



DG DIGIT

Unit.B2 (Interoperability & Digital Government)

# Open Source Software Country Intelligence Report

Belgium

2023

The initial research was carried out for the ISA2 Programme by Wavestone’s European Services team. This is an updated version of this report by OpenForum Europe, carried out for the Interoperable Europe Initiative under the Digital Europe programme. The report provides an overview of open source software (OSS) in Belgium as of September 2023. This report was enriched with the kind contribution of Bart Hanssens from FPS BOSA’s Directorate-General Digital Transformation (DG DT).



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*Updated in September 2023*

# Table of Contents

Executive Summary	3
Actors	3
Policy and legal framework	4
Open source software initiatives	5

# Belgium

## Executive Summary

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Belgium's public sector adoption of open source software (OSS) is being worked on within the national government, the governments of the three regions, the governments of the language communities, and local municipalities. At the federal level, the Belgian Federal Public Service Policy and Support (FPS BOSA) is the primary entity actively contributing to OSS solutions on platforms like GitHub. Examples of their contributions include OpenFed (a customised distribution of Drupal) and the eID middleware. However, it's important to note that FPS BOSA is not officially designated as the central authority responsible for the development and oversight of OSS.

Two of Belgium's three regions, Wallonia and Flanders, have their own independent open source strategy but coordination between these initiatives is not particularly strong. The Wallonia Digital Agency and the Flemish Information Agency are responsible for promoting digitalisation within their respective regional governments.

Legal provisions exist in the Brussels and Wallonia regions that encourage the use of OSS by public administrations, aiming to ensure the accessibility of information and communication technology. In practice, actors such as iMio, a public company created by municipalities, play a crucial role in promoting open source adoption in Wallonia by developing open source solutions for local administrations.

In Flanders, open source usage is strongly encouraged, particularly through the utilisation of open data. Many Flemish administrations publish their projects on GitHub and actively pursue open source projects for developing their solutions.

Belgium also has a significant presence of open source communities at the local level. These communities, some of which have existed for many years, have gained international recognition for the quality of their solutions. Additionally, newer communities have emerged in response to the growing demand for participative democracy and localised solutions. Belgium is also home to one of the largest open source conferences in Europe, FOSDEM, gathering thousands of open source practitioners and enthusiasts at the ULB Solbosch campus in Brussels since 2005 with its next edition in 2024 planning to feature over 400 speakers.

## Actors

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This section presents the key governmental bodies responsible for setting OSS policies and the main strategic players that work together with the government at all levels to raise awareness of OSS.

### *Policy makers*

- Within the Belgian Federal Public Service Policy and Support (FPS BOSA), the Directorate-General for Simplification and Digitalisation (DG SD) is responsible for the implementation of the federal digital agenda.<sup>1,2</sup>
- The Digital Agency (*Agence du Numérique, AdN*)<sup>3</sup> is the public service body of the Walloon Government responsible for monitoring technological innovation and habits relating to digital technology for Wallonia and its municipalities (*communes*). The AdN also monitors the implementation of the Digital Wallonia Strategy 2019-2024.<sup>4</sup>
- The Flanders Information Agency (*Informatie Vlaanderen*)<sup>5</sup> aims to develop a coherent Government-wide information policy for the Flemish Region. It supports the Flemish Government and helps to lead the transition to an information-driven government. The organisation is active on GitHub<sup>6</sup> and maintains various registries on street names and buildings, among other things.

### Strategic players

- iMio (*La mutualisation informatique au service des pouvoirs locaux*),<sup>7</sup> is an IT sharing body offering services to local authorities. It was created as a result of the Minister of Local Authorities' desire to establish a unique structure to promote and coordinate the pooling of organisational solutions, IT products and IT services for the local authorities of Wallonia. One of its main activities is the production of OSS solutions to meet the needs of these local authorities.
- V-ICT-OR (*Vlaamse Ict Organisatie*)<sup>8</sup> is an IT organisation that proposes expertise in ICT for local governments. Acting as a network of experts and practitioners, V-ICT-OR has developed multiple open source solutions for administrations in Flanders, coordinating efforts in digitalisation.<sup>9</sup>
- Abelli (*L'association belge de promotion du logiciel libre*)<sup>10</sup> is the Belgian association for the promotion of free software. Their objective is to inform the broader public about alternative software that respects digital privacy.

## Policy and legal framework

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This section summarises the main OSS-related policies and legal acts in Belgium, including the first known milestones in this domain. The list is presented in chronological order, starting from the most recent milestone.

