

PEACEKEEPING IN THE DIGITAL AGE

Emerging technologies used in

MINUSCA



BY

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(MINUSCA)

CONTENT

☐ Outreach

- GIRA FM

☐ Operations

- Military Observer Kit
- Force Protection Tools (Aerostat/MEOS/Orbiter)
- Smart City Project
- Tracking UN Vehicles and Personnel's
- Ground to Air Communication (JOTRON)
- Tethered drone

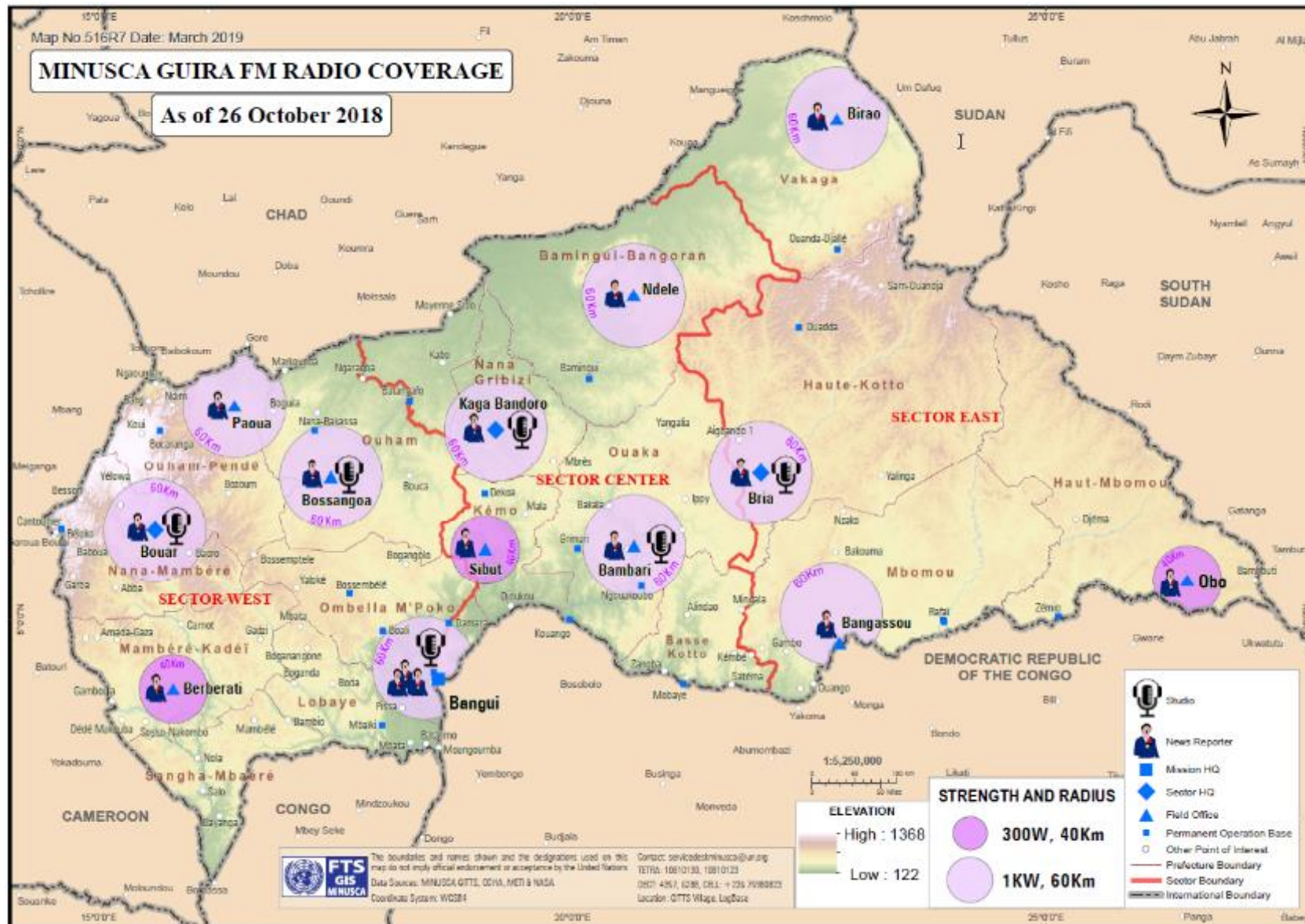
☐ Support

- Physical Security
- Quadcopter UAV for Small area Survey
- Fixed wing UAV for Large area Survey
- Solar power
- Radar sign board
- Generator metering / Remote monitoring Project

☐ Analysis

- I2 and Sage (Unite Aware Suite)
- Maps and Patrol App (Unite Aware Suite)

The GUIRA is an FM radio network used by MINUSCA to outreach the community and spreading the peace.



EFFECIENCY / PERFORMANCE :

- Eye in the sky capability
- Monitor beyond barriers
- Increases safety of Observer
- Information reliability

BENEFICIARY :

- MILOB, UNPOL, Battalion

RISK / DOWNSIDE :

- Rapid change in technology
- Availability of skilled manpower

GAPS BRIDGED :

- Getting reliable 1st hand intelligence.

PROTECTION OF DATA :

- Access to internet is restricted.
- Data are wiped before connecting for firmware updates.

LEGAL ISSUES :

- Obtaining host government permission.

The Observation kit is a backpack containing micro UAV, virtual reality goggles, GPS and solar panel. The users of the kit has to undergo a training and pass the assessment test to qualify as Mission Qualified UAV Operator.

❶ Hand held GPS



❷ Micro UAV



❸ Solar Charger



5 Km Range
28 min of Flight time.
(Swapping 4 batteries we achieve 110 min of autonomy)



SAFETY & EFFECTIVENESS



LOOKING BEYOND BARRIERS



BIRDS EYE VIEW



INFORMATION RELIABILITY

The Force protection tool Modular Electro-Optic System (MEOS) cameras and AEROSTAT Balloon are instrumental for surveillance at city level and key installations like Airport and HQ.

