

Ministry of Finance of Ukraine

TERMS OF REFERENCE

for Consultancy Services for the development of functional requirements and system specifications for budget planning information system

(contract reference – MF-QCBS-1)

Project: Strengthening Public Resource Management / EUroPAF TF Grant # TF0A5324
Part B. Support to PFM Strategy Implementation

1. Background

Ukraine has received financial assistance from the International Bank for Reconstruction and Development (“World Bank”), acting as administrator of the grant funds provided by the European Commission on behalf of the European Union (“Donor”) under the EC - World Bank Partnership Program for Europe and Central Asia Programmatic Single-Donor Trust Fund (EU Programme for the Reform of Public Administration and Finances (EUroPAF), in an amount of three million thirty thousand six hundred sixty-one Euro (EUR 3,030,661) (“Grant”) toward the cost of Strengthening Public Resource Management Project (“Project”). The Project consists of two parts: Part A “Strengthening Human Resource Management in Public Administration Institutions” (Project’s Part A) and Part B “Support to PFM Strategy Implementation” (Project’s Part B).

Project’s Part B, implemented by the Ministry of Finance of Ukraine (MoF) and totaling one million one hundred ten thousand six hundred eighteen (EUR 1,110,618) Euro equivalent, is aimed at supporting the MoF in implementing 2017-2020 PFM Strategy approved by the Cabinet of Ministers of Ukraine’s Resolution #142-p dated February 8, 2017. Implementation of PFM Strategy, prepared with support from the European Union (EU) and other development partners, shall result in modern and efficient PFM system that is based on advanced information and communication technologies (ICT).

One of the main priorities stipulated in the PFM Strategy is full-fledged implementation of medium-term budget planning closely linked with strategic planning and improved performance-based budgeting. In view of these goals MoF has committed to upgrading the existing IT system for budget planning for the central level to support the planned changes in the budget process.

MoF (the Client), in order to get support in preparation of functional requirements and system specifications for the upgraded budget planning IT system is going to contract through competitive selection a consulting company (Consultant) experienced in providing advisory services for reforming public finance management (PFM) systems with focus on budget planning process and related information and communication technologies.

2. Background Specific to the Assignment

Within the framework of structural reforms, one of the priority objectives set by the Government of Ukraine is the modernization of the public finance management as the main prerequisite for sustainable economic development.

The new PFM Reform Strategy 2017-2020 is based on government strategic documents and reflects international commitments of Ukraine under its EU Association Agreement and IMF Extended Fund Facility. Its goal is to build up a modern and efficient PFM system capable of providing quality public services while efficiently accumulating resources and allocating them in a clear consistency with the government's medium- and long-term development priorities. Achievement of this goal is based on attaining objectives in the following priority areas:

- maintain overall fiscal discipline in the medium term;
- improve resource allocation efficiency at the government policy making level;
- ensure efficient budget execution;
- increase the level of transparency and accountability in PFM.

PFM Strategy places a clear focus on full-fledged implementation of the medium-term budget planning together with an effective system for evaluating the budget performance on the basis of results, elevating the role and the responsibility of key spending units (KSUs) for defining priorities of their activities, and the efficient use of budget funds based on public services delivered, rather than mere upkeep of budget institutions.

To support the practical implementation of these objectives a robust IT system needs to be in place to allow for consolidation, monitoring and analysis of the financial and non-financial data and enabling informed decision-making in the budget process. The existing budget preparation IT solution used by the MoF and key spending units was introduced back in 2004. It has limited potential for further modernization in order to meet the new business requirements.

