



OpenAerialMap v2 Design Scope of Work

Objectives

Humanitarian OpenStreetMap Team (HOT) is looking to engage the services of an individual or a firm (“Consultant” from now on in this document) with expertise in designing web applications for publishing satellite and aerial imagery in the cloud. The current version of OpenAerialMap.org was developed over five years ago and HOT is now looking to review, validate and expand the original assumptions that led to the creation of OpenAerialMap (OAM), to guide the new design process. This will involve iterating over new design ideas for the user interface, and its implementation, and adding functionalities, for better support of humanitarian project needs and integration with imagery providers.

The Consultant will guide HOT and OAM stakeholders in a design process, with the objective of describing user stories and needs that will inform the development of the new and improved version of OpenAerialMap. Through an equitable human centred design process, the consultants will: define a core problem/challenge statement, define user personas, capture and prioritise user acceptability criteria, create prototypes and test key design assumptions, create conceptual architecture for solution deployment.

Scope of Work

1. Conduct an equitable human centred design thinking process to test and validate current and future solutions for increasing accessibility to open aerial imagery for humanitarian mapping
2. Define core problem/challenge statements to be addressed through the project
3. Define core stakeholders, groups and users needs that interact with open aerial imagery
4. Propose and test interactive prototypes to evolve current or alternative solutions that address core problem/challenge statements
5. Define and prioritise key user acceptability criteria for future product development
6. Design and propose conceptual architecture for solution(s) deployment



Activities & Deliverables

Phase	Activities	Deliverables
Phase 1 Discovery (2-3 weeks)	<ul style="list-style-type: none">- Review existing documentation and resources related to the current OAM implementation, consolidated issues and product backlog- Through an equitable, human centred, design thinking process understand and frame core problem/challenge statements and project needs- Review and validate the assumptions and needs that led to the creation of OAM.- Create a map of aerial imagery stakeholders and users (current and potential). This should include, imagery providers (e.g. satellite imagery vendors, drones pilots, etc), end users (humanitarian organizations, individual OSM contributors, etc) and potential donors. The map will be needed to identify stakeholders, potential partners and collaborators to engage in the design and development process.- Create user personas for three core user/stakeholder groups to be prioritised through the design phase.- Following the discovery activities, the Consultant will validate and refine the core problem statement(s) that will guide the design phase.- Review existing and planned products core to HOT's work and identify opportunities for integration of open aerial imagery in HOT's mapping/map usage workflows.- The Consultant can propose different methods for conducting these activities and for engaging participants across different time zones, languages and cultures.	<ul style="list-style-type: none">- Document summarizing research and discovery outcomes- Detailed map of OAM stakeholders and roles- Three core user/stakeholder personas- Clearly defined key project problem/challenge statements



Phase 2 Design (4-6 weeks)	<ul style="list-style-type: none"> - Conduct one (or more) design sprints with core stakeholders/users. These sprints should explore core user/stakeholder groups' challenges and needs - State and prioritise user stories to communicate user needs and objectives uncovered in the design sprint(s) - Identify user acceptance criteria/product requirements, and facilitate through review and prioritization process. - Define key design assumptions to be tested with core stakeholders/users - Create a storyboard and design recommendations for a proposed evolution of the existing OAM product - Create storyboards and interactive prototypes for one or more alternative solutions that address the core problem/challenge statements and key assumptions - Design at least two conceptual architecture(s) and validate with stakeholders - Proposed solutions should identify possible integrations with existing mapping/data usage tools and workflows 	<ul style="list-style-type: none"> - Design sprint output - Consolidated and prioritised user stories and acceptability criteria - Storyboard and design recommendations for existing OAM product - Storyboard(s) and interactive prototypes for alternative solution(s) - Final document summarizing the design findings and choices
Phase 3 Test (1 - 2 weeks)	<ul style="list-style-type: none"> - Test the top 3 design assumptions with a sample of core users/stakeholders using one or more of the interactive prototypes - Synthesise and present the user testing data, insights and recommendations for future product development 	<ul style="list-style-type: none"> - User testing results - User feedback - User testing insights - Recommendations
Phase 4 Guidance (2-3 weeks)	<ul style="list-style-type: none"> - Synthesise data to propose a recommended project vision and project direction. - Identify priority user acceptability criteria and product requirements based on insights from the design process. - Design the conceptual architecture for the proposed solution and validate it with key stakeholders. - Consult in the development of a ToR for a build phase based on outcomes of the design process. 	<ul style="list-style-type: none"> - Proposed product vision & direction - User acceptability criteria/product requirements document - Validated conceptual architectural diagram for proposed solution

