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MINISTÈRE DE LA DÉFENSE
Armée de Terre

Tactical UAV's in the French Army

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Report Documentation Page

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Prescribed by ANSI Std Z39-18

French Army Tactical UAV's

- In service systems
- Operational experience and deducted ConOps
- Future systems :

  Short term : SDTi

  Medium term : MCMM

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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

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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

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CL289 MISSION PRODUCT EXAMPLES

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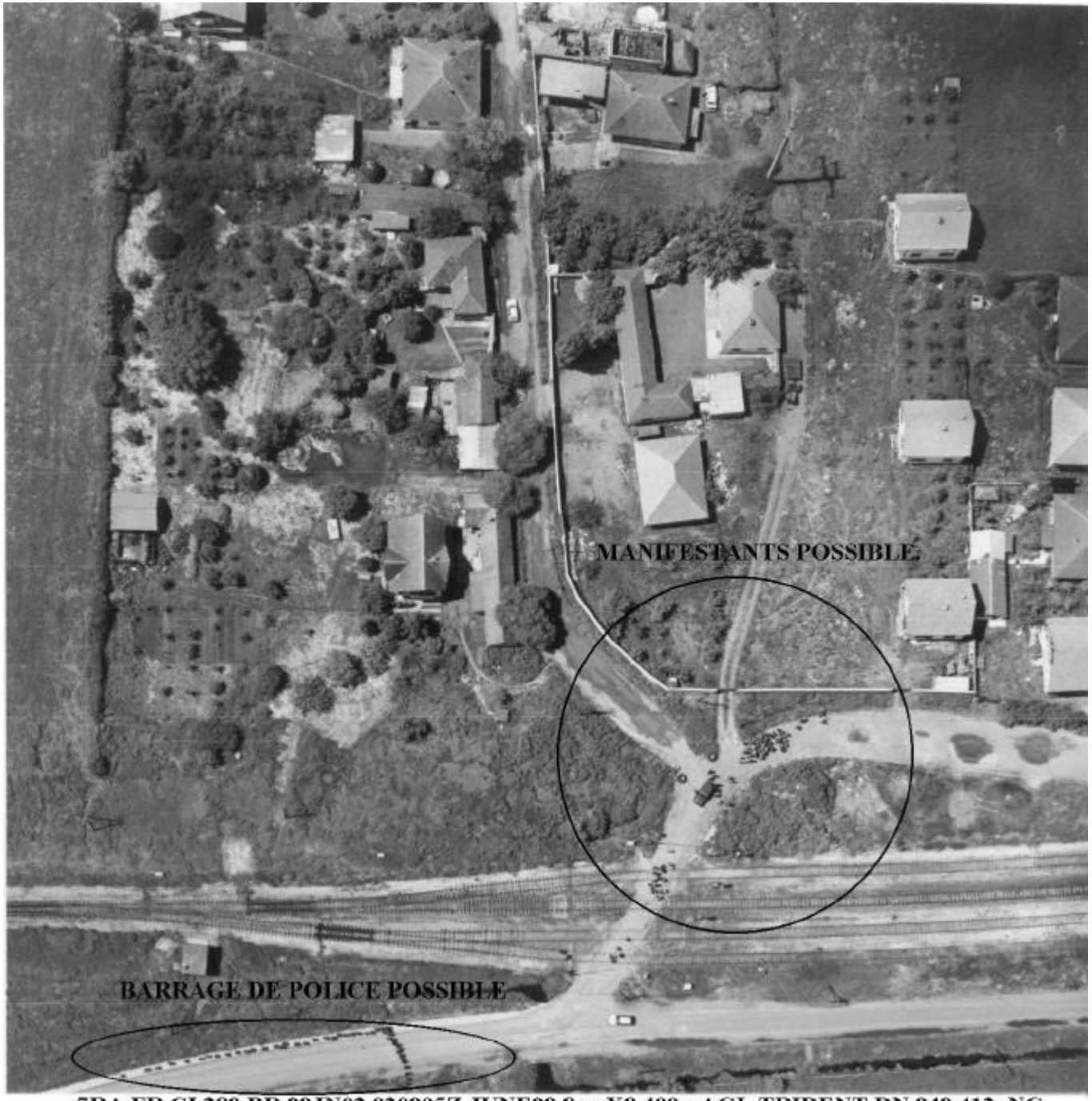

