- Please tell us about your proposed project and what the benefit of your work will be for the Rust project and the wider community of users. Please give as much detail as you can including, where appropriate, specific deliverables and timelines (though we understand that these might be hard to define at this point and we are happy to talk these through with you directly). If you want to focus on several areas of Rust as part of the project, that is totally fine, just say what you want to work on. *

750 words limit

Timeframe: 3 months and 2 people

The AeroRust community is focused on two challenging industries - aviation and space. They are multidisciplinary, highly regulated, and require a high degree of correctness: making them a natural fit for Rust.

While Rust has been widely accepted and used in the cloud, blockchain and even included in the Linux kernel, the world of system-critical and mission-critical software, like the ones developed in the automotive and aerospace industries, is still lagging behind due to their slower pace of adoption and long product development cycles.

This is why we're looking to grow the efforts in the aerospace industry in our community and also the Rust project as a whole by outlining the benefits that the Rust language, ecosystem and communities can bring to the table.

In this proposal for a Project Grant, we've decided to focus on 4 distinct goals:

- **Outreach** - projects, maintainers, organisations, companies, social media, content creators and events.
- **Onboarding** - An onboarding process with information on how people can contribute, good first issues and so on.
- **Communication** - 1 technical blog post per month for the AeroRust website (even re-posted to RustJobs / embeddedcomputing.com).
- **Project Management** - Projects planning and management (issues, PRs, mentoring, answering questions, coordination, etc.).

Outreach

The Outreach goal will take up most efforts for this grant as it will be the one that incorporates the organisational and execution parts for the rest of the 3 goals.

At the end of the timeframe provided for this grant application, we should have:

- 2 planned events - a Workshop and a Hackathon
- 1 technical blog post per month (3 months)
- Regular social media updates and blog posts for the ongoing efforts
- Reached out to organisations that express interest in collaboration for one of our current or future projects, events, etc.
- Possible sponsors for the events and projects

Onboarding

This has been the most challenging part since the creation of the community - the onboarding process. A place where people can familiarize themselves with the different disciplines that make up the aerospace industry, like Guidance Navigation and Control, RTOS, space and aerospace protocols and standards, existing in the Rust ecosystem projects and many, many more. On the other hand, it should be tightly coupled with some of the efforts happening in the community - "Are we in space yet?" crates catalogue [1], the NMEA 0183 [2] and the mav-sdk [3] crates to bring more collaborators and contributors to the community.

Apart from the general overview of the aerospace industry, it should include a good starting point for beginners or experienced people to engage with the community and contribute back like good first issues, calls for participation, content writing and even community organisation tasks.

- [1] "Are we in space yet?" crates catalogue
- [2] NMEA 0183 crate - maritime data protocol for onboard electronics
- [3] mav-sdk crate - A high-level SDK for the open-source MAVLink protocol

Events

The project grant will allow us to plan the 2 proposed events which will happen later that year, after the timeframe proposed in this grant application.

This will include finding sponsors, companies and other organisations that would like to collaborate on these events.

For example, the only company in Bulgaria that is working on CubeSats have expressed interest in the Rust programming language and Olimex - an open-source hardware company which regularly sponsors and executes soldering workshops at conferences. We will approach both for the events as I already have contact with them.

On the other hand, my new position as a National Point of Contact for Bulgaria of SGAC will allow me to include these events as part of the organisation's ongoing

efforts in Bulgaria and to find additional volunteers from the organisation. This opens the possibility to use the network and grow the event size.

- The Workshop will most probably be in Bulgaria, it can be a hybrid event if talks are present, but it will be focused on embedded programming and a practical project. The project might incorporate a current crate from AeroRust (like the nmea crate) or it can be tailor-made for the needs of the workshop - e.g. a simple toy project that mimics a part of a satellite system. Kits will be made and given away to the workshop participants.
- The hackathon - the Bevy community is very open to helping with the promotion of such a Game hackathon with an aerospace theme. A general idea must be formed during those 3 months with planning following after that and execution after mid of 2023.

- How much money are you applying for? This can be a rough figure, or if you are unsure, you can leave this blank and we can discuss it with you directly

$15 000 - the more funding there is, the more planning and execution we can perform

- How long do you expect your project to take to complete (number of hours work and the total amount of time from start to finish)? This can be a rough estimate, and if you are unsure about the number of hours, just say how many months you think it will take you to complete your project

In the span of 3 months, with 2 people ideally spending between 12-16 hours per week (which makes between $52 - $39 accordingly per hour gross, without any transaction fees and operational costs taken into account for the legal entity receiving the grant).

Since I've always been heavily engaged with the community and will continue to do so, I'll not be personally receiving any part of the grant.