Aerostat



24x7 overall City monitoring



MEOS



24x7 Threat monitoring at Airport & HQ



Control Room Operation



EFFECIENCY / PERFORMANCE :

- 24x7 Day and night surveillance
- Dispatch and restore peace.

BENEFICIARY :

- JTFB, MOC, POC

RISK / DOWNSIDE :

- Impact of weather on the service

GAPS BRIDGED :

- Ability to verify intelligence with ground truth without sending forces to the spot.

PROTECTION OF DATA :

- Streaming is through secured MINUSCA network
- Data are archived as per standard UN Policies.

LEGAL ISSUES :

- Permission from Ministry of Defense

The Orbiter is an Unmanned Aerial Vehicle(UAV) which deployed to sensitive location in assisting the forces for surveillance in restoring peace and Protection of Civilian.

Orbiter 2



40 Km Range
2.5 hours Flight time

Orbiter 3



100 Km Range
5 hours Flight time



Take off



Landing



Armed movement deduced in remote place



Movement of people in remote village

EFFECIENCY / PERFORMANCE :

- Air patrolling
- Day and Night surveillance of remote places
- Reduced aviation expenses for recce
- Frequent visit of suspected area
- Rapid deployment

BENEFICIARY :

- Forces and Substantive

RISK / DOWNSIDE :

- Impact of weather on service
- Getting permission for flying

GAPS BRIDGED :

- Verification of field condition without visiting

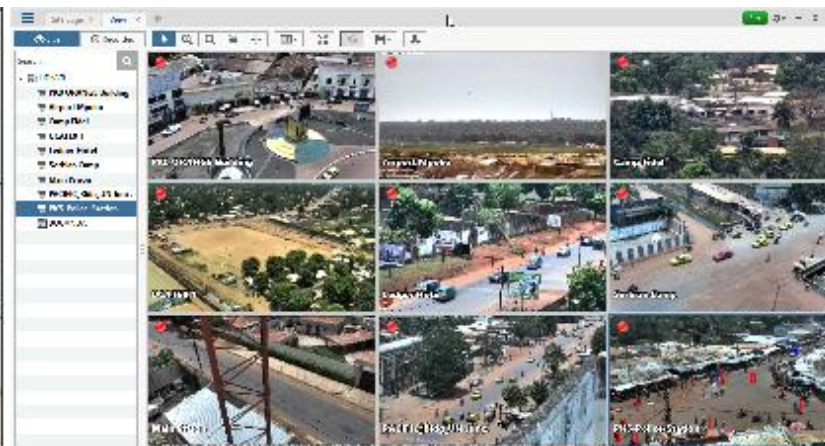
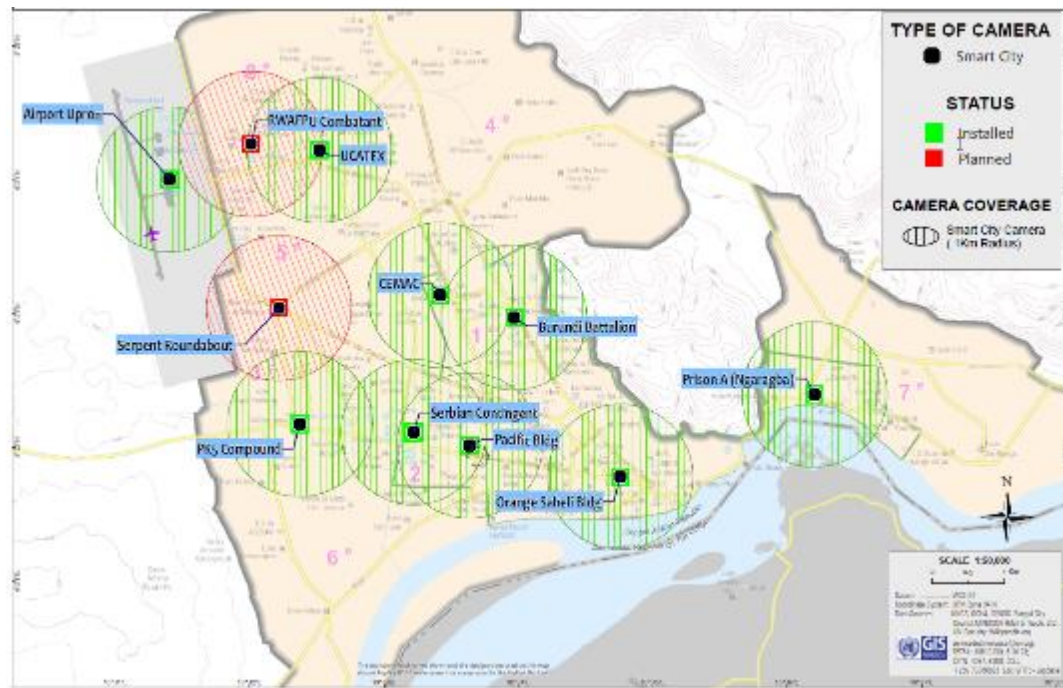
PROTECTION OF DATA :

- Video streaming is encrypted and through secured MINUSCA network

LEGAL ISSUES :

- Obtaining permission from Ministry of Defense, Ministry of Aviation,

The smart city cameras are installed to bring the Bangui hotspots under 24x7 high resolution surveillance. It has a retention period of 30 days.



24x7 city hotspot monitoring



EFFECIENCY / PERFORMANCE :

- Close view of hotspots
- Preventive action from forces to ensure peace continuity.