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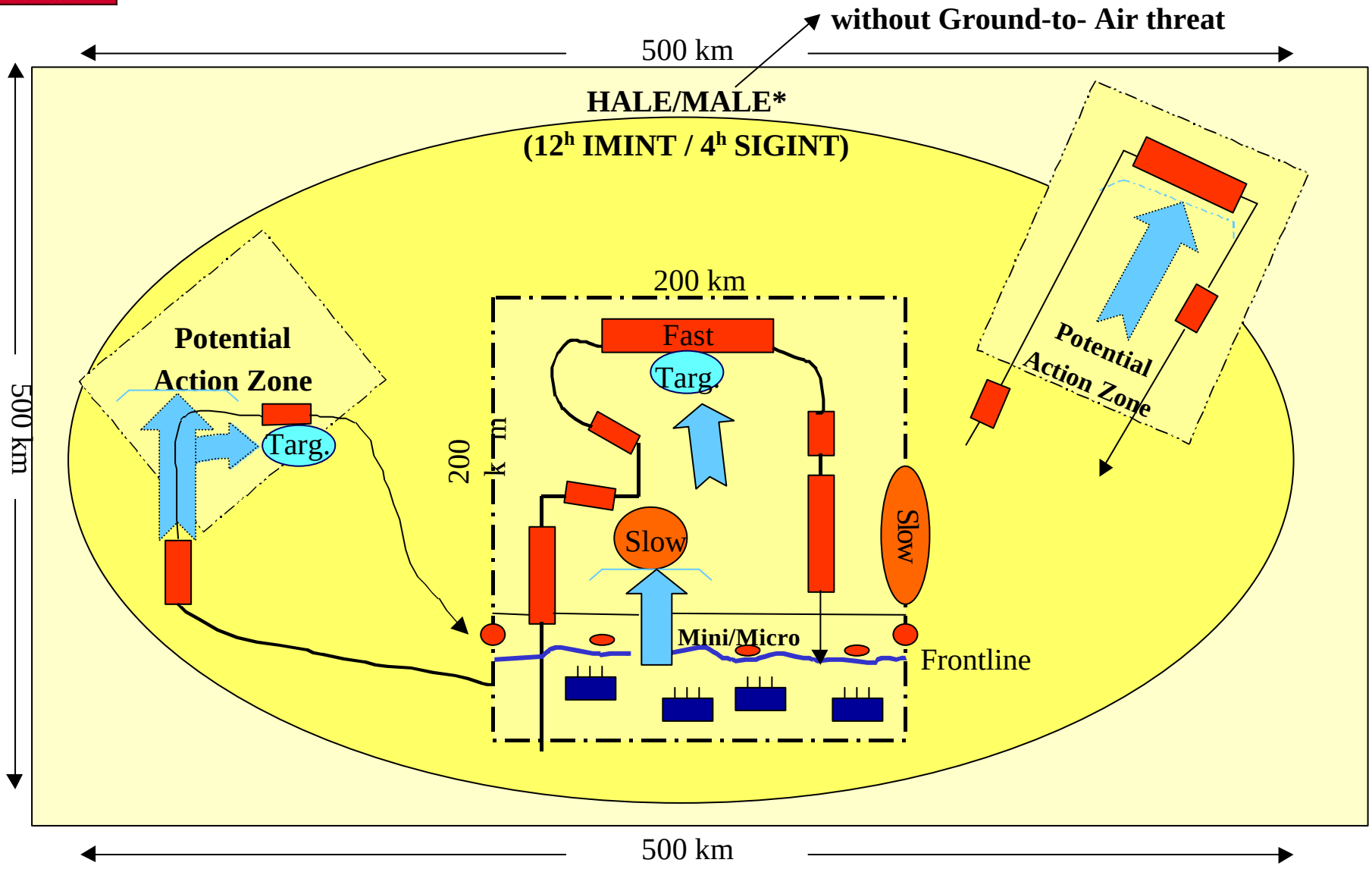
