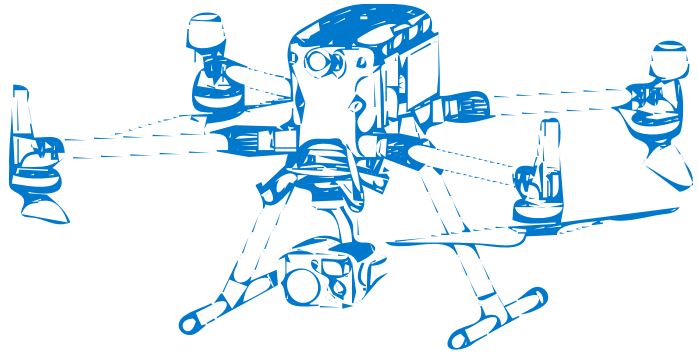
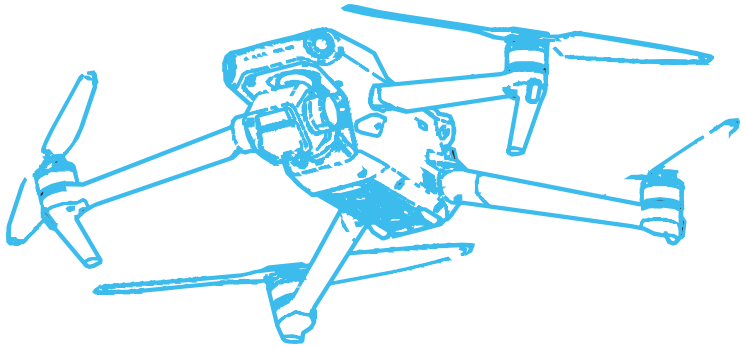
01.

Course Introduction

Micro-UAS Remote Pilot / Instructor Course

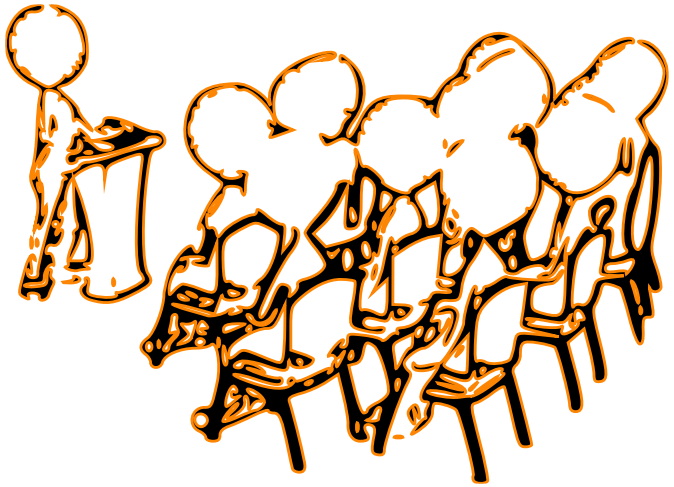
Hizkiel Getu Gebreselassie

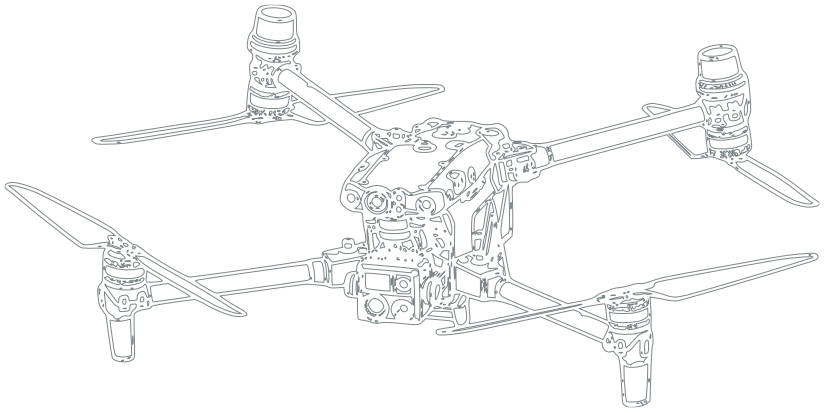




Aim

To explain how the courses will be conducted





Agenda

1. Course History
2. Instructors' Introduction
3. Attendees' Introduction
4. Training Description (Schedule, Timetable, Assessment)
5. Safety and Other Relevant Information
6. Q&A

