



ICC

international
computing
centre

ICT SOLUTIONS
FOR THE
UN FAMILY

**Implementation of blockchain based self-sovereign identity (SSI)
solutions**

UNICC RFP-2021-007 PR-000550

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1 Introduction

The United Nations International Computing Centre (UNICC) was established in 1971 pursuant to resolution 2741 (XXV) of the United Nations General Assembly, as an inter-agency facility providing Information and Communication Technology (ICT) Services on a cost recovery basis.

UNICC is governed by a Management Committee, comprised of one senior manager from each Partner Organization. The Management Committee provides broad policy guidelines and reviews UNICC's work programme and associated budgets. The Centre is headed by the Director of UNICC, who is its Chief Executive Officer.

As a UN System entity, UNICC is uniquely positioned to understand and meet the complex needs of its clients. UNICC focuses exclusively on the provision of ICT services to UN and other not-for-profit organizations, and thus has extensive experience in the implementation and support of ICT solutions specific to its clients.

UNICC provides a wide variety of standard and custom services to meet client requirements including. UNICC is based in Geneva and has offices in New York, Rome, Brindisi and Valencia.

2 RFP Objectives

In compliance with best practices in public procurement, UNICC is launching this Request For Proposal (RFP) in order to select **one** suitable and high-quality provider that will provide development, assistance for deployment and support to **a decentralized self-sovereign identity (SSI) solution based on blockchain technologies**.

UNICC will enter into a Framework Agreement with selected bidder(s) who will remain subject to an annual assessment of the provider's performance. The Framework Agreement with the chosen supplier will be for a period of two (2) years, renewable for another three (3) year term, eventually leading to an overall contract period of five (5) years. The estimated contract start date will be on or around **1 August 2021**.

UNICC is under no obligation to request any of the services specified in this Annex with the selected bidder(s) and assumes liability for payment only for services satisfactorily delivered by the contractor and for which a Purchase Order has been issued by the UNICC.

2.1 UNICC General Conditions and Confidential Disclosure Agreement

The contract and the engaged Company will be subject to the General Conditions of UNICC and Confidential Disclosure Agreement.

All suppliers responding to this RFP shall acknowledge in their Proposal that UNICC Terms and Conditions for Contracts (Services) are acceptable. If any of UNICC Terms and Conditions are not acceptable, the bidder is required to indicate in the Proposal with specificity any reservation(s) it has in respect of any of them and must provide alternative language to the particular clause. Please note, however, that such reservation(s) or deviation(s) will be taken into account, in the sole discretion of UNICC, in the evaluation of the Proposal, including the comparative evaluation with other Proposals and might result in the rejection of the Proposal.

2.2 Engagement model

The selected Supplier will execute each assignment on the basis of the Terms of Reference of the Agreement for Performance of Work (APW) issued.

For each assignment or project that requires implementation of blockchain based SSI solutions, either one of the following two approaches will be carried out:

a) Direct Engagement (Resources)

- UNICC will issue a Terms of Reference (ToR) and invite the awarded vendor to submit proposals
- Vendor will submit proposals with cost estimates based on the agreed rate card (or lower)
- UNICC will evaluate the proposals and interview proposed consultants who meet the requirements as part of the evaluation process.
- UNICC will issue an Agreement for Performance of Work (APW) contract on a time and material basis to the selected vendor for certain resource(s) and an established amount of time, based on the agreed Rate Card.

b) Fixed Price Engagement (Project)

- UNICC will issue a Terms of Reference (ToR) and invite the awarded vendor to submit proposals
- Vendor will submit proposals with cost estimates based on the agreed rate card (or lower)
- UNICC will evaluate the proposals that meet the requirements as part of the evaluation process
- UNICC will issue an Agreement for Performance of Work (APW) to the selected vendor to deliver the project, based on the agreed total cost

The Rate Cards agreed with the selected bidders may be revised during the Framework Agreement period if the vendor chooses to decrease hourly rates for the required roles.

2.3 Confidentiality

This RFP is confidential and proprietary to UNICC, contains privileged information, part of which may be copyrighted, and is communicated to and received by vendors on the condition that no part thereof, or any information concerning it may be copied, exhibited, or furnished to others without the prior written consent of UNICC, except that vendor may exhibit the specifications to prospective subcontractors for the sole purpose of obtaining Proposals from them. Notwithstanding the other provisions of the RFP, bidders will be bound by the contents of this paragraph whether or not their bidder submits a Proposal or responds in any other way to this RFP.

2.4 Prime bidder(s) responsibility/subcontractors

UNICC wishes to establish a Framework Agreement with **only prime vendor(s)** to fulfill all the requirements set forth in this RFP. Therefore, any contract that may result from this RFP shall specify that the prime bidder is solely responsible for the fulfilment of the contract with UNICC. UNICC will make contract payments to the prime bidder(s) only.