BENEFICIARY :

- JTFB, MOC, UNPOL

RISK / DOWNSIDE :

- Without Thermal capability

GAPS BRIDGED :

- Monitoring and Verification of ground reality

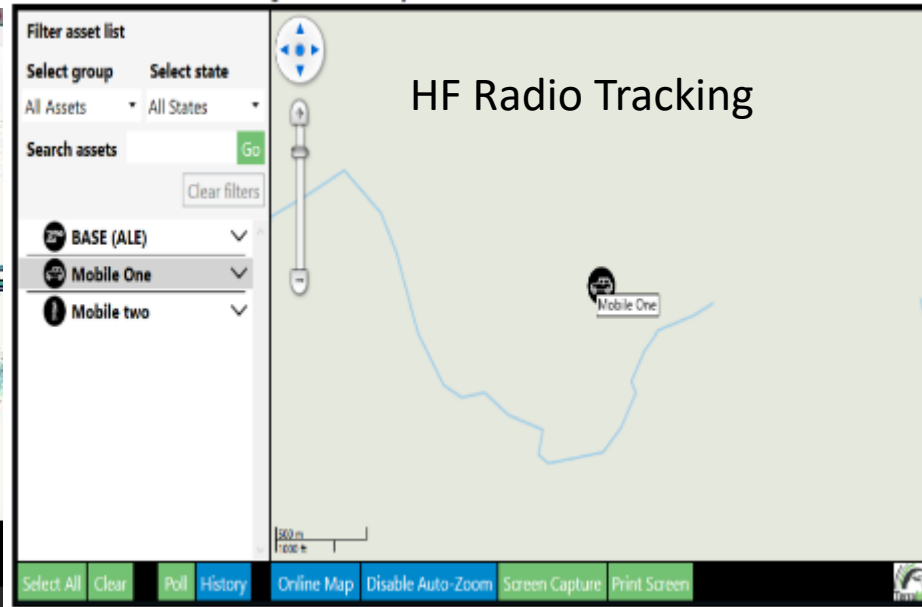
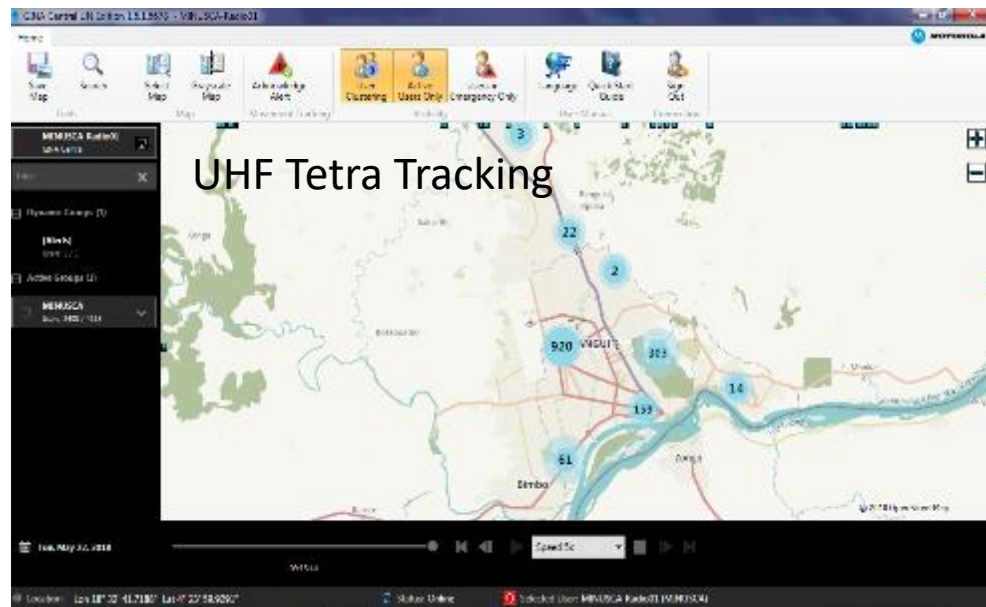
PROTECTION OF DATA :

- Video is streamed through secured network
- Data are archived as per standard UN Data policy

LEGAL ISSUES :

- Obtaining permission from Police.

Designed for the tracking of radio communications, replays history with actual time stamp, and backup data for audit purposes.



EFFECIENCY / PERFORMANCE :

- MINUSCA HF/UHF Radio Tracking
- Monitoring ongoing operations
- Replay history for 3 month
- Assists investigatory work and search and rescue operations

BENEFICIARY :

- Security, MOC, JTFB, UNPOL

RISK / DOWNSIDE :

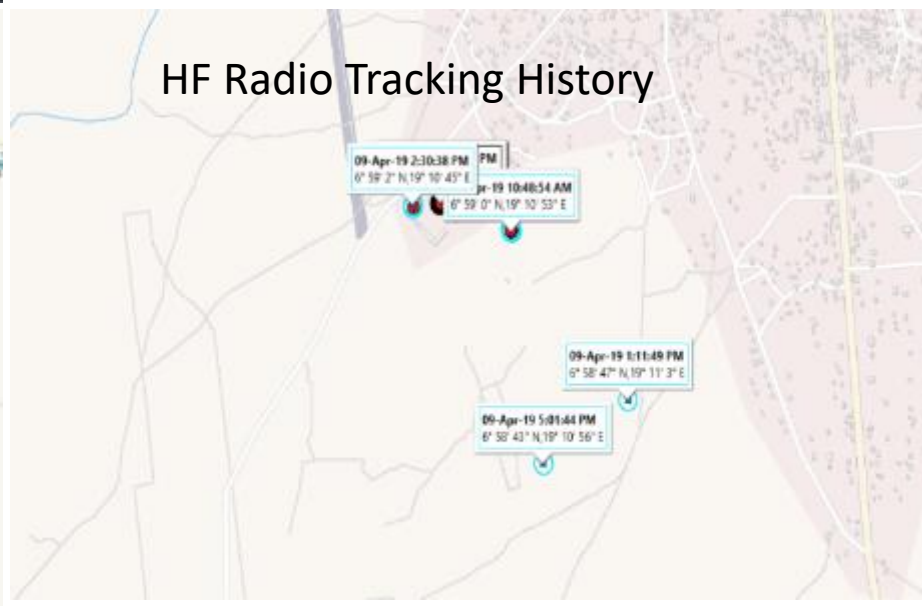
- Signal coverage are dependent on repeaters