M-UAS Training - UN

United Nations Global Service Center

1. Valencia – Spain
2. Brindisi - Italy

UNCAP

UNC4ISR- UN Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

M-UAS as a Service

Service Provider

1. UNGSC
2. SGITTS/TDDPS/TDU

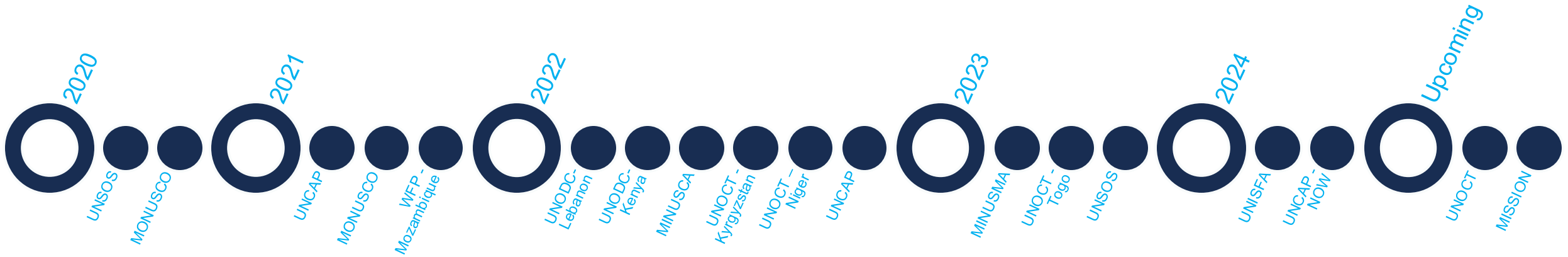
Training

1. MUAS Operator
2. MUAS TOT
3. MUAS Digital Forensics
    1. First Responder
    2. Level 1

Services

1. Technical Support
2. Operation Support
3. Procurement Support

MUAS Operator / TOT Training History



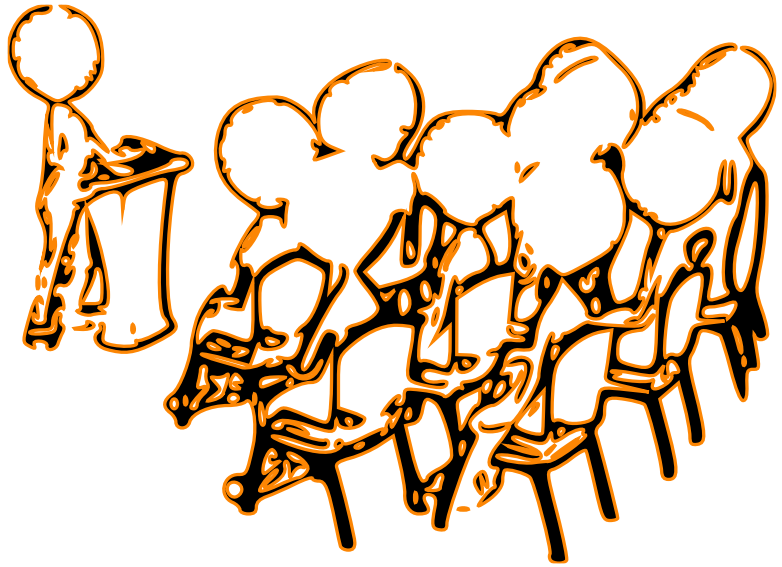
Trainers' Introduction

1. Jimmy Bourrel and Wenceslas Rubin : École des drones
2. Bedan Muroki : MONUSCO
3. Arvin Fajardo : UNISFA
4. Hizkiel Getu Gebreselassie: UNGSC

- Years of experience working for UN both in Mission and UNGSC
- Experience in
  - ICT Security
  - System Administration
  - Software development
  - Analysis, design, development / acquisition, implementation and support.
  - Training.
  - MUAS
  - XR

Attendees' Introduction

1. Name
2. Mission
3. Experience / current role
4. Your expectation for the training
5. Application of this training to your current role

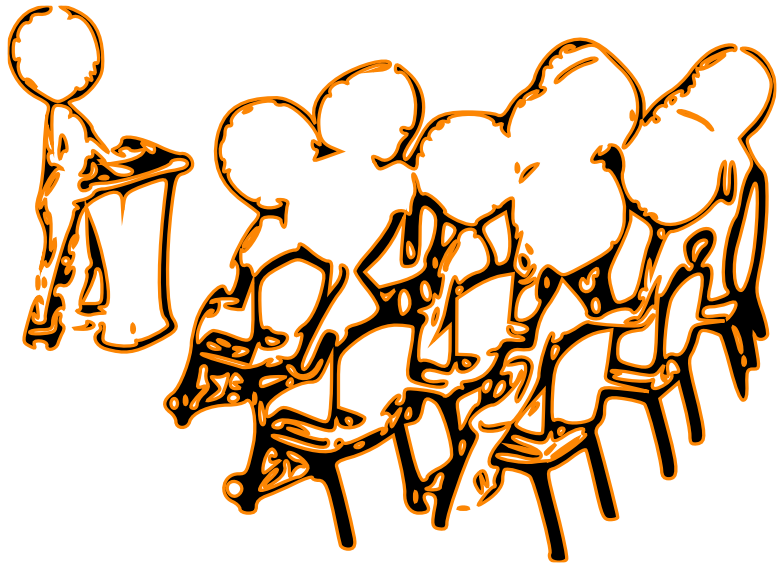


Facilities / Classroom

- **Facilities**
  - Rest Room
  - Cafeteria
  - Medical Facility
  - Emergency procedures
- **Classroom Coordinator**
- **Classroom**
  - Computers / Preinstalled software
  - MUAS
  - Flash drives with resources

Ground Rules

- Arrive on time.
- Turn your cell phone to silent/vibrate mode.
  - [If you must take any calls, take the call outside]
- Do not leave class early without okaying it with the instructor in advance.
- Ask questions if you are confused.
- Try not to distract others



Discussion and Classroom interaction

- Listen actively and attentively.
- Ask for clarification if you are confused.
- Do not monopolize discussion.
- Do not interrupt one another.
- Take responsibility for the quality of the discussion.