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<sup>1</sup> [Digital Administration | BOSA](#)

<sup>2</sup> BOSA DG DT is the successor of FPS Information and Communication Technology (Fedict)

<sup>3</sup> [Organisation - Agence du Numérique](#)

<sup>4</sup> [Digital Wallonia 2019-2024 | DigitalWallonia.be.](#)

<sup>5</sup> [Agentschap Digitaal Vlaanderen](#)

<sup>6</sup> [Digitaal Vlaanderen · GitHub](#)

<sup>7</sup> [Qui nous sommes — iMio](#)

<sup>8</sup> [Over ons - V-ICT-OR](#)

<sup>9</sup> [Realiseren - V-ICT-OR](#)

<sup>10</sup> [Abelli asbl](#)

- The Policy Statement of the Wallonia-Brussels Federation 2019-2024<sup>11</sup> (also known as the French Community, separate to the regional governments) has a dedicated chapter on digitalisation. It promotes open standards, OSS, and open data as indispensable tools within public administrations.
- The Political Declaration of Wallonia 2019-2024<sup>12</sup> aims to promote the use of open standards and OSS, both of which are deemed as essential tools to ensure accessibility to ICT while simultaneously guaranteeing the freedom of individual users. For this reason, Walloon public administrations intend to adopt OSS solutions and promote their use among citizens and companies.
- The 2009-2014 Brussels-Capital Regional Government Agreement titled "Sustainable regional development for the people of Brussels"<sup>13</sup> favoured the use of OSS both at communal and regional levels.
- The Declaration on the French Community Policy 2009-2014 titled "A shared energy for a sustainable, humane and supportive society" (*Une énergie partagée pour une société durable, humaine et solidaire*)<sup>14</sup> promotes the use of OSS in administrations and ministerial offices.

## Open source software initiatives

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This section presents an overview of the main OSS-related initiatives in Belgium. The list is presented in chronological order, starting with the most recent initiative.

- Coronalert, 2020:<sup>15</sup> Forked from Germany's Corona Warn App, Coronalert was developed by the Belgian government in a fraction of the time and cost expected.<sup>16</sup> Published under an open source licence,<sup>17</sup> the app is based around the DP-3T protocol,<sup>18</sup> which is also open source.
- Flemish Environment Agency's sewer monitoring system, 2019:<sup>19</sup> Part of an inter-regional project of North-West Europe, the BE-GOOD solution is used for tracing data and any kind of topological network. It was originally built for rivers and sewer systems.
- BOSA Accessibility Check, 2019:<sup>20</sup> a JavaScript application that checks web pages and detects non-adherence with a defined presentation or accessibility standard. It is a fork originating from HTML Sniffer.<sup>21</sup>

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<sup>11</sup> <http://archive.pfwb.be/1000000020c6026>

<sup>12</sup> [Déclaration de politique régionale pour la Wallonie 2019-2024](#)

<sup>13</sup> [Un développement régional durable au service des Bruxellois](#)

<sup>14</sup> <http://archive.pfwb.be/10000000104701e>

<sup>15</sup> <https://github.com/orgs/covid-be-app/repositories>

<sup>16</sup> [Belgium forked its COVID-19 app | Joinup](#)

<sup>17</sup> [cwa-app-android/README.md at develop - Coronalert](#)

<sup>18</sup> [GitHub - DP-3T/documents: Decentralized Privacy-Preserving Proximity Tracing](#)

<sup>19</sup> [BE GOOD pioneering in the development of innovative services — Flanders Environment Agency \(VMM\)](#)

<sup>20</sup> [GitHub - openfed/AccessibilityCheck](#)

<sup>21</sup> [HTML\\_CodeSniffer](#)

