

Digital Sovereignty

Balancing Control,
Dependencies, and Innovation





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OPEN SOURCE: KEY TO RECLAIMING PUBLIC SECTOR DIGITAL SOVEREIGNTY

Dirk Schrödter is Head of the State Chancellery (CdS) and Minister of Digitalization of the German state of Schleswig-Holstein. He has been leading the State Chancellery since 2017, and since 2022, he has also served as Minister for Digitalization and Media Policy. Previously, he was responsible for budget and financial policy in Schleswig-Holstein's Ministry of Finance. He studied economics in Potsdam.

Digital sovereignty means different things to different leaders. For a German state minister responsible for digitalization, what does the term mean in practice?

State sovereignty today is no longer determined solely by military strength or by the ability to enforce law and order domestically. It is increasingly defined by the capacity to act sovereignly in the digital sphere. Digital sovereignty has therefore become a matter of national security. The digital systems we operate within public administration are no longer merely technical tools – they constitute critical infrastructure. Accordingly, this is how we must treat our IT systems. If we lose control over our IT infrastructure, we risk losing our political and administrative capacity to act. Freedom, democracy, and sovereignty increasingly depend on our ability to shape and control our own digital infrastructure. Open source is therefore an expression of democratic values. Digital sovereignty means possessing the knowledge, capabilities, and means to understand, manage, and independently develop digital infrastructure; to influence IT operating processes; to retain full control over government data storage; and to prevent unwanted data outflows.

Open source is the key to digital sovereignty because full freedom of action can only be achieved through openness and a diverse ecosystem of IT providers.



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THE SCHLESWIG-HOLSTEIN OPEN SOURCE MIGRATION

You have said publicly that Schleswig-Holstein wants to become independent of large tech companies and ensure digital sovereignty. What led you to this strategy?

Originally, this was primarily an economic question: how could we avoid constantly rising licensing fees? After Russia's brutal attack on Ukraine, we began to examine the security risks we are confronted with. We saw how dependent we had become in the energy sector – and we are just as dependent in the digital sphere.

For this reason, the state government decided across all departments to systematically, gradually, and sustainably reduce proprietary dependencies. Only through the use of open solutions, open standards, and open-source software can we free ourselves from dependencies, continue developing systems independently, and build up digital expertise.

Digital sovereignty is the DNA of our strategy: proprietary solutions are being gradually replaced by open-source software.

When a government's daily operations — email, documents, video conferencing, collaboration — run entirely on non-European proprietary platforms, what is actually at risk?

The current situation is characterized by governments being heavily dependent on proprietary software — often provided by only a handful of global technology corporations. This dominance by a few tech giants limits our ability to shape and adapt our digital infrastructure, jeopardizes our security, and drives up software costs. In addition, major technology companies are often subject to non-European legal frameworks such as the U.S. Cloud Act, meaning that unwanted data transfers cannot be ruled out.



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The technology giants we are dealing with are exploiting their technological power for economic gain. This, too, threatens the state's ability to act independently. At the same time, the suppression of competition – which can only fully flourish through the use of open standards and open source software – also hinders innovation.

If a state can no longer shape its IT systems autonomously, it loses far more than efficiency; it loses autonomy itself and the trust of its citizens. That is why reducing dependencies on proprietary software from big tech – companies that are also subject to non-European legal systems – was never merely a technological decision. From the outset, it was a deliberate political agenda aimed at ensuring digital sovereignty, backed by political resolutions at cabinet level.

PROPRIETARY SOLUTIONS ARE BEING GRADUALLY REPLACED BY OPEN-SOURCE SOFTWARE.

Schleswig-Holstein has committed to migrating from proprietary software to open-source alternatives. How is the shift working out?

Digital sovereignty is achieved through strategic consistency in implementation. This is exactly what we are demonstrating in Schleswig-Holstein – through the introduction of LibreOffice, the replacement of Microsoft Exchange and Outlook with Open-Xchange and Thunderbird, the deployment of Nextcloud and OpenTalk, the migration from Microsoft Active Directory to Univention Nubus, the development of a sovereign telecommunications infrastructure, and the use of Linux-based workstations. We are pursuing this path step by step and pragmatically, replacing solutions wherever modernization is already required.

Executive Conversations

In April 2024, we became the first federal state in Germany to introduce a digitally sovereign IT workplace for around 30,000 public sector employees – a first step toward the state’s full digital sovereignty.

