

Terms of Reference for Consultant Services:
Implementation of M&E IT System for UKF programs

Proc. ref. no.: STPII-CS-16 (2)

Background

The Government of Croatia has received 20 million EUR from the International Bank for Reconstruction and Development (World Bank) for the implementation of Second Science and Technology Project (STP II) which was launched on July 31, 2013 and will last until March 31, 2019. The STP II objective is to support Croatia to absorb EU Funds in the research and innovation sector by capacitating selected public sector organizations and stimulating the demand for those funds from the business and scientific communities.

STP II, as a new project, is a continuation of The Croatian Science and Technology Project (STP) which was successfully finished on May 31, 2011. STP has resulted in significant improvement of the Croatian national innovation system, particularly the enhancement of public research organizations' capacities to commercialize research results and substantial improvement of technology transfer process and intellectual property protection on public research organizations and higher education institutions. Therefore, there was a need for a follow up project that would assist Croatia to bridge existing gap in research and development (R&D) financing until full availability of EU Structural Funds and would help in preparing R&D institutions for successful EU funds absorption in R&D sector.

The Ministry of Science and Education (MSE) has the overall responsibility for the implementation and coordination of STP II and it will use STP II funds for

- continuation of several activities already started under STP; as well as
- introduction of new activities aimed at (i) enhancing R&D system in Croatia and (ii) strengthening the absorption capacity for the upcoming use of Structural Funds, to enable elaborate and detailed project planning, preparation and management

The Project Implementation Unit (PIU), as part of the Project Implementation Team established at MSE, is responsible for day-to-day project management on behalf of MSE including project procurement, disbursement and financial management as well as monitoring and evaluation activities.

Within STP II, there is a business need for an IT service that will serve project stakeholder Croatian Science Foundation (CSF) / Unity through Knowledge Fund (UKF):

M&E system for UKF programs under STP II

About the Fund

UKF (the Unity through Knowledge Fund) was established in 2007 by the Ministry of Science, Education and Sports (MSE) and supported by the World Bank Loan through the Science and Technology Project (STP) and Second Science and Technology Project (STP II).

UKF Program has two main aims: (a) encouraging Croatian scientists and professionals working abroad (Diaspora) to return and work in Croatia and/or get connected with the local scientists; (b) fostering Croatian institutions and researchers to use potentials of Croatian scientific and

professional Diaspora. From its establishment until July 2017, the Fund has financed 118 scientific and technological projects and a total of 8,8 million EUR has been invested in the projects.

In UKF program special attention is given to elaborate project evaluation procedures and adequate monitoring of the projects financed and supported by the Fund is of primary importance since the UKF success is mainly judged on its projects performance. A detailed description of UKF is given on www.ukf.hr.

Actions towards ensuring the sustainability of the UKF and of its programs (i.e. Cooperability) after the end of STPII project include applying for ESF funds to be used for the continuation of implementation of the UKF Cooperability program after STP II end.

Objectives of the assignment

The Consultant should develop a M&E system for the Unity through knowledge Fund (further in text: UKF or Beneficiary) which will include existing data and key project performance indicators, and provide a unified system of collecting data and reporting.

The objective of the M&E system is to monitor the implementation and performance of UKF projects and UKF programs under the STP II project and results of finished UKF projects and programs under STP project, to be used for evaluation of UKF programs, for UKF statistics, as well as for various reporting requirements within the STP II project. The UKF Cooperability program may be continued even after the STP II end if the resources are secured from ESF fund which would secure the sustainability of the UKF program.

The UKF M&E system shall be dynamic and web-based and as per the specification provided by the Beneficiary. The system should be intuitive and easy to use. The system would make it possible to provide a high level of protection while enabling certain functionalities to different users.

Three levels of users should be foreseen: admin/technical user = CSF technical support and Consultant; 2) power user = UKF = Beneficiary (UKF staff); 3) limited user = project leaders as sub-beneficiaries.

Scope of Work

- The key technical requirement is the migration / import /transfer of existing data into the new M&E system.

Historical data for submitted/ contracted / implemented projects within STP (in the period 2006-2011) are available through 'Neos database' which can be viewed but not updated and for which UKF staff has web access. Data from Neos database may be exported as Excel tables.

Data on projects submitted /contracted within the UKF Programs during STP II project, that will be submitted to the Consultant by the UKF and which must be entered into the M&E system developed under this activity, are also available as Excel tables, as:

A) data exported from the "UKF projects application database" (www.ukf.hr); and

B) data compiled by the UKF (UKF inputs)

UKF Programs include ‘Cooperability’ program with Crossing borders and My First Collaboration grants; ‘Connectivity’ Program and the ‘Young Researchers and Professionals’ program. Majority of projects were completed until October 2015, some projects are ongoing and will be completed in December 2017, while the projects submitted to the last call of proposals will be contracted in October 2017. There is one more call for proposals that may be announced in future and new projects would be submitted / contracted, monitoring of which will have to be continued up to 5 years after the STP II end.