- OSS in Education, 2019: The Flemish Ministry for Education has been promoting the use of free software for many years. In 2005, all Flemish primary and secondary schools received an extensive manual on the use of free software.<sup>22</sup> In 2019, the Flemish Minister of Education Hilde Crevits announced that students with learning difficulties that impede their ability to read and write will soon also be able to use free reading software offered by the government in higher education.<sup>23</sup>
- OSS in Enabel, 2019:<sup>24</sup> The Belgian development cooperation agency Enabel<sup>25</sup> has opted for OSS since 2019. The software has helped to lower the barriers for collaboration between the agency and public institutions and non-governmental organisations due to its accessible and affordable nature.
- Open data portal of Flanders,<sup>26,27</sup> 2019: The Comprehensive Knowledge Archive Network (CKAN), together with the Flanders Government, has developed an open data portal. The portal was using TheDataTank,<sup>28</sup> a tool that helps users to create open datasets in the correct electronic formats. This solution is being developed as OSS by Open Knowledge Belgium.
- OSS in Walloon municipalities, 2019:<sup>29</sup> In 2017, 75% of municipalities in the Walloon Region were using OSS and open source services. Today,<sup>30</sup> 290 cities, towns, villages and other public administrations in the region are using eight open source-based solutions that are managed and maintained by iMio.
- Participatory democracy in Belgium, 2018:<sup>31</sup> BOSA, the French-speaking Parliament of Brussels (legislative branch of the French Community Commission in the Brussels Region), and the Parliament of the Brussels-Capital Region have implemented a fork of Decidim<sup>32</sup> to organise petitions for Belgian citizens on various projects.
- Bruxelles Environnement's Geodata, 2017:<sup>33</sup> Co-developed with the cooperative *Atelier Cartographique*,<sup>34</sup> this platform combines various geological maps of Brussels and mapping apps such as Infiltrasoil or Bruwater, both of which are themselves published as open source.<sup>35</sup>
- Generic Public Domain Information Platform (GIPOD),<sup>36</sup> 2016: Developed by the Digital Agency of Flanders, this platform brings together information about roadworks, construction work, events, and nuisance in the public domain, helping to coordinate public works.

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<sup>22</sup> [Minister promoot vrije software in onderwijs | Oproep voor een democratische school](#)

<sup>23</sup> [Gratis voorleessoftware binnenkort ook voor studenten hoger onderwijs | VRT NWS: nieuws](#)

<sup>24</sup> [Inclusion and sharing | Joinup](#)

<sup>25</sup> [Enabel](#)

<sup>26</sup> [VODAP | Vlaanderen.be](#)

<sup>27</sup> [GitHub - Informatievlaanderen/vodap: Het Vlaams Open Data Portaal is een CKAN instantie.](#)

<sup>28</sup> [Vlaamse URI-Standaard voor Data \(PDF\)](#)

<sup>29</sup> [Majority of towns in Wallonia now use open source](#)

<sup>30</sup> [Qui utilise nos apps — iMio](#)

<sup>31</sup> [Etat fédéral | Open Source Politics](#)

<sup>32</sup> [OpenSourcePolitics · GitHub](#)

<sup>33</sup> [Atlas](#)

<sup>34</sup> <https://atelier-cartographique.be/fr/index.html>

<sup>35</sup> <https://gitlab.com/atelier-cartographique/be-lb>

<sup>36</sup> [GitHub - Informatievlaanderen/GIPOD: Generiek Informatie Platform Openbaar Domein](#)

- CultURize, 2016:<sup>37</sup> A revamp of an existing solution<sup>38</sup> developed with Open Knowledge Belgium, this app set up a four-step process to create a persistent Uniform Resource Identifier (URI) for a collection item to be easily findable.
- Arthub Flanders, 2016:<sup>39,40</sup> Developed by the Flemish Art Collection (VKC), the official museum representatives for Flanders, and Meemoo (Flemish archive institute)<sup>41</sup> Arthub Flanders is a public discovery interface which provides users with the detail of the museums' collections. Based on the blacklight project,<sup>42</sup> as well as the Datahub:Factory<sup>43</sup> and the Catmandu<sup>44</sup> projects (two locally developed data management projects) it is an example of inter-administrative collaboration at the local level.
- Research Institute for Nature and Forest (INBO), 2016:<sup>45</sup> Mainly a repository for sharing open data, the INBO is the independent research institute of the Flemish government that underpins and evaluates biodiversity policy and management. It implements both open data and open access<sup>46</sup> policy regarding its work.<sup>47</sup>
- ANYWAYS, 2016:<sup>48</sup> This public multi-modal transport route planning system was developed by several municipalities of Belgium across Flanders and Wallonia. ANYWAYS has been used by localities to plan route modifications and privilege cycling as a transport mode.<sup>49</sup>
- System of Flemish Base Registries (*Stelsel van Vlaamse Basisregisters*), 2016:<sup>50,51</sup> The system is an event-based solution for base registries (authentic sources of information in public administrations) developed by the Flanders Information Agency. By using OSS, the Flemish Information Agency planned to foster the creation of new base registries in conjunction with creating of other OSS solutions within the .NET ecosystem utilising previously used software.
- Antwerp city platform as a Service (Antwerp UI), 2015:<sup>52</sup> An innovative approach to public procurement and IT development, Antwerp UI has created an open source ecosystem of independent single-purpose reusable components.<sup>53</sup> It allows the city to contract various small suppliers, usually startups, to develop new or existing parts of its system without being dependent

