Building a collaborative engineering culture at Siemens

Open Source @ 西门子 2025

2025年10月30日

SIEMENS

About me

Grew up in the little town of **Flims**
in the Swiss Alps, a ski resort.

Instead of working within tourism business,
moved to Zürich, the biggest city in Switzerland, and
now live in a town 15 minutes from Zürich.

Roger Meier
Distinguished Engineer
Service Owner code.siemens.com

r.meier@siemens.com

https://blog.siemens.com/author/roger-meier/

Active in Open Source since the last millennium, as contributor and maintainer on several projects.
At Siemens since 2004, in computer system engineering, kernel and user space, web, software and system architecture for multiple product lines. The last few years focusing on code.siemens.com, Inner and Open Source.

**I enjoy collaborating with people across the globe
and
I love engineering!**

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As a technology company we do...

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… built in factories running on **Siemens automation** …

We commute in cars designed, with **Siemens software...**

… and charged by a **Siemens smart grid**.

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… that use energy
with **maximum efficiency** …

We work in smart buildings that
**promote our health and
safety**…

… and connect the **physical**
and the **digital** workplace.

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… to travel on **trains made by Siemens** …

We book our train tickets with **Siemens software** …

… operated with Siemens **infrastructure technology**.

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Our products consist of
0% - 99%
Open Source

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Maturity for Open Source Adoption

Image Source: https://debricked.com/blog/reaching-higher-levels-open-source-maturity/

Upstream first!
- Contribute bug fixes or features back to the community!
- It's a **give and take**!

Otherwise:
- Short-term fixes/patches
- No review by the maintainers
- Very expensive mid- and long-term solutions, porting features is heavy work that could take months
- No chance to deliver security fixes in a timely manner
- Difficult to benefit from new features or bug fixes

Why? Do more with the same budget, attract talents, innovate faster, reduce maintenance efforts and have fun!

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# Establish an Open Source Culture @ Siemens

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code.siemens.com - DevOps at scale

Social coding platform to collaborate on code within minutes.

- > **300k** builds/day
- > **84k** users, > **77** countries
- > **30M** API requests/day
- > **1M** merge requests/year
- **0 €** license fees ➜ Open Source
- **No classic** help desk ➜ **community**

Thousands of **our** products and solutions are developed and deployed using code.siemens.com.

China
3972 of 84213 Users (4.72%)
2 Ambassadors
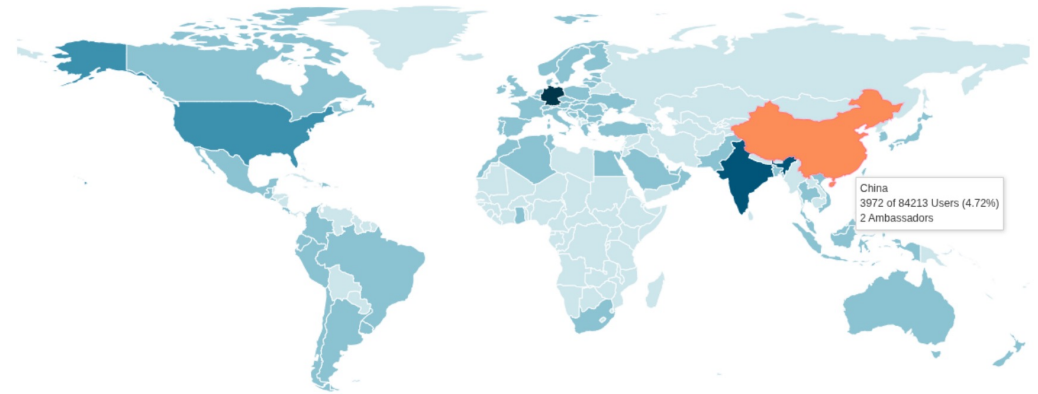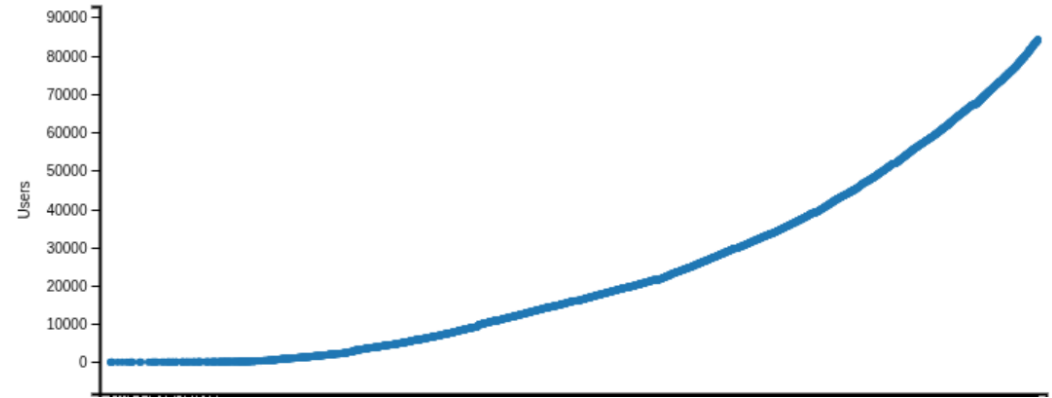
For developers, from developers

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The internal brand code.siemens.com started with one "like"👍

Roger Meier
Attached is the variant analysis we did for CCP@BT, so you can see our goals we had in mind.

