



Tactical UAV's
in
the French Army

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Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 02 SEP 2003		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Tactical UAVs in the French Army				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) French Army Technical Service, France				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES See also ADM001676, UAV 2002 Conference & Exhibition., The original document contains color images.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



French Army Tactical UAV's

- **In service systems**
- **Operational experience and deducted ConOps**
- **Future systems :**
 - Short term : SDTi**
 - Medium term : MCMM**

UAV SYSTEMS IN SERVICE WITH THE FRENCH ARMY



FAST DRONE

- Speed : 720 km/h
- Mission radius : 200 km
- Endurance : 1/2 h
- Sensors :
 - Wet Film
 - IRLS



SLOW DRONE

- Wing span : 3.3 m
- Speed : 180 km/h
- Mission radius : 60 km
- Endurance : 3 h
- Sensors:
 - Visible Line Scanner
 - IR Line Scanner

OPERATIONS RECORD:

CL289:

- BOSNIA: 96
- MACEDONIA: April 99 to June 99
- KOSOVO: engaged until March 2002

CRECERELLE:

- BOSNIA: November 98 to March 99
- MACEDONIA then KOSOVO: April 99 to July 99

CRECERELLE - LESSONS LEARNED

- 67 operational flights
- 3 losses (4.5 %)



CRECERELLE MAIN FEATURES

- **Missions**
 - **Reconnaissance**
 - **Electronic Warfare (Comms Jamming)**
- **Strategic / tactical qualities**
 - **Mobility: airtransportable vehicles**
 - **No runway needed**
 - **S-band data link**
- **Performances**
 - **«Flying robot»**
 - **Interoperable GCS (hand-over)**
 - **In flight programmable jammer**
- **Aircraft characteristics:**
 - **Wing span: 3.30 m**
 - **MTOW: 160 kg**
 - **Payload: 35 kg**
 - **Ceiling: 15,000' (4500 m)**
 - **Endurance: 3 hours**



CRECERELLE / LESSONS LEARNED

ASSESSMENT PRIOR TO COMMITMENT



- TERRAIN AND MAIN FEATURES
(Line of sight- medium altitude)
- LOCAL WEATHER CONDITIONS
(winds & icing conditions)
- ENEMY FORCES : COA & TARGETS
- LOCAL GROUND THREAT + CI
LIAISONS

MAINTENANCE SUPPORT

- MAPS , production capacity
- SPARE PARTS, planned rate of missions
- SPARE GROUND CONTROL STATION
- HOT-LINE WITH THE MANUFACTURER



CRECERELLE / LESSONS LEARNED

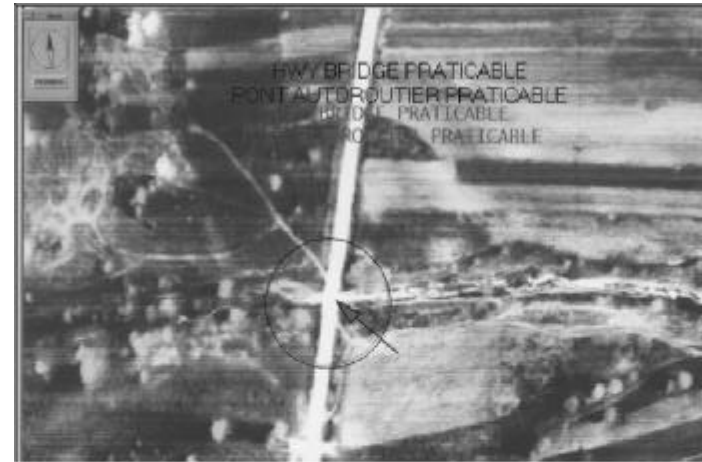
PEACE TIME TRAINING

- SIMULATORS
- +
REAL FLIGHTS, as difficult as possible
- CHECK-LIST
- + INTEL TRG (imagery & procedures)

CRECERELLE :

- OPTIMUM : 2 flights/month/crew
- MAINTENANCE : performing day to day maintenance tasks is enough





Both IR & visible
are necessary

To get accurate info,
real time becomes
quickly delayed time

You have to be able to transfer
your image to other authorities



CL289 DEPLOYMENT TO KFOR – EVALUATION

- Regarded period : April 01 to Sept 01
- 68 operational flights, 2 losses : < 3%
- Primary Tactical Recce asset for KFOR
- Outstandingly successful in
 - DAYTIME Tactical Recce
 - Mission planning roles
 - Geo tasks