Budget planning IT system for the central level is supposed to cover MoF units, approximately 90 key spending units (and nearly 12000 of spending units of lower levels in the network) and the following key processes:

PLANNING:

- preparation of medium-term budget declaration, including projected budget indicators, expenditure ceilings for key spending units, strategic objectives and outcomes of KSUs' activities, transfers to local budgets, based on various scenarios;
- preparation of annual state budget, including adjustments to budget indicators, expenditure ceilings and budget programs, preparation and analysis of budget requests, capturing results of budget negotiations;

IN-YEAR MANAGEMENT:

- preparation of amendments to the current annual state budget;
- monitoring and assessment of state budget execution, including preparation and adjustment of passports of budget programs, monitoring and assessment of performance indicators of budget programs;
- preparation and adjustment of state budget breakdown, including monthly breakdown of revenues, proposals on priority expenditures, expenditure limits for KSUs, including transfers to local budgets;

CLASSIFICATION:

- maintaining of budget classification reference (in particular, revenue, program, economic, administrative and functional);

ANALYTICS:

- preparation of analytical reports for each of the processes.

3. Objective of the Assignment

The objective of this assignment is to assist the MoF in the development of functional requirements and system specifications for a budget planning IT system required to support the full-fledged

introduction of medium-term budget planning linked with strategic planning and improved performance-based budgeting.

The consultants will develop a state of the art functional requirements and systems specifications for an IT system required to support the functional processes (for budget planning, including preparation of medium-term budget declaration, annual laws on the State Budget of Ukraine, monitoring and analysis of budget execution, reporting) and their interfaces with any external systems, such as those of the State Treasury Service (STS) and the State Fiscal Service (SFS), Open Budget IT system.

The resulting functional requirements and system specifications will later be incorporated in the Bidding Document for procurement. Therefore, they should be sufficiently detailed to enable a future software contractor or integrator team to develop or adapt the information system without further extensive recourse to MoF, except for ad-hoc clarifications or for mutual feedback required.

It is also to be noted that the subsequent procurement of IT system will be carried out outside of this Project and will not be guided by the World Bank procurement procedures.

4. Scope of Services, Tasks (Components), Expected Deliverables

The Consultant shall prepare functional requirements and system specifications for the budget planning IT system based on results of current business processes review and recommendations on their improvement, using best practices, methods, and standards, and in an evidence-based, coherent, and consistent format.

It is expected that the Consultant will carry out the following tasks:

- 1) analyze current business processes and provide recommendations on their reengineering, including:
 - review current business processes, procedures, forms and interfaces for business functions planned for coverage under budget planning IT system, as listed in annex 1;
 - analyze information flows and preparation of consolidated reports in the course of budget planning and execution, in particular information exchanges with the State Treasury and State Fiscal Service;
 - analyze objectives of GoU's PFM Reform Strategy 2017-2020 and provide recommendations on changes needed to the current processes, procedures, and forms and approach to implementation of such recommendations, taking into account recommendations of the international development partners, such as IMF, World Bank and EU;
 - undertake review of current legislation and regulatory environment to identify the changes needed in the context of changes proposed for business processes and procedures;
 - describe to-be business processes for implementation under new budget planning IT system in line with the PFM Strategy objectives, including consultations with KSUs to establish their user requirements. Business process description form is set in annex 2;
- 2) prepare functional requirements and technical specifications for the budget planning IT system in line with agreed to-be business processes, including:
 - analyze available documents on the state of existing IT systems used in budget planning process, including ICT Audit report for MoF, SFS and STS, strategic plan for IT system development to support PFM reform;
 - provide professional advice and share successful international experiences related with the functionalities and technical requirements of similar budget planning software solutions;

- provide inputs and recommendations into the scope and design of a new budget planning IT system, including specific recommendations on system scope, modules, functionality, and interfaces required with other ICT systems;
- provide recommendations on system requirements specifications for new budget planning IT system, including technical standards, system integration approach, design and protocols, and security standards;
- prepare high-level design and detailed functional requirements for the budget planning IT system in line with the agreed to-be business processes and in compliance with the rules of requirements formulation and description set in annex 3;
- develop system technological architecture document;
- define service level agreements -SLA- for the implementation services, including configuration, adaptation, training, maintenance and warranty;
- define an objective methodology and evaluation criteria for the selection of proposals during the procurement processes;
- define a methodology for conducting demonstrations, testing prior to awarding the solutions contract.