GAPS BRIDGED :

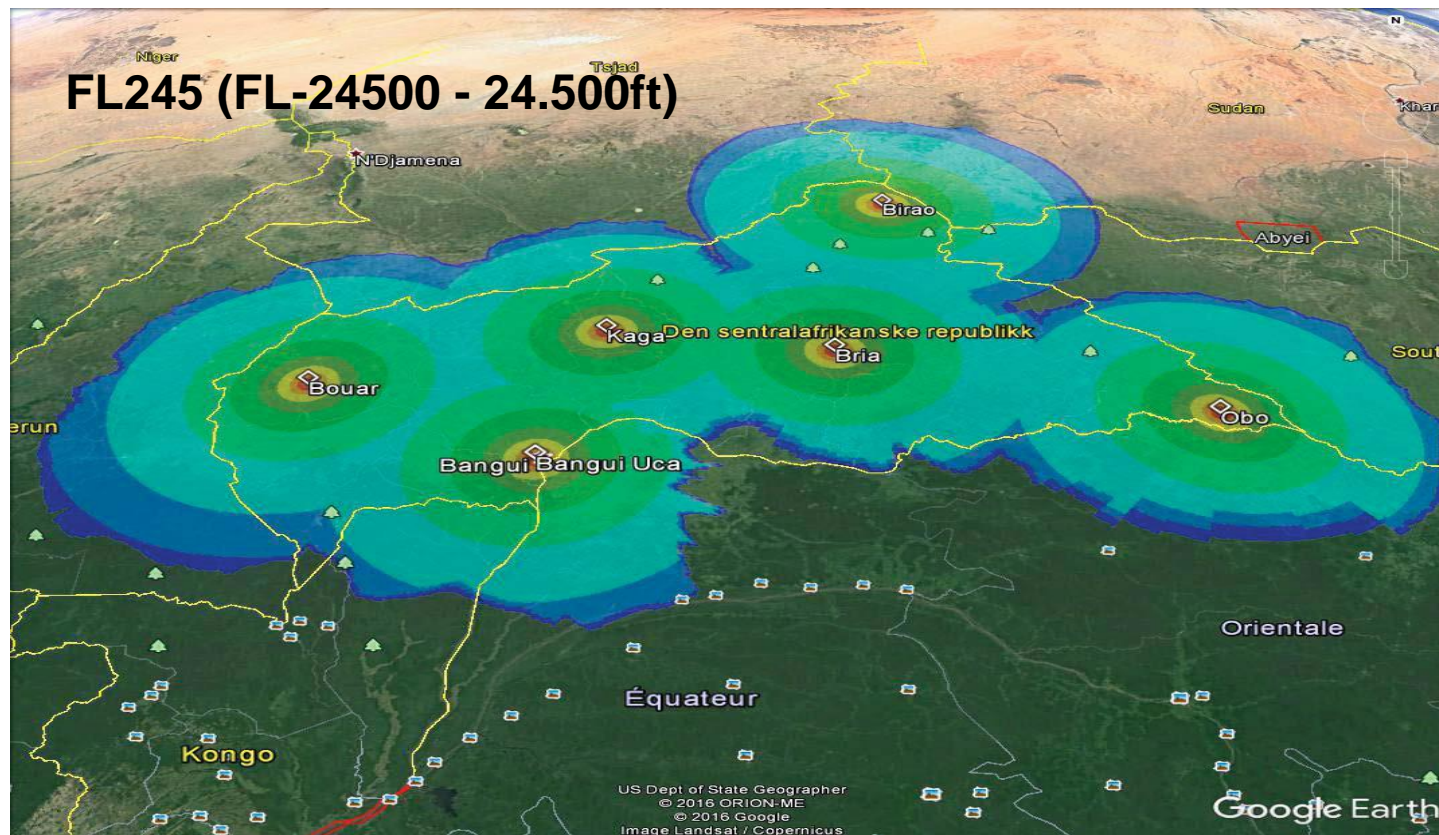
- Realtime location of staff and patrols

PROTECTION OF DATA :

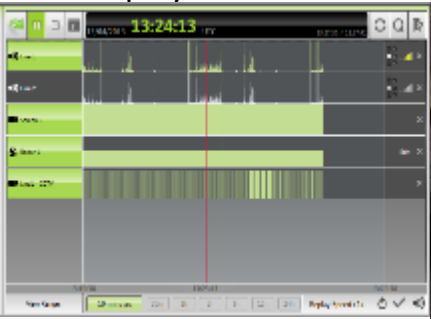
- Access to internet is restricted
- UHF Tracking data stored in UNGSC Brindisi with backup and mirror in UNGSC Valencia
- HF Tracking data stored individually in Local PC



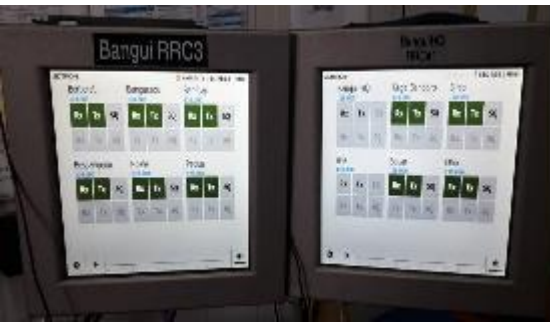
Implemented to support the air traffic control communications which includes full VOIP functionality with voice recording, replays and analyses all data with UTC time stamp. The system assists search & rescue operations and investigation.



