



Defence  
Safety Authority

# DSA 03-OME Part 1 (JSP 520)- Defence Code of Practice (DCOP) and Guidance Notes for OME Acquisition

Defence OME Safety Regulator

*DOSR*



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## PREFACE

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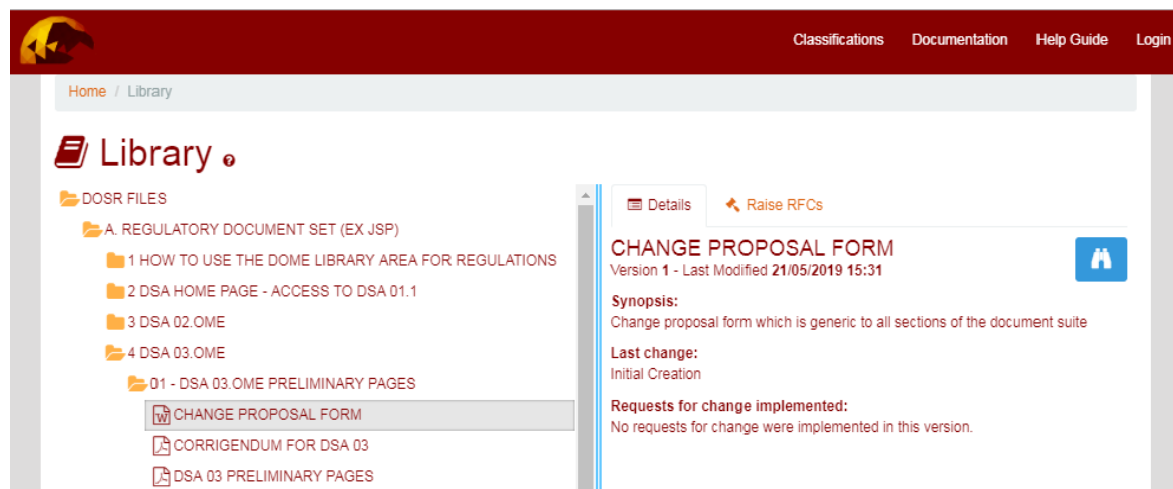


Figure 1. Change Proposal Form (Word version) Location

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# 1 Overview

1. The Review Category is used by the OME Safety Review Panel (OSRP) Secretary to determine the number and competence requirements of the panel members. It is NOT a method of determining project risk and safety case requirements.
2. The Review Category will be initially assigned at the earliest possible stage in the acquisition cycle and prior to the OME Safety Review Panel (OSRP) assessment but may change as the project develops and further information becomes available.

## Allocation Of Review Category

3. The allocation of the Review Category is a judgement made by the Project Team (PT) in conjunction with the Stakeholders at the Project's Safety and Environmental Panel (SEP). It will be determined by an assessment of the overall level of risk associated with the system and will include consideration of:
  - a. Credible Worst-Case Consequence.
  - b. System Maturity and Certification.
  - c. Energetic Materials.
  - d. OME Complexity and Integration.
  - e. Perceived Public Acceptability.
4. The assessment should be carried out as early as possible in the acquisition cycle, but the accuracy with which it can be assessed will depend on the level of information available. For example, in the case of a Commercial-Off-The-Shelf (COTS) programme, it is likely that existing safety information will be sufficiently robust as to enable an accurate assessment of the Review Category at an early stage. On the other hand, for a full development programme, the initial Review Category assessment will need to be based on a preliminary risk assessment, i.e. a general qualitative study of the system design concept in its predicted service environment, although once again the consequence factor will take precedence.
5. The Review Category should be reviewed periodically to ensure that it remains consistent with the complexity of the OME system.
6. This assessment will result in the assignment of a HIGH, MEDIUM, LOW or by meeting specific conditions VERY LOW CONSEQUENCE review category for the project. The Review Category assigned will be reviewed and endorsed by the OSRP at the appropriate submission points.
7. For HIGH and MEDIUM review projects, greater scrutiny of evidence will be required by the OSRP than for LOW review projects. In addition, it supports the decision by the OSRP regarding what review date to set for the OSRP Assurance Statement.
8. A tool for determining the Review Category is provided at Annex A. Where this method has not been used, the PT will document the process used to demonstrate

how the Review Category has been derived. This would then be scrutinised by the OSRP to ensure the alternative method is acceptable.

