xxRFP-2022-008

xx Games

This xx foundation request for proposals will fund the creation of xx Games, a protocol for playing various simple games over the xx Network. These games should ideally function using a p2p model (not requiring a central server) to protect anonymity.

The xx foundation is offering a competitive bidding process to complete this work, with independently compensated phases. The selection process will analyze each phase individually according to the response contents, the proposed compensation, and the proposed final deliverable dates and contents. Proposers are expected to propose for all phases.

Requirements

This tool should describe methods for transmitting various simple game states over the xx network. Since this is a simple enough task, proposals should also endeavor to explore options for anonymous matchmaking services and the possibility of a central server for more complicated games.

Some examples of simple games that would be a good starting point are:

- Blackjack
- Poker
- Connect Four
- Chess/checkers
- Battleships

Proposals should include a full description of how game states will be encoded and transmitted while protecting anonymity, along with a user interface design for both iOS and android.

Architecture

The architecture for this project will be highly dependent on the route taken & the games designed. In the simplest version, two clients will create IDs, establish a secure connection & messages will be sent normally through the network to each other containing game states. This can be accomplished using the REST-like package, backed by the authenticated connection implementation.

Alternatively, if a server is desired, clients should be able to establish a secure connection with the server & register a new identity. There are numerous approaches that can be taken from here. Two to consider are as follows: clients store their contact information with the server, which acts similarly to user discovery bot, connecting clients who can then play p2p games; or, clients send game states to the server, which then performs necessary actions and sends finalized game states back to the clients.

Phases

You may propose your own phases, but the following phases are desired:

Phase 1: **Proof of Concept**—Implement the basic version of your proposed design and submit a final design for the client-side functionalities. This should include final versions of any cryptographic primitives and fully explained versions of all data structures and sub-protocols.

Phase 2: **Core Implementation**

- **Server-Side Integrations**—Depending on your proposal, implement server-side architecture. This could include matchmaking or allow for more complex games to be played over the network, depending on how it is used.
- **Command-Line Tools**—Fully functional client-side command-line tool which fully exercises your proposed system without a user interface. The client-side command-line tool is the final library used by the Android and iOS apps, with test coverage of at least 85% of the code base and an accompanying continuous

Phase 3: **App Integrations**—Android or iOS (or desktop) app with the final user interface design using the library from Phase 2.

Submission Instructions

Proposers should submit their proposals, in English, to the following website:

- https://xxfoundation.org/archive/xx-foundation-announces-the-xx-dapps-grant-program

Note that proposals are divided into 2 parts: An anonymized technical proposal and a staffing proposal. The technical proposal will be posted online and should not contain any identifying information about your organization or staff. The staffing proposal will contain resumes and additional evidence for why you and your team are qualified to do the work you propose.