Replay Server



Radio Remote control



Network Sites



Air Band Main Switch



EFFECIENCY / PERFORMANCE :

- Mission Wide communication coverage
- Monitoring and operation remotely from Bangui MINUSCA Flight following Office
- Voice recording 24/7
- Replay Recording for 3 month
- Operation from local RRC positions

BENEFICIARY :

- Aviation Section

GAPS BRIDGED :

- Realtime location of UN aircrafts
- Audio and tracking recordings for flight safety and audit follow up

PROTECTION OF DATA :

- Access to internet is restricted
- Data is stored in Main servers for each sites and Backup Server
- Physical access to server is limited to authorized staff only

Position sensor camera at 150 metre high for 24x7 surveillance



Flying Height : 150 meter
Payload : 1Kilogram



EFFECIENCY / PERFORMANCE :

- Continuous flying with electricity through tethered cable.
- Quick deployment

BENEFICIARY :

- Forces
- Security

RISK / DOWNSIDE :

- Weather condition

GAPS BRIDGED :

- Seamless deployment
- Avoids the helium storage when compared with the Aerostat

PROTECTION OF DATA :

- Access to internet is restricted.
- Video is streamed through secured MINUSCA network

1. Video surveillance system

This is a integrated physical security system, deployed in all key MINUSCA premises in Bangui such as HQ, warehouse, SRSG residence) the purpose is to enhance the security of the UN comps and its perimeters



2. Access control system

The system prevents the entry of non authorized personnel into UN premises. It is connected to FSS and the ID card reader stores personnel movement IN and OUT of the UN premises. X-ray scanner and walk through scanner are integrated into the system.



3. Public Address(Alert system)

It is an integrated part of the physical security system, it enhances the quick broadcast of security messages within UN premises.



EFFECIENCY / PERFORMANCE :

- 24 hours Video surveillance.
- Video data high capacity storage.
- Increase security of staff and UN assets.
- Night vision capability
- Information reliability

BENEFICIARY :

- Security section, MSD

RISK / DOWNSIDE :

- Availability of skilled manpower

PROTECTION OF DATA :

- Access to monitoring room is restricted
- Video Data are stored in secured servers

Cumulus is an mapping drone utilized for city level mapping. This facilitate to gather terrain information to assist in planning.

Cumulus



10 Km Mapping Range
2.5 hours Flight time



Hand Launchable



Transportable



Easy Mission Planning

EFFECIENCY / PERFORMANCE :

- Reduced satellite imagery purchase
- Improvement terrain information

BENEFICIARY :

- Force, Substantive, MSD

RISK / DOWNSIDE :

- Weather impact

GAPS BRIDGED :

- High resolution imagery for large area planning and development activities.

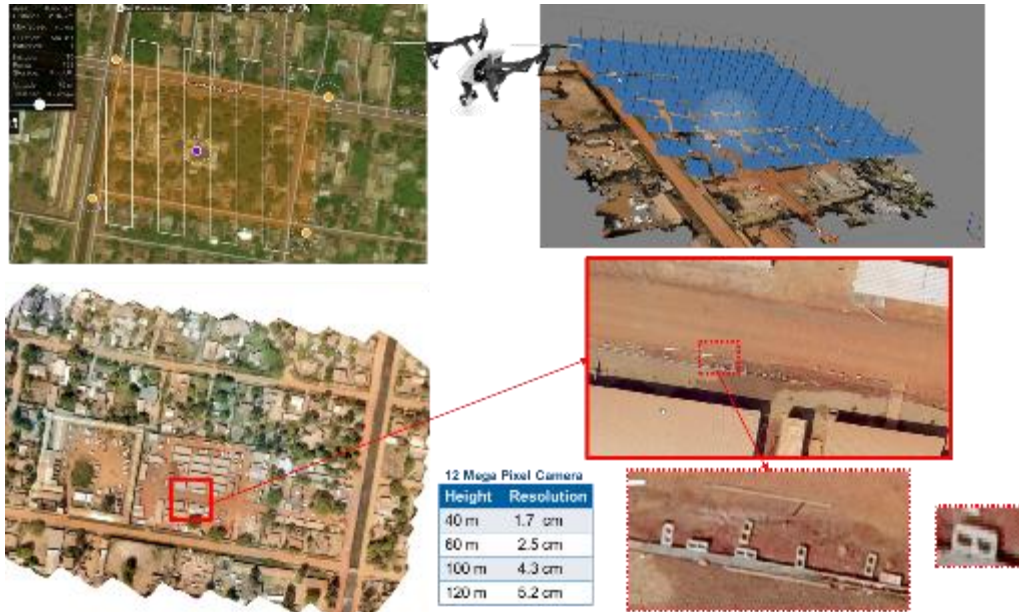
PROTECTION OF DATA :

- Data are kept in secured location.

LEGAL ISSUES :

- Permission to fly from Aviation

The micro UAV (quadcopters) are used by the civilian for camp mapping and change detection. This is now an indispensable tool for Engineering and Environment.



5 Km Range
28 min of Flight time.
(Swapping 4 batteries we achieve 110 min of autonomy)



EFFECIENCY / PERFORMANCE :

- Optimum use of UN space
- Reduction in satellite image purchase
- Inhouse capability

BENEFICIARY :

- Engineering, Environment

RISK / DOWNSIDE :

- Weather condition

GAPS BRIDGED :

- High resolution data for planning.

