DG DIGIT

Unit.B2 (Interoperability and Digital Government)

Open Source Software Country Intelligence Report

Denmark

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ofe OpenForum Europe

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Executive Summary

Since 2021, the use and deployment of Open Source Software (OSS) in Denmark's public administration has progressed slightly, based on the active role played by local authorities and associations as well as companies. National policies meanwhile have shifted their attention away from OSS; the National Strategy for Digitalisation has focused on open data and does not include policies to promote OSS.

National policies should be analysed in conjunction with the guidelines developed by the Danish Agency for Digital Government (AFD), which facilitates the use of open source software to achieve the goals set out in the National Strategy and Action Plan. The emergence of AI technologies in the last year has also been reflected in the Danish public sector, and the Danish Agency for Digital Government has included information on open source in its AI guidance.

At the local level, Danish municipalities rely on OS2, a nonprofit that aims to increase OSS takeup, which has developed several initiatives. These, alongside actions taken by the national municipalities' association KL, is essential to understand the landscape of OSS in the Danish public sector.

Several important OSS initiatives have been developed in Denmark. The Datavejviser (National Data Portal), createdin 2022, is an open source national data portal providing unified access to public data, built on the CKAN platform. Other OSS solutions such as OSdatascanner, OSGIR, and OS2kitos have been adopted by numerous Danish municipalities and regions for purposes such as HR management, GDPR compliance, and keyloggers. The Geological Survey of Denmark and Greenland developed IT systems based on open source software: RICE and GEUS. And 4S, a healthcare foundation, has provided an open source ecosystem for telemedicine providers and consumers with projects such as OpenTele and Net4Care. All these initiatives demonstrate Denmark's regional and local public administration commitment to fostering innovation through the use, and reuse, of open source software.

Actors

This section presents the key governmental bodies and strategic players influencing awareness and uptake of OSS within Denmark's government and public sector.

Policymakers

- The Ministry of Digital Affairs[1] was established under a new government configuration in August 2024. Its responsibilities range from digital transformation to eGovernment, accompanied by the technical work of the Danish Agency for Digital Government.

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[1] https://www.digmin.dk/

- The Danish Agency for Digital Government (AFD)[2], established in 2011, is in charge of implementing the government's policies for developing the digital public sector as well as large parts of the country's digital service infrastructure. On 15 December 2022, the AFD became part of the Ministry of Digital Affairs. It creates guidelines for the use of open source in the public sector and monitors their implementation.

- The Agency for Governmental IT Services[3] is the agency of the Ministry of Finance, and is responsible for IT services for the Danish government and ministers.

Strategic players

- KL (Kommunernes Landsforening)[4], the Danish municipalities' association: KL created a guide on the use of open source in 2021, together with the AFD. To demonstrate the guide's practical application, it plans to conduct a proof of concept by adopting the Dutch open source codebase Signalen. The KD also, again working with the AFD, commissioned the report 'Software Reuse through Open Source Software in the Public Sector - A qualitative survey on Policy and Practice'.[5] It has an active role in the promotion of open source projects in Denmark, in particular providing guidance and support to local municipalities.

- OS2[6]: This is a non for profit association that aims to increase the use of open source software in Denmark's public administration (municipalities, regions and state). In its own words, OS2 is a network of Danish public organisations and private suppliers that "specify, develop and govern digital solutions by municipalities and for municipalities". OS2 uses open source as a means of creating sustainable projects and ensuring co-creation, innovation and ownership of its results. The community focuses on coordinating collaboration on open source software to prevent vendor lock-in and to reduce costs, and has a range of 26 products in its portfolio.[7] Product portfolios and Danish municipality users are visible in their interactive map[8]. Nowadays, OS2 counts on 64 suppliers that range from small to large organisations across business and academia, which commit to provide open source solutions for the OS2 community[9].

Policy and legal framework

This section summarizes the main digital and public services policies relating to open source software in Denmark, including landmark strategies documents and implementation frameworks. The list is presented in a chronological order, starting from the most recent milestone.