Course Overview

1. Theoretical Classes
    1. Rules / Regulations / Policies / Documents
    2. General topics of Aviation
    3. Specific topics on M-UAS Equipment

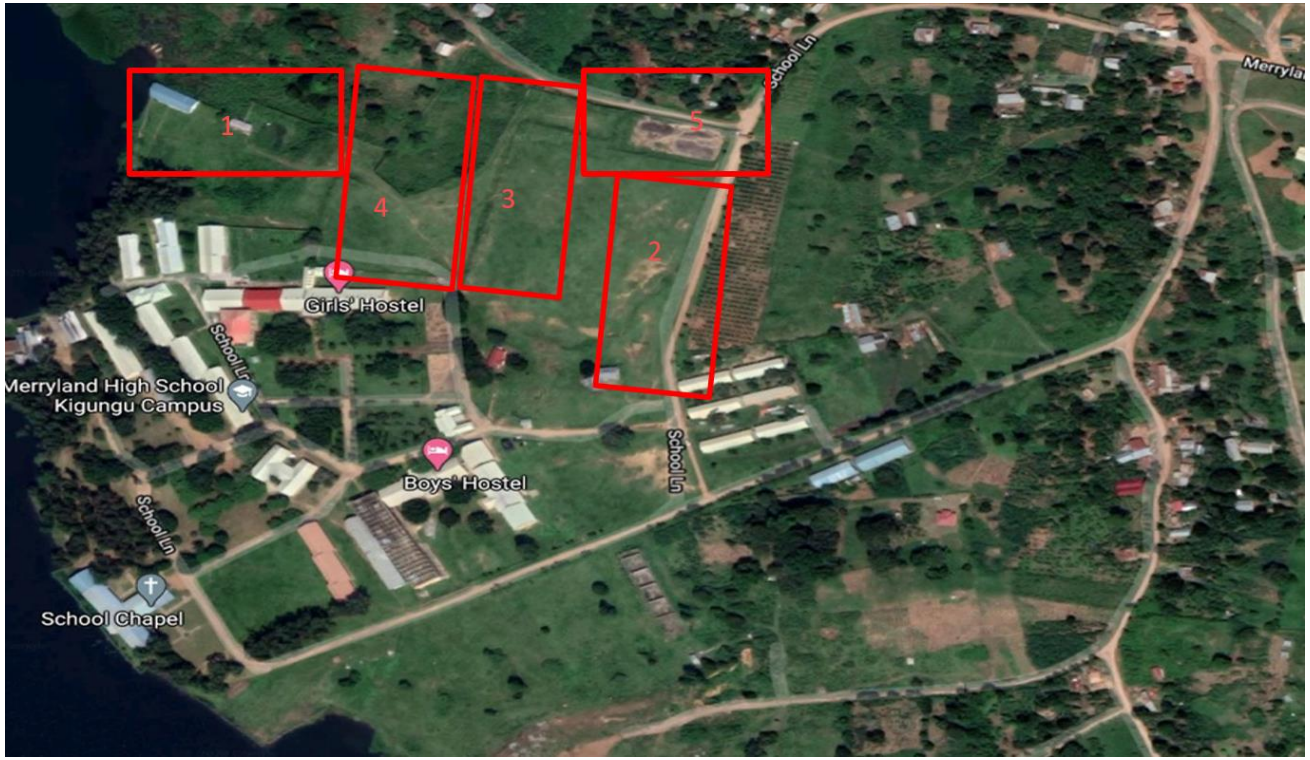
2. Practical Training
    1. Basic handling and flying skills
    2. Intermediate , Advanced ,and Autonomous Flight .
    3. Scenario Based training.

Training

1. Theoretical and Practical lessons
    1. Acquire knowledge relevant aviation concepts
    2. Acquire knowledge of the equipment used
    3. Develop your Flying skills
2. Progressive learning
3. Cumulative learning
4. Training material shared electronically
5. Flexible Timetable (Weather, availability of services)

Training Location

1. NOTAM
2. ATC Communication
3. Travel to location



Schedule

1. April 8 to 19, 2024
2. Morning - Theoretical lessons
3. Afternoon - Practical lessons

Training Day	Date	Calender Day	Course
Day 01	8-Apr	Monday	Operator / TOT
Day 02	9-Apr	Tuesday	Operator / TOT
T&P01	10-Apr	Wednesday	Holiday
Day 03	11-Apr	Thursday	Operator / TOT
Day 04	12-Apr	Friday	Operator / TOT
WE 01	13-Apr	Saturday	Weekend
WE 02	14-Apr	Sunday	Weekend
Day 05	15-Apr	Monday	Operator / TOT
Day 06	16-Apr	Tuesday	Operator / TOT
Day 07	17-Apr	Wednesday	Operator / TOT
Day 08	18-Apr	Thursday	Operator / TOT
Day 09	19-Apr	Friday	Operator / TOT
T&P03	20-Apr	Saturday	Departure to Duty Station

Training Schedule Detail - Operator

1. First Day
2. Revision briefing daily – TOT participants
3. Transit
4. Field Briefing
5. Practical Training (40 Min / participant / day)

