Monthly Maturity Report: January 2025

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Organization:
Open Source Committee
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Cardano Ecosystem

Review Process	Approval
1st Pass: Tex M, OSO PM	✅**Approved**
2nd Pass: Christian T, Head of OSO	✅**Approved**

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Summary

In **January 2025**, the Cardano open-source ecosystem experienced a strong rebound in delivery activity, paired with deeper structural and quality-focused development. While contributor count remained stable, total output — including commits, modified files, and pull requests — increased significantly. Key system repositories such as **Ouroboros Consensus**, **Plutus**, and **Cardano Ledger** saw large surges in structural changes, while issue resolution times dropped dramatically, reflecting improved triage and engineering efficiency. The data suggests a coordinated milestone effort across the core infrastructure, matched by expanded QA engagement and community participation.

General Observations

Organizational Contributions:

- **IOHK** increased commit volume by 50% and touched over 6,500 files, suggesting aggressive sprint work or system-wide upgrades.
- **Well-Typed**, **Cardano Foundation**, and **Tweag** all increased contributions, indicating renewed engineering engagement after year-end lulls.
- **Unknown contributors** rose significantly in both commits and issue submissions — reinforcing growing open-source participation.

Geographical Distribution:

- **European time zones (UTC +1, 0)** led January's resurgence with >75% growth in commits.
- **Pacific US (UTC −7)** activity declined slightly, while **new regional contributors** appeared from UTC −4 and +11, suggesting expanding ecosystem reach.

Project-Level Activity:

- **Ouroboros Consensus** and **Plutus** posted 400–500% increases in modified files, likely due to protocol updates and modularization work.
- **Cardano CLI** and **Ledger** also surged, pointing to both developer tooling improvements

and foundational layer refactoring.

Repository Focus:

- **cardano-node.git** remained the most active repository with consistent delivery levels.
- A wider range of repositories (25) received PRs, reflecting broadened delivery scope and ecosystem integration.

Quality Assurance Trends:

- **Issues submitted rose by 85%**, while resolution time **dropped from 43 to 22 days**, signaling faster feedback loops.
- Organizations like **IOHK**, **Well-Typed**, and **Cardano Foundation** submitted more issues and resolved them faster — suggesting stronger internal QA cycles.

Conclusion

January 2025 marked a strong reactivation phase across the Cardano ecosystem. The return to high-volume contributions, deep file-level modifications, and faster issue resolution reflects a community in delivery mode. Core contributors maintained focus while new and unaffiliated actors gained traction. Looking ahead, sustaining this throughput and extending engagement across more organizations and repositories will be key to scaling the ecosystem and delivering on roadmap milestones.

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1. Github Overview

This section provides a comprehensive overview of activities and dynamics within the Github platform. It encompasses various metrics and statistics concerning the usage, engagement, and performance of projects and contributors.

Summary:

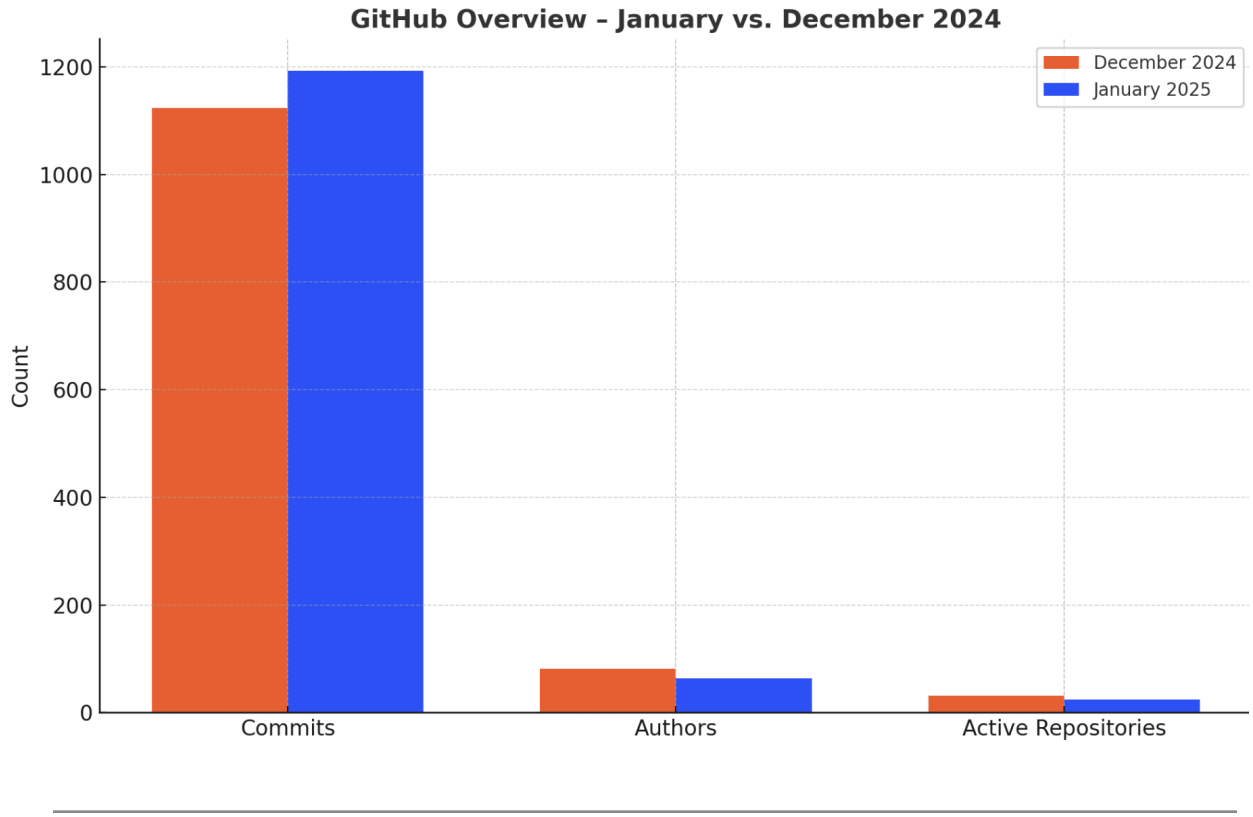
January 2025 – 1,193 commits were made by 64 authors across 24 repositories.