- The M&E system must support, upon request of the Beneficiary, the automatic migration of data in agreed exchange format that were submitted to ‘UKF projects application database’ by UKF sub-beneficiaries (projects applicants) with their application. Data from the UKF projects application database are available for export in Excel format.

- The M&E system will include predefined key performance indicators according to which programs / projects will be monitored and evaluated. KPI have already been developed by UKF, UKF will give the Consultant the list of all indicators (parameters).

It is envisaged up to 1000 parameters per project (each project will be evaluated through same 1000 parameters) and maximum number of projects is up to 1000, while estimated number of records will be up to 1 million.

- The UKF should be able to add, save, edit and delete data (projects / project / project data) according to the predefined parameters. There should be option to copy/paste data into the system. Depending on the type of data, data should be entered as free entry and where appropriate and possible, there should be option of selecting the data from the drop-down menu. (The ability to add/remove data to the drop-down menu is also required).

- The M&E system should also enable the UKF sub-beneficiaries (limited users) to upload periodic scientific and financial reports (Word, Excel, Pdf format) and to enter data related to predefined parameters directly into the system.

- The system will generate reports in the shape of Excel tables with statistical and graphical processing; that will be reporting at project, program or parameter level, chronological, etc .; reporting on indicators for the purpose of evaluating the effects of individual programs, etc. UKF will give the Consultant details of the relations between the parameters and reporting:

A) predefined queries to be created (Excel tables and graphs are defined as output),

B) in addition to predefined queries, M&E system will allow the UKF to create new queries using the data entered under predefined parameters (Excel tables and graphs as output).

- The Consultant shall cooperate closely with the UKF secretariat during the system development process so that the final product is acceptable to the Beneficiary and the Client.

- for better illustration, UKF will show the Consultant the screenshots or demonstrate the functionalities of the existing “Neos database” as a M&E system that has been done for UKF in the past.

- The Consultant will ensure data integrity during and after the M&E system implementation.

- M&E system must involve automatic backup & restore data module.

- M&E system will include additional functionalities which might be needed for projects funded from ESF (new categories with subcategories for project monitoring with new elements related to costs).

SW and HW environment specification

The Consultant who will be asked to submit technical and financial proposal will have to specify following elements of ICT infrastructure:

- platform server HW and SW,
- legal licenses required (OS, Database, SSL, Security ...)
- access points (network, DNS, SSL ...)
- other necessary SW and / or HW,
- recommended optimal HW and SW resources for uninterrupted application work,
- detailed database specification (if there will be one),
- Antivirus protection, if needed.

For better insight, the following are the basic predefined key performance indicators (INPUT), as well as the type of reports (OUTPUT) that are required for the monitoring and evaluation of UKF programs and projects:

INPUT - predefined basic parameters for data entry - will include but not be limited to the following general information about the projects submitted/contracted:

- **General parameters for project** - *basic data that can be added when a project is submitted to the call for proposals. The existing basic data are already submitted to the 'UKF projects application database' and they are currently available for export in Excel format. The M&E system should be synched with the "UKF projects application database". There should be possibility that data is transferred directly to the UKF M&E system in the appropriate format, upon the Beneficiary request.*
 - Basic Program Information - Program name (Cooperability, Connectivity, Young Researchers and Professionals ..), Grant type (A, B, C ..), Call number (First Call, Second Call ...)
 - basic data on the project- project research division (natural sciences, technical sciences, bio-medical sciences, bio-technical sciences, social sciences, humanities, art field, interdisciplinary sciences) project name, name and surname of the project leader and co-leader, phones and emails, names of the organizations included, contract number
 - amount of the project - amount requested at the time of application, contracted amount of the project (HRK and EUR)
 - contracted (planned) amounts per Categories of costs (Equipment, Salaries, Travel, Consultants, Overheads) - (in HRK, amount and Percentage) and total
 - organization - name, role of organization (administrative, coapplicants organization, partner organization), domestic / foreign, type of institution (public / private), amount of co-financing given to each project
 - status of the project - Submitted, Pending, Rejected, Completed, Withdrawn
 - dates - project application date, approval date, start, end, final approval, withdrawal. (Dates are chosen from the calendar.)
- **Project monitoring / evaluation / statistics parameters** - *data are added for contracted projects during their implementation*
 - realized costs per category of costs (equipment, salaries, travel, consultants, indirect costs) - actual amounts (in HRK, in amount and percentage) and total

