



INNOVATION AND TECHNOLOGIES IN HUMANITARIAN AVIATION

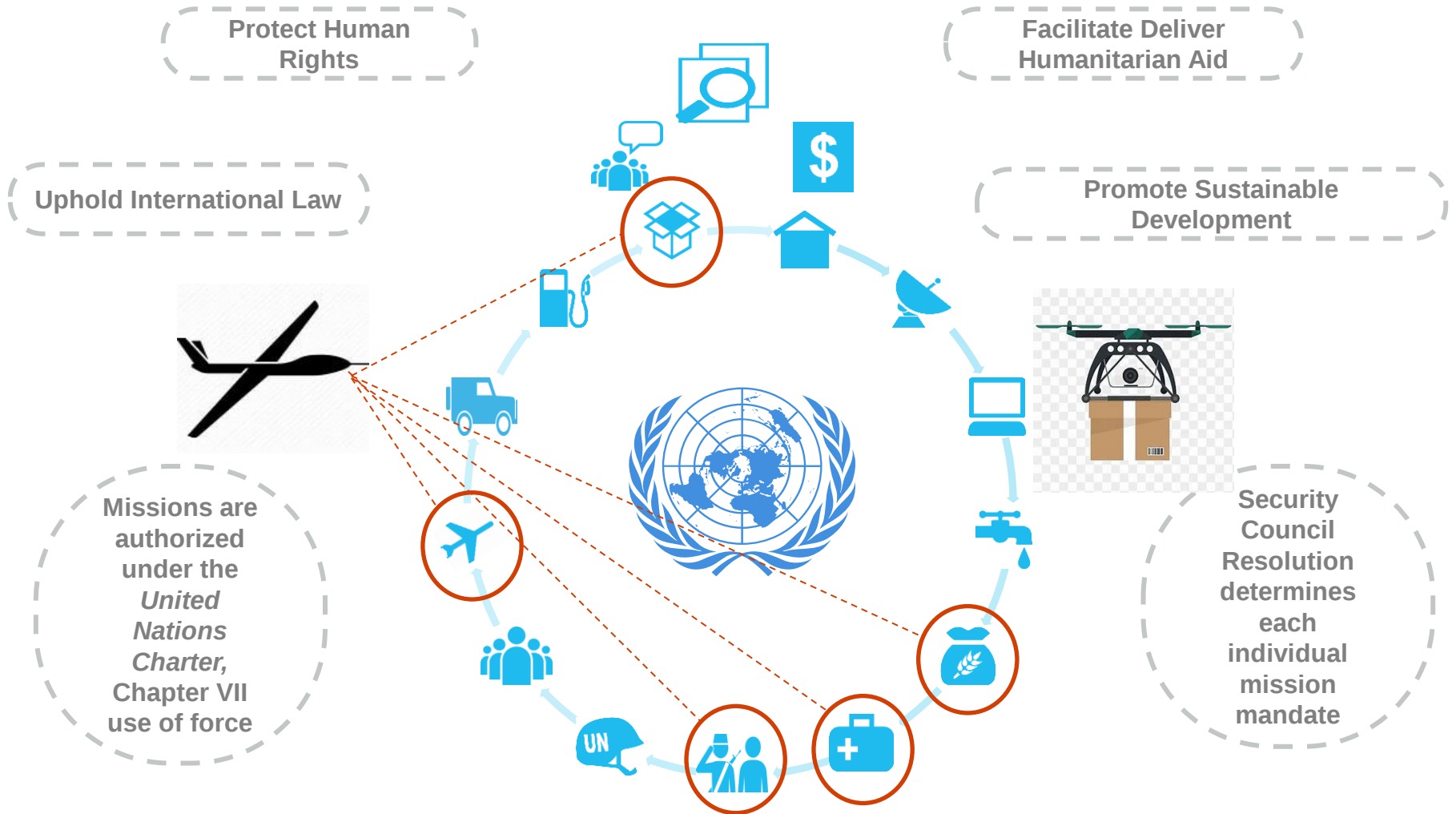
UAS/RPAS CHALLENGES FOR AVIATION SAFETY AND WAY FORWARD

Ovais Ahmed
Chief Aviation Safety, DOS
United Nations Headquarters



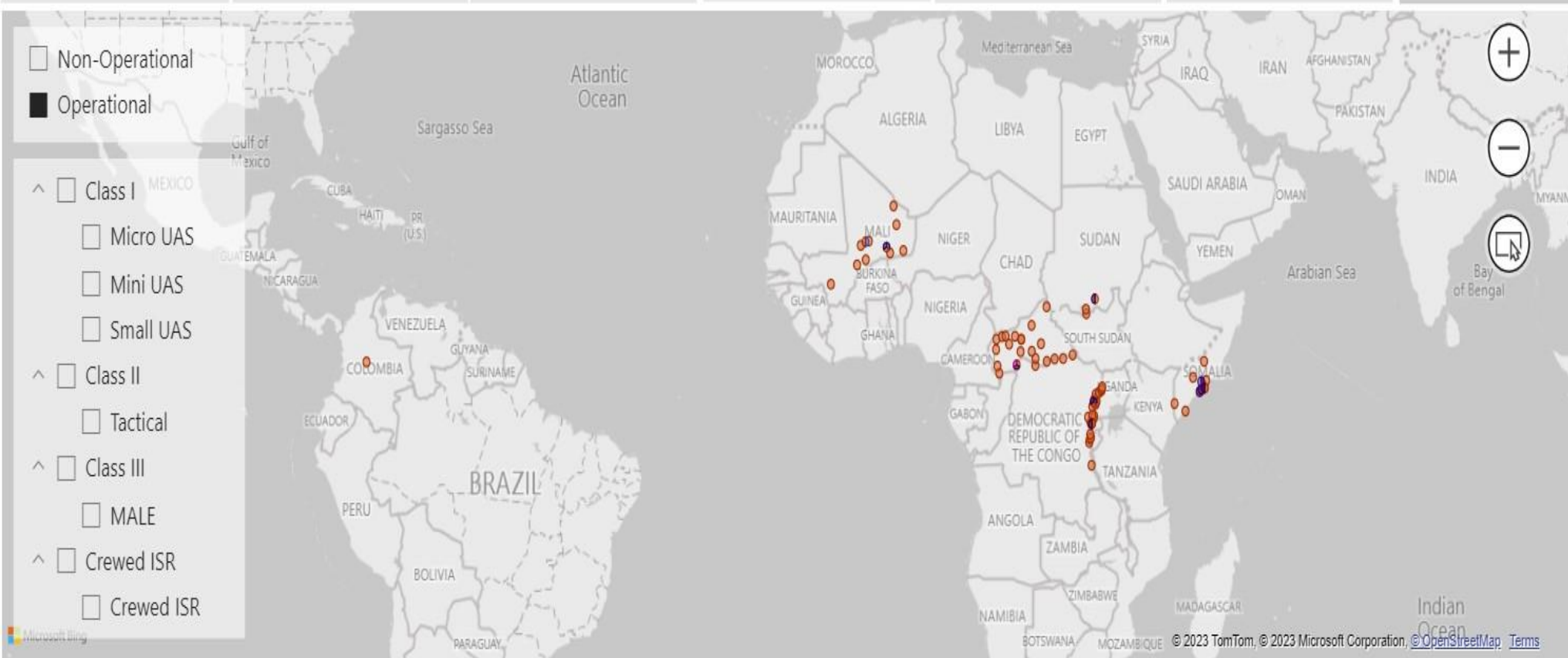


Maintain International Peace and Security



UAS/RPAS and Airborne ISR | Fleet Overview

Class I			Class II	Class III	ISR	Total
Micro	Mini	Small	Tactical	MALE	Crewed ISR	
						
417	37	4	3	7	2	470



UAS/RPAS and Airborne ISR | Micro and Mini UAVs

Status

- Select all
- N/A
- Non-Operational

Mission

- Select all
- MINUSCA
- MINUSMA
- MONUSCO

TCC

- Select all
-
- Bangladesh

Ownership Type

- Select all
- COE
- UNOE

Asset Type

- Select all
- Micro UAS

Purpose

- Select all
- Mapping and Imag...