<sup>37</sup> <https://github.com/PACKED-vzw/CultURize/wiki>

<sup>38</sup> [GitHub - PACKED-vzw/resolver: The Resolver application is a tool for creating, managing, and using persistent URIs.](#)

<sup>39</sup> [Arthub Flanders](#)

<sup>40</sup> [Digitale duurzaamheid in kunstmusea | meemoo](#)

<sup>41</sup> [Projecten | meemoo](#)

<sup>42</sup> [Project Blacklight](#)

<sup>43</sup> <https://thedatahub.github.io/>

<sup>44</sup> [Catmandu](#)

<sup>45</sup> [Research Institute for Nature and Forest \(INBO\) · GitHub](#)

<sup>46</sup> [Open Access Policy | Instituut voor Natuur- en Bosonderzoek](#)

<sup>47</sup> [Data & Applications | Instituut voor Natuur- en Bosonderzoek](#)

<sup>48</sup> [ANYWAYS · GitHub](#)

<sup>49</sup> [ANYWAYS | Safe cycling to school](#)

<sup>50</sup> [Public site for the Base Registries.](#)

<sup>51</sup> [Release Notes](#)

<sup>52</sup> [Antwerp UI](#)

<sup>53</sup> [ACPaaS UI is open source](#)



on larger providers. Through this open approach, the city claims to have reduced its cost and enabled another system of IT development for its administration.<sup>54</sup>

- Check Your House (Check Je Huis), 2015:<sup>55</sup> Launched in 2015, Check Your House is an online tool developed by the City of Ghent. Locals can calculate how energy efficient their house is and how their rating can be improved. Since 2017, the tool has become open source in order to respond to the interest shown by non-residents and other governments.
- Desktop system running on open source, 2015:<sup>56</sup> The French-speaking green political party of Belgium, Ecolo, completed its move to an entirely open source desktop system in 2015. All of Ecolo's parliamentarians and their staff, totalling more than 125 workstations, run GNU/Linux and use only OSS.
- Local Decisions as Linked Open Data, 2015:<sup>57</sup> The Agency for Local Governance in Flanders facilitates a more transparent decision-making process by publishing local council decisions as Linked Open Data. This initiative, started in 2015, created an open source editor to support administrations when writing and publishing linked decisions. A vibrant community of public administrations, companies and academia are involved in the development of the software.
- Athramhais, 2014:<sup>58</sup> Athramhais is an online SKOS editor developed by the Flemish Heritage Agency in 2014. It allows users to create and edit an online thesaurus or vocabulary adhering to the SKOS specification through a simple web interface. This allows any user with access to a web browser to consult the thesauruses and, if allowed, edit them.<sup>59</sup>
- The Digital Week, 2014:<sup>60</sup> Co-organised by public actors, NGOs and companies, this one-week event aims at creating an inclusive digital environment.<sup>61</sup> This conference promotes diversity in the digital field and features introductions to open source solutions.
- OpenFed, 2012:<sup>62</sup> FPS BOSA is funding the development of OpenFed, a tailored distribution of the Drupal content management system. Started in 2012 by Fedict, this multilingual distribution is currently used by dozens of federal websites.
- Orthanc, 2012:<sup>63</sup> Orthanc is an award-winning Belgian lightweight DICOM server for healthcare and medical research. Development of the server began in 2012 at the University Hospital of

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<sup>54</sup> ['Buy from startups' strategy pays off for City of Antwerp | Joinup](#)

<sup>55</sup> [Check je huis](#)

<sup>56</sup> [Ecolo achève sa libération informatique !](#)

<sup>57</sup> [lblad - Local Decisions as Linked Open Data in Flanders](#)

<sup>58</sup> [GitHub - OnroerendErfgoed/atramhais: An online SKOS editor](#)

<sup>59</sup> [Introduction — Atramhais 2.0.0b1 documentation](#)

<sup>60</sup> [La Semaine Numérique](#)

<sup>61</sup> [Les organisateurs | La Semaine Numérique](#)

<sup>62</sup> [OpenFed | Drupal.org](#)

<sup>63</sup> <https://web.archive.org/web/20230923011141/https://www.orthanc-server.com/>