CL289 MISSION PRODUCT EXAMPLES



7RA.FR.CL289.BR.99MI09.181300Z.MAY99.8cmX3.410mAGL.TRIDENT.EN 133244 .NC.
PRISTINA



REFUGÉES

7RA.FR.CL.289.BR.99MI13.250800Z.MAY99.8cmX5.400mAGL.TRIDENT.DN 960 210.NC
REFUGIES



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IMPACTS DE BOMBES



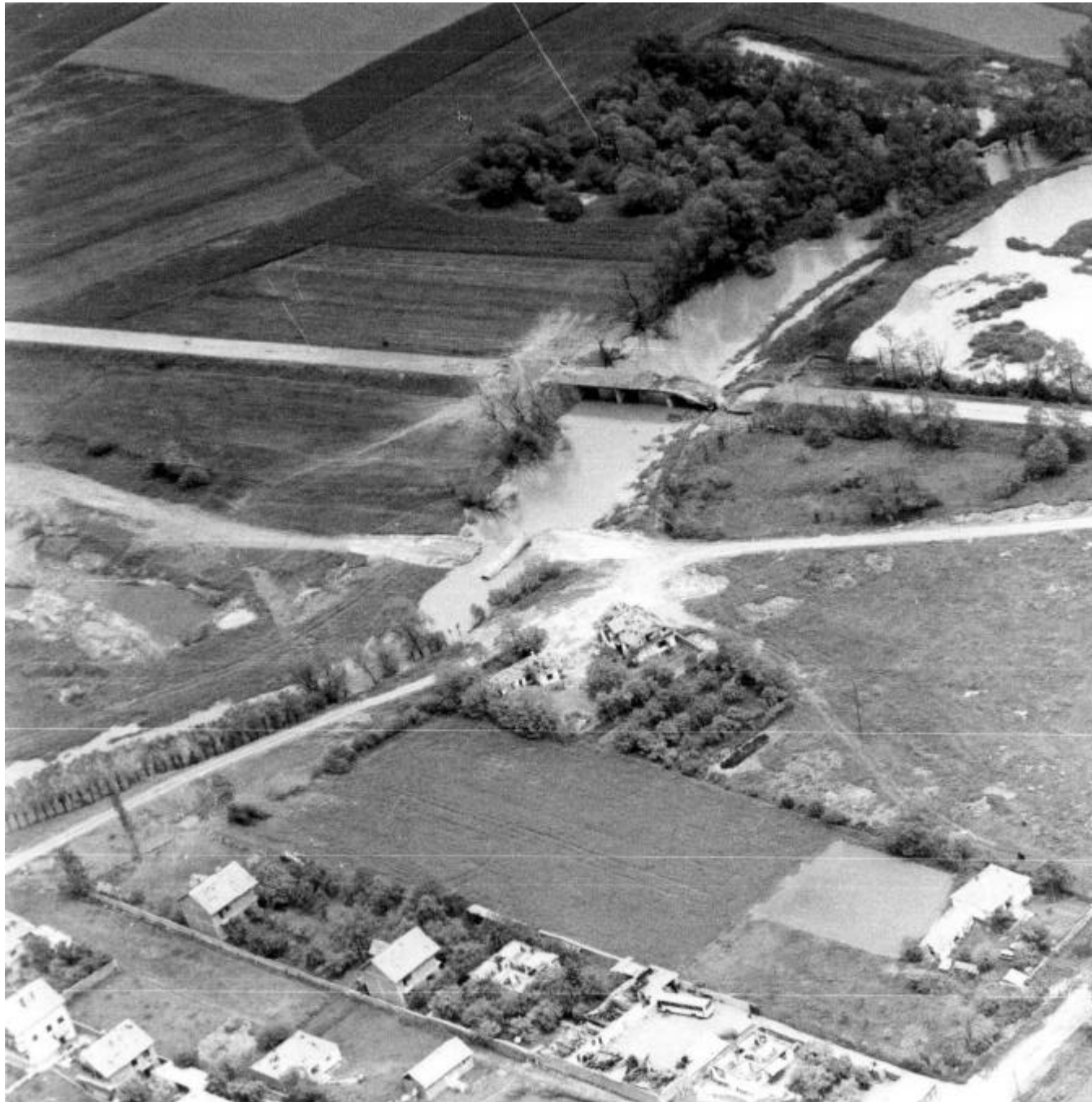
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SA 6



