

## Request for Proposal (RFP) No. PGA-005

### Native Mobile Application Immovable Property Sales Prices and Tax Appraisal Values – “Cadaster 360”

Date of Issuance: August 12-2024  
Closing Date for Questions: August 19-2024  
Closing Date for Submission of Proposal: September 2-2024  
Subject: **ARD Request for Proposal No. PGA-005 Native Mobile Application Immovable Property Sales Prices and Tax Appraisal Values – “Cadaster 360”**

You are kindly invited to submit a technical and financial proposal relating to ARD’s **Request for Proposal No PGA-005 Native Mobile Application Immovable Property Sales Prices and Tax Appraisal Values – “Cadaster 360”**.

- ARD intends to issue a **Firm Fixed Price subcontract** for this work.
- Costs incurred by respondents for the preparation of a proposal and the negotiation of contract are not reimbursable.
- ARD is not bound to accept any of the proposals submitted.
- ARD reserves the right to accept an offerors proposal without further discussion.
- ARD will only evaluate proposals from registered, qualified firms to execute and implement the work under this project. **Please note that according to USAID regulations, Republic of Kosovo institutions or organizations that receive more than 51% of their funding from the state budget are not eligible to participate in this procurement.**
- Offerors are required to obtain DBA Insurance prior to commencement of any services. See section 3. Financial Proposal for more information.
- The Offers must be able to complete all the items stated in the Statement of Work in Attachment A.
- **Authorized USAID Geographic Code-** All goods and services offered under this solicitation or supplied under any resulting award must meet **USAID Geographic Code 937** in accordance with the United States Code of Federal Regulations (CFR), [22 CFR §228](#). Offerors may not offer or supply any commodities or services that are manufactured or assembled in, shipped from, trans ported through, or otherwise involving any of the following countries: Cuba, Iran, North Korea, (North) Sudan, Syria.
- Offerors MUST NOT provide any goods and/or services that utilize telecommunications and video surveillance products from the following companies: Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company, or any subsidiary or affiliate thereof, in compliance with FAR 52.204-25. In addition, no Kaspersky Labs equipment/services should be purchased with funding related to this procurement.
- If applicable, FAR 52.223-99 (Ensuring Adequate COVID-19 Safety Protocols) will be incorporated into any award(s) issued under this solicitation.

**Please note that in submitting a response to this RFP, the Offeror understands that USAID is not a party to this solicitation and the Offeror agrees that any protest hereunder must**

**be presented – in writing with full explanation – to ARD for consideration as USAID will not consider protests regarding procurements carried out by implementing partners. ARD, at its sole discretion, will make a final decision on the protest for this procurement.**

### **Questions:**

All questions and inquiries related to this request must be submitted prior to the Closing Date for questions shown above for this RFP. All Offerors must submit their questions to ARD via the below email address: [kosovopga.procurement@tetrattech.com](mailto:kosovopga.procurement@tetrattech.com)

The subject line should have: **“Questions for RFP No.PGA-005 Native Mobile Application Immovable Property Sales Prices and Tax Appraisal Values – Cadaster 360° ”**

In compliance with standard procedure, all inquiries and comments will be shared with the rest of the Offerors along with ARD’s response. Questions received after the closing date for questions may not be answered.

### **Proposal Submittal requirements:**

- Proposals shall be submitted via e-mail: [kosovopga.procurement@tetrattech.com](mailto:kosovopga.procurement@tetrattech.com)
- **The Subject line of the email should read: “Proposal for RFP No. PGA-005 Native Mobile Application Immovable Property Sales Prices and Tax Appraisal Values – Cadaster 360°”**  
Proposals received after the exact time specified for receipts of offer shall be considered late and will be considered only at the discretion of ARD.

Respondents shall receive an email acknowledging that their Proposal has been received upon its submission.

### **Proposal Instructions and Required Format**

It is requested that Offerors organize their Technical and Financial Proposals as noted below. This request is made to facilitate ARD’s review of the submitted material thus enabling a rapid decision and contracting process.

The Offeror shall submit its best price offer/proposal to complete the Statement of Work (SOW) in Attachment A and shall contain the following information detailed in Sections 1 thru 4 below:

#### **1. Proposal Cover Letter:**

The proposal cover letter should be signed by an authorized representative.

#### **2. Technical Proposal:**

The technical proposal must be written in English. The technical proposal should not exceed a total of 10 type-written pages, excluding Attachments/supporting documents. Of the 10 pages, no more than 3 pages should be used to present: A. Firm Information and B. Corporate Capabilities and Past Performance and 7 pages should be used to present C. Technical Approach. (Desired Format - Type: Times New Roman, Font Size 11, Margins: 1” all around).

The technical proposal shall address the following:

## A. Firm Information

- Provide the name, address and copy of your firm's business registration.
- Provide the primary contact information for this project.
- If you intend to subcontract any portion of the requested work to other firms or institutions, provide the above information for each partner and the percentage of the work that they will be performing. Please note that ARD intends to sign only one contract for this award.
- Please describe your firm's management structure, list all owners.

## B. Corporate Capabilities and Past Performance

- i. Summary of Corporate Capabilities.
- ii. Summary of relevant past experience your firm has had in performing work similar to that described in Attachment A. Statement of Work.
- iii. Performance references for similar projects.  
For each project, please include the name of the client and his or her contact information (current and most recent information required, within the last three years). It is ARD's intention to contact some of these clients for testimonials regarding your firm's performance in these areas:
  - The quality of the work performed by the Offeror,
  - The timeliness of the effort performed by the Offeror, and
  - Whether the Client would use Offeror's services should they have similar needs in the future?

## C. Technical Approach

- i. The Offeror will describe in detail the approach that will be followed to conduct the Native Mobile Application for Property Data and Sales Prices/Values - "Cadaster 360°" in compliance with the requirements and illustrative parameters and specifications provided in Technical Specification attached this document.
- ii. The Offeror must prepare an Implementation Plan and Timeline listing critical activities and tasks as part of a feasible and implementable **22 (twenty-two) week** process beginning with the Inception Report (Initial Discovery and analyze) through delivery of the User Manuals and 1 year Maintenance. The implementation plan must include key milestones for achieving the Native Mobile Application for Property Data and Sales Prices/Values -"Cadaster 360°" within **22 (twenty-two) weeks** and at least includes the following stages:
  - a. Inception (Initial Discover)
  - b. Initial Development and preparations
  - c. Initial data preparation and migration for development/testing purposes
  - d. Arrangement of Agile style Iterations including
    - **Discovery** – The process of initiate and agree on scope of each iteration
    - **Design** – The process of demonstrate and agree on design of the system
    - **Develop** – The process of on-site development and elaboration of test plan.
    - **Test** – The process of testing and piloting, and initial acceptance testing. (UT-User test)
  - e. Roll Out Including

- **Installation** of subsystem/modules at Kosovo Cadastral Agency production environment
  - **Staff training**
- f. System integration
  - g. Testing of the integrated system (UAT-End user acceptance test)
  - h. Delivery of User Manuals
  - i. Maintenance agreement.
- iii. Identify the Key Personnel that would be working on this project assuming an award. Key Personnel should include besides project manager, at least one System Architect, GIS specialist, Database specialist, Web services and Web API developer and Software developer. The Offeror can propose additional key personnel it believes are required to complete the work. Please include a brief statement about their capabilities and experience. CVs should be provided and do not count against the page limit. CVs must not be longer than five pages, with work experience in chronological order (most recent presented first). The Offeror should also provide an organizational chart showing all staff that will be mobilized for this project and depict the chain of command between positions, and how positions relate to each other.

### 3. Financial Proposal

The Offeror's proposed Financial proposal must represent its best price offer in response to the solicitation, and shall contain the following:

**A. Budget.** Offerors must use budget template in Attachment B.

**B. Budget narrative.** A detailed narrative describing the basis on which the costs were derived should be provided to allow a complete analysis of the Offeror's cost/price.

#### **DBA Insurance:**

The subcontractor is required to procure DBA insurance. Procurement of DBA must be done through USAID's approved Subcontractor, Starr Indemnity & Liability Company (Starr). Pursuant to AIDAR 752.228-3, Worker's Compensation Insurance (Defense Base Act), USAID's DBA insurance carrier website link is: Defense Base Act (starr.com). Only this provider can be used to comply with this Subcontract requirement.

For calculating the DBA cost, current cost of DBA insurance for services is 0.75% over actual gross salaries. Starr Indemnity & Liability Company works through its agent, Marsh McLennan Agency (MMA). Contact information follows:

Website: The website provides an option for printing a PDF application form and submit it or complete an online application. The link to the website is: <https://www.starr.com/Insurance/Casualty/Defense-Base-Act/USAID---Defen se-Base-Act 2>.

\*Please note that the Subcontractor is still required to secure a worker's compensation policy in accordance with local standards.

#### **Taxes and VAT:**

The agreement under which this solicitation is financed does not permit the financing of any taxes, VAT, tariffs, duties, or other levies imposed by any laws in effect in Kosovo. No such taxes, VAT, charges, tariffs, duties or levies will be paid under an order resulting from this RFP.

#### **4. Required Certifications**

Offeror shall submit the required signed certifications as indicated in Attachment D.

##### **List of RFP Attachments:**

Attachment A: Statement of Work

Attachment B: Budget Template

Attachment C: Proposal Evaluation Criteria

Attachment D: Required Certifications

Attachment E: Technical Specifications

**Proposal for RFP No. 004**  
**Attachment A – Statement of Work**

**Native Mobile Application Immovable Property Sales Prices and Tax Appraisal Values – “Cadaster 360° ”**

**I. Background**

USAID Property Governance Activity (PGA) is a five-year USAID activity implemented by ARD that aims to improve the property rights system in Kosovo to reduce corruption, increase women’s empowerment, and improve formal property rights and investments in real property. PGA, in partnership with civil society, the private sector, and other local actors will contribute to advancing locally led development.

PGA is supporting the Kosovo Cadastral Agency (KCA) in developing a native mobile application for iOS 16+ and Android 13+ platforms to provide citizens and other stakeholders access to immovable property sales prices, tax appraisal values and immovable properties’ attributes that will be published by the KCA.

**II. Objective of the Subcontract/Work to be Performed.**

The purpose of this RFP is to competitively select and subcontract a Kosovo company to develop and deliver to PGA and the KCA a fully functional mobile app that will provide citizens and other stakeholders access to immovable property sales prices, tax appraisal values and immovable properties’ attributes that will be published by the KCA.

The subcontracted company shall transfer to ARD sole and exclusive ownership of the mobile application, and its source code, including all copyrights. ARD shall have the right to transfer the mobile application’s source code to USAID and/or the KCA, or to release the source code under an open-source license.

The native mobile application will build in the capability to access and present all the relevant key data parameters. All needed technical data on the properties themselves is available in the KCA’s Kosovo Cadastral Land Information System (KCLIS) and the the database maintained by the Ministry of Finance’s (MoF’s) Property Tax Department (PTD) and Immovable Property Appraisal Department (IPAD). Both PTD and IPAD use the same database. All properties that have sales contracts have the sales price recorded in the KCLIS, so those prices will be presented in the app and having that data available to real estate appraisers, accountants, lawyers, bankers, and the citizens will be immensely beneficial. The mobile app will also access and present the tax appraisal values of immovable property recorded in the shared database of the PTD and IPAD within the MoF.