W1 CLASS SCHEDULE — SCHEDULE START 8:00 AM

TIME	Monday, April 8, 2024 Day 01	Tuesday, April 9, 2024 Day 02	Wednesday, April 10, 2024 T&P01	Thursday, April 11, 2024 Day 03	Friday, April 12, 2024 Day 04
8:00 AM					
8:20 AM		Operator course revision TOT Participants 8:20 AM-8:39 AM		Operator course revision TOT Participants 8:20 AM-8:39 AM	Operator course revision TOT Participants 8:20 AM-8:39 AM
8:40 AM	Course Introduction Hizkiel Getu Gebreselassie 8:40 AM-9:19 AM	Pre and Post Flight Inspection Arvin Willy Fajardo 8:40 AM-9:19 AM		Navigation Bedan Muroki 8:40 AM-9:19 AM	Experience in using M-UAS in Peace Ops École des drones 8:40 AM-9:19 AM
9:00 AM					
9:20 AM					
9:40 AM	Course Briefings Hizkiel Getu Gebreselassie 9:40 AM-10:19 AM	MUAS - Unboxing and assembly of UAS - Micro Series Arvin Willy Fajardo 9:40 AM-10:19 AM		MUAS - Technical & General - Micro Series Hizkiel Getu Gebreselassie 9:40 AM-10:19 AM	MUAS - Autonomous flights - Micro Series 1 Hizkiel Getu Gebreselassie 9:40 AM-10:19 AM
10:00 AM					
10:20 AM					
10:40 AM	RPAS UAS UN Peace Operation Context Hizkiel Getu Gebreselassie 10:40 AM-11:19 AM	MUAS - Flight Modes - Micro Series Arvin Willy Fajardo 10:40 AM-11:19 AM		MUAS - Technical & General - Camera and Accessories - Micro Series Hizkiel Getu Gebreselassie 10:40 AM-11:19 AM	MUAS - Autonomous flights - Micro Series 2 Hizkiel Getu Gebreselassie 10:40 AM-11:19 AM
11:00 AM					
11:20 AM					
11:40 AM					
12:00 PM					
12:20 PM	Air laws and Regulations Barbra Nekesa 12:20 PM-12:59 PM	TRANSIT TO PRACTICAL TRAINING AREA Other 12:20 PM-12:59 PM		TRANSIT TO PRACTICAL TRAINING AREA Other 12:20 PM-12:59 PM	TRANSIT TO PRACTICAL TRAINING AREA Other 12:20 PM-12:59 PM
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1:20 PM	MUAS - Unboxing and assembly of UAS - Micro Series 1 Arvin Willy Fajardo 1:20 PM-1:59 PM	Flight Skill Basic - Micro series 1 All Instructors 1:20 PM-5:20 PM		Flight Skill Basic - Micro series 2 All Instructors 1:20 PM-5:20 PM	Flight Skill Intermediate - Micro series 1 All Instructors 1:20 PM-5:20 PM
1:40 PM					
2:00 PM					
2:20 PM	MUAS - Application Overview and Configuration - Micro Series 2 Hizkiel Getu Gebreselassie 2:20 PM-2:59 PM				
2:40 PM					
3:00 PM					
3:20 PM	MUAS - Application Overview and Configuration - Micro Series Hizkiel Getu Gebreselassie 3:20 PM-3:59 PM				
3:40 PM					
4:00 PM					
4:20 PM	MUAS - Movement Terminology and Flight Control Hizkiel Getu Gebreselassie 4:20 PM-4:59 PM				
5:40 PM					

Training Schedule Detail - Operator

1. First Day
2. Revision briefing daily – TOT participants
3. Transit
4. Field Briefing
5. Practical Training
    1. 40 Min / participant / day
    2. Hopefully 60 Min
    3. Total min 3 hrs.

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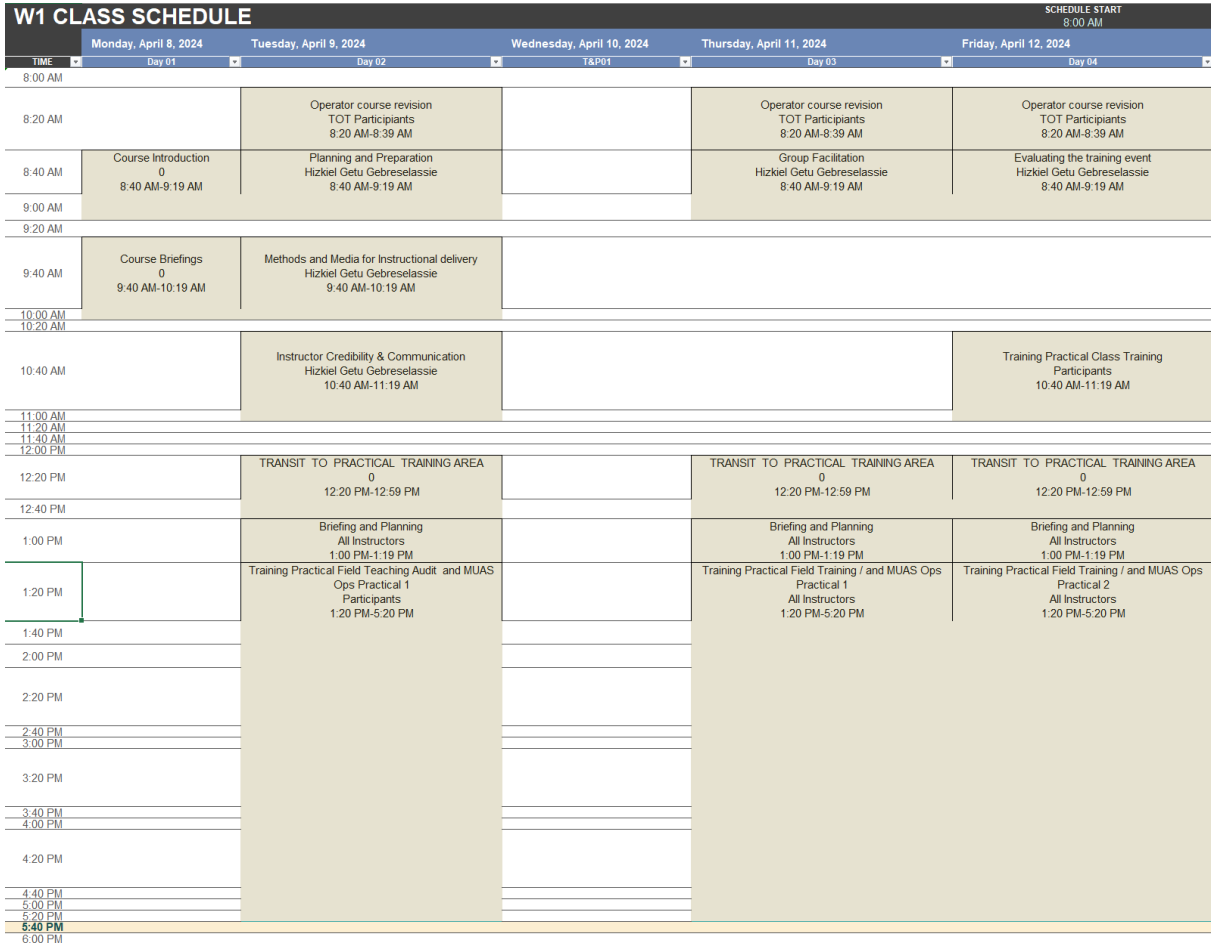
4:00 PM					
4:20 PM	MUAS - Movement Terminology and Flight Control Hizkiel Getu Gebreselassie 4:20 PM-4:59 PM				
5:40 PM					

