02.

UAS within the UN Operations Context

Micro-UAS Remote Pilot Course

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Learning Objective

- Understand the use-cases for UAS

Agenda

1	Why we use UAS
2	References
3	Types of UAS
4	Use-Cases

Why use UAS?

Mortar attack Mogadishu

Funeral in MINUSMA, Jan 2019. Attack in Aguelhok
(10 killed and 25 wounded)

IED attack Somalia
(9 Killed)

Four peacekeepers killed in complex attack on UN base in Mali

Attack in Aguelhok – MINUSMA, March 2021
(4 killed and 19 wounded)

Civil unrest Lebanon

Mali IED Attack Kills Three UN Peacekeepers

February 22, 2023 1:27 PM   Annie Risemberg

IED attack central Mali

References / Resources

- United Nations Aviation Manual, October 2018 (Updated May 2020)

- Cruz Report & Technology and Innovation in Peacekeeping (TIP) report

- Guidelines, United Nations Use of Unmanned Aircraft Systems (UAS) Capabilities (to be issued)

- ICAO Circular 328 - UAS

- UAV Code of Conduct

- ICAO UAS Toolkit

- UAV Humanitarian Guidelines

- Classifications, Applications, and Design Challenges of Drones: A Review

- United Nations Peacekeeping Intelligence Policy, 2017

- Joint Mission Analysis Centre (JMAC) Field Handbook, 2018

- Information Acquisition Guidelines, 2018

- United Nations Peacekeeping Military Intelligence Handbook, 2018

- Department of Interior DJI Data Management Evaluation

- WFP Drones' Resources

RPAS UAS in the UN

Terms

- Uncrewed Aircraft (UA) / Unmanned Aircraft
- Remotely Piloted Aircraft (RPA)
- Uncrewed Aerial Vehicle (UAV)
- Uncrewed Aircraft System (UAS)
- Remotely Piloted Aircraft System (RPAS)

UN UAS Use Globally

- UAS and RPAS have had an increasingly important role in support of UN field missions on the implementation of their mission mandate.

- Because of their flexibility and diversity, various stakeholders can use them effectively in many different scenarios and situations for a wide range of tasks.

- UN has 400+ Micro UAS

- Essential for tactical advantage.

- Increased security and operation effectiveness.

- Cost effective solution.

"Class I UAS are essential for tactical advantage. The secretariat encourages TCCs to use them for exploration and preventing ambush"."

RPAS / UAS Classification

UN PKO UAS/RPAS TABLE

Class	Category	Recommended employment	Normal approximate operating altitude AGL	Range	Recommended C2 level	Examples
Class III	HALE	Strategic/national	<65,000 ft	Unlimited (BLOS)	AOR/mission	Global hawk
	MALE	Operational/theatre	<45,000 ft	Unlimited (BLOS)	AOR/mission	Heron 1/ Hermes 900
Class II	Tactical	Tactical formation	<18,000 ft	<200 km (LOS)	Brigade	Hermes 450/ Falco Sperwer
Class I	Small	Tactical unit	<1,000 ft	<50 Km (LOS)	Battalion/ regiment, sector	Scaneagle/ Shadow 200/ Luna
	Mini	Tactical sub-unit (manual or hand launch)	<1,000 ft	<25 Km (LOS)	Company, platoon, squad	Raven/Aladin/ Puma/ Skylark Heidrun V1
	Micro	Tactical sub-unit (manual or hand Launch, tethered)	<400 ft	<5km (LOS)	Platoon, squad, team	WASPIII/MIKADO/ DJI Phantom 4, DJI Mavic Pro Hovermast-100

Air Transport Service (ATS) classifies UAS by operational employment

RPAS / UAS Classification

Course : Micro UAS - DJI Mavic 3 Enterprise and Classic

Class	Type	Weight range
Class I(a)	Nano	< 200g
Class I(b)	Micro	200g < 2 kg
Class I(c)	Mini	2 kg < 20 kg
Class I(d)	Small	20 kg < 150 kg

National Restrictions – UN Areas of Operation

7% of countries in the world have complete restrictions.

