



S U R U H A N J A Y A
PENGANGKUTAN AWAM DARAT

L A N D P U B L I C T R A N S P O R T
C O M M I S S I O N

SPAD GUIDELINE

NEW ROLLING STOCK APPROVAL

Document Type	Guideline
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Document Reference Number	SPAD/GL/RD/RAIL/005/Rev0
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1.0 INTRODUCTION

This document is to provide guidelines on the process for obtaining rolling stock approval under the Supplementary Proposal Approval.

2.0 NEW ROLLING STOCK APPROVAL PROCESS

The process and requirements for New Rolling Stock Approval is stipulated under APPENDIX A, APENDIX B and APPENDIX C.

3.0 FORMS & OTHER RELATED DOCUMENTS

This guideline must be read together with the following documents:

- i. APPENDIX A - SPAD Guideline - New Rolling Stock Approval Process
- ii. APPENDIX B - Content of Supplementary Proposal
- iii. APPENDIX C - New Rolling Stock Revenue Service Checklist



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APPENDIX A - NEW ROLLING STOCK APPROVAL PROCESS

Process	Project Owner/Operator/ICE Role	Provision of the PAD Act
Inform SPAD on Procurement of new Rolling Stock	<u>Project Owner</u> - informed SPAD on procurement of new rolling stock. - to appoint ICE.	Section 83
↓		
Submit Supplementary Proposal to SPAD	<u>Project Owner</u> - to submit Supplementary Proposal to SPAD for acceptance. - to ensure compliance with IEC 61133 standard (or equivalent). *Note: Refer APPENDIX B for Content of Supplementary Proposal.	Section 83
↓		
Design Stage (Preliminary Design Review & Final Design Review)	<u>Project Owner</u> - to submit PDR, FDR and Technical Meeting schedule to SPAD for record. - to submit FDR document to SPAD, for record. - to submit MIP schedule to SPAD, for record. <u>ICE</u> - to be involved during design stage. - to ensure all safety related issues to be handled and solved in appropriate means. <u>Operator</u> - to be involved during design stage. - to provide input and to share lesson learnt.	
↓		
Manufacturing & Assembly Stage	<u>Project Owner</u> - to submit FAI/FAT schedule to SPAD 3 months before commencement of FAI/FAT. - to submit FAI/FAT test protocol (approved by ICE) to SPAD 1 month before commencement of FAI/FAT. - to submit full list of FAI/FAT conducted to SPAD 1 week after completion for record. <u>ICE</u> - to review and approve the FAI/FAT test protocol. <u>Operator</u> - to be involved during manufacturing & assembly stage. *Note: Project Owner, ICE and Operator to ensure all tests conducted according to agreed protocol. : Project Owner, ICE and Operator to approve and accept all FAI/FAT.	Preparation towards Section 102
↓		



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Factory Functional (Post Installation) Test	<p><u>Project Owner</u> - to submit full list of test (including dates) to be conducted to SPAD 1 month before commencement of test. - to submit full list of tests conducted to SPAD 1 week after completion, for record.</p> <p><u>ICE</u> - to review and approve the test protocol.</p> <p><u>Operator</u> - to be involved during factory functional test.</p> <p>*Note: Project Owner, ICE and Operator to ensure all tests conducted according to agreed protocol. : Project Owner, ICE and Operator to approve and accept all tests. : Project Owner, ICE and Operator to ensure all tests completed before PDI.</p>	Preparation towards Section 102
↓		
Pre-Delivery Inspection (PDI)	<p><u>Project Owner</u> - to submit accepted PDI report/ checklist to SPAD 1 week after completion for record.</p> <p><u>ICE</u> - to review and approved the PDI protocol.</p> <p><u>Operator</u> - to be involved during PDI.</p> <p>*Note: Project Owner, ICE and Operator to ensure PDI conducted according to agreed protocol. : Project Owner, ICE and Operator to approve and accept the PDI.</p>	Preparation towards Section 102
↓		
Testing & Commissioning (T&C)	<p><u>Project Owner</u> - to submit full list of test & commissioning (including dates and test protocol) to SPAD 1 month before commencement of T&C. - Project Owner to submit full list of tests conducted to SPAD 1 week after completion for record.</p> <p><u>ICE</u> - to review and approved the test protocol.</p> <p><u>Operator</u> - to be involved during T&C.</p> <p>*Note: Project Owner, ICE and Operator to ensure all tests conducted according to agreed protocol. : Project Owner, ICE and Operator to approved and accept all tests. : Project Owner, ICE and Operator to ensure all tests completed before FFR.</p>	Preparation towards Section 102
↓		
Fault Free Running (FFR)	<p><u>Project Owner</u> - SPAD to acknowledge FFR test procedure before commencement of FFR. - to submit FFR report to SPAD 1 week after completion for record.</p> <p><u>ICE</u> - to verify all works, tests and system interface has been completed before FFR. - to verify and approve completion of FFR.</p>	Preparation towards Section 102