	Deliverables/ Content	Deadline (in weeks from the start of the assignment)
1	<u>Inception Report</u> Shall cover i) initial results, ii) work plan, iii) proposed approach for fulfilment of the assignment, iv) proposed clarification to the resources to be provided by the Consultant and Client; v) any other assignment-related matters that the Consultant wishes to raise.	within 2 weeks
2	<u>Report on business processes review</u> Shall include i) the results of the assessment of existing business processes, procedures, forms and interfaces for business functions planned for coverage under budget planning IT system; ii) recommendations on changes needed to current processes, procedures, and forms in line with PFM Strategy objectives and approach to implementation of such recommendations; iii) description and diagrams of improved business process in budget planning (including data flows), prepared using Microsoft Visio (or similar) in hard copy and as files of development environment agreed with the Client; iv) list of legislation and regulations subject to amending in order to support the proposed changes in business processes and procedures	
2.1	<u>Draft Report</u>	Within 6 weeks from the start of business process review

2.2	<u>Final Report</u>	Within three weeks upon receiving Client`s comments to the Draft
3	<u>Report with Functional Requirements and Technical Specifications Document</u> Shall include i) system functional design; ii) high-level and detailed functional and implementation services requirements for the budget planning IT system in line with agreed to-be business processes based on the PFM Strategy objectives; iii) system technological architecture document, including technical standards, system integration approach, design and protocols, and security standards; iv) service level agreements -SLA- for the implementations services, including configuration, adaptation, training, maintenance and warranty; v) methodology and evaluation criteria for the selection of proposals during the procurement processes. vi) methodology for conducting demonstrations, testing prior to awarding the solutions contract.	
3.1	<u>Draft Report, validation meetings with the Client and workshop with the presentation of a high level design/approach</u>	Within 10 weeks upon the acceptance of business process review report
3.2	<u>Final Report</u>	Within three weeks upon receiving Client`s comments to the Draft

All deliverables shall be in a form and substance acceptable to the Client. All reports shall be submitted electronically (in doc/docx formats and diagram development environment) and in hard copy both in Ukrainian and English to the Project Manager/Coordinator, appointed by the Client.

The Client shall consider reports submitted by the Consultant not later than within 30 days from the day of the submission of a given report and shall either provide its acceptance of the report or comments to be addressed by the Consultant. In case of no feedback from the Client during the specified period the report shall be deemed accepted.

5. Team Composition & Qualification Requirements for the Key Experts

The Consultant, as a firm, shall have the following qualifications:

1. At least ten years of consulting experience in similar assignments focusing on PFM business processes.
2. Substantial project management and organizational change expertise. Proven proficiency in the preparation of study reports and ability to communicate project issues with high ranking officials, and to resolve key issues quickly.

3. Proven track record of providing complex technical advice related to business processes reengineering and ICT systems in PFM.
4. Experience working with Ministries of Finance.
5. Expertise in managing ICT projects in the field of PFM will be an advantage.
6. Fluency in English is required for all members of the team. Fluency in Ukrainian or Russian will be an advantage.

The Consultant team will consist of one Team Leader (who will also work as the lead PFM Specialist), at least one PFM Business Process Review Specialist and one PFM ICT Systems Design Expert to perform the activities highlighted in this ToR.

The Consultant's **Team Leader** shall possess the following qualifications:

1. At least ten years' experience in reforming PFM systems in transitional or developing economies with focus on budget preparation, execution and monitoring.
2. Practical experience with designing functionality, implementing and/or working with ICT solutions for budget planning and execution.
3. Master's degree in public finance, economics, finance, business administration or a related field.

The Consultant's **PFM Business Process Review Specialist** shall possess the following qualifications:

1. At least five years' experience in budget planning and execution. Prior experience in budget area in Ukraine will be an advantage.
2. At least Bachelor's degree in public finance, economics, finance, business administration or a similar field.
3. Sufficient knowledge of budget planning ICT solutions design.