While the number of authors and active repositories declined, total commits **rose by 6.2%**, suggesting **higher per-contributor output** and a **strategic narrowing of active projects**.

Metric	December 2024	January 2025	Change
Commits	1,123	1,193	+6.2%
Authors	82	64	−22.0%
Active Repositories	31	24	−22.6%

Insights:

- Despite **18 fewer authors**, commit volume increased — pointing to a **more focused, efficient contributor set**, likely tackling well-scoped workstreams or finalizing pending features.
- The drop in repositories (−22.6%) suggests teams are **consolidating around fewer high-priority codebases**, reducing spread while increasing depth.
- This pattern — **fewer people, fewer projects, more output** — indicates an **intentional compression phase** typical of milestone completion or refactoring cycles.
- January's performance demonstrates resilience and delivery commitment from core contributors, even amid contraction in participation breadth.

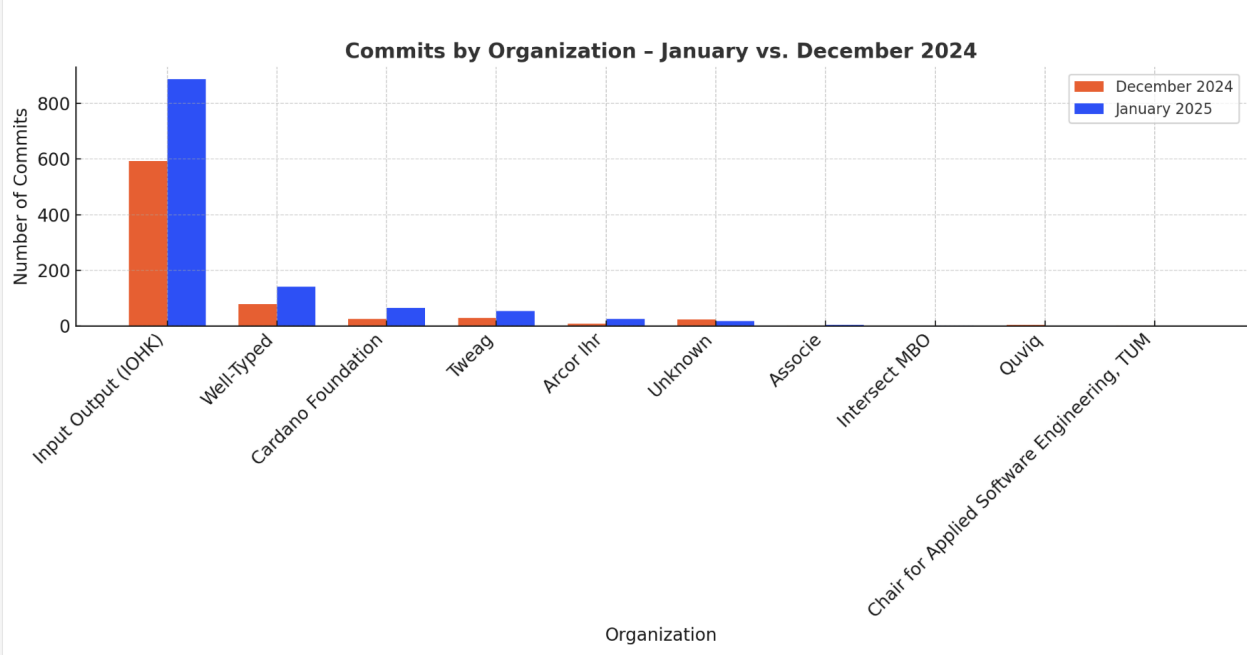


1.a) Organization Activity

Here is the data for how different organizations within the Cardano ecosystem were contributing to open-source projects during the current timeframe. Complete data available here in Bitergia.

Organization	Commits (Jan)	Commits (Dec)	Change (%)	Authors (Jan)	Files Modified	Lines Added	Lines Removed
Input Output (IOHK)	888	593	+49.7%	49	6,587	219,832	127,158
Well-Typed	141	78	+80.8%	5	376	8,506	4,329
Cardano Foundation	65	24	+170.8%	2	484	14,179	24,013

Tweag	52	28	+85.7%	1	139	2,143	759
Arcor IHR	25	8	+212.5%	1	71	644	720



Insights:

1. **IOHK** saw a significant rebound in activity, increasing commits by nearly 50%, **touching more than twice the number of files**, and adding over **219K lines**. Their team of 49 authors reflects a broad and well-orchestrated delivery push — suggesting active sprint cycles or milestone integration.
2. **Well-Typed** nearly doubled their commits with a lean team of five, showing efficient delivery across key modules with balanced additions and removals — consistent with **iterative development or refinement**.
3. **Cardano Foundation** tripled its contributions, signaling a **renewed technical push** — possibly focused on governance or infrastructure areas, as indicated by the high line churn and file count from just 2 authors.
4. **Tweag** reversed its decline from December with a modest but notable increase in activity, signaling continued presence and support for core engineering components.
5. **Arcor IHR** saw over a 200% increase, reflecting **deepening involvement from smaller vendors**, which may indicate progress in ecosystem onboarding or integration efforts.