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	<p><u>Operator</u> - to be involved during FFR.</p> <p>*Note : Project Owner, ICE and Operator to agree on FFR pass fail criteria (minor and major) before submission to SPAD. : FFR to be conducted on the mainline with actual operation condition. : FFR to be monitored by Project Owner, ICE and Operator. All faults (minor and major) must be recorded. No Fault Found (NFF) and log record to be submitted to SPAD. : The FFR shall restart from 0 when major faults occurred during FFR. : Project Owner, ICE, Operator and Contractor to approve and accept FFR without error.</p>		
↓			
Handing Over	<p><u>Project Owner</u> - to submit all approval (from other agencies) and certifications to SPAD for record. - to submit Handing Over certificate/report to SPAD 1 week after rolling stock acceptance for record.</p> <p><u>Operator</u> - to accept the handing over of rolling stock.</p>	Preparation towards Section 102	
↓			
Emergency Evacuation Exercise	<p><u>Operator</u> - to conduct emergency evacuation exercise in accordance to ERP document. - to submit emergency evacuation exercise report to SPAD 1 week after successfully completed the exercise for record.</p> <p><u>ICE</u> - to verify the Emergency Evacuation Exercise conducted according to agreed protocol.</p>	Preparation towards Section 102	
↓			
Trial Operation	<p><u>Operator</u> - to conduct trial operation demonstration with actual operation condition (simulation of full schedule). - to submit letter ready to operate to SPAD within 1 week after completion for record.</p>	Preparation towards Section 102	
↓			
Technical Report (with Engineer's verification) From Project Owner	<p><u>Project Owner</u> - to submit Technical Report minimum 1 month before revenue service (refer APPENDIX C).</p>	Preparation towards Section 102	
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ICE Rail Worthiness Certificate	<p><u>ICE</u></p> <ul style="list-style-type: none"> - to submit Rail Worthiness Certificate with confirmation that the system is ready and safe to operate to SPAD minimum 1 month before revenue service (refer APPENDIX C). 	Preparation towards Section 102	
SPAD Approval Process	<p>*Note: All document required for approval must be submitted by Project Owner and Operator minimum 1 month before revenue service to allow for SPAD approval process (inspections, reports and memorandum).</p>	Section 102	
Revenue Service	<p>*Note: New rolling stock can be used in revenue service upon receiving Approval letter from SPAD (for the first batch of rolling stock).</p>		
Approval for Subsequent Rolling Stock	<p><u>Project Owner</u></p> <ul style="list-style-type: none"> - to submit FFR Report to SPAD 2 weeks before revenue service. - to submit Handing Over certificate/report to SPAD 2 weeks before revenue service. <p><u>ICE</u></p> <ul style="list-style-type: none"> - to certify all rolling stocks - to submit Rail Worthiness Certificate with confirmation that the system is ready and safe to operate to SPAD 2 weeks before revenue service. <p><u>Operator</u></p> <ul style="list-style-type: none"> - to conduct trial operation demonstration with actual operation condition (simulation of full schedule). - to submit letter ready to operate to SPAD 2 weeks before revenue service. 	Section 102	



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APPENDIX B - CONTENT OF SUPPLEMENTARY PROPOSAL

1. The following shall be the minimum contents of the Supplementary Proposal.
2. Project Owner to justify if there are sections not applicable to the project scope.

SUPPLEMENTARY PROPOSAL	
1. GENERAL INFORMATION	
1.1	Project background
1.2	Project approval (agreement)
1.3	Project objective
1.4	Project scope
1.5	Project programme
1.6	Project organisation chart
2. PROJECT COST	
2.1	Project cost breakdown
2.2	Consultant cost
2.3	Operation cost
2.4	Financing plan
2.5	Concession agreement/franchise
2.6	Project cost benefit analysis
2.7	Project risk management
3. STANDARDS AND REGULATIONS, CODES OF PRACTICE	
3.1	List of standards applicable for each system and subsystem
4. TECHNICAL	
4.1 ROLLING STOCK	
4.1.1	General
4.1.2	Fleet size
4.1.3	Manufacturing plan
4.1.4	Technical specifications
4.1.5	Performance
4.1.6	Car components and dimensions
4.1.7	Weight and passenger loading
4.1.8	Structure gauge/ loading gauge
4.1.9	Automatic Train Protection (ATP)
4.1.10	Detection system
4.1.11	Propulsion and braking system
4.1.12	Communication system
4.1.13	Interior and exterior
4.1.14	Event recorder
4.1.15	Passenger Information System (PIS)
4.1.16	Passenger Address (PA) system
4.1.17	Platform gap analysis
4.1.18	Safety aspect
4.1.19	System operation principle
4.1.20	Standard reference
4.2 SYSTEM	
4.2.1	Trackwork System
4.2.2	Signalling and Train Control System
4.2.3	Communication System
4.2.4	Traction power System
4.2.5	Power Supply and Distribution System