Reported number of
Micro and Mini UAS
deployed

454
Operational

9
Non-Operational

Reported number of Micro and Mini UAS per Mission

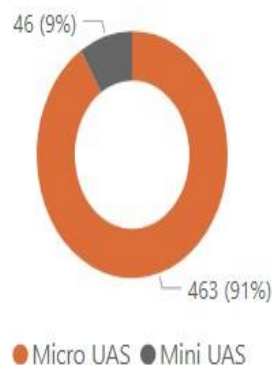


Location of Micro and Mini UAS as per last reporting date

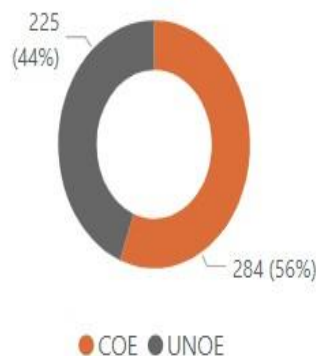
Status ● Non-Operational ● Operational



UAS per Type



UAS per Ownership



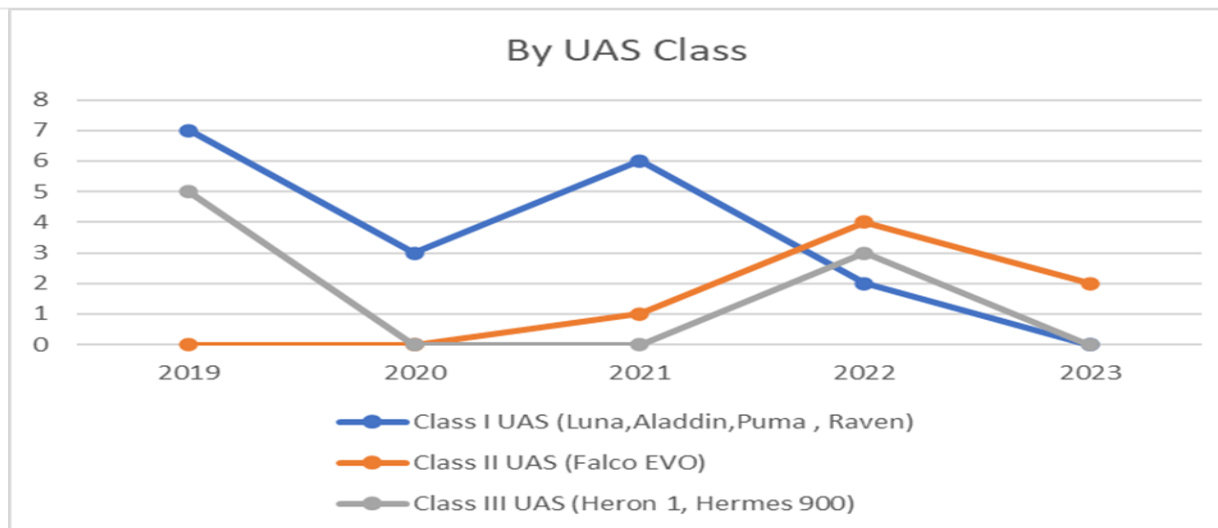
Monthly Evolution



Last data update: 2023-07

Source: Micro and Mini UAS Deployment tracker





Class I UAS (Luna, Aladdin, Puma, Raven)	2019	2020	2021	2022	2023
SCF-NP: System/Component Failure (Non-PP)	2	0	1	1	0
SCF-PP: Powerplant System/Component Failure	1	2	0	1	0
WX: Weather related	1	1	4	0	0
LOC-I: Loss of control-Flight	3	0	0	0	0
ARC: abnormal rwy contact	0	0	1	0	0
Class II UAS (Falco EVO)	2019	2020	2021	2022	2023
SCF-NP: System/Component Failure (Non-PP)	0	0	0	1	2
SCF-PP: Powerplant System/Component Failure	0	0	1	2	0
WX: Weather related	0	0	0	0	0
AMAN: Crew Related	0	0	0	1	0
ARC: abnormal rwy contact	0	0	0	0	0
Class III UAS (Heron 1, Hermes 900)	2019	2020	2021	2022	2023
SCF-NP: System/Component Failure (Non-PP)	3	0	0	0	0
SCF-PP: Powerplant System/Component Failure	1	0	0	0	0