UN Missions Restrictions:

- UNTSO (Israel)
- UNDOF (Israel)
- UNIFIL (Lebanon)
- MINURSO (Western Sahara)
- UNMOGIP (India and Pakistan)
- UNMISS (South Sudan)

Micro-UAS Use Cases

Base / Camp Perimeter Surveillance

Approach Route Reconnaissance

Protection of Civilians

No strange movement in IDP-MARKET.
No armed elements.

IDP MARKET

People walking normally in the IDP Market

UAS within the UN Operations Context
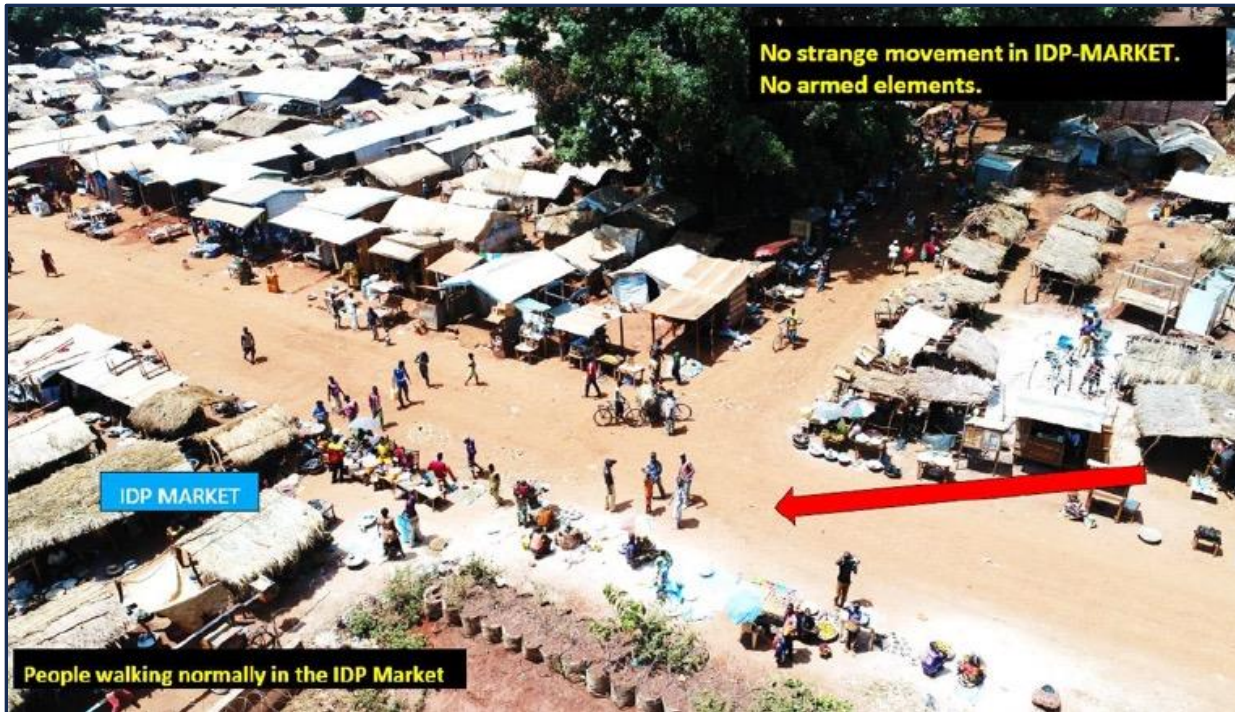
Protection Of Civilians and Humanitarian Affairs