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CASERNE D'UROSEVAC



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PONT DETRUIT

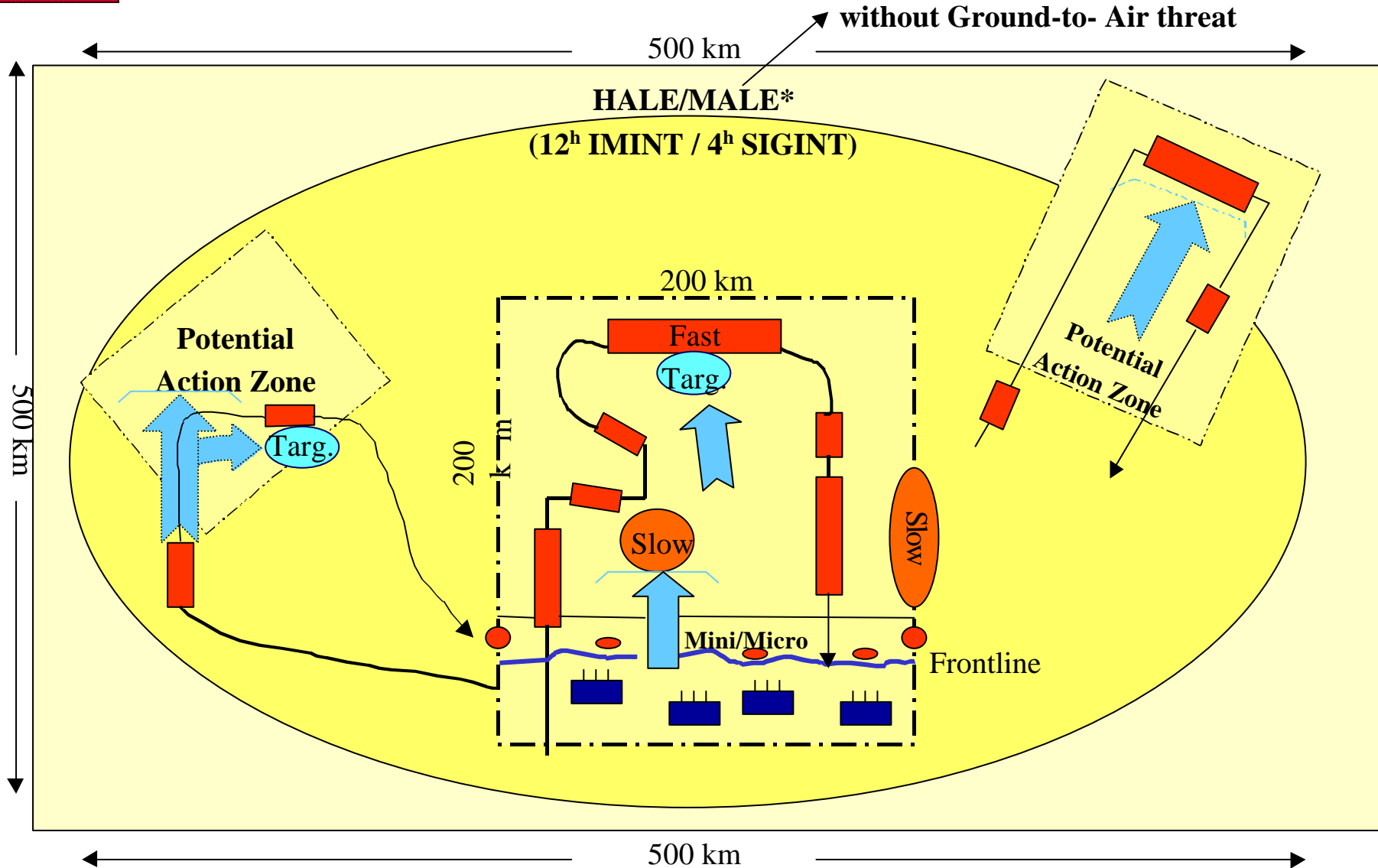


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MANIFESTATION POSSIBLE .



