

PROJECT MANAGED CHANGE PROGRAM (PMCP)

ACQUISITION CATEGORISATION GUIDELINE

Policy for the Categorisation of Projects

JABATAN KERJA RAYA Malaysia

Cawangan Pengurusan Projek Kompleks (PROKOM) Ibu Pejabat JKR Malaysia

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ACQUISITION CATEGORISATION GUIDELINE JABATAN KERJA RAYA MALAYSIA



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1	January 2007	ACAT Group	Final Draft	
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Amendments in this Version

Title	Page No.	Amendment Summary

Controlled Documents

This document has been developed as a controlled procedure and its use version is critical, users should contact PROKOM, JKR on 03-26187508 to ensure that this version represents the latest iteration.



Foreword

The Acquisition Categorisation (ACAT) provides a consistent methodology for categorising projects. The ACAT operates in conjunction with the Project Manager Certification Framework to align the availability of certified project managers suited for the project.

This document explains the process and provides guidance for categorising projects; it also requires that the ACAT level assigned to be reviewed at certain milestones in the project lifecycle.

The ACAT is a key initiative aimed at capturing, categorising, analysing and resource management of projects within JKR.



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OVERVIEW OF THE ACQUISITION CATEGORISATION (ACAT)

1.1 INTRODUCTION

This policy document describes the methodology for categorising projects managed within the Jabatan Kerja Raya (JKR). The intent of the policy is to ensure that projects are categorised in a consistent and logical manner, with appropriate consideration of their strategic significance, project and schedule management complexity, cost, technical difficulty, operation and support implications, and commercial factors. This will contribute to a common understanding of the broad characteristics of projects within the JKR. The Acquisition Categorisation is aligned with the JKR's Project Management Certification Framework so as to enable appropriate project management experience and competencies to be applied to JKR's projects thereby facilitating resource allocation from JKR's Project Management Pool and work force planning.

The ACAT is based on five Acquisition Categories that provide a graduated scale from the most demanding and complex projects to those that are less so. The largest, most demanding and complex projects are categorised as Acquisition Category (ACAT I) and ACAT II; less demanding projects are categorised ACAT III, ACAT IV and ACAT V.

1.2 PURPOSE AND APPLICABILITY OF THE ACAT

The purpose of the ACAT is to establish a categorisation of all projects managed by the JKR across the requirements development and acquisition stages of the projects lifecycle.

a. COMPONENTS OF THE ACAT GUIDELINE

The ACAT Guideline consists of:

- a. Acquisition Category Definitions,
- b. Project Decision Support Matrix, and
- c. Categorisation Process.

All components of the ACAT Guideline are necessary in the process of categorising a project and should not be considered or applied individually.

1.3 RELATIONSHIP TO THE JKR PROJECT MANAGERS CERTIFICATION FRAMEWORK

The Project Managers Certification Framework is a central strategy in JKRs theme of professionalising its workforce to meet its current and future challenges. This framework certifies project managers against defined professional standards, provides professional development opportunities that will be sustained through structured career management and continuing professional development and provides the means by which JKR can build, enhance and retain a pool of professional project managers. A recognised, consistent and repeatable methodology for categorising projects is a key element to aligning certified experience and competencies of project managers to the complexity and scale of projects. All project managers will be assigned to acquisition projects on the basis of their Certified Professional Project Manager status consistent with the acquisition category (ACAT level) of projects.



ACAT – SUPPORTING DETAIL

1.4 ASSIGNMENT AND REVIEW OF ACQUISITION CATEGORY

JKR's projects operate in a dynamic and changing environment where the complexity of a project is not static. Therefore, the initial assignment of a project's ACAT level needs to be kept under review to ensure that it is still reflects the complexity associated with the ACAT level assigned and in turn the certification level of its project manager. As a guide, projects should be reviewed at milestones in their lifecycle. Consequent to an ACAT level review, the ACAT level could be increased, decreased or remain the same.

Table 1 describes the Lifecycle Gates at which project ACAT levels are assigned and reviewed.