The use of subcontractors must be clearly explained in the proposal and must be **identified by name**. In accordance with UNICC General Terms and Conditions for Contracts, the contractor shall obtain the prior written approval and clearance of UNICC for all subcontractors. Please note that approval of subcontractors will be considered only when the bidder is recommended for the award. **However, bidders are required to disclose as part of their proposal whether they are planning to use subcontractors and if so, subcontractors must be identified.** The prime bidder(s) shall be wholly responsible for the entire performance whether or not subcontractors are used.

2.5 Working hours

- The standard working week comprises 40 hours i.e. Monday to Friday (or depending on the Project requirements).
- The services should cover CET time zone (between 08:00 – 18:00) based on actual project requirements. UNICC expects the resources to be available for at least 40% of the time during CET working hours.
- Working calendar will be the UN one, following UN working days and holiday.
- Work or Coverage during local public holidays will be negotiated during the time of implementation.
- Weekend work may be required at short notice especially during certain critical project implementations.
- Each resource shall be required to provide and maintain up to date a contact number where he/she may be reached in case of an emergency.
- In case of a resource leaving the UNICC project, the Supplier should provide an equivalent replacement resource without charge until the full knowledge transfer has been completed (usually 2 – 4 weeks).
- An all-inclusive hourly rate is required.

2.6 Contract establishment and Price validity

- Prices must be defined for the periods shown in Annex I and any price decrease should be communicated to UNICC for contract modification.
- UNICC is only liable for the costs of services actually provided in connection with APWs issued by UNICC and signed by the Supplier.
- UNICC may choose to utilize the resources either full time or part time, depending on the project demand.
- During onsite operations, travel costs will be reimbursed by UNICC **for economy travel**. The refund will be based on the actual costs submitted to UNICC as proof of payment along with the reimbursement claim.

- Off-site (*) rates should be inclusive including PC, Internet Connectivity and other costs related to the delivery of the professional service to UNICC.

Please fill in the financial information in the Annex II document, as part of the RFP response, and UNICC will evaluate the response as per its needs.

(*) In light of COVID Pandemic, offsite services are required and/or acceptable.

3 Context of the Service Requirements

Digital transformation is changing the way the United Nations manages its data, information, interactions and identities online. In the spirit of emerging technologies supporting the UN Secretary-General's Strategy on New Technologies, UNICC is building different solutions for multiple UN Agencies, Funds and Programmes harnessing blockchain, Self-Sovereign Identity, biometrics and mobility, making identity management efficient, secure, transparent, immutable, portable and universal.

These solutions are built to meet the following features:

- Be compliant with the W3C Decentralized Identifiers (DIDs) specification reference as the core for distributed identity.
- Follow the architectural principles of Self Sovereign Identity (SSI) solutions, to create a web of trust between issuers of verifiable credentials, holders and verifiers, while ensuring the security and privacy of data.
- Capable of running in UNICC data centres providing assured adherence to UN Privileges and Immunities and giving the UN Agencies, verifiable assurance about non-interference of any state actor.
- Capable of running in a major cloud provider, or under a hybrid cloud and on-premises setup, to maximise the maximum interoperability between different UN Agencies systems.
- Capable of being distributed to credential holders using smartphones while ensuring the security and encryption at rest and E2EE in all communications with other parts of the solution.
- The solution security is not based on assurance of the solution provider but is openly auditable and proven, with a strong preference for open-source based products.
- The technology is based on open standards and provides easy interoperability with other similar commercial and free solutions.
- The core underlying technology for these solutions is based on Hyperledger Aries, Indy and Ursa to build a decentralized, blockchain-based, Self-Sovereign Identity solution (<https://www.hyperledger.org/use/hyperledger-indy>).

Other aspects of UNICC's technology stack:

- ACA-Py based agents.
- Mobile agents based on JS library (<https://github.com/hyperledger/aries-framework-javascript>)

Communication between the project teams and the other UNICC teams will be done through a variety of media: Microsoft Teams, telephone, email. Regular team meetings are normally held through Microsoft Teams video calls. The Supplier needs to ensure that resources are able to use meeting rooms or a noise free area to join meetings.

UNICC's preference is to compensate overtime work with equivalent time off. If the supplier has different costing for out of office hours work, they would need to inform and agree with UNICC first, before performing duties outside of the normal work day.

The Supplier will ensure compliance with UNICC's confidentiality, security, privacy and operational policies and procedures. Wherever required, the Supplier shall also abide by the information security policy of UNICC's Partner Organization that s/he has been asked to support. The UNICC basic security training course is mandatory for all resources who are provided an UNICC credential and whose contract duration exceeds one calendar month.