TUAV CONCEPT of EMPLOYMENT

UAVs OPERATIONS CONCEPT





SHORT TERM :

SDTI

Systeme de Drone Tactique Intérimaire (SDTI)



- **Two «IMAGERY» platoons, each including**
 - 2 Stations
 - 9 Air Vehicles
 - 1 Launcher
 - 1 Platoon Maintenance Facilities
- **2nd Echelon Maintenance level**
- **Maintenance contract with the manufacturer with operational availability objectives**

Air Vehicle

- ➔ Max T-O Weight : 330 kg including payload 70 kg.
- ➔ Endurance : >5 h ; Speed 140 to 250 km/h.
- ➔ Data link range : 80 km.
- ➔ Flight level 300m AGL up to 3500 m ASL.

Payload

- ➔ Gyrostabilized : 1 daylight camera ; 1 caméra thermal camera.
- ➔ Real time transmission, no on-board recorder



Ground station

- ➔ 3 Workstations : Mission commander, Navigator, Payload operator
- ➔ Target localisation accuracy 20m at 300m AGL



SPERWER SYSTEM ORGANISATION: FRANCE

FRENCH ARMY PROJECTION PLATOON

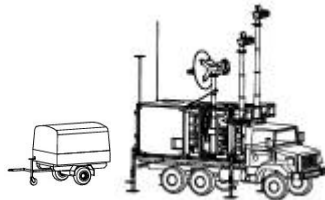
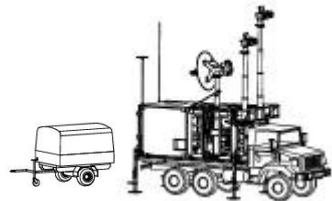


**61st
Artillery
Regiment**

Platoon HQ



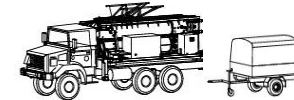
**Ground
Control Station
/ Remote Data
terminal**



**Transport &
Recovery System**



Launching System



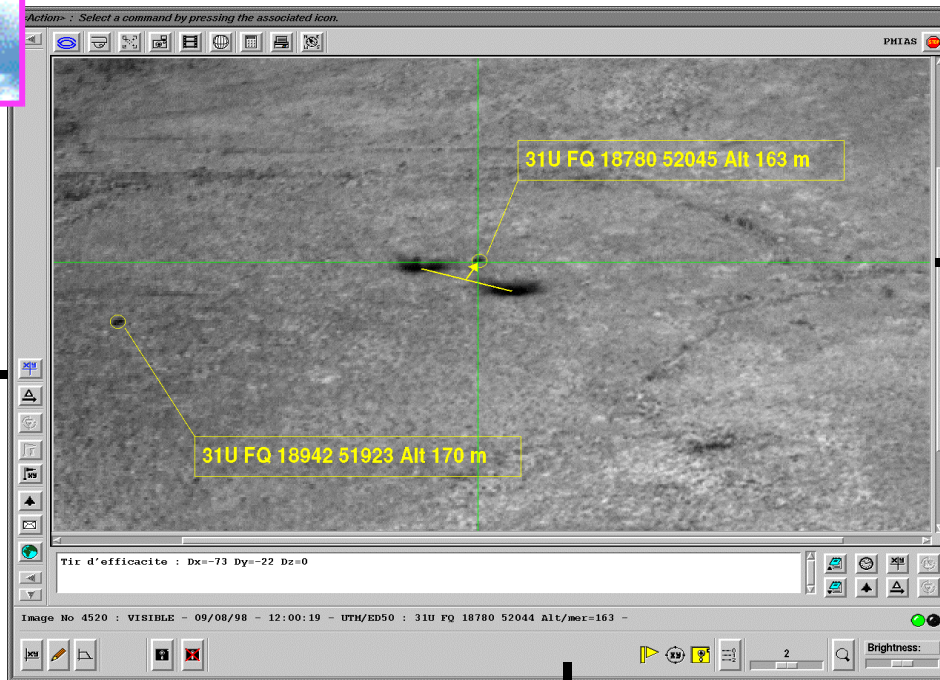
**Platoon Maintenance
Facilities**

(1st & 2nd echelons)





