MINUSMA
Unmanned Aerial System (UAS)
- Operational Capabilities and Requirements
Agenda.

1 Introduction – Guidelines – Generation Process
2 Strategic & Operational Framework
3 Force Limitations
4 UAS Classifications – MINUSMA Inventory
5 Airborne ISR Capabilities and Tasks
6 Operational Requirements
Purpose.

To provide guidance on the considerations required for the generation and employment of Unmanned Aircraft Systems (UAS), for both the military and civilian aspects of United Nations Field Missions.

Scope.

To apply guidelines to United Nations Headquarters (UNHQ) staff, military commanders, staff officers and United Nations personnel in Field Missions, to generate UAS capabilities to support UN missions.
UAS/ISR Force Generation.

Operational Requirements

UNSCR 2480 (2019)

- Contract of commercial provider by the individual mission
- UNHQ contract UAS capability on behalf of the mission
- TCCs offer UAS capabilities through the Peacekeeping Capability Readiness System

MPS / OMA

In the instance of a TCC contribution, defining the Statement of Force Requirement is a Military Planning Service (MPS)/OMA responsibility, which will take into account the ceiling limit of deployed forces in the mission.

DOS

Responsible for the contracting element of commercial UAS and military units' Letter of Assist. Evaluating or assessing TCCs and commercial UAS providers.

UAS Joint Cell UNHQ

Throughout the generation, the UAS Joint Cell in the UNHQ will act as the focal point and will ensure the appropriate capabilities match the UN Field Mission’s operational requirements.
Strategic & Operational Framework.

1st Strategic Priority
Implementation of the Peace Accord.

- "Monitor and supervise the ceasefire"
- "Anticipate, deter and effectively respond to threats to the civilian population”.

2nd Strategic Priority
Protection of Civilians in the Centre.

- "Monitor and document violations of human rights”
- "Strengthen Early warning”
- "Mitigate the risks to civilians in force and police operations”

- Agile
- Flexible
- Proactive
- Robust

5 KEY AREAS
+ 6 KEY POPULATION CENTRES

MINUSMA UAS –Operational Capabilities and Requirements
Force limitations to cope with the Mandate.

Movability.
Terrain, climate and distances limit the responsiveness of the Force.

“Blind spots”.
Force strength and posture do not allow for a complete coverage of the AoR and for permanent presence of troops on the ground.

Aviation (manned).
Vulnerability to ground-air-threats and limited durations over “targets” do not allow for endured coverage of hot and/or blind spots.

CASEVAC.
Ground Force AoO is limited to areas of appropriate medical emergency response.

Unmanned Aircraft Systems (UAS) and airborne ISR assets allow for an agile, proactive, flexible and anticipating response to areas where troops cannot go or/and timely action and response is needed.
Airborne ISR assets close the capability gaps.
### UAS Classifications / MINUSMA deployed UAS.

<table>
<thead>
<tr>
<th>Class</th>
<th>Category</th>
<th>Recommended employment</th>
<th>Normal approximate operating altitude AGL</th>
<th>Range</th>
<th>Recommended CZ level</th>
<th>Examples (deployed)</th>
<th>Sector/Unit</th>
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<tr>
<td>Class III</td>
<td>HALE</td>
<td>Strategic/national</td>
<td>&lt;65,000 ft</td>
<td>Unlimited (BLOS)</td>
<td>AOR/mission</td>
<td>Global Hawk</td>
<td></td>
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<td></td>
<td>MALE</td>
<td>Operational/theatre</td>
<td>&lt;45,000 ft</td>
<td>Unlimited (BLOS)</td>
<td>AOR/mission</td>
<td>HERON-1 (3) (2 X TL)</td>
<td>SEC-E, GAO DEU ISR</td>
</tr>
<tr>
<td>Class II</td>
<td>Tactical</td>
<td>Tactical formation</td>
<td>&lt;18,000 ft</td>
<td>&lt;200 km (LOS)</td>
<td>Brigade</td>
<td>HERMES 450 FALCO SPERWER</td>
<td></td>
</tr>
<tr>
<td>Class I</td>
<td>Small</td>
<td>Tactical unit</td>
<td>&lt;1,000 ft</td>
<td>&lt;50 km (LOS)</td>
<td>Battailion/Regiment/Sector</td>
<td>SCANEAGLE SHADOW 200 LUNA (10)</td>
<td>SEC-E, DEU ISR</td>
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<tr>
<td></td>
<td>Mini</td>
<td>Tactical sub-unit (manual or hand launch)</td>
<td>&lt;1,000 ft</td>
<td>&lt;25 km (LOS)</td>
<td>Company/Platoon/Squad</td>
<td>RAVEN (3) ALADIN (4) PUMA (2)</td>
<td>SEC-E, DEU ISR</td>
</tr>
<tr>
<td></td>
<td>Micro</td>
<td>Tactical sub-unit (manual or hand launch, tethered)</td>
<td>&lt;400 ft</td>
<td>&lt;5 km (LOS)</td>
<td>Platoon/Squad/Team</td>
<td>WASP II MIKADO (9) DJI PHANTOM 4 (2) DJI MARVIC Pro</td>
<td>SEC-E, DEU ISR</td>
</tr>
</tbody>
</table>