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[2] [Danish Agency for Digital Government](#)
[3] https://statens-it.dk/english/
[4] https://www.k.ldk/
[5] https://www.diva-portal.org/smash/get/diva2:1848137/FULLTEXT01.pdf
[6] [OS2](#)
[7] [Open Source produkter i OS2-fællesskabet](#)
[8] [Kommuners tilknytning til OS2](#)
[9] [Leverandører | OS2 – Offentligt digitaliseringsfællesskab](#)

- Guidance on the use of open source in the public sector, 2024[10]: These guidelines, created by the AFD, detail the different licensing options and strategies for the acquisition of open source software and their implementation. The guidance includes Architectural principle 2.3: Avoid Reliance on Suppliers and Proprietary Technologies, which was adopted in 2022[11] and encourages public authorities to use sustainable open source components and open standards.

- Open Government Partnership National Action Plan 2023–2025[12]: This document details the commitments adopted by the Danish government on open data. While it does not directly include actions dedicated to open source, the commitment to set up the Datavejviser (National Data Portal) relied on open source software to provide a unified access point to public data (see below).

- National Strategy for Digitalisation, 2022[13]: This sets out nine goals for Denmark to strengthen cybersecurity and IT training, develop a strong and responsible digital foundation, and promote digital transformation for SMEs. The National Strategy takes into account the Danish Government Digitisation Partnership recommendations and includes them among its 61 initiatives.

- Guides for the use of AI for public authorities, 2022[14]: This document includes information to distinguish between open and closed AI tools and indicates that open source AI tools are those whose code is publicly available and where it is possible to obtain knowledge of how the AI tool is developed and works. These guides demonstrate that the Danish public sector was discussing open AI before the Open Source Initiative published its definition in October 2024.

- Guide to Government IT project-model, 2022[15]: The Danish Agency for Digital Government created this guide to share recommendations and guidance for the use of Common Public Digital Architecture and the reuse of existing systems for software development.

- Poul Schmith Legal note, 2020[16]: This law firm's note, commissioned by OS2, provides clarification regarding municipalities' use of open source software. The note indicates that a public contracting authority can request in its contracts the use of open source software for its projects.

- Open standards policy, 2007[17]: Following a Parliament resolution[18] Eight months earlier, the Danish Ministry of Sciences, Technology and Innovation in March 2007 set out a policy mandating the use of open standards in the public administration and national, regional and local levels.

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[10] Vejledning om brug af open source i den offentlige sektor | Fællesoffentlig Digital Arkitektur
[11] Arkitekturregel 2.3: Undgå afhængighed af leverandører og proprietære teknologier | Fællesoffentlig Digital Arkitektur
[12] Open Government Partnership National Action Plan
[13] National Strategy for Digitalisation
[14] Guide til myndigheder
[15] Vejledning til statens it-projektmodel
[16] https://opendenmark.dk/wp-content/uploads/2020/06/Notat_endeligt-1.pdf
[17] DK: Open standards made manda… | Interoperable Europe Portal
[18] B 103 - 2005-06 (som vedtaget): Forslag til folketingsbeslutning om anvendelse af åbne standarder for software i det offentlige. / Folketinget

Open source software initiatives

This section presents an overview of the main open source software-related initiatives in Denmark. The list is presented in a chronological order, starting with the most recent initiative.

- Data viewer (Datavejviser), 2022[19]: The Danish Agency for Digital Government manages the Data viewer catalogue of available data sets and makes them available in the common public standard for the description of datasets (DCAT-AP-DK[20]). The descriptions of data (i.e. the metadata) are freely available to all users and can be reused and redistributed under the Creative Commons Public Domain License. The underlying IT system is a modified version of the open source system CKAN[21], operated on the State IT platform GvCloud[22]. CKAN is OSS and is released under the GNU Affero Public License. Because this is a copyleft licence, all modified versions are also available under the same terms.

- Geological Survey of Denmark and Greenland (GEUS), Department of Glaciology and Climate, 2020: The department established a GitHub page to develop and share its scripts, workflows, datasets and ideas[23]. It now contains 44 public repositories, with the first dated September 2020.

- GEUS Operational Sentinel-3 snow and ice products (SICE), 2020[24]: This is an automated open source processing chain to determine daily albedo and other surface properties of glaciated areas. It counts on 12 repositories in Github that are actively maintained[25].

- OS2iot, 2019[26]: This is open source software used by 25 municipalities. It consists of an IoT platform enabling the sensor data management of IoT devices. It allows sensor data gathering regardless of transmission type, and is standardised so it can be used by businesses.

