



**Development of a Business Case  
for an Integrated Digitalised Results Management System  
at the Inter-University Council for East Africa**

**Period of Assignment: 4 months after commencement of the work**

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## Acronyms

a.k.a.	also known as
COTS	commercial off-the-shelf
DRM	Digitalised Results Management system
EABC	East African Business Council ( <a href="http://eabc-online.com">eabc-online.com</a> )
EAC	East African Community ( <a href="http://eac.int">eac.int</a> )
EACHEA	East African Common Higher Education Areas
ERP	Enterprise Resource Planning
GDPR	General Data Protection Regulation (EU)
ICT	Information and Communication Technologies
IUCEA	Inter-University Council for East Africa ( <a href="http://iucea.org">iucea.org</a> )
MoU	Memorandum of Understanding
TOGAF	The Open Group Architecture Framework ( <a href="http://togaf.org">togaf.org</a> )
ToR	Terms of Reference



## 1 Context

The Inter-University Council for East Africa (**IUCEA**) is an institution of the East African Community (**EAC**) located in Kampala/Uganda. IUCEA is also a member-based institution with more than 140 member universities located throughout the EAC and approx. 40 staff from the seven EAC Partner States. The EAC Treaty mandates IUCEA to advise, develop and coordinate all matters related to higher education and research in the EAC. Concretely, IUCEA's mandate and mission as stipulated in the IUCEA Act 2009 include:

- 1) **Advising EAC Partner States on higher education matters** for contributing towards meeting national and regional development goals.
- 2) **Developing quality assurance frameworks and processes** to ensure that teaching, learning and research in the EAC achieve and maintain international standards.
- 3) **Assisting IUCEA's member universities and other higher education institutions** throughout the EAC to identify and implement good practices in institutional management.
- 4) **Developing human resource capacity** in all disciplines of higher education in the EAC.
- 5) **Facilitating networks among higher education institutions** within the EAC as well as with institutions outside the EAC. These include academia-public-private partnerships in collaboration with the East African Business Council for dialogues with East African industries on developing human resources and furthering innovation for economic competitiveness and growth.
- 6) **Establishing a regionally harmonised higher education system** with internationally comparable education standards for attaining regional competitiveness in higher education.

In 2017, the EAC declared the **East African Common Higher Education Area (EACHEA)**. The declaration envisages national higher education and training systems of the EAC's Partner States adhering to common regional frameworks and policies which harmonise curricula, examinations and certifications, academic and professional qualifications, and consequently the quality of education and training in higher education. The declaration mandates IUCEA to provide technical assistance for creating a common frame of references for facilitating comparability and compatibility of higher education and training systems including the mutual recognition of qualifications attained in EAC Partner States. IUCEA subsequently orchestrated the design and development of the EACHEA's building blocks, which to date encompass the:

- 1) **East African Qualifications Framework for Higher Education**, which is a tool for harmonising education and training systems and the qualifications attained.
- 2) **Regional Quality Assurance Framework**, which comprises a policy framework, quality assurance instruments, benchmarks for academic programmes, and the East African Higher Education Quality Assurance Network.
- 3) **Students Mobility Policy and Academic Staff Mobility Policy Framework** to facilitate the attainment of the EAC regional integration agenda.

IUCEA's has furthermore been mandated to operationalise the EACHEA's building blocks at regional and Partner States' levels by jointly developing corresponding roadmaps, strategies and implementation arrangements, and subsequently overseeing their execution. Expanding, upgrading, domesticating, operationalising, operating and maintaining these building blocks in all Partner States against the



backdrop of dynamic regional, continental and global socio-economic environments continues to be work in progress and—as in the past—requires concerted efforts among IUCEA, the EAC’s seven Partner States and other stakeholders in the coming years.

Over the past years, IUCEA has consequently accumulated vast experience in coordinating and building capabilities at EAC universities regarding higher education and research. As a result, IUCEA has become a preferred partner for bilateral and multilateral cooperation partners’ initiatives targeting East Africa and beyond, an example being the World Bank-funded *Eastern and Southern Africa Higher Education Centers of Excellence project* which spans across eight African countries.

## 2 Rationale and goal of the contract

Given IUCEA’s expanding mission, partners and involvement in East Africa and beyond, its strategic and operational functions, structures and processes require adaptation through reengineering and digitalisation, subsequently enabling its staff to master their increasing responsibilities and workloads accurately and productively. While IUCEA is fully networked with adequate Internet access, has a data centre and uses commercial off-the-shelf software for communication, office tasks and financial accounting, only few of its other functions and processes are adequately digitalised. This increasingly impedes IUCEA discharging its mandate and executing its mission efficiently and effectively.

**It is therefore the goal of this contract to complete the groundwork for transforming IUCEA into a digitalised institution that utilises information processing services across its functions and along its processes, resulting in enhanced capabilities for discharging its mandate and executing its mission efficiently and effectively to the expectations of its stakeholders in the years to come.**

As a first step towards its digitalisation endeavours, **IUCEA requires expert services for developing a *business case for creating, deploying, operating and maintaining an integrated Digitalised Results Management system at IUCEA*** (hereinafter referred to as **DRM**). Digitalisation in the context of IUCEA means the application of digital technologies across reengineered functions, structures and processes to discharge its mandate and execute its mission in compliance with statutory requirements and to the expectations of its stakeholders. The contractor shall develop a viable business case for a DRM to measurably improve the execution of IUCEA’s strategies and operations towards attaining its strategic and operational objectives, as manifested in its current Strategic Plan 2021–2026 and its annual operations plans.