PROTECTION OF DATA :

- Data are secured

LEGAL ISSUES :

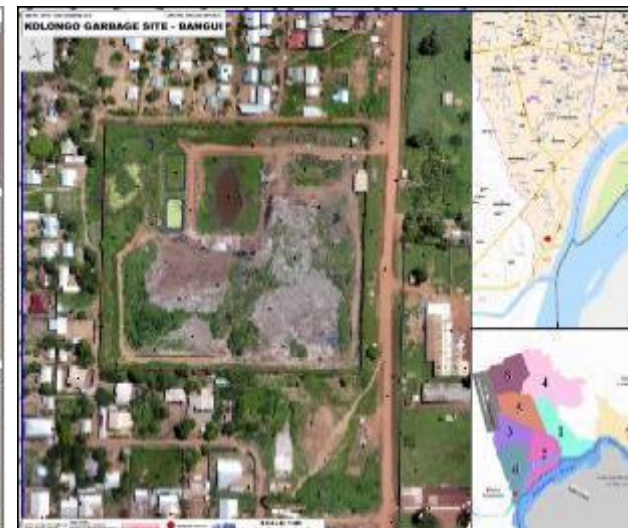
- Permission from host government



Security perspective of Camp lighting



Camp utilization management



Solid waste dumping site monitoring

As part of MINUSCA Greening initiatives, the mission has installed solar panel systems to power the data centers. A total of 180 Kw, mission wide. Also installed solar camp lights



6KW Solar Farm to power the Camp Fidel our backbone transmission center



Solar camp street lights



Solar panel to power the smart city cameras.

EFFECIENCY / PERFORMANCE :

- Less reliance on power grid
- Clean electricity
- Reduction in carbon emission

BENEFICIARY :

- FTS, Engineering

RISK / DOWNSIDE :

- Heavy rain and sunshine hours
- Spares and know how

GAPS BRIDGED :

- Continuous electricity in remote places even when the fuel supply is obstructed.

MINUSCA sign board to regulate speeding of UN vehicles as part of Road Safety

Fixed Radar Sign Board



Mobile Radar Sign Board



EFFECIENCY / PERFORMANCE :

- Driving speed is noted by all
- Notify drivers to slow down

BENEFICIARY :

- Road Safety Unit
- Transport

RISK / DOWNSIDE :

- Spares and know how

GAPS BRIDGED :

- Negligence over speeding is avoided by prompt alert

With the assistance of the US Department of Defense (DoD), MINUSCA implemented energy metering equipment to measure the efficiency of MINUSCA generators



Console Monitoring



Metering and wireless module



Server where data can be stored

EFFECIENCY / PERFORMANCE :

- Clear information on electric consumption by camp
- Right number of generators are switched on as per the demand
- Fuel conservation
- Carbon emission controlled

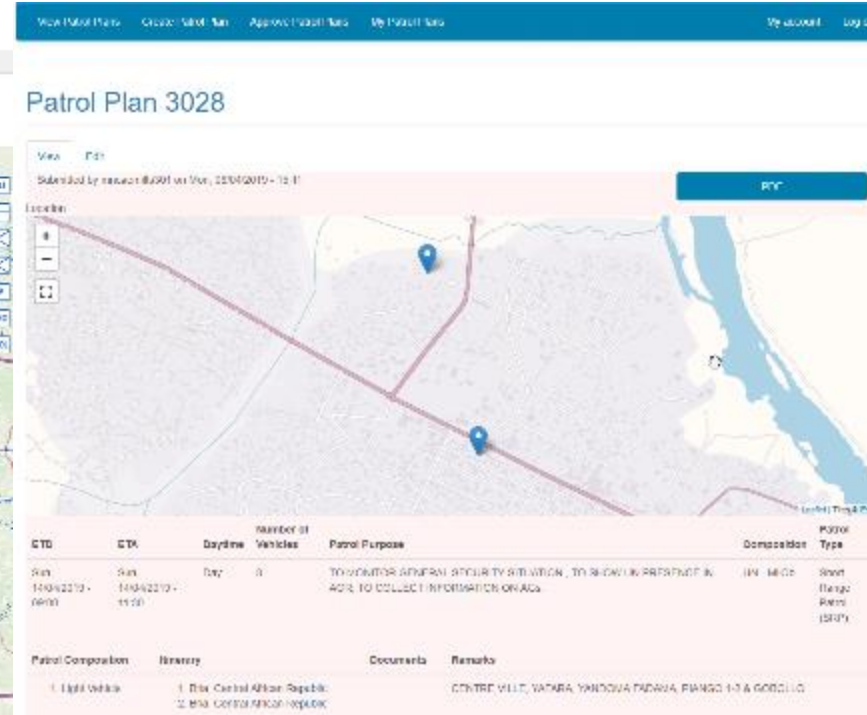
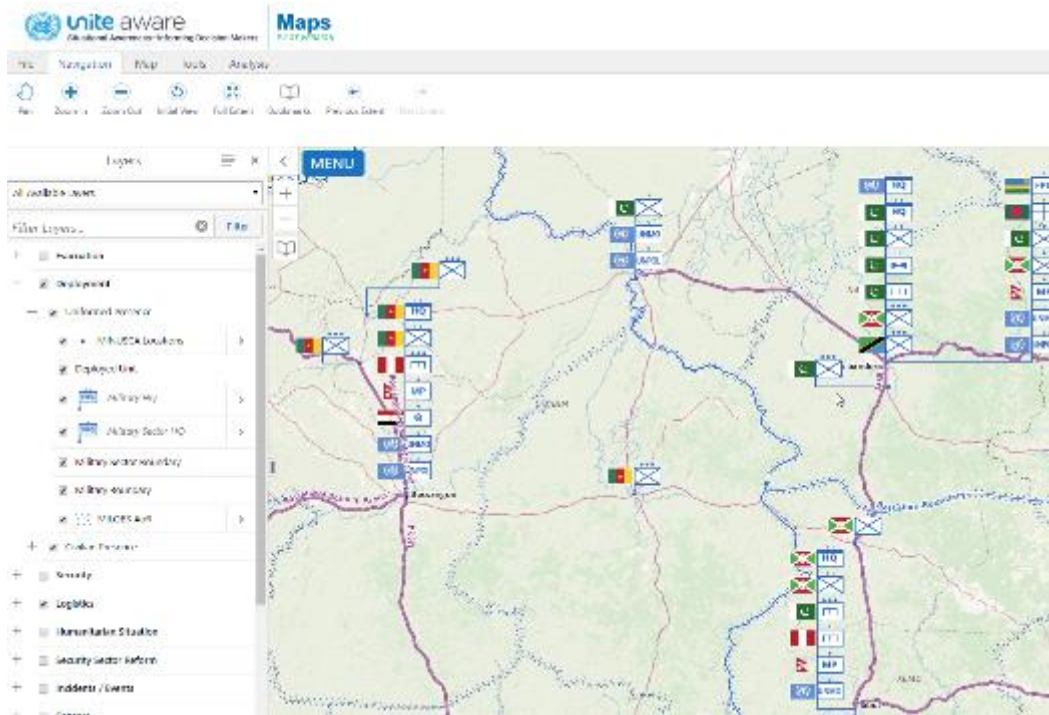
BENEFICIARY :

