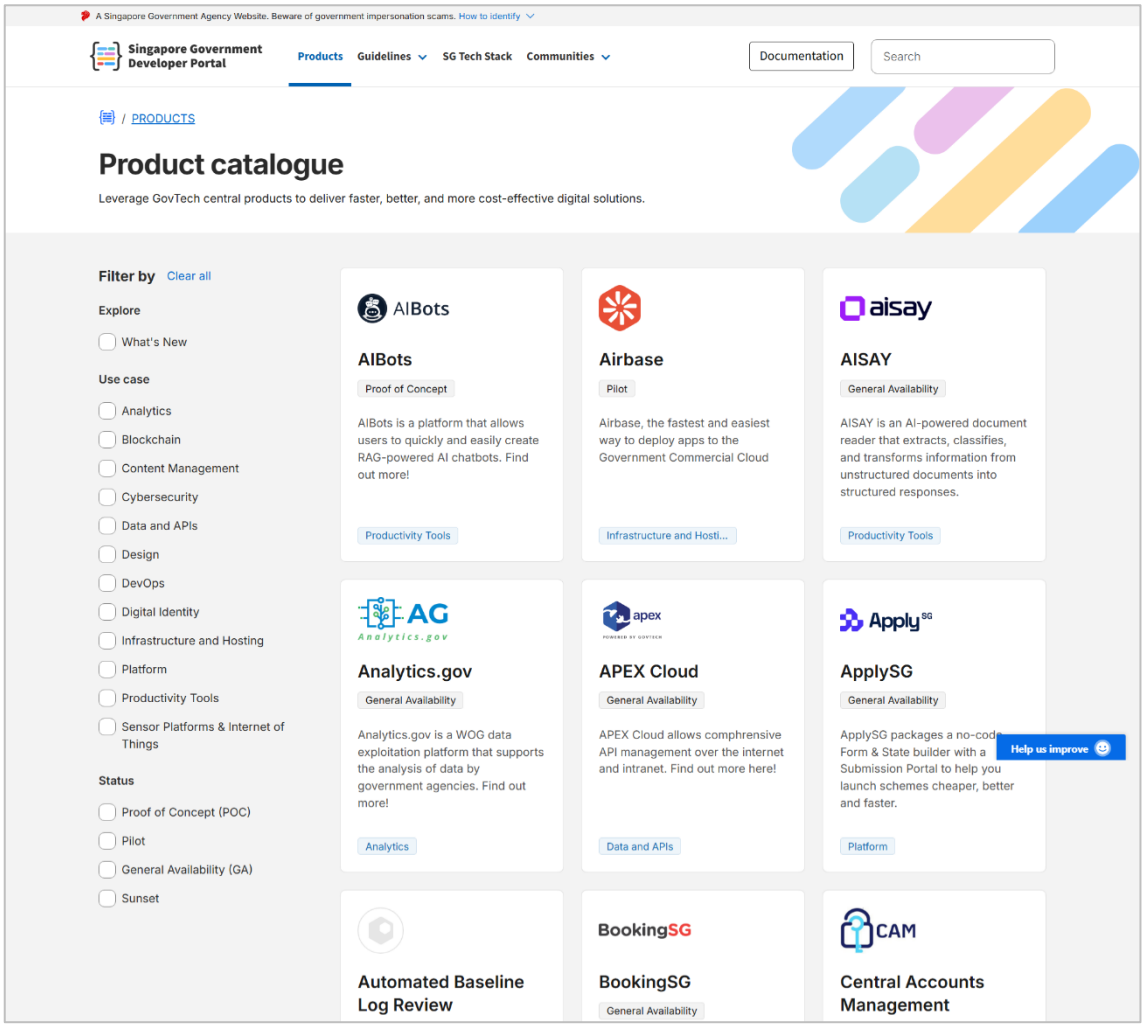

Figure 3-8 Product Catalogue

(Government of Singapore, n.d.)

3.4 Germany

GitHub Statistics:

- Number of Organizations: 8
- Number of repositories: 276

Multiple agencies collaborate in public health and administrative services, implementing distributed development utilizing OSS.

3.4.1 corona-warn-app

GitHub Statistics (Total):

- Repositories: 39
- Stars: 10,674
- Forks: 2,143
- Branches: 246
- Issues: 4,824
- Pull requests: 15,645
- Contributors: 743

The Corona-Warn-App is a contact tracing app developed as a measure against the novel coronavirus. Its design, which balances privacy protection and transparency, has received high international acclaim. The implementation of Bluetooth-based contact detection technology and decentralized data management has influenced the development of public health apps in other countries. Commissioned by the German Federal Government, it was jointly developed by government agencies such as the Robert Koch Institute (RKI) and the Federal Office for Information Security (BSI), along with private companies including SAP and Deutsche Telekom.

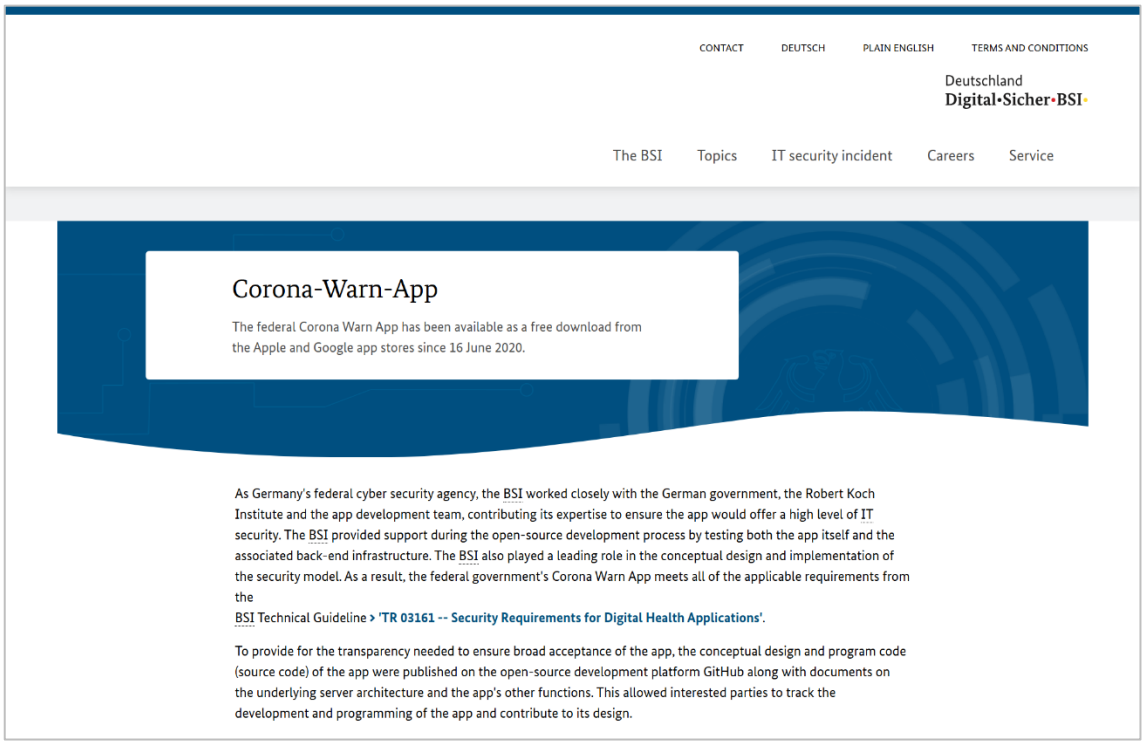

Figure 3-9 Corona-Warn-App

(Federal Office for Information Security (BSI), n.d.)

3.4.2 DigitalService GmbH des Bundes (digitalservicebund)

GitHub Statistics (Total):

- Repositories: 95
- Stars: 256
- Forks: 57
- Branches: 396
- Issues: 217
- Pull requests: 17,507
- Contributors: 877

DigitalService GmbH des Bundes is an organization promoting the digitization of administrative services for the German government. It aims to improve user experience while enhancing operational efficiency through various projects. Emphasis is placed on user-centered service design, such as improving online application forms and integrating the design of administrative portals. The

organization prioritizes the integration of design and technology, with careful consideration given to accessibility and multilingual support. Active collaboration with private-sector UX experts significantly contributes to improving the quality of administrative services.

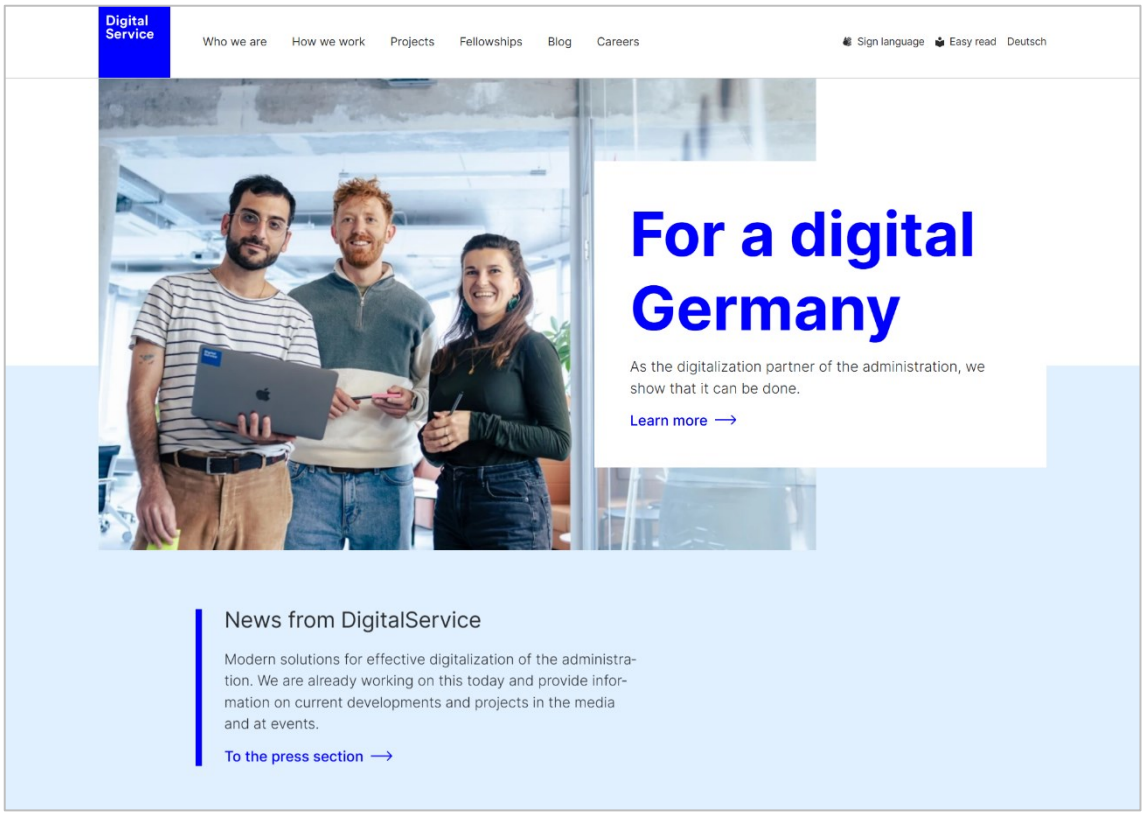

Figure 3-10 DigitalService

(DigitalService GmbH of the Federal Government, n.d.)

3.4.3 Robert Koch Institute (Robert Koch-Institut / RKI)

GitHub Statistics (Total):

- Repositories: 58
- Stars: 651
- Forks: 154
- Branches: 219
- Issues: 458
- Pull requests: 3,305
- Contributors: 323

The Robert Koch Institute is the core public health agency under the German Federal Ministry of Health, responsible for infectious disease control, epidemiological investigations, and health policy support. It was deeply involved in developing the Corona-Warn-App, providing technical oversight for the design of the contact detection algorithm and data management. Its research findings and technical tools are openly published and highly regarded in the international public health field.

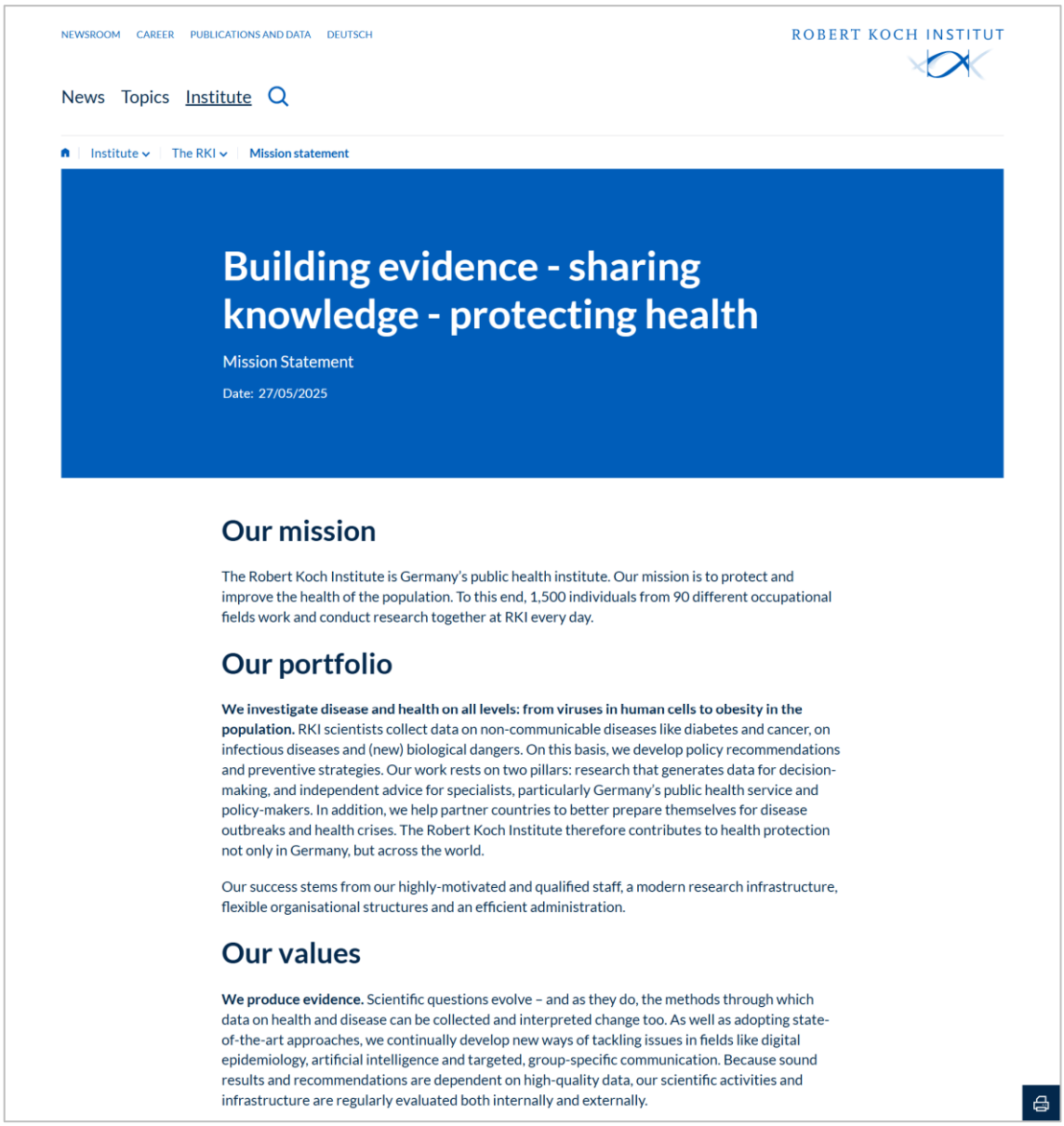

Figure 3-11 Mission Statement

(The Robert Koch Institute, n.d.)

3.5 France

GitHub Statistics:

- Number of Organizations: 25
- Number of repositories: 2,359

Supports rapid service development by leveraging OSS with a startup-like approach to address administrative challenges.

3.5.1 National Digital Services Incubator (Incubateur de Services Numériques de l'État / betagouv)

GitHub Statistics (Total):

- Repositories: 658
- Stars: 2,734
- Forks: 2,250
- Branches: 12,055
- Issues: 22,595
- Pull requests: 92,309
- Contributors: 10,589

Betagouv is an organization established as the French government's digital services incubator. Aiming to rapidly improve administrative services, it supports the experimental and flexible development of services by startup-style development teams. It deploys prototypes across diverse fields such as tax filing, employment support, and education, enhancing the agility of government and its responsiveness to citizen needs. Services are published on GitHub, emphasizing transparency and reusability as open source.

Figure 3-12 Discover the program

(beta.gouv.fr, n.d.)

3.5.2 Social Ministries Digital Factory (La Fabrique numérique des Ministères Sociaux / SocialGouv)

GitHub Statistics (Total):

- Repositories: 326
- Stars: 1,299
- Forks: 636
- Branches: 5,426
- Issues: 10,196
- Pull requests: 51,171
- Contributors: 2,639

SocialGouv is an organization promoting digitalization in the social security and welfare sectors. It provides information, application support, and data disclosure in areas closely tied to citizens' lives, such as employment, healthcare, and family

support. It adheres to thorough user-centered design and prioritizes accessibility. Operating as part of BetaGouv.fr, it also supports rapid digital responses to administrative challenges.