## 3 Stakeholders

The following stakeholders will—to various degrees—benefit from utilising selected DRM information processing services and must therefore be investigated, *e.g.* through consultation, by the contractor when eliciting requirements for the envisaged DRM.

### 3.1 IUCEA

- 1) **IUCEA staff concerned with executing strategic and operational tasks** related to furthering and fulfilling IUCEA's mandate and mission. Such tasks include planning, organising, coordinating, monitoring and controlling objectives, change, inputs, outputs, outcomes and impacts.

An example of a task is the management of IUCEA's products and services lifecycles which includes designing, developing, producing, diffusing/executing and retiring products and services. IUCEA products include, *for example*, handbooks for quality assurance in higher education or benchmarks for academic programmes. IUCEA services include, *for example*, auditing universities and their academic programmes or accrediting regional academic programmes.

IUCEA furthermore develops products and executes services in course of fixed-term initiatives that are sponsored by bilateral, regional, continental and international cooperation partners (see section 3.4).

- 2) **IUCEA staff concerned with partnerships, resource mobilisation and public relations-related tasks**, which include, *for example*:
  - a) Developing and maintaining MoUs and other partnership agreements
  - b) Searching, assessing and pursuing opportunities for obtaining resources—monetary or in kind
  - c) Keeping IUCEA's web portal and other social media channels up to date.
- 3) **IUCEA staff concerned with support tasks**, which include, *for example*:
  - a) Administration-related tasks, *such as* managing events; assets and facilities; procurement; staff travel; and visas and work permits
  - b) Human resources-related tasks, *such as* managing institutional policies and procedures; maintaining workplace models and job descriptions with qualification profiles; recruitment, onboarding, performance and termination; training, coaching and mentoring; and attendance and absence
  - c) Financial management-related tasks, *such as* managing payroll and financial benefits; accounting; budgeting; membership fees; and cost centres (for time-bound initiatives)
  - d) Audit-related tasks, *such as* carrying out internal audits and liaising with external audits
  - e) Knowledge management-related tasks, *such as* administering physical and digital repositories
  - f) ICT-related tasks *such as* managing data, application and technology infrastructures which jointly provide ICT services *such as* access to the Internet, e-Mail, collaboration, or financial management.

### 3.2 Higher education-related institutions in the EAC

- 1) **Member universities**, totalling more than 140 located throughout the EAC, and who benefit from dedicated services while paying annual fees to IUCEA. Member universities are also frequently consulted on higher education-related topics of common concern, *such as* quality assurance frameworks or academic staff exchange. IUCEA also invites them to its annual members conference.
- 2) **National ministries for higher education and national commissions/councils for higher education**, who are part of IUCEA's governance structure and thus frequently involved.



### 3.3 EAC organs and institutions

- 1) **EAC Secretariat**, which not only defines EAC-wide ICT-related strategies, policies and procedures shaping IUCEA's ICT infrastructure and services, but also requires various financial and non-financial information and reports from IUCEA—periodically and ad hoc.
- 2) **East African Legislative Assembly**, which approves the structures and financing of IUCEA.
- 3) **East African Science and Technology Commission**, which cooperates with IUCEA in the areas of research, innovation and technology transfer.
- 4) **East African Business Council**, which cooperates with IUCEA in areas related to university-industry collaboration.

### 3.4 Bilateral, regional, continental and international consultation and cooperation partners

- 1) **Bilateral technical and financial cooperation partners** change over time: Past partners included, *inter alia*, China and Sweden; the main bilateral cooperation partners at present are Germany and South Korea.
- 2) **Regional consultation partners** located in the EAC include, *inter alia*, the Ubuntu Net Alliance, Nile Basin Initiative, and the East African Business Council.
- 3) **Continental cooperation partners** include the African Union as well as higher education-related institutions from other African regional economic communities and their Partner States, *such as* the Southern African Development Community and the Economic Community of West African States.
- 4) **International cooperation partners** include the World Bank which presently finances two projects that are managed by IUCEA.

## 4 Objectives of the contract

The contractor shall develop a business case for creating, deploying, operating and maintaining an integrated Digitalised Results Management system (DRM) at the Inter-University Council for East Africa.

### 4.1 Objectives of the business case

The business case shall provide IUCEA with sufficient information for deciding on the creation, deployment, operations and maintenance of a DRM in terms of:

- 1) Desirability (balance of costs, benefits, risks)
- 2) Viability (ability to deliver a DRM), and
- 3) Achievability (whether the use of the DRM results in anticipated outcomes and benefits).

In the context of this contract, the business case contains the business justification for the DRM in terms of value for money, thereby considering estimated costs of ownership vs. IUCEA's forecasted investment and recurrent budgets vs. the expected benefits to be gained while considering all risks during the DRM's creation, deployment and operations.