Training Schedule Detail - TOT wk. 1

1. Common courses
2. TOT courses
3. Transit
4. Field Briefing
5. Practical Training
    1. 40 Min / participant / day
    2. Hopefully 60 Min
    3. Total min 3 hrs.



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8:40 AM	Course Introduction 0 8:40 AM-9:19 AM	Planning and Preparation Hizkiel Getu Gebreselassie 8:40 AM-9:19 AM		Group Facilitation Hizkiel Getu Gebreselassie 8:40 AM-9:19 AM	Evaluating the training event Hizkiel Getu Gebreselassie 8:40 AM-9:19 AM
9:00 AM					
9:20 AM					
9:40 AM	Course Briefings 0 9:40 AM-10:19 AM	Methods and Media for Instructional delivery Hizkiel Getu Gebreselassie 9:40 AM-10:19 AM			
10:00 AM					
10:20 AM					
10:40 AM		Instructor Credibility & Communication Hizkiel Getu Gebreselassie 10:40 AM-11:19 AM			Training Practical Class Training Participants 10:40 AM-11:19 AM
11:00 AM					
11:20 AM					
11:40 AM					
12:00 PM					
12:20 PM		TRANSIT TO PRACTICAL TRAINING AREA 0 12:20 PM-12:59 PM		TRANSIT TO PRACTICAL TRAINING AREA 0 12:20 PM-12:59 PM	TRANSIT TO PRACTICAL TRAINING AREA 0 12:20 PM-12:59 PM
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3:40 PM					
4:00 PM					
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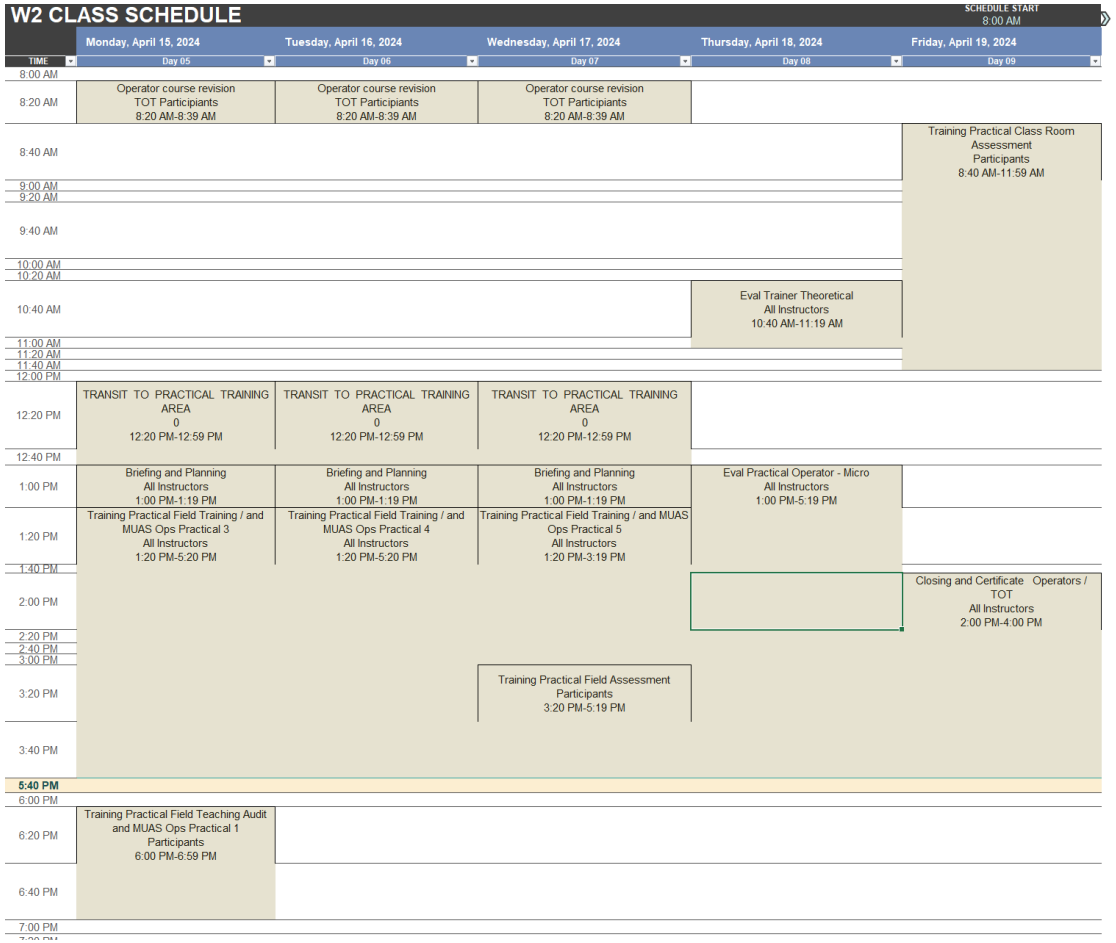
5:40 PM					
6:00 PM					