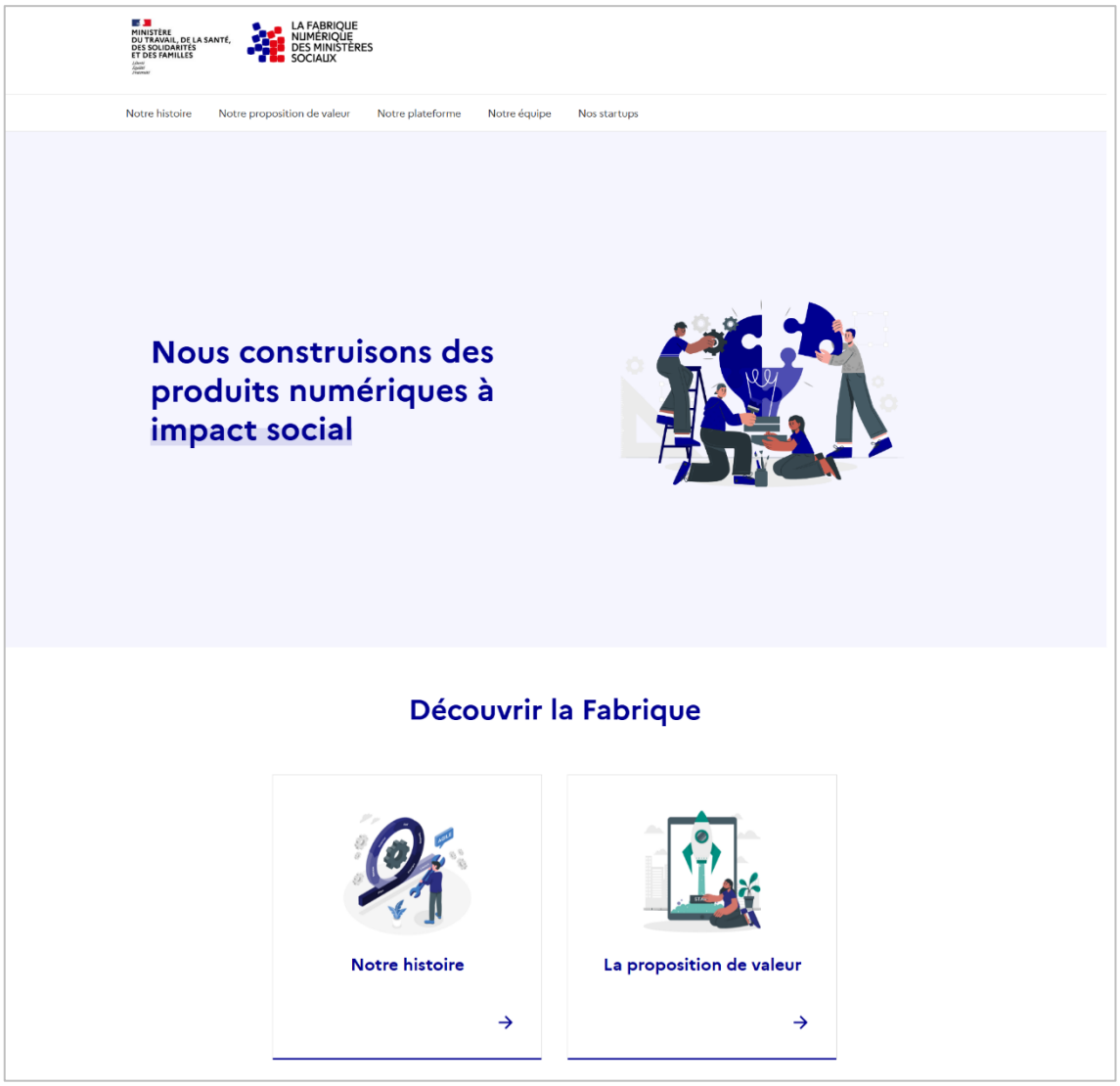

Figure 3-13 The Digital Factory of the Social Ministries

(La Fabrique numérique des Ministères Sociaux, n.d.)

3.5.3 etalab

GitHub Statistics (Total):

- Repositories: 293
- Stars: 2,725
- Forks: 1,276

- Branches: 1,567
- Issues: 4,519
- Pull requests: 13,791
- Contributors: 1,743

Etalab is the core organization responsible for the French government's open data strategy. It designs and operates the government data portal data.gouv.fr, enhancing the transparency and reusability of public information through API development and data publication. It publishes diverse datasets including geographic information, statistics, and administrative procedures, promoting their utilization by researchers, businesses, and citizens.

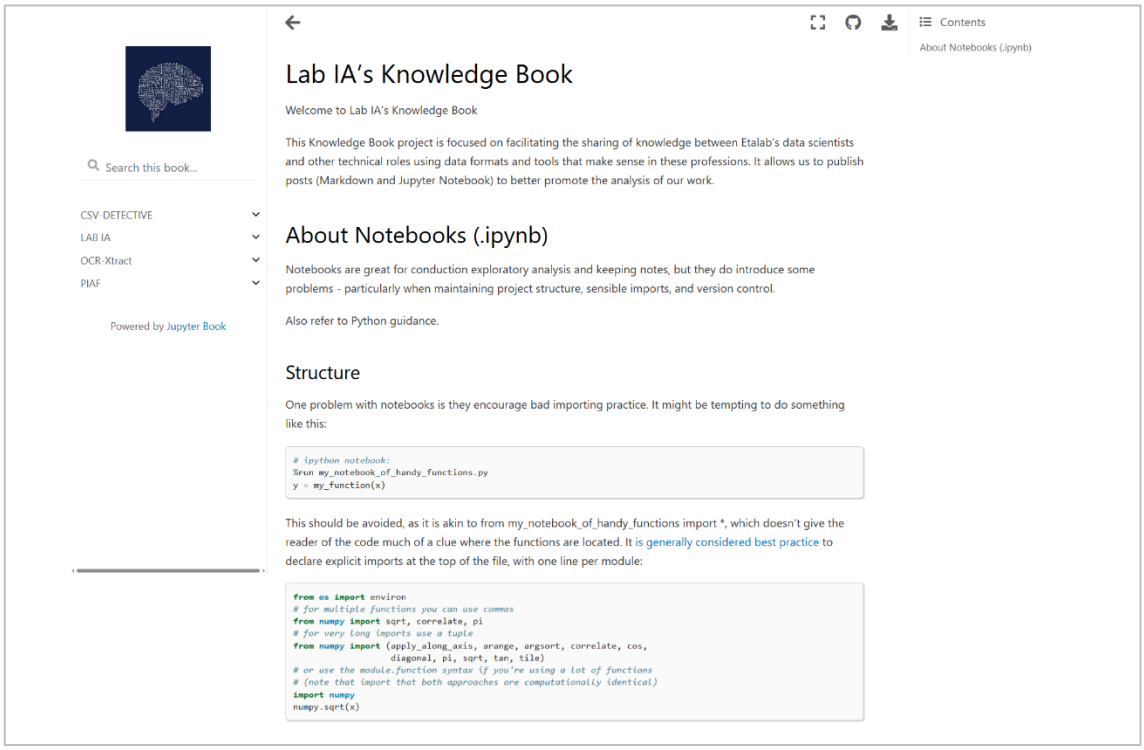

Figure 3-14 Lab IA's Knowledge Book

(etalab-ia, n.d.)

3.6 United Kingdom

GitHub Statistics Data:

- Number of organizations: 30

- Number of repositories: 16,058

Centered around GOV.UK, achieving integration and standardization of government services through OSS, with a focus on UX and reusability.

3.6.1 Government Digital Service (alphagov)

GitHub Statistics (Total):

- Repositories: 1,659
- Stars: 13,727
- Forks: 7,961
- Branches: 17,572
- Issues: 16,528
- Pull requests: 300,912
- Contributors: 29,894

Alphagov is the organization that develops and operates the UK government's unified web services, centered around GOV.UK. It rigorously applies user-centered design to enhance the searchability, understandability, and simplicity of administrative information and procedures. Incorporating continuous user testing and improvement cycles, it contributes to enhancing the UX of public services. Its design guidelines and component libraries are publicly available, widely recognized as a reference case for government portal development in other countries.

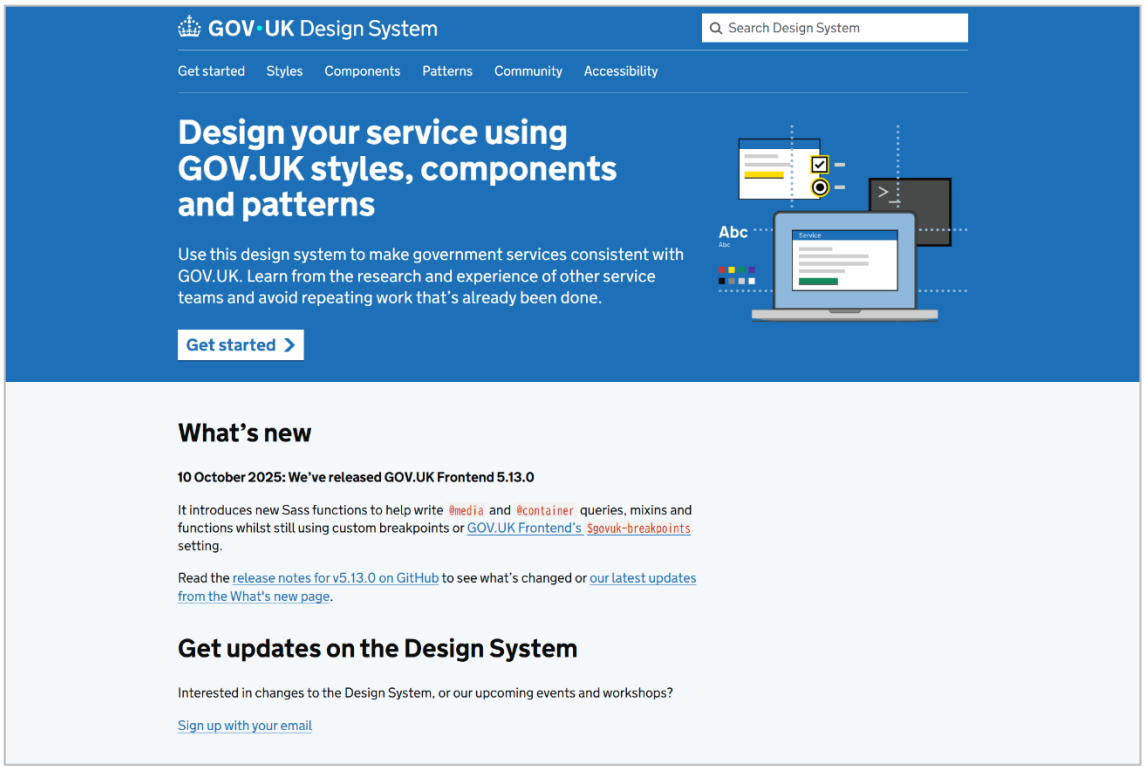

Figure 3-15 GOV.UK Design System

(GOV.UK, n.d.)

3.6.2 Ministry of Justice (Ministry of Justice / ministryofjustice)

GitHub Statistics (Total):

- Repositories: 2,380
- Stars: 3,650
- Forks: 3,458
- Branches: 21,605
- Issues: 25,256
- Pull requests: 388,455
- Contributors: 19,464

The Ministry of Justice is an organization promoting digital services related to the justice system. It undertakes a wide range of projects, including the digitization of court proceedings, search and viewing services for legal information, and prison management systems. Its designs are crafted to complement the complexity of the

legal system through technology, with numerous features supporting user understanding and access. It is recognized as a leading example of digitalization within the legal field.

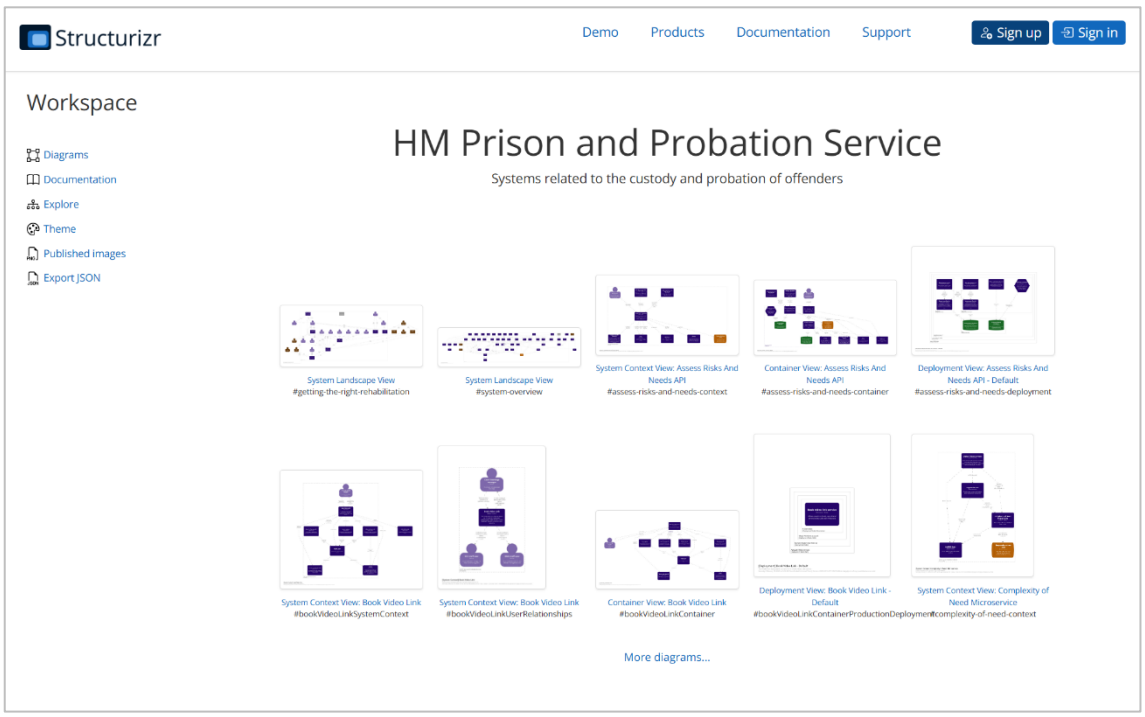

Figure 3-16 HM Prison and Probation Service

(Structurizr, n.d.)

3.6.3 Her Majesty's Revenue and Customs (hmrc)

GitHub Statistics (Total):

- Repositories: 1,633
- Stars: 1,974
- Forks: 3,317
- Branches: 10,047
- Issues: 1,685
- Pull requests: 197,758
- Contributors: 29,133

HMRC delivers digital services in the tax and finance sector. It balances operational efficiency with citizen convenience through online tax filing for taxpayers,

API integration for businesses, and tax data visualization. Designed with a strong emphasis on security and reliability, it is recognized as a successful example of government OSS in the financial sector.

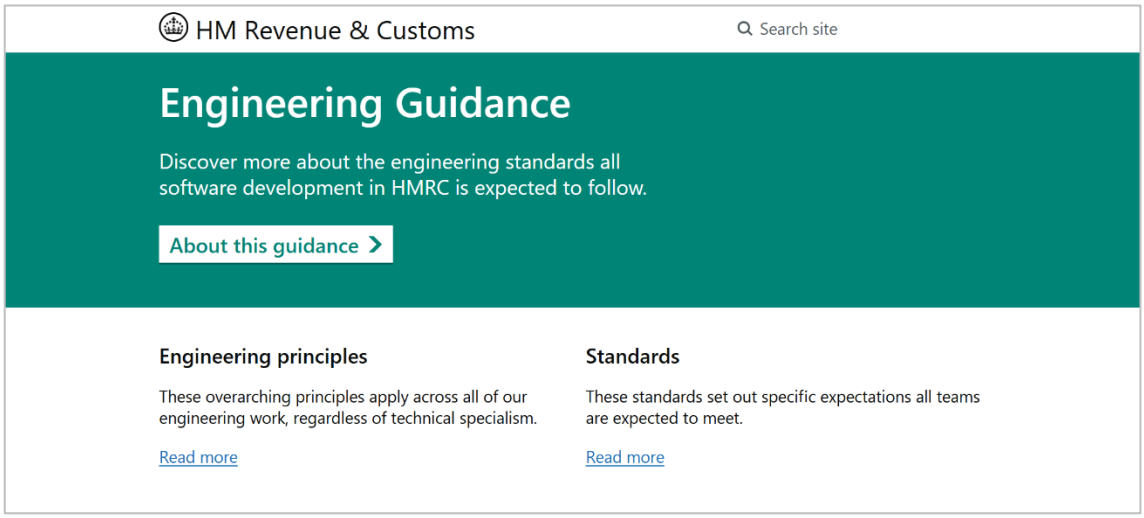

Figure 3-17 Engineering Guidance

(HM Revenue & Customs, n.d.)

3.7 United States

GitHub Statistics:

- Number of Organizations: 71
- Number of repositories: 10,300

In addition to OSS releases in science and technology fields by national laboratories, government agencies also promote common platforms and service improvements through OSS.

3.7.1 NASA

GitHub Statistics (Total):

- Repositories: 596
- Stars: 53,732
- Forks: 14,128
- Branches: 5,925

- Issues: 18,113
- Pull requests: 35,138
- Contributors: 3,323

NASA publishes research results in the fields of space and Earth science as open source. Tools for weather simulation, orbital calculations, image analysis, and more are increasingly being reused by educational institutions and researchers, contributing to the democratization of science and technology. Documentation and datasets are also well-developed, serving as a foundation for international research collaboration.

Figure 3-18 Open Source Mission Control Software

(NASA, n.d.)

3.7.2 General Services Administration (GSA)

GitHub Statistics (Total):

- Repositories: 1,019
- Stars: 11,774
- Forks: 7,115
- Branches: 11,681
- Issues: 23,885
- Pull requests: 58,082
- Contributors: 8,401

GSA is the organization responsible for building the IT infrastructure across the entire U.S. government. It supports the digital transformation of government by providing common services and design guidelines. It develops and publishes generic tools such as form management, authentication infrastructure, and UI components, promoting cross-agency reuse. It plays a central role in establishing and promoting technical standards.