The supplier must ensure that for resources working outside of UNICC or Client premises have assigned IT equipment (i.e desktop, laptop and mobile phones) with internet connectivity and bandwidth for seamless audio/video conferencing. The facilities should also enable resources to install and run software required for delivering required services and projects.

4 Technical Scope of Service

UNICC is now seeking a competent provider to provide the following three services for its internal teams of architects, developers and operational administrators:

Training: 'off-the-shelf' and bespoke (described in Annex A of this document)

Subject Matter Experts (SME) to supplement the UNICC teams in implementing various projects, on Time and Material basis. The required skill sets are:

-  **Indy Engineer:** Skilled in operational aspects for running an Indy based private network. Good understanding of the practices required for deployment of Indy networks, including aspects such as scalability, resilience and other standard ITIL practices.
Capability to understand and/or contribute the Indy code will be a plus point.
-  **Agent/Wallet Developers:** Skilled in development of different Aries based agents and/or wallets for mobile as well as web. Deep knowledge of associated RFCs is required. Specialisation in either cloud or edge (mobile) agents described above (service context).
-  **SSI/DID Architects:** Deep understanding of the concepts around these topics. Ability to design solutions based on SSI/DID for various complex use-cases. Have the know-how to build a technical governance layer on top of a private Indy network.

For providing support on the Hyperledger SSI solution:

The below requirements are **mandatory**. Failure to meet any of these may result in automatic disqualification.

- Proven experience in deploying and supporting blockchain Hyperledger-based solutions in large International Organisations, Non-Profits, or other public bodies, with focus on interoperability and governance between multiple participating organisations.
- The provider should have experience deploying such solutions in on-premises data centres.
- The provider has proven experience in developing solutions that follow the guidelines of Hyperledger Aries RFCs.
- The provider has a proven record of contributing to the blockchain and SSI communities by sharing software development under OSS license, participating in standard and specifications definitions, and/or being active in the fora related to this field.
- The provider is able to deliver different architectures that adapt to different scenarios depending on the number of users and intensity of usage forecasted for such platforms. These architectures should be easily scalable in case needed.
- The provider can deliver training on the fundamentals of SSI; architecture and operations best practices; and the SSI-oriented technologies under Hyperledger.
- The solution security is not based on assurance of the solution provider but is openly auditable and proven.

4.1 Functions and Areas of Technology

UNICC is looking for the following roles for the initial selection:

| |
|-------------------------|
| Role Type |
| Indy Engineer |
| Agent/Wallet Developers |
| SSI/DID Architects |

In addition to the mentioned roles, UNICC reserves all rights to request proposals for similar functions to deliver the required technical services pertinent to the RFP selection, as appropriate.

CVs/Resumes should be presented by the vendor for all the roles noted above – ideally one separate batch of resumes for each of the roles. UNICC reserves the right to also consider resumes that may overlap across the various roles.

5 Proposal Requirements

A Technical Proposal covering the criteria specified in paragraph 3 and 4 and comprising the following:

- Company profile
- Understanding of UNICC requirements for both Resources per role AND providing expertise in the required technical areas.
- At least 3 Customer References highlighting an ROI-based outcomes efficiencies delivered to clients on multiple related technology platforms
- Relevant certifications and accreditations of resources
- Details of trainings- Standard Catalogue as well as details of trainers delivering the bespoke training

- Profiles/CV of the Subject Matter Experts and overall experience of the respondent vis-à-vis the service requirements
- Sample list of similar engagements delivered with resources specified in Annex II – Financial Response Summary

A Financial proposal comprising a completed Annex II.

- Catalogue prices for the standard training for groups up to 10 people
- Fixed price for the custom training defined in the Annex A of this RFP, for up to 20 people.
- Hourly rate of different profiles (described above) for any Time and Material based engagements with UNICC.
- Tiered pricing for volume-based discounts, if engagement reach a certain threshold (to be proposed by the respondents).

Financial proposals are to be submitted separately from the technical proposal. Any indication of costs of this engagement to UNICC in the technical proposal will cause the proposal to be disqualified.

UNICC's staff and consultants' workforce consists of many diverse nationalities, cultures, languages and opinions. UNICC seeks to sustain and strengthen this diversity to ensure equal opportunities as well as an inclusive working environment for its entire workforce. Respondents to this RFP are requested to confirm, in writing, that applications for this role have been encouraged from all qualified candidates without distinction on grounds of race, color, sex, national origin, age, religion, disability, sexual orientation and gender identity.

United Nations Core Values are Integrity, Professionalism, Respect for Diversity. RFP responders should include equitable representation of women in their proposal in order to be considered for further technical and financial assessments.