The mobile app will possess functionality required to enable up to 500 users to simultaneously access data drawn from the KCLIS and tax database. The mobile app will be designed to enable end users with minimum technical knowledge and skills to effectively use the app. The mobile application will show immovable properties' registration status, sales price, tax appraisal value and property tax amount paid based on the appraised value. The mobile app will access updated data from the KCLIS and property tax database each time a property is sold or transferred and each time the appraisal value and property tax amount is updated and show the history of these changes. This will allow users to see trends in prices and values. For examples of mobile applications for real estate information including sales price and values, refer to zillow.com, homes.com and realtor.com.

**Interoperability with KCA systems:** KCA has all digital systems which hold the information for cadastral and data maintained in databases of Municipal Cadastral Offices (MCOs). The KCLIS is a replicated database, updated every 5 minutes, to provide real time data for immovable properties that are recorded in MCOs. The mobile app will access information contained in these replicated databases and show the data in real time. Communication with the databases in real time provides stakeholders with high-quality and updated data. It is envisioned that sales prices and values will over time become available for all types of property transfers and registrations including sales contracts, new registrations, corrected registrations, in-kind transfers, gifts, inheritance, expropriation, privatization, and judicial transfers and enforcements. For each cadastral unit it should identify which type of transfer/registration it was.

The KCLIS provides the needed Application Platform Interface (API) and other web services related to the data for cadastral objects any other graphical part such orthophotos and textual attributes of cadastral objects. If API changes are needed, the KCA will create a new one that will not affect external consumers.

**Interoperability with Property Tax Department and Immoveable Property Appraisal Department systems:** The mobile app will show the PTD and IPAD information on both legalized and non-legalized properties, including the appraised value and tax amount on each property.

The PTD and IPAD provide web services and API for data including the zone of evaluation, date or year of evaluation, date of next planned evaluation. The department's database is also replicated, and its data will be consumed and presented by the mobile app in real time.

## **IMPLEMENTATION METHODOLOGY**

The project implementation shall follow internationally accepted software development principles:

- Staged progress of the development from inception and system design to training and roll-out
- The total system delivered in portions, where each delivery independently can be rolled out and implemented in the organization,
- Incremental, iterative development of the most complex subsystems

The implementation shall apply Agile style iterations (for example RUP) to the software implementation project. The principle of applying these iterations is sketched below in Figure 1: Agile Style iteration.

The requirements may be adjusted/updated in each iteration.

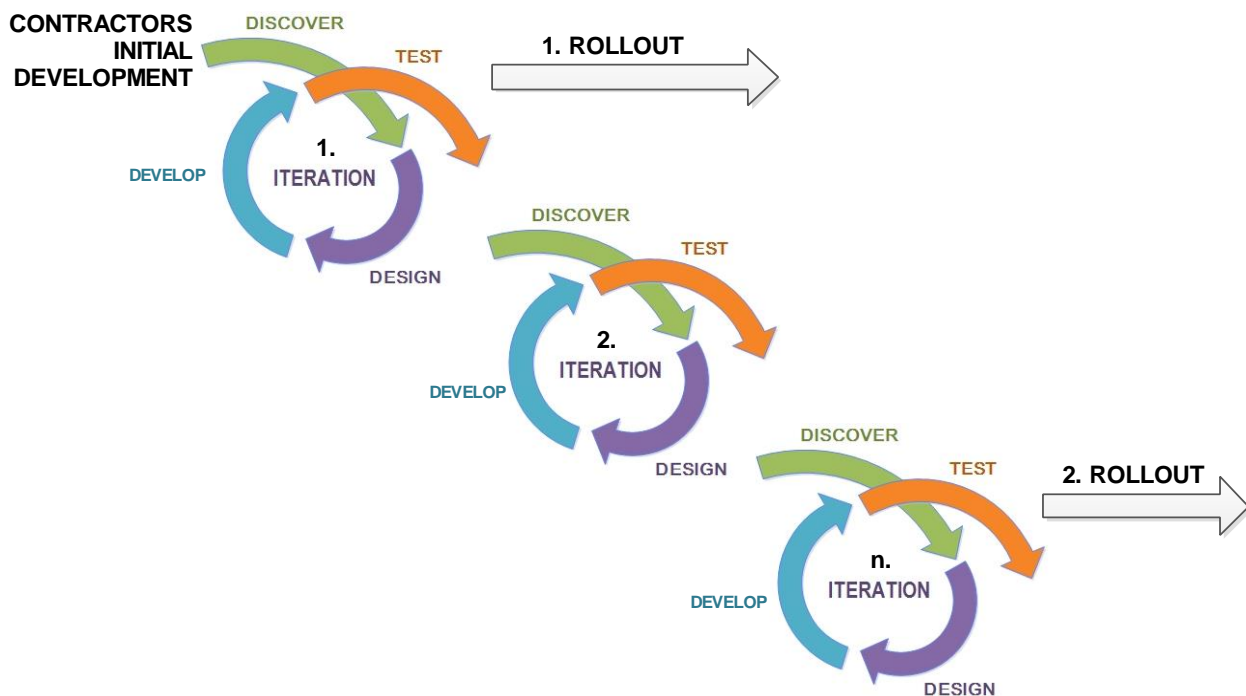


Figure 1: Agile Style iteration

The Iterations are executed by a team consisting of staff from the contractor and KCA, with differently defined roles. The first iteration in a delivery will normally not be complete and include only main and critical functionality. The iteration consists of four distinct parts, Discovery, Design, Development and Test.



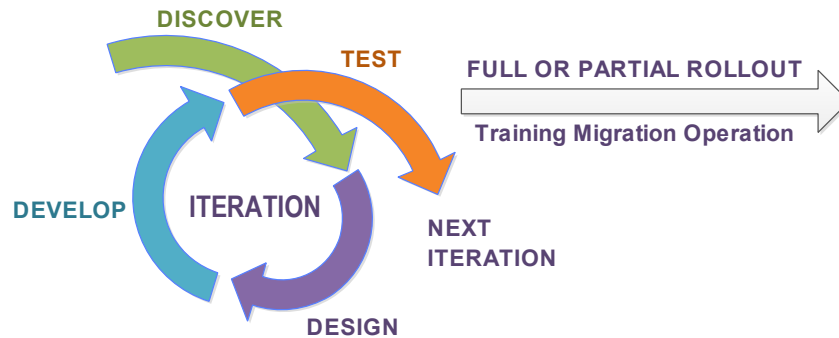


Figure 2: Details of one iteration

The different iteration parts and their content are:

- DISCOVER – Contractor and KCA review specifications and decide what functionality shall be included in the iteration. For the first iteration this may be done well before the Design part.
- DESIGN – The Contractor describes proposed solution and user interface and discusses and agrees with KCA. Test scenarios will be defined.
- DEVELOP – The contractor builds solution and proposes test cases – KCA approves test cases and merges with additional test cases from KCA.
- TEST – The test consists of testing and an extension running piloting to ensure feasibility. The test cases are executed, followed by a formal acceptance test. Piloting is done as deemed necessary. Adjustments/improvements in requirements are recorded for input in the next iteration.
- ROLLOUT - At the end of the iteration it may, or may not, be run a Rollout. Before the final iteration it may be decided to run a partial Rollout. After the last iteration there will be a final Rollout. The Rollout shall cover training, migration, and operation.

### III.0 Deliverables and Due Dates

The following deliverables are required and mandatory. The detailed requirements for the deliverables are described in the Technical Specifications provided in Annex E.

Key Deliverables	Deliverable Due Date
Proof of DBA insurance purchase	5 days after award
1) Inception Report (Initial Discovery and analysis)	2 weeks after award
2) Initial mobile App development and preparations	2 weeks after award
3) Initial data preparation	4 weeks after award

Key Deliverables	Deliverable Due Date
4) Proposed database design	5 weeks after award
5) Analyze and design of API consumption from KCA and TAK property tax system	6 weeks after award
6) Monthly Progress report	4, 8, 12, 16 and 22 weeks after award
7) Alpha version of the system sufficiently developed to enable initial piloting and testing.	13 weeks after award
8) Complete initial piloting and testing	14 weeks after award
9) Roll out the Minimum Viable Product (MVP)	15 weeks after award
10) System integration	17 weeks after award
11) User Acceptance Test	20 weeks after award
12) Delivery of User Manuals	21 weeks after award
13) Training of KCA Staff	22 weeks after award
14) Deliver the source code and transfer all rights in the source code, including all copyrights, to ARD	22 weeks after award
15) Maintenance	1 year after system integration (point no. 10)

## Attachment (B)

### Budget

Include as an Excel Spreadsheet

<b>BUDGET</b>				
<b>DIRECT LABOR</b>				
Position	Name	Daily Rate	Days (Basis)	Total Local Currency
				-
				-
				-
				-
				-
				-
<b>Total Direct Labor</b>				-
<b>TRAVEL, TRANSPORTATION and PER DIEM</b>				
Description	Rate	Units (Per day)	Total	
			-	
			-	
			-	
			-	
			-	
<b>Total Travel, Transportation &amp; Per Diem</b>				-
<b>OTHER DIRECT COSTS</b>				
Description	Rate	Units (Basis)	Total	
DBA Insurance (*)	0.69%	-	-	
<b>Total Other Direct Costs</b>				-
<b>Administrative Costs</b>				
<b>TOTAL COSTS</b>			<b>€</b>	<b>-</b>

(\*) Based on actual salaries/rates paid to staff/consultants.

## Attachment (C)

### Proposal Evaluation Criteria

Offeror's response to RFP requirements will be scored based on the below criteria:

Technical Proposal Evaluation Criteria:	Maximum Points
<b>Part A - Firm Information</b>	
a. Did the offer provide all of the requested information?	Yes/No
<b>Part B - Corporate Capabilities and Past Performance (Maximum 15 Points)</b>	
a. Relevant Corporate Capabilities	5
b. Does the Offeror have quality and relevant past experience performing this type of work?	10
<b>Part C - Technical Approach (Maximum 55 Points)</b>	
a. The methodology and process the Offeror will undertake to complete the task.	20
b. Reasonableness of the data quality assurance measures, processes, and systems that will discourage fraud and ensure valid quality data.	15
c. Feasibility of Offeror's proposed implementation timeline.	10
d. The skills and experience of the proposed Key Personnel applicable to the work to be performed under the Statement of Work?	10
<b>Technical Proposal Evaluation Scoring - Possible Total Score 70</b>	70
<b>Financial Proposal Evaluation Criteria:</b>	<b>Maximum Points</b>
Cost Effectiveness (Maximum 30 points)	
a. Comparison with Internal Cost Estimate:	7
b. Comparison to other bidders' proposals (lowest price ranked maximum points, and then derated on a percentage basis downward)	15
c. Cost realism: feasibility, reasonableness, completeness and allocability?	8
<b>Financial Proposal Evaluation Scoring - Possible Total Score 30</b>	30
<b>Possible Total Score - 100</b>	100

**Attachment (D)**  
**Certifications**

**1. CERTIFICATION REGARDING RESPONSIBILITY MATTERS.**

**FAR Reference 52.209-5.**

As prescribed in 9.104-7(a), insert the following provision:

Certification Regarding Responsibility Matters (AUG 2020)

- (a) (1) The Offeror certifies, to the best of its knowledge and belief, that –
- (i) The Offeror and/or any of its Principals –
    - (A) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;
    - (B) Have not within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property; and
    - (C) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.
    - (D) Have not within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied.
- (1) Federal taxes are considered delinquent if both of the following criteria apply:
- (i) *The tax liability is finally determined.* The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.
  - (ii) *The taxpayer is delinquent in making payment.* A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.
- (2) *Examples.*

- (i) The taxpayer has received a statutory notice of deficiency, under I.R.C. § 6212, which entitles the taxpayer to seek Tax Court review of a proposed tax deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.
  - (ii) The IRS has filed a notice of Federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. § 6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek tax court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.
  - (iii) The taxpayer has entered into an installment agreement pursuant to I.R.C. § 6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.
  - (iv) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. 362 (the Bankruptcy Code).
- (ii) The Offeror has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.
- (2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

- (b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Contractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Contractor non responsible.
- (d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this

provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

- (e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

## **2. KEY INDIVIDUAL CERTIFICATION NARCOTICS OFFENSES AND DRUG TRAFFICKING**

22 CFR Part 140, Prohibition on Assistance to Drug Traffickers.

*Note: This certification shall be filled by any key person proposed in the project.*

I hereby certify that within the last ten years:

1. I have not been convicted of a violation of, or a conspiracy to violate, any law or regulation of the United States or any other country concerning narcotic or psychotropic drugs or other controlled substances.
2. I am not and have not been an illicit trafficker in any such drug or controlled substance.
3. I am not and have not been a knowing assistor, abettor, conspirator, or colluder with others in the illicit trafficking in any such drug or substance.

