Directorate of Civil Aviation
Grand-Duché de Luxembourg

UAS – THEORETICAL REQUIREMENTS

FOR OPEN A2 CATEGORY EXAMINATION

The theoretical knowledge examination should cover aspects from the following subjects:

Meteorology

1. The effect of weather on the UAS :
- wind (e.g. urban effects, turbulence, evolution with altitude, isobars, pressure charts)
- temperature (cold/heat, UAS performance)
- visibility (light, precipitations)
- the density of the air (warm/cold air, high/low altitude)

2. Obtaining weather forecasts

UAS flight performance

1. The typical operational envelope of a rotorcraft, for fixed wing and hybrid configurations

2. Mass and balance, and center of gravity (CG)
- consider the overall balance when attaching gimbals, payloads (MTOM, load factor…)
- consider payloads characteristics and stability of a flight (fixed winds vs. rotorcraft)
- understand that each different type of UA has a different CG

3. Secure the payload

4. Batteries
- understand the power source to help prevent potential unsafe conditions (amperage…)
- familiarize with the existing different kinds of battery types (LiPO,NiMh…)
- understand the terminology used for batteries (e.g. memory effect, capacity, c-rate)
- understand how a battery functions (e.g. charging, usage, danger, storage)

Technical and operational mitigations for ground risk

1. Low-speed mode functions (OPEN sub-categories)
2. Evaluating the distance from people (safety distances, involving people ...)
3. The 1:1 rule