UNMANNED AIRCRAFT SYSTEM PERFORMANCE METRIC

1. INTRODUCTION

1.1 Performance Metric

1.1.1 The purpose of this Performance Metric is to provide a detailed description of the performance standards and guidelines that will be applied to measure the performance of the contractor supplied Unmanned Aircraft System (UAS) during the contract delivery phase.

1.1.2 The UAS performance metric will be used to assess performance of the contractor's supplied UAS against pre-determined Sortie Reliability Rate (SRR) of 95%.

1.1.3 The SRR of 95% is to provide a quantitative performance goal for the contractor to be able to deliver reliable UAS, which is capable of delivering contractual requirements throughout the period of contract.

1.2 SRR Criteria

Each authorized Assignment will be assessed against the SRR criteria. The Contractor must achieve a minimum of 95% SRR to earn full payment. Should the contractor fails to deliver SRR of 95%, the sortie payment shall be prorated taking into account the actual delivered hours as per the guidelines described below.

2. SORTIE PROTOCOL

2.1 SRR shall be used as the measure of effectiveness for sortie performance. SRR is defined as the total credited sortie hours completed over the course of a month divided by total scheduled sortie hours over the course of a month. A SRR of 95% is the minimum threshold required for full payment, with a desired SRR of 100%.

2.2 The Contractor must deliver all sortie requirements in accordance with the approved schedule provided to the Assignment Manager. If the contractor fails to meet the required SRR of 95% for any scheduled sortie in a specific calendar month, that particular Sortie payment shall be prorated. Contractor's applicable monthly invoice must claim prorated payment/s in accordance with the instructions provided below.

2.3 The Contractor will not be subject to reduced payments when SRR falls below the minimum required threshold of 95% as a result of reasons beyond the control of the contractor and without the fault or negligence of the contractor as defined in contract.

2.4 A 100% credited sortie is defined as UAS successfully delivering all scheduled hours with the required functional payload to accomplish the pre-defined goals of the sortie, at the designated location, within the specified time, with successfully transmitting quality and useful data, in accordance with the Annex C - System Performance Specifications (SPS), in accordance with the Sortie Plan.

2.5 Total achieved sortie hours by the contractor will be the sum of the daily scheduled sortie hours minus any cancelled hours by Canada due to factors outside the contractor's control.

2.6 The total credited sortie hours that shall qualify for payment will be total sortie hours delivered as per the following process. The total sortie hours delivered will be calculated by subtracting the total sortie hours delivered within each twenty-four hour period minus the sortie cancelled hours by the contractor, from the originally scheduled hours, that result from circumstances that are within the Contractor's control.

2.7 The table below specifies the adjustment factors that shall determine the proration ratio of a monthly invoice when the SRR is not met.

3. METHODOLOGY FOR CALCULATING SRR

3.1 The following are some probable scenarios to illustrate calculation for the SRR:

3.1.1 Sortie 1 is scheduled for 10 hours to accomplish imaging mission. The imaging payload fails in the last 1.5 hours of the scheduled sortie resulting in 1.5 hours reduction to credited sortie time. The contractor will be credited with 8.5 hours.

3.1.2 Sortie 2 is scheduled for 10 hours to accomplish imaging mission. A storm blows up during the last 1.5 hours of the sortie and Canada cancels the remaining portion of the sortie. A 1.5 hour adjustment is made to the sortie achieved time to 8.5 hours. The Contractor will be credited with 8.5 hours.

3.1.3 Sortie 3 is scheduled for 10 hours to accomplish imaging mission. Canada extends the mission for an additional hour. The Contractor delivers all eleven hours. The Contractor will be credited with 11 hours.

3.1.4 Sortie 4 is an unscheduled Contact of Interest opportunity imaging mission of a 4 hour length. The Contractor successfully executes the sortie and is therefore credited with an additional 4 hours towards the monthly total.

3.1.5 Sortie 5 is scheduled for a 10 hours to accomplish imaging mission. After 4 hours of sortie time, the UA has an engine failure. As a result the contractor cannot deliver the remaining 6 hours of sortie time. The Contractor is credited with 4 hours;

3.1.6 Sortie 5A is a follow-on to Sortie 5, with a replacement UA. The Contractor completes the last 2 hours of the scheduled sortie and is credited with the 2 additional hours.

