



# CHECKLIST

## SORA for BVLOS application

### Instructions

1. The documentation submitted must follow the level of robustness (levels of integrity and assurance) identified when applying the specific operations risk analysis (SORA) version 2.0 methodology. Do not send more documentation than required by the applicable level of robustness (low, medium, high). CASA will not review any out-of-scope documentation and its content will remain solely under the responsibility of the applicant/operator.
2. Further substantiation or documentation might be required upon request by CASA.

Applicant details			
Applicant name		Applicant ARN	

## 1. SORA Step 1 – Concept of Operations (ConOps)

Criteria	Description
<p><b>Location(s)</b></p> <p>Please provide a separate KML file for:</p> <ol style="list-style-type: none"> <li>1. the operational volume (flight geography (FG) and contingency volume (CV))</li> <li>2. the ground risk buffer (GRB)</li> <li>3. the air risk buffer (if required).</li> </ol> <p>The KML must depict the contingency volume and risk buffers when applied to higher populated areas within the operational volume.</p>	
<p><b>Provide a short description of proposed operations:</b></p> <p><i>e.g. We intend to operate the fixed wing RPA to conduct aerial survey task up to 400ft AGL during day and night operations.</i></p> <p><i>e.g. We intend to operate a multi-rotor RPA at 1000ft AGL over forest land to identify new species using thermal imagery. We intend to operate at night and only within 2km from the landing / take-off area.</i></p>	

## 2. SORA Step 2 – Intrinsic Ground Risk Class (iGRC)

Criteria	Description
Max dimension / Speed	<input type="checkbox"/> 1m / 25 m/s <input type="checkbox"/> 3m / 35 m/s <input type="checkbox"/> 8m / 75 m/s <input type="checkbox"/> 20m / 120 m/s <input type="checkbox"/> 40m / 200 m/s
Operational type	<input type="checkbox"/> VLOS <input type="checkbox"/> BVLOS
Type of operational areas on the ground (including FG, CV and GRB)	Controlled ground area Isolated environment Scarcely populated environment Lightly populated environment Sparsely populated environment Suburban / low density metropolitan environment High density metropolitan environment Assemblies of people
Resulting iGRC (for VLOS iGRC, refer to alternate iGRC table published in TMI)	1      2 <input type="checkbox"/> 3 <input type="checkbox"/> 4      5 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10
Information sources used in determination of iGRC	ABS data LandScan On-site assessment Other – please specify:

### Remarks / Justification for determination

Include information relating to the qualitative assessment of the ground area and what population densities you identified within the operational area. The highest population within a 1km grid square should be identified.

### 3. SORA Step 3 – Final Ground Risk Class (fGRC)

#### 3.1 Ground Risk Mitigations – SORA Annex B

Mitigations	Robustness	Remarks	Reference to documentation (insert document ID, chapter/section and page number)
<b>M1 Strategic mitigations for ground risk</b>	<input type="checkbox"/> None (0) <input type="checkbox"/> Low (-1) <input type="checkbox"/> Medium (-2) <input type="checkbox"/> High (-3)		
<b>M2 Effects of ground impact are reduced</b> (e.g. parachute)	<input type="checkbox"/> None/Low (0) <input type="checkbox"/> Medium (-1) <input type="checkbox"/> High (-2)		
<b>M3 An emergency response plan (ERP) is in place, the UAS operator is validated and effective</b>	<input type="checkbox"/> None/Low (+1) <input type="checkbox"/> Medium (0) <input type="checkbox"/> High (-1)		

#### Final GRC

1     
  2     
  3     
  4     
  5     
  6     
  7     
  ≥8

## 4. SORA Step 4 – Initial Air Risk Class (iARC)

Criteria	Description
<b>Classification of the airspace where the operation is intended to be conducted</b> (select all that apply)	<input type="checkbox"/> A <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> G <input type="checkbox"/> Restricted Airspace <input type="checkbox"/> Military Operating Area <input type="checkbox"/> Danger Area <input type="checkbox"/> Airport Environment <input type="checkbox"/> Remote Australian Airspace (refer to STS#6 or #7 for required elements) <input type="checkbox"/> Atypical
<b>Operating heights</b>	<input type="checkbox"/> <500ft AGL <input type="checkbox"/> >500ft AGL but less than FL600
<b>Specify the initial Air Risk Class (of the Operational Volume)</b>	<input type="checkbox"/> ARC-a <input type="checkbox"/> ARC-b <input type="checkbox"/> ARC-c <input type="checkbox"/> ARC-d

## 5. SORA Step 5 – Strategic air risk mitigations and residual Air Risk Class (Optional)

Only complete this section if you are claiming the application of strategic mitigations to reduce the initial Airspace Risk Class. If not, go to step 6.