### **NOTICE:**

1. You are required to sign this Certification under the provisions of 22 CFR Part 140, Prohibition on Assistance to Drug Traffickers. These regulations were issued by the Department of State and require that certain key individuals of organizations must sign this Certification.
2. If you make a false Certification you are subject to U.S. criminal prosecution under 18 U.S.C. 1001.
3. A false certification from a key person involved in the project, shall result in the termination of his/her contract with the operator.

## **3. CERTIFICATION REGARDING TERRORIST FINANCING**

Implementation of Executive Order 13224

Certification Regarding Terrorist Financing, Implementing Executive Order 13224

- (a) The Recipient, to the best of its current knowledge, did not provide, within the previous ten years, and will take all reasonable steps to ensure that it does not and will not knowingly provide, material support or resources to any individual or entity that commits, attempts to

commit, advocates, facilitates, or participates in terrorist acts, or has committed, attempted to commit, facilitated, or participated in terrorist acts, as that term is defined in paragraph (c).

(b) The following steps may enable the Recipient to comply with its obligations under paragraph (a)

(1) Before providing any material support or resources to an individual or entity, the Recipient will verify that the individual or entity does not (i) appear on the master list of Specially Designated Nationals and Blocked Persons, which list is maintained by the U.S. Treasury's Office of Foreign Assets Control (OFAC) and is available online at OFAC's website: <http://www.treas.gov/offices/eotffc/ofac/sdn/t11sdn.pdf>, or (ii) is not included in any supplementary information concerning prohibited individuals or entities that may be provided by USAID to the Recipient.

(2) Before providing any material support or resources to an individual or entity, the Recipient also will verify that the individual or entity has not been designated by the United Nations Security (UNSC) sanctions committee established under UNSC Resolution 1267 (1999) (the "1267 Committee") [individuals and entities linked to the Taliban, Usama bin Laden, or the Al Qaida Organization]. To determine whether there has been a published designation of an individual or entity by the 1267 Committee, the Recipient should refer to the consolidated list available online at the Committee's website: <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>.

(3) Before providing any material support or resources to an individual or entity, the Recipient will consider all information about that individual or entity of which it is aware and all public information that is reasonably available to it or of which it should be aware.

(4) The Recipient also will implement reasonable monitoring and oversight procedures to safeguard against assistance being diverted to support terrorist activity.

(c) For purposes of this Certification-

(1) "Material support and resources" means currency or monetary instruments or financial securities, financial services, lodging, training, expert advice or assistance, safehouses, false documentation or identification, communications equipment, facilities, weapons, lethal substances, explosives, personnel, transportation, and other physical assets, except medicine or religious materials."

(2) "Terrorist act" means-

(i) an act prohibited pursuant to one of the 12 United Nations Conventions and Protocols related to terrorism (see UN terrorism conventions Internet site: <http://untreaty.un.org/English/Terrorism.asp>); or

(ii) an act of premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents; or

(iii) any other act intended to cause death or serious bodily injury to a civilian, or to any other person not taking an active part in hostilities in a situation of armed conflict, when the purpose of such act, by its nature or context, is to intimidate a population,



or to compel a government or an international organization to do or to abstain from doing any act.

- (3) "Entity" means a partnership, association, corporation, or other organization, group or subgroup.
- (4) References in this Certification to the provision of material support and resources shall not be deemed to include the furnishing of USAID funds or USAID-financed commodities to the ultimate beneficiaries of USAID assistance, such as recipients of food, medical care, micro-enterprise loans, shelter, etc., unless the Recipient has reason to believe that one or more of these beneficiaries commits, attempts to commit, advocates, facilitates, or participates in terrorist acts, or has committed, attempted to commit, facilitated or participated in terrorist acts.
- (5) The Recipient's obligations under paragraph (a) are not applicable to the procurement of goods and/or services by the Recipient that are acquired in the ordinary course of business through contract or purchase, e.g., utilities, rents, office supplies, gasoline, etc., unless the Recipient has reason to believe that a vendor or supplier of such goods and services commits, attempts to commit, advocates, facilitates, or participates in terrorist acts, or has committed, attempted to commit, facilitated or participated in terrorist acts.

This certification is an express term and condition of the agreement and any violation of it shall be grounds for unilateral termination of the agreement by USAID prior to the end of its term."

#### **4. ACKNOWLEDGEMENT OF ETHICAL AND BUSINESS CONDUCT REQUIREMENTS**

ARD is committed to integrity in procurement and subcontracting, and only selects offerors based on objective business criteria such as price and technical merit.

ARD does not tolerate fraud, collusion among offerors, falsified proposals/bids, bribery, or kickbacks. Any firm or individual violating these standards will be disqualified from this procurement, barred from future procurement opportunities, and may be reported to both USAID and the Office of the Inspector General.

Employees and agents of ARD are strictly prohibited from asking for or accepting any money, fee, commission, credit, gift, gratuity, object of value or compensation from current or potential offerors in exchange for or as a reward for business. Employees and agents engaging in this conduct are subject to termination and will be reported to USAID and the Office of the Inspector General. In addition, ARD will inform USAID and the Office of the Inspector General of any supplier offers of money, fee, commission, credit, gift, gratuity, object of value, or compensation to obtain business.

Offerors responding to this RFP certify that by submitting a proposal, they:

- i. Have disclosed any close, familial, or financial relationships with ARD or project staff. For example, if an offeror's cousin is employed by the project, the offeror must state this.
- ii. Have disclosed any family or financial relationship with other offerors submitting proposals. For example, if the offeror's father owns a company that is submitting another proposal, the offeror must state this.
- iii. Certify that the prices in the offer have been arrived at independently, without any consultation, communication, or agreement with any other offeror or competitor for the purpose of restricting competition.

- iv. Certify that all information in the proposal and all supporting documentation are authentic and accurate.
- v. Certify understanding and agreement to ARD prohibitions against fraud, bribery and kickbacks.

Please contact ARD.Ethics@tetrattech.com or tetrattech@ethicspoint.com with any questions or concerns regarding the above information or to report any potential violations.

**SIGNATURE**

By signature hereon, or on an offer incorporating these Representations, Certifications, and Other Statements of Offerors, the Contractor certifies that they are accurate, current, and complete, and that the Contractor is aware of the penalty prescribed in 18 U.S.C. 1001 for making false statements in offers.

By signing below the subcontractor provides certifications for:

- 1. Certification Regarding Responsibility Matters - AUG 2020. (FAR Reference 52.209-5),
- 2. Prohibition on Assistance to Drug Traffickers. (22 CFR Part 140),
- 3. Certification Regarding Terrorist Financing. (Implementation of Executive Order 13224),
- 4. Acknowledgement of Ethics and Business Conduct Requirements

RFP Title: Request for Proposal No PGA-00 Native Mobile Application Immovable Property Sales Prices and Tax Appraisal Values - "Cadaster 360°":

Firm or Organization Name: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***This entire Attachment D must be signed by Offeror and returned as part of the proposal submission.***

**Attachment (E)**

**TECHNICAL SPECIFICATIONS FOR NATIVE MOBILE  
APPLICATION IMMOVABLE PROPERTY SALES PRICES  
AND TAX APPRAISAL VALUES – CADASTER 360°**

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## Definitions, Acronyms, and Abbreviations

Term	Definition
AGILE	A set of principles for software development in which requirements and solutions evolve through collaboration
ARIS	Address Registry Information System
BLADE	A server with a modular design and expansion possibilities
Cadastre	Real Estate Cadastre
CBK	Central Bank Kosovo
CoP	Chief of Party
COR	Contracting Office Representative
DBMS	Database Management System
DMZ	Demilitarized Zone (i.e., open side of firewall or perimeter network)
ETN	Real Estate Market Register
FAT	Factory Acceptance Test
FMV	Fair Market Value
FOSS	Free and Open Source Software (synonymous with OSS)
GeoPortal	KCA official web site for dissemination of spatial data
GeoServer	GeoServer is an open source software server written in Java that allows users to share and edit geospatial data
GIS	Geographic Information System
GML	Geography Markup Language (OGC Standard)
GUI	Graphical User Interface
http	Hypertext Transfer Protocol – protocol used for information exchange over a computer network
IIS	Internet Information Server from Microsoft
IPAD	Immovable Property Appraisal Department
IPRR	Previous cadastre information system in Kosovo replaced by KCLIS
IT	Information Technology
KCA	Kosovo Cadastral Agency
KCLIS	Kosovo Cadastral and Land Information System
KCLIS-CM	KCLIS Cadastral Map system – management of spatial cadastre data
KCLIS-DM	Existing KCLIS subsystem – management of documents
KCLIS-G	KCLIS Graphical system– management of maps
KCLIS-T	Existing KCLIS subsystem – management of cadastre text information

KPCVA	Kosovo Property Comparison and Verification Agency
LADM	Land Administration Domain Model
LIS	Land Information System
MCO	Municipality Cadastre Office
MESPI	Ministry of Environment, Spatial Planning, and Infrastructure
MoF	Ministry of Finance
MS	MicroSoft
NSDI	National Spatial Data Infrastructure
OGC	The Open GIS Consortium
OSS	Open Source Software (synonymous with FOSS)
PGA	Property Governance Activity
PTD	Property Tax Department
RESTful WS	Representational State Transfer http-based web services
<a href="#">RUP</a>	Rational Unified Process
SAN	Storage Area Network
SOA	Service Oriented Architecture
SOAP	Simple Object Access Protocol
SQL	Structured Query Language
TAK	Tax Authority of Kosovo
TEXTUAL	The new subsystem of KCLIS managing cadastre textual data
UAT	End-User Acceptance Test (synonymous with Site Acceptance Test)
USAID	United States Agency for International Development
WFS	Web Feature Service, ISO standard
WMS	Web Map Service, ISO standard
WS	Web Service
XML	Extended Markup Language

# 1. GENERAL INFORMATION

USAID Property Governance Activity (PGA) is a five-year activity implemented by Tetra Tech ARD that aims to improve the property rights system in Kosovo to reduce corruption, increase women's empowerment, and improve formal property rights and investments in real property. PGA, in partnership with civil society, the private sector, and other local actors will contribute to advancing locally led development. The activity began on May 27, 2022.