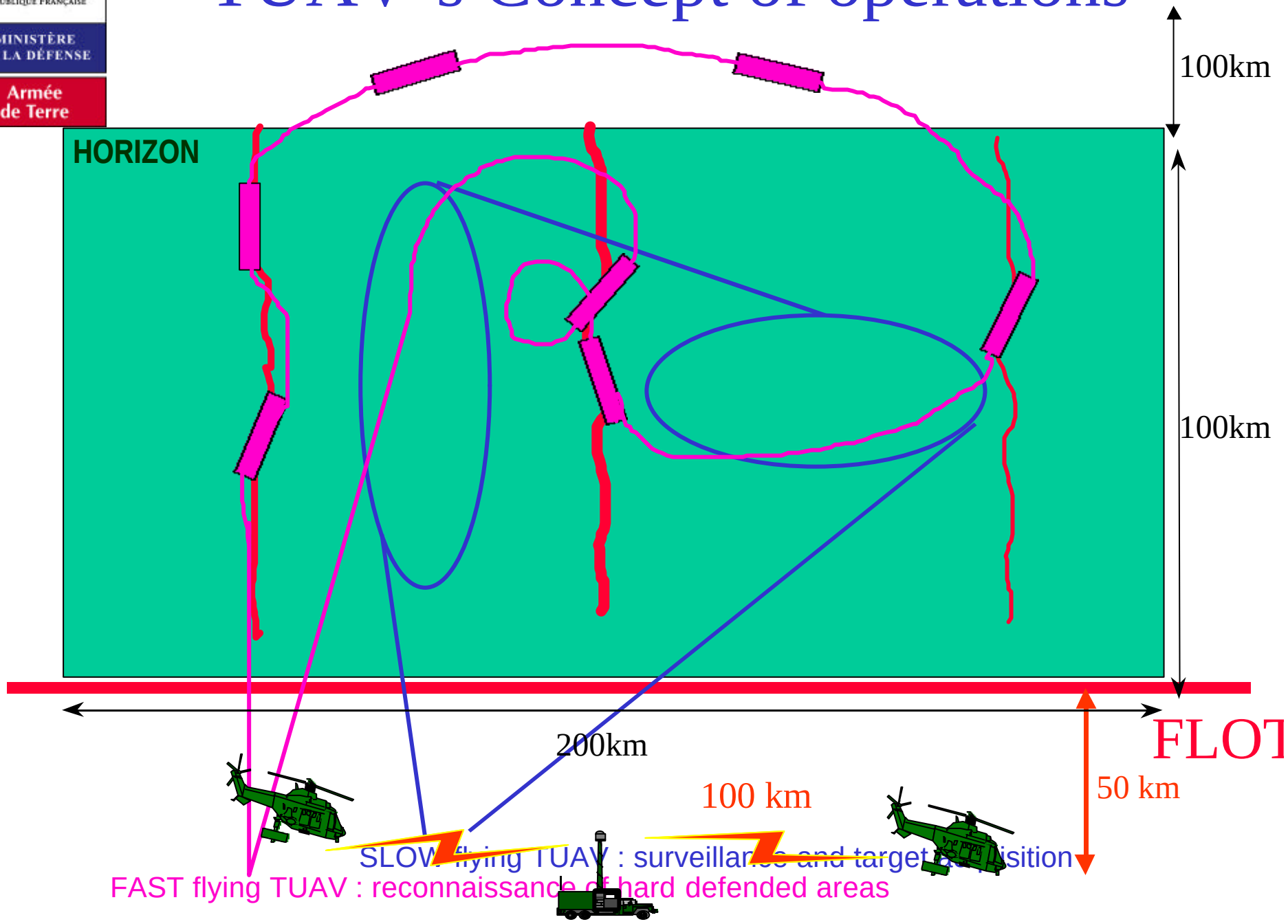
TUAV CONCEPT of EMPLOYMENT

