

From the Ground Up: Enabling **Open Source** Practices Without Top-Down Mandates

SIEMENS



Marion Deveaud

Research Group Manager

Open Source Embedded Systems

Social Coding Ambassador & Linux Sponsor



Three questions to guide our journey

1 Why does Open Source matter for Siemens?

2 What did Siemens achieve so far?

3 How do we make it work without an OSPO?

Why does Siemens care about Open Source?



Strategic drivers

Open Source **moves faster than traditional software development**, driving innovation at a very high speed, which is why both public and private sectors embrace it.

Industrial computing stacks are highly complex but **non-differentiating**, making Open Source collaboration essential for efficiency and sustainability

Big tech and industrial leaders invest in Open Source to shape the ecosystems:

- **collaborate** on infrastructure
- **compete** on value-added features

How does Open Source impact the fabric of Siemens?



Open Source backbone

Stay ahead of Open Source innovations, development best practices, and emerging software trends to keep Siemens competitive

Drive critical technology development aligned with the company's needs by creating, sponsoring and contributing to key Open Source projects

Harmonize and streamline the Open Source baseline for industrial operating systems and developers platforms with communities upstream

How does Open Source impact the way software is developed?

In Open Source projects, people work **openly and transparently** in a collaborative, community-centric way.

In Open Source projects, authority is defined through **knowledge and involvement**.

Applying best practices from Open Source internally leads to higher **growth and retention** of developers.



Thank your [Priscilla Dupreez](#) for sharing your picture on Unsplash!6

Three questions to guide our journey

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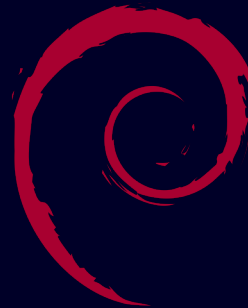
3 How do we make it work without an OSPO?

What do those Open Source projects have in common?

yocto
PROJECT



CIVIL
INFRASTRUCTURE
PLATFORM



XENOMAI

margo

Outbound Open Source Engagement



Upstream impact

Upstream contributions to critical projects: Linux, real-time extensions, base system packages, source control platforms and tools

Long-term strategic partnerships with trusted Open Source communities, ensuring sustained engagement and influence

Steering development in key areas via strategic projects like Civil Infrastructure Platform (CIP), Margo, and other industry-wide collaborations

What do those Siemens brands have in common?



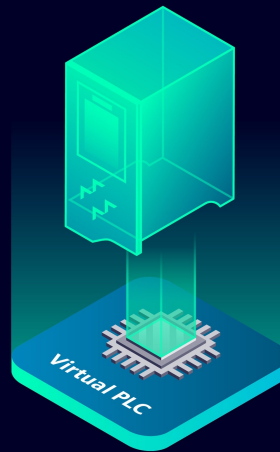
Originated from IT
code.siemens.com



Originated from CT
[Score](#)



Originated from SI
[SiMPL](#)



DI with [vPLC](#)



SMO with
[CoreShield S2L2 Linux](#)