IDP MONITORING

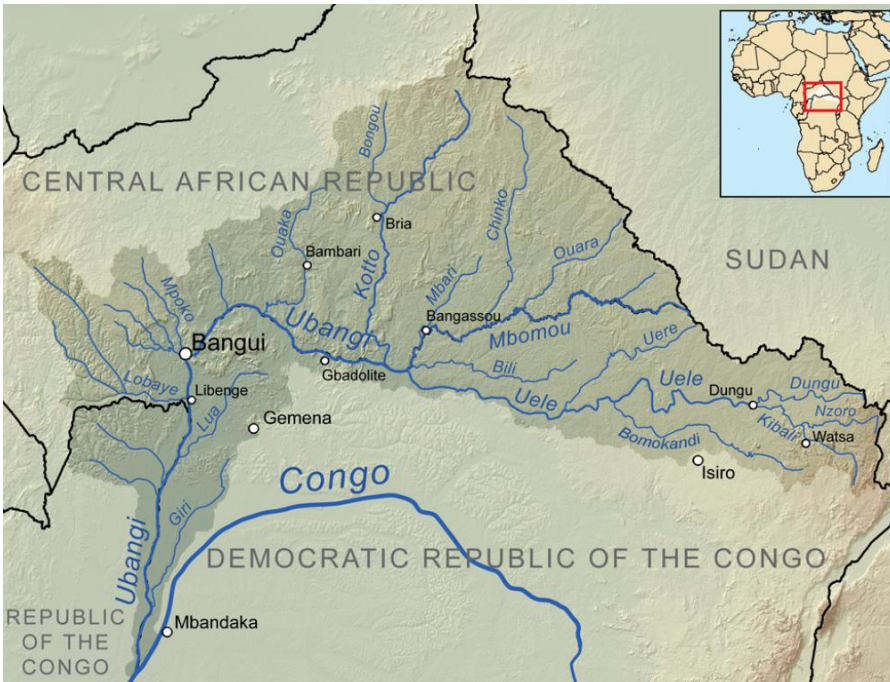POC DURING CRISIS

# Maritime Domain Awareness Contribution
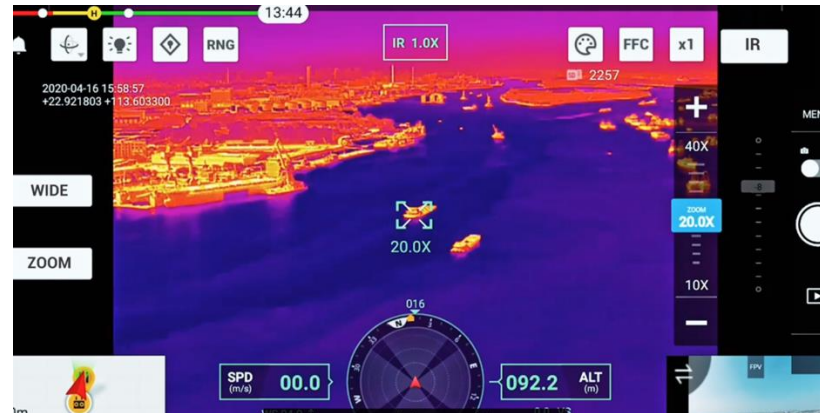
Border Patrol Surveillance

Border Patrol Surveillance

- Location: Border Between Central African Republic And Dr Congo.

- UAS Activity: Border Patrol Across The Ubangi River.

- Un Organization: MINUSCA

Use Cases (Continued)

- Force protection

- Vulnerable point clearance checks

- Convoy overwatch

- Battle damage assessment (BDA)

- Nighttime operations / surveillance / deterrence

- Disaster site survey

- Search and rescue operations
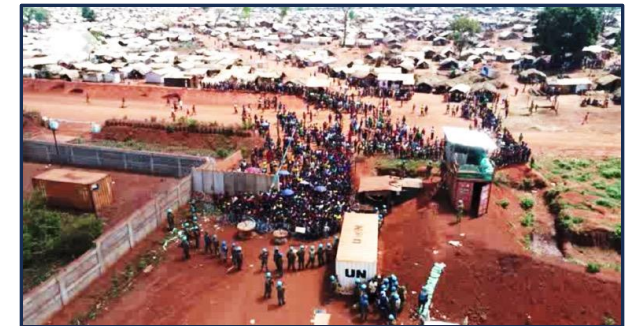
Use Cases (Continued)

- Mapping and Surveying
- Digital Twin
- Inspection

Use Cases (Continued)

- Disaster site survey
- Rebuilt infrastructure

Other Use-Cases

- Post Main Supply Route clearance – random schedule of overflights to prevent IED emplacement.

- Covert tracking of forces to patrol harbor / Forward Operating Base (IR Sensor).

- Probing attack response.

- Vulnerable point reconnaissance (Over the hill and around the corner) for C-IED and anti-ambush.

- Shebelle river swelling – monitoring crossing points for military and local population support (in 2 days it went from passable to impassable). This reduced the entry points for IEDs to Mogadishu.

- Indirect fire support (Artillery / Mortar) targeting. Increase in accuracy.

- Identification of 'Pattern of Life' at night using Infrared sensor.