Project Lifecycle Gate	Purpose of ACAT Level Review
Enter JKR Capability Plan	Allocate - initial assignment of ACAT Level to enable forward resource planning and facilitate the management of the JKR Project Manager Pool
1 st Pass Approval	Assign – confirm the ACAT level and assign project manager to manage 1^{st} to 2^{nd} Pass activities
2 nd Pass Approval/ Enter Contract	Review - to reassess the appropriateness of the ACAT level assigned
Acceptance Into Service (of Initial Operational Capability)	Review - to reassess the appropriateness of the ACAT level assigned

TABLE 1 - ACAT LEVEL REVIEW MILESTONES

1.5 **RESPONSIBILITY FOR CATEGORISATION**

The Director General, is responsible for the assessment of an ACAT Level conducted by Portfolio/Program/Project Office (PO). To initiate reviews, PO may consult the Branch/State Directors, the Deputy Director General and Director General as necessary. Final approval of the assignment of ACAT Levels or changes resulting from a review of the ACAT Level vests with Director General for all projects.

1.6 RECORDING AN ACQUISITION CATEGORY

ACAT Levels for major projects are identified in First and Second Pass documentation, JKR's Reporting System (SKALA) and Acquisition Overview Reports.

ACQUISITION CATEGORY DEFINITIONS

1.7 ACAT DEFINITIONS

The definition of each of the five Acquisition Categories is as follows:



a. **ACAT I** – ACAT I projects are major projects acquisitions that are normally the JKR's most strategically significant. They are characterised by extensive project and schedule management complexity and very high levels of technical difficulty, operating, support and commercial arrangements.

b. **ACAT II** – ACAT II projects are major projects acquisitions that are strategically significant to the JKR. They are characterised by significant project and schedule management complexity and high levels of technical difficulty, operating, support arrangements and commercial arrangements...

c. **ACAT III** – ACAT III projects are major or minor projects acquisitions that have a moderate strategic significance to the JKR. They are characterised by the application of traditional project and schedule management techniques and moderate levels of technical difficulty, operating, support arrangements and commercial arrangements.

d. **ACAT IV** – ACAT IV projects are major or minor projects acquisitions that have a lower level of strategic significance to the JKR. They are characterised by traditional project and schedule management requirements and lower levels of technical difficulty, operating, support arrangements and commercial arrangements.

e. ACAT V – ACAT V projects are minor projects acquisitions that have a lower level of strategic significance to the JKR. They are characterised by traditional project and schedule management requirements and very low levels of technical difficulty, operating, support arrangements and commercial arrangements.



TABLE 2: PROJECT DECISION SUPPORT MATRIX

ATTRIBUTE COMPLEXITY LEVEL	ACQUISITION COST (Note 1)	PROJECT MANAGEMENT COMPLEXITY (Note 2)	SCHEDULE (Note 3)	TECHNICAL DIFFICULTY (Note 4)	OPERATION AND MAINTENANCE (Note 5)	INDUSTRY (Note 6)
5 [Very Low]	< RM10m	Relies predominantly on traditional Project Management knowledge	 Routine schedule management issues Requires the application of routine project monitoring and control measures. 	 Very low system complexity No hardware and/or critical software development No requirement of systems coordination / integration Highly feasible location and logistic 	 Very similar to existing system/ equipment No new operation, maintenance and support infrastructure changes needed Sustainment can fit in an existing SOP 	 Existing companies have supplied almost identical systems Contracting arrangements and contracts are traditional and contract management is routine
4 [Low]	RM10m-RM100m	Relies predominantly on traditional Project Management knowledge with minimum complexity	 Moderate schedule management issues Requires the application of remedial schedule management measures. 	 Low system complexity Limited hardware and/or critical software development Limited amount of systems coordination / integration Feasible location and logistic 	 Very similar to existing system/ equipment Slight change needed in operation, maintenance and support infrastructure. Sustainment can fit in an existing SOP with minimal change 	 Existing companies have supplied similar systems Contracting arrangements and contracts are complex but contract management is routine
3 [Moderate]	RM100m-RM300m	Relies predominantly on traditional Project Management knowledge with moderate complexity	 Difficult schedule management matters expected to arise from time to time Requires the application of difficult remedial schedule management measures. 	 Moderate system complexity Moderate level of hardware and/or software development Moderate systems coordination / integration. Feasible location and logistic with some difficulty 	 Similar to existing system/ equipment Some operation, maintenance and support infrastructure changes needed Sustainment can fit in an existing SOP with moderate change 	 Companies have previously demonstrated capability to develop and produce systems Contracting arrangements and contracts are complex and require a high level of contract management.
2 [High]	RM300m-RM500m	Significant	 Complex schedule management issues with competing priorities and persistent pressure on delivery date(s) Requires the application of innovative schedule management initiatives. 	 High system complexity High level of hardware and/or software development High systems coordination / integration Difficult location and logistic 	 Some systems/ equipment different from existing / non existence Major operation and maintenance infrastructure changes needed Sustainment may require major changes to an existing SOP 	 Individual company capabilities exist but not previously combined to produce required capability Project will challenge extant industry capabilities Contracting arrangements are complex or there is high level of interdependency between a number of commercial arrangements being managed by JKR
1 [Very High]	>RM500m	Extensive	 Extremely complex schedule management issues with competing/ conflicting priorities and persistent high-level pressure on delivery date(s) Requires the application of innovative schedule management initiatives and frequent high-level management intervention. 	 Very high system complexity Very high level of hardware and/or software development Very high systems coordination / integration Very difficult location and logistic 	 Most major systems/ equipment different from existing / non existence Significant operation and maintenance infrastructure changes needed Sustainment could require a new SOP to be put in place. 	 New industry capabilities may need to be introduced Project is at the margins of extant industry capability maturity levels Contracting arrangements are highly complex and there is very high level of interdependency between a number of commercial arrangements being managed by JKR Novel commercial practices required to undertake the project