Key Requirements:
Main focus for this evaluation is managing source code for Linux Kernel and U-boot and collaboratic
Most of our core components such as Linux, U-Boot and OpenEmbedded are using git as their sour
well. Otherwiese we will not be able to manage history and code changes
Social coding platforms do provide an additional layer on top of git to simplify forking, merging, pull
Precondition is to use ATOS infrastructure with a provided "must use" Red Hat Enterprise Linux. It w
required
Of course, I would prefere a Siemens solution, e.g. https://code.siemens.com/
However, I was unable to wait for this.
I'm sure we will have this one day and I will say "we are a state-of-the-art software company".

📄 BT-CCP-S-0007_DAR_Configuration_Management.pdf

Jun 11, 2014 at 11:45 am   ⭐ 1 person likes this

Jaime R. Garza
@RogerMeier6 : Thanx! I just registered code.siemens.com, so if the idea gets central sponsorship,

Jun 11, 2014 at 12:00 pm   Unlike ⭐ 4 people like this
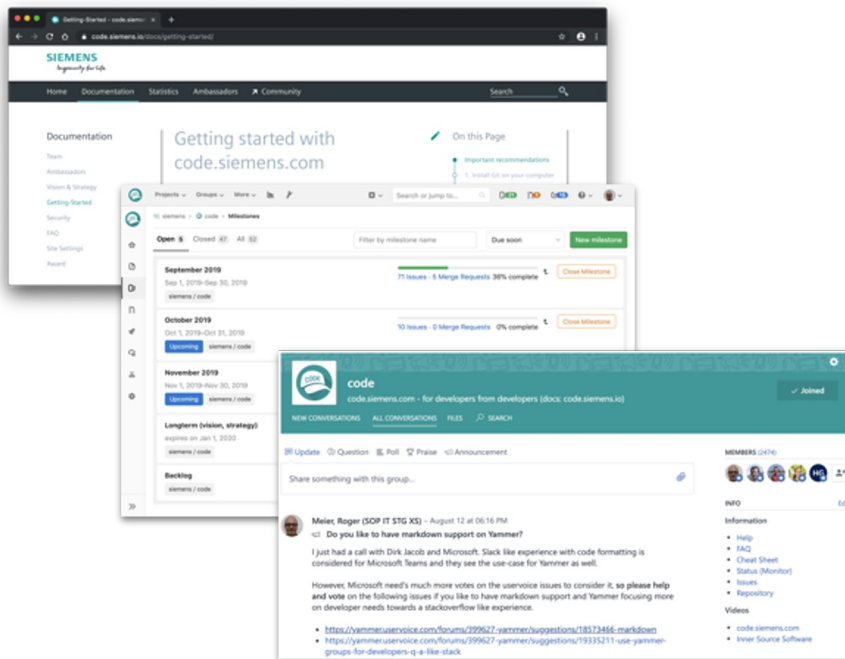
- A recognizable name is important
- Establish an ambassador circle
- Community identifies itself with brand
- Known people behind the brand

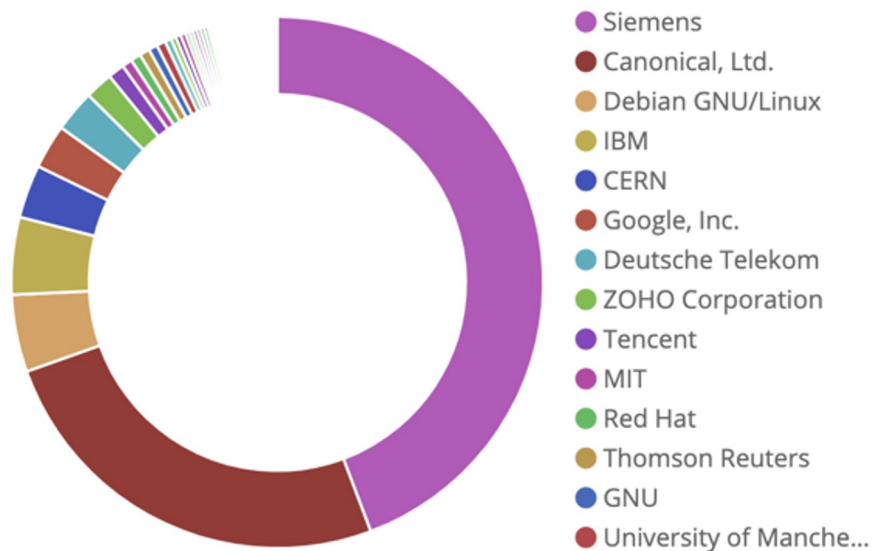We do have stickers...