In Kosovo, sales prices of real estate/immovable property transactions are not readily available to the public, nor even to real estate appraisers. Without the sales prices of each transfer of real estate/immovable property recorded in the cadaster and available to the public, it is impossible to do a "fair market valuation" of the property (what a willing buyer is willing to pay a willing seller, when the parties are independent of each other, and are not acting under duress). It is impossible to know the real value of specific property without the sales prices of all real estate transactions being known and available. With comparable sales, an appraiser/valuator can determine the fair market value of any property, without any prior appraised values, and without "value zones" or "reference prices," which do not determine the actual value of a specific parcel of property.

Law No. 08/L-237 on the Cadaster of Immovable Property, enacted on 28 December 2023, now requires the Kosovo Cadastral Agency (KCA) to publish and make accessible to the public property sales prices and other cadastral data.

The KCA has an advanced system for the registration of immovable property in the country called the "Kosovo Cadastral Land Information System" (KCLIS). This system is expected to be advanced with new modules for the highest quality, accurate, transparent, and fast services for the citizens of the Republic of Kosovo. The system is designed to interact with the systems of public institutions and other interest groups for access to cadastral data.

## 1.1. Project objectives

The fundamental objectives of this activity are:

- Development of a native mobile application for both iOS 16+ and Android 13+ platforms to provide public access to immovable property sales prices and tax valuation data.
- Interoperability with KCA systems
- Interoperability with TAK Property Tax systems for property tax data and property values

**Development of a native mobile application for both Android and iOS for property data and sales prices and values:** PGA is collaborating with the KCA in developing a mobile application for iOS and Android platforms to provide citizens and other stakeholders access to prices, values and some of the data property which will be published. The overall goal of this project is to increase the transparency and availability of cadastral information. The native mobile application will build in the capability to access and present all of the relevant key data parameters. Much of the technical data on the properties themselves is available in the KCA from the KCLIS system and from the database maintained by the Ministry of Finance's (MoF's) Property Tax Department (PTD) and Immovable Property Appraisal Department

(IPAD). Both PTD and IPAD use the same database. All properties that have sales contracts have the sales price recorded in the KCLIS, so those prices will be presented in the app and having that data available to real estate appraisers, accountants, lawyers, bankers, and the citizens will be immensely beneficial. The mobile app will also access and present the property tax value as appraised by the IAPD. As new sales prices and values are recorded, they will be presented in the app.

The mobile app will have great performance and high data quality which will draw from KCA information systems in real time. The mobile app will be developed using the latest technology in order to have all the functionalities working properly and a great performance. The ease of use of the mobile app will be another requirement where the end user with minimal knowledge can use it in an easy and flexible way. The mobile application will show the type of transfer/registration, the sales price, the appraised value from IAPD and the amount of property tax assessed. This data will be replicated and continued to be shown for each time the property is sold or transferred and each time the valuation is updated and/or the property tax amount is updated. This will allow users to see trends in prices and values. For examples of mobile applications for real estate information including sales price and values, refer to zillow.com, homes.com and realtor.com.

**Interoperability with KCA systems:** KCA has all digital systems which hold the information for cadaster and those data are maintained in databases from the Municipal Cadastral Offices (MCOs). The idea is for this mobile app to get all that information from replicated databases and show the data in the mobile app in real time. Communication with the databases in the real time makes the data show with high quality and timeliness, and all other stakeholders will be able take the data in an easy and fast manner. It is envisioned that sales prices and values will over time become available for all types of property transfers and registrations including sales contracts, new registrations, corrected registrations, in-kind transfers, gifts, inheritance, expropriation, privatization, and judicial transfers and enforcements. For each cadastral unit it should identify which type of transfer/registration it was.

**Interoperability with PTD and IPAD systems:** The mobile app will access the PTD and IPAD database. It will present the amount of property tax assessed, and the value of the property based on IPAD appraisals for both legalized and non-legalized properties.

## 1.2. Scope of the specifications

These specifications:

- Give an overall picture of the background and environment in which the mobile app will be developed
- Describe the overall system concept
- Specify the overall system requirements
- Specify the requirements for the system modules
- Specify the non-functional requirements of the project

## 1.3. Data consumption and publication

The native mobile app shall have the possibility to access the data using web services from different sources such as from PTD and IPAD property tax database and KCA KCLIS databases.

KCLIS systems in KCA will offer all needed API and other web services related to the data for cadastral objects any other graphical part such orthophotos and textual attributes of cadastral objects. KCLIS will provide also the data regarding the sale prices, date when happened and any other data which will be published to the mobile app.



The PTD and IPAD will provide web services and API for the data for properties which they have evaluated, the zone of evaluation, date or year, and next year they will have data that will be consumed by the mobile app.

After consuming those data in real time or from replicated databases shall be possible to offer to public, using this mobile app.

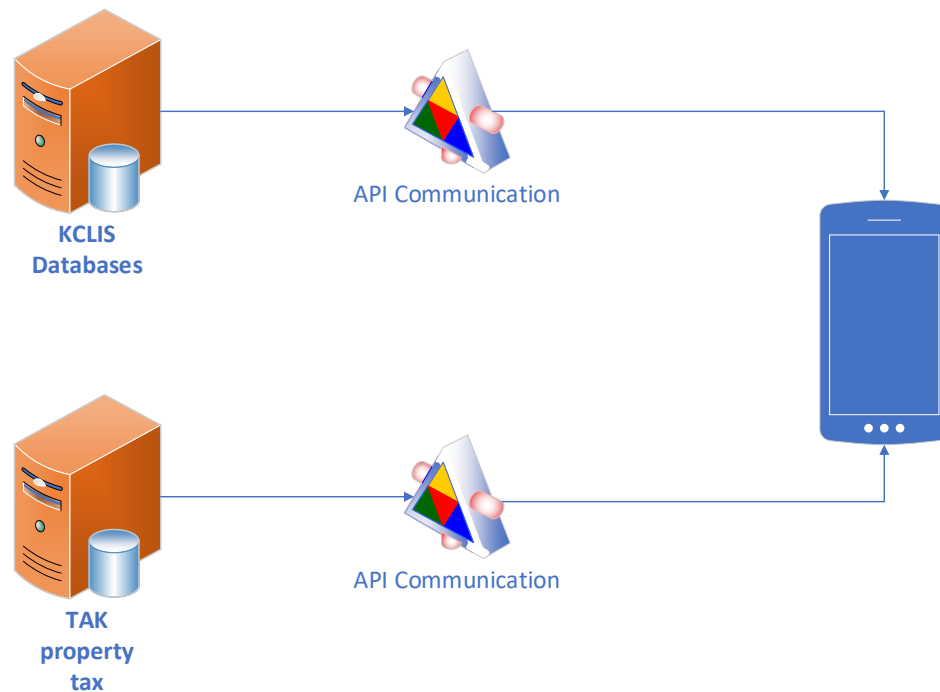


Figure 1. API Communication

The KCA has main responsibility for management and securing of the cadastre information in Kosovo, but also is responsible of sharing specific data to the other public institutions of Kosovo. KCA is now planning to find a better way of sharing cadastre data through the mobile app.

## 2. KCLIS

Cadastral information systems are closely related to each other, some of which depend on each other, and some of them have the possibility of consuming information from external services to fill in the most accurate data.

KCLIS components include:

KCLIS-T – manages the thematic/textual cadastral data

KCLIS DM –manages the documents/files from all the systems and to store on the file server, indexing them

KCLIS Workflow – manages the workflow and cases , including business rules and users

KCLIS-CM (Cadastral Map) – manages the geospatial data of cadastral units

ARIS –manages the road network geospatial and thematic/textual data

KCLIS-G – manages the rare geospatial data such as orthophotos, municipality boundaries, cadastral zone boundaries, etc.

KCLIS-Online – used for external users who do access public services and those paid ones were based on the roles they can use this system to use services

The below figure shows KCA information systems and communication with external systems:

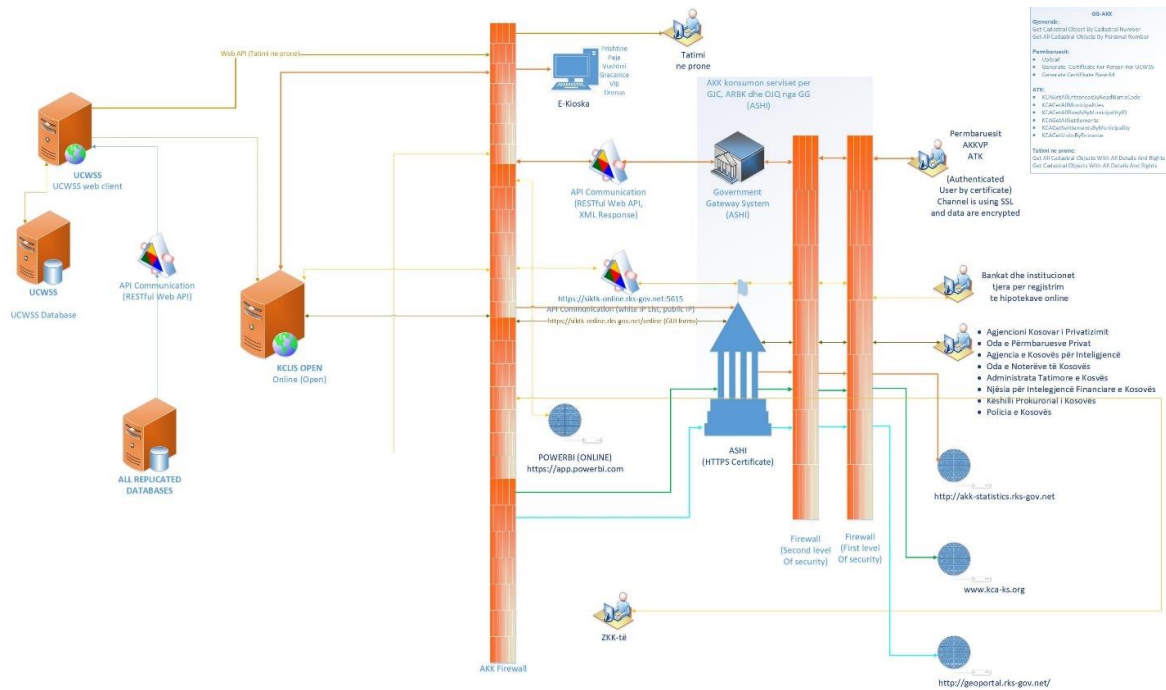


Figure 2. KCA information systems and communication with external systems

## 2.1 Architectural Principles

### 2.1.1 Principles of Software Architecture

The KCLIS system is based on the principles of Service Oriented Architecture (SOA), as:

- Each subsystem operates independently of other subsystems/modules
- Each subsystem fully controls the data for which it is responsible
- The subsystems communicate with each other and with different clients through interaction services.

Over the past 10 years, SOA has become a well-known and accepted method for integrating software modules within a single software system. In the context of this document, SOA principles also apply to the integration of independent systems.

### 2.1.2 Principles of interoperability

Integration and communication between current systems will be implemented using services. The components in KCLIS will deal with three types of interoperability services, namely:

- Web interface – web client
- Web API
- Web services for geospatial data.

## 2.2 Data Security

Data management within the existing systems of KCA is done by authorized users in MCO and KCA, where the working premises are part of the government network. Data management systems are protected by a "firewall" (SAFE AREA) from Internet access.

The distribution of data through the Geoportal and other systems through the Internet will not have direct access to the systems used for data production and management but will communicate with identical systems outside the 'firewall' (OPEN ZONE) which contains copies replicated data structures.

The following figure shows the data management inside and outside the existing KCA systems, where production systems and data of the core systems are stored, which those data are replicated based on a scheduling and could be accessed from outside through internet.