UAVs OPERATIONS CONCEPT



TUAV's Concept of operations



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SHORT TERM :
SDTI

Système 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**

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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

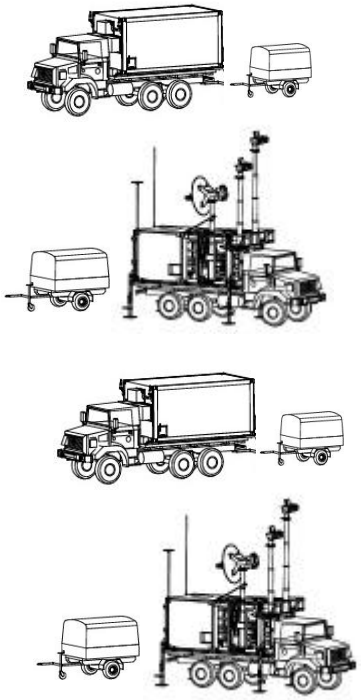
SPERWER SYSTEM ORGANISATION: FRANCE

FRENCH ARMY PROJECTION PLATOON

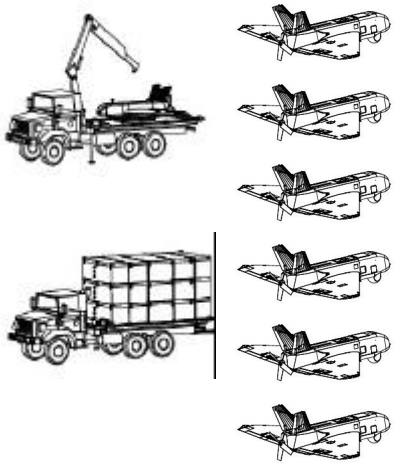
61st Artillery Regiment

Platoon HQ

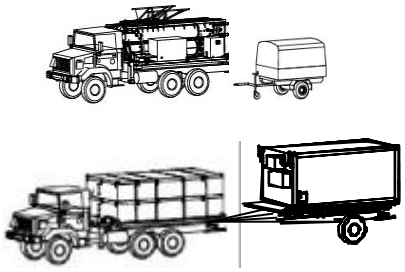
Ground Control Station / Remote Data terminal



Transport & Recovery System

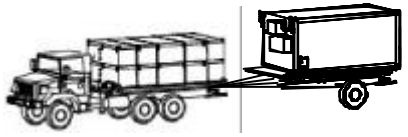


Launching System

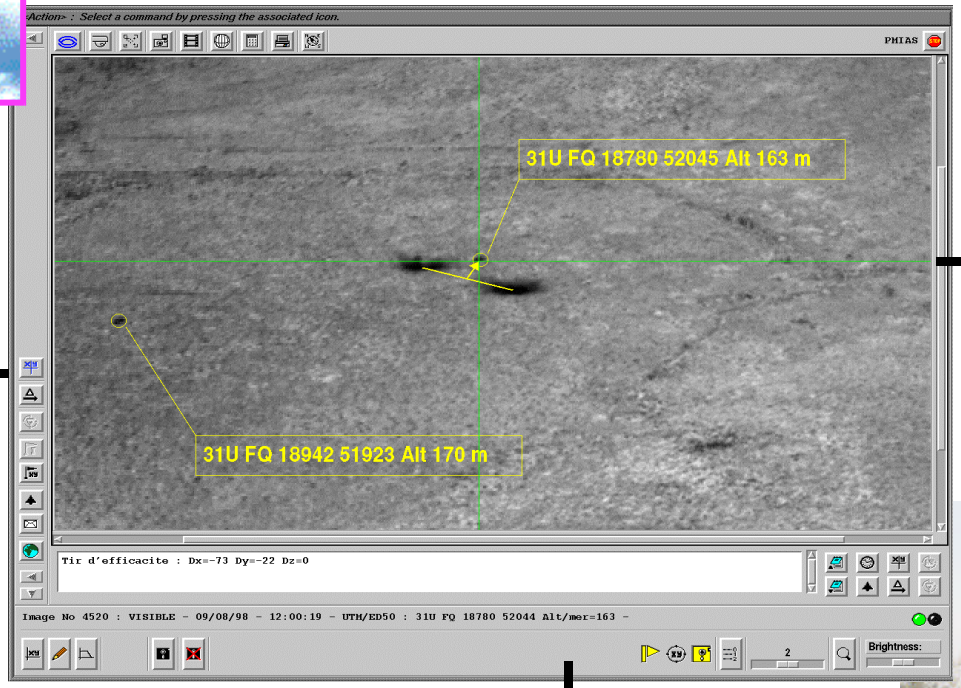


Platoon Maintenance Facilities

(1st & 2nd echelons)