9. The PT should also note that if a Review Category of Low is assigned that the full OSRP process may not be required if it can be demonstrated that it has Very Low Consequence.

## **Responsibilities**

10. Project Team Leader (PTL) is responsible for:
  - a. Assigning a Review Category to all OME systems for which they are responsible.
  - b. Continually reviewing the Review Category through the life of the system.
  - c. To ensure a record is made outlining the rationale behind the score for future reference.
11. The OSRP are responsible for endorsing the Review Category assigned by the PT.

## **Definitions**

12. Persons Directly involved: Personnel having a fair and reasonable understanding of the risks associated with the OME or activity i.e., users, maintainers, cadets, emergency services.
13. Persons Indirectly involved: Personnel not associated with the OME or activity being undertaken i.e., general public, MOD employees, contractors or visitors not in vicinity.
14. Facilities: Storage or processing buildings
15. Damage to Platform: Dependent on OME ie loss of a Small Arm compared to vehicle.
16. Environmental Impact: At firing point and impact area.



## Annex A: Tool for the Determination of OME Review Category

1. The tool is intended to assist the PT and Project's SEP in assigning a Review Category. It uses a scoring system against 5 factors (Table A1) to produce a total score which is converted into a Review Category using Figure A1 and A2.
2. The tool considers the following 5 Factors:
  - a. Credible Worst Case Consequence (40% weighting).
  - b. System Maturity and Certification (10% weighting).
  - c. Energetic materials (20% weighting).
  - d. Munition Complexity and Integration (10% weighting).
  - e. Perceived Public acceptability (20% weighting).
3. Level indicators have been provided in the form of qualitative statements to aid the scoring process. These indicators have been split into 4 ranges (level indicators) from Very Significant through Significant and Marginal to Insignificant.
4. To use the tool:
  - a. Start with factor 1 "Credible Worst Case Consequence.
  - b. Allocate a score of between 0 and 16 for EACH of the following "period of exposure", "persons involved", "damage to facilities", "damage to platform" and "environmental impact" separately.
  - c. The logic and assumptions behind the assessment should be recorded to provide understanding in future reviews.
  - d. Select the HIGHEST of these scores (only) and multiply by the weighting (in this case 0.4) to give a weighted score for risk factor 1.
  - e. Repeat this process for EACH of the remaining 4 factors.
  - f. Add the weighted scores for all 5 factors together to get a total score.
  - g. Use Tables A1 and A2 to translate the total score into a Review Category.

5. As shown in Table A1, a total score of less than or equal to 5 would be indicative that an OME is LOW Review Category. A total score of “greater than 5 and less than 10” suggests that an OME is MEDIUM Review Category. A total score of greater than or equal to 10 would generally indicate that an OME is HIGH Review Category. The provisional assessment can then be reviewed by the Project Safety Panel.
6. The logic and assumptions behind the assessment should be recorded.

<b>Review Category</b>	<b>Total Score</b>
Low	< or = 5
Medium	> 5 and < 10
High	= or > 10

**Table A1: Low to High Review Categories**

7. Providing the review category is LOW and the corresponding score in Factor 1 (Credible Worst Case Consequence) is less than or equal to 2.4 then a Very Low consequence category is achieved as illustrated in Table A2.

<b>Very Low Consequence (VLC)</b>	<b>Total Score</b>
Low	< or = 5
&	&
Risk Factor 1 (Credible Worst Case Consequence)	< or = 2.4

**Table A2: Very Low Consequence Review Category**

**Table A3: Assessment Matrix for the Determination of the OME Review Category**

Factor	Review Level Indicators																Score	Weighting	Weighted Score
	16	14	12	10	9	8	7	6	5	4	3	2	1	0					
	Very Significant (Score 16 to 9)				Significant (Score 8 to 5)				Marginal (Score 4 to 2)				Insignificant (Score 1 to 0)						
<b>1. Credible Worst Case Consequence</b>	Continuous period of personnel exposure to risk.				Daily period of personnel exposure to risk.				Short period (hours) of personnel exposure to risk.				Very Short (less than an hour) period of personnel exposure to risk.					0.4	
	<u>Persons directly involved.</u> Multiple deaths.				<u>Persons directly involved</u> A single death and / or multiple severe injuries or equivalent occupational illness.				<u>Persons directly involved</u> A single severe injury or occupational illness and / or multiple minor injuries or minor occupational illness.				<u>Persons directly involved.</u> At most a single minor injury or minor occupational illness.						
	<u>Persons indirectly involved.</u> A single death and / or multiple severe injuries or equivalent occupational illness.				<u>Persons indirectly involved.</u> A single severe injury or occupational illness and / or multiple minor injuries or minor occupational illness.				<u>Persons indirectly involved.</u> At most a single minor injury or minor occupational illness.				<u>Persons indirectly involved.</u> Any injury or occupational illness, however minor.						