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No Help Desk

For developers, From developers

- Documentation Portal
- Issue tracker
- Internal Social Network
- "Help Yourself"

Great engagement within the community

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Upstream First - No Patches

Contributions to GitLab by company

Legend:
- Siemens
- Canonical, Ltd.
- Debian GNU/Linux
- IBM
- CERN
- Google, Inc.
- Deutsche Telekom
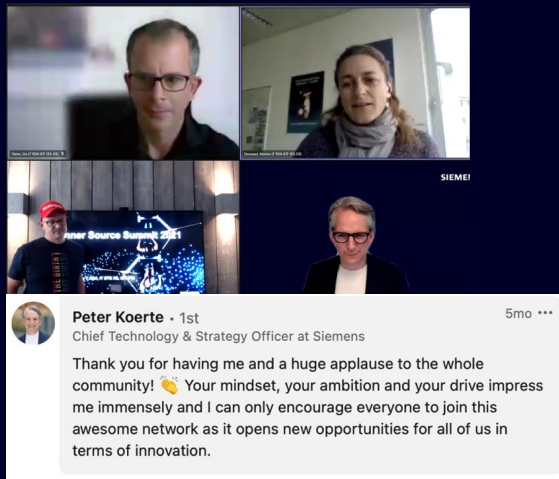- ZOHO Corporation
- Tencent
- MIT
- Red Hat
- Thomson Reuters
- GNU
- University of Manche...

- We deploy on a **regular basis**
- We only **deploy from upstream**
- **We extend** what we're using
- **We contribute to the ecosystem** around GitLab

> 350 merge requests to GitLab
12 elections as GitLab MVP (most valuable person) within the crew

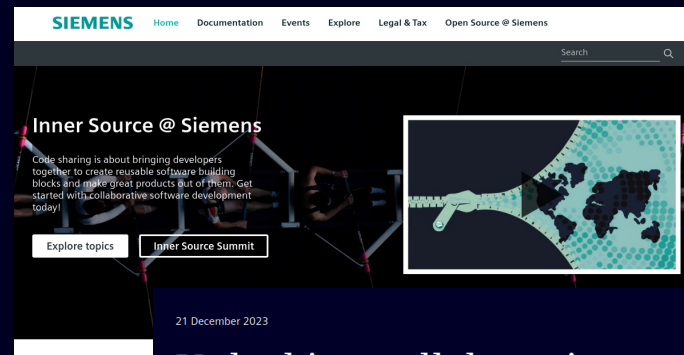**SIEMENS**

Inner Source - Apply the Open Source principles in-house

Internal: Yearly summit

Peter Koerte · 1st
Chief Technology & Strategy Officer at Siemens

5mo · · ·

Thank you for having me and a huge applause to the whole community! 👏 Your mindset, your ambition and your drive impress me immensely and I can only encourage everyone to join this awesome network as it opens new opportunities for all of us in terms of innovation.

- Provide a stage for projects
- 5th edition in 2025

https://blog.siemens.com/space/developers/

Internal Portal with insights

Inner Source @ Siemens

Code sharing is about bringing developers together to create reusable software building blocks and make great products out of them. Get started with collaborative software development today!

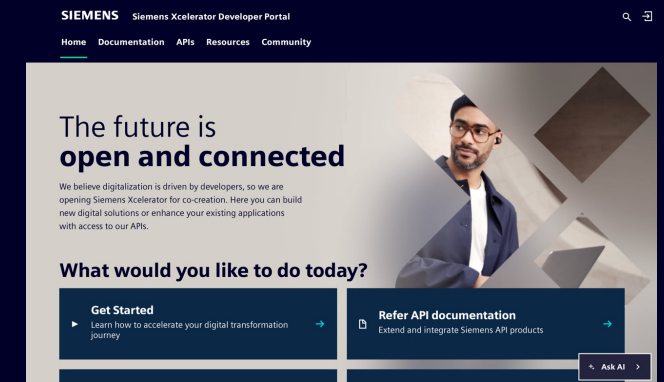Explore topics   Inner Source Summit

21 December 2023

Unlocking collaboration: how Inner Source transformed the way we develop software at Siemens

8 years ago, Siemens embarked on its **Inner Source journey**, marked by the establishment of a code sharing platform based on the Open Source software GitLab. This year, we organized the **3rd edition of our Inner Source Summit**, an internal event targeting developers and DevOps engineers, fostering exchange of information, networking and collaboration beyond organizational boundaries.

Some examples:
- **developer.siemens.com**

The future is **open and connected**

We believe digitalization is driven by developers, so we are opening Siemens Xcelerator for co-creation. Here you can build new digital solutions or enhance your existing applications with access to our APIs.

What would you like to do today?