- the number of project participants, divided into domestic, foreign, diaspora, and by scientific level (senior, doctoral, postdoctoral)
- number of short-term and long-term stays of participants according to their scientific level
- project applications for international funding - sources of financing (domestic, European, third countries ...), name of the program (...), project title, program goal, amount intended for HR partner, financing instrument, status of application (accepted, pending, rejected ..)
- summary of the project - text in Croatian and English language

- **Projects finances /payments** - *will be used for tracking the payments*

- Financial part of the monitoring process – possibility to enter the payment amount (in HRK and automatic conversion option in EUR according to the HNB exchange rate on a given day /at a given exchange rate), payment date, total amount paid (HRK, EUR)

- **List of organizations** – *The system should include the possibility of creating the list of organizations by Client. The organizations can then be selected from the drop-down menu when entering project data.*

- list of organizations with basic data - domestic/foreign, name, type, address, country

OUTPUT – Reports -- *All project data that is entered in the M&E system under the predefined parameters is required in order that various reports be created.*

- Reports that UKF require can be displayed as graphs, and data used for the graph can be sorted and exported as an Excel table.

- Reporting is done at project, program, parameter, chronological level, etc. It is particularly important to report on the indicators for the purpose of evaluating the effects of individual programs.
- In addition to the default / predefined queries, the Beneficiary should also have the option to create new queries using existing parameters.

Examples of reports that are essential and which can be displayed as a chart, and data can be sorted and exported as an Excel table:

- 1) List of submitted and contracted projects- - system generates list of projects depending on selected parameters (program, grant, call, status etc.)
- 2) Number and list of organizations involved in projects within a particular program, grant, call, etc., by type of organization
- 3) The amount of co-financing by type of organization within a particular program, grant, call, etc.

Examples of reports that are related to a specific time period (from / to date); Output: Excel table:

- 4) List of submitted / contracted / approved / completed projects with amounts
- 5) List of projects contracted within the program, within a specific research area etc.
- 6) List of projects with the amounts contracted / paid for each category of costs
- 7) List of payments made within the program; etc.

Examples of statistics reports used for statistics and program performance evaluation; Output: Excel table:

- 8) List of applications to various sources of funding by source of funding, by call, by source etc.
- 9) Number of scientists involved in projects per program, etc

Deliverables

- The Consultant will provide the content and list of functions of the M&E system

- The Consultant will provide/install M&E system that includes **all requested functionalities** and demonstrate the functionality of the system with acceptance testing until final approval of Beneficiary
- The Consultant will provide reference manual for the Beneficiary for all the modules installed
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- The Consultant will provide/deliver ‘source code’ to the Beneficiary which will become the Beneficiary’s property After Final acceptance of developed IT system “M&E system for UKF programs” Delivery of source code is a precondition for payment approval.
- All deliverables (except source code) will be prepared in Croatian language
- The Consultant shall deliver the following:

	Description	Duration
1.	Requirements definition	2 weeks
2.	Development, installation, data migration, testing, fine tuning	6 weeks
3.	Final acceptance testing, Reference manual preparation	4 weeks

Table 1 List of deliverables

Each phase can begin upon written formal confirmation of the Client/Beneficiary that previous phase was finished successfully.

Reporting

Consultant’s short report on performed services in English language should be addressed to the representative nominated by the MSE (contract coordinator). Report has to be submitted in electronic form and after given approval by MSE, a hard signed copy should be submitted.

Length of the assignment

The total duration of work under this ToR is estimated at 30 man/day during 3 months.

The Consultant is expected to start working immediately after contract signing, presumably in January 2018.

Requirements for the Consultant

The Consultant should be a legal entity registered in Croatia and should fulfill following qualifications:

- Proven relevant experience (at least 3 years) in development of M&E IT systems
- Proven relevant experience (at least 3 years) and expertise in creating relational databases of similar size/type
- Proven relevant experience in development of web applications
- Proven relevant experience in data analysis for comparable IT systems
- Evidence of migration of data of similar size/complexity
- Proven experience of performing the tasks of similar scope and complexity in region

- Submit the following for review: company profile, expertise, services offered, educational and professional profiles of key personnel, reference list and recommendations from clients
- Advantage: Familiarity of Science & Technology Policy and/or R&D&I projects in Republic of Croatia

Communications

The contact person for the Consultant in the Project Implementation Unit (PIU) of the Ministry of Science and Education is Mr. Duško Stajić, PIU Project Manager, Donje Svetice 38, 10000 Zagreb, Croatia; Phone: +385 1 4594 554; e-mail: STPII@mzo.hr.