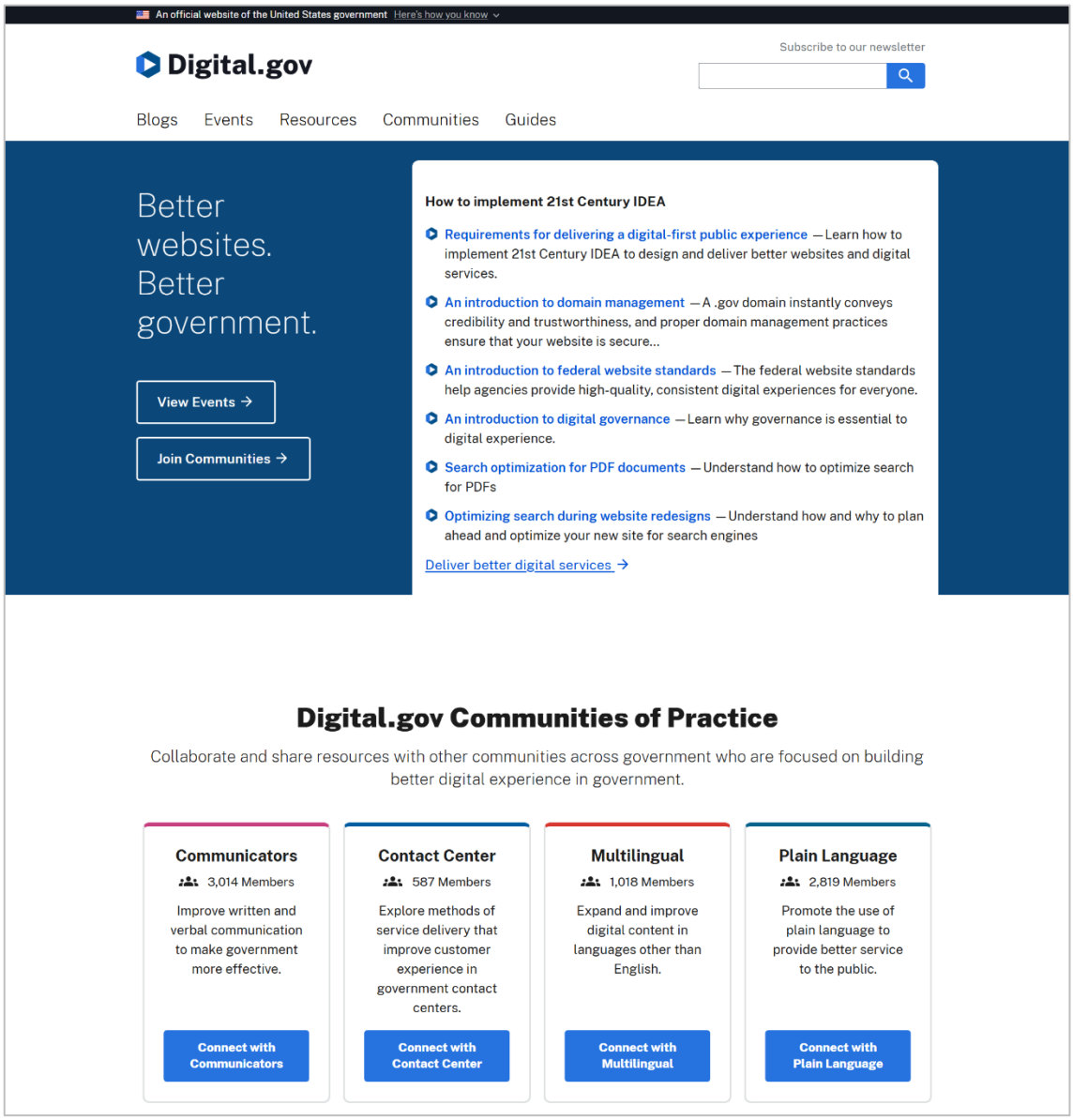

Figure 3-19 Digital.gov

(U.S. General Services Administration, n.d.)

3.7.3 Lawrence Livermore National Laboratory (LLNL)

GitHub Statistics (Total):

- Repositories: 608
- Stars: 13,008
- Forks: 3,893
- Branches: 4,466

- Issues: 9,740
- Pull requests: 22,032
- Contributors: 5,101

LLNL, as a U.S. national laboratory, conducts open-source software activities in the fields of high-performance computing, simulation, and data analysis. It releases open-source software across diverse domains, including numerical analysis, finite element methods, radiation simulation, compression algorithms, package management, visualization, compiler technology, and mathematical optimization using AI. These tools are also utilized in applied fields such as energy, security, materials science, meteorology, space, and healthcare.

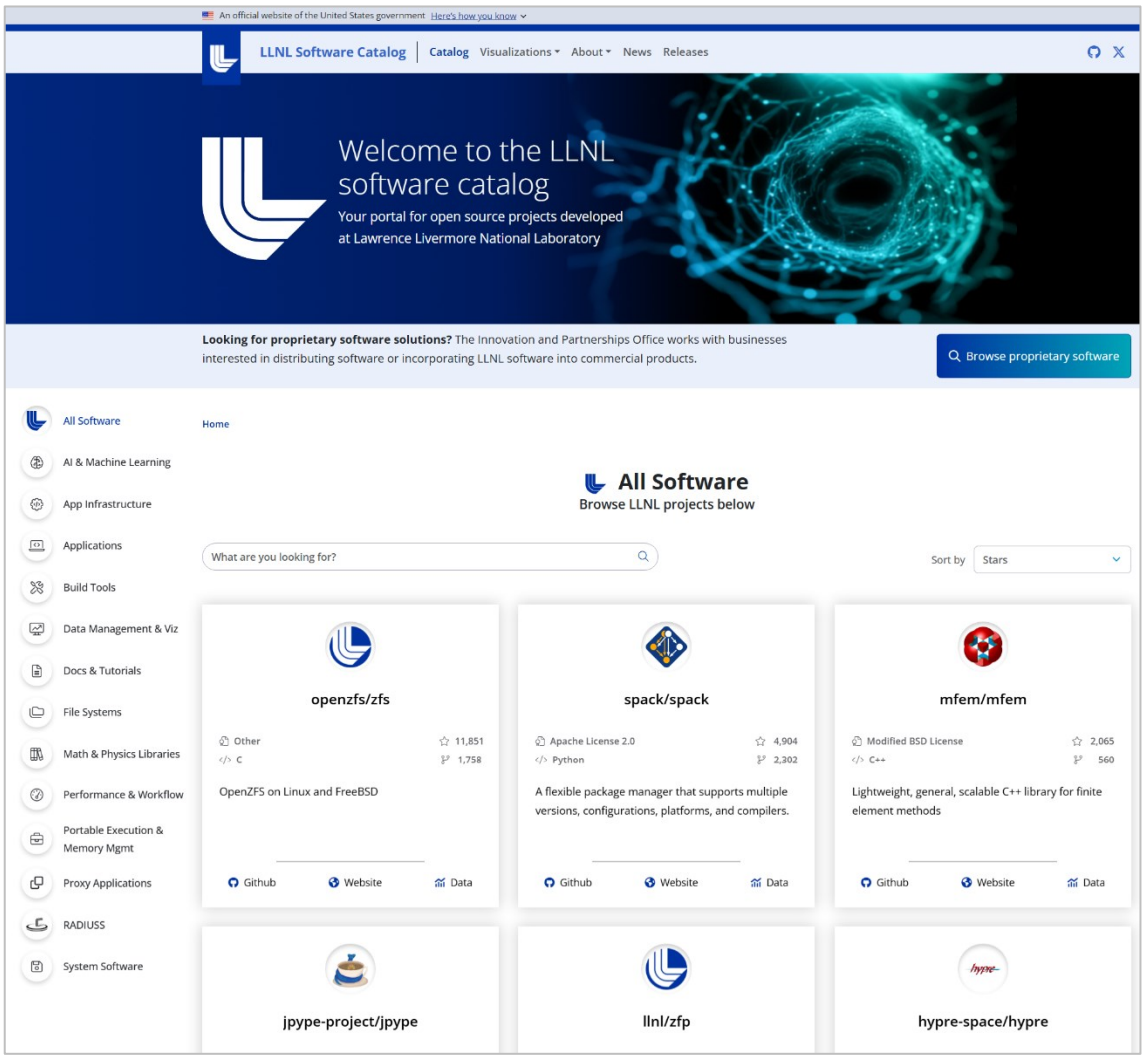

Figure 3-20 LLNL Software Catalog

(Lawrence Livermore National Laboratory, n.d.)

4. Analysis

4.1 Purpose and Overview of the Analysis

Based on the data collected in Chapter 3, this chapter aims to identify characteristics of open-source software (OSS) activities within national governments. We collected statistics on publicly available repositories and contributions on GitHub, along with OSS-related policies from external data sources for each country and presented the results of observing the relationship between these two sets of data.

It should be noted that due to the limitations of the collected data and the absence of qualitative research such as organizational interviews, discrepancies between these analysis results and actual activities are anticipated. However, sufficient information has been gathered to present these findings as hypotheses for future research and policy discussions. Therefore, this chapter provisionally presents the analysis results based on the collected data.

This chapter presents analysis results based on three perspectives: "number of activities," "time axis," and "technology field." Analysis 1 organizes the scale (activity level) and maturity of OSS disclosure activities within public institutions in each country, as well as other characteristics revealed by the data, based on country-specific aggregated results from the collected data. Analysis 2 then focuses on the temporal changes in the number of OSS releases. It clarifies the process of these changes using the number of OSS releases organized chronologically. Furthermore, it identifies policies formulated and government movements occurring around the timing of these changes, presenting them as hypotheses for events that may have influenced OSS release activities. The relationship between policy and OSS disclosure activities is presented as an observation of contemporaneous trends; no causal assertions are made. Analysis 3 attempts to classify the collected data by technology field to identify trends. Note that this analysis is purely exploratory and descriptive, without statistical verification.

4.2 Analysis 1: Number of OSS Releases by Country

4.2.1 Data Overview

The analysis in this chapter is based on GitHub activity data acquired between September and October 2025. Tables 4-1 and 4-2 present key metrics for each country's OSS activity (number of repositories, stars, forks, branches, issues, pull requests, contributors, and organizations). This data provides a foundation for comparing the activity levels, developer community maturity, and organizational structures of OSS initiatives across countries.

Table 4-1 (Activity) Measurement Data for Repositories, Stars, Forks, and Branches (as of September 2025)

Country	Number of Repositories	Stars	Fork Count	Branches
Japan	626	6214	1658	1863
Estonia	196	1333	819	937
Singapore	483	2869	1113	5835
Germany	276	12911	2657	1752
France	2359	23622	8723	28100
United Kingdom	16058	74112	34051	214172
United States	10300	206907	86611	93257

Table 4-2 (Maturity) Measurement Data for issue count, pull request count, contributor count, and (Organizational reach) number of organizations (as of September 2025)

Country	Number of Issues	Pull Request Count	Number of Contributors	Number of Organizations

Japan	1204	3801	4359	22
Estonia	1058	6050	1464	6
Singapore	5137	34608	6008	5
Germany	6239	39411	3141	8
France	64501	238886	22875	25
United Kingdom	86241	1903128	160810	30
United States	239529	542434	73764	71

4.2.2 Activity Level and Maturity

The activity level of OSS efforts and the maturity of improvement cycles vary significantly by country.

The UK stands out in both activity and maturity of improvement activities, recording 16,058 repositories and approximately 1.9 million pull requests.

The United States also demonstrates high maturity with 10,300 repositories and over 500,000 pull requests.

France recorded approximately 240,000 pull requests across 2,359 repositories, indicating active improvement efforts despite its medium scale.

Germany has 276 repositories and approximately 39,000 pull requests, characterized by intensive activity related to security and digital sovereignty.

Singapore has 483 repositories and approximately 34,000 pull requests, showing strong activity in smart city-related areas.

Japan has 626 repositories with approximately 3,800 pull requests, while Estonia has 196 repositories with approximately 6,000 pull requests. Although smaller in scale, both show concentrated improvements in specific areas.

These differences may stem from variations in policy implementation, timing and administrative structures.

4.2.3 Characteristics of National Activities Seen Through Repositories and Pull Requests

Figures 4-1 and 4-2 illustrate the relationship between the horizontal axis (number of repositories, indicating activity level) and the vertical axis (number of pull requests, indicating developer community maturity) in OSS activities by national governments.

(Figure 4-2 is an enlarged view of the lower-left area of Figure 4-1)

Overall, the UK and US stand out. The UK recorded over 1.9 million pull requests for approximately 16,000 repositories, indicating very high activity scale (activity level) and developer community maturity. The US also demonstrated strong activity in both scale and improvement cycles, with over 500,000 pull requests for approximately 10,000 repositories.

France, with around 2,300 repositories and over 200,000 pull requests, exhibits active improvement despite its medium scale.

Conversely, Japan, Estonia, Singapore, and Germany have repository counts in the hundreds and pull request counts below tens of thousands, but their activity is characterized by concentration in specific fields. Notably, Germany and Singapore have a high number of pull requests relative to their repository counts, indicating a lean, high-quality improvement cycle.

This comparison suggests that the "activity level" and "maturity" of OSS activities reflect different approaches by country, likely influenced by differences in policy and organizational structure.

Next, we will comprehensively compare multiple metrics—including repository count, pull request count, star count, fork count, branch count, issue count, and contributor count—to analyze the structural characteristics of OSS activities in each country.

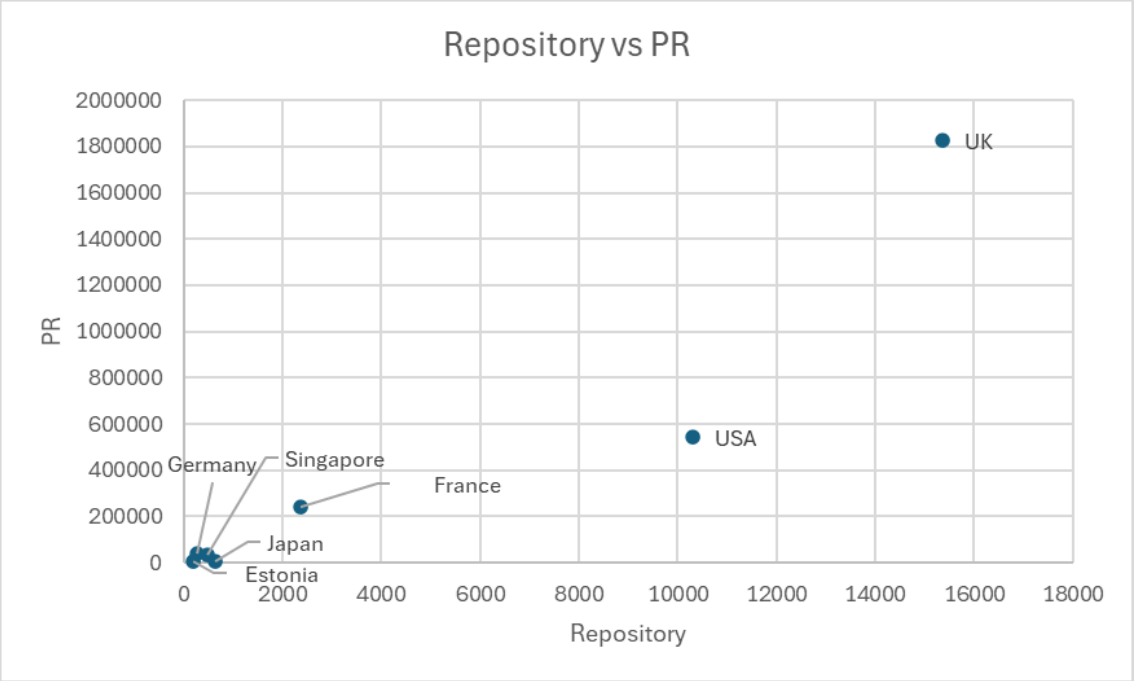

Figure 4-1 Repository Count and Pull Request Count (7-Country Comparison)

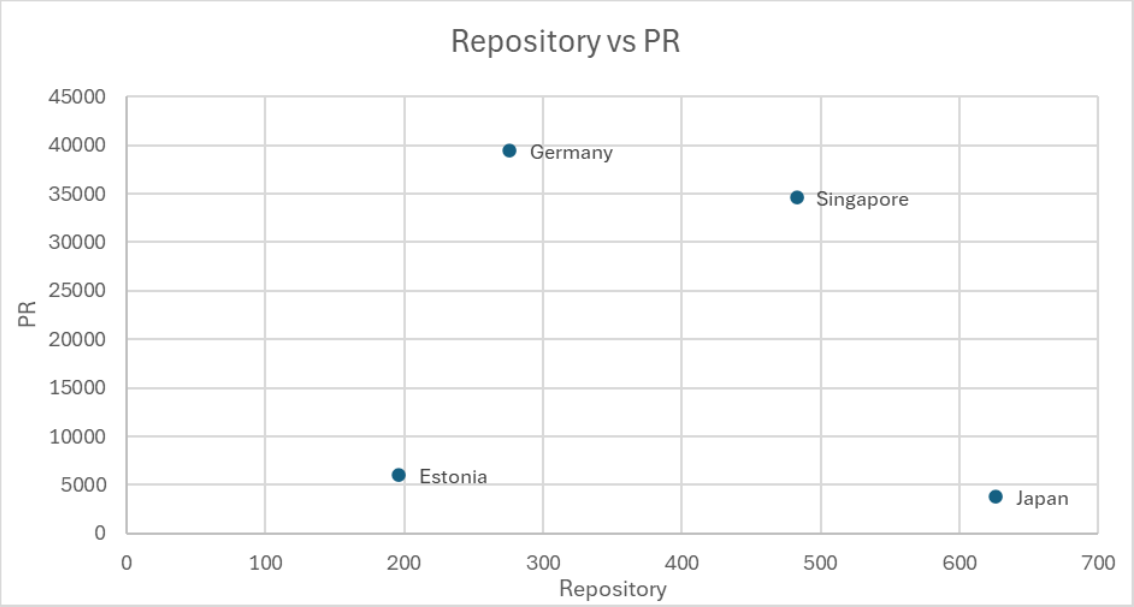

Figure 4-2 Repository Count and Pull Request Count (4-Country Comparison)

4.2.4 Characteristics of Each Country Based on Key Indicators

Figures 4-3 and 4-4 are radar charts comparing key indicators. To create these radar charts, each indicator was normalized using its maximum value as the baseline. The absolute values of each indicator vary significantly in magnitude,

making direct comparison difficult. Furthermore, since the theoretical maximum value for each indicator is unknown, normalizing within the observed data range is more reasonable than comparing absolute values. Therefore, by setting the maximum value for each item to 1.0 and representing other countries as ratios relative to this, it became possible to show relative relationships. This method eliminates scale differences between items, enabling comparison across all indicators. As an example of normalization, Japan's normalized value for repositories is calculated as Japan's repository count (626) divided by the UK's repository count (16,058) (626/16,058).