- Attack deterrent by using all lights and sound options on the UAS around the FOBs. Unknown lights in the sky may deter possible attacks.
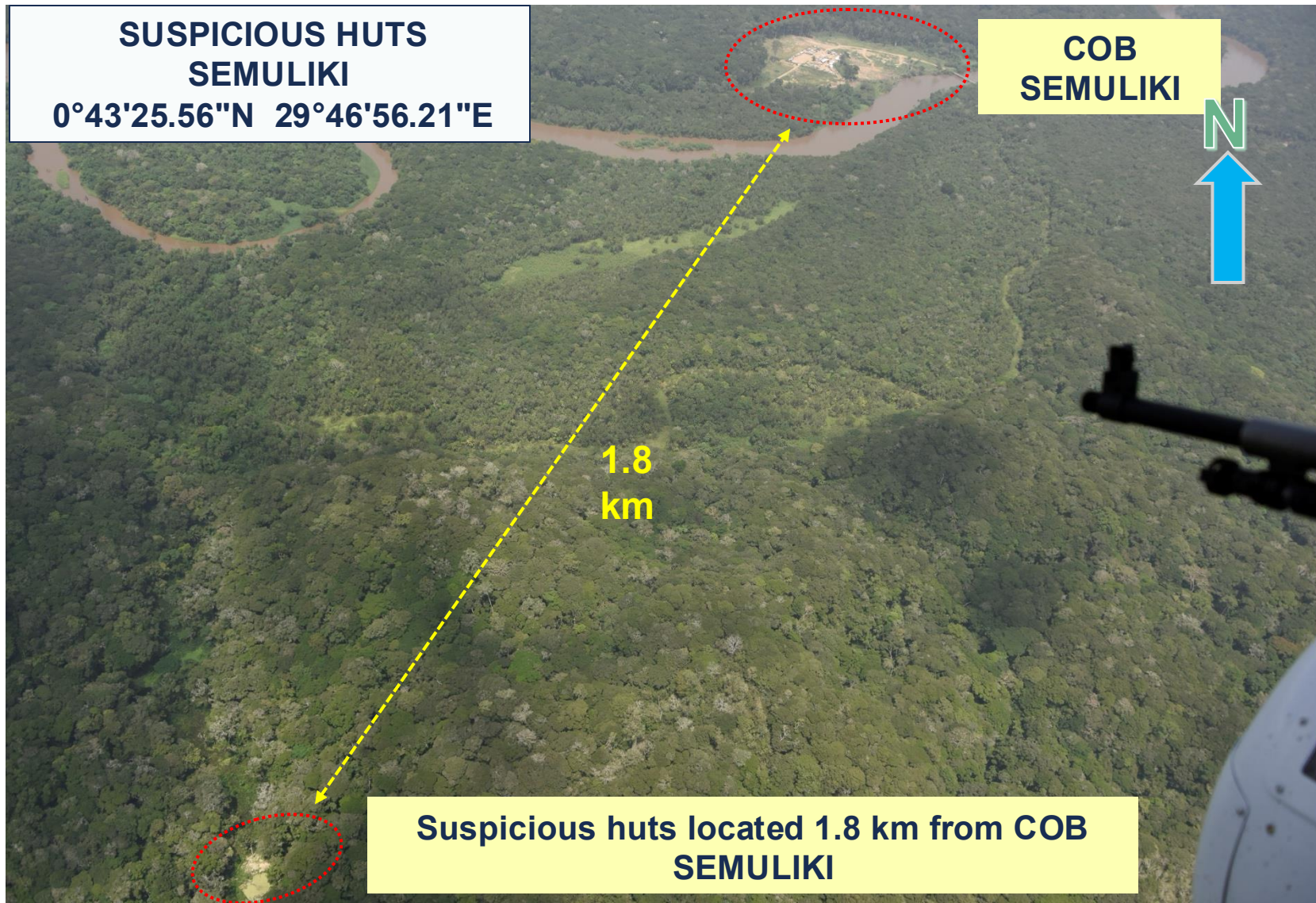
SUSPICIOUS HUTS SEMULIKI
0°43'25.56"N 29°46'56.21"E

