**UAS General Product Specifications & Concept of Operation (CONOP) Evaluation Worksheet “SMEAC Sheet”**

* **Applicant Name:**
* **Review Date May 15th 2022**
* **Project Number:?**
* **CONOP Revision: Sept. 23, 2020**
* **UAS Risk Class (1-6):**

**Background**: This method of evaluating a CONOP is based on a “5-paragraph order” format, which is leveraged from the military operations world. The purpose is to allow a team of diverse members to quickly determine whether an applicant explicitly identifies key information that will be necessary for a subsequent Operational Risk Assessment (ORA). These paragraphs spell out the acronym S-M-E-A-C, for “Situation”, “Mission”, “Execution”, “Administration & Logistics”, “Command & Signal”. This is known as the “SMEAC Sheet”.

Instructions: Use this SMEAC Sheet as a member of the CONOP review team. Build your understanding of the applicant’s Unmanned Aircraft System by assessing how their CONOP addresses the essential elements of the following five paragraphs. Assess if the listed elements of the CONOP are mature enough to enable moving on to an ORA. Questions of whether particular design features increase or decrease risk, or may or may not be eventually acceptable, will be addressed in the ORA itself (only use the SMEAC Sheet to facilitate understanding the CONOP, and determine if we have sufficient knowledge of the CONOP to enable an ORA).

Grade the applicant’s descriptive adequacy of each element with three possible responses:

* *“S” if the applicant’s description is “Satisfactory” in order to progress to an ORA*
* *“I” if it is “Incomplete” (applicant needs to add material or clarity in order to progress to an ORA)*
* *“N” if the applicant has “Not Addressed” the element (applicant needs to address each element to move to an ORA)*

The standard for grading “S” is whether the applicant’s description will be sufficient for subsequently producing an ORA. Use the “Comments” block to elaborate on “I” or “N” items, or expound as you see fit and attach additional pages as necessary. “I” may include either an incomplete range of content, or an insufficient conciseness of that content.

**Type of Aircraft**

|  |  |  |
| --- | --- | --- |
| **Aircraft Categories** | **Yes / No** | **Comments** |
| **Powered-Lift** |  |  |
| **Part 23 Level 1 – Low or High Performance** |  |  |
| **Part 23 Level 2 – Low or High Performance** |  |  |
| **Part 23 Level 3 – Low or High Performance** |  |  |
| **Part 23 Level 4 – Low or High Performance** |  |  |
| **Part 27 Rotorcraft** |  |  |
| **Part 29 Rotorcraft** |  |  |
| **Part 25** |  |  |
| **Part 107** |  |  |
| **Another Aircraft Category not considered above** |  |  |

**Aircraft Configuration**

|  |  |  |
| --- | --- | --- |
| **Main Components / Aircraft configuration** | **Yes/No** | **Comments** |
| Electrical Engine |  |  |
| Battery (Please describe the type of battery) |  |  |
| Fixed wing |  |  |
| Rotors |  |  |
| Tilt rotors |  |  |
| Fossil Fuel |  |  |
| Electrical (Provide Voltage High/Low) |  |  |
| Number of Passengers |  |  |
| Type of Payload |  |  |
| Pilot |  |  |
| Remote Pilot |  |  |
| Catapult |  |  |
| Landing Gear |  |  |
| Skid Landing |  |  |
| Skid |  |  |
| Composite |  |  |
| Metallic |  |  |
| T Tail, Y Tail or V Tail |  |  |
| Canard |  |  |
| Air cooling |  |  |
| Another type of cooling |  |  |

**SITUATION** – Does the applicant provide the very broad “high level” situation that they propose for their UAS? Are you able to understand the applicant appropriately…

|  |  |
| --- | --- |
| *S* | *1. Describes the nature of the company’s business (manufacturer, operator, system integrator, etc.)*  *dfsfsdf* |
| *I* | *2. Defines their geographic operating boundaries (lack of specifics implies very broad NAS access)*  *1* |
| *S* | *3. Describes whether they will launch/fly/recover only over private property with owner’s permission*  *1* |
| *S* | *4. Defines the minimum and maximum operating altitude of the vehicle*  *1* |
| *I* | *5. Intends to operate within or beyond Visual Line of Sight (VLOS)*  *1* |
| *N* | *6. Adequately defines command and control link*  *1* |
| *S* | *7. Supplies information on dimensions, materials & processes necessary to define the vehicle design.*  *1* |
| *S* | *8. Identifies the congestion of their proposed operating area*  *1* |
| *S* | *9. Identifies the vehicle’s maximum cruise speed*  *1* |
| *S* | *10. Describes Their Proposed Airspace Classes (A, B, C, D, E, G, F, etc.)*  *1* |
| *S* | *11. Defines the Proposed Operating Airspace (character aspects of particular air spaces – regardless of class)*  *1* |
| *I* | *12. Describe location of the control station*  *1* |
|  | *Comments***:**  *1* |

