

## **Product Internship Test**

Design a sequence diagram in UML that depicts the interaction between roles and systems and create an implementation plan for the following “project.” Please show your solution in a PowerPoint format saved as a PDF.

### **1. Overall Project Vision and Value Proposition**

Client is interested in demonstrating the ability of blockchain to help with reducing costs for internal settlement of services between its subsidiaries.

The application will consist of a central issuer (CI), multiple exchange parties and the creation of the token that can be freely exchanged between them (“Groupcoin”):

- a. General Treasury – Creates a pool of Groupcoin on a yearly basis and fixes the exchange rate to local currencies (e.g. 1 Groupcoin = 1 USD). They distribute the Groupcoins to various subsidiaries based on their assigned budgets.
- b. Exchange Parties – Groupcoin assigned by General Treasury can be used by each subsidiary to buy services from other subsidiaries (e.g. Client UK, Client United Arab Emirates). If the subsidiary uses up its initial allocation, they must request more Groupcoin from the General Treasury.
- c. Settlement – At the end of the year, General Treasury calculates all balances and pays out local currencies to subsidiaries based on the fixed exchange rate.

The values of using a blockchain solution:

- a. Reduced costs – all exchange transactions done on-chain at no cost.  
Settlement transactions done annually as FX transfers.
- b. Real-time reconciliation – all parties’ balances are available in real-time.
- c. Transparency – the ledger is immutable and available for audit by all participants.
- d. Speed – exchange transactions processed in real-time.

### **2. Description of Services**

BlockApps agrees to provide Client with BlockApps’ STRATO Software Service (“STRATO”) Platform and Application Program Interface (“API”), and consulting services (collectively, “Services”) and related Documentation, as more particularly described in this SOW for a PoC and Pilot:

**a. Services**

- i. During the Initial Term (as defined herein) and any Renewal Term (as defined herein), BlockApps hereby grants Client a license to use the BlockApps STRATO Platform - Standard Edition.
- ii. During the Initial Term and any Renewal Term, BlockApps shall provide Software Upgrades and Management of the Blockchain Infrastructure.
- iii. During the Initial Term and any Renewal Term, BlockApps will provide Client with Production Support five (5) days a week during the normal business hours. Normal business hours shall be defined as Monday through Friday (excepting national holidays), from 10:00 a.m. to 6:00 p.m. EST for Support Service requests. Resolving a single Support Service request may involve multiple phone calls, email exchanges and off-line research. BlockApps will make reasonable efforts to provide the requested Support Services; however, BlockApps cannot guarantee that every issue will be resolved. BlockApps shall not be required to provide any Support Services relating to problems or issues arising out of or from (i) Client's use of BlockApps Software or API ("Products") in a manner for which they were not designed; (ii) damage to the media or network on which the Products are provided or to the computer on which the Products are installed; or (iii) Client's negligence, misuse, or unauthorized modification of the Products.

**b. Deliverables**

During the Initial Term, BlockApps will provide Deliverables (as defined herein), subject to the following timeline:

- i. PoC
  - a) One (1) week of Discovery, Solution Architecture, and Product Design for a Multi-Node Solution (hereinafter, "Solution Architecture").
  - b) Seven (7) weeks of STRATO Configuration and Back-End Application Development (hereinafter, "Back End Development Phase").
  - c) Five (5) weeks of Front-End Application Development (hereinafter, "Front End Development Phase").

ii. Pilot

- a) Eight (8) weeks to evolve the PoC to Production, with a small set of exchange partners and limited integrations.
- b) Two (2) weeks to demo production model and make changes necessary for final delivery.

b. **Resources and Timing**

Resources

This engagement will require the participation of representatives from Client, BlockApps, BlockApps' subsidiary, and, at BlockApps discretion, BlockApps' subcontractor(s).

During the Term, BlockApps shall provide Client resources experienced in blockchain technology, including the following:

<b>Role</b>	<b>Responsibilities</b>
Project Lead	Client coordination, development planning, agile management, status reporting.
Solution Architect	Business analysis, requirements gathering, specification and reference architecture development.
Front-end Engineer	Design and implementation of UI/UX, interfacing with the STRATO Platform and smart contracts.
Back-End Engineer	Design and implementation of Solidity smart contracts and middleware, interfacing with the STRATO Platform.
UX/UI Design/Developer	Design look and feel and user interactions of Platform.

Unless otherwise specified, all resources assigned to the project will serve on a part-time basis and availability of identified personnel may change due to varying circumstances; however, at all times the anticipated roles will be appropriately staffed by BlockApps to complete the Deliverables (as defined herein).

## Projected Timeline

Project Kick-off Date: June 4, 2018

- a. **Discovery Phase:** This phase shall include one (1) week of Solution Architecture to gather information and together with Client define the scope and breadth of product development, implementation, and design to begin June 1, 2018.
- b. **Back End Development Phase:** This phase shall include seven (7) weeks of STRATO configuration and back-end application development to begin **June 11, 2018.**
- c. **Front End Development Phase:** This phase shall include five (5) weeks of front-end application development to begin **July 30, 2018.**
- d. **Pilot:** This phase shall include eight (8) weeks of development to evolve the PoC into small scale production and shall begin **September 3, 2018.**
- e. **Demo Production and Final Product:** This phase shall include two (2) weeks of demo and edits to complete project and shall begin **October 29, 2018.**
- f. **Continued Implementation (If requested).**