Inbound Open Source Usage



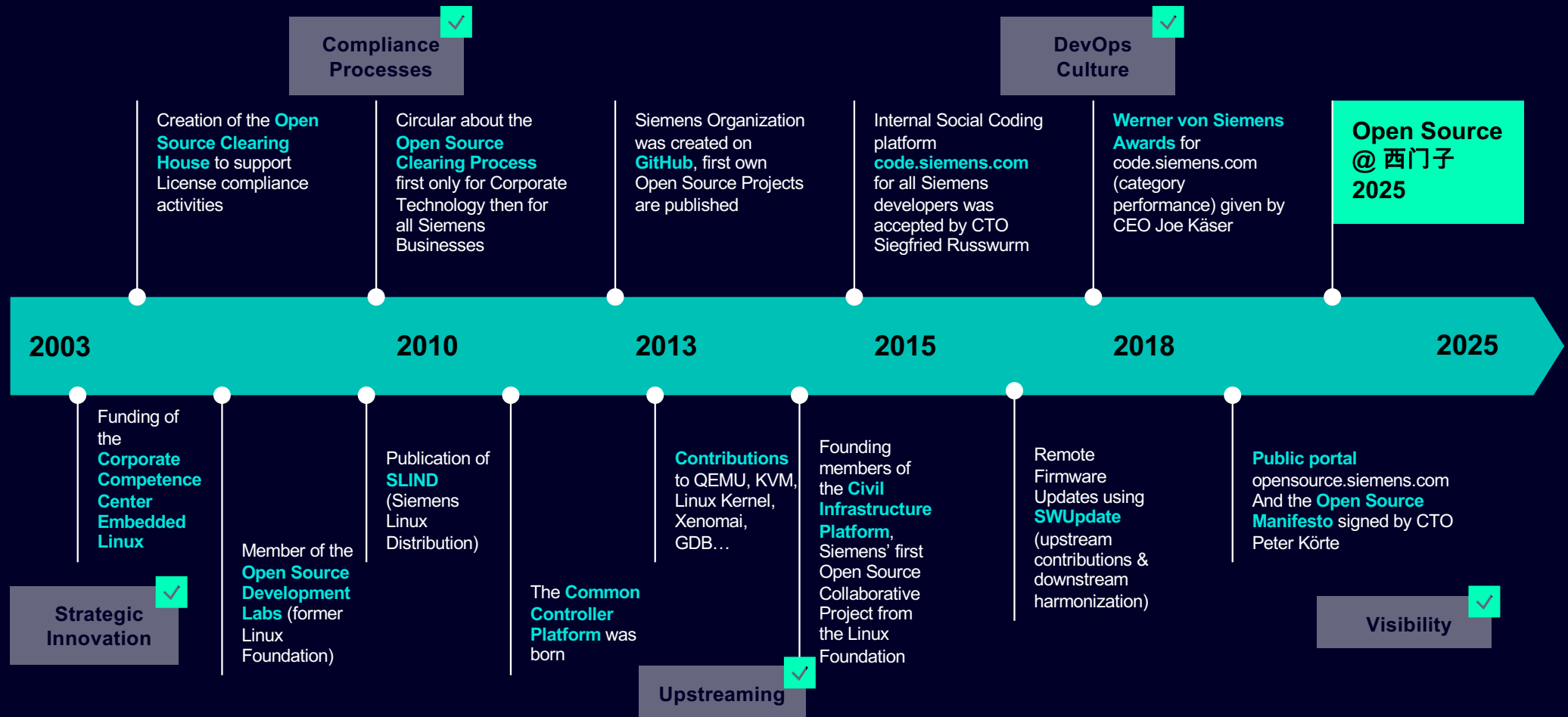
Downstream integration

Adoption of Open Source software into **products and solutions** across all Siemens businesses: industry automation, digitalization services and infrastructure

License compliance checks for third-party Open Source components to reduce risks through internal procedures and tools

Unrestrictedly shared best practices and templates for active **monitoring of vulnerabilities** and integration of security updates via continuous integration pipelines

Siemens Open Source History



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Siemens already defined an “Open Source Strategy” in 2017



Reduce time to market

Accelerate sourcing and handling of software to enable a continuous delivery approach



Promote cultural change

Establish **Open Source** and inner source as preferred source of non-critical software component, foster internal and external collaboration during the entire development process



Create value through sharing

Achieve business goals by engaging with the global **Open Source** communities and by establishing inner source communities for internal platform projects

Our Open Source foundations today

Participation

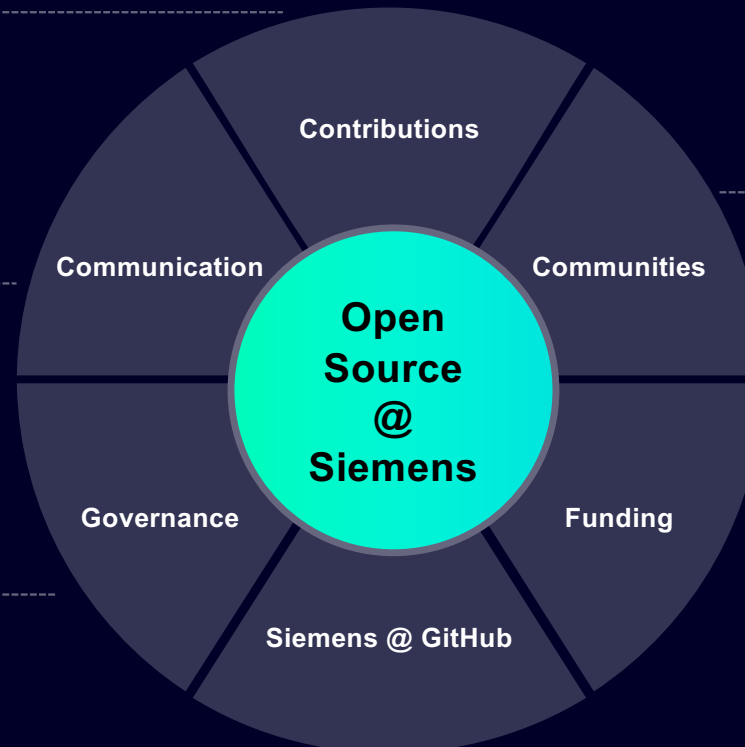
- Contribution to many OSS projects
- Maintenance of projects critical to our business
- Scooting of OSS trends, evaluation and integration