SDTI C4I integration



MARTHA:
ATM / ATC

ATLAS:
Targeting

SAIM and SIC-F:
Command and intelligence

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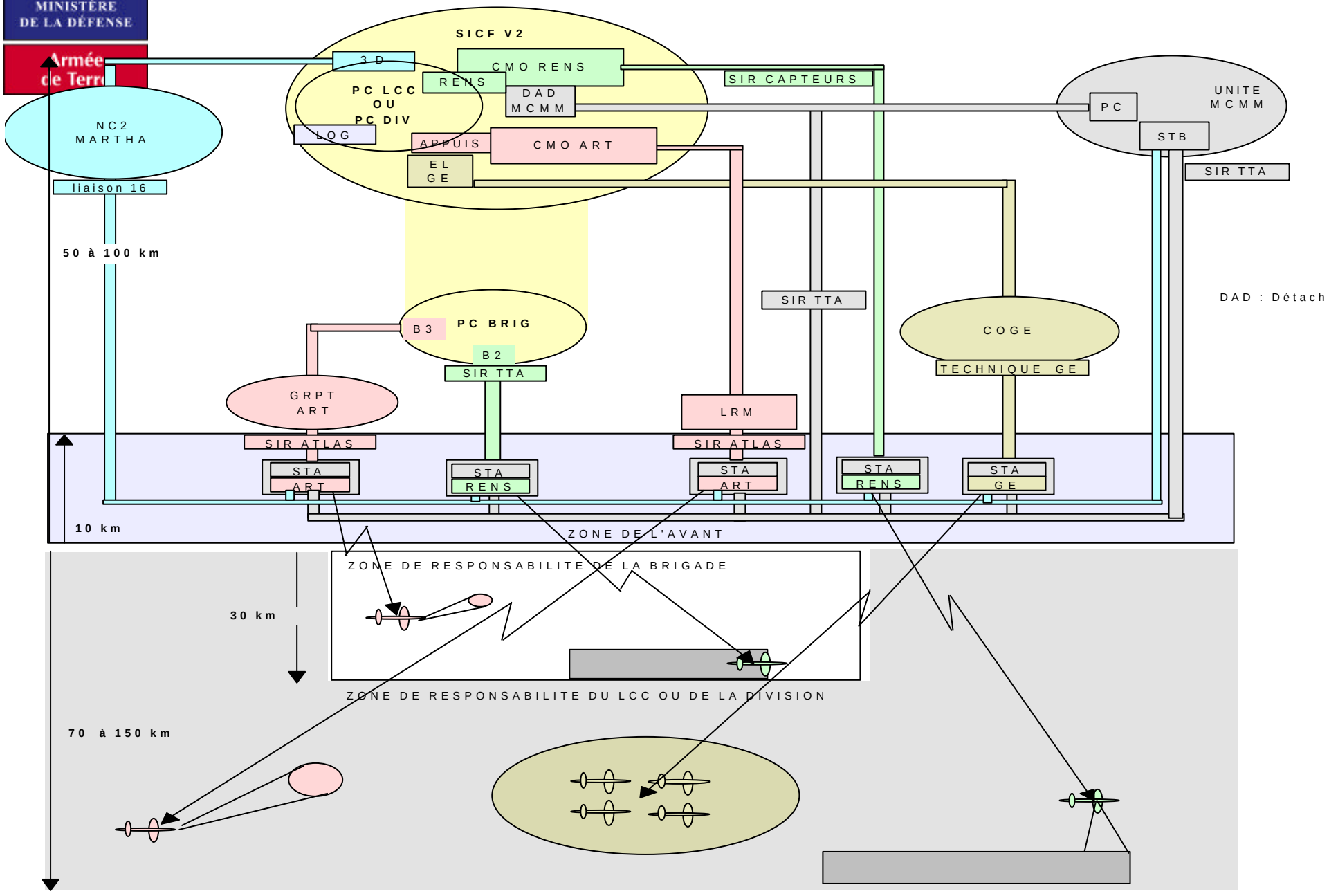
MEDIUM TERM : MCMM