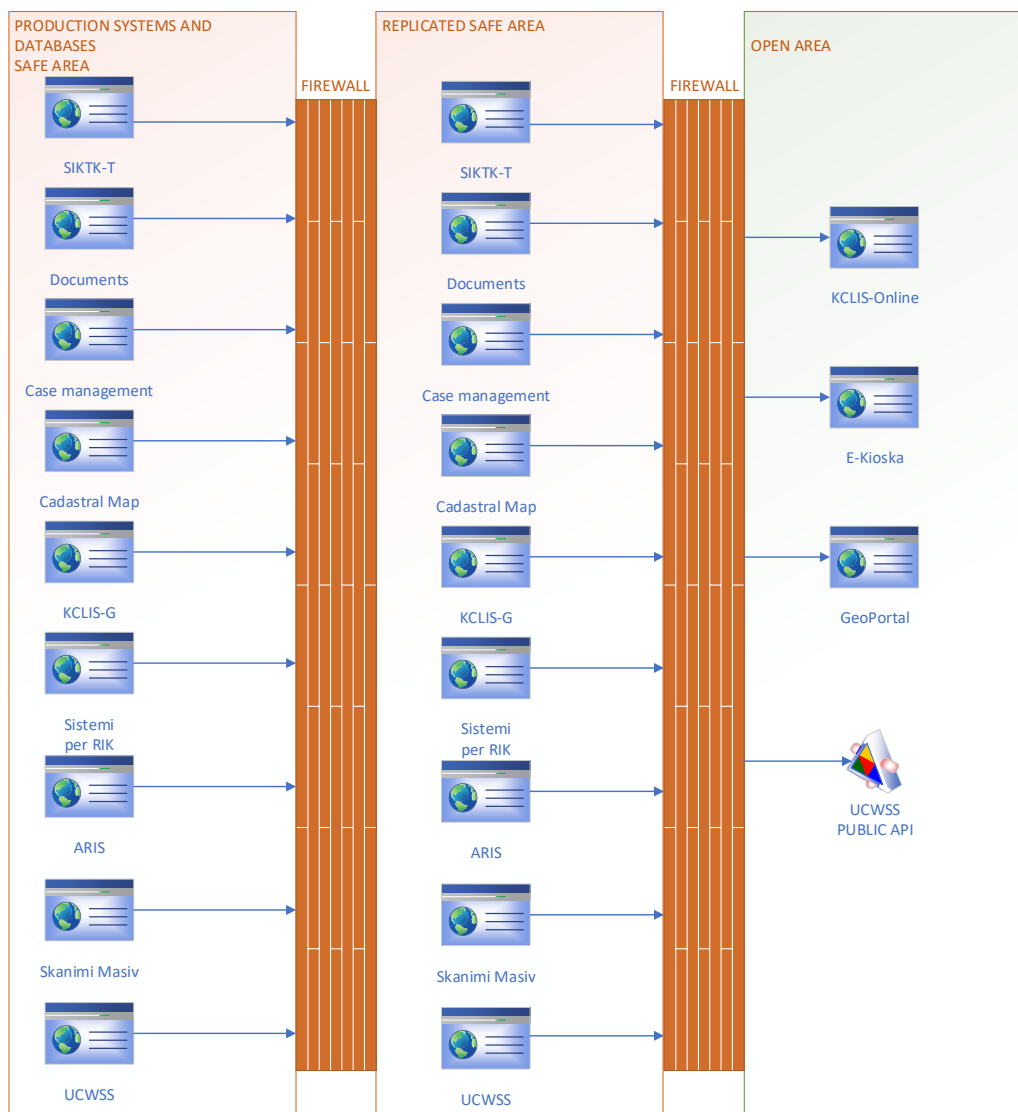


Figure 3. Data management inside and outside the existing KCA systems

### 2.3. Description of the IT Infrastructure

The KCA operates a highly secure and well-managed Primary Datacenter, which is located within the KCA premises in Prishtina. The datacenter is administered and managed by the KCA IT Directorate. ICT Infrastructure follows a robust three-tier architecture, encompassing Computing Power (Blade server of the last generation), Networking, and Storage Area Network (SAN – Flash disks for SQL Databases), ensuring optimal performance and reliability.

The KCA uses virtualization technology provided by VMware to virtualize the entire infrastructure. This means that all information systems are hosted within the primary datacenter, taking advantage of the benefits that virtualization offers. To ensure the safety of valuable data, the KCA follows industry best practices for data storage and implements a thorough backup strategy. This strategy includes both Disk to Disk and Disk to Tape backups, providing multiple layers of protection. Furthermore, critical virtual servers receive an extra level of security through backups conducted by Unitrends, a specialized backup solution.

To prepare for any potential disasters, an ICT Disaster Recovery Site is established at the Government Data Center. The primary datacenter and the disaster recovery site are connected using advanced Dark Fiber Optic technology, ensuring a fast and secure connection. In case of any disruptions, the systems are replicated at the virtual machine level using VMware vSphere Replication and SRM. This means that even in the event of a disaster, the recovery point objective (RPO) can be as low as 5 minutes or up to 24 hours.

All Municipal Cadastre Offices (MCOs) are connected to the IPRR.KS domain through the internal government network. MCOs have access to the Perimeter Network (DMZ) and Local Area Network (LAN) at KCA, facilitated by Cisco ASA.

For a more visual representation of the network setup, please refer to the accompanying diagram.

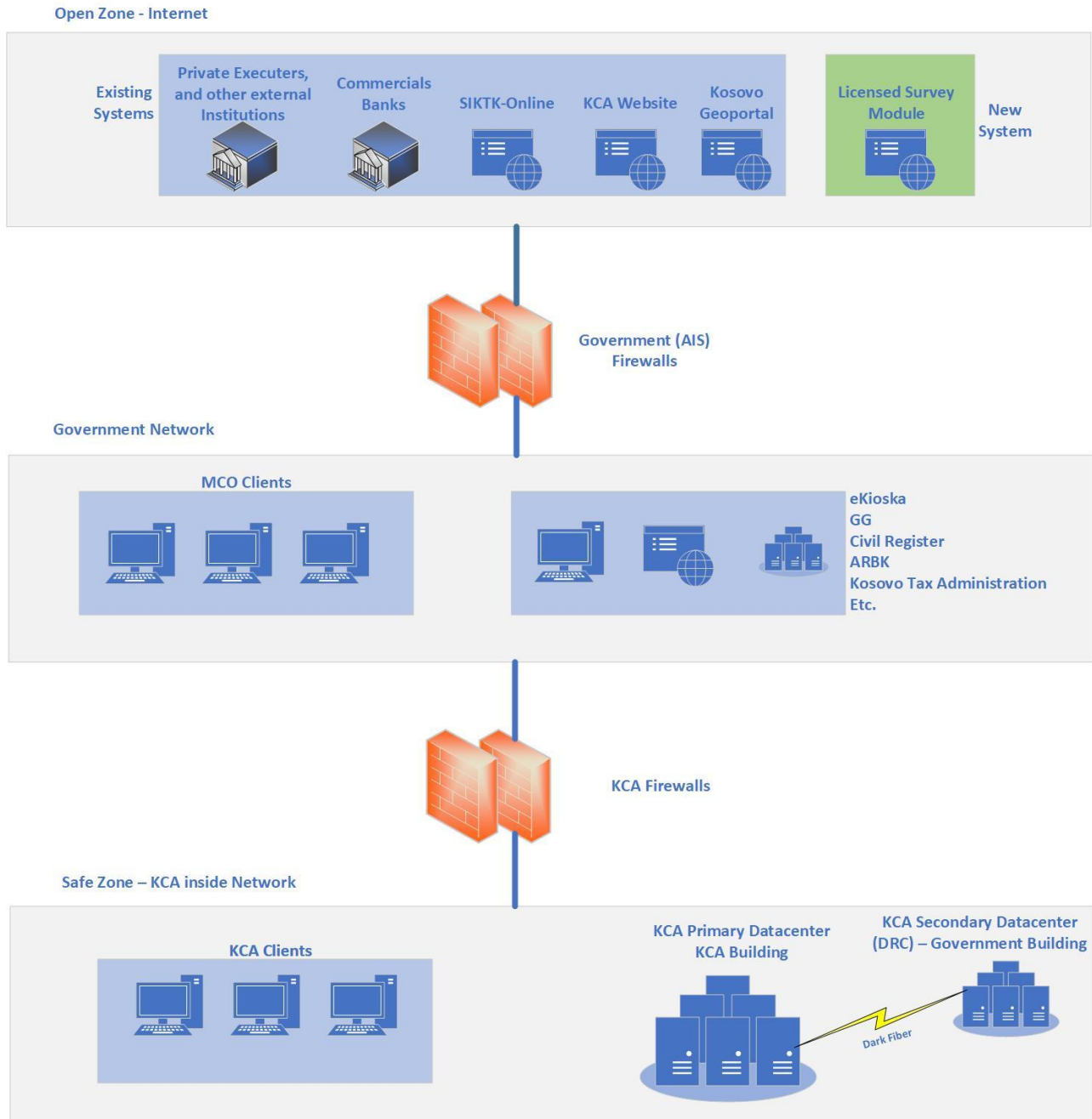


Figure 4. KCA – Overall Logical Network Layout

### 3. IMPLEMENTATION METHODOLOGY

The project implementation shall follow internationally accepted software development principles:

- Staged progress of the development from inception and system design to training and roll-out
- The total system delivered in portions, where each delivery independently can be rolled out and implemented in the organization,
- Incremental, iterative development of the most complex subsystems

The implementation shall apply Agile style iterations (for example RUP) to the software implementation project. The principle of applying these iterations is sketched below in **Figure 1: Agile Style iteration**.

The requirements may be adjusted/updated in each iteration.

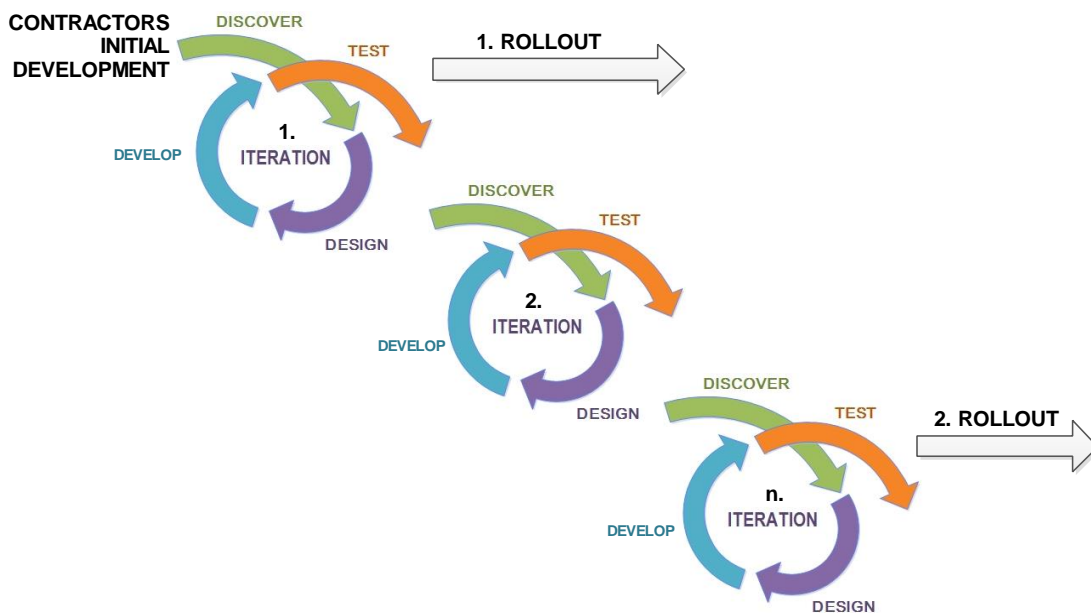


Figure 5. Agile Style iteration

The Iterations are executed by a team consisting of staff from the contractor and KCA, with differently defined roles. The first iteration in a delivery will normally not be complete and include only main and critical functionality. The iteration consists of four distinct parts, Discovery, Design, Development and Test.