Public relations

- Siemens public Open Source Portal
- Functional e-mail opensource@siemens.com
- Blog articles and activities on social media

Processes

- 3rd party license compliance
- Open Source Publication process
- Legal support for the usage of OSS in products



Engagement

- Active participation to collaborative projects
- Organization of events around Open and Inner Source
- Representation of Siemens at external conferences

Sustainability

- Strategic investments into projects and communities
- Sponsoring of maintainers (via GitHub Sponsors)
- Partnering with maintainers & external contributors

Collaboration Platform

- Primary home for OSS projects published by Siemens
- Collaboration space for contributors and customers
- Management of contributors, DevOps features & forks

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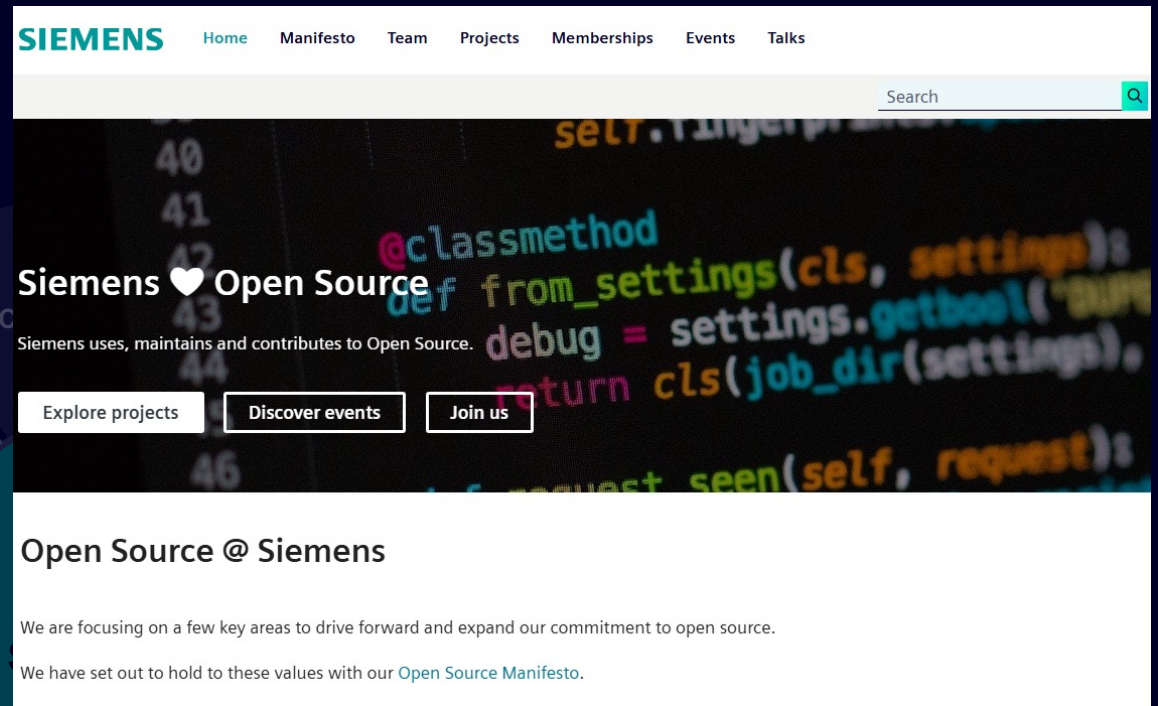
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Communication

Governance

Siemens @ GitHub



SIEMENS Home Manifesto Team Projects Memberships Events Talks

Search

Siemens ❤️ Open Source

Siemens uses, maintains and contributes to Open Source.

[Explore projects](#) [Discover events](#) [Join us](#)

Open Source @ Siemens

We are focusing on a few key areas to drive forward and expand our commitment to open source.