Get Started — Learn how to accelerate your digital transformation journey

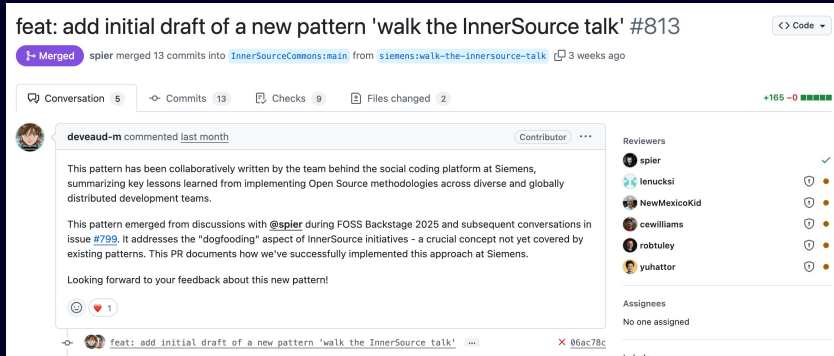Refer API documentation — Extend and integrate Siemens API products

- Some components: >1.5k re-uses
- Managed Linux client
- Common UI components

If you're able to collaborate in-house, then you are ready for Open Source. Get experienced Open Source developers to accelerate.
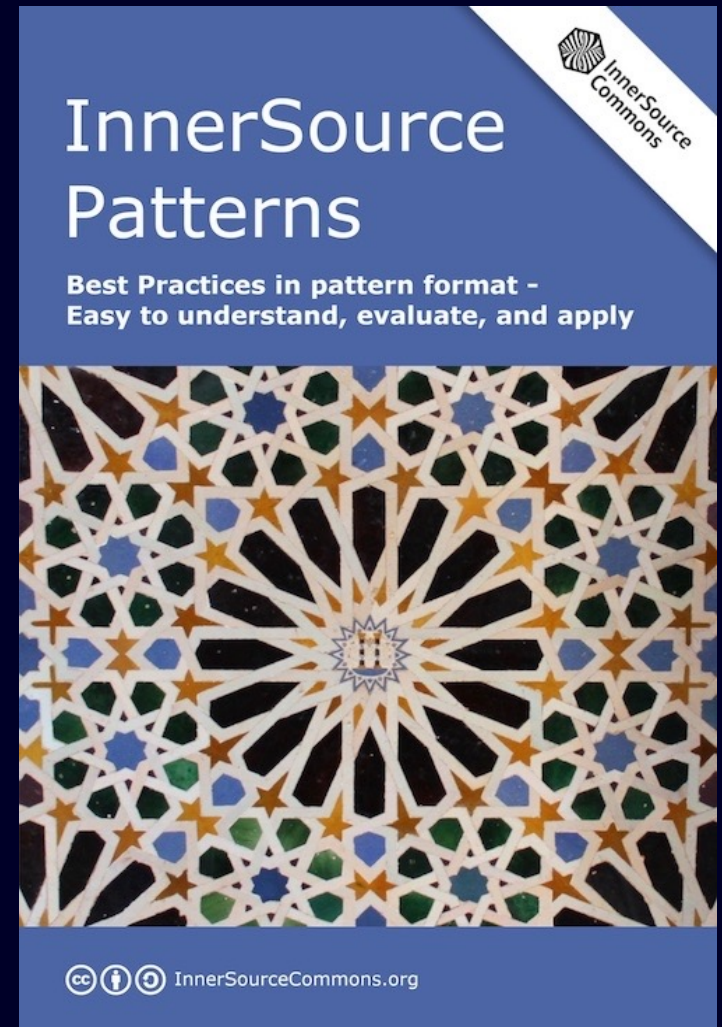
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Inner Source Patterns - Walk the Inner Source talk

feat: add initial draft of a new pattern 'walk the InnerSource talk' #813

Merged · spier merged 13 commits into InnerSourceCommons:main from siemens:walk-the-innersource-talk · 3 weeks ago

Conversation 5 · Commits 13 · Checks 9 · Files changed 2 · +165 −0

deveaud-m commented last month · Contributor

This pattern has been collaboratively written by the team behind the social coding platform at Siemens, summarizing key lessons learned from implementing Open Source methodologies across diverse and globally distributed development teams.

This pattern emerged from discussions with @spier during FOSS Backstage 2025 and subsequent conversations in issue #799. It addresses the "dogfooding" aspect of InnerSource initiatives - a crucial concept not yet covered by existing patterns. This PR documents how we've successfully implemented this approach at Siemens.

Looking forward to your feedback about this new pattern!

Reviewers
- spier
- lenucksi
- NewMexicoKid
- cewilliams
- robtuley
- yuhattor

Assignees
No one assigned

Labels

feat: add initial draft of a new pattern 'walk the InnerSource talk' · 06ac78c

At Siemens, when the Inner Source journey began, the **early contributors** were deeply inspired by the **Open Source culture.** For them, setting up an Inner Source platform wasn't a stretch; it was a **natural continuation of how they already worked**: asynchronously across locations, sharing ideas through issues, and documenting **decisions transparently**.