- 4S Foundation for software-based healthcare services[27], 2015: Aarhus University and the Alexandra Institute operate this open source ecosystem for telemedicine providers and consumers. Members include the National eHealth Authority, responsible for setting the national standards for telemedicine in Denmark; three out of Denmark's five regions, which operate all public hospitals and secondary care; municipalities responsible for primary health care and social care; and software providers. Their two main projects are OpenTele[28] (a telemedical platform for collecting

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[19] Datavejviser
[20] GitHub - SEMICeu/DCAT-AP: This is the issue tracker for the maintenance of DCAT-AP
[21] https://ckan.org/
[22] GovCloud
[23] GEUS Glaciology and Climate · GitHub
[24] about SICE - snow.geus.dk
[25] SICE · GitHub
[26] OS2iot | OS2 – Offentligt digitaliseringsfællesskab
[27] https://4s-online.dk/wordpress/english/
[28] https://4s-online.dk/wordpress/4s-opentele/

health data), and Net4Care[29] (a development platform that connects health IT across sectors and suppliers). 4S's Gin repositories are accessible at bitbucket.org[30].

- Aarhus Municipality Open Source Action Plan, 2014[31]: This aims to increase the use of open source software to avoid IT vendor lock-in. The municipality of Aarhus has been a long-time open source software enthusiast, and adopted this strategy as a continuation of its efforts to develop its open source policy. In 2011, the Aarhus city council adopted a decision that required the municipality to consider the use of open source every time new IT solutions are acquired. One of the outcomes of the action plan is the Aarhus municipality website which was developed as OSS (Umbrazo).

- OSdatascanner 2014[32]: This is open source software developed by Magenta[33] in collaboration with OS2 and Vordingborg Kommune, that aims to help the Danish public sector comply with the EU's General Data Protection Regulation (GDPR), which entered into force in May 2018. During the software development process, Vordingborg Kommune[34] functioned as a test municipality for a period of six months. In autumn 2018, OS2Webscanner was expanded with file and mail scan. Additionally, the name was changed to OS2datascanner. In 2023, the name was again changed to OSdatascanner.

- OS2borgerPC[35], 2013[36]: This is an open source remote management system developed by OS2 for publicly available computers that aims to protect users against identity theft and keyloggers. It was developed by Magenta in collaboration with Aarhus Municipality among others. Nowadays, 43 municipalities use OS2borgerPC.

- OS2kitos, 2012[37]: This is an open source software tool developed by OS2 which oversees a municipality's IT systems, contracts, interfaces and system portfolio. The first Danish municipality to use KITOS was Roskilde in 2012; now 81 municipalities use it. In order to maintain the community and keep OS2Kitos updated to the latest developments, OS2 still organises two annual user club meetings.

- Open Source Global Identity Repository (OSGIR) 2012[38]: This is an open source HR system developed by Magenta that manages organisations with full ownership and automation. Aarhus Municipality and Ballerup Municipality in 2012 asked Magenta to develop the tool under Architectural principle 2.3 (see Policy Framework section). The system is open source and owned

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[29] https://4s-online.dk/wordpress/4s-net4care/
[30] https://bitbucket.org/4s/workspace/repositories/
[31] Danish Municipality of Aarhus aims to free itself from IT vendor lock-in (Aarhus Open Source Action Plan) | Interoperable Europe Portal
[32] OSdatascanner - Magenta
[33] Magenta
[34] OSdatascanner as a GDPR solution at Vordingborg Municipality
[35] OS2borgerPC - Magenta
[36] https://os2borgerpc-admin.readthedocs.io/en/latest/news.html#version-2-0-2-july-12-2013
[37] OS2kitos | OS2 – Offentligt digitaliseringsfællesskab
[38] OS GIR - Magenta

by the OS2 community. –At the regional level, three out of the five Danish regions use it: Hovedstaden (Capital region), Midtjylland (Central region) and Syddanmark (South region).

- Nemhandel, 2005[39]: This is a digital infrastructure for the exchange of business documents between private companies and public authorities in Denmark. Since 2005, it has been mandatory to use Nemhandel when exchanging business documents with the authorities in Denmark. It consists of a digital contact register, where all Danish companies and authorities that accept digital business documents are registered. In addition, there are a number of access points that support the secure and fast exchange of digital business documents, such as e-invoices, between sender and recipient both nationally and internationally.

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[39] NemHandel

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