5.1 Technical Selection Criteria

Technical proposals will be evaluated against the following criteria and percentage distribution:

| Technical evaluation | Scoring |
|--|------------|
| Addressing UNICC's requirements and expectations | 100 |
| Quality of overall proposal | 50 |
| Customer success support | 50 |
| Expertise architecting, operating and supporting SSI solutions based on Hyperledger technology | 100 |
| Demonstrable contribution to the Open Source community in SSI technologies | 100 |
| Integration of SSI with existing solutions for widely used applications | 100 |
| Expertise and compliance with SSI accepted standards | 100 |
| Experience architecting governance frameworks of multiple-stakeholder-SSI solutions | 100 |
| Total | 700 |

The vendor should demonstrate its capability to meet the following requirements in the technical proposal:

➤ **Solution Availability Monitoring**

The vendor has experience in integrating a SSI solution with common monitoring tools, including synthetic transactions to measure the availability of the software and not only the underlying infrastructure.

➤ Requirements concerning data backup

The vendor has experience in integrating an SSI solution with major data backup and restore solutions in the market, allowing users to recover lost data in case accidental deletion, with no possibility of having data leaks. The backed-up data must also have the same encryption level than the data hosted by the application itself.

6 Commercial Terms and Price Validity

- The purpose of this section is to provide a **complete understanding of terms and costs** associated with a vendor's proposal, in order to establish the best prices and/or volume discount schemes available to UNICC and through UNICC to its Partners and User Organizations.
- UNICC expects to establish a Framework Agreement with the selected Proposer(s) in order to permit costs to be distributed properly over the life of the agreement.
- UNICC expects and strongly encourages Service Solutions providers to recognize the cumulative value of business provided by UNICC and the UN Family to the selected vendor over the life of the commercial relationship. Therefore, deeply discounted pricing, cumulative discounts schemes or upfront favored Nations pricing are expected.
- UNICC, through this agreement, strongly encourages the Proposers to maintain the same pricing also beyond the initial Framework Agreement term, for additional optional extensions and clearly stipulate in their financial proposal whether such commitment has been made.
- Any preferred pricing scheme to provide, UNICC or any UN agency, fund or programme accessible to the best pricing should be clearly stated.
- Note for USA based companies: UNICC or any UN agency, fund or programme should be seen equivalent and eligible to receive full benefits under GSA contracts. Price proposals must state if they are subject to GSA pricing and indicate current GSA contract number, as applicable.
- Proposers should provide the following in a separate document/spreadsheet: the adjusted pricing model and clear examples that are applicable, if in future, UNICC or any of UN entities decide to scale up or down on its implementation by adding or reducing the number of resources in the future.
- Currency of quote (Prices/Rates): All rates/prices must be quoted in US Dollars. Note that failure to quote in US Dollars will invalidate your offer.
- If there are dependencies between trainings (i.e. must attend to Training A to fully take advantage of Training B etc.) then this should be clearly explained in your Proposal and pricing provided as appropriate and using an unbundle approach so that UNICC can understand dependencies among trainings and its associated pricing.
- As a result of this RFP process, UNICC reserves the right to award a Framework Agreement in full or for the selected part of the requirements to the selected Proposer, if deemed to be in the best interest of UNICC.
- UNICC also reserves the right to make the following decisions and actions based on its business interest:

- UNICC can accept or reject any proposals without disclosing details of the evaluation result to the Proposer
- UNICC can negotiate with one or more Proposers
- UNICC can make split awards to more than a single Proposer
- UNICC can choose or reject line item services or pricing elements

Agility in providing services:

- On the basis of its humanitarian mandate, UNICC expects and encourages potential service providers to kindly explain the proposer's level of allowance to provide for various resources and expertise at short notice

7 Annex A

Bespoke training details

Hyperledger Aries agents- Introduction and building first app:

- ❖ Details of Aries protocols
- ❖ Details of Aries Interop Profile
- ❖ Learn how to extend the Aries protocols for customization

Hyperledger Indy - Introduction and running a private/permissioned network:

- ❖ Nodes setup
- ❖ Mediator scalability strategies
- ❖ Operational considerations:
 - Shared network between multiple organisations
 - including non-functional aspects like DR and service continuity

Data and credentials lifecycle:

- ❖ Verifiable credentials capabilities
- ❖ Personal aggregated data lifecycle
- ❖ Credentials architecture
- ❖ Data change management: revocation, reissuance
- ❖ Backup & restore strategies
- ❖ Mixed agents: distributed and centralized user agents
- ❖ Options available for data sharing with relying parties
- ❖ SSI and authentication

Governance framework:

- ❖ Shared credential schemes
- ❖ ToIP applications