Training Schedule Detail - TOT wk. 2

1. Night Flight
2. Assessment
    1. Theoretical
    2. Practical



Assessment

1. Continuous Assessment
2. Written Exam
    1. Objective type questions [operators]
    2. Objective type questions [TOT]
3. Practical / Flying Test domains
    1. Preparation to fly a M-UAS [pre-flight checks] and care of equipment
    2. Flying Skills - Precise Maneuvers.
    3. Completing mission.
    4. Safety Consciousness*
    5. Field instruction assessment [TOT]
    6. Classroom instruction skill [TOT]
4. Passing mark operators 60% across domain
5. Passing mark TOT 80 % across domain

Instructor Name

Task	Activity	Max Score	Detail
Square P & R(3)	First Time	3	"+/-" 1 Meter (Boundary &height)
	Second time		"+/-" 1 Meter (Boundary &height)
	Else		
Square P & Y (w/o stopping)	Full Accuracy		
	With Deviation (or Repeat		
	Repeat		
	Else		
Circle P & Y	Full Accuracy		
	With Deviation (or Repeat		
	Repeat		
	Else		
Circle P & Y & R	Full Accuracy		
	With Deviation (or Repeat		
	Repeat / Else		
Tactical	Navigations		

Instuctor Name

Task	Activity	Max Score	Detail
PreFlight Checks (6	Physical Check	4	
			Camera and Gimble
			Propeller and Motor
			Sensors
			Battery
			Frame
	Quick Checklist		
		2	Mode
			Distance
			RTH
			Height
			Battery
			Sensors
	Environment	1	
Knowledge(4)	Ask knowledge on(Pick 4)		
		4	Emergency ShutDown
			Height Reading reference poi
			Home Point Setting
			Linking the RC-Controller
			RTH at different meter
			Map Use

Certificates

1. MUAS Operator
2. MUAS Assistant
3. MUAS Instructor

CERTIFICATE

OF COMPLETION

This certificate is awarded to

Sample

UNITED NATIONS MULTIDIMENSIONAL INTEGRATED STABILIZATION MISSION IN MALI (MINUSMA)

for completion of

Micro–Unmanned Aircraft Systems Remote Pil

Qualification: M-UAS Instructor

28/03/2023 – 31/03/2023 MINUSMA Mali, Tombou

Jean-Michel Kergoat
Operations Manager & Chief Technology Training

Office of Information and Communications Technolo
Department of Operational Support

LEVEL1: M-UAS INSTRUCTOR

1. Students can safely operate micro-UAS in a peace operation environment under the instructions of the Mission chain of command.
2. Students can use the technology to contribute to the security of UN and other camps, the intelligence cycle, GIS mapping and other use-cases.
3. Students can undertake the analysis of the operational environment using ISR technology.
4. Students can liaise with the mission command and control structure and national bodies to provide commanders with suitable courses of action related to UAS.
5. Students can support the preparation and delivery of a micro-UAS operators' course in a UN peace operation under the supervision of a certified UAS instructor
6. Students can ensure that high standards of instruction are delivered consistently.

LEVEL 2: M-UAS PILOT

1. Students can safely operate micro-UAS in a peace operation environment under the instructions of the Mission chain of command.
2. Students can assist in planning and preparation of conduct of a M-UAS training course in the mission.
3. Students can use the technology to contribute to the security of UN and other camps, the intelligence cycle, GIS mapping and other use-cases.
4. Students can undertake the collection of information using ISR technology in the operational environment piloting a micro UAS.