Comparing OSS activities by government organizations across countries using metrics such as repository count, star count, fork count, branch count, issue count, pull request count, and contributor count revealed significant differences in activity scale (activity level) and maturity of the improvement cycle.

The UK and US stand out across all metrics, leading the world in both the scale (activity level) and maturity of their OSS activities. The UK recorded 16,058 repositories and approximately 1.9 million pull requests. Despite having a relatively small number of organizations (30), it is likely to employ a centralized, large-scale open-source strategy. The US, meanwhile, has 10,300 repositories and overwhelming numbers of stars and forks, suggesting it holds numerous OSS projects with high international usage and visibility.

France, while medium-sized, exhibits highly active improvement efforts. With approximately 240,000 pull requests and 64,501 issues recorded across 2,359 repositories, it demonstrates a strong user-participation-driven improvement culture and high maturity in collaborative development.

Germany has a low number of repositories but a high volume of pull requests. This structure indicates a focus on investing resources into a small number of key projects, aligning with its policy emphasis on security and digital sovereignty-related

development.

Singapore stands out with a high number of branches, indicating active parallel development and experimental feature additions. This suggests diverse smart city-related trials are underway.

Japan and Estonia, though smaller in scale, exhibit distinctive improvement patterns. Japan has a relatively high number of contributors but fewer pull requests, suggesting potentially rigorous code review and integration processes. Estonia, with only 196 repositories, recorded approximately 6,000 pull requests, highlighting its highly efficient improvement cycle. Furthermore, the number of pull requests (1,058) significantly exceeds the number of issues, suggesting a tendency for reported problems to be resolved quickly. This indicates that Estonia likely has a development culture focused on intensive improvement activities for a small number of projects, prioritizing high improvement rates and rapid response.

The shape of the radar chart also clearly reveals each country's strategic characteristics. The UK and US are omnidirectional, excelling in all areas: scale, popularity, improvements, and personnel. France, on the other hand, leans heavily toward issues and pull requests, forming a developer community-driven improvement culture. Germany and Singapore show sharp peaks in specific metrics, indicating specialized, focused activities. Japan and Estonia are small-scale and efficiency-focused, likely influenced by differences in the timing of policy implementation and administrative structures.

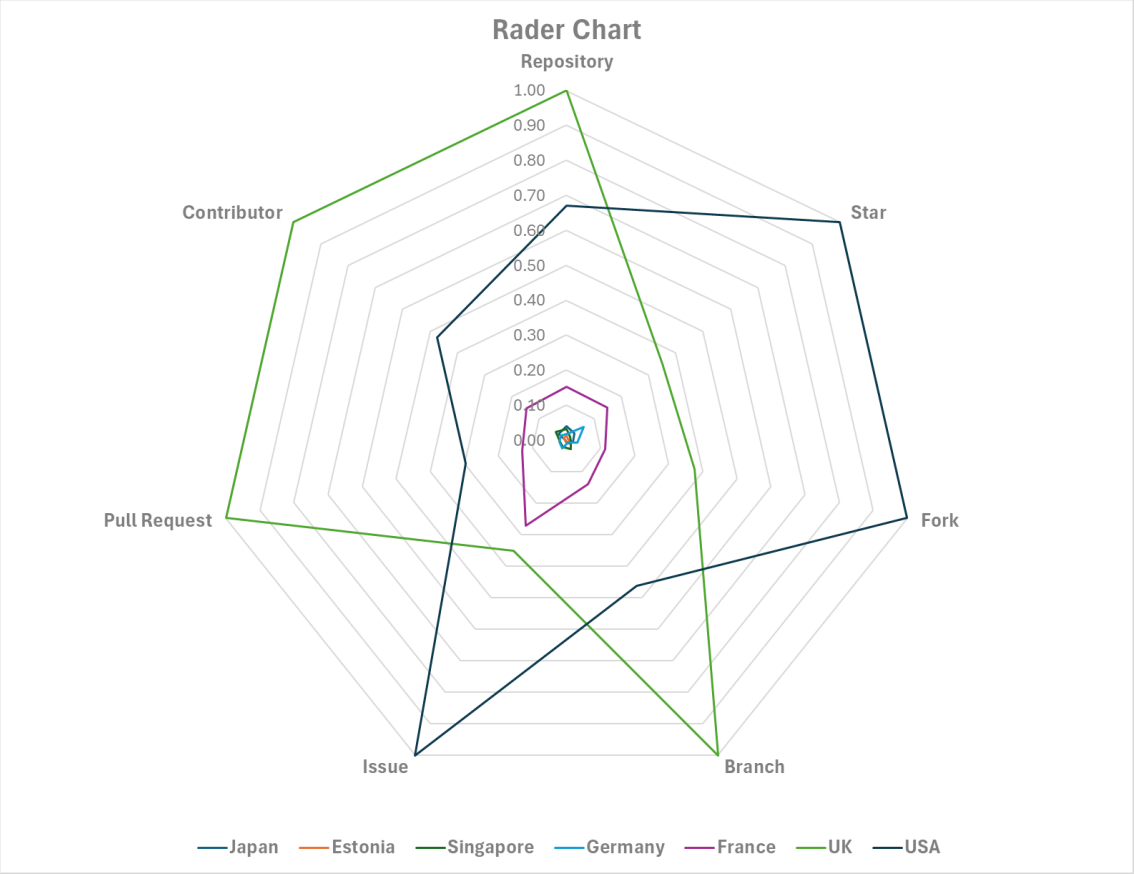

Figure 4-3 Radar Chart (7-Country Comparison)

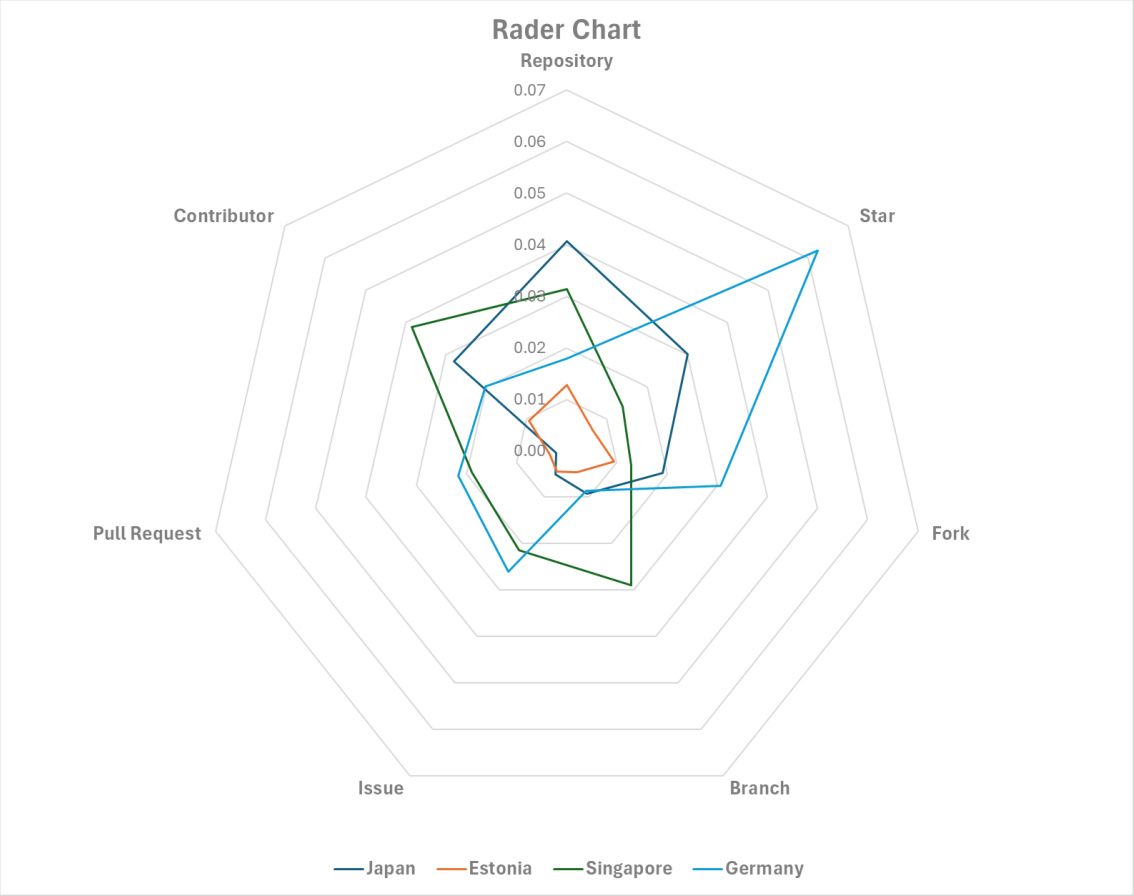

Figure 4-4 Radar Chart (4-Country Comparison)

4.3 Analysis 2: Analysis by Time Series

To understand the temporal evolution of OSS activities across countries, we aggregated the initial commit dates (publication dates) of OSS repositories and quantitatively calculated the annual number of OSS releases. Using initial commit dates enabled an objective analysis of the start dates of OSS activities by each government and the trends in the number of releases.

A simultaneous increase in policy implementation timing and OSS publication numbers was observed across multiple countries. However, numerous confounding factors exist, and establishing causality is beyond the scope of this edition.

Particularly in the UK, US, France, and Germany, OSS releases surged immediately after policy implementation, suggesting policies may have strongly contributed to activity activation. Conversely, cases like the US and Singapore show

active OSS activity predating policies, indicating policies may also accelerate and institutionalize existing trends.

These trends suggest that institutionalizing and implementing policies in government OSS activities can have a significant impact on expanding activity volume and improving quality.

4.3.1 Japan

Japan has 22 GitHub organizations and 626 repositories, with OSS releases surging between 2013 and 2015. This increase is likely attributable to the government's push for openness following the 2012 e-Government Open Data Strategy and the 2013 Basic Policy on Open Data. Since 2018, the publication of the Digital Government Promotion Standard Guidelines via the Government CIO Portal has provided institutional backing for OSS utilization, leading to a steady increase in releases. The establishment of the Digital Agency in 2021 was a major turning point; the inclusion of "Open by Default" and "Cloud by Default" in its priority plans accelerated OSS releases. Since 2022, the number of releases has been steadily increasing. These trends suggest that policy-driven institutional support may be having an impact.

- Open Data Strategy (2012)
  Promoted the disclosure and reuse of administrative information. Established the foundation for OSS utilization by fostering a trend toward openness.
- Government CIO Portal OSS Recommendations (Around 2018~)
  Expanded OSS options in government procurement. Ensured transparency in technology selection through standard guideline sets.
- Establishment of the Digital Agency (2021)
  Establishes foundations for promoting OSS utilization. Advances standardization and openness of government systems.

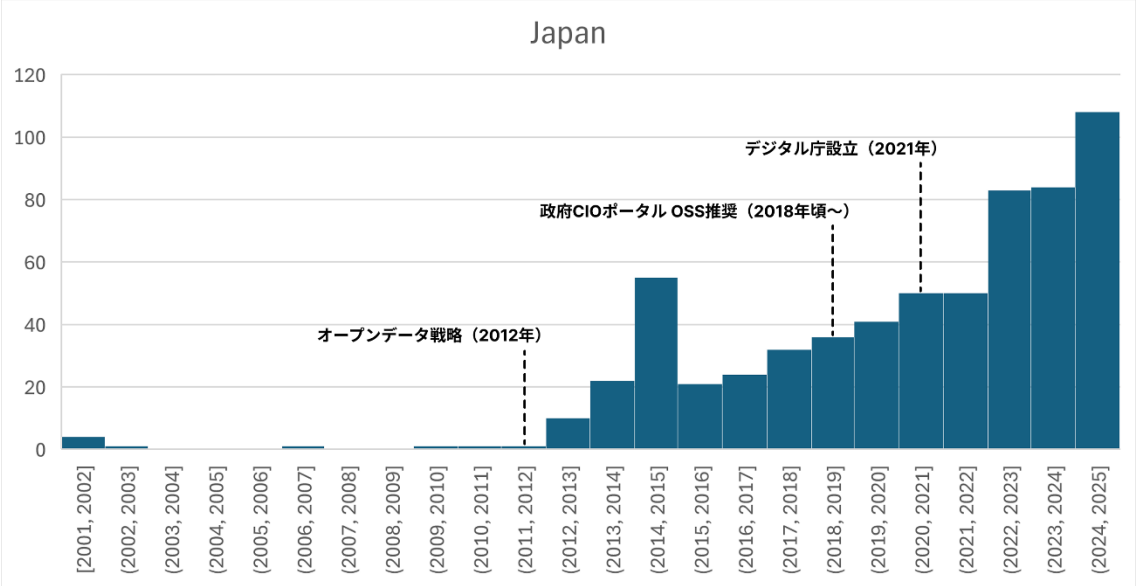

Figure 4-5 Annual trend in OSS repository releases (Japan)

4.3.2 Estonia

Estonia has 6 GitHub organizations and 196 repositories, with OSS releases increasing sharply since 2013.This growth is attributed to the "Digital Agenda 2020" formulated in 2013, which strengthened the digitization and openness of government services. The number of releases maintained a high level particularly from 2014 to 2017, influenced by the OSS release of X-Road (published on GitHub in 2014) and efforts to promote international reuse. Although there has been a slight downward trend since 2018, the number remains at a steady level. This is due to the continued use of OSS accompanying the expansion of e-Residency and cross-border services. These trends suggest that Estonia's digital policy strongly supports OSS releases, and particularly that international collaboration and the opening of public infrastructure contribute to the growth of the OSS ecosystem.

- Digital Agenda 2020 (2013)
  Promotion of digital public services, including OSS.
- OSS release of X-Road (2016)
  Release of X-Road (intergovernmental data exchange platform) as OSS. (Foundation of OSS strategy)

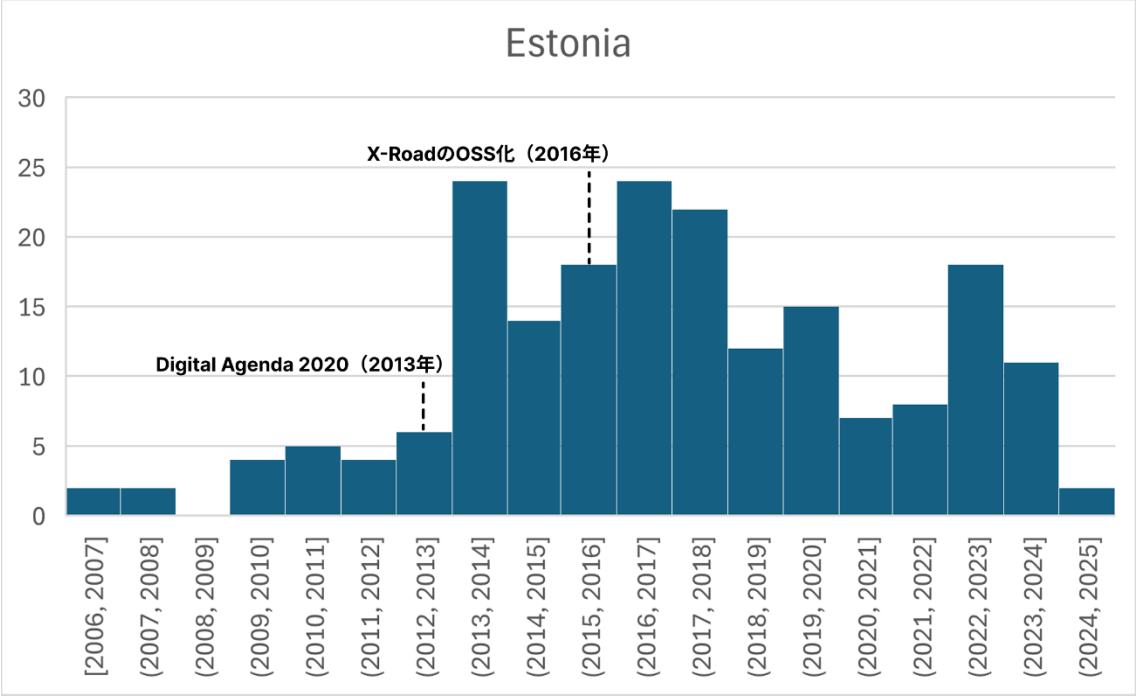

Figure 4-6 Annual trend in OSS repository releases (Estonia)

4.3.3 Singapore

Singapore has 5 GitHub organizations and 483 repositories. Its open-source software (OSS) releases surged sharply after 2015, peaking between 2017 and 2018. This surge is attributed to the Smart Nation policy launched in 2014 and the open-source promotion initiatives by GovTech since 2016. Notably, in 2017, the government significantly increased code releases on GitHub and strengthened collaboration with the developer community. While maintaining high levels since 2018, there has been a gradual decline, reflecting the completion of the initial large-scale releases. In 2020, the Singapore Government Developer Portal was launched, institutionally supporting OSS reuse and transparency. Since 2021, the number of releases has stabilized, remaining at a high level. These trends suggest that Singapore's digital policies strategically position OSS release to strengthen the nation's digital infrastructure.

- Smart Nation Policy (2014)

  Promotes open technologies as the core of the national digitalization strategy.

- GovTech's OSS Strategy (around 2016–present)

  Initiated GitHub publication of government code and strengthened collaboration with the developer community.
- Singapore Government Developer Portal (2020)

  Promotes the publication and reuse of OSS libraries.