**Visual Line of Sight (LOS):** most Class I UAS, aircraft pilot must be able to see the UAS at all times.

**Radio LOS:** larger UAS, radio signal comms for directional input and to receive feed from the sensors; it does not mean that the UAS must be within visual range.

**Beyond LOS (BLOS):** Class III UAS, need to use satellite uplinks and downlinks to communicate with the UAS.
Airborne ISR capabilities and desired tasks.

- Monitor Disaster Areas (e.g. floods)
- Monitor population movements
- Identify/ Monitor illegal Activities
- IDP/ Refugee movements
- Geo Surveys
- Logistical surveys/ recce
- Facilities security support

- Monitor border area movement and activity
- Monitor CAGs / TAGs
  - OP FARRIER (CTS monitoring of ceasefire violations)
- Post-incident assessment or battle damage assessment (BDA)
  - IDF attacks, crash sites, IED attacks, POC invest.

- Primarily Information collection
- Provide Force Protection (FP) through ‘Overwatch’
  - OP MONGOOSE (series), OP AZALAI (series)
- Provide persistent coverage of ongoing incidents, as a product for subsequent analysis, interpretation and evaluation
- Peace Keeping
- Humanitarian

“Force & Mission Multiplier”

DAY and NIGHT
Force Operational Airborne ISR Requirements.

Day and Night operations.
Capable to operate during day and night using distinct sensors to allow for appropriate surveillance and detection. (EO & IR)

At least 2 separate Tasking Lines.
Provide services for two simultaneous operations to endure day and night operations and to mitigate regional weather impact. (2 ISR assets at separate locations)

At least 300hrs/month and 12hrs/day.
Desirably with only one day a week for crew rest.

SAR/GMTI Sensors...
Optional Synthetic Aperture RADAR (SAR) allow for all weather, day/night imaging. Optional Ground Moving Target Indicator (GMTI) allows for identification of moving targets.
Military TCC vs. Contracted providers.

- Military Chain of Command (C2)
- **Could operate orders not tasks**
- Military logistic support / NSE back-bones
- Military attitude and loyalty to **go the extra mile**
- Data storage and processing in classified domains
- TCC more likely to obey/adjust to agreed SUR
- ISR units account into the Mandate ceiling

- C2 arrangement into military structures
- Access to classified information
- **Reluctant to adjust** or go beyond contract
- Commercial supply chain in hazardous AO
- Operate on a **Min-Max Business Principle**
- Adjustments come at high prices
- Do not fall under Mandate ceiling
- Possibly faster access to new technologies
Summary

✔ Persistent requirement for MALE UAS and/or Airborne ISR assets beyond 2020 (Force Adaptation)

✔ Will allow for Agile, Proactive and Flexible responses

✔ Min 2 TL: preferably operated from separate locations

✔ Generation priority sits with TCC.

✔ Sensor Mix Day/Night, Long endurance, IMINT Analysis, FMV – RVTs/Rovers, especially for MTF/FCP Requirements.

✔ Generation/deployment at low infrastructural and crowding-out effects