Factor	Review Level Indicators										Score	Weighting	Weighted Score			
	16	14	12	10	9	8	7	6	5	4				3	2	1
	Very Significant (Score 16 to 9)				Significant (Score 8 to 5)			Marginal (Score 4 to 2)			Insignificant (Score 1 to 0)					
<b>1. Credible Worst Case Consequence Continued</b>	Severe damage to facilities.				Moderate damage to facilities.			Minor damage to facilities.			No damage to facilities.					
	Damage to platform, which leads to total loss of capability (ship, aircraft, vehicle).				Damage to platform, which leads to significant loss of capability.			Damage to platform, which leads to reduced capability.			No damage to platform or loss in capability.					
	Significant, long term environmental impact.				Moderate long term or significant short term environmental impact.			Moderate short term environmental impact.			Trivial environmental impact.					
<b>2. System Maturity and Certification</b>	Developmental Item.				Modifications essential to meet UK requirements.			Minimal modifications to meet UK requirements.			Mature system with sound in-service history.				0.1	
	Non-accredited manufacturer with no experience of the OME natures.				Non-accredited manufacturer with experience of similar OME natures.			Accredited manufacturer with experience of similar OME natures.			Accredited manufacturer with experience of the specific OME nature.					

Factor	Review Level Indicators											Score	Weighting	Weighted Score		
	16	14	12	10	9	8	7	6	5	4	3				2	1
	Very Significant (Score 16 to 9)				Significant (Score 8 to 5)				Marginal (Score 4 to 2)			Insignificant (Score 1 to 0)				
<b>2. System Maturity and Certification Continued</b>	Different manufacturing process to previous supplier. Limited or no supporting objective, quality evidence.				Different manufacturing process to previous supplier. Some supporting objective, quality evidence.				Existing supplier but using different manufacturing process. Supported by objective, quality evidence.			Fully understood manufacturing process. Supported by complete disclosure of required data.				
	Unknown Compliance with Design Safety Standards.				Known non-compliance with Design Safety Standards – no mitigation.				Known non-compliance with Design Safety Standards – mitigation(s) in place.			Known compliance with Design Safety Standards.				
<b>3. Energetic Materials</b>	Multiple novel energetic.				Single novel energetic.				Non-novel energetics.			Non-novel energetics.		0.2		
	Energetic with no in-service history.				Energetic may have service history with other users.				Energetic have limited in-service history.			Energetics have significant in-service history.				
	Wholly Non-IM Compliant munition.				Munition IM Compliant against 1 or 2 Threats.				Munition IM Compliant against 3 or 4 Threats.			IM Compliant Munition.				

Factor	Review Level Indicators											Score	Weighting	Weighted Score		
	16	14	12	10	9	8	7	6	5	4	3				2	1
	Very Significant (Score 16 to 9)				Significant (Score 8 to 5)				Marginal (Score 4 to 2)			Insignificant (Score 1 to 0)				
<b>4. OME Complexity and Integration</b>	Complex OME (e.g. autonomous guided).	Complex OME (e.g. man-in-loop guided).				Non-complex but interacts with platform (e.g. decoy flare).			Non-complex (e.g. small arms ammunition).			0.1				
	Critical component new to military service.	Critical component new to UK MOD.				Similar to in-service items.			Identical to in-service items.							
	Safety Critical Software.	Complex Safety Related Software.				Simple Safety Related Software.			No Safety Related Software.							
	Significant OME / Platform integration issues – results in constraints in operation.	Significant OME / Platform integration issues – no operational constraints.				Simple OME / Platform integration.			No OME / Platform integration required.							
<b>5. Perceived Public Acceptability</b>	OME likely to provoke International TV Headline news. International implications.	OME likely to provoke headline national news and continuing local attention.				OME likely to provoke considerable local news with inside page national note.			OME likely to provoke no outside interest.			0.2				
<b>TOTAL SCORE</b>																
<b>REVIEW CATEGORY (HIGH/MEDIUM/LOW)</b>																