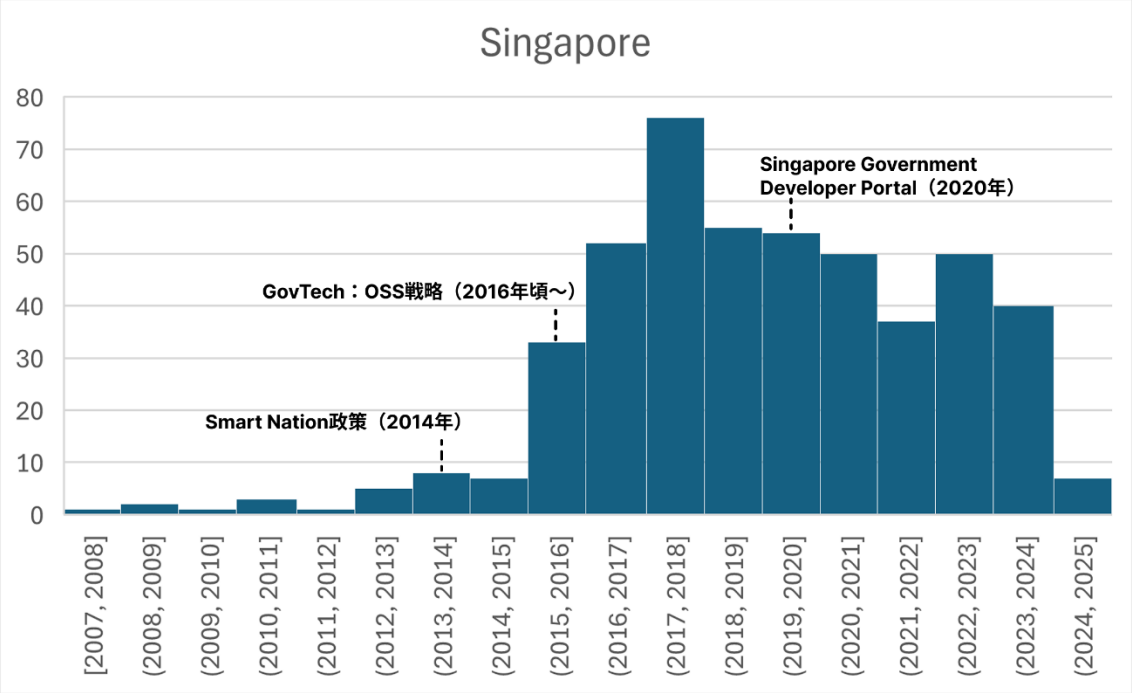

Figure 4-7 Annual trend in OSS repository releases (Singapore)

4.3.4 Germany

Germany has 8 GitHub organizations and 276 repositories. OSS releases have increased gradually since 2015, showing rapid growth since 2020. This surge is attributed to the federal government clarifying OSS's role in its digitalization strategy in 2019 and the announcement of the "Sovereign Tech Fund" initiative in 2021. The number of releases reached record highs from 2021 to 2023, influenced by the government positioning OSS as a key element for securing national digital sovereignty and introducing funding support and enhanced security measures. The 2022 formulation of the "Digital Strategy Germany," which explicitly promotes OSS usage and development support, also contributed to the increase in releases. While

a slight decline was observed in 2024, the number remains at a high level, suggesting that institutional support through policy is influencing the growth of OSS activities.

- OSS explicitly stated in the Federal Government Digitalization Strategy (2019)
  Clarified the policy for OSS use in government systems.
- Sovereign Tech Fund Initiative (2021)
  Initiated funding specifically for security and maintenance support of OSS foundational technologies.
- Digital Strategy Germany (2022)
  Incorporates promotion of OSS use and development support into national strategy.

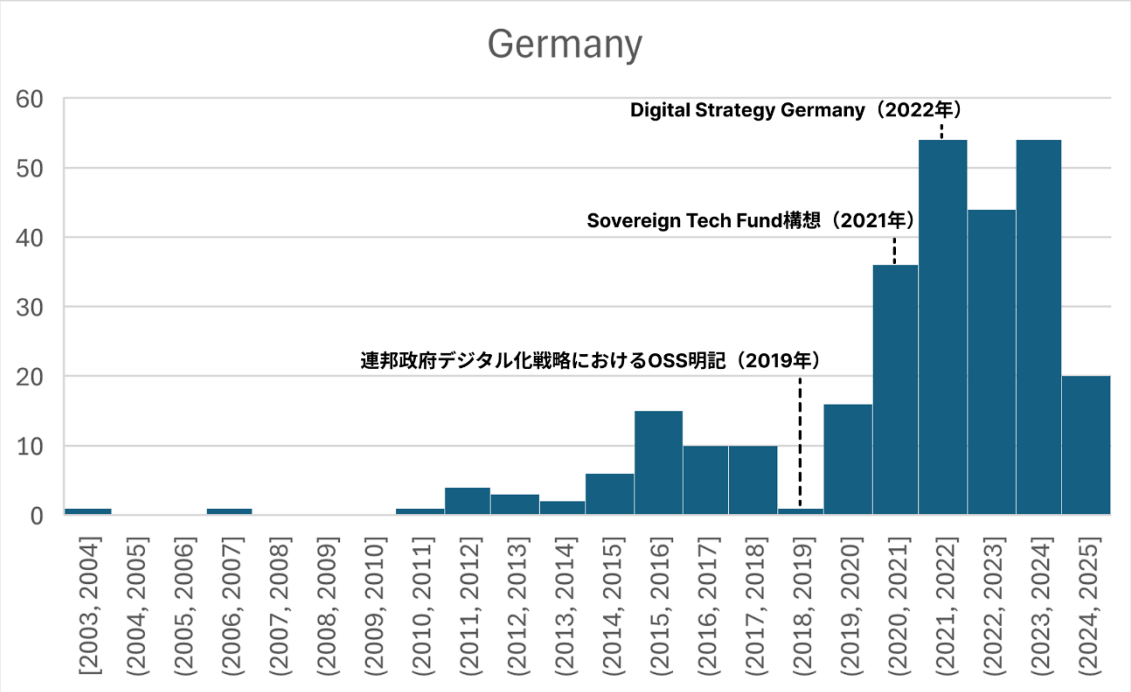

Figure 4-8 Annual trend in OSS repository releases (Germany)

4.3.5 France

France has 25 GitHub organizations and 2,359 repositories. OSS releases surged after 2012, showing significant growth from 2015 to 2018. This increase is likely attributed to the introduction of an OSS priority policy for government agencies

following the 2012 "Circulaire Ayrault." In 2016, Etalab strengthened initiatives to promote OSS reuse and established the foundation for government code disclosure, further influencing this trend. Since 2018, the number of releases has stabilized at a high level, peaking between 2021 and 2022. This peak resulted from the institutionalization of government source code disclosure through the launch of Code.gouv.fr. While a slight decline has been observed since 2023, the number remains at a high level, suggesting that French policy may be having a long-term impact on the growth of the OSS ecosystem.

- Circulaire Ayrault (2012)
  Introduced a policy prioritizing OSS use within government agencies.
- Promotion of OSS reuse by Etalab under the Digital Republic Act (around 2016~)
  Promotes the sharing and reuse of public code.
- Launch of Code.gouv.fr (2021)
  Institutionalized the publication of government source code and improved transparency.

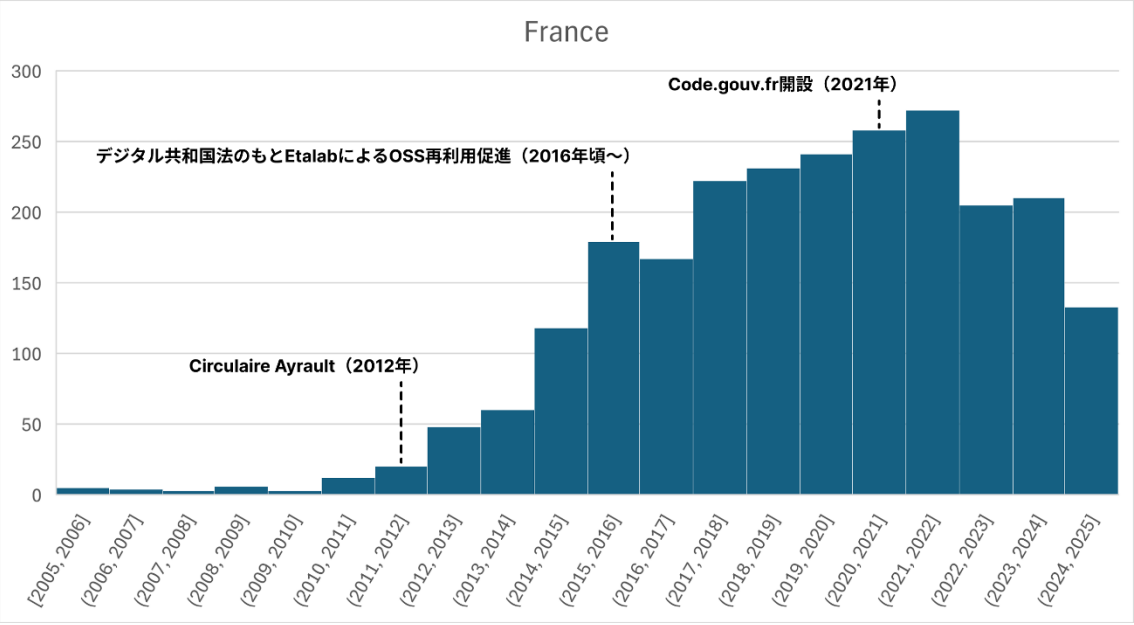

Figure 4-9 Annual trend in OSS repository releases (France)

4.3.6 United Kingdom

The UK has 30 GitHub organizations and 16,058 repositories. OSS publication numbers showed gradual growth until the early 2010s but grew rapidly after 2013, peaking between 2017 and 2018. This surge is likely attributable to the establishment of the Government Digital Service (GDS) in 2012, which introduced Digital Service Standards and an open-source utilization policy. Furthermore, the "Open Standards Principles" formulated that same year institutionalized the adoption of open technologies in government systems. From 2016 onward, the expansion of the GOV.UK platform and increased publication on GitHub helped maintain a high level of OSS releases. While a slight decline has been observed since 2020, the level remains high, suggesting that UK policy may be having a long-term impact on the growth of the OSS ecosystem.

- Establishment of the Government Digital Service (2012)
  Introduced standardization and OSS utilization policies for Government Digital Services.
- Open Standards Principles (2012)
  Emphasized open standards and OSS compatibility in government IT.
- GOV.UK Platform Expansion (circa 2016–)

Promoting OSS-based service development and code publication on GitHub.

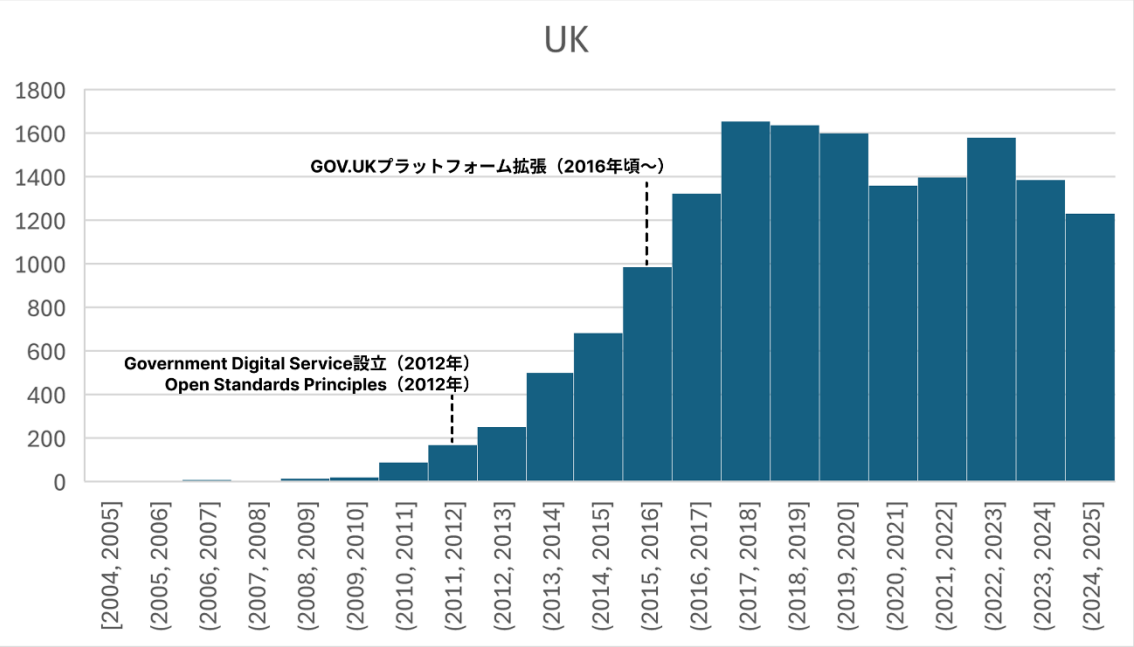

Figure 4-10 Annual trend in OSS repository releases (UK)

4.3.7 United States

The US has 71 (GitHub) organizations and 10,300 repositories, with OSS releases increasing sharply since 2016. This growth is likely due to the introduction of the "Federal Source Code Policy" announced in 2016, which mandated that over 20% of government-developed code be released as OSS. The launch of Code.gov in 2017 institutionalized the aggregation and reuse of government code, accelerating OSS publication. Since 2020, the number of releases has remained at a high level. In 2022, OMB M-22-18 explicitly mandated enhanced security management for OSS, promoting improved reliability and continued release. These policies, aimed at transparency and innovation promotion, suggest a potential long-term impact on the growth of the OSS ecosystem.

- Federal Source Code Policy (2016)
  Introduced a policy to release over 20% of government code as OSS.
- Launch of Code.gov (2017)
  Promoted the aggregation and reuse of government OSS.

- OMB M-22-18 (2022)

  Mandates enhanced security management for OSS.

  OMB: Office of Management and Budget (U.S. Administrative Management and Budget Bureau)

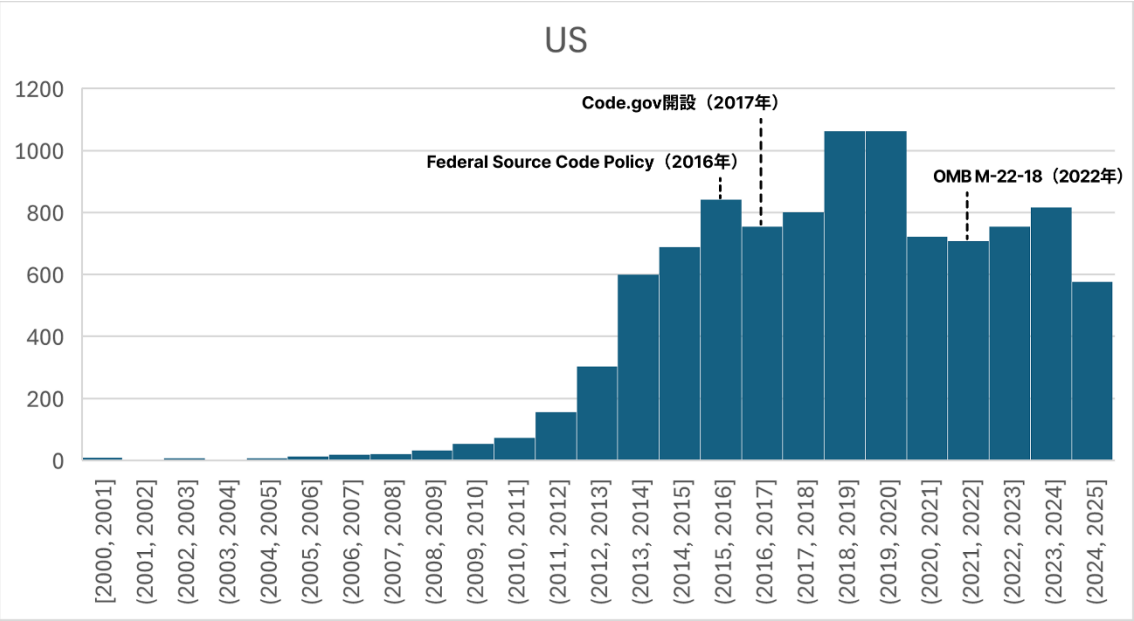

Figure 4-11 Annual trend in OSS repository releases (United States)

4.4 Analysis 3: Classification by Technology Field and Trend Identification

This analysis attempts to organize OSS repositories published by various governments by technical field and provide an overview of activity trends. The objective is to understand the publication status of government-related OSS by field, identify areas where development is active, and clarify noteworthy technical fields. While these results are experimental and exploratory in nature, they serve as a starting point for gaining a more detailed understanding of key focus areas for administrative OSS.

For this analysis, OSS repositories were classified into the following six fields:

- Data Infrastructure & APIs
- Government Services

- Security
- Maps and Urban Information
- Smart Cities
- Education, Healthcare, and Welfare

Classification is performed automatically based on keywords contained in repository names and project names, with the following six fields defined. Detailed classification methods and keyword lists are provided in the Appendix.

Note that this classification is an estimation based on repository names and is technically prone to error; it does not involve specialized verification. Many OSS repositories use proper nouns or neologisms, and often lack keywords indicating a technical field, resulting in a very high number of repositories classified as "Other." "Other" includes OSS with general-purpose functions, such as development tools, and unclassified repositories.

This attempt is an exploratory organization to grasp trends by field, not a strict technical classification. We believe that adding more precise classification and expert review in the future will enable a more accurate understanding of the key areas for administrative OSS.

