Emerging Technologies in UN DFS Aviation

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Emerging Technologies (Technics)

• Using technology and an administrative framework to solve complex problems through aviation and aviation support technologies

• Centralized coordination and planning, using technologies of command / control, and situational awareness, to facilitate the tactical deployment of emerging operational technologies, further supported by infrastructural investments and developments in order to fully develop capacity to support continuing operations and react to exigent crises.

• more than just the UAS, NVG-capable helicopter…it’s the entire regime
Overview: Emerging Technologies in support

- Brief Overview of DFS Aviation
- Emerging Technologies and applications to solve complex field problems through Aviation
- The “Strategic”
  - Centralized Command / Control from Air Operations Centre
  - Global Satellite tracking system
  - 24/7 command control centre: strategic coordination of air assets
  - Fleet efficiency optimization through data management and analysis / procurement
- The “Tactical”
  - Infrastructure development
  - Landing aids: GNSS approaches / lighting projects
  - Specialized Equipment: NVIS, UAS
- Bringing it together / Conclusion

UN Aircraft Fleet (PKO and SPM) – 11 Peacekeeping & 5 SPMs

Comm/ Mil: Fixed wing: 51 / 2; Helicopters: 70 / 72; UAS: 8 / 42;
Commercial / Military (195) FW / RW

Source: Air Transport Section, Budget Unit (Aircraft Fleet Report Nov 2017)
Strategic Air Operations Centre

The Strategic Air Operations Centre was created as integral part of the Air Transport Section through General Assembly Resolution A/61/752, A/61/968, A/62/769, due to the rapidly growing fleet of aircraft and the demand to provide global operational coverage to address and reduce duplication of efforts, wastage, and inefficiencies — "to ensure that UN aircraft deployed for strategic airlifts are utilized according to the Secretariat’s concept of global fleet utilization and fleet optimization" to achieve synergies, economies of scales, and cost efficiencies.
Global Satellite Tracking System

Full spectrum of capabilities available to all field missions, oversight also provided by SAOC in Brindisi

Aviation Information Management System

Providing Business Intelligence in support of Fleet Performance Analysis for more effective procurement exercises and fleet reviews / facilitating verification of services; payment to operators.
Construction / rehabilitation of airfields and helipads

Airfield / helipad lighting (NVG compatible systems)
PBN approaches

Global Navigation Satellite System (GNSS)
Without ground based (WAAS)
Fully implemented in MONUC (Monusom) PBN approaches chart

CASEVAC helo support – 24/7 Night Vis Imaging Systems (NVIS) -- Military and Commercial aircraft

Night Vision Device compatible Flight Decks

CASEVAC in Somalia (UNSOS)
What are the challenges?

• Capturing the Requirement. Requirement → Best Value for Money Solution / Military Solution. No bias to any particular outcome (e.g., “manned ISR?”)

• Funding the Requirement—In an increasingly tight financial environment, we must be able support high cost systems with increasingly limited public funds. Simple, flexible solutions with clear measurable benefits / deliverables.

• Delivering / Supporting the system—Maintaining complex systems in complex, hostile, austere locations, with problematic supply chains, remains a challenge.

• Tasking the System—Full range of stakeholders must be educated (not only military users), and systems applied to full mandate delivery and support.

• Lack of governance—international, military, national, UN...

• Airspace Management Issues—similar to the complexities found arising with “military operations” taking place in de-segregated airspace.

• Accessing, analysing, storing and operationalizing the data—Systems are more than the sensor and aerial platform—policy related to information collected, analysed, stored and shared becomes complex—with implications that could last for many years.
**SURVEILLANCE**

**CONVOY ESCORT**

**IMAGE DETAIL:** Two people interacting with a white object.

**IA COMMENT:** A single person on a motorbike approached the area and stopped by the white object. He was observed interacting with it shortly before leaving the area. He headed north to an area with livestock and drinking troughs where he picked up another person and then returned to the white object.

The two people were observed doing something with the white object before loading another white object onto the motorbike. The first person got onto the bike and began to ride away to the north and the second person ran back to the livestock area.

The convoy was advised to halt as this activity had never been observed before so were deemed suspicious. The area in which this occurred has been previously used for IED attacks and ambushes.
IMAGE DETAIL: Enlargement of the scene of the incident.

IA COMMENT: Hermes was re-tasked at approximately 1300hrs to conduct overwatch of a convoy following a mine or IED strike. The convoy was traveling from Douentze to Bambara Mounde.

Hermes arrived in the area at approximately 1405hrs and commenced scanning the surrounding area for any follow up threats while the convoy waited for CASEVAC.

The force protection vehicle had driven over a mine or IED which was emplaced just at the edge of the concrete for the bridge. The remnants of a vehicle was at the side of the road, likely from a former explosion in the same place. The remainder of the convoy vehicles had parked 200m south of the bridge.

Two local vehicles were observed approaching the area but then turning round after seeing the incident.

IMAGE DETAIL: The CASEVAC helicopter departing the area.

IA COMMENT: Following successful casualty extraction the helicopter left the area at 1658hrs.

The remainder of the convoy then filtered past the bridge, driving through the shallow water, and formed up on the north side in preparation to continue the journey to Bambara Mounde.

At approximately 1730hrs the convoy was complete on the north side of the bridge and began moving again towards Bambara Mounde.

During time overhead, no suspicious activity was identified.
Bringing it together

Thank you!