Following this decision, LibreOffice, the open-source office suite, is now the mandatory standard for office applications across the ministries and public authorities of the state. All employees use this standard, and Microsoft Office has been removed from nearly 80 percent of all workstations outside the tax administration. In individual cases, separate licenses are still required for certain specialized applications.

Another major milestone was the complete migration from Microsoft Exchange and Outlook to Open-Xchange and Thunderbird, involving more than 44,000 mailboxes and 110 million emails and calendar entries. The entire working memory of the state administration was successfully migrated – Outlook no longer plays any role in our administration.

Moving tens of thousands of civil servants off familiar tools is as much a change management challenge as a technology one. How are you managing this transition?

We cannot rely on the experience of others – worldwide, there are hardly any comparable projects of this scale. The transition is complex and, naturally, does not proceed entirely without friction. Employees who have spent 20 years or more working with Word and Excel must learn new tools, and established processes have to change.

This requires careful planning, perseverance, and intensive support for employees. That is exactly what we have provided through a comprehensive change management process, ranging from training videos to on-site floor managers.

It also requires the willingness to take and bear responsibility. Without clear political leadership, such a transformation is impossible.

Yet it is precisely in these phases that the strength of close, direct, and agile collaboration with the providers of open-source solutions becomes apparent – collaboration that our new approach makes possible in the first place. It is hard to imagine achieving this kind of responsiveness when dealing with global tech giants, where coordination is often extremely difficult.

In Schleswig-Holstein, we are creating the blueprint for a sustainable transition to open source. One thing is clear: the path to digital sovereignty is long and challenging, but it is achievable – both technically and economically.

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OPEN SOURCE AS A SOVEREIGNTY STRATEGY

How do you ensure that AI entering your public administration does not quietly recreate the exact vendor dependencies you spent years dismantling?

In line with our Open Innovation and Open Source Strategy, Schleswig-Holstein is consistently pursuing the path toward digital sovereignty through open-source solutions. At the same time, we also intend to continue modernizing the state administration through the use of artificial intelligence.

AI-based models increase both the efficiency and the quality of administrative processes. They give employees greater freedom to focus on their actual professional responsibilities.

For this reason, since 2023, AI language models are already being used in the day-to-day work of Schleswig-Holstein's state administration in compliance with the State IT Deployment Act. As part of our "Open Innovation and Open Source Strategy," however, we are also transitioning the use of AI within the state administration to a digitally sovereign and European infrastructure.

To this end, the pilot project "LLMoin" has now been launched to enable secure and digitally sovereign AI use in everyday administrative work. In an initial phase, the AI assistant will be integrated into the IT workplace of 1,000 employees. LLMoin supports staff in drafting texts for emails, presentations, and reports, analyzing documents, and structuring information more effectively overall.

Executive Conversations

What makes this particularly significant is that, unlike the proprietary large language models previously used on international platforms, the new AI assistant is built upon a digitally sovereign and European infrastructure. The gradual introduction of LLMOin allows us to harness the potential of AI language models on a digitally sovereign foundation. Our goal is scalable, secure, and sovereign AI deployment for public administration, as well as potential collaboration with academia and other public institutions.

In a further step, preparations are currently underway for the gradual integration of an AI assistant into our open-source email system, Open-Xchange.

Schleswig-Holstein aims to save cost with the open source migration. What are the main areas for cost reductions? Are they eaten up by necessary developments to provide needed functions to integrate in your processes?

Schleswig-Holstein is demonstrating through its transition to open source that the path toward digital independence is both feasible and economically viable. The state is already saving more than 15 million euros in licensing costs. In contrast, one-time investments of nine million euros are planned for 2026 for the migration process and the further development of the open-source solutions.

Beyond the financial perspective, however, we ultimately have to ask ourselves: what is digital sovereignty worth to us? Can the value of digital independence even be fully quantified?



This is not only about technological autonomy – it is also about economic resilience.

A holistic approach – as embedded in our strategy – therefore also includes strengthening the regional digital economy. Instead of spending public IT budgets on licensing fees, we invest in development and support contracts.

In Schleswig-Holstein, we are convinced that public administrations can and must become drivers of innovation in the use of open-source software and the adoption of open standards. In doing so, we strengthen the domestic digital economy and Schleswig-Holstein as a business and innovation location overall.

Should European governments be collaborating on shared sovereign digital infrastructure, a common stack for public administration, or does each nation need to find its own path?