Table 4-3 Classification by Technical Field Across All OSS Repositories in 7 Countries

Category		Repository
Administrative Services		2340
Data Infrastructure/API		1935
Maps & Urban Information		443
Education, Healthcare, Welfare		278
Smart City		54
Security		38
Other	Development Tools	10934

	Uncategorized	13950

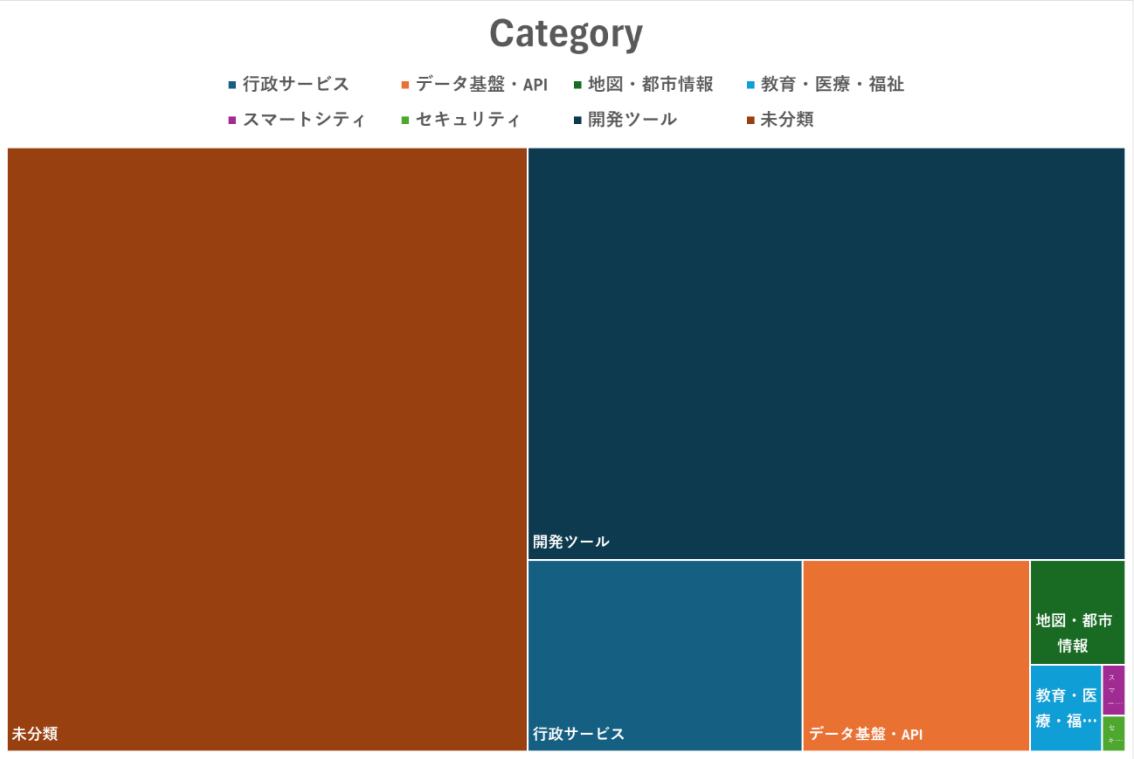

Figure 4-12 Classification by Technology Field Across OSS Repositories in 7 Countries (Treemap)

4.4.1 Trends by Category

(1) Administrative Services (2,340 entries)

Many OSS projects supporting the digitization of administrative procedures—such as public services, e-applications, and dashboards—are published. These include frontend UI, design guidelines, application form generation tools, and administrative dashboards. As they directly enhance the convenience of administrative services and improve operational efficiency, they stand out in both quantity and importance.

(2) Data Infrastructure & APIs (1,935 items)

This core area for government digitalization and data integration strategies primarily features OSS related to API platforms, data integration, and

standardization. Representative examples include API gateways, data integration platforms, and API documentation generation tools, which function as foundational infrastructure for administrative services and other sectors. This OSS constitutes critical technology supporting data sharing between government agencies and the integration of public services.

(3) Maps & Urban Information (443 items)

This field includes OSS related to geospatial information and urban planning, focusing on 3D city models, map APIs, and visualization tools. Examples include GIS data conversion tools and urban structure simulations, which are being utilized to advance smart cities and urban planning.

(4) Education, Healthcare, and Welfare (278 items)

This is an area where OSS adoption is challenging due to handling personal and sensitive information, though limited releases exist. Representative examples include school choice support tools and medical data verification APIs, contributing to educational support and the digitization of healthcare services.

(5) Smart Cities (54 items)

Includes OSS related to urban infrastructure, traffic control, and smart services. While the number of projects is limited, representative examples include urban traffic management systems and smart infrastructure integration tools. These technologies are increasingly important for enhancing urban sustainability and efficiency.

(6) Security (38 items)

Though the number of projects is small, this is an essential area for ensuring the reliability of e-government. It includes OSS aimed at authentication, encryption, and privacy protection, with representative examples being single sign-on (SSO), electronic signatures, and encryption libraries. While the number of releases is limited, their qualitative importance is extremely high.

4.4.2 Development Tools

The release of government-related OSS extends beyond technical fields like administrative services and data infrastructure to encompass tool sets supporting development and operations. This movement addresses needs such as improving government system development efficiency, quality assurance, security enhancement, and cloud migration, making it a core element of the digital government strategy.

In particular, the adoption of OSS for CI/CD, operational automation, testing/quality assurance, and development support tools is crucial as a mechanism enabling the rapid delivery and continuous improvement of government services.

(1) Overview of Published Development Tools

The publicly available development tools cover a wide range, with the main categories listed below.

CI/CD and Build-Related Tools

Numerous OSS tools supporting continuous integration and deployment, such as Jenkins, GitHub Actions, and Terraform, are publicly available. This enables rapid updates and improvements to government services.

Operational Automation and Infrastructure Management

Tools like Ansible, Docker, and Kubernetes are included to streamline the construction and management of cloud and on-premises environments. These are essential for ensuring the scalability and stability of government systems.

Development Assistance and Utilities

OSS tools that enhance developer productivity, such as code generation, templates, SDKs, and sample code, are publicly available. This improves standardization and reusability in the development process.

Testing and Quality Assurance

Includes OSS supporting quality management, such as automated testing, mocking, and QA tools. These play a crucial role in ensuring the reliability of government services.

UI Components & Visualization

OSS that contributes to usability improvement, such as React- and Vue-based UI components and dashboards, is publicly available.

Security Support Tools

Includes OSS aimed at strengthening security, such as vulnerability scanners, authentication modules, and encryption libraries.

(2) Relationship Between Development Tools and Technical Fields

These development tools serve as the foundation supporting OSS development in technical fields.

In the administrative services domain, CI/CD and UI components enable rapid service updates and usability improvements.

In the data infrastructure and API domain, API testing tools and data conversion tools ensure reliability and compatibility.

In the security domain, vulnerability detection and authentication modules guarantee safety.

In the smart city and geographic information sector, visualization tools and GIS-related plugins promote the utilization of urban data.

The open-source release of development tools is not merely a supplementary activity but an essential element in the government's digitalization strategy.

- Development Efficiency: CI/CD and templates shorten the development cycle.

- Quality Assurance: Service reliability improves through test automation.
- Security Enhancement: Vulnerability detection and authentication modules enable secure service provision.
- International Reusability: Publishing as OSS enables use by other countries and private companies, contributing to ecosystem expansion.

Government organizations overwhelmingly publish OSS in the areas of administrative services and data infrastructure/APIs, driving government digitalization. Maps and urban information demonstrate significant presence as the foundation for urban digitalization. Education, healthcare, and welfare face limitations due to sensitive information constraints, resulting in restricted publication, yet their social impact remains substantial. Security and smart cities, though fewer in number, are critical areas directly linked to e-government reliability and urban sustainability.

This analysis reveals that the release of government-related OSS is not merely a technical offering, but a strategic initiative directly linked to enhancing administrative transparency, efficiency, and the quality of citizen services.

4.5 Summary of Analysis

The results of this analysis suggest that each country's OSS activities reflect differences in the timing of policy introduction and institutional design, indicating that historical background likely strongly influences current activity characteristics. Countries that introduced policies early stand out in multiple metrics, including the number of repositories and pull requests, demonstrating high maturity in both activity scale and improvement cycles. Conversely, later adopters, while smaller in scale, tend to focus on efficient improvement activities in specific domains and prioritize rapid issue resolution.

A radar chart providing an overview of international comparisons revealed each country's strategic characteristics. The UK and US are omnidirectional, excelling in scale, popularity, improvement, and personnel. France is developer community-

driven, heavily weighted toward issues and pull requests, with a mature collaborative development culture. Germany and Singapore show sharp peaks in specific metrics, pursuing specialized, field-focused activities. Japan and Estonia are small-scale and efficiency-focused, characterized by a development culture emphasizing improvement rates and speed. These differences do not indicate superiority or inferiority but rather reflect diverse approaches adopted according to each country's specific environment.

Meanwhile, exploration analysis focused on technical domains reveals that government organizations overwhelmingly publish OSS in the areas of administrative services and data infrastructure/APIs, demonstrating OSS's contribution to national DX efforts. Maps and urban information maintain a significant presence as the foundation for urban digitalization. Education, healthcare, and welfare face limitations due to sensitive information constraints, resulting in restricted releases, yet their social impact remains substantial. Security and smart cities, while fewer in number, are critical areas directly linked to e-government reliability and urban sustainability.

Regarding the release of OSS development toolkits, these form the core of the government-related OSS ecosystem and are suggested to be key to accelerating OSS releases in technical fields. CI/CD, operations automation, testing/quality assurance, and development support tools are indicated to enable rapid development and operation of administrative services and data infrastructure while ensuring quality and security.

Based on these analyses, the release of government-related OSS is considered a strategic initiative that goes beyond mere technology provision, directly contributing to administrative transparency, efficiency, and improved quality of citizen services.

5. Summary

This report collected data available as of September 2025 on OSS repositories published on GitHub by governments and public institutions worldwide, analyzing them from perspectives including activity volume, timeline, and technical domains. First, country-specific aggregation of activity volume and related data revealed significant differences in the scale of OSS publishing activities among governments. The United States and the United Kingdom exhibit large-scale activities, while France engages in medium-scale activities. Japan, Estonia, Singapore, and Germany were classified as having small-scale activities on GitHub among the countries surveyed. Furthermore, by analyzing not only the scale of activity (activity level) inferred from the number of repositories but also combining it with the maturity of continuous development and improvement activities reflected in the number of pull requests, and by clarifying the balance of related metrics using radar charts, the characteristics of the OSS published by governments and public institutions in each country became apparent. However, it is important to note that the analysis of activity scale and characteristics revealed in this study may change if data from platforms other than GitHub is integrated, as some countries, such as Estonia and Germany, also utilize platforms beyond GitHub.

Time-series analysis of activity counts per country revealed the growth and decline patterns of OSS releases in each nation. Furthermore, we mapped digital-related policies implemented during the same time periods as the changes in OSS release counts. The causal relationship between these policies and OSS release activities could be clarified through more detailed literature reviews and qualitative research. Furthermore, differences in technological fields and organizational structures reflect the priorities and characteristics of administrative systems within each country's digital policies. This clearly reveals distinct policy focuses per country, such as Japan's geospatial information, Estonia's data integration infrastructure, and Singapore's smart city initiatives.

This report conducted a quantitative survey of activities on GitHub across seven countries, specifically focusing on public institutions excluding local governments. Considering the usefulness and limitations of the insights gained from this survey,

the following five areas are expected to be continuously investigated in future work:

1. Continuous repository surveys on OSS activities in the seven countries covered by this study
2. Survey of OSS Utilizing Platforms Other Than GitHub
   (Including platforms operated by domestic governments, etc.)
3. Research on Countries and Regions Not Covered in This Study
4. Qualitative surveys or interviews based on perspectives outlined in the discussion
5. Research on activities at different governance levels, such as municipal and international levels

Focusing on Japan's public sector activities, while the scale of OSS promotion is smaller compared to the US, UK, or France, there are signs of gradually increasing OSS activity. Examples include active movements in the map and spatial information fields by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the Geospatial Information Authority of Japan (GSI), as well as the release of high-profile OSS by the Digital Agency. Currently, it is anticipated that there are fewer policy-driven or strategic top-down promotion activities compared to other countries. Consequently, many initiatives are currently led by individual staff members with high OSS literacy and interest. Moving forward, it will be necessary to transform these individual-driven efforts into more organized and institutionalized movements. Regarding specific measures to promote this, further research and discussion are anticipated as prospects.

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7. Appendix: Threats to Validity

Several threats to validity exist in the results and interpretations of this report. The main threats to validity and their impacts are summarized below.

- **Coverage**

  GitHub is major but not the only platform. Other platforms and inner source may be underobserved.

- **Attribution**

  Publication of official government organizations is excluded, creating potential for omission.

- **Statistical Impact**

  Aggregation may be skewed by large repositories

- **Confounding Factors**

  Changes over time may be influenced by factors other than policy (e.g., crises, procurement, budgets, platform migrations)

- **Classification Error**

  The technical field is keyword estimation without specialized verification.

- **Interpretation Limits**

  This version's interpretation is descriptive and makes no causal claims

8. Appendix: Python Script

Note: GitHub Access Token must be obtained in advance.

8.1 Python Script (1)

Collection of Organization, Repo Count, Repository, Star, Fork, Branch, People, Issue, Pull Request, Contributor (Example from Japan)

```
import requests
import csv
import time


# GitHub access token
```

```
   TOKEN = "ghp_XXX "
   HEADERS = {"Authorization": f"token {TOKEN}"}



   def get_all_items(url, max_pages=50):  #  Default 50 pages
      items = []
      page = 1
       sep = '&' if '?' in url else '?'
      while True:
           paged_url = f"{url}{sep}per_page=100&page={page}"
          response = requests.get(paged_url, headers=HEADERS)

           time.sleep(0.75)  # Wait 1 second


          if response.status_code != 200 or not response.text.strip():
             print(f"API error: {paged_url} - status {response.status_code},
text: {response.text[:100]}")
              break
          try:
               page_items = response.json()
          except Exception as e:
              print(f"JSON parsing error: {paged_url} - {e}")
              break
          if not page_items:
              break
           items.extend(page_items)
          page += 1
          if page > max_pages:
             print(f"Too many pages (exceeding {max_pages} pages): {url}")
              break
      return items


   # GitHub organization list
   organizations = [
      "aistairc",
      digital-go-jp,
      "gsi-cyberjapan",
      "IPA-CyberLab",
      "ndl-lab",
      "nhoHQ",
```

```
        "NICT-ATT",
        "nict-csl",
        "NICT-STARS",
        "NII-cloud-operation",
        "nims-mdpf",
        "ODS-DFS-L2",
        "ODS-DFS-L3",
        "ODS-DFS-L4",
        "ODS-IS-CAVC",
        "ODS-IS-IMDX",
        "ODS-IS-UASL",
        "ODS-IS-STID",
        "Ouranos-Ecosystem-Dataspaces",
        "ouranos-ecosystem-idi",
        "Project-PLATEAU",
        "riken-rccs"
    ]



    # CSV file
    with open("github_org_stats_jp.csv", "w", newline='', encoding='utf-8') as
csvfile:
        fieldnames = ["Organization", "Repo_count", "Repository", "Stars",
"Forks", "Branches", "People", "Issue", "PullRequest", "Contributor"]
        writer = csv.DictWriter(csvfile, fieldnames=fieldnames)
         writer.writeheader()


        for org in organizations:
            print(f"¥n Organization: {org}")


            repos = get_all_items(f"https://api.github.com/orgs/{org}/repos")
              repo_count = len(repos)
            people                                                          =
get_all_items(f"https://api.github.com/orgs/{org}/members")
              people_count = len(people)


            print(f"Repositories: {repo_count}")


            for repo in repos:
                name = repo["name"]
```

```
            stars = repo["stargazers_count"]
            forks = repo["forks_count"]

            # get Branch count
            branches_url = repo["branches_url"].replace("{/branch}", "")
            branches = get_all_items(branches_url)
             branch_count = len(branches)

            # Get issue count (only issues without PRs)
            issues_url                                                    =
f"https://api.github.com/repos/{org}/{name}/issues?state=all"
             all_issues = get_all_items(issues_url)
            issue_count = sum(1 for issue in all_issues if "pull_request"
not in issue)

            # get Pull Request count
            pulls_url                                                     =
f"https://api.github.com/repos/{org}/{name}/pulls?state=all"
             all_pulls = get_all_items(pulls_url)
             pull_count = len(all_pulls)

            # Get Contributor count
            contributors_url                                              =
f"https://api.github.com/repos/{org}/{name}/contributors"
            try:
               # Only when fetching contributors, set max_pages=5 (up to
500 people)
                all_contributors     =     get_all_items(contributors_url,
max_pages=5)
                 contributor_count = len(all_contributors)
            except Exception as e:
                print(f"Contributor error: {org}/{name} - {e}")
                 contributor_count = 0  # set 0



           print(f"  {name} |  {stars} | {forks}| {branch_count} Branches")

            # write CSV file
             writer.writerow({
```

```
                "Organization": org,
                "Repo_count": repo_count,
                "Repository": name,
                "Stars": stars,
                "Forks": forks,
                "Branches": branch_count,
                "People": people_count,
                "Issue": issue_count,
                "PullRequest": pull_count,
                "Contributor": contributor_count
            })
    print("GitHub stats have been stored in CSV file : github_org_stats_jp.csv")
```