MAC: Airprox/ACAS/mid-air collisions	0	0	0	3	0
ATM/CNS	1	0	0	0	0

1 Flying with Loads,
dropping Loads



4 Flying in Adverse
Conditions – Marginal
Wx, Jamming

**FUTURE
UN OPERATIONS**

2 Flying Over Crowds &
Specialized Operations

3 Flying DG, Infectious
Substances

Paradigm Shift

UAS Future Projects

Possible Support to Humanitarian



CARGO

- 50-300kg
- Target 2 tons



MEDICAL

- Blood
- Vaccines
- supplies



MISSION SUPPORT

- De-mining/counter IED
- Emergency response
- Airspace management.
- Counter-terrorism, crowd monitoring.



UN Regulatory Framework
Certifications

Variety of Entities – Ops and
Regulations

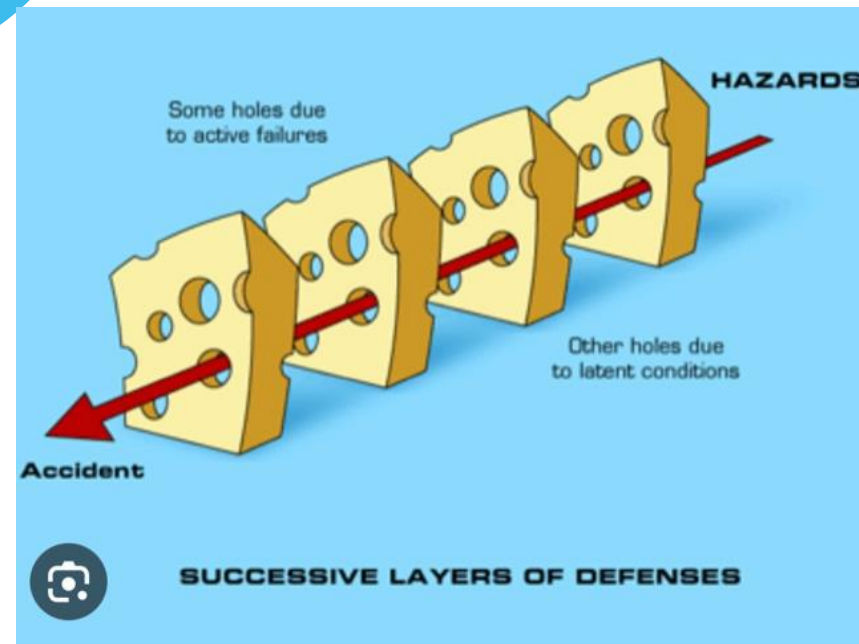
UN Risk Management Model
and Safety Assurance

RISKS

Training

Airworthiness

Counter UAS/
Cyber Security



Key Message – The cost of Innovation can be high!

Mitigation by Strengthening UN Safeguards

- UN Regulatory Framework (Technical Criteria's – Commercial and Military).
- UN Identified Role – formalize in regulations and coordination.
- UN Training for the future.
- Declaration of Complex Operations – as Specialized Operations.
- Adoption of Risk Management Model – mandatory for all classes, especially for specialized operations.



Questions