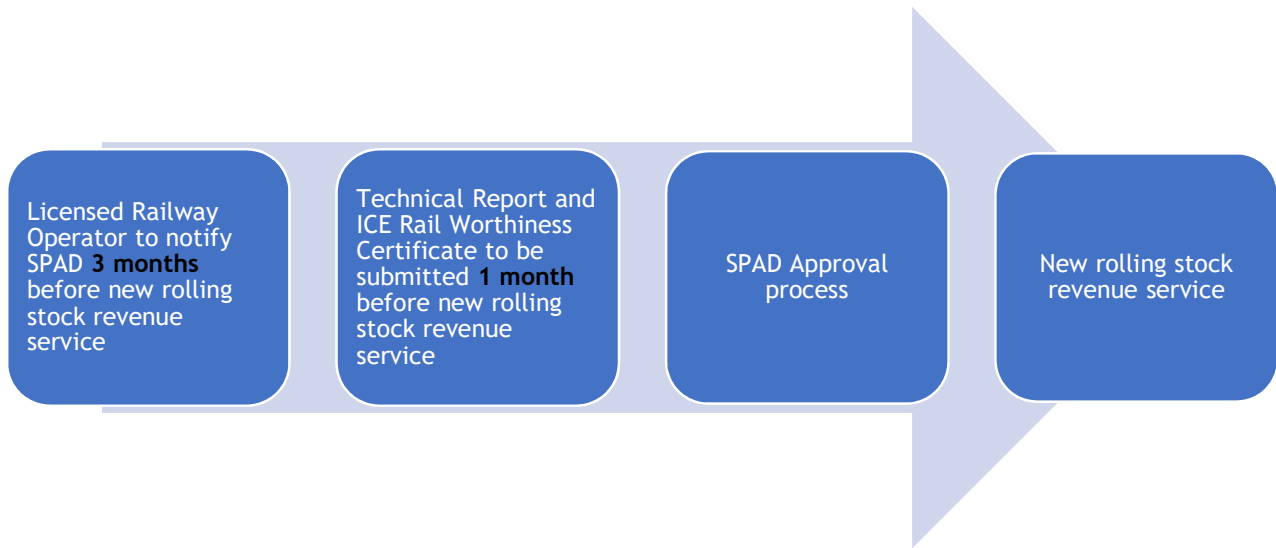
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4.2.6	Platform Screen Door
4.2.7	SCADA System
4.2.8	Operation Control Centre (OCC)
4.2.9	Other system
4.3 SYSTEM INTERFACE	
4.3.1	Trackwork System
4.3.2	Signalling and Train Control System
4.3.3	Communication System
4.3.4	Traction power System
4.3.5	Power Supply and Distribution System
4.3.6	Platform Screen Door
4.3.7	SCADA System
4.3.8	Operation Control Centre (OCC)
4.3.9	Other system
4.4 BUILDING AND INFRASTRUCTURE	
4.4.1	Station (including platform gap analysis)
4.4.2	Operation Control Centre (OCC)
4.4.3	Depot and yard
4.4.4	Guideway and Bridge
4.4.5	Tunnel
4.4.6	Kinematic Envelope (for all conditions)
4.4.7	Other structures
4.5 DRAWING/ PLAN/ DIAGRAM	
4.5.1	Rolling stock details
5. TESTING AND COMMISSIONING	
5.1	Testing and commissioning strategy and plan
6. OPERATION AND MAINTENANCE	
6.1	Operation strategy and plan
6.2	Maintenance strategy and plan
6.3	Maintenance facilities
7. MANUAL, REPORT AND PROCEDURE	
7.1	List of Manuals and Procedures (for existing railway system, to include list of manuals and procedures to be amended)
7.2	Emergency Evacuation Exercise planning
8. TRAINING PLAN	
8.1	Training plan
9. CERTIFICATION	
9.1	Approval and certification