LEVEL 3: M-UAS ASSISTANT

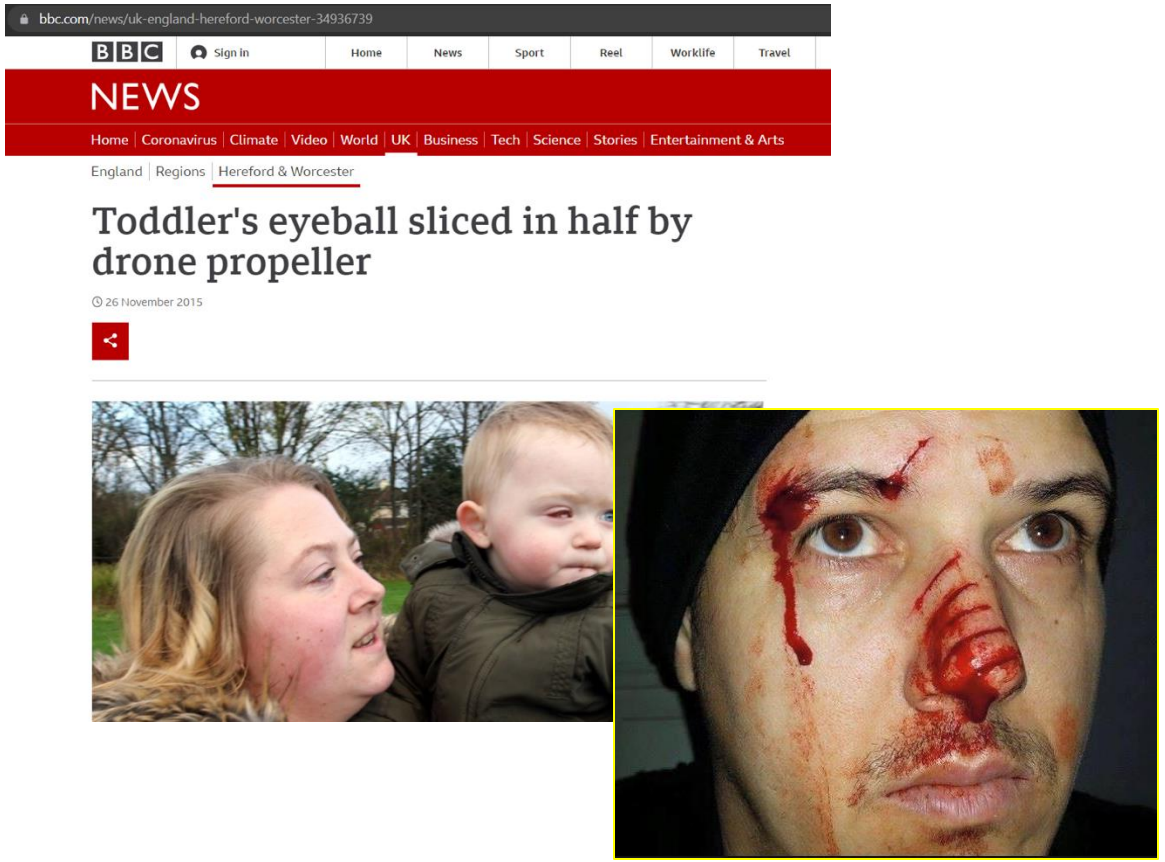
1. Students are NOT qualified to operate micro-UAS in a peace operation environment.
2. Students can assist in planning and preparation of conduct of a micro–UAS training course in the mission.
3. Students can assist a Remote Pilot in the use of the micro-UAS technology to contribute to the security of UN and other camps, the intelligence cycle, GIS mapping and other use cases.
4. Students can assist in the micro-UAS assets management, maintenance, storage and provide logistic support to a pilot of a micro-UAS.

Other information

1. Training courses – customized
2. Trainees' full dedication.
3. Receive training material at the end of the day (memory stick / Moodle).
4. Study daily.
5. Instructors' availability.
6. Daily attendance morning/afternoon.
7. Micro – UAS Community.

Safety and Other information

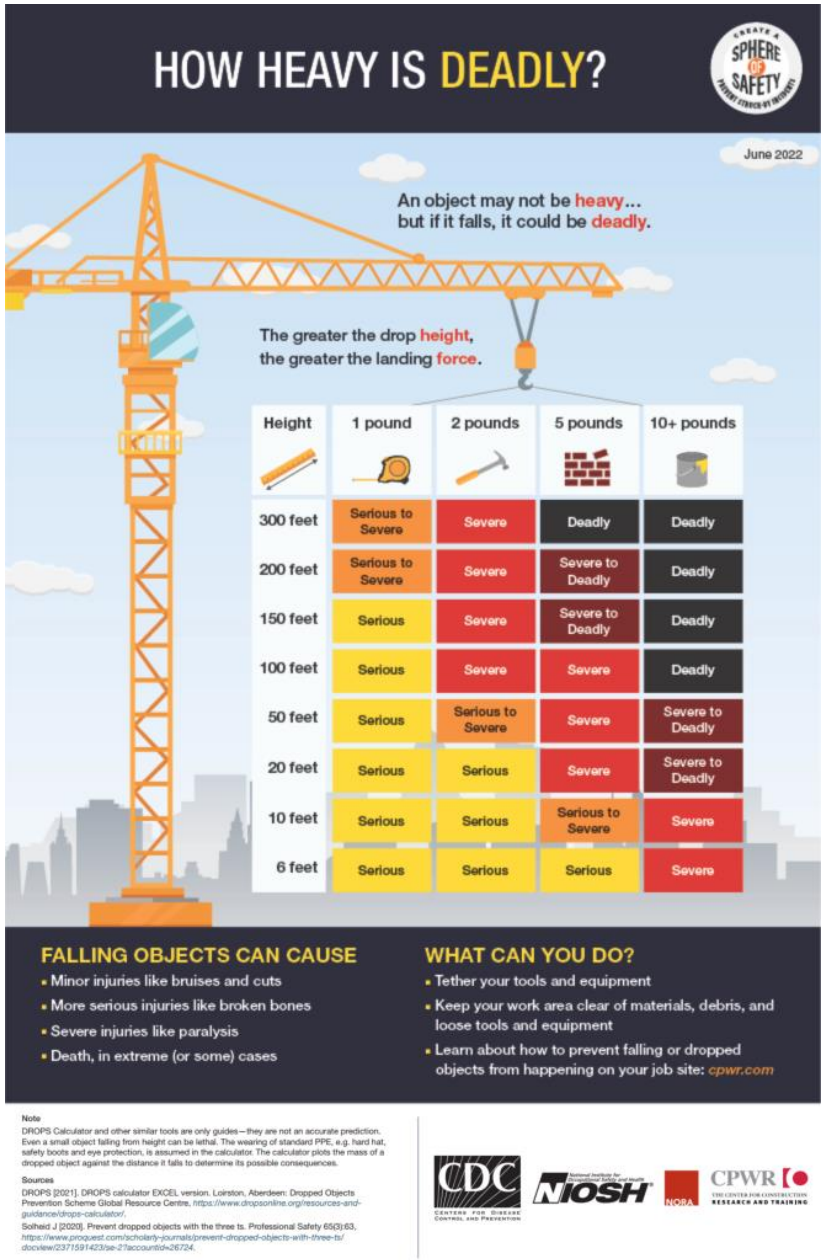
1. Safety first
2. Attendance
3. Teamwork
4. Material custody and availability
5. Stress Management
6. Under treatment or taking medicines?
7. Parking lot
8. There are no stupid questions
9. House keeping rules



