Training Micro/Mini RPA Operators In the Armed Forces

Roma, 29 marzo 2017

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RPA Center of Excellence

Agenda

- **Centro di Eccellenza APR – RPA CoE**
- **RPA ITA Legal Framework**
- **Mini RPA – Operator Training**

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CdE APR – RPA CoE

"A center of *Subject Matter Experts,* with joint value, capable to promote standardization, capability enhancement and operational growth in the *Unmanned Air Systems sector*…"

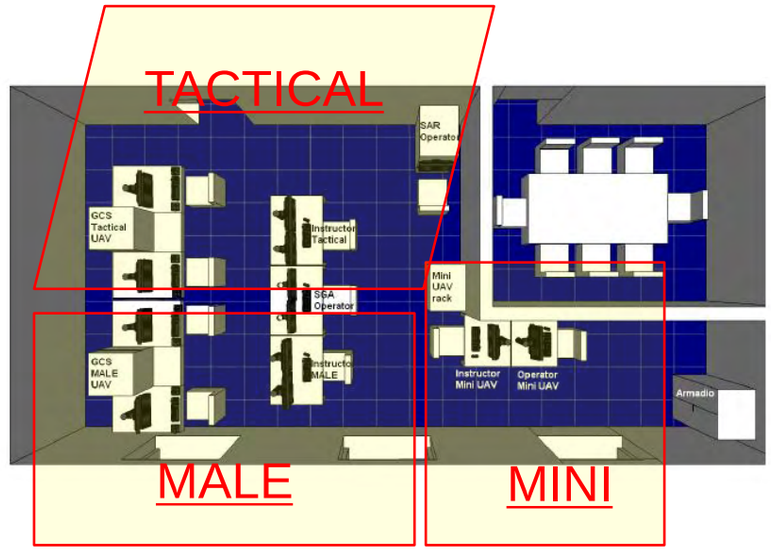
What we do:

- Development and integration of common/joint doctrine, standards, TTPs, training *sillabi*
- Follow RPA technology evolution
- Basic training modules
- CONEMP development

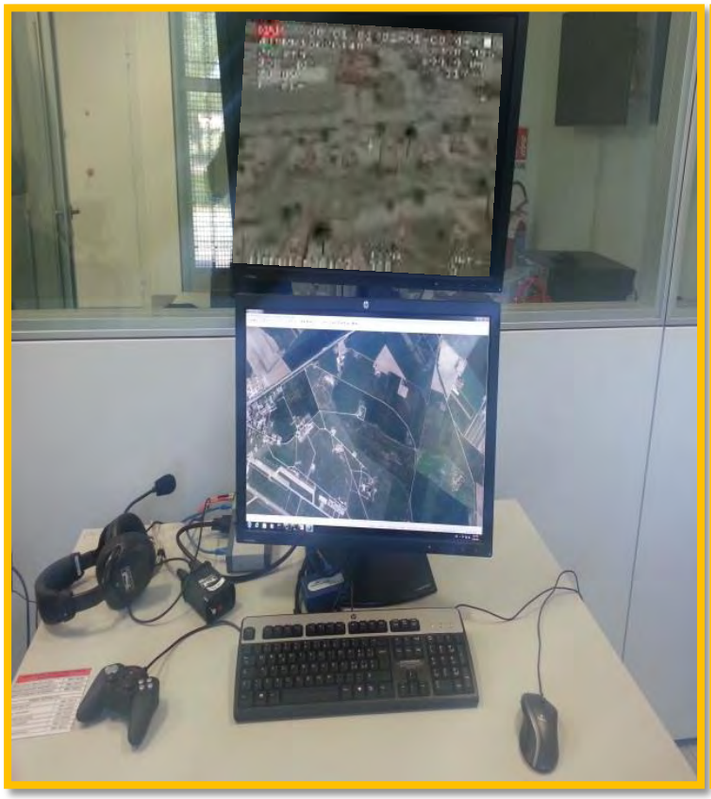


CdE APR - UAS Battle Lab

- 3 integrated simulators: Mini, Tactical, MAL
- Sensor replication: EO/IR/SAR
- Scenario Generator Animator



Mini



Tactical



MALE/Strategic



Agenda

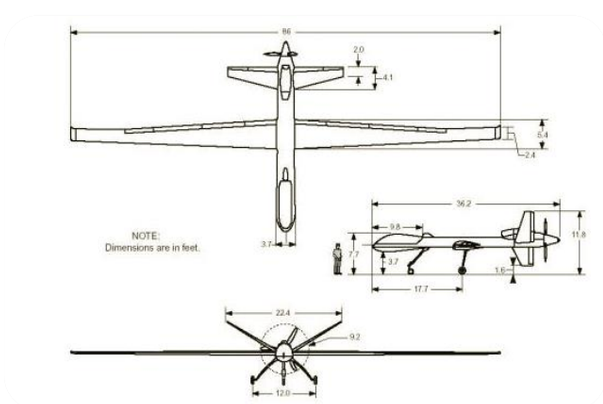
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RPA –Italian Legal Framework