We have set out to hold to these values with our [Open Source Manifesto](#).

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Our Open Source foundations today

[back to top](#)

Community

Activities



The [Civil Infrastructure Platform](#) is a collaborative, open source project hosted by the Linux Foundation. The CIP project is focused on establishing an open source "base layer" of industrial grade software to enable the use and implementation of software building blocks in civil infrastructure projects.

Since 2016 we've been collaboratively designing and implementing infrastructures and tools to build Linux-based systems with long-term maintenance and security in mind. Many Siemens products re-use the building blocks provided by CIP thus driving the harmonization of base operating system layers in our embedded systems landscape.



The [Margo Project](#) defines mechanisms for interoperable orchestration at scale of edge applications/workloads and devices. It will deliver the interoperability promise through an open standard, a reference implementation and comprehensive compliance testing toolkit.

Siemens as funding member of the Margo project is collaboratively defining a **de-facto standard** for the orchestration of edge applications with other industrial partners like ABB, Rockwell automation, Schneider Electric and many more.

The membership fees are fully financed by **DI FA CTR**.



The [Real Time Linux collaborative](#) project was established to help coordinate the efforts around mainlining Preempt RT and ensuring that the maintainers have the ability to continue development work, long-term support and future research of RT.

Industrial process controllers incorporate PREEMPT-RT to ensure reliable and responsive performance in the field. The Linux Foundation community plays a vital role in supporting the maintenance of real-time extensions for Linux.



The [Yocto Project](#) is an open source collaboration project that helps developers create custom Linux-based systems regardless of the hardware architecture.

Together with **SI B PRO** we equally share the fees for the Yocto projects.

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Siemens @ GitHub

The screenshot displays the Siemens GitHub profile page. At the top, the Siemens logo and name are shown, along with the tagline 'Technology to transform the everyday.' and a 'Verified' badge. Below this, statistics show 1.1k followers and 204 repositories. The main content area features a 'Siemens ❤️ Open Source' section with a description of Siemens as a technology company focused on industry, infrastructure, transport, and healthcare. It includes a link to 'open source projects!' and a row of badges for various GitHub repositories: `github:iot2050`, `github:industrial-edge`, `github:mendix`, `github:industrial-iot`, `github:isa-portal`, and `github:simatic-ax`. A 'Pinned' section lists several repositories: `linux-entra-ss0` (Public, JavaScript, 135 stars, 14 forks), `efibootguard` (Public, C, 123 stars, 40 forks), `jailhouse` (Public, C, 1.9k stars, 350 forks), `kas` (Public, Python, 497 stars, 188 forks), `meta-iot2050` (Public, Python, 140 stars, 83 forks), and `ros-sharp` (Public, C#, 1.1k stars, 390 forks). On the right sidebar, there are sections for 'People' (a grid of avatars), 'Sponsoring' (a row of logos), 'Top languages' (Python, C, TypeScript, Go, Java), and 'Most used topics' (linux, siemens, docker, java, sbom). At the bottom right, it says 'GitHub Sponsor'.

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What is missing?

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Foundation of digital products and services

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Culture

Siemens should be the leading industrial Open Source contributor, driving sovereign and sustainable infrastructure for all business units.

Thank your [Benjamin Davis](#) for sharing your picture on Unsplash



There is this place...

where technical readiness meets people excellence

It's called Open Source

Upcoming Events: remote attendance from live.siemens.io

Tuesday December 9, 2025

Design offices. Nuremberg, Germany

Linux Community Event



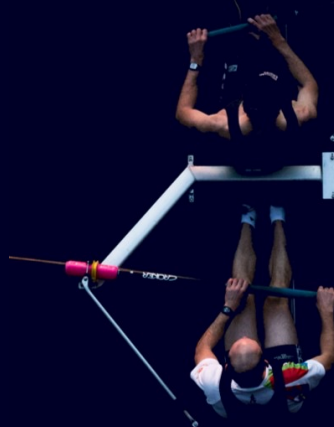
linux.siemens.io

SIEMENS

Wednesday December 10, 2025

Design offices. Nuremberg, Germany

Inner Source Summit

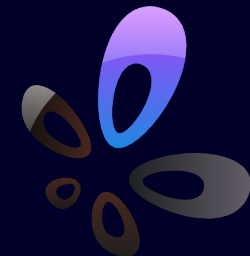


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Thank You