Digital sovereignty is best achieved together. European governments can benefit from a shared digital infrastructure without being forced to rely on a single rigid software solution. At the European level as well, digital sovereignty requires strategic consistency. This includes open standards, interoperability, and the willingness to fundamentally question existing dependencies.

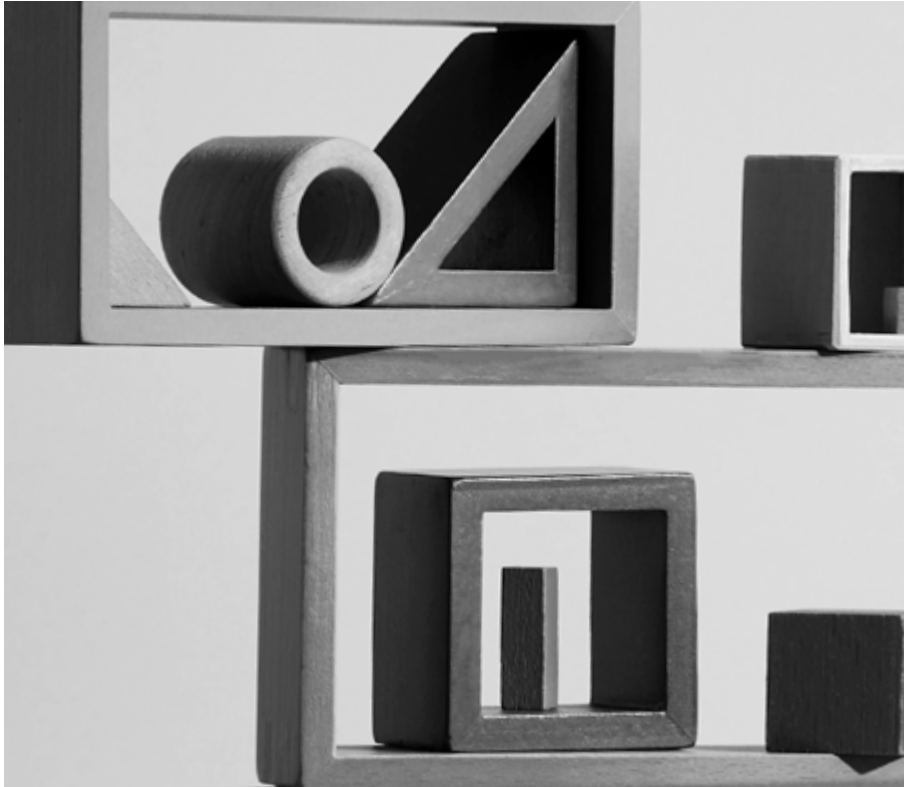
That is why “buy European” alone is not enough. A European proprietary dependency is still a dependency. What truly matters are openness, transparency, a willingness to innovate, and the ability to control and further develop systems independently. This applies equally to public administrations, governments, and businesses throughout Germany and Europe.

Every region and every nation must find its own path and timeline toward digital sovereignty. That is why dialogue and the exchange of experience with our European partners are essential.

In Schleswig-Holstein, we have taken the lead, and we invite everyone to join us on this important journey. Europe faces a shared challenge – but also a tremendous opportunity: to shape European sovereignty while sustainably strengthening the European digital economy.



European governments can benefit from a shared digital infrastructure."



To what extent can digital sovereignty in public administrations also be considered a driver of the economy and innovation?

Open standards and open source code enable widespread innovation. Studies by the European Commission and Harvard Business School show that even moderate shifts in public IT spending toward open-source solutions – and their broader adoption within businesses – can generate substantial macroeconomic and business-level effects.

Specifically, a ten percent increase in EU-wide spending on open-source solutions could generate up to 0.6 percent additional economic growth across the European Union. This is an extraordinarily powerful lever that we must make use of.

For the management of public budgets, this creates a clear mandate for action. Funds currently tied up in licensing fees must be redirected. Instead of importing dependencies and financing technological progress elsewhere in the world, public resources should be invested strategically: in the procurement, further development, adaptation, and support of open-source solutions, as well as in building digital expertise.

In this way, public administration becomes not only an active part of an innovation-driven ecosystem, but also a driver of innovation itself – including in the sense of an industrial policy for the digital economy.