- Engineering

GAPS BRIDGED :

- Fuel waste
- Power waste

The Unite Aware Suite allows to collect and disseminate various mission critical data to diversified stakeholders coherently to have a common operating picture for efficient decision making.



EFFICIENCY / PERFORMANCE :

- Improved Situational Awareness and information Analysis
- Efficient integrated common information management processes and technologies

BENEFICIARY :

- Forces, JOC, JMAC, SOC, MOC, Substantive and Mission Support

RISK / DOWNSIDE :

- Data validity

GAPS BRIDGED :

- Availability of Standardized, effective information tools to mission leadership which improves decision making

PROTECTION OF DATA :

- Security Group policy in place for data access
- Data are stored in secured server

LEGAL ISSUES :

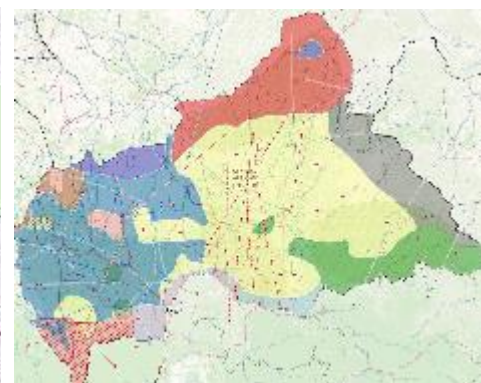
- Classified information, handled according to UN policy



INCIDENTS AND FLASH REPORTS



FIND ROUTE



ETHNIC GROUPS/TRANSHUMANCE ROUTE



FLIGHT SCHEDULE

Sage is a centralized incident collection and report application for the mission. All the mission stakeholders from HQ to TeamSite. The reported incidents are validated and approved before it is visible to others.

EFFECIENCY / PERFORMANCE :

- Identifies emerging trends and implement preventive measures
- Receive early warnings for crisis and conflicts
- One platform across the mission to report incidents.

BENEFICIARY :

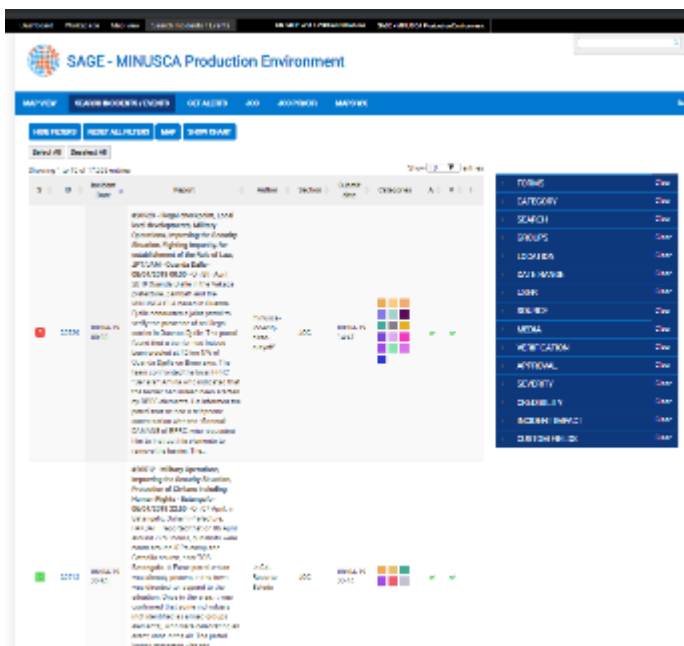
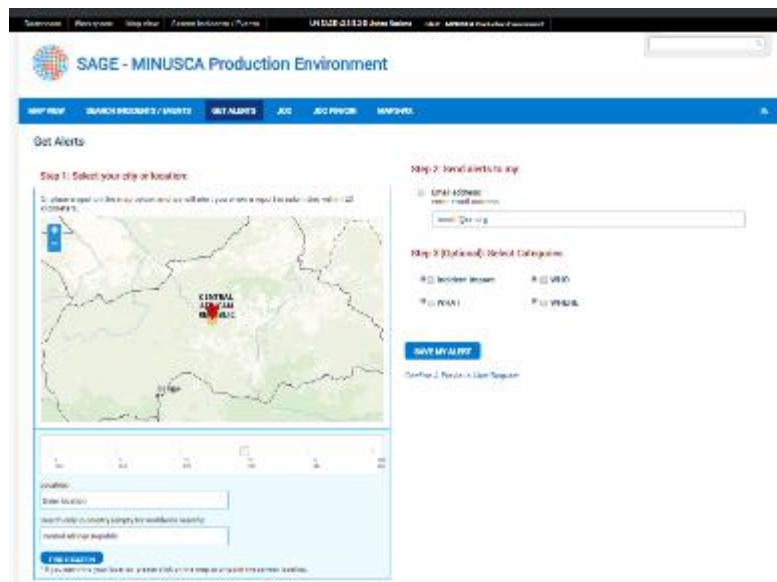
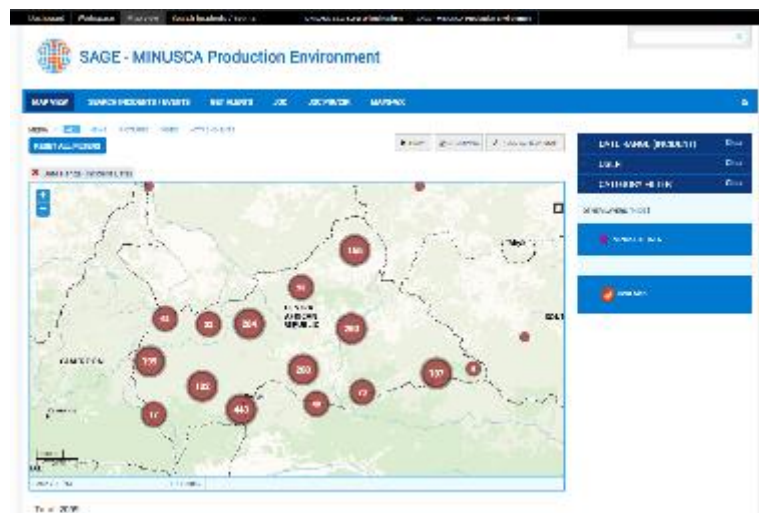
- SRSG, DSRSG, JOC, JMAC, Security, UNPOL, Military, UNMAS

