Best Effort Review Report

Axelar solana-gas-service (2)

Solana program

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on October 15, 2025

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Disclaimer

The report makes no statements or warranties, either expressed or implied, regarding the security of the code, the information herein or its usage. It also cannot be considered as a sufficient assessment regarding the utility, safety and bugfree status of the code, or any other statements.

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Due to its time-constrained nature, a best effort review might not go in the same security depth as an audit. In particular, it does not include a re-assessment on whether all reported issues are correctly fixed at a frozen, subsequent version of the codebase. Further, issues might not be disclosed even if still open, and inherent risks might not have been investigated.

Terminology

Code: The code with which users interact.

Inherent risk: A risk for users that comes from a behavior inherent to the code's design.

Inherent risks only represent the risks inherent to the code's design, which are a subset of all the possible risks. **No inherent risk doesn't mean no risk.** It only means that no risk inherent to the code's design has been identified. Other kind of risks could still be present. For example, the issues not fixed incur risks for the users, or the upgradability of the code might also incur risks for the users.

Issue: A behavior unexpected by the users or by the project, or a practice that increases the chances of unexpected behaviors to appear.

Critical issue: An issue intolerable for the users or the project, that must be addressed.

Major issue: An issue undesirable for the users or the project, that we strongly recommend to address.

Medium issue: An issue uncomfortable for the users or the project, that we recommend to address.

Minor issue: An issue imperceptible for the users or the project, that we advise to address for the overall project security.

Objective

Our objective is to share everything we have found that would help assessing and improving the safety of the code:

1. The **inherent risks** of the code, labelled R1, R2, etc.
2. The **issues** in the **code**, labelled C1, C2, etc.
3. The **issues** in the **testing** of the code, labelled T1, T2, etc.
4. The **issues** in the **other** parts related to the code, labelled O1, O2, etc.
5. The **recommendations** to address each issue.

Summary

Blockchain: Solana

Initial scope

- **Repository:** https://github.com/eigerco/axelar-amplifier-solana
- **Commit:** `6c64b18dc0d0b0f5dbd190606264d9a6acf3d66b`
- **Path(s):** `./programs/axelar-solana-gas-service-v2/`

1 inherent risk

4 issues reported

Some issues could still be open (fix missing or not reviewed).

Severity	Reported
Critical	0
Major	2
Medium	1
Minor	1

We do not disclose the issues of this report.

Inherent Risks

R1: Users might be refunded incorrectly, or too late, or even not refunded at all for the excess of tokens they provided to cover gas costs.

This is because the tokens deposited in the Gas Service program are fully managed by a single authority, who might not perform the refunding as expected in the following situations:

- The authority could make mistakes, e.g. could refund a wrong address, a wrong amount, or a wrong token.
- The authority could be manipulated: anyone with access to the collector's private key can send all the funds deposited in the Gas Service to any address.
- The authority might be inactive, e.g. might have lost access to private keys or might be unavailable, in which case refunds will not be processed.