The Consultant's **PFM ICT Systems Design Expert** shall possess the following qualifications:

1. At least five years' experience in designing and implementing ICT solutions in PFM area with focus on budget planning and execution.
2. Experience managing/implementing/designing ICT projects based on off-the-shelf solutions and/or software development.
3. At least Bachelor's degree in information systems, engineering, finance or related fields.

6. Client's Input and Counterpart Personnel

- (a) The following services, facilities and property shall be made available to the Consultant by the Client to ensure Consultant's ability to perform its obligations under the assignment:
 - access to Client's premises and all systems;
 - all relevant documentation;
 - working space in the relevant offices and access to office equipment (photocopier, printer, scanner)
- (b) Professional and support counterpart personnel to be assigned by the Client to the Consultant's team will be identified in a separate Clients' statement.

7. Environmental And Social Policy – N/A

8. Working Arrangements And Duration Of The Assignment

The Assignment is expected to be implemented starting from January 2019 through June 2019 in the city of Kyiv. The Consultant`s efforts to implement of the Assignment are expected to cover 6 person-months of input from at least of 2/3 key consultants of the required qualification as indicated in the Section 4 above.

The Consultant shall be responsible for all the logistics and accommodations that will be required to carry out the assignment in Kyiv, as well as for interpretation and translation services.

The Consultant shall work in Ukrainian and English languages using, if necessary, qualified interpreters for interacting with the Client`s counterparts. Documents should be prepared in English and Ukrainian.

Business processes to be covered by automation

	Process	Participants	Process outcome
1	BUDGET DECLARATION PREPARATION		
1.1	Development of preliminary state budget indicators for the medium term (planned budget period and the following two)		
1.1.1	Preparation of KSUs' proposals regarding: - changes in KSUs' expenditures structure (years 1 and 2 are adjusted, year 3 is added); - changes in classification codes; - revenue projections for the special fund of the budget	KSUs	Structural changes. Revenue projections for the special fund of the budget
	Analysis of KSUs' proposals on changes in expenditure structure	MoF expenditure units MoF State Budget Department	Proposals of MoF expenditure units on accepting structural changes proposed by KSUs
1.1.2	Preparation of preliminary forecast of state budget resources (revenues, financing, loan recovery)	MoF expenditure units MoF State Budget Department	Forecast of state budget resources for general and special funds
1.2	Calculation of expenditure ceilings and ceilings for loans provision		
1.2.1	Preparation of budget balance for 3 years, defining of aggregate expenditure ceiling for each year of the medium term - calculation of preliminary budget indicators (revenues, minimum wage, energy supplies, etc.)	MoF State Budget Department MoF expenditure units	Balanced aggregate state budget indicators for medium term for general and special fund
1.2.2	Calculation of KSUs' expenditure ceilings	MoF State Budget Department MoF expenditure units	Expenditure ceilings and ceilings for loan provision broken down by KSUs for general and special fund
1.3	Preparation of proposal to draft budget resolution (budget proposals)	KSUs	KSUs' budget proposals (goals and outcomes of their activities within the expenditure ceilings)
1.4	Analysis of budget proposals received from KSUs (goals and outcomes of their activities within the expenditure ceilings)	MoF expenditure units	Proposals on including KSUs' budget proposals into draft

			budget resolution
1.5	Budget negotiations with KSUs	MoF expenditure units MoF State Budget Department	Consolidated information based on negotiations results
1.6	Preparation of draft budget declaration (variations/scenarios)	MoF State Budget Department MoF expenditure units	Draft budget declaration (variations/scenarios)
2	PREPARATION OF DRAFT STATE BUDGET OF UKRAINE FOR THE NEXT YEAR		
2.1	Proposals on structural changes to budget programs	MoF State Budget Department KSUs MoF expenditure units	KSUs' proposals received
2.2	Adjustment of budget balance for 3 years: - preliminary budget indicators (revenues, minimum wage, energy supplies, etc.)	MoF State Budget Department MoF expenditure units	Budget balance
2.3	Adjustment of expenditure ceilings for 3 years	MoF State Budget Department MoF expenditure units	Expenditure ceilings for KSUs
2.4	Preparation of budget requests	KSUs	Budget requests from KSUs (online)
2.5	Analysis of KSUs budget requests	MoF State Budget Department MoF expenditure units	Proposals on inclusion of KSUs' budget requests to the draft budget
2.6	Budget negotiations with KSUs	MoF State Budget Department KSUs MoF expenditure units	Consolidated information based on negotiations results
2.7	Preparation of draft state budget law	MoF State	Draft (approved) state