SDTI C4I integration



MARTHA:
ATM / ATC

ATLAS:
Targeting

SAIM and SIC-F
Command and intelligence

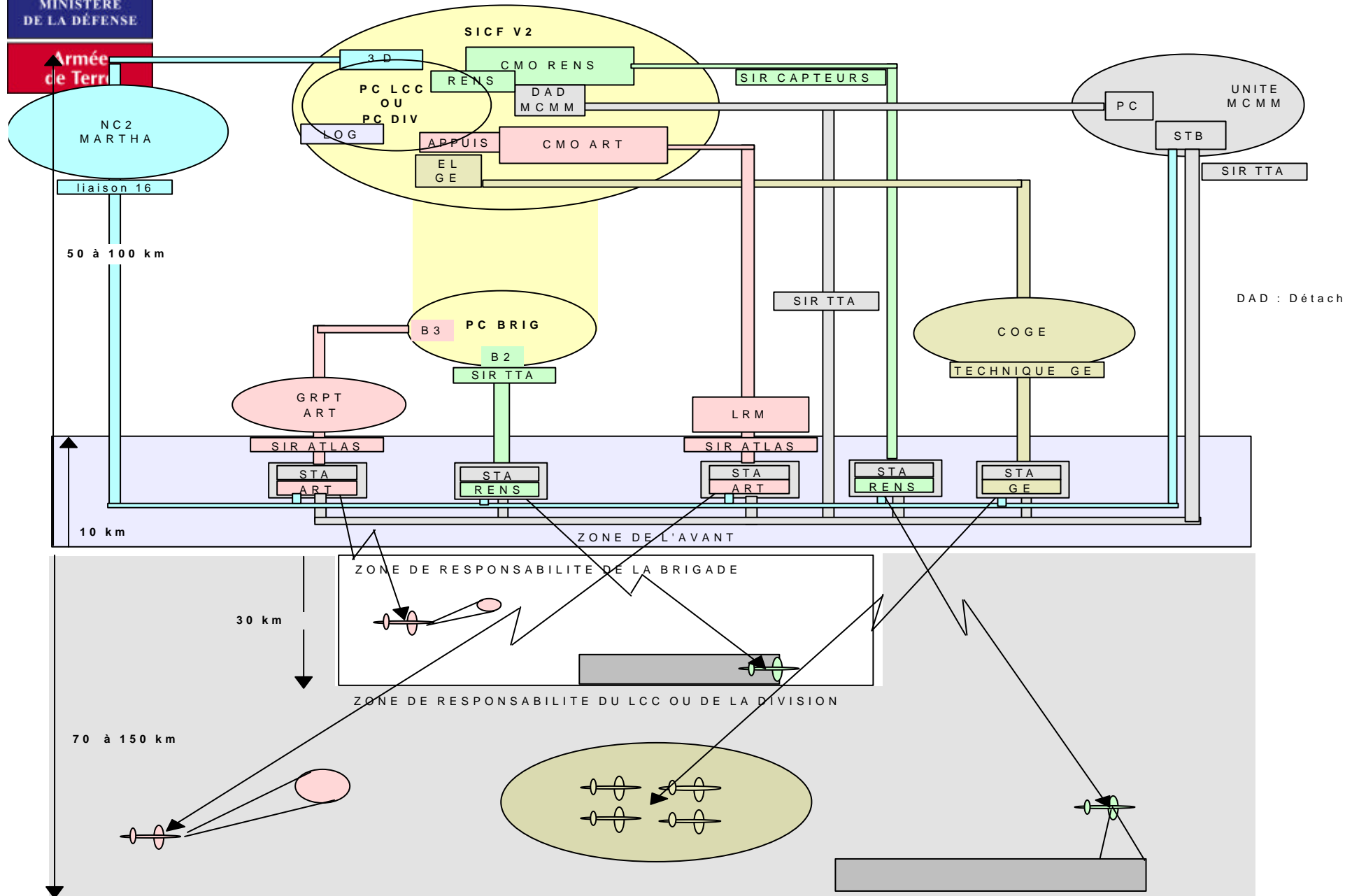




MEDIUM TERM : MCMM



CONCEPT of OPERATION MCMM





UAV SYSTEMS PROCUREMENT: FRENCH ARMY PRIORITIES

P1: MCMM Tactical UAV System

(Multi-Payload, Multi-Missions)

2 flight profiles : slow & fast

Interoperability with HORIZON and SIGINT

P2: Interoperability with MALE Drone

(Medium Altitude, Long Endurance)

P3: Close Range UAV System (Minidrone)

MISSIONS

IMINT : Intelligence, Targeting

SIGINT/COMMS: ESM, Comms relay

OTHER : Weather forecasting, NBC, Geography, etc.

French army general planning for TUAV programmes