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APPENDIX C - NEW ROLLING STOCK REVENUE SERVICE CHECKLIST



NEW ROLLING STOCK REVENUE SERVICE CHECKLIST			REMARK
1. APPLICATION LETTER			3 months before revenue service
1.1	Application letter for new rolling stock revenue service		
2. RAILWAY OPERATOR'S LICENCE			3 months before revenue service
2.1	Operating Hours (weekdays from xx to xx, weekends from xx to xx)		
		Weekday (Mon-Fri)	Weekend (Sat & Sun)
	Operating Hours	xx Hour to xx Hour	xx Hour to xx Hour
2.2	Minimum service (weekdays peak and off peak from xx to xx, weekends peak and off peak from xx to xx)		
	Type Of Service	Weekday (Mon-Fri)	Weekend (Sat & Sun)
	Peak Hour Service (xx Hour to xx Hour)		
	Off Peak Hour Service (xx Hour to xx Hour)		



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NEW ROLLING STOCK REVENUE SERVICE CHECKLIST		REMARK
3. MANUAL, REPORT AND PROCEDURE		3 months before revenue service
3.1	Emergency Response Plan Manual	
3.2	Operations and Maintenance Manual	
3.3	Safety & Security Manual	
3.4	Customer Handling Procedure (including OKU)	
3.5	OCC Manual	
3.6	Station Supervisor's Manual	
3.7	Train Driver's Manual	
3.8	Training Manual	
3.9	List of Critical Personnel & the Certification Process Of The Personnel	
3.10	Capital spares list	
3.11	Risk Assessment Report	
4. TECHNICAL REPORT FROM PROJECT OWNER (WITH VERIFICATION BY CERTIFIED ENGINEER THAT THE RAILWAY SYSTEM IS READY AND SAFE FOR OPERATION)		1 month before revenue service
4.1 GENERAL INFORMATION		
4.1.1	Project background	
4.1.2	Scope of work (including technical specification for all scope)	
4.1.3	Reference Standard	
4.2 TESTING AND COMMISSIONING		
4.2.1	Full list of completed FAI/FAT report	
4.2.2	PDI/PSI report	
4.2.3	Full list of completed Site Acceptance Test report	
4.2.4	Full list of completed Site Integration Test report	
4.2.5	Ride Index report	
4.2.6	Fault free run/endurance test report	
4.2.7	Certificate of Fitness/ Permission for Commercial Operation (PFCO)	
4.2.8	Handing Over Certificate/ Taking Over Certificate	
4.2.9	Trial Operation (letter to start revenue service)	
4.2.10	Risk Management (including evidence of Hazard log transfer)	
4.3 ROLLING STOCK AND SYSTEM CERTIFICATE		
4.3.1	Rolling Stock Certificate including the following: - Signalling and Train Control System; - Communication System; - Traction Power System; and - System Interface Certificate (PIDS, Platform Screen Door, etc)	
4.4 BUILDING AND INFRASTRUCTURE CERTIFICATE		
4.4.1	Certificate of Completion and Compliance for station, depot and other railway buildings for modification/ addition section (if applicable)	



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4.4.2	Certificate from Suruhanjaya Tenaga for generator set, UPS and others for station and depot (if applicable)	
4.4.3	Certificate Perakuan Mesin Angkat (PMA) and Certificate Perakuan Mesin Tekanan (PMT) from Jabatan Keselamatan dan Kesihatan Pekerja (JKKP) for station and depot for new depot equipment to maintain new rolling stock (if applicable)	
4.5 TRAINING RECORD AND CERTIFICATION		
4.5.1	List of all training and verification all training completed	
4.6 DRAWING/ PLAN/ DIAGRAM		
4.6.1	Rolling stock details	
4.6.2	Building layout plan and details for station (for modification/ addition section)	
4.6.3	Building layout plan and details for depot (for modification/ addition section and for new depot equipment to maintain new rolling stock)	
4.6.4	System layout plan and details including for trackwork, communication, signalling and turnout for station and depot (for modification/ addition section)	
4.7 ENGINEER CERTIFICATION		
4.7.1	Project Owner to provide an engineer certification to certify and confirm the system is ready and safe to operate	
5. SAFETY REPORT		1 month before revenue service
5.1	Safety Report with verification from ICE	
6. ICE CERTIFICATE		1 month before revenue service
6.1	Certificate for: <ul style="list-style-type: none"> Rolling Stock; Signalling and Train Control System; Communication System; Traction Power System; and System Interface (PIDS, Platform Screen Door, etc) 	
6.2	Rail Worthiness Certificate to certify the system is ready and safe to operate	
7. EMERGENCY EVACUATION EXERCISE		1 month before revenue service
7.1	Emergency Evacuation Exercise & Report by Operator	
8. LETTER OF INDEMNITY		1 month before revenue service
8.1	Letter of indemnity from Operator indemnifying SPAD and the Government	