		Budget Department MoF expenditure units	budget law
3	PREPARATION OF PROPOSED AMENDMENTS TO THE CURRENT STATE BUDGET	MoF State Budget Department MoF expenditure units	Amendment made to the state budget
4	MONITORING AND ASSESSMENT OF STATE BUDGET EXECUTION		
4.1.	Preparation of draft budget program passports	KSUs	Budget program passport
4.2	Preparation of draft changes to budget program passports	KSUs MoF expenditure units MoF State Budget Department	Revised budget program passport
4.3	Monitoring of execution and performance assessment of budget programs	KSUs MoF expenditure units MoF State Budget Department	
4.3.1	Monitoring of the state budget execution in real time based on data provided by STS IT system	MoF State Budget Department STS MoF expenditure units KSUs	Report on state budget execution
4.3.2	Monitoring of performance indicators of budget programs	KSUs MoF expenditure units MoF State Budget Department	Report on achievement by KSUs of performance indicators of budget programs
5	PREPARATION OF STATE BUDGET BREAKDOWN		
5.1	Preparation of resources breakdown (revenues, financing, loan recovery)	MoF Department for	Monthly indicators of revenues, state

		Budget Revenues Forecasting, Debt Policy Department, expenditure units KSUs	property privatization and borrowing distribution, projected payments on public debt servicing and repayment, loan recovery of the state budget for the year
5.2	Proposals on priority spending of the general fund of the state budget	MoF expenditure units KSUs	Monthly breakdown of expenditures of the general fund of the annual state budget which are set to be made in a certain month or cannot be postponed
5.3	Balancing of state budget breakdown	MoF State Budget Department	Calculation of monthly allocation limits of the general fund of the state budget of the relevant year (based on consolidated areas)
5.4	Calculation of monthly allocation limits of the general fund (broken down by MoF expenditure units)	MoF State Budget Department, MoF expenditure units	Limit references for KSUs
5.5	Preparation of breakdown of allocations and loan provision from the state budget	KSUs, MoF expenditure units	Monthly breakdown of allocations and loan provision from the state budget for the year
5.6	Balancing of all elements of the breakdown	MoF State Budget Department	Approved state budget breakdown for the year
5.7	Handing the state budget breakdown over to the State Treasury Service	MoF State Budget Department, STS	Files with breakdown and references to be handed over to STS in the format of data exchange between MoF and STS
5.8	Preparation of breakdown of transfers to the local budgets	KSUs, MoF expenditure units	Monthly breakdown of transfers to the local budgets for the year (by local budget)
5.9	Balancing breakdown of transfers to the local budgets	MoF Local Budgets Department	Approved breakdown of transfers to local budgets for the year
5.10	Handing the breakdown of transfers to local budgets to the State Treasury Service	MoF Local Budgets	Files with breakdown and references to be