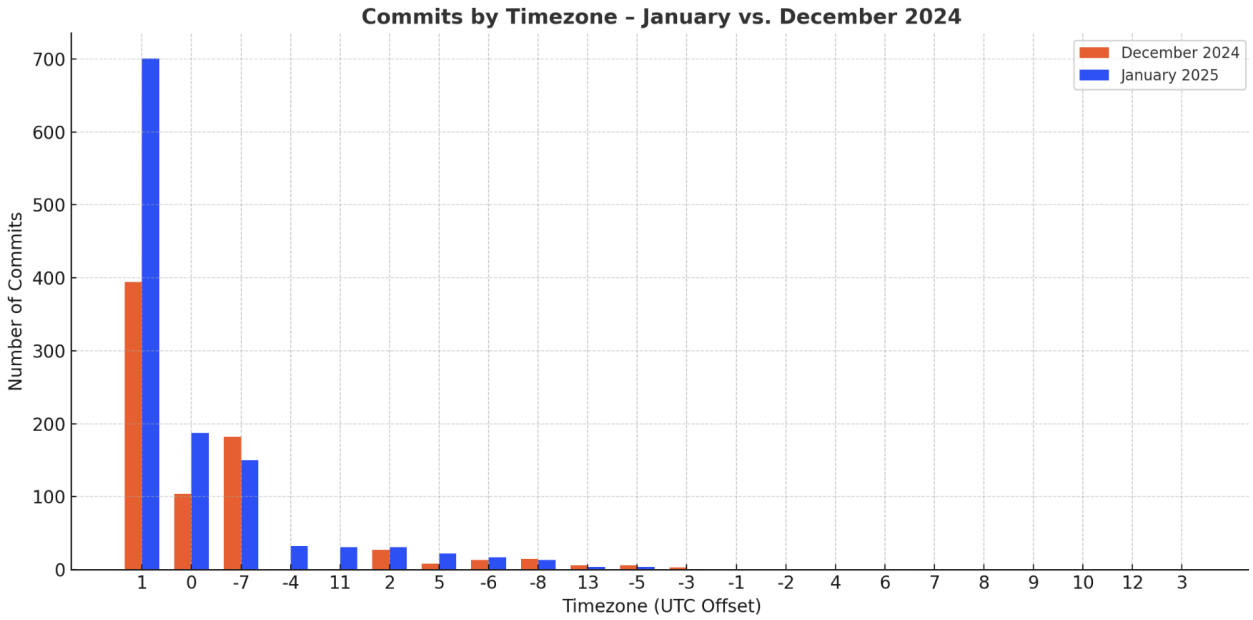
1.b) Commits by Timezone

Here is the data for commits per timezone. This view is important to understand how the contributors are spread geographically. Complete data available here in Bitergia.

In **December 2024**, commit activity shifted geographically, with notable growth in the Americas and a slowdown in European-based zones. The **Pacific Timezone (UTC -7)** posted the strongest gains (+59.6%), while historically dominant zones like **UTC +1** and **UTC 0** saw significant declines (−31.6% and −40.2%, respectively). This indicates a **regional handoff of development activity**, potentially due to holidays or shifting team workflows.

Top Timezones – January 2025

Timezone (UTC ±)	Commits (Jan)	Commits (Dec)	Change (%)
+1	701	394	+77.9%
0	187	104	+79.8%
−7	150	182	−17.6%
−4	32	0	+3200.0%
+11	31	1	+3000.0%



Insights:

- **UTC +1 (Western Europe)** saw a dramatic 78% increase in commits, reasserting its position as the **most active development zone** after a December lull.
- **UTC 0 (UK/GMT)** also grew nearly 80%, indicating strong return-to-work patterns from contributors in British and West African regions.
- **UTC −7 (Pacific US)** was the only major zone to decline (−17.6%), possibly reflecting extended holiday downtime or project handoffs.

Emerging zones:

- **UTC −4** (Eastern US/South America) and **UTC +11** (Eastern Australia) surged — though from very low baselines — suggesting **new regional contributors or team expansions**.

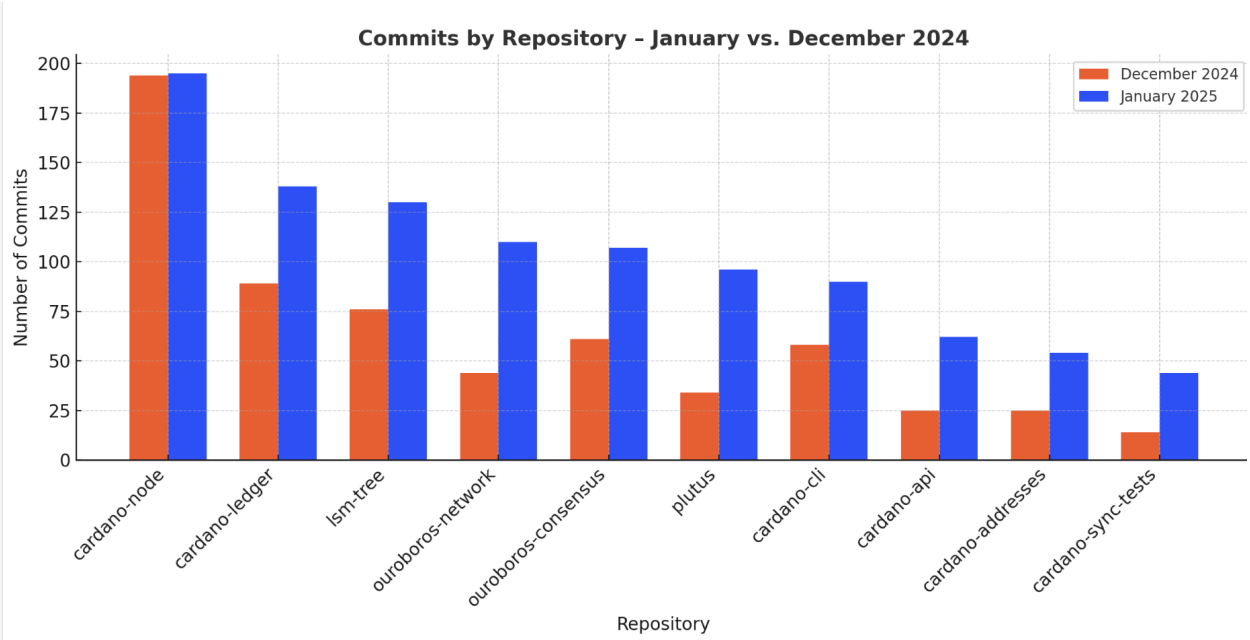
1.c) Per Repository Activity

This section shows activity for each repository in Cardano open-source. Complete data available here in Bitergia.