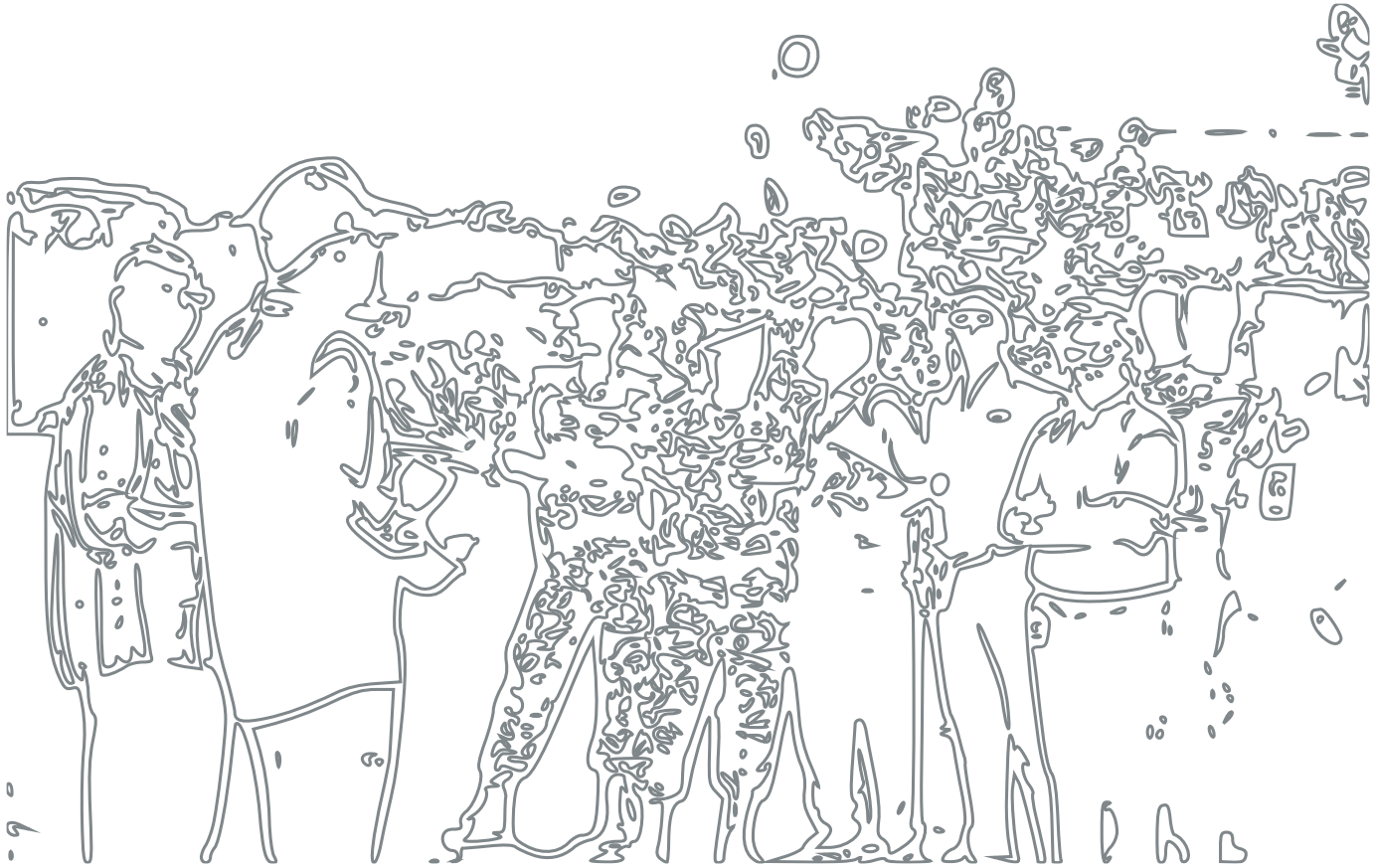
Be Safety Consciousness: During and BEYOND the Course !!

Safety Information

- https://blogs.cdc.gov/niosh-science-blog/2023/04/04/2023-struck-by-stand-down/
- https://www.sciencedirect.com/science/article/pii/S2405844022029656



Questions?



What is Next?

- RPAS UAS UN Peace Operation Context (Hizkiel Getu Gebreselassie)

The End


United
Nations
UNITED NATIONS
C4ISR ACADEMY FOR
PEACE OPERATIONS