		Department, STS	handed over to STS in the format of data exchange between MoF and STS
6	PREPARATION OF TEMPORARY QUARTERLY BREAKDOWN OF THE STATE BUDGET		
6.1	Preparation of the temporary resource breakdown (revenues, financing, loan recovery)	MoF Department for Budget Revenues Forecasting, Debt Policy Department, expenditure units KSUs	Monthly indicators of revenues, state property privatization and borrowing distribution, projected payments on public debt servicing and repayment, loan recovery of the state budget for the quarter
6.2	Proposals on priority spending of the general fund of the state budget for the quarter	MoF expenditure units KSUs	Monthly breakdown of expenditures of the general fund of the state budget which are set to be made in the relevant quarter or cannot be postponed
6.3	Balancing of state budget breakdown for the quarter	MoF State Budget Department	Comparative table of the temporary monthly breakdown of the general fund of the state budget for the previous year's quarter and quarter of the year that is being calculated (based on consolidated areas).
6.4	Calculation of monthly allocation limits of the general fund for the quarter (broken down by MoF expenditure units)	MoF State Budget Department, MoF expenditure units	Monthly allocation limits of the general fund of the state budget for the quarter
6.5	Preparation of temporary breakdown of allocations and loan provision for the quarter	KSUs, MoF expenditure units	Monthly breakdown of allocations and loan provision from the state budget for the quarter
6.6	Balancing of all elements of the temporary breakdown for the quarter	MoF State Budget Department	Approved temporary state budget breakdown for the quarter
6.7	Handing the temporary state budget breakdown for the quarter over to the State	MoF State Budget	Files with breakdown and references to be

	Treasury Service	Department, STS	handed over to STS in the format of data exchange between MoF and STS
6.8	Preparation of temporary breakdown of transfers to the local budgets	KSUs, MoF expenditure units	Breakdown of transfers to the local budgets for the quarter
6.9	Balancing temporary breakdown of transfers to the local budgets	MoF Local Budgets Department	Approved temporary breakdown of transfers to local budgets for the year
6.10	Handing the temporary breakdown of transfers to local budgets to the State Treasury Service	MoF Local Budgets Department, STS	Files with breakdown and references to be handed over to STS in the format of data exchange between MoF and STS
7	AMENDING OF THE STATE BUDGET BREAKDOWN		
7.1	KSU's proposals on amending state budget breakdown	KSUs, MoF expenditure units	Draft amendments to the state budget breakdown
7.2	Amending of state budget breakdown	MoF expenditure units, MoF State Budget Department	Approved amendments to the breakdown
7.3	Balancing of all elements of the breakdown of the general fund of the state budget	MoF State Budget Department	Approved amendments to the breakdown of financing of the general fund of the state budget
7.4	Handing the amendments to the state budget breakdown over to the State Treasury Service	MoF State Budget Department, STS	Files with breakdown amendments to be handed over to STS in the format of data exchange between MoF and STS
7.5	Reconcilement of state budget breakdown (taking into account amendments made) between MoF and STS databases	MoF State Budget Department, STS	1. Files of amendments register to be handed over to STS in the format of data exchange between MoF and STS; 2. Protocol of discrepancies between

			MoF and STS databases with regard to amendments to the breakdown.
7.6	Informing of the Accounting Chamber, Verkhovna Rada's Budget Committee on amendments to the state budget breakdown in line with state budget law amendments for the relevant year	MoF State Budget Department	state budget breakdown in line with state budget law amendments for the relevant year (in table form)
8	REFERENCES AND CLASSIFICATION CODES		
8.1	Preparation of amendments to MoF order on budget classification	MoF State Budget Department MoF expenditure units STS	MoF order on amending budget classification
8.2	Maintaining budget classification references	MoF State Budget Department	Updated references transferred to STS
8.3	Maintaining local budgets reference	MoF Local Budgets Department MoF IT Division	Updated references transferred to local budgets and STS
9	PREPARATION OF ANALYTICAL REPORTS	MoF State Budget Department MoF expenditure units	Analytical reports prepared for each business process

Business Process Description Form

1. Title page of process description

Project title

Process title

Process: _____

Sub-process _____

Version number, language of the document: _____ (E - English, U - Ukrainian)

Creation date: _____

2. Process description structure

1. System segment identification code	2. System process title	3. Process identification code
BP	(title)	

3. Diagram of improved/new process

(Insert scheme)