8.2 Python Script (2)

First Commit Date Collection (Japan Example)

```
import requests
import csv
import time


# GitHub access token
TOKEN = "ghp_XXX "
HEADERS = {"Authorization": f"token {TOKEN}"}



def get_all_items(url, max_pages=50):
    items = []
    page = 1
     sep = '&' if '?' in url else '?'
    while True:
         paged_url = f"{url}{sep}per_page=100&page={page}"
        response = requests.get(paged_url, headers=HEADERS)
         time.sleep(0.75)
        if response.status_code != 200 or not response.text.strip():
```

```
            print(f" API Error: {paged_url} - status {response.status_code},
text: {response.text[:100]}")
            return items   #   Use return instead of break for immediate
termination
        try:
             page_items = response.json()
        except Exception as e:
            print(f" JSON parsing error: {paged_url} - {e}")
            return items  #  Immediately exit using return instead of break
        if not page_items:
            break
         items.extend(page_items)
        page += 1
        if page > max_pages:
            print(f"Too many pages (exceeding {max_pages} pages): {url}")
            break
    return items



 def get_first_commit_date(owner, repo):
     url = f"https://api.github.com/repos/{owner}/{repo}/commits?per_page=1"
    response = requests.get(url, headers=HEADERS)
    if response.status_code != 200:
        print(f"Failed to retrieve commits: {owner}/{repo} - status
{response.status_code}")
        return ""
    # Get the last page number from    the Link header
    if 'Link' in response.headers:
        links = response.headers['Link'].split(',')
        last_link = [l for l in links if 'rel="last"' in l]
        if last_link:
             last_url = last_link[0].split(';')[0].strip()[1:-1]
            # Get the last page
             last_response = requests.get(last_url, headers=HEADERS)
            if last_response.status_code != 200:
              print(f"Commit retrieval error: {owner}/{repo} - status
{last_response.status_code}")
                return ""
            commits = last_response.json()
            if commits:
                return commits[0]['commit']['committer']['date']
```

```
    # If there is only one page of commits
    commits = response.json()
    if commits:
        return commits[-1]['commit']['committer']['date']
    return ""



# GitHub organization list
organizations = [
    "aistairc",
    "digital-go-jp",
    "gsi-cyberjapan",
    "IPA-CyberLab",
    "ndl-lab",
    "nhoHQ",
    "NICT-ATT",
    "nict-csl",
    "NICT-STARS",
    "NII-cloud-operation",
    "nims-mdpf",
    "ODS-DFS-L2",
    "ODS-DFS-L3",
    "ODS-DFS-L4",
    "ODS-IS-CAVC",
    "ODS-IS-IMDX",
    "ODS-IS-UASL",
    "ODS-IS-STID",
    "Ouranos-Ecosystem-Dataspaces",
    "ouranos-ecosystem-idi",
    "Project-PLATEAU",
    "riken-rccs"
]



# CSV file
with    open("github_org_stats_jp-firstcommit.csv",    "w",    newline='',
encoding='utf-8') as csvfile:
    fieldnames = ["Organization", "Repo_count", "Repository", "Stars", "Forks",
"Branches", "People", "First_commit_date"]
    writer = csv.DictWriter(csvfile, fieldnames=fieldnames)
     writer.writeheader()
```

```
    for org in organizations:
        print(f"¥n Organization: {org}")


       repos = get_all_items(f"https://api.github.com/orgs/{org}/repos")
        repo_count = len(repos)
       people = get_all_items(f"https://api.github.com/orgs/{org}/members")
         people_count = len(people)


        print(f"Repository: {repo_count}")


        for repo in repos:
            name = repo["name"]
            stars = repo["stargazers_count"]
            forks = repo["forks_count"]


            # get Branch count
            branches_url = repo["branches_url"].replace("{/branch}", "")
            try:
                branches = get_all_items(branches_url)
                 branch_count = len(branches)
            except Exception as e:
                print(f"Branch retrieval error: {org}/{name} - {e}")
                 branch_count = 0



            # Get first commit date
             first_commit_date = get_first_commit_date(org, name)


          print(f"   {name} |   {stars} |   {forks} |   {branch_count} Date
{first_commit_date}")


            # write CSV file
             writer.writerow({
                "Organization": org,
                "Repo_count": repo_count,
                "Repository": name,
                "Stars": stars,
```

```
                "Forks": forks,
                "Branches": branch_count,
                "People": people_count,
                "First_commit_date": first_commit_date
            })
print("GitHub stats have been stored in CSV file:github_org_stats_jp-min.csv")
```

9. Appendix: Technical Field Classification Method

9.1 Classification Method

The technical field classification used in this report is an estimation method that automatically categorizes repositories based on keywords contained in their names or project names.

Specifically, following a predefined "keyword-category mapping table" (see Appendix), repositories containing relevant keywords in their names were classified into the corresponding categories.

For example, repositories containing keywords like "ci," "jenkins," or "pipeline" were classified as "CI/CD and Build-Related"; those containing "test," "qa," or "mock" were classified as "Testing and Quality Assurance"; and those containing "docker," "terraform," "cloud," or "server" were classified as "Operations Automation and Infrastructure Management."

Additionally, keywords like "tool," "plugin," "sample," "template," and "web" were classified under "Development Support/Utilities," while "security," "auth," and "crypto" were categorized as "Security Support."

This classification method enables the aggregation and analysis of OSS repositories across domains using consistent criteria.

Table -91 Correspondence table between keywords used for classification and categories

Category Name	Keyword List

Government Services	gov, service, form, passport, benefit, dashboard, frontend, design, gouv
Data Infrastructure & API	api, data, metadata, json, openapi, platform, adapter, datagov, datagouv
Maps & Urban Information	map, geo, gis, urban, city, spatial, tile, geometry, 3d, city
Security	auth, secure, certificate, privacy, threat, cyber, sso, crypto, authentication
Smart City	smart, iot, mobility, traffic, digital-twin, infrastructure, drone
Education, Healthcare, Welfare	school, edu, health, hospital, care, social, medical, clinical
CI/CD and Build Related	CI, CD, build, deploy, pipeline, Jenkins, GitHub Actions, Terraform
Testing & Quality Assurance	test, tests, mock, qa, unit, integration, e2e, cypress, jest, evaluation
Data Transformation/ETL	ETL, transform, convert, parser, extract, load, CSV
Visualization & UI Components	ui, component, chart, graph, visual, dashboard, react, vue, report, reporting
Operational Automation & Infrastructure Management	infrastructure, ansible, docker, k8s, kubernetes, monitoring, ops, configuration, cloud, aws, backend, fb, azure, server, client, spark, jupyter
Development Support & Utilities	tool, util, helper, cli, script, lib, library, plugin, sample, template, sandbox, doc, docs, sdk, prototype,

	performance, web, evaluation, production, webapi, benchmark, benchmarks, simulator, simulators
Security Support	scan, vuln, security, auth, crypto, certificate, sso, authentication

10. Appendix: Government & Public Sector GitHub Repositories

10.1 Estonia

Account	Name	Description
e-gov	E-government building blocks	Software developed by various Estonian government agencies. Includes services such as TARA authentication and GovSSO.
ria-ee	Estonian Information System Authority	Coordinates the development and administration of Estonia's information systems, including cybersecurity and interoperability.
MKM-ITAO	ITAO: Department for the Development of Information Society Services	Department for Developing Information Society Services. Projects include mapping and describing public services.
open-eid	Open Electronic Identity	Estonian Electronic Identity Software. Provides tools for digital signing, authentication, and ID-card integration.
open-source-it-ministry-of-estonia	Open Source IT Ministry of Estonia	Repository for open source projects by the Estonian IT Ministry. Contains one public repository.

opendata-ee	Estonian Open Data Portal	GitHub home of Estonia's open data portal. Hosts CKAN-based data management system and related tools.

10.2 France

Account	Name	Description
AmbaNum	French Ambassador for Digital Affairs / Ambassadeur pour le numérique	Promotes digital diplomacy and counters disinformation through initiatives like the Paris Call and disinfo.quaidorsay.fr.
ANSSI-FR	Agence nationale de la sécurité des systèmes d'information	France's national cybersecurity agency. Publishes open-source tools for digital sovereignty, cryptography, and incident response.
ansforge	Agence du Numérique en Santé (ANS)	Supports digital transformation in healthcare. Shares interoperability standards and health data exchange tools.
ApieFrance	Agence du Patrimoine Immateriel de l'Etat	Promotes reuse of public intangible assets. Shares documentation and tools for public sector innovation.
betagouv	beta.gouv.fr	Incubator for public digital services. Builds state startups to improve citizen-government interactions.

datagouv	data.gouv.fr	France's national open data platform. Shares datasets and APIs to promote transparency and innovation.
eole	EOLE Team	Open-source infrastructure team from the Ministry of National Education. Publishes configuration and deployment tools.
etalab	Etalab	Chief Data Office of the French government. Coordinates open data policy and supports AI and data projects.
DGFiP	Direction générale des finances publiques	Manages public finances and taxation. Shares tools for accounting compliance and fiscal transparency.
diplomatiegouvfr	Public Repository of the Ministry for Europe and Foreign Affairs (MEAE)	Publishes digital tools for diplomacy and international cooperation, including disinformation monitoring.
DISIC	Interministerial Directorate for Digital Affairs	Coordinates digital strategy across ministries. Shares frameworks and tools for public sector IT governance.
GouvernementFR	Gouvernement	Publishes official design systems, visualization libraries, and digital tools for public service modernization.

IGNF	Institut National de l'Information Géographique et Forestière	France's national mapping agency. Shares geospatial data and tools for cartography and forest management.
Inist-CNRS	Institut de l'information scientifique et technique - CNRS	Publishes tools for scientific information management and open access research dissemination.
INRIA	National Institute for Research in Computer Science and Control	National research institute for digital sciences. Collaborates on cybersecurity, AI, and scientific computing.
inseefr	National Institute of Statistics and Economic Studies (INSEE)	France's national statistics bureau. Shares demographic and economic datasets and statistical tools.
MINAGRI-INITIAL	Digital Services Incubator of the Ministry of Agriculture and Food	Publishes agricultural data and digital tools to support farming and rural development.
MinistereSupRecherche	Ministry of Higher Education and Research	Shares tools and datasets for higher education and scientific research policy.
MTES-MCT	Digital Factory of the Ministry for Ecological Transition	Publishes environmental and territorial planning tools and datasets.

polewebmaedi	Web Division | MAEDI DCP	Publishes digital tools and websites for foreign affairs and international relations.
Programme Vitam	Programme Vitam	Develops digital archiving solutions for the long-term preservation of public records.
sgmap-agd	Chief Data Officer	Coordinates modernization of public administration. Shares tools for digital transformation.
SocialGouv	Digital Factory for Social Ministries	Publishes digital tools and datasets for social welfare and public health services.
SocieteNumerique	Société Numérique	Promotes digital inclusion and literacy. Shares resources for bridging the digital divide.
transportdatagouvfr	Transport.data.gouv.fr	France's open data platform for transport. Shares mobility datasets and APIs for public and private use.

10.3 Germany

Account	Name	Description
BSI-Bund	Federal Office for Information Security (BSI)	Germany's national cybersecurity authority. Develops tools for secure digitalization and publishes security standards and frameworks.
CERT-Bund	German National CERT	Computer Emergency Response Team for Germany's federal authorities. Provides incident response tools and publishes threat intelligence.
corona-warn-app	Corona-Warn-App	Germany's official COVID-19 contact tracing app. Developed as open-source by SAP and Deutsche Telekom with support from RKI and BSI.

Digitaler-Impfnachweis	Digital Vaccination Certificate	German solution for COVID-19 vaccination certificates. Developed by IBM and Ubirch for the Federal Ministry of Health.
digitalservicebund	DigitalService GmbH des Bundes	Federal software development unit. Builds digital solutions for public administration and promotes agile working in government.
GovDataOfficial	GovData - German Open Data Portal	Centralized platform for open government data from federal, state, and local levels. Integrates CKAN and other metadata tools.
isyfact	isyfact	Software factory developed by the Federal Administration Office. Provides architecture standards and reusable components for government IT systems.

robert-koch-institut	Robert Koch Institute (RKI)	Germany's central institution for public health. Publishes open datasets on infectious diseases, COVID-19, and health surveillance.

10.4 Japan

Account	Name	Description
aistairc	AIST Artificial Intelligence Research Center	Publishes AI research tools and datasets for machine learning, robotics, and industrial applications.
digital-go-jp	Digital Agency of Japan	Leads Japan's digital transformation. Shares design systems, address geocoding tools, and open data converters.
gsi-cyberjapan	Geospatial Information Authority of Japan	Publishes geospatial data and visualization tools including GSI Maps and vector tile experiments.

IPA-CyberLab	Information-technology Promotion Agency CyberLab	Shares cybersecurity tools for secure telework, certificate management, and threat analysis.
ndl-lab	NDL Lab (National Diet Library)	Publishes OCR tools, annotated datasets, and layout recognition modules for next-generation library systems.
nhoHQ	National Hospital Organization	Publishes specifications and documentation for standardized electronic medical record systems (SS-MIX2).
NICT-ATT	NICT Advanced Translation Technology	Shares machine translation and evaluation tools for multilingual communication research.
nict-csl	NICT Cybersecurity Laboratory	Publishes threat intelligence tools and darknet monitoring datasets for cybersecurity research.
NICT-STARS	NICT STARS GIS Platform	Provides GIS tools and plugins for spatiotemporal data visualization and synchronization.

NII-cloud-operation	National Institute of Informatics Cloud Operation Team	Publishes reproducible infrastructure tools using JupyterHub and Ansible for cloud federation.
nims-mdpf	National Institute for Materials Science MDPF	Shares materials data platform tools for managing and analyzing scientific materials data.
ODS-DFS-L2	Ouranos Data Space DFS Level 2	Publishes tools for data federation and semantic interoperability in smart city projects.
ODS-DFS-L3	Ouranos Data Space DFS Level 3	Shares advanced data integration and analytics tools for urban digital twins.
ODS-DFS-L4	Ouranos Data Space DFS Level 4	Publishes AI-driven decision support tools for smart infrastructure and mobility.
ODS-IS-CAVC	Ouranos Intelligent System CAVC	Shares tools for connected and autonomous vehicle control systems.
ODS-IS-IMDX	Ouranos Intelligent System IMDX	Publishes intelligent mobility data exchange tools for smart transportation.

ODS-IS-UASL	Ouranos Intelligent System UASL	Shares urban air mobility simulation and logistics tools.
ODS-IS-STID	Ouranos Intelligent System STID	Publishes smart traffic infrastructure and data tools for urban planning.
Ouranos-Ecosystem-Dataspaces	Ouranos Ecosystem Dataspaces	Shares semantic data space tools for cross-domain interoperability in smart cities.
ouranos-ecosystem-idi	Ouranos Ecosystem IDI	Publishes intelligent data infrastructure tools for digital governance and urban services.
Project-PLATEAU	Project PLATEAU	Japan's national 3D urban modeling project. Shares open data and tools for digital twin development.
riken-rccs	RIKEN Center for Computational Science	Publishes high-performance computing tools and datasets for scientific research and simulation.

10.5 Singapore

Account	Name	Description
c-BIG	c-BIG (Centre for Big Data and Intelligence Governance)	Publishes tools and datasets related to big data governance and analytics in Singapore.
datagovsg	Data.gov.sg	Singapore's open data portal. Shares datasets, APIs, and visualization tools for public sector data.
GovTechSG	Government Technology Agency of Singapore	Develops digital services and infrastructure for Singapore's Smart Nation initiative. Shares open-source tools and APIs.
dsaidgovsg	Data Science and Artificial Intelligence Division (DSAID)	Division under GovTech Singapore focused on AI and data science projects. Publishes models, datasets, and analytics tools.
opengovsg	Open Government Products	Team under GovTech Singapore building open-source digital tools for public good. Shares products like FormSG, Isomer, and GoGovSG.

10.6 United Kingdom

Account	Name	Description
alphagov	Government Digital Service (GDS)	Builds digital services for UK government including GOV.UK and Verify.
cabinetoffice	Cabinet Office	Publishes tools and guidance for government operations and transparency.
companieshouse	Companies House	Shares APIs and tools for accessing UK company registration data.
defencedigital	Defence Digital	Technology and digital services for the UK Ministry of Defence.
defra	Department for Environment, Food & Rural Affairs	Publishes environmental datasets and digital tools.
DFE-Digital	Department for Education Digital	Builds digital services for education in the UK.
dstl	Defence Science and Technology Laboratory	Publishes research tools and datasets for defense science.
dvla	Driver and Vehicle Licensing Agency	Shares APIs and tools for vehicle and driver data.
dvsa	Driver and Vehicle Standards Agency	Publishes tools for driving tests and vehicle safety.

dwp	Department for Work and Pensions	Shares digital services and data for welfare and pensions.
GCHQ	Government Communications Headquarters	Publishes open-source security and cryptography tools.
GSS-Cogs	Government Statistical Service	Publishes tools for statistical data transformation and metadata.
hmcts	HM Courts & Tribunals Service	Shares digital services for UK courts and tribunals.
HMPO	Her Majesty's Passport Office	Publishes tools related to passport services.
hmrc	HM Revenue & Customs	Shares APIs and tools for tax and customs services.
HO-CTO	Home Office CTO	Publishes technical guidance and tools for Home Office systems.
MetOffice	UK Met Office	Publishes weather data APIs and climate tools.
MHRA	Medicines and Healthcare products Regulatory Agency	Shares tools and datasets for medicine regulation.
ministryofjustice	Ministry of Justice	Publishes justice-related digital services and open-source tools.

nationalarchives	The National Archives	Shares tools for digital preservation and access to historical records.
nhsdigital	NHS Digital	Publishes APIs and tools for UK health data and services.
nhsengland	NHS England	Shares digital services and data for healthcare delivery.
nhsuk	NHS UK	Publishes public-facing health information and tools.
NHSX	NHSX	Drives digital transformation in UK healthcare.
ONSdigital	Office for National Statistics	Shares statistical datasets and digital tools.
OrdnanceSurvey	Ordnance Survey	Publishes geospatial data and mapping tools.
UKGovernmentBEIS	Department for Business, Energy & Industrial Strategy	Shares tools and datasets for business and energy policy.
UKHomeOffice	UK Home Office	Publishes digital services and tools for immigration and policing.
UKHomeOfficeForms	UK Home Office Forms	Shares form templates and tools for Home Office services.
ukparliament	UK Parliament	Publishes tools and datasets for parliamentary transparency and access.

