APPENDIX H

Functional & Reliability (F&R) Tests / Interoperability Assessment (IA)

The following definitions of probability terms are described in FAA Advisory Circular (AC) 23.1309-1C (single reciprocating engine [SRE], under 6000 lbs class of airplanes designed to FAR Part 23 airworthiness code).

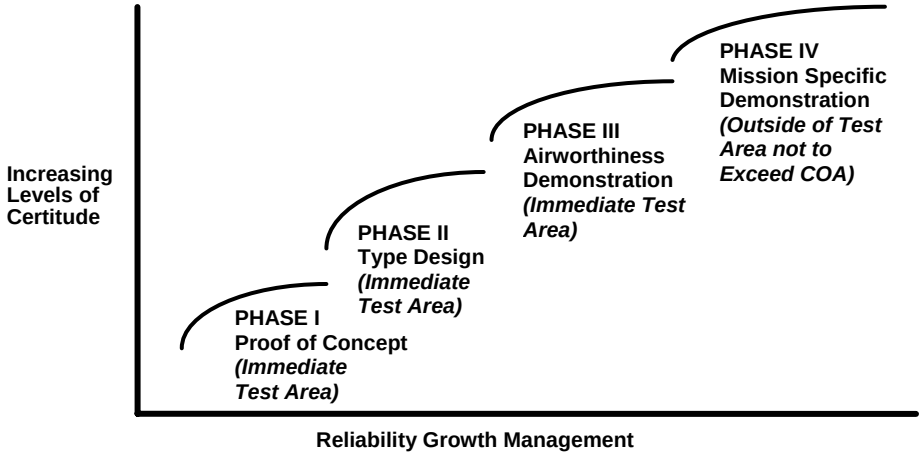
- ***Probable:***
  Qualitative: *anticipate occurring one or more times during the operational life of an entire system or fleet.*
  Quantitative: probability of occurrence per operational hour less than or equal to 1 x 10-3.
- ***Remote:***
  Qualitative: *unlikely to occur to each item during its total life (may occur several times in the life of an entire system or fleet).*
  Quantitative: probability of occurrence per operational hour is less than or equal to 1 x 10-4.
- ***Extremely Remote:***
  Qualitative: not anticipated to occur to each item during its total life (may occur few times in the life of an entire system or fleet).
  Quantitative: probability of occurrence per operational hour is less than or equal to 1 x 10-5.
- ***Extremely Improbable:***
  Qualitative: so unlikely that it is not anticipated to occur during the entire operational life of an entire system or fleet.
  Quantitative: probability of occurrence per operational hour is less than or equal to 1x 10-6.

RANGE SAFETY CRITERIA HAZARD PROBABILITY LEVEL GUIDELINES:

Description	**Level**	**Incidents Per 100,000 Flight Hrs**	**Individual Exposure Rate**	**Fleet or Inventory Exposure Rate**
Frequent	A	100 or more	likely to occur frequently	continuously experienced
Probable	B	10 to 99	will occur several times in the life of an item	will occur frequently
Occasional	C	1 to 9.9	likely to occur sometime in the life of an item	will occur several times
Remote	D	0.1 to 0.99 `	unlikely but possible to occur in the life of an item	unlikely but can reasonably be expected to occur
Improbable	E	less than 0.1	so unlikely, it can be assumed occurrence will not be experienced	unlikely to occur, but possible

NMSU PSL TAAC can provide sufficient details as may be necessary to describe the areas over which the flights are to be conducted, including establishing geographical boundaries of the flight test area and any restrictions of flights over densely populated areas, congested airways, and takeoff, departure, and landing approach corridors, to ensure that hazards to other aircraft, persons, and property on the ground are minimized.

NMSU PSL TAAC Airworthiness Flight Test Demonstrations



PHASE	I	II	III	IV
Example of Flight Hrs	40	40	40	80 (Aerostar)

NMSU PSL TAAC is proposing appropriate functional & reliability (F&R) flight tests in the immediate assigned test area and outside the test area that would collectively approximate 200 hrs total. Please be aware, NO flight tests and/or demonstrations will be conducted by NMSU PSL TAAC personnel until appropriate airworthiness substantiation has been developed and submitted for review/evaluation.

The initial 40 hrs total time in service for Phase I is intended to demonstrate compliance with the flight operations of an unknown UAS in specific non-populated areas, to ensure all components are operating properly.

The 80 hrs total time in service in Phases II & III, is intended to demonstrate an increase in reliability of the UAS, within the assigned immediate test area and buffer zone, at the full performance capabilities (normal & emergencies) of the UAS.

The final 80 hrs total time in service in Phase IV is intended to cover mission specific flight demonstrations for a UAS *(like the Aerostar)*, for flights outside of the immediate assigned flight test area but within the imposed provisions and restrictions of the COA.

Phase IV will include all flight demonstrations conducted under the TAAC developed unmanned systems operations & validations program procedures and requirements. The Phase IV demonstration flight area will be coordinated with FAA prior to conducting actual UAS flight operations and will be in accordance with the certificate of authorization (COA).

Note: ADS Aerostar UAS (S/N 617 and S/N 618) are considered eligible for operations at the Phase IV level based on the collective airworthiness substantiation provided and the known reliability growth and assessment of the system.