152635
ORYX : ISR mission
09 MAR 2020

The marked path might be used as an avenue of approach to COB SEMULIKI

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AREA COVERED BY DRONE IN RECON
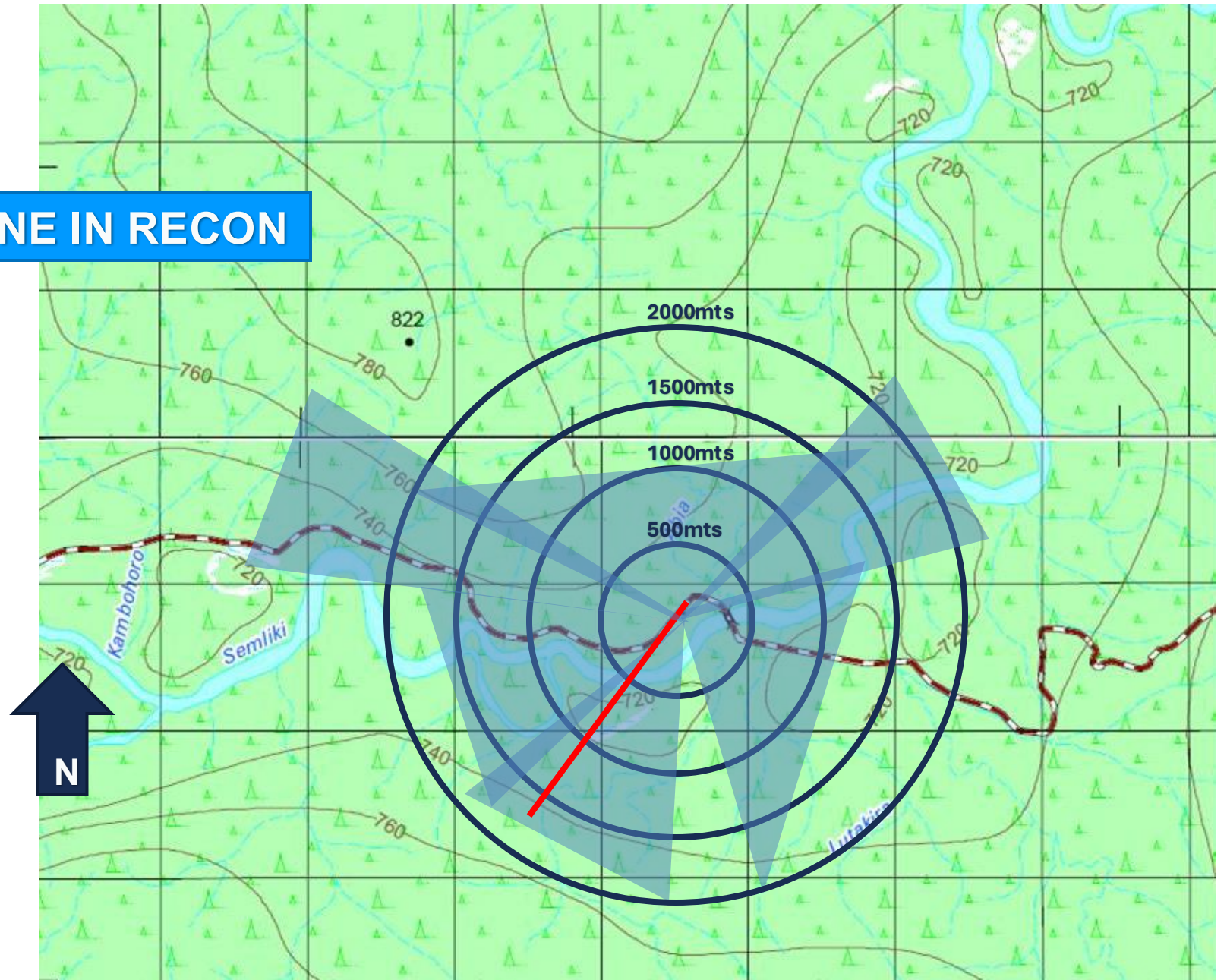
SUSPICIOUS HUTS SEMULIKI
0°43'25.56"N 29°46'56.21"E

Huts under construction

152635
ORYX : ISR mission
09 MAR 2020

SUSPICIOUS HUTS SEMULIKI
(05) Huts hidden
(02) Huts under construction

5/5/2025

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Questions?

UAS within the UN Operations Context

The End