NOTES:

1. Acquisition Cost:: The Acquisition Cost includes the cost of the system (i.e. buildings, roads, infrastructure and equipment), lands, constructions, consultants, management and facilities costs.

2. Project Management Complexity: Complexity beyond that associated with traditional project management knowledge areas¹ that are characterised by a project execution environment which is novel and uncertain with very high-level political interactions.

3. Schedule: Complexity brought about by schedule pressures on the project requiring the application of varying levels of sophistication in schedule management.

4. Technical Difficulty: Inherent complexities which are associated with technical undertakings of design and development, location and logistic, construction/assembly, coordination/integration, test, commission and acceptance.

5. Operation and Maintenance: Complexity associated with the readiness of the organisation and environment into which the system will be operated and maintained.

6. Industry: The capability of industry to deliver and support the required system/ equipment, the complexity of the commercial arrangements being managed including the number and level of interdependency of commercial arrangements managed by the JKR



CATEGORISATION PROCESS

The process of categorising a project to determine its ACAT Level is not a science but rather relies on the application of sound judgement by persons that have a reasonable level of understanding of the characteristics of the project. The earlier in the project's lifecycle that categorisation is done the less is known about these characteristics and the more susceptible are the assessments to change as the project progresses. However, it is important to make these judgements as accurately as possible because of the follow on implications of changing the assigned ACAT levels to workforce planning, assignment of the appropriately certified project manager and the implications this has for the management of the JKR Project Manager pool.

1.8 APPLICATION OF THE DECISION SUPPORT MATRIX

The Project Decision Support Matrix in Table 2 establishes six major attributes against which assessments of levels of complexity are made viz:

- a. Acquisition Cost: This is expressed as either less than, greater than or as a range of costs. Requirements development and through life operating and support costs are empirically <6-10% and 3-4 times of acquisition cost respectively. Therefore, consideration of acquisition cost inherently also considers requirements development and through life operating and support costs.
- b. **Project Management Complexity**: Is expressed as management characteristics beyond those associated with traditional project management knowledge areas, conducted in a project execution environment which is novel and uncertain with very high-level political interactions. This attribute is a major discriminator for ACAT I and II assignment.
- c. **Schedule Complexity**: Is a measure of the inherent complexity brought about by schedule pressures on the project requiring the application of varying levels of sophistication in schedule management.
- d. **Technical Difficulty**: Is a measure of the inherent complexities associated with technical undertakings such as design and development; location and logistic; construction / assembly, coordination / integration, testing and commissioning; and acceptance.
- e. **Operation and Maintenance**: Is a measure of the complexity associated with the readiness of the organisation and environment into which the system will be operated and supported; maintained and sustained.
- f. **Industry:** Is a measure of the readiness and capability of industry to develop, produce and support the required capability and the complexity of the commercial arrangements being managed including the number and level of interdependency of commercial arrangements managed by the JKR.