Top Repositories – January 2025

Repository	Commits (Jan)	Commits (Dec)	Change (%)

cardano-node.git	195	194	+0.5%
cardano-ledger.git	138	89	+55.1%
lsm-tree.git	130	76	+71.1%
ouroboros-network.git	110	44	+150.0%
ouroboros-consensus.git	107	61	+75.4%



Insights:

1. **cardano-node.git** maintained its leading position with near-identical commit volume — suggesting a **consistent delivery cadence** and continued core system refinement.

2. **cardano-ledger.git**, **ouroboros-network.git**, and **ouroboros-consensus.git** all saw **50–150% increases in activity**, signaling **intensive work on the consensus layer and ledger logic** — likely part of a coordinated protocol push.

3. **lsm-tree.git** continued its momentum, indicating sustained investment in **storage or indexing infrastructure**, potentially supporting DB Sync or core node performance.

These patterns indicate that while contributor count decreased, **repository activity became denser**, with teams focusing more deeply on **system-critical codebases**.

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2. Areas of Code

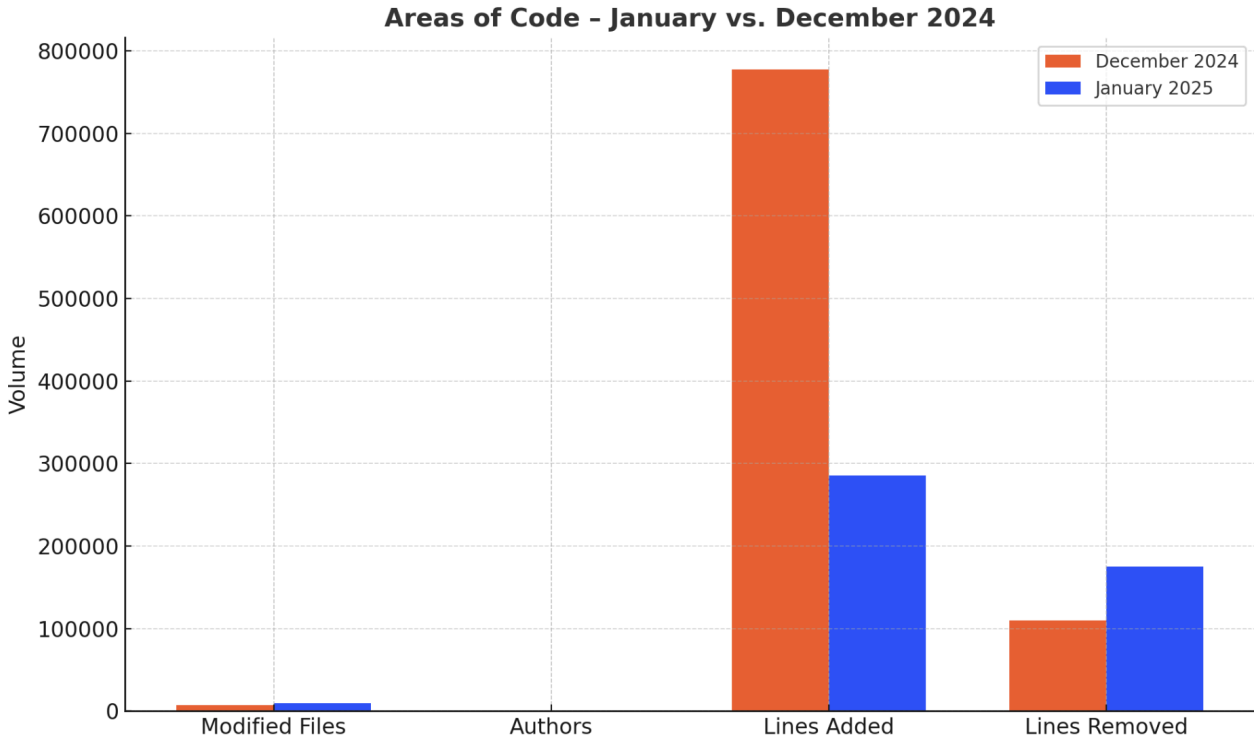
This category outlines the diverse areas and aspects of code development and management within the Github environment.

Summary

January 2025 – 9,588 files were modified by 64 authors, resulting in **285,725 lines added** and **175,456 lines removed**.

While total added lines dropped by over 63%, the number of modified files increased significantly, and lines removed surged by 60%, indicating a **shift from feature expansion to aggressive refactoring or simplification**.

Metric	December 2024	January 2025	Change
Modified Files	6,927	9,588	+38.4%
Authors	65	64	-1.5%
Lines Added	777,819	285,725	-63.3%
Lines Removed	109,658	175,456	+60.0%



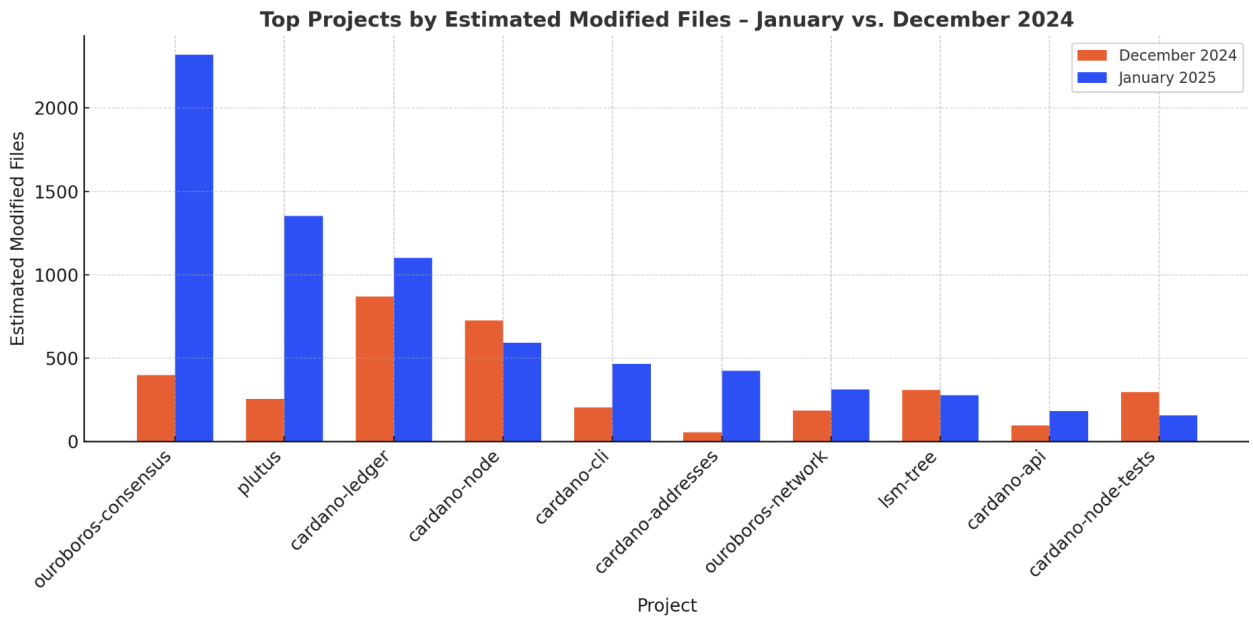
Insights:

- Despite **1 fewer contributor**, the team touched **over 2,600 more files**, showing **broad impact across the codebase**.
- The **drop in lines added** (−63%) likely reflects a shift away from large feature work toward **optimizing, cleaning, or modularizing** existing code.
- The **60% increase in lines removed** reinforces this — suggesting **technical debt cleanup, test removal, or aggressive code refactors**.
- The underlying trend: fewer authors, fewer new features, but more systemic code restructuring and preparation for long-term maintainability.

2.a) Projects

Top Projects – January 2025

Repository	Files (Jan)	Files (Dec)	Change (%)
ouroboros-consensus.git	2,319	399	+481.2%
plutus.git	1,353	255	+430.6%
cardano-ledger.git	1,100	869	+26.6%
cardano-node.git	593	725	−18.2%
cardano-cli.git	464	203	+128.6%



Insights:

1. **ouroboros-consensus.git** and **plutus.git** led the month with enormous jumps in modified files, suggesting **deep rearchitecture or feature modularization**.
2. The **481% increase** in consensus-related files likely reflects **protocol-level evolution** — possibly linked to ledger integration or modularity updates.
3. **cardano-ledger.git** continued its upward trend, while **cardano-node.git** slightly contracted — possibly indicating stabilization after a heavy December.
4. **cardano-cli.git** activity more than doubled, hinting at **new tooling support or integration enhancements**.

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3. Issues

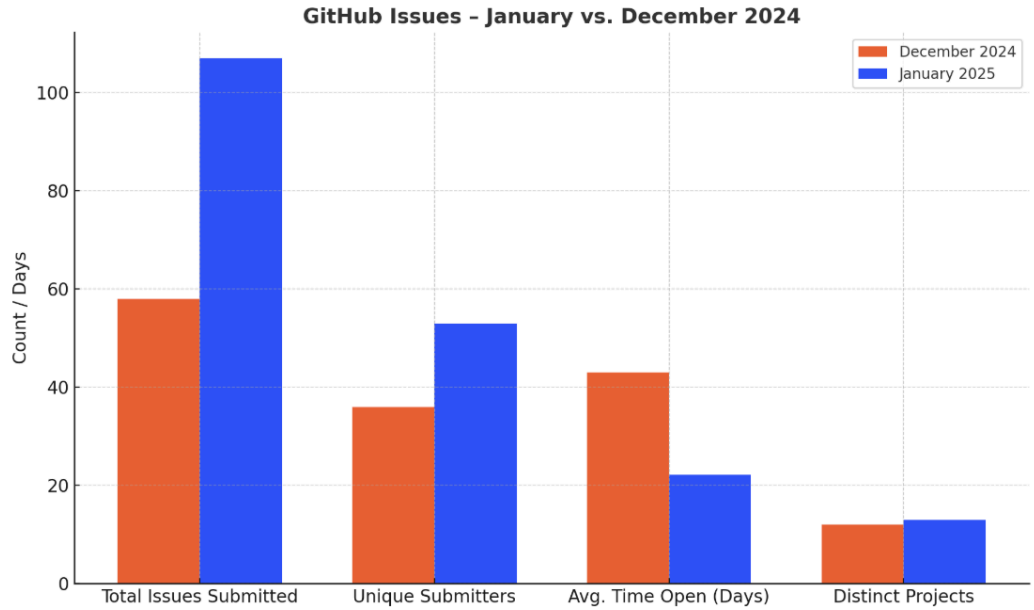
This segment revolves around the identification, tracking, and resolution of issues within Github projects. It encompasses discussions on problem-solving methodologies, issue management practices, and related metrics.

Summary

January 2025 – 107 issues were submitted by 53 unique contributors across 13 repositories.

Compared to December, this represents an **84.5% increase in issues**, **47% growth in submitters**, and a nearly **50% reduction in average resolution time**, signaling a **highly engaged and responsive development cycle**.

Metric	December 2024	January 2025	Change
Total Issues Submitted	58	107	+84.5%
Unique Submitters	36	53	+47.2%
Avg. Time Open (Days)	43.0	22.1	−48.5%
Distinct Projects	12	13	+8.3%



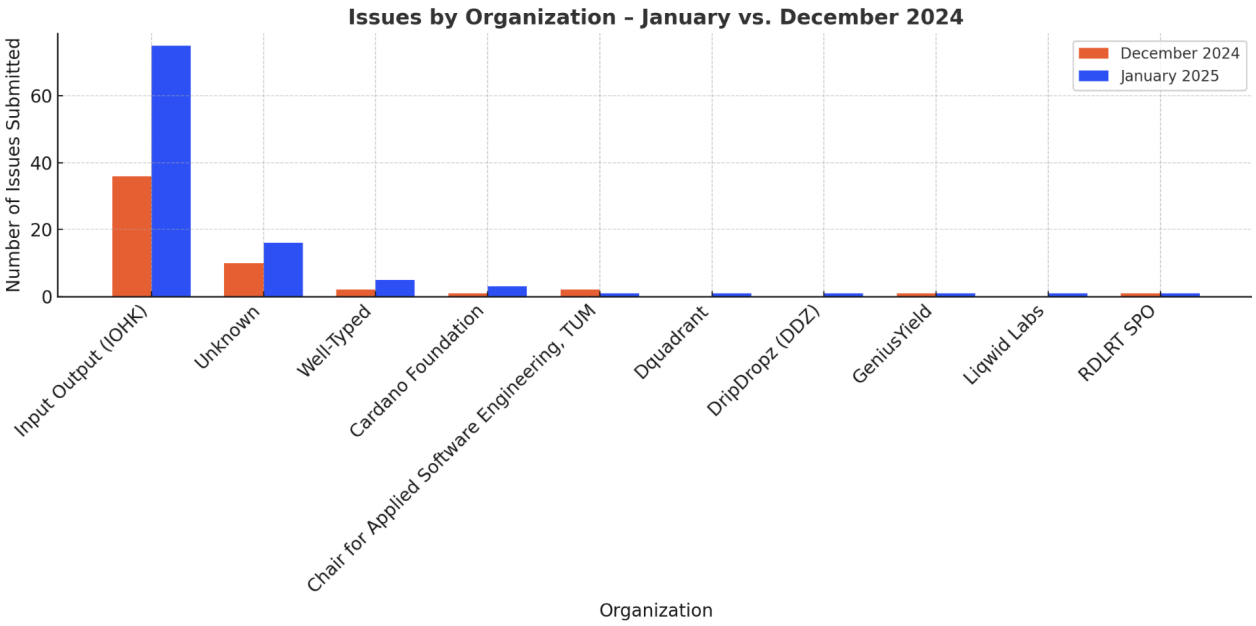
Insights:

- The near doubling of issue submissions suggests an **active testing and review phase**, likely tied to recent feature delivery or codebase refactors.
- More contributors engaged in QA (+47%), indicating **broader team involvement in quality assurance and triage**.
- Average resolution time dropped significantly — from 43 to 22 days — suggesting **strong responsiveness from maintainers** and an efficient issue lifecycle.
- The slight rise in project coverage (13 vs. 12) signals that **feedback loops are spreading across more of the ecosystem**, not just core repositories.

3.a) Organizations

Top Organizations – January 2025

Organization	Issues (Jan)	Issues (Dec)	Change (%)	Median Open (Jan)	Median Open (Dec)
Input Output (IOHK)	75	36	+108.3%	22.9 days	47.1 days
Unknown	16	10	+60.0%	23.4 days	27.2 days
Well-Typed	5	2	+150.0%	22.4 days	70.1 days
Cardano Foundation	3	1	+200.0%	7.7 days	35.1 days
TUM (Chair of Applied Software Eng.)	1	2	−50.0%	4.6 days	39.5 days



Observations:

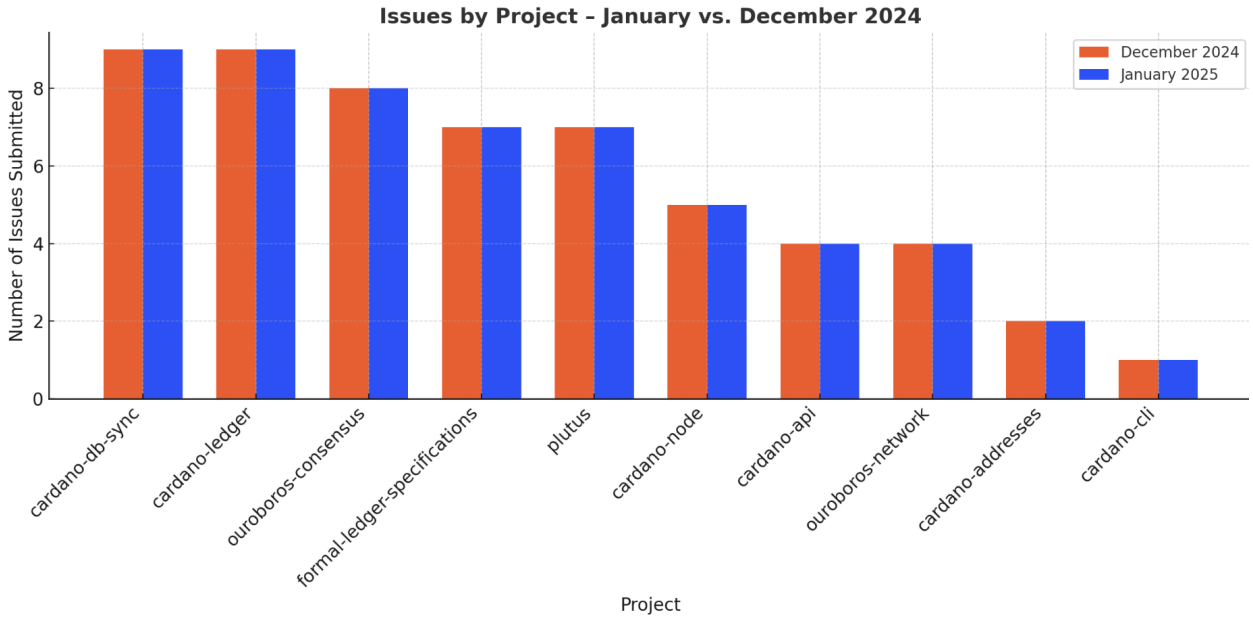
1. **IOHK** more than doubled its issue submissions, demonstrating a **major QA engagement spike**. Their resolution time dropped by more than half, reflecting **rapid triage and response**.
2. **Well-Typed** and **Cardano Foundation** increased reporting significantly while also improving response times — signaling **greater internal testing visibility and faster feedback loops**.
3. The **Unknown** group remains consistently active, reinforcing **healthy unaffiliated community involvement** in the QA process.
4. **TUM** reported fewer issues but resolved them much faster, which could suggest better targeting or quicker support turnaround.

3.b) Projects

Top Projects – January 2025

Project	Issues (Jan)	Issues (Dec)	Change (%)	Median Open (Days)
cardano-db-sync	9	9	+0.0%	32.9

cardano-ledger	9	9	+0.0%	35.6
ouroboros-consensus	8	8	+0.0%	50.1
formal-ledger-specifications	7	7	+0.0%	50.4
plutus	7	7	+0.0%	42.0



Observations:

1. The **top five projects remained identical** in volume, contributors, and resolution times — suggesting **a stable QA pipeline focused on mission-critical repositories**.

2. This consistency reflects **structured issue management**, possibly with planned testing cycles tied to recent or upcoming feature releases.

3. **Median resolution times** remained fairly consistent (30–50 days), indicating continued **triaging of complex or deep-layer feedback**.

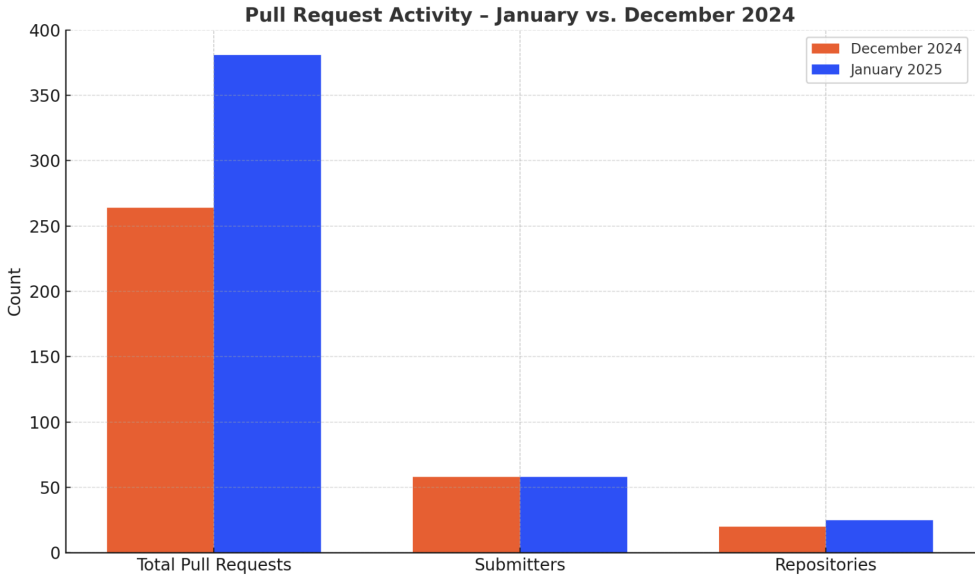
4. The unchanged issue volume across all projects signals that **testing environments and bug queues are being actively managed**, with no spikes or regressions.

4. Pull Requests

Summary:

January 2025 – 381 pull requests were submitted by 58 contributors across 25 repositories. This marks a **44.3% increase in PR volume** and **25% expansion in repository coverage**, even as the number of submitters remained constant — suggesting a **more productive, better-coordinated contributor base**.

Metric	December 2024	January 2025	Change
Total Pull Requests	264	381	+44.3%
Unique Submitters	58	58	+0.0%
Repositories Touched	20	25	+25.0%



Insights:

- The 44% surge in PRs confirms **a rebound in delivery momentum**, likely tied to features or structural changes initiated in December.
- The number of contributors remained flat, indicating **higher output per developer** and **better deployment alignment**.

- The jump in repositories touched (20 → 25) reflects **wider delivery focus**, either on infrastructure or mid-layer modules brought back into active development.
- This signals a **healthy start to the year** — with more code shipped, broader project touchpoints, and consistent team stability.