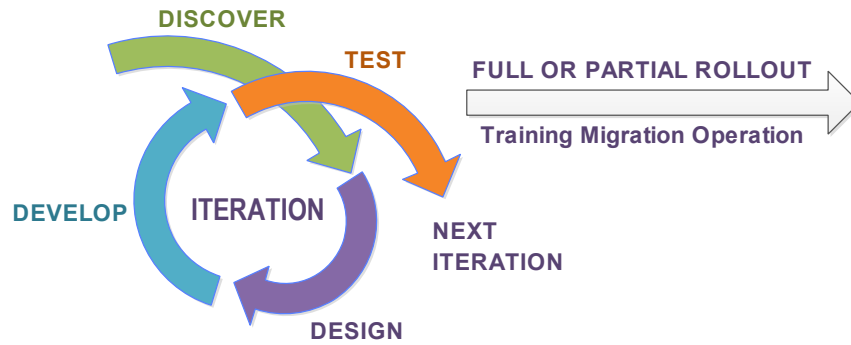


Figure 6. Details of one iteration

The different iteration parts and their content are:

- DISCOVER – Contractor and KCA review specifications and decide what functionality shall be included in the iteration. For the first iteration this may be done well before the Design part.
- DESIGN – The Contractor describes proposed solution and user interface and discusses and agrees with KCA. Test scenarios will be defined.
- DEVELOP – The contractor builds solution and proposes test cases – KCA approves test cases and merges with additional test cases from KCA.
- TEST – The test consists of testing and an extension running piloting to ensure feasibility. The test cases are executed, followed by a formal acceptance test. Piloting is done as deemed necessary. Adjustments/improvements in requirements are recorded for input in next iteration.
- ROLLOUT - At the end of the iteration it may, or may not, be run a Rollout. Before the final iteration it may be decided to run a partial Rollout. After the last iteration there will be a final Rollout. The Rollout shall cover training, migration, and operation.

## 4. REQUIREMENTS

### 4.1. Description

The native mobile application will build in the capability to access and present all of the relevant key data parameters. This will make it possible to consume the data from different systems from KCA and TAK PTD to present the data for cadastral units.

### 4.2. Main functional requirements

ID	Description	Type	Bidders' comments
FR1	Shall consume API which are of other KCA information systems (KCLIS-CM, KCLIS-T, KCLIS-G)	Mandatory	
FR2	Shall have the ability to show property Description – Prose (from key headline parameters)	Mandatory	

FR3	Shall have the ability to show the property pictures when available	Mandatory	
FR4	Shall have the ability to show parcel identification number and building identification number	Mandatory	
FR5	Shall have the ability to show the property type	Mandatory	
FR6	Shall have the ability to show type of transfer or registration	Mandatory	
FR7	Shall have the ability to show the date of transfer or registration and other relevant information for transfer	Mandatory	
FR8	Shall have the ability to show the land type	Mandatory	
FR9	Shall have the ability to show actual use of property	Mandatory	
FR10	Shall have the ability to show the improvement status	Mandatory	
FR11	Shall have the ability to show the improvement status, giving the information for parcel if it has relevant infrastructure and/or buildings	Mandatory	
FR12	Shall have the ability to show address information for buildings and parcels	Mandatory	
FR13	Shall have the ability to show location of parcel or building	Mandatory	
FR14	Shall have the ability to show the size and shape of property	Mandatory	
FR15	Shall have the ability to show the price and value of property	Mandatory	
FR16	Shall have the possibility to show property tax value with date and amount of property tax assessed	Mandatory	
FR17	Shall have the possibility to show Appraisal value with date of appraisal and effective date of valuation	Mandatory	



FR18	Shall have the possibility to show information if the property has access to road	Mandatory	
FR19	Shall have the possibility to show information what type of utilities it has access	Mandatory	
FR20	Shall have the possibility to show property information for environmental issues	Mandatory	
FR21	Shall have the ability to show property rental status whenever it is available	Mandatory	
FR22	Shall have the ability to show building Manager/Condominium Association/Homeowners Association	Mandatory	
FR23	Shall be possible to show the information for number of rooms for part of buildings	Mandatory	
FR24	Shall be able to consume API from Tax Administration	Mandatory	
FR25	Shall be able to show the orthophotos from KCA	Mandatory	
FR26	Shall be able to show graphical information from KCA	Mandatory	
FR27	If it is available from KCA, the application shall show the utilities	Mandatory	
FR28	Shall be able to show the trend of transactions on Cadastral units	Mandatory	

Notes: Property can be parcel, building or part of building.

**4.3 General and non-functioning high-level and conceptual requirements**

ID	Feature	Content	Type	Bidders' comments
GRHL1	Independent system	<p>The application shall operate independently, and not be affected by other systems in the KCA.</p> <p><i>Note! Cadastre data from KCLIS shall be accessed by using KCLIS services.</i></p>	Mandatory	
GRHL2	Replication	The application shall consume data from replicated databases.	Mandatory	
GRHL3	Mobile	System user functions shall be configured to operate on all common mobile phones, tablets, and other portable devices on the market	Mandatory	
GRHL4	Application Deployment	The bidder is responsible to deploy the mobile app for iOS and Android in their corresponding markets.	Mandatory	
GRHL5	System platform / Software licensing	Any required non-Microsoft licenses must be included in the Bid offer. These licenses should be perpetual and provide a minimum of 1-year support.	Mandatory	

#### 4.4 Overall Requirements

ID	Feature	Description	Type	Bidder's comments
GROA-1	Standard system	<p>For the system, standard system shall be applied as a platform for the implementation.</p> <p><i>Note! Specific requirements beyond standard functionality must be developed of the contractor</i></p>	Preferable	
GROA-2	User interface language	Albanian, Serbian, and English language shall be possible to apply in the user interface, changeable by configuration.	Mandatory	
GROA-3	Graphical User Interface	International GUI standards shall be used in the toolbars	Mandatory	
GROA-5	History	All configurations made in the system should have a history of change by date, time and the user who made that change.	Mandatory	
GROA-6	History	<p>The system administration should be able to show information</p> <ul style="list-style-type: none"> <li>• Who made that configuration</li> <li>• What entities are allowed for the configuration</li> <li>• Which was the period of time of that configuration</li> </ul>	Mandatory	
GROA-7	Log changes	All changes that may have influence on the content of the database shall be logged.	Mandatory	

#### 4.5 Project Implementation Requirements

ID	Capability	Feature	Type	Bidders' comments
PSR-1	Implementation plan	<p>The Bidder shall propose a project implementation plan based on delivery of modules, the staged implementation approach, combined with incremental, iterative development of complex modules.</p> <p>The plan must clearly show the distribution of work between main- and subcontractors, or JV partners.</p>	Mandatory	
PSR-2	Staged implementation	<p>The project plan shall at least include the following stages:</p> <ol style="list-style-type: none"> <li>1. Inception (Initial Discover)</li> <li>2. Initial Development and preparations</li> <li>3. Initial data preparation and migration for development/testing purposes</li> <li>4. Arrangement of Agile style Iterations including <ul style="list-style-type: none"> <li><b>Discovery</b> – The process of initiate and agree on scope of each iteration</li> <li><b>Design</b> – The process of demonstrate and agree on design of the system</li> <li><b>Develop</b> – The process of on-site development and elaboration of test plan.</li> <li><b>Test</b> – The process of testing and piloting, and initial acceptance testing. (UT-User test)</li> </ul> </li> <li>5. Roll Out Including <ul style="list-style-type: none"> <li><b>Installation</b> of subsystem/modules at KCA production environment</li> <li><b>Staff training</b></li> </ul> </li> <li>6. System integration</li> <li>7. Testing of the integrated system (UAT-End user acceptance test)</li> <li>8. Delivery of User Manuals</li> </ol>	Mandatory	

		<p>9. Maintenance agreement</p> <p><i>Note! The term “Agile style” is meant to cover any type of practical iterative development procedures, for example RUP.</i></p>		
PSR-3	Project schedule	The project plan shall include the overall time schedule for the project with milestones.	Mandatory	
PSR-4	Deployment plan	The bidders shall propose detailed deployment (in the form of deployment diagram), taking into consideration the existing ICT infrastructure.	Mandatory	
PSR-5	Delivery plan	<p>The supplier shall provide a delivery plan that step-by-step specifies the deliveries which shall be approved by KCA after the Inception stage. This plan shall include:</p> <ul style="list-style-type: none"> <li>• Detailed specification of the deliverables</li> <li>• Timetable of deliveries</li> </ul>	Mandatory	
PSR-6	Reporting	<p>The contractor shall deliver an inception report at a specified point of time in the initial stage:</p> <p>For each Agile Iteration style, the following documentation shall be produced:</p> <ul style="list-style-type: none"> <li>• Description of Scope of Iteration covering modules and functionality with reference to requirement specifications. (Subject to KCA approval)</li> <li>• Brief design description including mockups of user interfaces and functionality realization description. (Subject to KCA approval)</li> <li>• Test plan for Iteration Functionality. (Subject to KCA approval and supplement)</li> </ul>	Mandatory	

		<ul style="list-style-type: none"> <li>Report from testing and piloting, including issues to be carried to next iteration. (Produced by KCA)</li> </ul> <p>KCA will be given a maximum of 10 working days for acceptance or rejection of each report. The project cannot proceed to the next stage before the previous stage report is approved by KCA, an iteration may not start until the test of the previous iteration is approved.</p> <p>The deadlines for reports submission and time for acceptance shall be included in the project implementation plan and time schedule.</p>		
PSR-7	Project organization	The bidder shall provide a detailed description of the project organization and management with clear division of roles and responsibilities of the bidder and subcontractors	Mandatory	
PSR-8	Project team	The bidder shall provide a description of the project team members to proof that each member possesses sufficient competence and relevant experience for the assigned tasks	Mandatory	
PSR-9	Personnel	<p>The bidder shall provide a list of personnel, including of subcontractors, allocated to the project execution with the assigned positions, roles, responsibilities and required competence for each position</p> <p><i>Note! CVs will not substitute this description, but may be included only as a supporting documentation</i></p>	Mandatory	
PSR-10	Change of personnel	The project team assigned to project cannot be changed without consent from Steering Committee. The replacement personnel shall as a minimum have equal qualifications with the personnel to be replaced.	Mandatory	
PSR-11	Design stage	<p>The deliverables from the design stage of the project shall include documentation of</p> <ul style="list-style-type: none"> <li>System architecture document with reference to required principles</li> </ul>	Mandatory	

		<ul style="list-style-type: none"> <li>• Software architecture (UML Use case and Component diagrams)</li> <li>• Data models (UML Class diagram and ER diagram)</li> <li>• Description of Business process</li> <li>• Business rules</li> <li>• Service specifications</li> <li>• User interface design</li> <li>• Use Case descriptions / Test scenarios / Test cases</li> </ul>		
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#### 4.6 Project Management Requirements