The business case might reveal that creating and deploying a DRM (project output) will result in IUCEA's strategies and operations being processed more quickly, more accurately and more controlled (measurable outcomes), further resulting in IUCEA's expanding mandate and mission being executed more effectively (benefits to stakeholders).

It is, however, also possible that the contractor's investigation reveals that there is no business case for a DRM because, *for example*, IUCEA's budgets in the coming years will be insufficient for sustainably operating even a skeleton DRM. It may, however, still make sense to reengineer IUCEA's strategic and operational functions, structures and/or processes without additional digitalisation as this could be accomplished within IUCEA's budget.

## 4.2 Acceptance criteria for the business case

The business case must meet certain criteria to be accepted by IUCEA. Preliminary acceptance criteria are listed below but these will likely be updated during the inception stage of the contract. They may moreover be updated when IUCEA's requirements are being elicited by the contractor. At the end of the day, however, the business case should:

- 1) **Contain an executive summary** which comprises the:
  - a) *Rationale for deploying a DRM* (in case deployment is recommended) in terms of outcomes, benefits and costs; accompanied by a high-level deployment strategy with a timeline
  - b) *Description of the investigation and design approach* that was applied
  - c) *Results of the activities that were carried out* which include recommendations for reengineering IUCEA's strategic and operational functions, structures and/or processes.
- 2) **Be based on the DRM functional solution** (see section 5.1) **in combination with the DRM technical solution** (see section 5.2) and contain the following decision-relevant information on:
  - a) *Scope and rationale of the DRM functional solution*, i.e. its information processing services and their value to stakeholders at IUCEA (see section 3.1) and elsewhere (see sections 3.2, 3.3, 3.4) in terms of measurable outcomes and benefits. The business case must explain the DRM's added value to IUCEA for discharging its mandate and executing its mission
  - b) *Scope and rationale of the DRM technical solution* in terms of performance, reliability, security, evolvability, etc.
  - c) *Expected changes to the capabilities of IUCEA* as an institution, manifested in the capabilities of its functions and the competencies of its staff in executing their tasks. This includes assessing IUCEA's staff readiness for developing their competencies to the desired levels which determines the scope, priorities and strategies for competency development
  - d) *Expected changes to IUCEA's operations*, thereby assessing IUCEA's readiness for institutional transformation which determines the scope, priorities and strategies for reengineering its functions, structures and/or business processes





- e) *Critical success factors and risks* during the creation and deployment of the DRM including institutional transformation (output-related risks) as well as its subsequent operations (outcome-related risks). For identified risks, mitigation measures should be suggested
  - f) *Timeline for the development and deployment of the DRM* until operational readiness
  - g) *Costs of ownership*, comprising all costs for the development, deployment (including institutional transformation and capacity building), ongoing operations, and maintenance/upgrading of the DRM.
- 3) **Include summaries of DRM functional solution alternatives** that were investigated by the contractor terms of desirability, viability and achievability for either:
- a) *No DRM*, which may, however, still include transforming IUCEA by reengineering its functions, structures and/or processes, albeit without updating or adding information processing services, or
  - b) *Deploying a skeleton DRM*, which may include reengineering some of IUCEA'S functions, structures and/or processes, supported by a limited set of additional information processing services, or
  - c) *Deploying a full-fledged DRM*, subsequently transforming IUCEA into a digitalised institution. This may require reengineering many, if not all of IUCEA's functions, structures and/or processes, supported by a large set of information processing services.
- 4) For (3.b) and (3.c) above, **include summaries (with evaluations) of two DRM technical solution alternatives** that were investigated by the contractor for the creation, deployment, operations and maintenance of the DRM. Alternatives may be either:
- a) *Bespoke solutions*, where IUCEA commissions the development and deployment of the DRM functional and technical solutions to external experts
  - b) *Customisable off-the-shelf solutions*, where IUCEA purchases or licenses a commercial or open-source off-the-shelf software solution which is customised and deployed by external experts.
- 5) **Be annexed with an Architecture Definition Document**, which includes, *inter alia*:
- a) Some of the items listed in (2)–(4) above
  - b) Requirements catalogue with functional and non-functional requirements
  - c) Baseline *and* target business, data, application and technology architectures
  - d) Gap analysis between baseline and target architectures
  - e) Priorities and pathways for closing these gaps.

## 5 Tasks and outputs

### 5.1 Design the functional solution for the integrated Digitalised Results Management system

Designing a functional solution starts with investigating the current situation at IUCEA while, at the same time, eliciting requirements for a future DRM. It is recommended to structure investigation and design activities along an enterprise architecture framework, *such as The Open Group Architecture*

**Framework (TOGAF).** This framework is widely used for designing, constructing, and deploying information systems along four integrated architectural layers:

- 1) **Business architecture**, which defines IUCEA's strategy, governance, functions, structure, key business processes, and partners.
- 2) **Data architecture**, which defines the structure and composition of IUCEA's physical and logical data assets and the associated data management resources.
- 3) **Application architecture**, which defines IUCEA's individual application systems that are deployed, the information processing services they provide, the interactions between these systems, and their relationships to its key business functions and processes .
- 4) **Technology architecture**, which defines the hardware, software, network and security infrastructures in place to support the operations of the data and application architectures.