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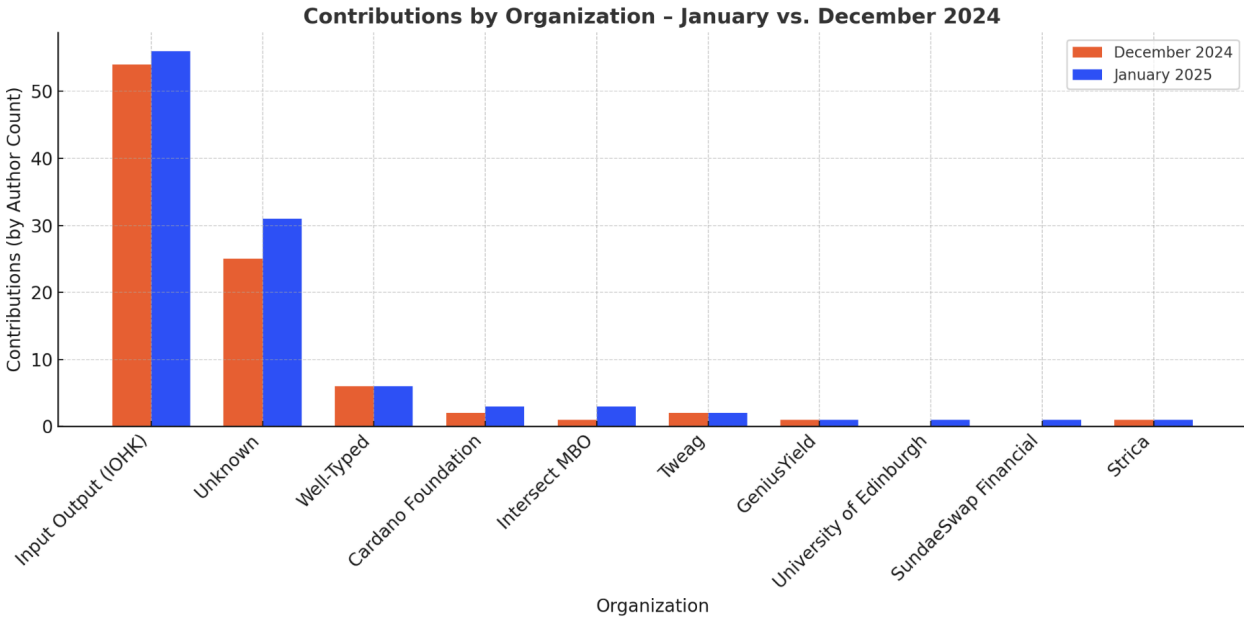
5. Analysis of Contributions by Organization

Top Organizations – January 2025

Organization	Contributions (Jan)	Contributions (Dec)	Change (%)	Authors (Jan)
Input Output (IOHK)	56	54	+3.7%	56
Unknown	31	25	+24.0%	31
Well-Typed	6	6	+0.0%	6
Cardano Foundation	3	2	+50.0%	3
Intersect MBO	3	1	+200.0%	3



Insights:

- **IOHK** continued to lead contributor volume with consistent team strength, signaling strong in-house coordination and steady engineering operations.
- **Unknown contributors** posted notable growth — a healthy sign of **community-level**

participation or ecosystem-wide vendor involvement.

- **Well-Typed** maintained stable activity, while **Cardano Foundation** and **Intersect MBO** saw meaningful increases in contributor headcount and contributions, indicating **re-engagement or growth in engineering capacity**.

- Overall, the January data reflects a **stable yet expanding base of contributors**, with a mix of organizational consistency and broader community involvement.

Glossary

Report Technical Definitions:

- **Repository(Repo):** In Git, a repository, often abbreviated as "repo," is a storage space where your project's files and their entire revision history are stored. It typically includes various files such as source code, documentation, images, and more. Repositories can be either local (on your computer) or remote (hosted on a server like GitHub, GitLab, Bitbucket, etc.).
- **Issue:** An issue is a feature request, bug report, task, or any other item that needs to be tracked within a project. In Git repositories hosted on platforms like GitHub or GitLab, issues are commonly used for discussing and tracking tasks or problems related to the project. They can include labels, assignees, comments, and other metadata to facilitate collaboration and organization.
- **Pull Request (PR):** A pull request is a proposed change that a user wants to merge into a target branch of a repository. It's commonly used in distributed version control systems like Git to facilitate code review and collaboration. When a developer completes a feature or fixes a bug in a separate branch of the repository, they can initiate a pull request to merge their changes into the main branch or another designated branch. Pull requests often include a summary of the changes, discussions, reviews, and automated checks.
- **Contributor:** A contributor is anyone who participates in a project by making contributions such as code changes, documentation improvements, bug fixes, feature enhancements, etc. Contributors can be individuals or organizations, and their contributions can take various forms, from writing code to providing feedback, reporting issues, or reviewing pull requests.
- **Git:** Git is an open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. It allows multiple developers to work on the same project simultaneously, coordinating their work through branching, merging, and version tracking. Git is widely used in software development for managing source code revisions and collaborating on projects.
- **GitHub:** GitHub is a web-based platform that provides hosting for Git repositories and offers collaboration features such as issue tracking, pull requests, code review, and project management tools. It's one of the most popular platforms for hosting Git repositories and facilitating collaboration among developers and teams. GitHub also provides additional features like wikis, continuous integration, and deployment services.
- **Commit:** In Git, a commit is a snapshot of the changes made to the files in a repository at a specific point in time. It represents a single revision or change set and includes a unique identifier (SHA-1 hash), a commit message describing the changes, and a pointer to the previous commit(s). Commits are fundamental to version control in Git, as they allow developers to track changes, revert to previous states, and collaborate on code changes.
- **Organization:** In Git and GitHub, an organization refers to a group or entity that can own repositories, manage access permissions, and collaborate on projects. Organizations are often used by companies, open-source projects, or groups of developers to centralize their repositories and manage their collective work. Organizations on GitHub can have multiple members with varying levels of access, allowing for collaborative development within a structured environment.
- **Project:** A project in the context of Git and GitHub typically refers to a specific software development endeavor or initiative. It encompasses all the related tasks, code,

documentation, issues, and resources needed to achieve a particular goal. Projects are often organized within repositories on GitHub, where developers can collaborate, track progress, manage tasks, and share code. A project may involve multiple contributors working together to develop and maintain software, with each contributor contributing to different aspects of the project.

- **Community:** In the Git and GitHub ecosystem, a community refers to the collective group of developers, users, contributors, and other stakeholders who are involved in a particular project, organization, or open-source initiative. Communities are essential for fostering collaboration, sharing knowledge, providing support, and driving the growth and sustainability of projects. They often gather around shared interests, goals, or values, and may interact through various channels such as forums, mailing lists, chat platforms, and social media. A strong and engaged community can contribute to the success and longevity of a project by providing feedback, contributing code, reporting issues, and supporting fellow members.