ID	Capability	Feature	Type	Bidders' comments
PMR-1	Communication	The supplier and the KCA shall communicate via a single point of contact, even though both the supplier and contracting authority have a project team	Mandatory	
PMR-2	Language	The project communication language is English and/or Albanian. The system documentations (user manual, training, training documents, etc.) shall be in Albanian and English.	Mandatory	
PMR-3	Management roles	<p>The supplier shall provide clear role description for the project management covering:</p> <ul style="list-style-type: none"> <li>• Authority for technical decisions including modifications and change orders</li> <li>• Interface between the KCA and the Supplier's organization</li> <li>• Financial administration and authorization</li> <li>• Quality assurance</li> <li>• Contract management authority over sub-contractors.</li> </ul>	Mandatory	
PMR-4	Project meetings	The supplier shall prepare and run project meetings during the implementation of the project at KCA, at least once every 2 weeks.	Mandatory	

PMR-5	Collaboration	The supplier shall provide a collaboration platform to plan, track, code, build and ship the system. The supplier shall foresee including KCA work group member as part of this collaboration platform during the whole phase of the project	Mandatory	
PMR-6	Project reports	The supplier shall provide monthly reports on the progress of the deliverables, which shall comprise: <ul style="list-style-type: none"> <li>• Status on the project</li> <li>• Detailed plan for the following month</li> <li>• Revised plan for the whole project</li> <li>• List of actions (task list) and responsibilities for special tasks to be provided both by supplier and KCA</li> </ul>	Mandatory	
PMR-7	Project/working group meetings	The Contractor shall prepare, call on and run regular meetings with the Software Implementation working groups and Workflow working group at KCA site at least every second week. Brief minutes of meeting shall be made available to all participants and to all project managers.  The Steering Group shall have regular meetings at intervals to be agreed for the different phases of the project.	Mandatory	

#### 4.7 Ownership

ID	Feature	Type	Bidder's comments
OW-1	The mobile application and its source code shall be transferred into ARD's sole and exclusive ownership. ARD shall have the right to transfer the mobile application's source code to USAID and/or the KCA, or to release the source code under an open-source license.	Mandatory	



#### 4.8 Performance Requirements

ID	Feature	Type	Bidder's comments	
PF-1	System shall be available 24 hours a day, 7 days a week (24/7).	Mandatory		
PF-2	System shall be available for public and private institutions, and citizens, via the Internet.  The system shall be able to manage more than 500 users connected at the same time.	Mandatory		
PF-3	System response times for <b>data entry</b> will be measured at KCA as the delay between a key stroke action by the user and the completion of the system operation, on a client desktop workstation similar to Intel Core Duo processor.	<ul style="list-style-type: none"> <li>• 90% within 2 seconds</li> <li>• 100% within 3 seconds</li> </ul>	Mandatory	
PF-4	System response times for <b>data search</b> will be measured at KCA as the delay between a key stroke action by the user and the time taken to display the record required by the user, on a client desktop workstation similar to Intel Core Duo processor.	<ul style="list-style-type: none"> <li>• 90% within 2 seconds</li> <li>• 100% within 3 seconds</li> </ul>	Mandatory	
PF-5	System response times for use of services provided by other systems shall not be included in the response time of the new subsystems, but the new subsystems shall provide a log for response times when using services.	Mandatory		
PF-6	System shall be scalable to manage up to twice the currently planned number of users of the new subsystems	Mandatory		

#### 4.9 Usability

ID	Feature	Type	Bidder's comments
UB-1	System shall be able to be used by operators with minimal to average experience with Internet, web browsing and mobile applications	Mandatory	
UB-2	The system must provide the option on every page of the completely new subsystems to view the headings, menus, labels, tooltips, and any software control values in all of the following languages: Albanian, Serbian, or English	Mandatory	

#### 4.10 Documentation

ID	Feature	Content	Type	Bidder's comments
DC-1	Software Description Guide	<p>The Software Description Guide of the systems shall be provided in the Albanian and English languages, and shall describe the following:</p> <ul style="list-style-type: none"> <li>• Software development environment (including tools used),</li> <li>• Software compilation details</li> <li>• Implemented software architectural features</li> <li>• Software coding standards</li> <li>• And any other software details that will be of use for software support or for further development of the new subsystems.</li> <li>• UML Use Case diagram</li> <li>• UML Class diagram</li> <li>• UML Component diagram</li> </ul>	Mandatory	

DC-2	Deployment Guide	<p>The Deployment Guide the systems shall be supplied in the Albanian and English languages, and shall describe the technical aspects of</p> <ul style="list-style-type: none"> <li>• installing,</li> <li>• calibrating, and</li> <li>• fine-tuning</li> </ul> <p>The software, application performance and database. This guide shall be oriented towards the technical specialist (e.g., system integrator, DBMS administrator).</p> <p>UML Deployment diagram</p>	Mandatory	
DC-3	User Manual	The User Manual all systems shall be supplied in the Albanian and English languages and shall describe and illustrate all system functions.	Mandatory	
DC-4	User Manual Updates	The text files containing the original text of the User Manuals shall be organized in such a way that parallel updates in all the languages will be managed easily and consistently. The update method shall be described by the bidder in the offer.	Mandatory	
DC-5	Help files	Text files used for the Online Help functions and tutorials shall be available for management and parallel update in all the languages. The update method shall be described by the bidder in the offer.	Mandatory	

#### 4.11 Licensing

ID	Feature	Type	Bidder's comments
LI-1	All systems shall be able to be scaled-up to the double the number of users as currently specified, without the need to pay for additional software license fees.	Mandatory	

ID	Feature	Type	Bidder's comments
LI-2	<p>The supplier shall, at the stage of detailed system design, identify all software packages (whether Commercial or Open Source) that are required as part of the comprehensive solution for the systems, along with any costs associated with the ongoing use of these software packages.</p> <p>The contracting authority shall reserve the right to obtain software licenses under a separate contract.</p>	Mandatory	

#### 4.12 System Deliverance

ID	Feature	Type	Bidder's comments
SD-1	<p>All systems shall be delivered in two versions</p> <ul style="list-style-type: none"> <li>• Pilot version</li> <li>• Final version</li> </ul> <p>The specification of the Pilot version shall be specified in detail during the Inception stage of the project and accepted by KCA. Both versions of the systems shall be tested and accepted (FAT and UAT) prior to installation on the production environment</p>	Mandatory	

**4.13 Security Management**

<b>ID</b>	<b>Feature</b>	<b>Type</b>	<b>Bidder's comments</b>
SEC-1	The system shall provide System Administration tools for the definition of user roles of <ul style="list-style-type: none"> <li>• Read-only</li> <li>• Edit</li> </ul> and <ul style="list-style-type: none"> <li>• Editor of the new subsystems</li> <li>• Database Administrator</li> </ul>	Mandatory	
SEC-2	System shall be able to prevent the receipt of trivial messages from users as well as other kinds of spam	Mandatory	

**4.14 Training Requirements**

<b>ID</b>	<b>Feature</b>	<b>Type</b>	<b>Bidder's comments</b>
TG-1	The supplier shall deliver a plan for training of the staff at KCA as part of the inception report.	Mandatory	
TG-2	It is required that the supplier works in partnership with the KCA, and other stakeholders identified by the KCA to ensure knowledge transfer and further build local capacity for maintenance of the system.	Mandatory	
TG-3	The supplier shall involve KCA staff when developing administration and users' manuals.	Mandatory	

ID	Feature	Type	Bidder's comments
TG-4	As part of the final handover the supplier shall provide the KCA management with a written assessment confirming that the responsible KCA staff is competent to assume full responsibility for the system and make appropriate recommendations about further training or support.	Mandatory	
TG-5	<p>The supplier shall prepare and execute a formal training program which shall identify timing, structure, and content of the following training programs for the new subsystems:</p> <ul style="list-style-type: none"> <li>• Training of Editor(s). The Editor(s) will be staff assigned by the KCA</li> <li>• Training of Superuser (if relevant)</li> <li>• Training of KCA web site programmer (if relevant)</li> <li>• Training of KCA IT staff for system operation</li> <li>• Training of KCA database manager</li> </ul>	Mandatory	
TG-6	The training shall include the preparation of all training materials (including printed materials) and handouts. All training materials shall be available in the Albanian and Serbian languages; however, part of the system documentation shall be prepared in English only, approved by KCA.	Mandatory	
TG-7	The number of participants of a training session shall be no more than 10 (ten).	Mandatory	
TG-8	<p>The training shall cover:</p> <ul style="list-style-type: none"> <li>• System use (introduction and functionality to all modules, data entry, searches, reporting etc.).</li> <li>• System functionality for the editor for content management and design of the user interface of the new subsystems</li> <li>• Information management procedures (how and when information is captured, used, and shared as part of the business processes)</li> <li>• Information security and handling (protective markings, risk assessments, physical control etc.)</li> </ul>	Mandatory	

ID	Feature	Type	Bidder's comments
TG-9	<p>The training shall be delivered in the Albanian languages and involve:</p> <ul style="list-style-type: none"> <li>• Presentations</li> <li>• Discussions</li> <li>• Practical exercises using the system</li> </ul>	Mandatory	
TG-10	<p>The supplier is obliged to deliver a knowledge transfer package which includes training in software development for necessary customization (e.g., plug-in). The description of the knowledge transfer procedure shall be described in the offer</p>	Mandatory	

**4.15 Installation, Testing and Warranty requirements**

ID	Capability	Feature	Type	Bidder's comments
ITW-1	Installation	<p>The software shall be installed by the supplier at the premises of the KCA under the supervision of the KCA staff.</p>	Mandatory	

ID	Capability	Feature	Type	Bidder's comments
ITW-2	Testing	<p>There shall be three stages of the software testing and acceptance:</p> <ul style="list-style-type: none"> <li>○ Factory Acceptance Testing (FAT)</li> <li>○ User Test (UT)</li> <li>○ End User Acceptance Test (UAT)</li> </ul>	Mandatory	
ITW-3	Test plan	<p>The supplier shall deliver a test plan of all tests to be included in the FAT. This plan shall follow IEEE 829-2008 guidelines. The test plan shall contain</p> <ul style="list-style-type: none"> <li>● A list of test scenarios (test cases)</li> <li>● Detail test cases associated to the scenarios</li> </ul>	Mandatory	
ITW-4	Test scenario	<p>The supplier shall prepare a list of test scenarios which shall contain a short description of real use cases or workflows to be tested. The list of scenarios shall be approved by KCA</p>		
ITW-5	Test cases	<p>The supplier shall prepare test case specifications and provide them to the KCA for approval. The KCA shall have the right to request modifications to the test case documentation. The KCA shall have the right to use amended and expanded test cases for the User Test and End User Acceptance Test (UAT).</p>	Mandatory	
ITW-6	Test cases	<p>The supplier shall prepare test case descriptions for</p> <ul style="list-style-type: none"> <li>● Functional tests</li> <li>● Test of practical and actual workflows / use cases</li> </ul>	Mandatory	



ID	Capability	Feature	Type	Bidder's comments
ITW-7	Test case content	<p>The test cases shall cover all test scenarios. The description shall be formatted as a step-by-step procedure (checklist), where each step is described by following information</p> <ul style="list-style-type: none"> <li>• User function</li> <li>• Detail input test data</li> <li>• Detailed expected results from the function</li> </ul> <p><i>Note! Test cases can also be used as training material</i></p>	Mandatory	
ITW-8	Web Service Test	<p>The supplier shall prepare test programs for test and verification of web services which enables</p> <p>DV-1      The user to specify parameters for request  DV-2      The user to study the response</p>	Mandatory	
ITW-9	Test and training environment	The supplier shall develop testing, training, and development environments, separated from the production system.	Mandatory	
ITW-10	Unit tests	The supplier shall include unit tests for core functionalities	Mandatory	
ITW-11	Automatic functional tests	The supplier delivers functional testing tools where such are use in the development	Mandatory	
ITW-12	FAT	The supplier shall perform FAT on all test cases. The FAT shall be documented and accepted by the KCA prior to the installation at KCA.	Mandatory	