10.7 United States

Account	Name	Description
18F	18F	18F is a digital services agency within the General Services Administration (GSA) that partners with other federal agencies to improve the user experience of government services by helping them build and buy technology.
CDCgov	Centers for Disease Control and Prevention (CDC)	CDCgov shares public health data, tools, and software to support disease prevention and health promotion efforts across the United States.
cfpb	Consumer Financial Protection Bureau (CFPB)	CFPB publishes open-source tools and datasets to help protect consumers in the financial sector and promote transparency.
cisagov	Cybersecurity and Infrastructure Security Agency (CISA)	CISA shares cybersecurity tools, guidance, and open-source software to help protect critical infrastructure and government networks.

cmsgov	Centers for Medicare & Medicaid Services (CMS)	CMS publishes code and APIs related to healthcare programs including Medicare and Medicaid to improve access and transparency.
CMS-Enterprise	CMS Enterprise	Enterprise-level projects and tools from the Centers for Medicare & Medicaid Services (CMS), focusing on scalable healthcare IT solutions.
Code-dot-mil	Code.mil	A platform by the U.S. Department of Defense to promote open-source software development and collaboration within the military.
commercegov	U.S. Department of Commerce	Publishes tools and datasets to support economic growth, trade, and innovation in the United States.
department-of-veterans-affairs	U.S. Department of Veterans Affairs	Shares software and APIs to improve services for veterans, including healthcare and benefits management.
deptofdefense	U.S. Department of Defense	Publishes open-source tools and frameworks to support defense operations and cybersecurity.
dhs-gov	Department of Homeland Security (DHS)	Publishes cybersecurity, emergency response, and infrastructure protection tools and resources.

dodcio	DoD Chief Information Officer (CIO)	Shares IT modernization and cybersecurity initiatives from the Department of Defense CIO office.
doecode	DOE CODE	Open-source software platform by the Department of Energy for scientific and research code sharing.
DSACMS	Defense Security Cooperation Agency CMS	Publishes content management tools for defense security cooperation programs.
EEOC	Equal Employment Opportunity Commission	Shares tools and datasets to support workplace equality and anti-discrimination enforcement.
enterprise-cmcs	Enterprise CMCS	Enterprise systems and tools for the Center for Medicaid and CHIP Services.
fda	Food and Drug Administration (FDA)	Publishes tools and APIs for drug approvals, food safety, and medical devices regulation.
fecgov	Federal Election Commission (FEC)	Shares campaign finance data and tools to promote transparency in elections.
federaltradecommission	Federal Trade Commission (FTC)	Publishes consumer protection and antitrust enforcement tools and datasets.

fedramp	Federal Risk and Authorization Management Program (FedRAMP)	Shares templates and tools for cloud service authorization and compliance.
fema	Federal Emergency Management Agency (FEMA)	Publishes disaster response and emergency preparedness tools and datasets.
gsa	General Services Administration (GSA)	Shares digital services, procurement tools, and open-source software for federal agencies.
hhs	Department of Health and Human Services (HHS)	Publishes health-related datasets, APIs, and digital tools for public health services.
HHS-AHRQ	Agency for Healthcare Research and Quality (AHRQ)	Shares research tools and datasets to improve healthcare quality and safety.
HHSDigitalMediaAPIPlatform	HHS Digital Media API Platform	Provides APIs for accessing HHS digital media and public health content.
HHSIDEAlab	HHS IDEA Lab	Innovation lab within HHS promoting open data, innovation, and entrepreneurship.

idaholab	Idaho National Laboratory	Publishes research tools and software for nuclear energy and national security.
imls	Institute of Museum and Library Services (IMLS)	Shares tools and datasets to support libraries and museums across the U.S.
IRSgov	Internal Revenue Service (IRS)	Publishes tax-related APIs and tools for public and developer use.
libraryofcongress	Library of Congress	Shares digital tools and datasets for historical and cultural collections.
LLNL	Lawrence Livermore National Laboratory	Publishes scientific computing tools and research software for national security and energy.
MeasureAuthoringTool	Measure Authoring Tool	CMS tool for creating and managing electronic clinical quality measures (eCQMs).
nasa	National Aeronautics and Space Administration (NASA)	Publishes space exploration, earth science, and aeronautics research software and datasets.

NationalGuard	U.S. National Guard	Shares tools and resources for National Guard operations and public engagement.
nationalparkservice	National Park Service (NPS)	Publishes tools and datasets for park management, visitor services, and conservation.
NIHgov	National Institutes of Health (NIH)	Shares biomedical research tools, datasets, and APIs for public health advancement.
noaagov	National Oceanic and Atmospheric Administration (NOAA)	Publishes climate, weather, and oceanographic data and tools.
noaa-gfdl	NOAA Geophysical Fluid Dynamics Laboratory (GFDL)	Shares climate modeling and simulation software for atmospheric and oceanic research.
nrel	National Renewable Energy Laboratory (NREL)	Publishes tools and datasets for renewable energy research and development.
ntia	National Telecommunications and Information Administration (NTIA)	Shares broadband mapping, spectrum management, and digital policy tools.

ombegov	Office of Management and Budget (OMB)	Publishes federal budget, performance, and policy tools and datasets.
ornl	Oak Ridge National Laboratory (ORNL)	Shares scientific research software and tools for energy, environment, and security.
peacecorps	Peace Corps	Publishes tools and resources for volunteer management and global development programs.
PNNL	Pacific Northwest National Laboratory (PNNL)	Shares research software and tools for energy, environment, and national security.
presidential-innovation-fellows	Presidential Innovation Fellows (PIF)	Publishes open-source projects developed by fellows to improve government services.
SSAgov	Social Security Administration (SSA)	Shares APIs and tools for social security benefits and services.
sandialabs	Sandia National Laboratories	Publishes research software and tools for national security and energy innovation.
uscensusbureau	U.S. Census Bureau	Shares demographic, economic, and geographic datasets and APIs.

uscis	U.S. Citizenship and Immigration Services (USCIS)	Publishes immigration-related tools and APIs for public and developer use.
usda	U.S. Department of Agriculture (USDA)	Shares agricultural data, APIs, and tools for food, farming, and rural development.
USDA-ERS	USDA Economic Research Service (ERS)	Publishes agricultural economics research tools and datasets.
USDA-FSA	USDA Farm Service Agency (FSA)	Shares tools and datasets for farm program administration and support.
usdaForestService	USDA Forest Service	Publishes forest management, conservation, and recreation tools and datasets.
usdepartmentoflabor	U.S. Department of Labor	Shares employment, labor statistics, and workplace safety tools and datasets.
usdoj	U.S. Department of Justice (DOJ)	Publishes law enforcement, legal, and civil rights tools and datasets.
USDOT	U.S. Department of Transportation (DOT)	Shares transportation infrastructure, safety, and mobility tools and datasets.

usdot-fhwa-stol	USDOT FHWA Saxton Transportation Operations Lab (STOL)	Publishes research tools for intelligent transportation systems and vehicle automation.
usdot-jpo-ode	USDOT Joint Program Office Open Data Exchange (ODE)	Shares connected vehicle data and tools for transportation research.
usds	U.S. Digital Service (USDS)	Publishes digital tools and services to improve federal government technology delivery.
usepa	U.S. Environmental Protection Agency (EPA)	Shares environmental data, APIs, and tools for pollution control and sustainability.
USFWS	U.S. Fish and Wildlife Service (FWS)	Publishes conservation, wildlife, and habitat management tools and datasets.
USGCRP	U.S. Global Change Research Program (USGCRP)	Shares climate change research tools and datasets from federal agencies.

usgpo	U.S. Government Publishing Office (GPO)	Publishes government documents, data, and APIs for public access.
usgs	U.S. Geological Survey (USGS)	Shares geospatial, geological, and environmental datasets and tools.
USGS-OWI	USGS Office of Water Information (OWI)	Publishes water data and tools for hydrologic science and management.
usnationalarchives	U.S. National Archives and Records Administration (NARA)	Shares historical records, datasets, and digital preservation tools.
usopm	U.S. Office of Personnel Management (OPM)	Publishes federal workforce data and tools for HR and hiring.
USPS	United States Postal Service (USPS)	Shares postal service APIs and tools for mail tracking and logistics.
USPTO	U.S. Patent and Trademark Office (USPTO)	Publishes patent and trademark datasets and APIs for innovation and IP management.

USSBA	U.S. Small Business Administration (SBA)	Shares tools and datasets to support small business development and funding.
usstatedept	U.S. Department of State	Publishes diplomatic, consular, and foreign policy tools and datasets.
ustaxcourt	U.S. Tax Court	Shares legal tools and resources for tax-related case management.
uswds	U.S. Web Design System (USWDS)	Publishes design standards and components for building accessible federal websites.
whitehouse	The White House	Shares open data, policy tools, and digital services from the Executive Office of the President.

11. Appendix: Country-Specific Aggregate Data

11.1 Estonia

Organization	Repository	Star	Fork	Branch	Issue	PullRequest	Contributor
e-gov	91	140	181	287	337	905	748
MKM-ITAO	4	5	3	4	61	3	9
opendata-ee	20	1	10	359	9	0	129
open-eid	69	1002	531	236	640	4906	531

open-source-it-ministry-of-estonia	1	1	0	1	1	0	1
ria-ee	11	184	94	50	10	236	46
Total	196	1333	819	937	1058	6050	1464

11.2 France

Organization	Repository	Star	Fork	Branch	Issue	PullRequest	Contributor
AmbaNum	35	66	39	310	255	537	633
ansforge	119	173	72	706	2374	3067	514
ANSSI-FR	75	7160	1107	124	401	724	182
ApieFrance	1	0	0	1	0	0	1
betagouv	658	2734	2250	12055	22595	92309	10589
datagouv	71	754	260	779	2680	3975	394
DGFiP	1	56	22	2	40	6	4
diplomatiegouvfr	1	0	0	1	0	0	0
DISIC	110	1054	412	684	2397	1965	645
eole	52	2	1	311	0	362	1874
etalab	293	2725	1276	1567	4519	13791	1743
GovernmentFR	13	624	166	96	300	1091	51
IGNF	145	1199	289	758	2663	3365	698

Inist-CNRS	72	678	185	280	783	3702	312
INRIA	26	3841	1082	104	1698	5368	652
inseefr	76	358	423	935	3158	12108	623
MINAGRI-INITIAL	3	0	1	7	3	4	23
MinistereSupRecherche	4	29	2	8	0	11	5
MTES-MCT	214	576	357	3381	10308	41452	847
polewebmaedi	4	1	0	8	0	0	26
ProgrammeVitam	17	188	90	384	87	3668	245
sgmap-agd	23	93	42	112	38	22	84
SocialGouv	326	1299	636	5426	10196	51171	2639
SocieteNumerique	15	11	11	41	6	188	51
transportdatagouvfr	5	1	0	20	0	0	40
Total	2359	23622	8723	28100	64501	238886	22875

11.3 Germany

Organization	Repository	Star	Fork	Branch	Issue	PullRequest	Contributor
BSI-Bund	15	581	67	23	38	119	40
CERT-Bund	10	73	20	68	2	1	170
corona-warn-app	39	10674	2143	246	4824	15645	743
Digitaler-Impfnachweis	6	527	138	98	446	441	66

digitalservicebund	95	256	57	396	217	17507	877
GovDataOfficial	17	88	37	231	136	26	418
isyfact	36	61	41	471	118	2367	504
robert-koch-institut	58	651	154	219	458	3305	323
Total	276	12911	2657	1752	6239	39411	3141

11.4 Japan

Organization	Repository	Star	Fork	Branch	Issue	PullRequest	Contributor
aistairc	104	673	145	251	275	609	536
digital-go-jp	7	1043	127	37	170	884	33
gsi-cyberjapan	108	1336	864	189	182	111	267
IPA-CyberLab	46	296	15	179	9	223	425
ndl-lab	43	1114	85	115	26	132	272
nhoHQ	2	29	5	4	159	126	8
NICT-ATT	1	3	0	1	0	0	1
nict-csl	6	166	32	18	4	35	9
NICT-STARS	11	2	12	45	1	13	51
NII-cloud-operation	34	198	111	87	122	577	415
nims-mdpf	18	25	10	67	165	704	46
ODS-DFS-L2	3	0	0	3	0	2	4

ODS-DFS-L3	2	0	0	2	0	0	3
ODS-DFS-L4	10	0	2	11	1	1	11
ODS-IS-CAVC	20	3	0	20	3	0	24
ODS-IS-IMDX	18	0	0	18	0	0	22
ODS-IS-STID	3	0	1	3	0	0	6
ODS-IS-UASL	15	3	15	15	0	0	19
Ouranos-Ecosystem-Dataspaces	1	0	0	1	0	0	1
ouranos-ecosystem-idi	6	9	12	21	0	9	10
Project-PLATEAU	103	1025	163	409	42	115	448
riken-rccs	65	289	59	367	45	260	1748
Total	626	6214	1658	1863	1204	3801	4359

11.5 Singapore

Organization	Repository	Star	Fork	Branch	Issue	PullRequest	Contributor
c-BIG	16	29	9	47	68	133	467
datagovsg	61	328	109	1247	1924	1848	954
dsaidgovsg	103	474	150	601	104	1244	2112
GovTechSG	175	577	394	2092	377	4816	1298
opengovsg	128	1461	451	1848	2664	26567	1177

Total	483	2869	1113	5835	5137	34608	6008

11.6 United Kingdom

Organization	Repository	Star	Fork	Branch	Issue	PullRequest	Contributor
alphagov	1659	13727	7961	17572	16528	300912	29894
cabinetoffice	111	96	91	2017	39	5856	1154
companieshouse	656	334	415	6468	131	38021	5363
defencedigital	60	38	13	353	24	1920	524
defra	1321	593	631	8352	715	92436	6117
DFE-Digital	739	902	915	11512	3287	126137	6267
dstl	32	1112	364	163	408	1307	179
dvla	37	80	64	149	18	204	184
dvsa	276	156	287	35512	95	24704	2816
dwp	577	500	935	7325	848	21294	3463
GCHQ	72	36454	4543	938	11351	14208	697
GSS-Cogs	198	20	27	713	3112	1324	1213
hmcts	1688	1322	2289	48383	4399	394756	23511
HMPO	26	46	38	224	57	1165	144
hmrc	1633	1974	3317	10047	1685	197758	29133
HO-CTO	6	26	17	81	239	492	76

MetOffice	83	406	227	596	2772	4487	1241
MHRA	9	21	21	389	445	1051	178
ministryofjustice	2380	3650	3458	21605	25256	388455	19464
nationalarchives	601	372	421	5287	878	52829	2467
nhsdigital	496	1223	984	11529	1772	72388	4150
nhsengland	195	478	439	805	592	4111	654
nhsuk	28	976	254	444	2544	9533	356
NHSX	103	672	359	825	389	3525	465
ONSdigital	1341	1047	1918	9840	5408	76782	9092
OrdnanceSurvey	172	1102	501	649	211	778	1329
UKGovernmentBEIS	131	1855	693	1603	911	11937	1420
UKHomeOffice	1233	4748	2395	9667	1897	47621	8222
UKHomeOfficeForms	41	27	70	398	100	1111	291
ukparliament	154	155	404	726	130	6026	746
Total	16058	74112	34051	214172	86241	1903128	160810

11.7 United States

Organization	Repository	Star	Forks	Branches	Issue	PullRequest	Contributor
18f	1210	14591	13472	12126	23104	41189	10105
CDCgov	499	2525	2362	4417	14831	34366	2735

cfpb	358	5260	3723	2777	10497	26057	3749
cisagov	469	26055	5255	3014	9460	33751	4263
CMS-Enterprise	63	74	60	488	251	6556	298
cmsgov	217	1830	829	2092	1179	23788	2129
Code-dot-mil	10	1335	151	25	125	228	52
commercegov	4	132	37	4	33	20	14
department-of-veterans-affairs	479	2227	1208	8118	20654	52736	6134
deptofdefense	63	1948	573	361	1466	2612	746
dhs-gov	19	30	21	36	13	48	33
dodcio	4	35	7	15	81	141	9
doecode	16	66	44	53	176	77	140
DSACMS	70	116	74	903	347	2487	493
enterprise-cmcs	50	210	103	1157	3348	22771	629
fda	56	1054	365	168	276	498	273
fecgov	39	997	355	2257	15704	10785	501
federaltradecommission	4	29	28	4	2	1	4
fedramp	4	109	26	9	68	58	12
fema	9	45	19	10	3	6	12
gsa	1019	11774	7115	11681	23885	58082	8401
hhs	165	722	611	1028	6022	11597	603

HHS-AHRQ	10	232	111	11	0	2	18
HHSDigitalMediaAPIPlatform	10	10	41	12	0	0	12
HHSIDEAlab	6	24	31	26	39	76	33
idaholab	140	3875	2681	754	7372	11059	1069
imls	4	19	12	32	282	159	12
IRSgov	5	68	83	9	4	2	12
libraryofcongress	55	2436	554	335	1759	3277	665
LLNL	608	13008	3893	4466	9740	22032	5101
MeasureAuthoringTool	72	184	206	4966	145	17270	770
nasa	596	53732	14128	5925	18113	35138	3323
nationalparkservice	138	1670	288	286	2121	680	1068
NIHgov	2	5	3	42	1	961	28
noaa-gfdl	66	664	1397	413	2312	5508	631
noaagov	2	108	46	2	9	35	30
nrel	727	13061	8796	5084	18996	30962	3826
ntia	44	364	170	281	198	688	189
ombegov	5	143	61	10	58	28	11
ornl	145	858	328	825	2444	3444	1338
peacecorps	34	111	632	75	695	196	174
PNNL	450	4937	1750	1965	1812	3874	1080

presidential-innovation-fellows	85	349	459	556	877	1125	790
sandialabs	752	6651	2024	3983	6253	7685	2917
SSAgov	21	448	115	41	365	99	278
uscensusbureau	42	1207	260	278	404	1713	197
uscis	2	9	1	2	0	0	2
usda	4	165	31	4	141	9	8
USDA-ERS	1	0	0	1	0	0	1
usdaForestService	16	242	128	457	1268	2156	102
USDA-FSA	21	28	32	148	1345	123	35
usdepartmentoflabor	89	358	314	451	824	683	244
usdoj	7	83	81	366	397	2443	76
USDOT	1	0	1	1	0	0	0
usdot-fhwa-stol	112	706	451	2063	2264	6609	2013
usdot-jpo-ode	26	246	205	345	312	1515	227
usds	53	2119	780	900	3021	4094	494
usepa	637	4112	3097	3515	7910	12736	2122
USFWS	56	52	128	162	126	215	240
USGCRP	18	28	99	40	542	514	52
usgpo	19	1313	448	20	594	52	58
usgs	157	1169	1527	758	3530	18892	672

USGS-OWI	8	11	49	56	48	266	25
usnationalarchives	45	935	286	170	716	294	396
USPS	1	137	25	21	59	23	8
USPTO	3	22	10	7	3	54	9
USSBA	24	68	46	413	25	365	487
usstatedept	85	93	165	418	4253	1244	913
ustaxcourt	16	155	81	875	971	10549	144
uswds	12	12183	1555	814	5050	5341	354
whitehouse	41	7345	2564	130	606	390	175
Total	10300	206907	86611	93257	239529	542434	73764

Colophon

Title

International Comparative Study Report on Open Source Software Publication Activities by Governments: Quantitative Analysis of Government Agency Repositories on GitHub

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