This Open Source-inspired mindset gave the Inner Source platform a distinctly different character - transparent, collaborative, and developer-friendly - compared to the closed, proprietary environments many developers were used to.

https://github.com/InnerSourceCommons/InnerSourcePatterns/blob/main/patterns/1-initial/walk-the-innersource-talk.md

InnerSource Commons

InnerSource Patterns

Best Practices in pattern format - Easy to understand, evaluate, and apply

InnerSourceCommons.org

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code.siemens.com - Upstream work

This month's Notable Contributor is jointly awarded to Niklas van Schrick and Gerardo Navarro

Everyone can nominate GitLab's community contributors! Show your support for our active candidates or add a new nomination 🗳

Niklas van Schrick now has the hat trick with three MVPs and has become one of GitLab's most consistent contributors with at least one merge request per milestone since GitLab 14.3.

Niklas was nominated by Magdalena Frankiewicz, Product Manager at GitLab, for contributing a feature to create custom webhook payload templates and then following it up with the ability to specify custom webhook headers. "This solved a highly demanded 7-year-old feature request with 65 upvotes," says Magdalena. "Users can now fully design custom webhooks!"

Niklas is a member of the GitLab Core Team and helps the wider community and GitLab live up to our mission to enable everyone to contribute.

"During my journey, I interacted with a lot of different reviewers, maintainers, designers, technical writers, product managers, and probably more," Niklas says. "Everyone was helpful and did their best to help move issues and merge requests forward."

Gerardo Navarro has been contributing to GitLab for over a year and takes home a second GitLab MVP award.

Gerardo was nominated for creating ongoing contributions towards a feature to show protected packages in the package registry list. This feature is part of a series of contributions related to the protected packages epic that intends to increase security by enabling fine-grained permissions to create, update, and delete packages from the package registry.

Many thanks to Gerardo Navarro and the rest of the team from Siemens for helping co-create GitLab.

"Thank you very much for appreciating our work with such a cool award," says Gerardo. "I feel honored. I am still learning a lot with every contribution."

~600 commits from the code.siemens.com crew to Open Source projects in the last year

Noteworthy GitLab contributions
- Protected packages and protected container registry
- Support for structured text / SCL syntax highlighting together with Martin Waitz (Mobility)
- IPv6 fixes to bring it to our shared runners
- Unified **token revoke endpoint**

Upcoming Topics
- Step-up authentication at group level
- Token prefix for all token types
- See https://gitlab.com/gitlab-org/gitlab/-/merge_requests?search=siemens

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Siemens Open Source activities

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Open Source – Event series

2014 - 2016
Open Source @ BT in Zug

2017 - 2019
Open Source @ BT at the GALVANIK

2020 – 2025+
Open Source @ Siemens at GALVANIK

- Nobody requested to start an event series. **If you believe in something, do it and form an alliance with like-minded people!**
- Started as internal only, now streamed to the public and with about 120 people on-site (speakers and guests).
- Focus on technology and collaboration culture, no sales!
- Balanced mix of external and Siemens speakers
- Call for presentations for the next event in 2026 will be published early next year: https://opensource.siemens.com/events/2026/

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Thank you **Daniel** and crew for making **Open Source @ 西门子** happen!

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opensource.siemens.com

First, we started with a very basic event website.
Now we have all our Open Source-related topics in one portal.

All slides from **Open Source @ 西门子** will be published there as well!

Embedded Linux Developers – Amazing Upstream Work!


```
$ git clone https://git.yoctoproject.org/poky && cd poky && date && git short
log -s -n --email --since=1.year | grep siemens
Cloning into 'poky'...
remote: Enumerating objects: 687403, done.
remote: Counting objects: 100% (635/635), done.
remote: Compressing objects: 100% (425/425), done.
remote: Total 687403 (delta 345), reused 325 (delta 208), pack-reused 686768
Receiving objects: 100% (687403/687403), 216.76 MiB | 10.15 MiB/s, done.
Resolving deltas: 100% (499464/499464), done.
Thu May 22 11:47:32 AM CEST 2025
    96  Peter Marko <peter.marko@siemens.com>
    22  Adrian Freihofer <adrian.freihofer@siemens.com>
     5  Stefan Koch <stefan-koch@siemens.com>
     2  Alexander Sverdlin <alexander.sverdlin@siemens.com>
     1  Clara Kowalsky <clara.kowalsky@siemens.com>
     1  Haseeb Ashraf <haseeb.ashraf@siemens.com>
     1  Patrick Wicki <patrick.wicki@siemens.com>
     1  Peter Tatrai <peter.tatrai.ext@siemens.com>
     1  Walter Schweizer <walter.schweizer@siemens.com>
```

```
[roger@philotes linux-cip]$ git switch linux-6.12.y-cip
Updating files: 100% (103549/103549), done.
branch 'linux-6.12.y-cip' set up to track 'origin/linux-6.12.y-cip'.
Switched to a new branch 'linux-6.12.y-cip'
[roger@philotes linux-cip]$ git shortlog -s -n --email --since=1.year | grep
siemens
     8  Alexander Sverdlin <alexander.sverdlin@siemens.com>
     6  Diogo Ivo <diogo.ivo@siemens.com>
     6  Jan Kiszka <jan.kiszka@siemens.com>
     5  Felix Moessbauer <felix.moessbauer@siemens.com>
     1  Alessandro Zini <alessandro.zini@siemens.com>
     1  Andreas Ziegler <ziegler.andreas@siemens.com>
     1  Li Hua Qian <huaqian.li@siemens.com>
     1  Lukas Stockmann <lukas.stockmann@siemens.com>
     1  Zdenek Bouska <zdenek.bouska@siemens.com>
```