An enterprise architecture framework thus brings together various domains of IUCEA's institutional capability, *such as* structure, processes, people, partners, beneficiaries, data, and technology. While the application of TOGAF is recommended, the contractor may, however, use any other framework or methodology for investigating IUCEA and designing its future DRM. Regardless of the contractor's approach to investigating and designing the DRM, the **contractor's tasks** will be as follows:

- 1) **Investigate the current business, data, application and technology architectures at IUCEA**, a.k.a. *baseline architectures*.
- 2) **Elicit requirements from stakeholders** regarding improvements to IUCEA's business functions, structures and processes in combination with digitalisation.
- 3) **Develop three alternatives for future business, data and application architectures** (a.k.a. *target architectures*) which would mirror different subsets of stakeholder requirements:  
*Alternative 1:* Without a DRM (i.e. no upgraded/additional digitalisation but perhaps some reengineering of IUCEA's functions, structures and/or processes), *or*  
*Alternative 2:* In combination with a skeleton DRM (i.e. minimal upgraded/additional digitalisation with perhaps some reengineering of IUCEA's functions, structures and/or processes), *or*  
*Alternative 3:* In combination with a full-fledged DRM (i.e. comprehensive upgraded/additional digitalisation with reengineering of IUCEA's functions, structures and/or processes).

While the baseline architectures can be documented at a high level, the three alternatives for the target architectures should be sufficiently detailed to fully comprehend each of them in terms of:

- 1) Extent (i.e. breadth and depth), priorities and sequence of digitalising IUCEA's functions and/or processes in response to identified problems and stakeholder requirements (only for alternatives 2 and 3).
- 2) Extent, priorities and sequence of functional, structural and/or process reengineering (all alternatives).
- 3) Competencies required by IUCEA's staff for accomplishing their respective tasks in a reengineered and digitalised institution as well as the efforts required for establishing and maintaining such competencies.

- 4) Supporting IUCEA in discharging its mandate and executing its mission in compliance with statutory requirements and to the expectations of its stakeholders.

IUCEA will assess each alternative and decide to either pursue one of them as proposed by the contractor or a combination of them against a desired subset of the requirements. Based on IUCEA's decision, **the contractor shall finalise the DRM functional solution** which encompasses detailed target business, data and application architectures. These then constitute the blueprint for the envisaged DRM.

### 5.1.1 Scope of the investigation for the DRM functional solution

- 1) **Executive and management-related responsibilities, such as:**
  - a) Strategy planning, resourcing, execution and controlling
  - b) Operations planning, resourcing, execution and controlling (*e.g.* regional academic programme accreditation, student and academic staff mobility facilitation)
  - c) Products and services lifecycle management (*e.g.* university programme benchmarks)
  - d) IUCEA policies and procedures
  - e) Audit (internal, external, ICT).
- 2) **Infrastructure-related responsibilities, such as the management of:**
  - a) Assets (tangible and intangible)
  - b) Facilities (*e.g.* premises and buildings)
  - c) Vehicle fleet and transport
  - d) ICT services (*e.g.* of hardware and software infrastructure, ICT continuity, incidents and problems and help desk)
  - e) Collaboration (internal and external)
  - f) Content and knowledge
  - g) Records (physical and digital).
- 3) **Administration-related responsibilities, such as the management of:**
  - a) Consumables (*e.g.* office supplies)
  - b) Events and meetings (*e.g.* conferences, hosted delegations)
  - c) Travel (*e.g.* staff and partners)
  - d) Procurement (*e.g.* tenders, orders, contracts, suppliers).
- 4) **Human resource-related responsibilities, such as:**
  - a) Human resource policies and procedures
  - b) Workplace and work practice modelling, and job descriptions with qualification profiles
  - c) Staff accounts (*e.g.* name, photo, date of birth, marital status, dependants etc.)
  - d) Staff recruitment, onboarding and exit
  - e) Staff competency and career development
  - f) Staff attendance, absence, and leave management
  - g) Staff performance management

- h) Staff surveys.
- 5) **Finance-related responsibilities, such as:**
- General ledger
  - Fixed assets
  - Payroll including benefits
  - Accounts payable/receivable
  - Banking
  - Cash management
  - Invoicing.
- 6) **Higher education institutions membership-related responsibilities, such as:**
- Membership initiation, renewal and termination
  - Member accounts
  - Membership fees
  - Member communication and information
  - Member events.

### 5.1.2 Outputs from DRM functional solution design

The contractor shall produce and deliver the following outputs:

- 1) **Architecture Definition Document 1st draft**, containing:
- Requirements catalogue* with functional and non-functional requirements which drive the design—and subsequently the capabilities—of the target business, data, application and technology architectures. Each requirement shall be ranked as either *mandatory*, or *desirable*, or *optional*
  - High-level baseline business, data, application and technology architectures* which outline, *inter alia*, the *current state (as-is)* of structure, processing and digitalisation at IUCEA
  - Three DRM functional solution alternatives*, including (1) *no DRM*; (2) *deploying skeleton DRM*; and (3) *deploying full-fledged DRM*.