Criteria	Description
<b>Claimed Residual Air Risk Class</b> (after strategic mitigation)	<input type="checkbox"/> ARC-a <input type="checkbox"/> ARC-b <input type="checkbox"/> ARC-c <input type="checkbox"/> ARC-d

If strategic mitigations are applied, provide remarks / justification against each applied mitigation.

*Note : Completion of this section is mandatory.*

<b>Remarks</b>	<b>Reference to documentation</b> (insert document ID, chapter/section and page number)

## 6. SORA Step 6 – Tactical Mitigations Performance Requirements (TMPR) – SORA Annex D

### 6.1 TMPR level

Criteria	Description
TMPR level required	<input type="checkbox"/> VLOS (not required) <input type="checkbox"/> BVLOS, requirement: <ul style="list-style-type: none"> <li><input type="checkbox"/> ARC-a (The completion of this section is optional when operating in ARC-A)</li> <li><input type="checkbox"/> Low / ARC-b</li> <li><input type="checkbox"/> Medium / ARC-c</li> <li><input type="checkbox"/> High / ARC-d</li> </ul>

### 6.2 TMPR functions

TMPR functions	Remarks (describe how integrity and assurance requirements are met for each function)	Reference to documentation (insert document ID, chapter/section and page number)
Detect		
Decide		

TMPR functions	Remarks (describe how integrity and assurance requirements are met for each function)	Reference to documentation (insert document ID, chapter/section and page number)
Command		
Execute		
Feedback loop		

## 7. SORA Step 7 – SAIL Determination

Criteria	Description
Claimed Specific Assurance and Integrity Level (SAIL)	<input type="checkbox"/> SAIL I <input type="checkbox"/> SAIL II <input type="checkbox"/> SAIL III <input type="checkbox"/> SAIL IV <input type="checkbox"/> SAIL V <input type="checkbox"/> SAIL VI

# 8. SORA Step 8 – Operational Safety Objectives – SORA Annex E

Note: Some OSOs are grouped according to Annex E.

OSO	Robustness	Remarks	Reference to documentation (insert document ID, chapter/section and page number)
<b>#01</b> Ensure that the UAS operator is competent and/or proven	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#02</b> UAS manufactured by competent and/or proven entity	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#03</b> UAS maintained by competent and/or proven entity	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#04</b> UAS developed to authority recognised design standards	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		



OSO	Robustness	Remarks	Reference to documentation (insert document ID, chapter/section and page number)
<b>#05</b> UAS is designed considering system safety and reliability	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#06</b> C3 link characteristics are appropriate for the operation	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#07</b> Inspection of the UAS to ensure consistency with the ConOps	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#08, #11, #14, #21</b> Operational procedures	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#09, #15, #22</b> Remote crew training	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#10, #12</b> Safe design Note: Only applicable when operating over populated areas or gatherings of people.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		

OSO	Robustness	Remarks	Reference to documentation (insert document ID, chapter/section and page number)
<b>#13</b> External services supporting UAS operations are adequate for the operation	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#16</b> Multi-crew coordination	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#17</b> Remote crew is fit to operate	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#18</b> Automatic protection of the flight envelope from human errors	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#19</b> Safe recovery from human error	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		

OSO	Robustness	Remarks	Reference to documentation (insert document ID, chapter/section and page number)
<b>#20</b> A human factors evaluation has been performed and the human machine interface (HMI) found appropriate for the mission	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#23</b> Environmental conditions for safe operations are defined, measurable and adhered to	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		
<b>#24</b> UAS is designed and qualified for adverse environmental conditions	<input type="checkbox"/> Optional <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		

## 9. SORA Step 9 – Adjacent area / airspace considerations

Criteria	Description
<b>Adjacent area determination</b>	Controlled ground area Isolated environment Scarcely populated environment Lightly populated environment Sparsely populated environment Suburban / low density metropolitan environment High density metropolitan environment Assemblies of people
<b>Adjacent airspace</b>	ARC-a ARC-b ARC-c ARC-d
<b>Containment type requirement</b>	Basic containment Enhanced containment

### Remarks / justification for containment

Note: This section relates to the containment type requirement above.

Remarks / justification for determination	Reference to documentation (insert document ID, chapter/section and page number)

# 10. Reference Documents

Example: Emergency response plan.

No.	Title
1	
2	
3	
4	
5	
6	
7	
8	