ID	Capability	Feature	Type	Bidder's comments
ITW-13	External test possibilities	During the development period, the supplier shall establish a test environment which is accessible from KCA, and others as decided by KCA	Mandatory	
ITW-14	User Test	After installation, a user test shall be performed at KCA and at least one office or Internet user outside KCA. User test and acceptance shall be done after the training is completed for the relevant KCA staff.	Mandatory	
ITW-15	Error corrections	Based on the user testing the supplier shall correct the software and install a new version of the software. The user tests shall continue until all errors are removed.	Mandatory	
ITW-16	UAT	When all errors are removed, the supplier shall participate in the UAT. The UAT shall take place no more than one week after UT has been completed. The UAT shall be executed at the premises of KCA and in at least one external office.	Mandatory	
ITW-17	Warranty	<p><b>The supplier shall provide a comprehensive warranty for one year.</b> The warranty shall cover all software and customized applications that are delivered as part of the software solution and database for the new systems.</p> <p>The warranty period shall begin once End User Acceptance Test as well as Training is complete and approved by KCA.</p>	Mandatory	

ID	Capability	Feature	Type	Bidder's comments
ITW-18	Error handling	<p>During the installation, acceptance, and warranty period the supplier shall provide corrective services.</p> <p>The supplier shall in the offer present a proposal for error reporting and corrective services, including response times.</p>	Mandatory	
ITW-19	Support	<p>The support during the warranty shall be implemented via a three-level support regime</p> <ul style="list-style-type: none"> <li>• 1<sup>st</sup> level support, by a super-user who can give rapid help to users at KCA who experience a problem with the system. This requires a person who has particularly good knowledge of the system, who can understand the problem and give advice on what to do. Many problems can be solved at this level, without making any changes to the SW.</li> <li>• 2<sup>nd</sup> level support by an analyst who can analyze problems that cannot be solved by the experienced user or analyze the need for improved functionality in depth. and prepare related specifications for subsequent changes to the source code</li> <li>• 3<sup>rd</sup> level support by a developer who can make changes to the source code related to removing errors as well as for new functionality</li> </ul>	Mandatory	
ITW-20	Locally based support	<p>The support during the warranty shall be implemented via locally based first-level and second-level support, while third level support may be provided from outside Kosovo.</p>	Mandatory	
ITW-21	Maintenance	<p>The supplier is obliged - if requested by KCA– to enter into a maintenance contract after the warranty period has expired</p>	Mandatory	

**4.16 Support Organization Requirements**

<b>ID</b>	<b>Capability</b>	<b>Feature</b>	<b>Type</b>	<b>Bidders' comments</b>
PSO-1	Organization	The supplier shall describe the support organization	Mandatory	
PSO-2	Support procedures	The supplier shall specify the support procedures both at locally based first-level support and at higher support levels	Mandatory	

## **5. TEAM COMPOSITION, ASSIGNMENT AND KEY EXPERTS**

The company must prove the implementation of successful contracts in the past eight (8) years from the date of publication of this contract notice for the development of information systems.

### **Requirements for Economic Operator**

<b>ID</b>	<b>Request description</b>	<b>Type</b>	<b>Bidders' comments</b>
REO-1	The bidder shall prove for valid certificate for quality management ISO 9001	Mandatory	
REO-2	The bidder shall prove for valid certificate for security of data management ISO 27001	Mandatory	
REO-3	The bidder shall prove for valid certificate for standard certification PAS 99:2012 for managing integrated systems	Optional	
REO-4	The bidder shall prove for valid certificate for standard certification ISO/IEC 20000-1:2018 for managing IT services	Optional	
REO-5	At least 1 (one) similar contract executed in the past eight (8) years or in the past eight-year period from the date of publication of the contract notice is required. Copies of references (1 reference) of the realization of projects (one) contracts realized in the last eight years from the date of publication of the Contract Notice.	Mandatory	
REO-6	The EO must submit financial reports audited and certified by a recognized licensed auditing firm or a licensed independent auditor for the last three years (2021, 2022 and 2023)	Mandatory	

**Requirements for Key Experts**

The company should propose an expert team consisting at least of:

ID	Request description	Type	Bidders' comments
KEEO-1	<p><b>Project manager:</b></p> <ul style="list-style-type: none"> <li>a. University degree (equivalent to 240 ECTS) in computer engineering, telecommunication, master's in computer science, master's in information systems, computer science, or software engineering</li> <li>b. Proven valid certificate in PMP</li> <li>c. Proven minimum 10 years of experience after graduation in the management of projects of a similar nature</li> <li>d. To have managed in the last 10 years at least three (3) similar projects related to land information systems</li> <li>e. Declaration from the Proposer for assigning as project manager</li> <li>f. Experience creating Project Plans, Dashboards, Statistics and Status Reports</li> <li>g. Ability to communicate clearly with a variety of stakeholders</li> <li>h. Thorough understanding of SDLC methodologies (RUP, Agile)</li> <li>i. Experience in the following technical environment:               <ul style="list-style-type: none"> <li>• Design Patterns</li> <li>• General RESTful and SOAP Web Service Understanding</li> </ul> </li> <li>j. Excellent presentation and communication skills.</li> </ul>	<p>Mandatory requirements are a-d</p> <p>Optional requirements (considered assets) are e-j</p>	
KEEO-2	<p><b>System architect:</b></p> <ul style="list-style-type: none"> <li>a. University degree (equivalent to 240 ECTS) in computer science, computer engineering with telecommunication, master's in</li> </ul>	<p>Mandatory requirements are a-c</p> <p>Optional requirements (considered assets) are d-j</p>	

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	<p>computer science, master’s in information systems, or software engineering</p> <ul style="list-style-type: none"> <li>b. Proven minimum of 10 years after graduation experience in the analysis and design of information systems of a similar nature</li> <li>c. To have participated as a system architect or system analyst for at least 10 years in at least three (3) projects of a similar nature, including at least one (1) project of a similar nature developed on the SOA architecture – land information system</li> <li>d. Proven knowledge and experience on architecture frameworks (TOGAF, 4+1 view model, or similar)</li> <li>e. Knowledge on System architecture design tools (Sparx System Enterprise Architect, UNICOM System Architect, or similar)</li> <li>f. Proven knowledge and experience in system integration/interoperability</li> <li>g. Proven knowledge and experience with UML and related tools</li> <li>h. Proven knowledge and experience in business process analysis and re-engineering including business process mapping (BPMN) tools (Activity, Bizagi, Camunda, or similar)</li> <li>i. Workflow and business rule management systems (Activiti, jBPM, Drools, or similar)</li> <li>j. Declaration from the Proposer for assigning as system analyst</li> </ul>		
KEEO-3	<p><b>GIS specialist:</b></p> <ul style="list-style-type: none"> <li>a. University degree (equivalent to 240 ECTS) in computer science, software engineering, or geomatics/surveying, or computer engineering</li> <li>b. Proven minimum of 7 years of after graduation experience in the analysis and design of geospatial subsystems</li> </ul>	<p>Mandatory requirements are a-e</p> <p>Optional requirements (considered assets) are f-i</p>	

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	<p>in projects of a similar nature or land information systems</p> <ul style="list-style-type: none"> <li>c. Proven experience in business process modelling, designing of IT/GIS systems/platforms</li> <li>d. Proven knowledge and experience with geospatial DBMS</li> <li>e. Proven knowledge and experience in designing and development of nationwide WebGIS-based systems</li> <li>f. Proven knowledge and experience with ISO 19152 LADM standard</li> <li>g. Proven knowledge and experience with UML and related tools</li> </ul> <p>Proven knowledge and experience with GIS software (QGIS, ArcGIS, GeoMedia, or similar) and WebGIS servers (GeoServer, ArcGIS Server, or similar)</p> <ul style="list-style-type: none"> <li>h. XML/GML schema design and related tools</li> <li>i. Geospatial ETL tools (FME, Talend, or similar)</li> </ul>		
KEEO-4	<p><b>Database specialist:</b></p> <ul style="list-style-type: none"> <li>a. University degree (equivalent to 240 ECTS) in computer science, software engineering or computer engineering</li> <li>b. Minimum 5 years' experience in the designing, programming, and managing databases in the projects involving geospatial data</li> <li>c. Experience in designing a nationwide LIS database</li> <li>d. Proven knowledge and experience in designing databases in at least three (3) projects of a similar nature during the last 5 years</li> <li>e. Proven knowledge and experience with relational and OR DBMS (MS SQL Server, PostgreSQL, Oracle, or similar)</li> <li>f. Proven knowledge and experience with UML and related tools</li> </ul>	<p>Mandatory requirements are a-d</p> <p>Optional requirements (considered assets) are e-h</p>	



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	<ul style="list-style-type: none"> <li>g. Proven knowledge and experience with data modelling and designing tools (Sparx Enterprise Architect, IBM Data Architect, or similar)</li> <li>h. Proven knowledge and experience with database programming languages (T-SQL, PL/SQL, PL/pgSQL, or similar)</li> </ul>		
KEEO-5	<p><b>Web services and Web API developer:</b></p> <ul style="list-style-type: none"> <li>a. University degree in computer science, software engineering, computer engineering or computer engineering with telecommunication</li> <li>b. Proven minimum 5 years of experience in the development of Web services and Web APIs of similar projects developed on the Microsoft platform (.NET)</li> <li>c. To have participated in the development of Web services and Web API for a minimum of 10 years in at least two (2) projects of a similar nature, developed on the Microsoft platform (.NET with SQL Server) to have been a developer of Web services and Web APIs at least one (1) project of a similar nature developed on the Microsoft platform (.NET with SQL Server) and be SOA architecture - land management system</li> </ul>	Mandatory requirements	
KEEO-6	<p><b>Software developer:</b></p> <ul style="list-style-type: none"> <li>a. University degree in computer science, software engineering or computer engineering</li> <li>b. Provon experience at least three (3) years in software development in Microsoft platform (.Net with SQL Server), development of similar nature projects</li> <li>c. To have participated in software development for at least 3 years in at</li> </ul>	<p>Mandatory requirements are a-c</p> <p>Optional requirements (considered assets) are d-j</p>	

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	<p>least three (3) projects of a similar nature, developed on the Microsoft platform (.NET with SQL Server), to have been a software developer for at least one (1) project of a similar nature developed on the Microsoft platform (.NET with SQL Server) and to be SOA architecture - land management systems</p> <ul style="list-style-type: none"><li>d. Demonstrable experience interfacing with clients in extracting use cases and deriving requirements</li><li>e. Working experience in various software development lifecycles</li><li>f. Proven knowledge and experience in object-oriented programming languages (C#, C++, Java, Python, or similar)</li><li>g. Proven knowledge and experience with Web application servers (MS IIS, ApacheTomcat, WildFly, GlassFish, or similar)</li><li>h. Experience using RESTful and SOAP Web Service technologies</li><li>i. Proven knowledge and experience with relational and OR DBMS (MS SQL Server, PostgreSQL, Oracle, or similar)</li><li>j. Proven knowledge and experience with UML and related tools</li></ul>		
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