Top 3 SWUpdate Contributors
https://github.com/sbabic/swupdate

Congratulations to
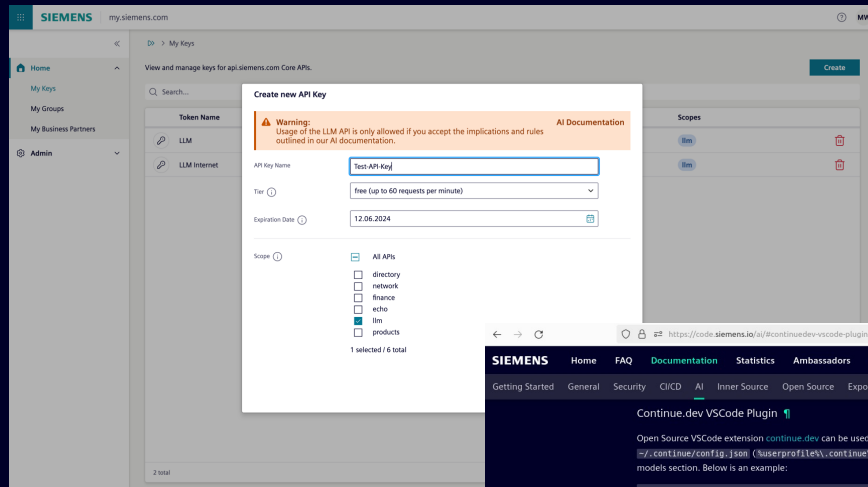- Common Controller Platform (CCP) team at SI
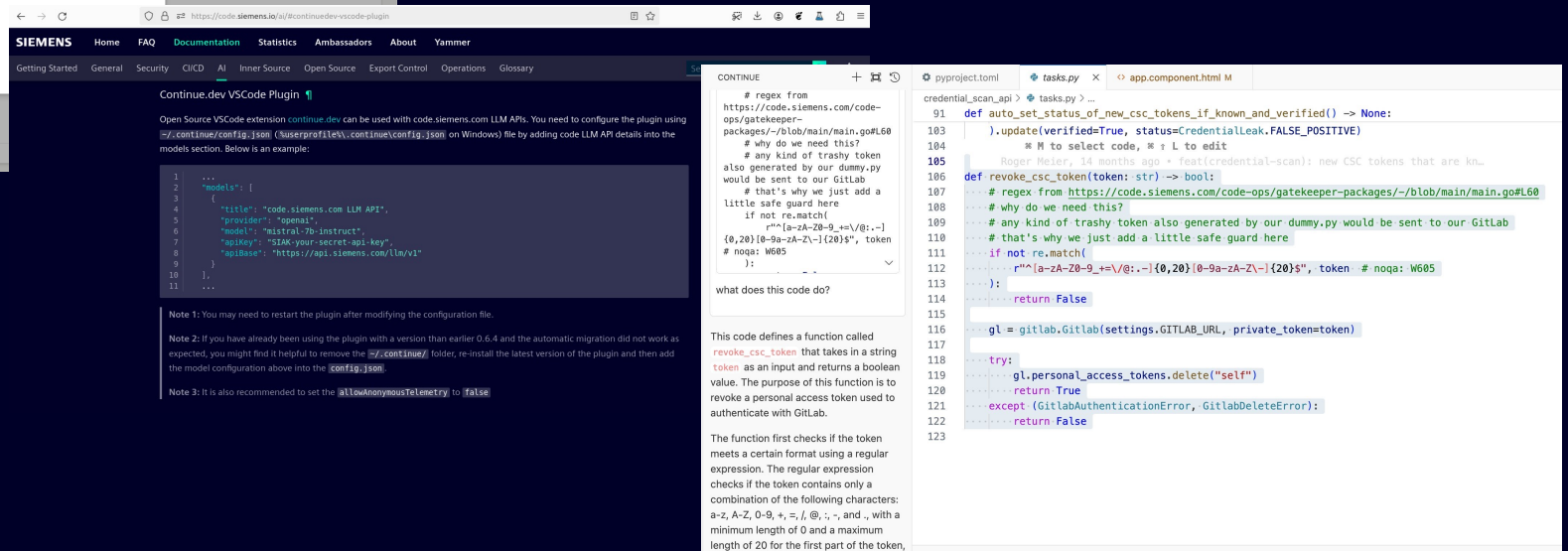- Linux Expert Center at FT RPD
- and others
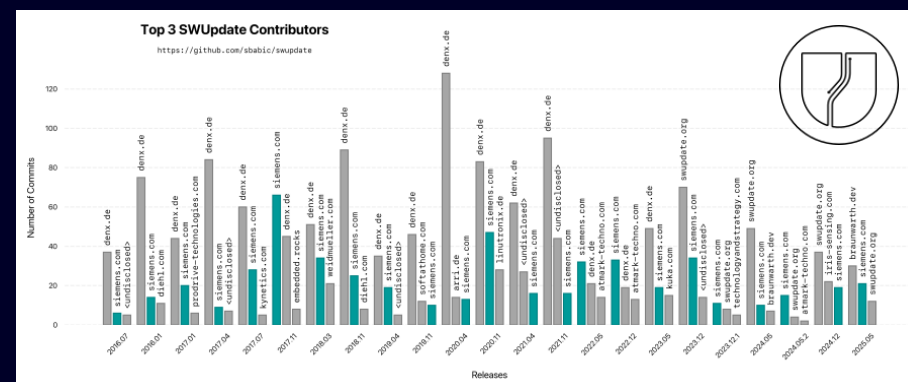
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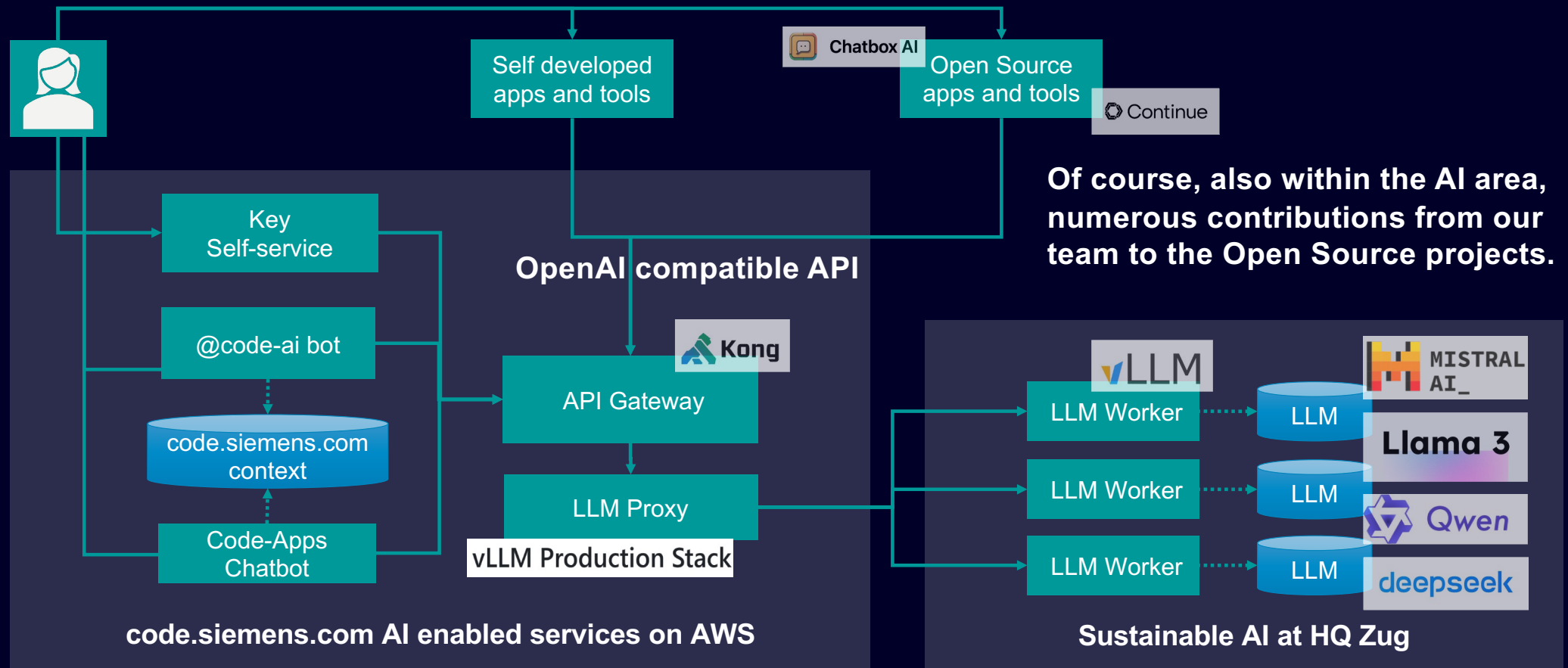# Open weight LLM usage in-house

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For developers: Get API key, Configure IDE, use it

- **Everyone can get started in less than 5 minutes**

- **All data stays within Siemens**

- **Open Source IDE plugins: continue.dev, Cline, ...**

- **OpenAI compatible API**

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Our setup, entirely based on Open Source and in-house

Self developed apps and tools

Chatbox AI

Open Source apps and tools

Continue

OpenAI compatible API

Of course, also within the AI area, numerous contributions from our team to the Open Source projects.