**MISSION** – Does the applicant provide a clear and concise statement of what they want to accomplish. This is probably the most important large-scale question, since “implicit in the design is the use.” Are you able to understand if the applicant appropriately …

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|  |  |
| --- | --- |
| *S* | *1. Describes the intended mission of the UAS (surveillance, agricultural applicator, cargo delivery, etc.)*  *2* |
|  | *Comments:*  *2* |

**EXECUTION** – Does the applicant adequately state how they will “execute” the mission in their particular situation? Are you able to understand if the applicant appropriately …

|  |  |
| --- | --- |
| *S* | 1. *Identifies Airspace Considerations (peculiarities & congestion of particular airspace, special use, etc.)*   *3* |
| *I* | 1. *Gives Launch & Recovery Details/ Location(s)*   *3* |
| *N* | 1. *Identifies and describes the vehicle’s proximity to people, infrastructure and surface vehicles.*   *3* |
| *S* | 1. *Identifies and describes the vehicle’s proximity to other NAS users*   *3* |
| *S* | 1. *Identifies whether they want to Fly Into Known Icing (FIKI)*   *3* |
| *S* | 1. *Identifies the meteorological conditions they want to operate in (Visual/Instrument conditions)*   *3* |
| *S* | 1. *Identifies the flight rules they want to operate in (Visual / Instrument Flight Rules)*   *3* |
| *S* | 1. *Describes whether their geographic and airspace boundaries are physically contiguous*   *3* |
| *I* | 1. *Identifies the Automation Level (occasional autopilot, 100% autonomous, manual control, etc.)*   *3* |
| *I* | 1. *Identifies minimum crew and support personnel*   *3* |
| *I* | 1. *Identifies the role(s) of the crew and support personnel*   *3* |
| *S* | 1. *Identifies whether they will fly over people not involved in the operation*   *3* |
| *S* | 1. *Identifies any requests for airspace be blocked-off for their exclusive use.*   *3* |
| *S* | 1. *Identifies their operator/vehicle ratio (1:1, etc.)*   *3* |
| *S* | 1. *Identifies day and/or night operations*   *3* |
| *S* | 1. *Plans for safety of Operator(s) and Observer(s)*   *3* |
| *N* | 1. *Describes the training level of each team member*   *3* |
|  | *Comments:*  *3* |

**ADMINISTRATION & LOGISTICS** – Assess how well the applicant builds your understanding of information or instructions pertaining to how and with whom they will coordinate to conduct the operations. Are you able to understand if the applicant appropriately …

|  |  |
| --- | --- |
| *N* | 1. *Describes Community Outreach Plans (Flying / Non-Flying Public, municipalities, airports, etc.)*   *4* |
| *S* | 1. *Describes when/ if flight plans will be filed with Air Traffic Control (VFR/IFR)*   *4* |
| *S\** | 1. *Identifies Liaisons with Air Traffic Control*   *4* |
| *I* | 1. *Identifies MISHAP Reporting Procedures*   *4* |
| *I* | 1. *Identifies when NOTAMs will be posted*   *4* |
|  | *Comments:*  *4* |

**COMMAND & SIGNAL** – Asses how well the applicant informs you of their plans involving command and communication functions between different portions of the UAS and stakeholders. Assess how the applicant will command & signal amongst the various components of the entire system (vehicle, control station, control link, observers, etc.). Are you able to understand if the applicant appropriately …

|  |  |
| --- | --- |
| *I* | 1. *Describes Communication Between The Operator, Observer and Crew Members (visual, radio, etc.)*   *5* |
| *I* | 1. *Describes the Electronic Security of the Control Link*   *5* |

|  |  |
| --- | --- |
| *I* | 1. *Describes the Physical Security of the operator and control station*   *5* |
| *I* | 1. *Describes real time situational awareness features*   *5* |
| *S\** | 1. *Describes the number of operators, and hand-off between control stations (direct/“daisy chain”, etc.)*   *5* |
| *I* | 1. *Describes Lost Link Procedures or loss of Positive Control*   *5* |
| *S* | 1. *Describes Communication Expectations w/ATC*   *5* |
| *I* | 1. *Describes Emergency Procedures*   *5* |
|  |  |

(end)