While the *no DRM* alternative argues against additional digitalisation, it may still recommend reengineering selected functions, structures and/or processes, albeit without additional information technology support. Should this be the case, an Architecture Definition Document should still be produced containing information regarding:

- Expected improvements to discharging IUCEA's mandate and executing its mission
- High-level target business architectures
- Gap analysis between baseline and target business architectures
- Extent of reengineering business functions, structures and/or processes, including strategies for accomplishing these tasks
- Competencies required by IUCEA staff to accomplish their tasks in a reengineered institution, including strategies for establishing and maintaining such competencies
- Estimated costs and timeline for reengineering and competency development.

For each of the *skeleton* and *full-fledged* alternatives, the Architecture Definition Document shall include information regarding:

- Scope of IUCEA functions to be digitalised and in which sequence (deployment priority)
- Expected improvements to discharging IUCEA's mandate and executing its mission
- High-level target business, data and application architectures
- Gap analysis between baseline and target business, data and application architectures
- Extent of reengineering business functions, structures and/or processes, including strategies for accomplishing these tasks
- Competencies required by IUCEA staff for utilising DRM information processing services to accomplish their tasks in a reengineered institution, including strategies for establishing and maintaining such competencies
- Compliance assessment against EAC and IUCEA standards and practices concerning digitalisation
- Estimated costs of ownership, comprising all costs for the development, deployment (including institutional transformation), ongoing operations, and maintenance/upgrading.

- 2) **Finalised DRM functional solution**, approved by IUCEA after assessing the 1st draft of the Architecture Definition Document with the DRM functional solution proposals outlined in (1.c) above. The finalised functional solution may be either any of the three solution alternatives described under (1.c) above or any combination of these alternatives that reflects the subset of the requirements that IUCEA wants implemented in future. The finalised DRM functional solution may (*skeleton DRM, full-fledged DRM, combination DRM*) or may not (*no DRM*) include digitalisation (i.e. DRM information processing services).
- 3) **Architecture Definition Document 2nd draft**, based on the finalised DRM functional solution (see (2) above) and containing:
  - a) *Requirements catalogue* with functional and non-functional requirements which drive the design—and subsequently the capabilities—of the target business, data, application and technology architectures, ranking each requirement as either *mandatory*, or *desirable*, or *optional*
  - b) *High-level baseline business, data, application and technology architectures* which summarise the current digitalisation at IUCEA
  - c) *Detailed description of the finalised DRM functional solution* including detailed target business, data and application architectures, containing all the elements listed above under (1.c).

The final structure and contents of the outputs listed above—and which are largely contained in the Architecture Definition Document—shall be agreed upon during the inception stage of the contract. Functional requirements could, *for example*, be documented through user stories. Baseline and target architectures could, *for example*, be described through narratives in combination with artifacts, which are work products that describe aspects of the architecture. Examples of artifacts include:

- 1) Business architecture artifacts: Role catalogue, functional decomposition diagram, business use case diagrams, process flow diagrams.
- 2) Data architecture artifacts: Data entity catalogue, data entity/business function matrix, data dissemination diagram.
- 3) Application architecture artifacts: Application portfolio catalogue, application/business function matrix, application use-case diagram.

- 4) Technology architecture artifacts: Technology standards catalogue, technology portfolio catalogue, application/technology matrix, data protection and data security-related artifacts.

## 5.2 Design the technical solution for the integrated Digitalised Results Management system

Ignore this section if the finalised functional solution is based on the *no DRM* alternative (see section 5.1.2 / 1.c) and subsequently excludes updated or additional digitalisation at IUCEA. Go to section 5.3 instead.

Having developed a common understanding of IUCEA's future functional and structural setups, processes and digitalised capabilities, which are all detailed in the 2nd draft of the Architecture Definition Document (see section 5.1.2 above), the contractor shall **investigate and assess two DRM technical solution alternatives** for developing, deploying, operating and maintaining the DRM:

- 1) **Bespoke solution**, where IUCEA commissions the development and deployment of the DRM technical solution to external experts, *such as* a software development company in combination with a cloud services provider. A bespoke solution may include commercial and/or open-source off-the-shelf software components.
- 2) **Customisable off-the-shelf solution**, where IUCEA purchases, rents or licenses a commercial or open-source off-the-shelf software solution which is then customised by external experts—*such as* ERP implementers—towards enabling the DRM functional solution. A customised off-the-shelf software solution could, for example, be hosted in the cloud.

Similarly to the functional solution, IUCEA assesses the two DRM technical solution alternatives and decides which alternative to pursue. Once this is done, **the contractor shall finalise the DRM technical solution** which can include elements of both a bespoke and a customised off-the-shelf solution and furthermore incorporate ICT applications currently used at IUCEA.

### 5.2.1 Evaluation criteria for both DRM technical solution alternatives

Both DRM technical solution alternatives should:

- 1) Enable the DRM functional solution, as documented in the 2nd draft of the Architecture Definition Document (see section 5.1.2 above).
- 2) Provide information processing services through Internet browsers on Microsoft Windows and Apple computers as well as through apps on Android and Apple mobile devices.
- 3) Provide customisable user experiences, *such as* clustering user-defined information processing services (*e.g.* through quick-access tool bars) or saving complex enquiries which are routinely executed.
- 4) Meet criteria for performance, reliability, capacity, recovery, security, evolvability, etc. The latter, *for example*, should cater for updating or adding information processing services in future.
- 5) Remain within IUCEA's budget for investment and recurrent expenditures, which will be conveyed to the contractor during the inception stage.
- 6) Incorporate current ICT applications used at IUCEA, if feasible and justifiable.