CONCEPT of OPERATION MCMM



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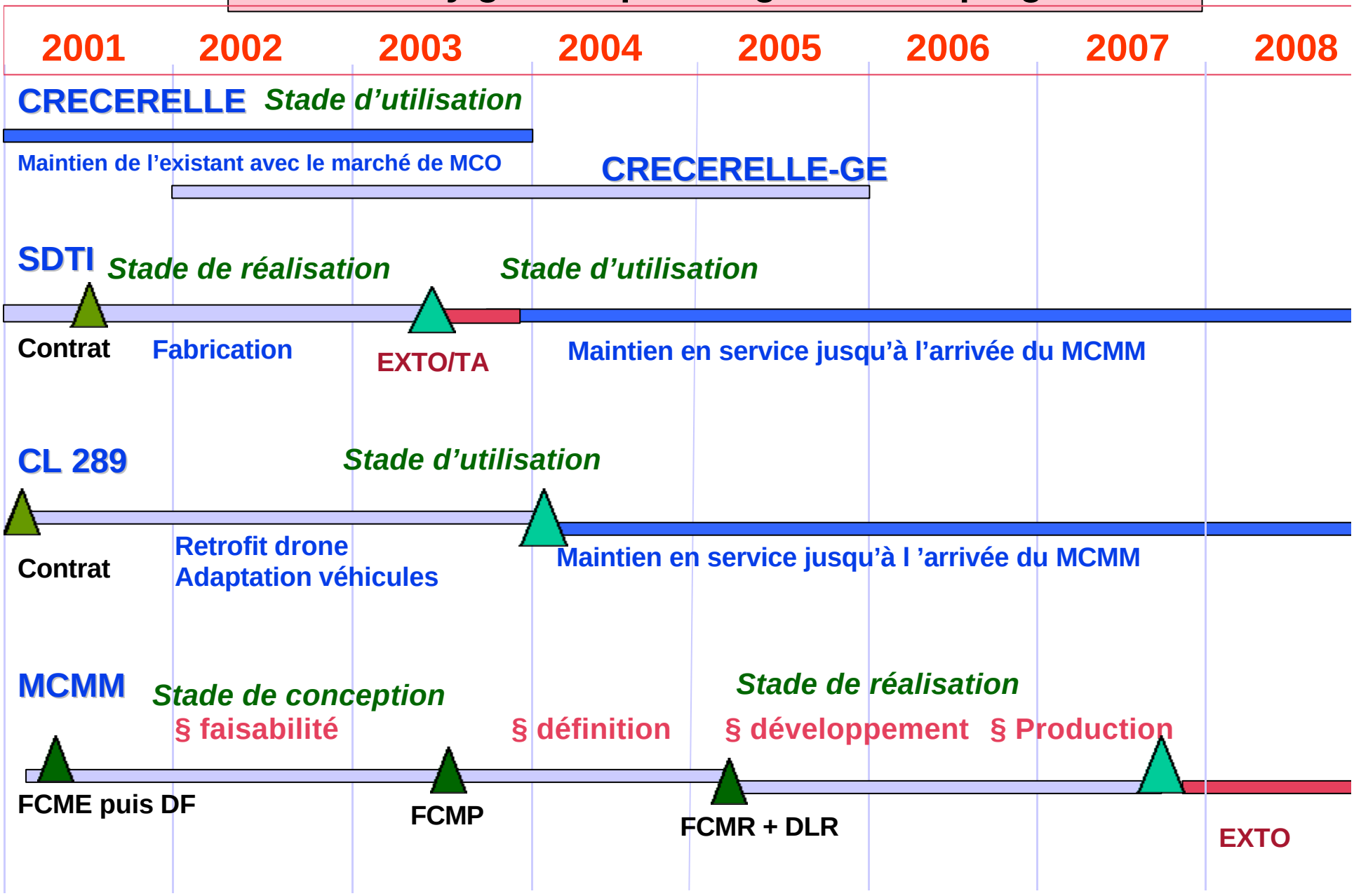
UAV SYSTEMS PROCUREMENT: FRENCH ARMY PRIORITIES

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