Liège. It has since been awarded with the Digital Public Good Alliance label.<sup>64</sup> Work to integrate Orthanc into GNU Health began in 2019<sup>65</sup> and was completed in July 2023.<sup>66</sup>

- Technical Libraries by the Flemish Heritage Agency, 2012:<sup>67</sup> The Flemish Heritage Agency has made several technical libraries that are used to build Flanders Heritage’s web applications. These technical libraries mainly use OSS solutions such as Python, Pyramid technology, Javascript, Dojo and Aurelia.
- OSLO toolchain, 2012:<sup>68,69</sup> The OSLO toolchain is an open and transparent environment for the publication of semantic data standards. Originally developed by the non-profit organisation V-ICT-OR, it was then developed by the Flanders Information Agency. It consists of open source components which transform UML documents into human and machine-readable data standards. The complete transformation process from source until publication is publicly visible on GitHub and several support tools are available. The later OSLO<sup>2</sup> project focuses on the development of semantic interoperability to facilitate more efficient information exchange between citizens and municipalities.<sup>70</sup>
- Open Knowledge Belgium (OKBE)<sup>71</sup> and the Open Summer of Code, 2011:<sup>72</sup> Every summer, OKBE gives students the opportunity to experience what it is like to work on a real project in a field relevant to their studies. Students are coached by experts working in public and private organisations who want to share their experience. In return, these organisations can innovate and develop OSS tools while scouting for potential talent. The four-week event started out as the “iRail Summer of Code” in 2011 and has now grown to an event with almost 100 students and coaches working on 20 different OSS projects.<sup>73</sup> OKBE also supports initiatives like HackYourFuture, a coding school for refugees with an open source curriculum. The graduation project is the development and completion of an OSS project.
- Digital Signature Service, 2009:<sup>74</sup> BOSA DG DT started developing the digital signature service in 2009 as an open source framework of modular building blocks. This framework formed the basis of the service until 2017.
- eID Middleware, 2006:<sup>75</sup> BOSA is actively developing the middleware of the state-issued electronic identity cards on GitHub.

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<sup>64</sup> [Orthanc is granted the DPGA status](#)

<sup>65</sup> [GNU Health and Orthanc - The perfect companions](#)

<sup>66</sup> [Integration of Orthanc into GNU Health](#)

<sup>67</sup> [Onroerend Erfgoed · GitHub](#)

<sup>68</sup> [Opleidingsmateriaal OSLO | Vlaanderen.be](#)

<sup>69</sup> [About OSLO - Open Standards for Linked Organisations](#)

<sup>70</sup> [GitHub - Informatievlaanderen/OSLO-Standaarden: OSLO<sup>2</sup>](#)

<sup>71</sup> [Open Knowledge Belgium](#)

<sup>72</sup> [Open Summer of Code](#)

<sup>73</sup> [2019 projects | Open Summer of Code](#)

<sup>74</sup> [https://dt.bosa.be/en/over\\_bosa/realisaties/Signing\\_Box](https://dt.bosa.be/en/over_bosa/realisaties/Signing_Box)

<sup>75</sup> [GitHub - Fedict/eid-mw: eID Middleware \(main repository\)](#)

- QDOAS and the Atmospheric Toolbox, 2004: Developed by the Royal Belgian Institute for Space Aeronomy<sup>76</sup> under the GNU General Public License, QDOAS (for Differential Optical Absorption Spectroscopy) is available on ESA Atmospheric Toolbox<sup>77</sup> alongside other open source solutions for atmospheric observation.<sup>78</sup> It facilitates the analysis of results regarding traces of gas in the atmosphere. Dating back to the early 2000s<sup>79</sup> the open approach to spatial measurement tools has been modernised and adapted to current standards, with the source code now freely available online.<sup>80</sup>
- FOSDEM, 2000<sup>81</sup>: A yearly event, the FOSDEM conference is a non-commercial, volunteer-organised European event centred on free and OSS development. An institution in the European open source community, it gathers thousands of participants to discuss various themes related to open source. The event features many talks around policy and the public sector use of open source.

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<sup>76</sup> [BIRA-IASB](#)

<sup>77</sup> [Atmospheric Toolbox](#)

<sup>78</sup> [QDOAS Software user manual](#)

<sup>79</sup> [Basic Envisat Atmospheric Toolbox Tutorial](#).

<sup>80</sup> [GitHub - UVVIS-BIRA-IASB/qdoas: Application to perform DOAS retrievals of trace gases from spectral measurements](#)

<sup>81</sup> [fosdem](#)