- 7) Be available for purchasing or licensing in the EAC and supported by certified partners located in the EAC for customisation, operations and maintenance.
- 8) Be cloud-capable and hosted in the EAC. Cloud services should be GDPR-compliant and data may not be stored outside the EAC.
- 9) Guarantee information processing services continuity during Internet outages.
- 10) Guarantee data integrity after hardware failures.
- 11) Be multi-lingual, including English and French (mandatory) and Kiswahili and Arabic (desirable).
- 12) Allow multi-accounts for different cost centres, *such as* projects. Furthermore, allow costing across accounts.
- 13) Cater for multi-currencies and automatic currency exchange at specific points in time (*e.g.* for invoices). Must include all global currencies.
- 14) Provide seamless integration or interfaces with:
  - a) Microsoft Office 365 products including SharePoint and Active Directory
  - b) WhatsApp and SMS
  - c) IUCEA's website, which may retrieve data from the DRM
  - d) Uganda government modules, *e.g.* for invoicing
  - e) EAC applications, *such as* budget management systems (see annex 3 for a list of relevant EAC applications).

## 5.2.2 Outputs from DRM technical solution alternatives design

- 1) **Investigation results for a bespoke solution**, which can be developed, deployed, operated and maintained by IUCEA jointly with external experts that are located in the EAC.
- 2) **Investigation results for a customisable off-the-shelf solution**, which include four commercial or open-source off-the-shelf solutions that are available in the EAC and have certified partners in the EAC. Investigated commercial solutions *may*, but must not, include only one solution from any of the following market players: SAP, Oracle, Microsoft, and Sage.
- 3) **Finalised DRM technical solution**, assessed and approved by IUCEA.
- 4) **Architecture Definition Document final draft**, containing:
  - a) *Requirements catalogue* with functional and non-functional requirements which drive the design—and subsequently the capability—of the target business, data, application and technology architectures, ranking each requirement as either *mandatory*, or *desirable*, or *optional*
  - b) *High-level baseline business, data, application and technology architectures* which summarise the current digitalisation of IUCEA's operations
  - c) *Detailed description of the DRM functional solution* including detailed target business, data and application architectures, containing all elements and adhering to all criteria listed in section 5.1.
  - d) *Detailed description of the DRM technical solution* including detailed target technology architecture, containing all elements and adhering to all criteria listed in section 5.2. A technical solution must not be developed if IUCEA decides against developing a DRM

- e) *Gap analysis* between the baseline and the target technology architecture
- f) *Compliance assessment* against EAC and IUCEA legal statutes, standards and practices concerning ICT and digitalisation.

### 5.3 Complete the business case

- 1) **Compile the business case** which includes the outputs listed in sections 5.1 and 5.2, thereby adhering to the acceptance criteria listed in section 4.2. Add narratives where necessary.
- 2) **Submit the business case** to IUCEA.

#### 5.3.1 Outputs

Completed business case with annexes, submitted to IUCEA.

## 6 Milestones

Milestones represent control points, where outputs are quality controlled against agreed acceptance criteria.

Milestone	Deadline, place
Inception report	Week 2, IUCEA
Functional solution design, including Architecture Definition Document draft	Week 4, IUCEA and home-based
Technical solution design, including updated Architecture Definition Document draft	Week 8, home-based
Business case with annexes, including finalised Architecture Definition Document, submitted to IUCEA	Week 10, home-based

**Period of assignment:** 4 months after commencement of the work

## 7 Assignment management of the bidder/contractor

In its bid, the bidder is required to show how the objectives and tasks are to be achieved, i.e. how it will provide its services. This includes, but is not limited to:

- 1) Describing the key services it will provide for carrying out the tasks and creating the outputs listed in section 5—thereby taking into account given milestones and contributions of other actors.
- 2) Proposing a steering structure for directing and controlling the assignment.
- 3) Proposing a project organisation which includes a description of how the experts assigned to perform the tasks will be prepared and managed.



The contractor shall submit the following reports during its assignment:

- 1) **Inception report**, to be submitted **two weeks after the commencement of the assignment**, and which shall include, *inter alia*:
  - a) Assignment organisation structure with role descriptions, responsibilities, and an assignment plan which includes information on assignment dates (duration and expert days) and locations of the individual members of the contractor's team
  - b) Output breakdown structure and output descriptions
  - c) Acceptance criteria for outputs
  - d) Output configuration management approach
  - e) Activity/outputs plan (i.e. work packages plan)
  - f) Risk management approach
  - g) Change management approach
  - h) Communications plan
  - i) Quality management approach.
- 2) **Weekly progress briefs** by e-Mail or upon request
- 3) **End-of-contract report**, latest one month after conclusion of the assignment.

## 8 Staff concept of the bidder/contractor

**Total amount of staff inputs:** 100 person days

The bidder is required to provide staff that is suited to filling the positions described below and that are capable of attaining the goal and objectives of the contract. Staff will be evaluated on the basis of their CVs against the profiles outlined in sections 8.1 and 8.2 as well as their competencies in executing the tasks towards producing the outputs outlined in section 5.