3.1.7 Sortie 6 is scheduled for 6 hours to accomplish imaging and AIS mission. The UA is not available for the entire sortie due to maintenance issues.

3.2 **Calculation of the SRR**

3.2.1 This example assumes the scheduled hours for each sortie in the table below:

Table 1:

Sortie Number	Scheduled Hours
Sortie 1	10.0 Hours
Sortie 2	10.0 Hours
Sortie 3	10.0 Hours
Sortie 4	0.0 Hours
Sortie 5	10.0 Hours
Sortie 5A	0.0 Hours

Sortie 6	6.0 Hours
Total Scheduled Sortie Hours	**46 Hours**

3.2.2 If we assume that that the delivered UAS flying hours for sorties are as per the following:

Table 2:

Sortie Number	Achieved Hours
Sortie 1	8.5 Hours
Sortie 2	8.5 Hours
Sortie 3	11.0 Hours
Sortie 4	4.0 Hours
Sortie 5	4.0 Hours
Sortie 5A	2.0 Hours
Sortie 6	0.0 Hours
Total Achieved Sortie Hours	**38.00 Hours**

3.2.3 Based on Table 1 and 2, the calculation of SRR will be as following:

SRR = Total credited Sortie hours successfully completed over the course of a month divided by total Sortie hours scheduled over the course of the same month.

This ratio (38/46) results in an achieved monthly SRR of 82%. Therefore, for example, if the per hour UA flying rate is $800.00, the contractor will be paid $35,696.00 based on 3% adjustment factor shown in Table 3.

3.2.4 Scheduled Sortie Hours shall not include transit time.

3.2.5 Actual Sortie Hours shall include hours of unscheduled Sorties performed; and

3.2.6 Credited Sortie Hours shall not credit time if the one or more payload data not successfully transmitted if scheduled and/or requested by Canada.

3.2.7 The following payment adjustment factors will be applied to settle contractor’s claim:

Table 3:

Payment Adjustment Factor	
Achieved SRR	**Adjustment Factor**
Above 95%	+ 1% of the total payment
= 95%	Full Payment
90% to 94.9%	-1%
85% to 89.9%	-2%
80% to 84.9%	-3%
75% to 79.9%	-5%
70% to 74.9%	-6%
65% to 69.9%	-20%
60% to 64.9%	-30%
Below 60%	-50%

4. UAS Availability Criteria

A cumulative SRR below 60% in any specific month will be deemed as contractor not having meet its assignment obligations under the contract. Should the contractor fail to deliver a minimum of 630 hours during an assignment, i.e. not meeting sixty percent threshold of the mandatory 1050 hours required, the contractor will be paid fifty percent of the assignment payment.

UAS PERFORMANCE REPORTING LOG

The log below or a similar log may be used by the CAF and Contractor for documenting Sortie performance.

UAS PERFORMANCE LOG - March 2019												
							Daily	MTD	YTD			
Assignment Number:						Hours:					Date	1 Apr 2019
Assignment Manager:						Sorties:						
						Unscheduled Flights:						
				Scheduled			Actual					
Date	Sortie # Scheduled (S) Unscheduled (U)	Aircraft #	Sensor(s)	Start Time	Stop Time	Sortie Time (hours)	Start Time	Stop Time	Sortie Time (hours)	Reason for Cancel Abort or Delay	Notes	MRR %
1 Mar 2019	1 (S)	1	Imaging	0800	1800	10.0	0800	1630	8.5			
2 Mar 2019	2 (S)	2	Imaging	0640	1510	8.5	0640	1510	8.5	Sandstorm		
3 Mar 2019	3 (S)	2	Imaging	0600	1600	10	0600	1700	11.0			
5 Mar 2019	4 (U)	1	Imaging				2100	0100	4.0			
8 Mar 2019	5 (S)	1	Imaging	1800	0400	10	1800	2200	4.0			
9 Mar 2019	5a (U)	1	Imaging				2330	0130	2.0			
11 Mar 2019	6 (U)	2	Imaging and AIS	1800	0000	6	1800	1800	0.0	Mechanical failure		
Total						44.0			38.5			99.0