4. Stakeholders empowered to approve		
Full name/Stakeholder's title	Position	Phone number

5. GENERAL DESCRIPTION
(text)

6. Process related risks		
a. Brief risk description	b. Process stage to which the risk relates	c. Risk ranking

7. Process data and performance data

Stage (process) identification code	Detailed description of the stage (process)	Performance mode	Legal origin	Time used	Unit (body)

8. Work streams description		
Title	Description	Type

9. Work streams flow		
Process stage – data source or origin of the document	Work stream title	Process stage – recipient of document or data

10. Additional documents*		
Document code	Document title	Process stage to which the document relates

* Legal and regulatory acts with amendments and annexes in force as of business process creation date.

* Legal and regulatory acts that need to significantly amended.

11. Endorsement and approval by stakeholders		
(position)	(signature)	Name

Reference for describing and formulating requirements to budget planning IT system

1. Methodology of requirements description.

Requirements description should consist of two parts:

- requirement itself (starting with the word "Requirement");
- explanation of requirement (starting with the word "Explanation").

Requirement code	Description	Reference
	Requirement: System must... Explanation:...	(identification code of the process or its stage)

Explanation may be further specified by creating additional requirements to it.

2. Requirements identification

Requirements identification enables tracing of requirements from creation to transformation into a specific program code, user manual, system architecture, etc.

Requirement code is formed as follows:

<Subsystem (segment)/process code>-<Requirement type>-<Requirement number>, where < Subsystem (segment)/process code > is a short title of subsystem (segment) or process for which the requirement is being defined. Process number may be omitted if the requirement relates to the whole subsystem or segment.

<Requirement type> is one letter which identifies requirement type according to a table of requirement types (or similar).

<Requirement number> is a sequence number of the requirement. Each requirement type within one subsystem (segment) has its own numbering of requirements.

Code of specific requirement is formed based on the code of (main) requirement by adding a sequence number of a specific requirement:

<Subsystem (segment)/process code>-<Requirement type>-<Requirement number>-<Specific requirement number>.

Requirement types table.

Requirement type	Requirement identification code
Requirements to modes	M
Functional requirements	F
Requirements to external interfaces	E
Requirements to internal interfaces	I
Data requirements	D
System adaptation requirements	A

Guarding requirements	G
Requirements to confidentiality and information security	S
Requirements to environment	V
Requirements to computer resources	B
Requirements to system quality	Q
Design restrictions	C
Requirements to personnel	H
Training requirements	T
Requirements to logistical support	L
Other requirements	O

3. Reference for requirements wording

Requirement wording should consist of the following sequenced parts:

<Subject> <Verb describing action> <Verb> <Object> <Operator or qualification>,

where <**Subject**> refers to an object to which the requirement will be applied.

In fact, each requirement should answer the question “who should do the work?”.

<**Verb describing action**> refers to a verb used to identify the importance of requirement and provide options for requirements analysis by Project Manager.

There are four types of such verb:

Shall. Subject shall comply with this requirement. Further on, subcontractor shall define how this requirement will be implemented by preparing Specific Requirements to the System (SRS document) or Specific Requirements to Interfaces (IRS document).

Must refers to next lower degree from “shall”. Subject must comply with requirement, however, if there is a risk of implementing this requirement or at the stage of defining specific requirements problems occurred with implementing this requirement, subcontractor may request simplification of such requirement by using an alternative option. Such options are discussed in the document “Risk (probability) analysis”.

Will refers to next lower degree from “must”. Subject must comply with this requirement, however, if at the stage of defining specific requirements subcontractor or users found a better way to implement that requirement (e.g. requirement can be implemented by means of already developed software or off-the-shelf solution), **Project Manager** may decide on modifying or rejecting such requirement.

Should, may refer to next lower degree from “will”. Subject has the right not to meet this requirement.

<**Verb (phrasal verb)**> refers to description of what exactly the subject has to do.

<**Object**> describes an object to which action is applied.

<**Operator or qualification**> describes other conditions of action performance, e.g. processing speed, etc.