### 8.1 Team Leader/Business Systems Analyst

**Tasks of the Team Leader/Business Systems Analyst:**

- 1) Overall responsibility for attaining the objectives and associated outputs as outlined in sections 4 and 5 including all associated tasks. Compiling and submitting the business case to IUCEA.
- 2) Managing risks to the quality and timely delivery of all outputs.
- 3) Leading and executing DRM functional solution-related tasks as outlined in section 5.1, with focus on business architecture-related tasks for the envisioned DRM.
- 4) Seconding the information systems analyst in his/her DRM technical solution-related tasks.
- 5) Aligning the target data, application and technology architectures, which were developed by the information systems analyst, with the business architecture to result in an integrated Digital Results Management system.
- 6) Coordinating and ensuring communication with IUCEA, its stakeholders and others, *such as* providers of DRM technical solutions.

- 7) Managing all other staff of the contractor and their assignments.
- 8) Reporting to IUCEA.

**Qualifications of the Team Leader/Business Systems Analyst:**

- 1) **Education/training:** University degree (Bachelor/Master) in either business management, or public administration or information systems-related studies (*e.g.* IT management). Other degrees are acceptable if complemented by relevant professional experience.
- 2) **Language:** Excellent English business language skills.
- 3) **General professional experience:** 12 years of professional experience in organisational transformation in combination with digitalisation.
- 4) **Specific professional experience:** 5 years of professional experience in analysing, designing and deploying enterprise architectures.
- 5) **Leadership/management experience:** 5 years of management/leadership experience as project team leader or manager in a company or public institution.
- 6) **Regional experience:** 5 years in the EAC *or* 7 years in sub-Saharan Africa.
- 7) **Other:** Experience in deploying ERP systems will be an asset.

## 8.2 Information Systems Analyst

**Tasks of the information systems analyst:**

- 1) Executing technical solution design-related tasks as outlined in section 5.2 with focus on data, application and technology architectures for the envisioned DRM.
- 2) Seconding the team leader/business systems analyst in his/her DRM functional solution-related tasks.
- 3) Investigating purchasable and customisable solutions against evaluation criteria and making a reasoned recommendation for a specific vendor.
- 4) Seconding the team leader/business analyst in compiling the business case.

**Qualifications of the information Systems Analyst:**

- 1) **Education/training:** University degree (Bachelor/Master) in information systems-related studies or other degrees if complemented by relevant professional experience.
- 2) **Language:** Excellent English business language skills
- 3) **General professional experience:** 12 years of professional experience in information systems design and development.
- 4) **Specific professional experience:** 5 years professional experience in enterprise architecture.
- 5) **Regional experience:** 5 years in sub-Saharan Africa.
- 6) **Other:** Experience with enterprise architecture documentation tools. Experience deploying ERP systems will be an asset.



### **8.3 Short-term expert pool**

The bidder may add short-term experts for management, expert or back-office tasks in its bid. In this case, the bidder must provide a clear overview of all proposed short-term experts and their individual qualifications.

## **9 Costing requirements**

As the contract to be concluded is a contract for works, please offer a fixed lump sum price that covers all applicable costs, broken down by:

- 1) Fees.
- 2) Travel (flights and other transportation to/from/within Kampala, visas, daily allowances if not included in the fees).
- 3) Accommodation while at IUCEA in Kampala.

Travel and accommodation shall not be included for contractor's staff residing in the Kampala metropolitan area.

## **10 Timelines and payment terms**

- 1) Work must be completed within 4 months after the commencement of the work.
- 2) 20% of the contract sum shall be paid after IUCEA's approval of the inception report.
- 3) 40% of the contract sum shall be paid after IUCEA's approval of the functional solution design and the technical solution design, including updated Architecture Definition Document draft.
- 4) 40% of the contract sum shall be paid after IUCEA's approval of the business case with annexes, including finalised Architecture Definition Document.

## **11 Inputs of IUCEA**

IUCEA will make the following available:

- 1) Liaison officer.
- 2) One desk, to be shared by all the contractor's experts.
- 3) Internet access.
- 4) Meeting room.

## **12 Requirements on the format of the bid**

The structure of the bid should—by and large—correspond to the structure of the ToR. The bid shall be drawn up in English and use a single font, size 11 or larger).



The complete bid shall not exceed 15 pages (excluding CVs).

The CVs of the staff proposed in accordance with section 8 of the ToR must be submitted using the template depicted in Annex 4. CVs shall not exceed 4 pages and must be clearly associated with the proposed staff listed in section 8.

## 13 Annexes

### Annex 1: Documents regulating and guiding IUCEA's mandate, mission, strategy, and operations

Some of these documents are available at [iucea.org](http://iucea.org), others will be made available to the contractor during the inception stage.