Key Self-service

@code-ai bot

code.siemens.com context

Code-Apps Chatbot

Kong

API Gateway

LLM Proxy

vLLM Production Stack

vLLM

LLM Worker → LLM

LLM Worker → LLM

LLM Worker → LLM

MISTRAL AI_

Llama 3

Qwen

deepseek

code.siemens.com AI enabled services on AWS

Sustainable AI at HQ Zug

- https://blog.siemens.com/2024/04/open-source-llms-for-everyone/
- https://blog.siemens.com/2025/10/our-sovereign-ai-journey-building-a-self-contained-sustainable-and-cost-effective-llm-platform/

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Sustainable AI on our climate-neutral campus

Facts & Figures about the climate-neutral Campus Zug

- **25 000 m²** campus area
- **81 000 m²** total net floor area*
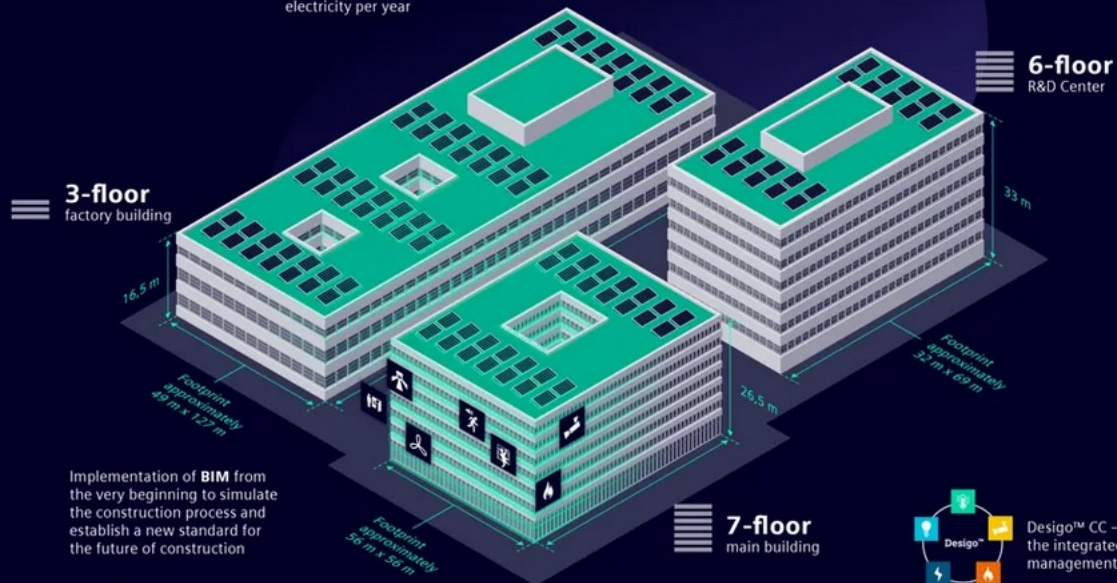- **13 000 m²** production area**
- **39 000 m²** office space**
- **1700** Siemens employees

- **3500** solar modules on an area of 6,100 m²
  1,300 MWh renewable electricity per year
- **2 100 000 m³** lake water per year for heating and cooling***
- **7800 m²** of vegetated rooftop

* incl. parking facility and staff restaurant
** incl. secondary space
*** Assumption for commissioning of all buildings

3-floor factory building

16.5 m

Footprint approximately 49 m x 127 m

Implementation of **BIM** from the very beginning to simulate the construction process and establish a new standard for the future of construction

Footprint approximately 56 m x 56 m

7-floor main building

26.5 m

6-floor R&D Center

33 m

Footprint approximately 32 m x 69 m

Desigo™ CC – the integrated building management platform

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AI assisted development and enablement with the CodeAI project

Open weight models are on-par with commercial models!

Value for Siemens

- Provide **cost effective and sustainable AI for everyone** with **in-house GPUs**
- Siemens **context and code awareness**
- Use for any kind of data including strong confidential
- **In-house collaboration** knowledge sharing to **master the technology end-to-end**
- Deploy new models within days
- Full stack **under our control,** adaptable to our needs (e.g., security and plagiarism scans)

Key features

- Scalable infrastructure running on-premise with offloading peaks to cloud
- OpenAI compatible API, self-service
- Code AI bot, integration with code-apps

Upcoming

- Evaluation framework for data driven decisions
- Finetuning on Siemens code/data blueprint
- New models, advanced agentic workflows
- Model Context Protocol (MCP)[1], provide more Siemens-specific context

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Everyone at Siemens **can start within minutes** using our self-service and use the LLMs either via **AI code editor/cli,** chat client or custom tooling.

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1 MCP is an open protocol that standardizes how applications provide context to LLMs. Think of MCP like a USB-C port for AI applications

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Contact

Roger Meier
Distinguished Engineer
Service Owner code.siemens.com
https://gitlab.com/bufferoverflow
https://github.com/bufferoverflow

r.meier@siemens.com

https://opensource.siemens.com/

https://blog.siemens.com/space/developers/

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