RISK / DOWNSIDE :

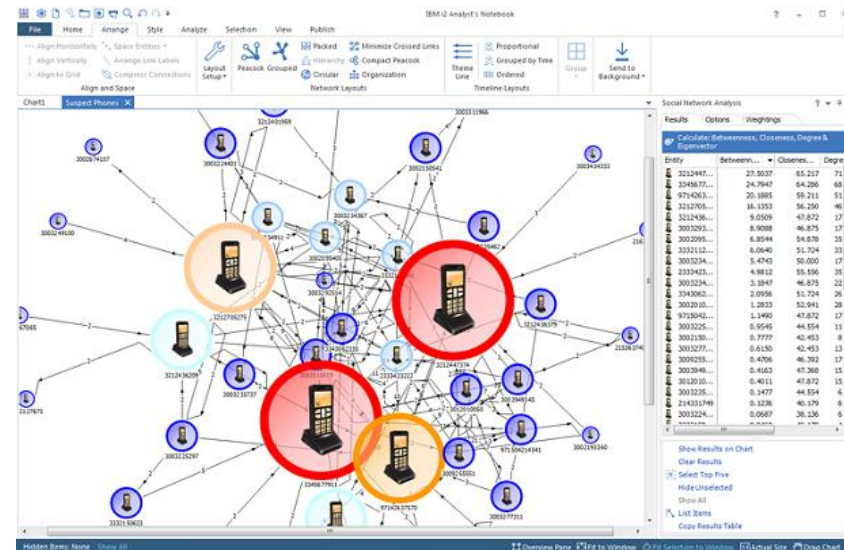
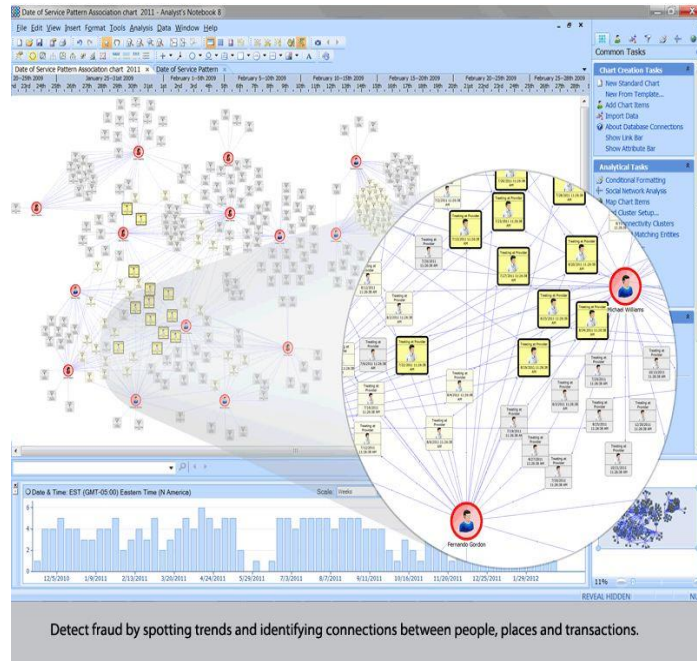
- Handling duplicate information and the process to validate

PROTECTION OF DATA :

- Data stored in UNGSC servers
- Extensive cyber security tests done and system changes made to prevent data leakage outside of UN network



I2 Analyst is the visual analysis tool that helps the mission analyst to turn data collected into Intelligence. It facilitates to study the pattern in data using features like connected network visualization, social network analysis and geospatial views.



EFFECIENCY / PERFORMANCE :

- Collect, discover and analyze intel data
- enable the aggregation of incidents, terrorists, armed groups, organizations or ethnic groups in one common Enterprise System (UNSMILES)
- Share cross-issues across several missions

BENEFICIARY :

- JMAC, Security, JOC, MILOB, UNPOL

RISK / DOWNSIDE :

- Data has to be clean, verified, and up-to-date

PROTECTION OF DATA :

- Data stored in UNGSC servers
- Extensive cyber security tests done and system changes made to prevent data leakage outside of UN network

THANK YOU..