#### East African Community (EAC)

- 1) The Treaty for the Establishment of the East African Community

#### Inter-University Council for East Africa (IUCEA)

- 1) IUCEA Strategic Plan 2021–2026
- 2) IUCEA Act, 2009
- 3) IUCEA Organogram
- 4) Staff Rules and Regulations
- 5) Financial Manual
- 6) Chart of Accounts and Cost Centres
- 7) Procurement Manual
- 8) ICT Procedures and Guidelines
- 9) Records and Information Management Policy



## Annex 2: IUCEA sample products

All of these documents are available at [iucea.org](http://iucea.org).

- 1) East African Qualifications Framework for Higher Education
- 2) Principles and Guidelines for Quality Assurance in Higher Education in East Africa
- 3) A Road Map to Quality. Handbook for Quality Assurance in Higher Education. Combined Volume 1 & 2: Guidelines for Internal and External Programme Assessment
- 4) A Road Map to Quality. Handbook for Quality Assurance in Higher Education. Volume 3: Guidelines for self-assessment at institutional level
- 5) A Road Map to Quality. Handbook for Quality Assurance in Higher Education. Volume 4: Implementation of a Quality Assurance System
- 6) A Road Map to Quality. Handbook for Quality Assurance in Higher Education. Volume 5: Principles, Practices and Management of External Quality Assurance in East Africa
- 7) Benchmarks for Civil, Mechanical, Electrical, Electronics and Telecommunication, Agricultural Engineering Programmes
- 8) Benchmarks for Bachelor of Education Programmes



### **Annex 3: EAC ICT applications**

- 1) Asset Management (HardCat)
- 2) Budget Management System
- 3) Budget Requisition & Accountability Module
- 4) E- Procurement
- 5) EAC Information Repository
- 6) EAC Reports Database
- 7) EAC Websites
- 8) East Africa Monitoring System
- 9) Inspiro People
- 10) IT helpdesk System (Alloy)
- 11) Online Leave Module
- 12) Online Recruitment System
- 13) Performance Management System
- 14) Sun System Financial
- 15) TRIM Records Management System



**Annex 4: CV template**

- A) **Family Name**
- B) **First Name(s)**
- C) **Company**
- D) **Years with the Company**
- E) **Present Position**
- F) **Education** (only post-secondary)

Date (from – to)	Institution	Degrees obtained

- G) **Certifications** (relevant to the ToR)

Date (month/year)	Institution	Certifications obtained

- H) **Language Skills** (1=excellent; 5=basic)

Language	Reading	Speaking	Writing
English			

- I) **Key Qualifications** (relevant to the ToR)
- J) **Professional Experience Record** (past 10 years)

<b>Date</b> (from – to)	
Location	
Company	
Position	
Description	



<b>Date (from – to)</b>	
Location	
Company	
Position	
Description	

<b>Date (from – to)</b>	
Location	
Company	
Position	
Description	

<b>Date (from – to)</b>	
Location	
Company	
Position	
Description	

<b>Date (from – to)</b>	
Location	
Company	
Position	
Description	

Add additional professional experience record tables if necessary.



## Annex 5: Definitions

Architecture	Structure of elements organised to achieve stated purposes
Artifact	An architectural work product that describes an aspect of an enterprise architecture
Benefit	Measurable improvement to one or more stakeholders resulting from an outcome
Business case	Document providing IUCEA with sufficient information for deciding on the creation, deployment, operations and maintenance of a DRM in terms of desirability (balance of costs, benefits, risks), viability (ability to deliver a DRM), and achievability (whether the use of the DRM results in anticipated outcomes and benefits)
Concern	An interest in a system relevant to one or more of its stakeholders. Concerns may pertain to any of a system's functioning, development or operation, <i>e.g.</i> its performance, reliability, security, distribution and evolvability
Cost-effectiveness	Economic analysis that compares the relative costs and outcomes of different courses of action. In the context of IUCEA, it means maximising outputs and subsequently stakeholder outcomes and benefits against given resources/costs
Cost-efficiency	Reduce the cost of creating a product or performing an activity without compromising its design, functionality and quality. In the context of IUCEA, it means reducing the resources/costs of operations while not compromising on outputs, outcomes and benefits
DRM functional solution	IUCEA-approved scope of information processing services provided by the DRM for consumption by its users. The DRM functional solution is largely based on functional requirements and described through the target business, data and application architectures
DRM technical solution	IUCEA-approved range of technologies and their interactions (a.k.a. technology stack or platform) to enable operations of the DRM functional solution (i.e. the range of information processing services). The DRM technical solution is largely based on non-functional requirements and described through the target technology architecture
Effectiveness	Capability of producing a desired result
Efficiency	Quantitative determination of the ratio of useful output to useful input. It is often measured as the ability to avoid wasting materials, energy, efforts, money, and time while performing a task
Outcome	The result of change which is caused by utilising the outputs of a contract in the manner intended
Output	A deliverable that the contractor produces in course of the contract and submits to IUCEA, <i>e.g.</i> an information system, a reengineered business



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	process, trained staff. Management outputs— <i>such as</i> plans, reports or risk assessments—are not outputs but created for managing the contract
Requirement	A statement of need that must be met by a particular solution. Requirements can originate from desperations ( <i>e.g.</i> to solve problems) or inspirations ( <i>e.g.</i> to pursue ideas)
Stakeholder	Individual, team, or organisation/institution having an interest in a system
System	Combination of interacting elements organised to achieve stated purposes