Budget & Payment Schedule

The budget available for this project is between \$30,000-\$50,000 USD.

Event Triggering Payment	% of Final Contract Amount Paid
Contract signing	10%
Completion of Phase 1	20%
Completion of Phase 2	40%
Completion of Phases 3 and 4	30%

Requirements

The Consultant applying for this project is required to have experience in:

- Organizing and conducting interactive design workshops with NGOs in the humanitarian sector, and providers and end users of geospatial data and imagery.
- Connecting and convening stakeholders from different regions, cultures, genders, sectors, with particular focus on currently underrepresented groups of OAM end-users
- The Earth Observation (EO) industry, leaders and disruptors, with thorough understanding of traditional and novel satellite platforms and imaging sensors
- OpenStreetMap and the role of geospatial data and imagery in humanitarian projects
- Imagery processing workflows, emerging geospatial data formats such as COG, and specifications for documenting and indexing EO data (e.g. STAC)
- Design and development of geospatial data catalogs, implementing international standards for interoperability (OGC, ISO TC-211, etc)
- Leveraging cloud computing infrastructures, serverless functions, cloud-native file formats, and optimized storage solutions for large datasets

Additional expertise in these areas is an added benefit:

- Unmanned Aerial Vehicles (UAV/UAS - aka drones) technology, vendors, market and applications in humanitarian projects
- Knowledge of Artificial Intelligence (AI) / Machine Learning (ML) for processing and making use of aerial imagery in humanitarian projects
- Privacy and ethical implication with sharing very high resolution aerial imagery

The selected Consultant must demonstrate a proactive and leading approach in conducting the design process and stakeholders engagement. HOT will provide guidance and access to existing partners, but it's expected that the Consultant will perform interviews, outreach and necessary research independently, with limited supervision by HOT.

Open source software and open data are at the heart of HOT. We create and build open source tools and run our projects with an open source ethos. We expect that the Consultant will share the same values and passion for open source software and design. All deliverables, project documents, code and designs created for this project will be posted in HOT's public Github repositories and made available for community review and feedback.

How to Apply

To apply, please send a proposal in ODF or PDF format (not exceeding 20 pages) to info@openaerialmap.org that includes the following information by December 20, 2021:

- Consultant presentation
- Previous relevant experience
- Technical approach for conducting the activities
- Timeline for implementation
- Estimated budget

Individual CVs/resumes can be attached as supporting evidence of the required experience.

If you have any questions, please direct them to info@openaerialmap.org.

Information about OpenAerialMap



Humanitarian
OpenStreetMap
Team

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Main project page: <https://openaerialmap.org>

Imagery browser: <https://map.openaerialmap.org/>

About OAM: <https://openaerialmap.org/about/>

OAM blog posts: <https://blog.openaerialmap.org/latest>

Main OAM Github repository: <https://github.com/hotosm/OpenAerialMap>

Other relevant resources and blog posts:

<https://www.elrha.org/project-blog/openaerialmap-final-blog/>

<https://openimagerynetwork.github.io/>

<https://medium.com/planet-stories/cng-part-4-open-aerial-maps-cloud-native-geospatial-architecture-a7f784cf7c2f>

<https://www.opendronemap.org/2018/07/from-images-to-commons-fast-sharing-to-openaerialmap/>

<https://www.cogeo.org/>

<https://stacspec.org/>