1.9 CATEGORISATION OF PROJECTS

The following process should be adopted when assessing or reviewing the acquisition category of a project.

- a. **Step 1 Select a Complexity Level for each Attribute** Consider and assess the characteristics of the project and assign a level of complexity (between 1 to 5) for the Attribute that best aligns with the descriptors provided in the Table 2 for each of the six Attributes viz:
 - Acquisition Cost
 - Project Management Complexity
 - Schedule
 - Technical Difficulty
 - Operation and Maintenance
 - o Industry
- b. Step 2 Enter Complexity Level for each Attribute in ACAT Score Calculator The ACAT Score Calculator has built-in algorithms with embedded weighting factors against each of the six Attributes and rating factors for each Attribute level. These algorithms MUST not be changed. The ACAT Score Calculator is an MS EXCEL based model that can only be accessed in the soft copy version of this document.

To operate the ACAT Score Calculator, activate the MS EXCEL spreadsheet by double clicking in the figure below. Place an "x" against each Attribute under the Attribute Complexity Level (ie Level 1 to 5) determined through Step 1. (NOTE: Only one "x" may be entered for each Attribute row and in any Attribute Level column). When all six "x"s have been input, the Calculator will display the calculated score and ACAT Level. The calculated score and ACAT Level will change depending where the "x"s are placed.



PROJECT ACQUISITION CATEGORY ASSIGNMENT

	A	CAT SU	UKE CALU	ULAIU	ĸ	_
Attribute	Level 1	Level 2	Level 3	Level 4	Level 5	
	(very nigh)	(nigh)	(Moderate)	(LOW)	(very Low)	
Acquisition Cost		х		γ		
Project Management Complexity						
Schedule		/×/ /				
Technical Difficulty		V V				
Operations and Maintence			х			
Industry		х				Normalised Score
Score						78
						ACAT III

ACAT SCORE CALCULATOR

The Calculator selects the ACAT level from a range of scores as follows:

ACAT I:	Score range 95 -100
ACAT II:	Score range 75 – 94
ACAT III:	Score range 50 – 74
ACAT IV:	Score range 30 – 49
ACAT V:	Score range 10 - 29

It is advisable to judiciously examine the calculated ACAT Level for scores that are at the extremities of the above score ranges when recommending the ACAT Level that should be assigned.

IMPORTANT NOTE:

The ACAT Score Calculator has being integrated into JKR SKALA. The categorisation process can only be accessible by the authorised personnel.

CAUTIONARY NOTE

No mathematically based model can be relied upon entirely to determine the appropriate Acquisition Category level of a project.

Despite what the ACAT Score Calculator computes, ultimately judgement needs to be exercised in deciding the ACAT Level.

c. Step 3 – Consult, Approve and Record ACAT Level Assignment

Having calculated the ACAT Level, the PO will consult with the relevant Branch/State Director, and seek confirmation of the ACAT Level from the responsible approving officer identified in paragraph 0 of this document.

A record of the assigned ACAT Level using the format of the Project Acquisition Category Assignment shown overleaf is to be retained.

The assigned ACAT level as registered in SKALA is deem to be Approved Acquisition Category.



Project Number and Phase: Project Title:

Project Maturity Score:

AttributeLevel 1 (very High)Level 2 (High)Level 3 (Moderate)Level 4 (Low)Acquisition CostXProject Management ComplexityXScheduleXTechnical DifficultyXOperations andXX	Level 5 (Very Low)	ļ
AcquisitionxCostXProjectXManagementXComplexityXScheduleXTechnicalXDifficultyXOperationsX		
Project Management ComplexityxSchedulexTechnical DifficultyxOperations 		
Schedule x Technical x Difficulty x Operations x and x		
Technical x Difficulty Operations x and x		1
Operations x and		1
Maintenace]
Industry x		Normalise Score
Score		78

Recommended Acquisition Category (*plus supporting remarks*):

(Signature – Recommending Officer) Date: Categorisation Officer

Approved Acquisition Category(*plus supporting remarks if necessary*):

(Signature – Approving Authority)

Date: