**Artificial Systems**

**Amazon**

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# Purpose of the Document

This document details the agreement between the client (Amazon) and the vendor (Artificial Systems). All the names mentioned in this document shall refer to either the client or the vendor as referred to in this section. The purpose of this document is to present a Statement of Work (“SOW”) that outlines Artificial System’s roles, tasks, dependencies, and deliverables at a high level for deployment of services to support a planned launch by Amazon.

The project is an API that will use AI mechanisms to perform a conglomeration of tests on a website and mobile application to identify security weaknesses and vulnerabilities as well as conduct performance scans and other metrics. The agreed upon price to deliver the solution is $2,369,400 USD. Details of this price per iteration are listed in the Payment Milestone section of this document.

Performance of the services described in this SOW shall be governed by the terms of the proposed Supply and Services Agreement #3209650394 dated January 30, 2020 (“Agreement”) between Artificial Systems and Amazon.

No obligation to provide the service described herein arises unless an order for the service, incorporating the terms of an agreed SOW, has been placed by the customer under a signed governing agreement in place between Artificial Systems and Amazon and accepted by Artificial Systems. Artificial System’s performance of the Services described below is subject to the assumptions, exclusions and other conditions identified in this document. In the event of a conflict between the terms of the Agreement and this SOW, the terms of this SOW shall prevail with respect to the subject matter contained herein.

# 

# Scope of Work

## Components

### Front-end

1. Program Dashboard
   * Scan all links, test destinations for unresponsive or erroneous webpages.
   * Test web pages for UI responsiveness.
2. Runtime Dashboard -
   * Tests the UI workflow of the website/app to check if webpage links are synchronized with button clicks
   * Tests whether SEO strategies are implemented correctly, including title tags, meta descriptions, URL structure and image alt tags
3. Post-runtime Dashboard
   * Perform boundary value analysis on front-end forms.
   * Tests website compatibility with multiple browsers and operating systems, then identifies UI discrepancies between them

### Back-end

* Pose as artificial user, and test back-end workflow
  + Fill in forms, or other areas of user-input and test to ensure proper data flow
  + Tests if social media integration is aligned with website architecture and workflow
  + Tests the workflow of the website/app consisting of the:
    - Login and Signup options
    - Search functionality
    - Product review posting feature
    - Sorting feature
    - Applying filters for choosing the desired product(s)
    - Add/remove functionality in the shopping cart
    - Check out process
    - Order number and invoice generation
    - Payment gateway and payment processing
* Ethical hacking system: Test data leak, security etc
  + Apply security threats on the system to test response and detection systems, like DDoS or Brute-force attacks.
  + Attempt to travel into administrative pages.
  + Attempt to collect and decode encrypted files.
* Performance analysis system:
  + Increase load on each page to test performance response.
  + Performance testing that includes:
    - Webpage loading speed
    - Throughput
    - Data transfer rate
    - Efficiency
    - Uptime
    - Database performance
    - Website traffic load tolerance
    - Error messages
* Payment security and testing for eCommerce:
  + Tests the payment gateway to ensure that it functions properly and provides security while doing transactions
* Documentation system
* Connectability:
  + Apply VPN to test server ping response, connectability.

## 

## Out of Scope

As noted above, all activities that are not explicitly called out in the Section “Scope of Work”, are considered out of scope. These out-of-scope activities include the following commonly overlooked areas:

* Any content bought, sold, or hosted on any of the applications or websites tested
* Customization of the design of the webpage or application
* Maintaining the solution after the closing phase
* Installation and troubleshooting of third-party software agents, including antivirus and backup software.
* Complying with the federal and local law regarding the use of the solution.

# 

# **Services Rendered**

## **Requirement Phase**

**Objective**

Artificial Systems consults with the client to gather all requirements and use these to analyze the client’s needs and create an initial document. The project requires the team to work closely with the customer to determine the customer's requirements for the product. The team will use the iterative software life-cycle, so the customer can analyze and change the requirements if needed throughout the project. The requirements phase identifies the functionality, performance levels, and other characteristics which the product must satisfy in order for it to be acceptable to the customer.

Artificial Systems will conduct the Stakeholder Analysis for the project and based on that, will schedule interviews with the stakeholders to gather requirements. Post the interview process, requirements and evidence will be reviewed to draft the Requirements Document.

**Key Deliverables:**

* + 1. Stakeholder Interview Schedule
    2. Wireframe Designs
    3. User Experience Case studies
    4. Requirement Document

## **Design Phase**

**Objective**

Artificial Systems will deliver a project plan for Amazon. This document will detail how we design the application, the technology we use to deliver the three-tier application: front-end, back-end, and database.

It plans how Artificial Systems implements the artificial intelligence tester on the client input from requirement documents, design documents, and the rationale behind such design. The section on back-end technology contains information on how it works with the front-end, how it handles information from the customer and processing results. In addition, it contains information on how we handle security issues.

The database section contains the type of the database, the schema, benefits and limitations of using such technology in terms of the number of requests, response time, disaster recovery, and redundancy.

**Key Deliverables:**

1. Finalized design of front-end dashboard
2. Finalized design for back-end and database
3. Finalized choice for deploying
4. End to End Design Document

## **Development Phase**

**Objective**

Artificial Systems will create a project based on previous plans and instructions from the client. At each milestone, Artificial Systems shall complete the planned items and deliver them to the client. All the documents from the previous phase will be transformed into an actual solution.

In the case of items not delivered due to unforeseen circumstances, the milestones shall be renegotiated. The work is divided into modules/units and actual coding is started. In this phase the code is produced so it is the main focus for the developer. This is the longest phase of the software development life cycle.

**Key Deliverables:**

* + 1. Working software for front-end
    2. Working software for back-end
    3. Script for setting up database
    4. Unit tests

## **Testing Phase**

**Objective**

Artificial Systems shall test the AI Tester solution against the requirements detailed in the requirement documents and ensure the least amount of bugs remain in the system. The testing ensures the solution delivers all the features required and it can operate without any major fault.

Artificial Systems shall conduct integration testing for the three components: front-end, back-end, and database. Artificial Systems shall also conduct user acceptance testing (UAT) for the Music Streaming Platform solution and compile the testing report to present to the client for review and approval.

**Key Deliverables:**

* + 1. Testing Plan
    2. Test Results

## **Deployment Phase**

**Objective**

After the team tests the product and the product passes each testing phase, Amazon will move on to the deployment phase. In the deployment phase, the project team passes the testing of the product, and the product is ready to go live. The team will deploy the website on the AWS S3 servers and conduct another test to ensure successful deployment. The product will then be ready to be used in a real environment by all end users of the product.

**Key Deliverables:**

1. Deployed application
2. Working AI algorithm
3. Source Code

## **Closing Phase**

**Project Hand-off, Post-Project Completion Support Plan**

**Objective**

Artificial Systems delivers the final working code base, the implemented project on a working server. Artificial Systems also provides a checklist based on the project plan and demonstrates that the implemented project contains information on how it satisfies the requirement from clients.

The client training plan and project manual will be delivered to the client. This contains details on how the client should access and use the functionalities of the project at a high level. The Project Manual contains information for changing the code base at a low level, code organization, schema and documentation on the implementation. In addition, it contains contact information for Artificial Systems support and AI algorithms.

The Post-Completion Support Plan lists the level of support that we plan to provide past project completion, and other levels of support and pricing should the client choose Artificial Systems for continuous support.

The Disaster Recovery Plan provides the roadmap to restoring the project should the client encounter unforeseen circumstances and need to restore the AI tester solution.

After release of project resources to the client company, reassign parts of next project to team members

Perform post-project reviews with the team: assess individual performance, reflect on issues or team disputes and lessons learned.

**Key Deliverables:**

* + 1. Client training plan
    2. Project Manual
    3. Post completion support plan
    4. Disaster Recovery Plan

# **Customer Responsibilities, Assumptions and Dependencies**

* Temporary identification and access to Amazon buildings to Artificial Systems employees for the duration of the project.
* Amazon hardware (laptops/chargers) provided by Amazon for the development of the project.
* Email account with domain @amazon for all Artificial Systems employees. This includes support staff.
* Access to Amazon Wi-Fi network for all Artificial Systems employees for the duration of the project.
* Access to Amazon production environment (server) during deployment phase of the project.
* A reliable point of contact for the project manager of Amazon.
* Two Amazon system administrators with whom Artificial Systems developers may interact and obtain the necessary information and resources to build services.
* Sufficient knowledge transfer sessions to understand business requirements which will help in designing database schema and tables.
* Provision of music content, images, descriptions, and credits of music items on a daily basis.
* Approval to use third party payment gateways API’s like PayPal, Visa, MasterCard, etc. as provided by the Amazon banking institution.
* Allowance from Amazon for the usage of Amazon S3 storage. The number of tables and data (the number of users) is estimated by Amazon and Artificial Systems by a mutual agreement. If data scales in the future, meetings will be conducted to discuss AWS S3 storage and resources control.
* Sufficient server space provided by Amazon in order to host the Website Guidelines from Amazon in designing, implementing and deployment a new solution.
* The payment plan for the project will be in installments.
* The priority of the project will be completing it on time.

# **Acceptance Criteria**

Artificial Systems will notify Amazon upon completion of the services by providing the notice of completion. Amazon will have (15) days from the notice day to notify Artificial Systems if any requirements are not included in the Statement of Work; such services shall be deemed accepted by the earliest of:

1. The passage of ten (10) days from the date of notice of the completion with no notice of non-conformance from the client, Amazon
2. Amazon’s actual acceptance (it being contemplated that Customer will use the letter of acceptance (LOA) when accepting such Services)
3. Client’s use of any part of each Service or any result (or deliverable) of each Service, whether or not any revenue is generated by the Client, would constitute acceptance within (15) days.

# **Pricing / Payment Milestones**

Fees shall be paid as the Deliverables identified below are produced and accepted by Amazon in accordance with the acceptance procedures described here in. Each milestone corresponds to an iteration which will be completed during a fiscal quarter. The project is estimated to take 2 years and will be executed in eight iterations.

After creating the work schedule, the schedule was reduced to 731 days and the bottom-ups price estimate reflects a more precise amount for the project. The revised payment milestones have been updated accordingly.

|  |  |  |
| --- | --- | --- |
| **Milestones** | **Description** | **Price (in USD)** |
| M01 | Project start | 0 |
| M02 | Governance Plan | $20,000 |
| M03 | Requirements phase | $120,000 |
| M04 | Design phase | $260,000 |
| M05 | Coding phase | $2,000,000 |
| M06 | Testing phase | $280,000 |
| M07 | Deployment phase | $320,000 |
|  | **TOTAL** | **$3,000,000** |

# **Agreement**

This SOW and the non-conflicting terms and condition of the Agreement constitute the entire agreement between the Parties and supersede all prior oral or written negotiations and agreements regarding the subject matter herein. Any modification or addition to this SOW shall be in writing and signed by authorized representatives of both parties.

IN WITNESS WHEREOF, the parties hereto have caused this SOW to be executed by their duly authorized representatives.

|  |  |
| --- | --- |
| **“Amazon”** | **“Artificial Systems”** |
|  |  |
| Signature 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Signature 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Name 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Signature 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| If applicable: | Name 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Signature 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Signature 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Name 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Signature 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Name 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Signature 5: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Name 5: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |
|  | Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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