The role of the state in the market is changing. It is no longer merely a customer, but an active shaper of technological development. This perspective extends beyond regional and national borders. Digital sovereignty is not a project for individual administrations alone; it is a European responsibility. When public sector clients act together, economies of scale can be realized and sustainable alternatives to the solutions of previously dominant tech giants can be established.

Initiatives such as Open Source Program Offices, strengthening the ecosystem through digital hubs, and reformed – ideally coordinated – procurement strategies that clearly prioritize open-source solutions in law are the decisive levers for achieving this transformation.

What is your message to other public sector leaders who agree with the principle of digital sovereignty but are daunted by the practical difficulty?

My message is this: be courageous and start. Do not focus on the sheer scale of the challenge; instead, break the task down into manageable sub-projects and establish a roadmap with concrete milestones that enables the transition step by step.

As a state, we are demonstrating how this can be done, and we see ourselves as both a pioneer and a role model. Together with our IT service provider and in coordination with the Schleswig-Holstein IT network, we aim to organize ourselves in such a way that new solutions can be rolled out and deployed on a broad scale.

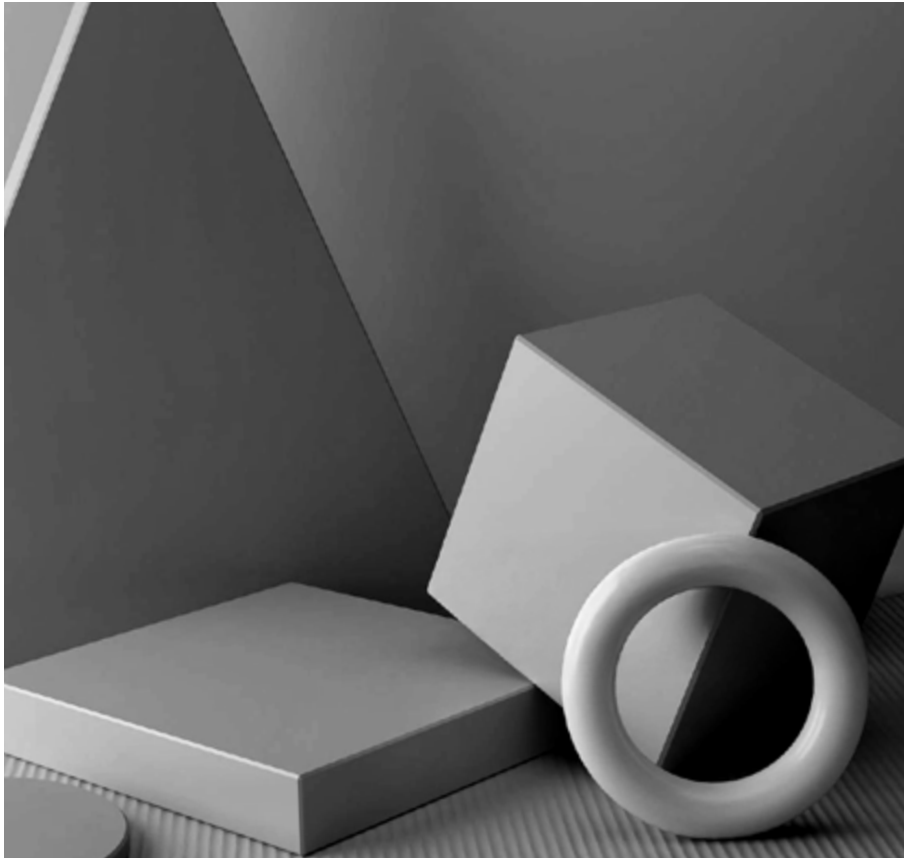
As mentioned, the transition is not easy and it takes time. At the same time, we must acknowledge that skilled professionals are in short supply, particularly at the municipal level – a challenge that exists regardless of whether proprietary or open-source solutions are used. The key is to address this issue through smart mechanisms and centralized services that support smaller municipalities with the necessary expertise.

One thing must never be forgotten: this entire realignment is not an end in itself. It is the response to a structural dependency in which many other public administrations across all levels of government throughout Europe also find themselves – a structural dependency on a small number of global providers associated with rising costs, limited flexibility, and, above all, risks to IT and data security.

Executive Conversations

Safeguarding digital sovereignty has clearly become a matter of national security.

Digital sovereignty is not merely a question of governance; it is a question of the technical architecture of ownership and control. Only the use of open-source software enables digital expertise to reside where it belongs: within the institutions that bear responsibility for the common good.





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