- *Mezzo aereo pilotato da equipaggio collocato in una Stazione Remota di Comando e Controllo* (art. 246 COM) ***(definition of RPA)***
- *Le FA sono autorizzate ad impiegare APR…* (art. 247 COM) ***(authorization to employ RPAS…)***
- *…con le limitazioni stabilite nel* ***DTO*** *AM-ENAC* (art. 247 COM) ***(…with the limitations established by Air Force-ENAC document DTO)***
- APR<20kg (art. 248 COM) ***(RPA<20kg)***

RPA Classification (Military)*

OPERATOR**

- ✓ Micro (< 2 Kg)
- ✓ Mini (2-20 Kg)



Strix = Mini

PILOT

- ✓ Light (20-50 Kg)
- ✓ Tactical (150-500 Kg)
- ✓ Strategic (> 500 Kg)



Predator = Strategic

**DM 23 giu 2006*
***COM art. 248*

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CdE APR – Training Modules

- Micro/Mini Operators (3 wks)
- Payload/Sensor Operators (3 wks)
- T/S RPA Pilots (2 wks)

Students from 4 Services + VVdF, GdF, CdP...





RPA – System of Systems



Ground Control Station



A/C



Crew



Sensors



COMM Systems

How to "make" an Operator

- **Human** is at the heart of the RPAS
- **Mission** preparation - Operator part of a **Team**
- **Airmanship** build up





Operator training - Subjects

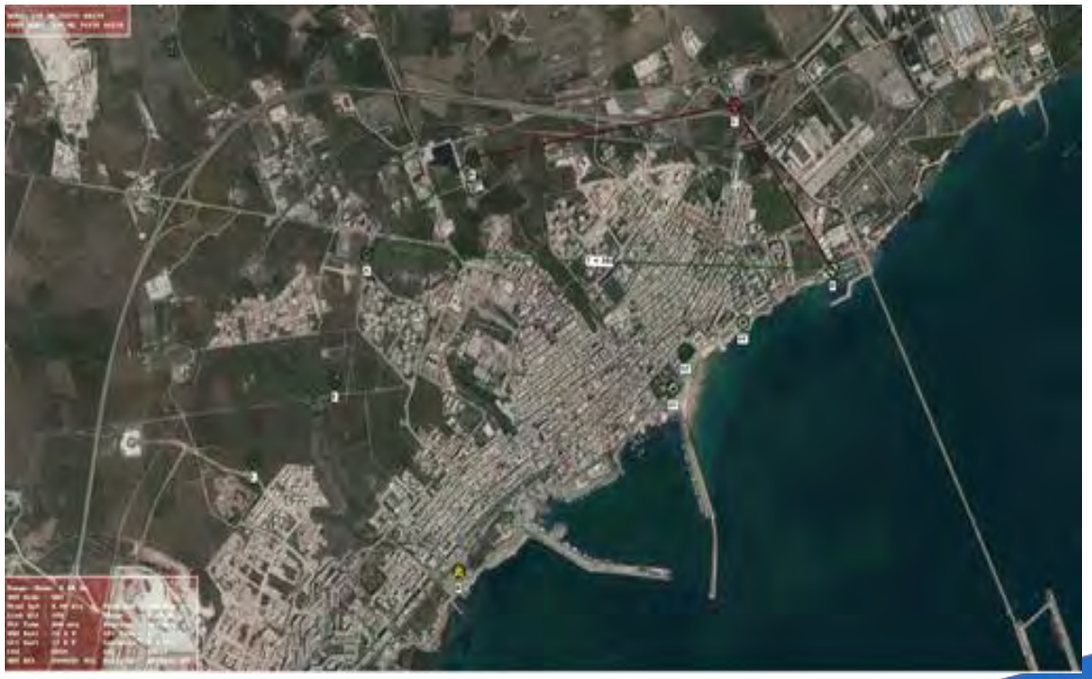
Lezioni	Materia di Insegnamento
NORM	Elementi di diritto della navigazione aerea
DIR	Profili di responsabilità derivanti dall'attività di volo
ATC	Regole del Volo, conoscenza degli spazi aerei;
ENG	Elementi di radiofonia aeronautica
AER	Aerodinamica e principi del volo
MET	Meteorologia
MED	Medicina Aeronautica
PREST	**Prestazioni e Pianificazione**
APR	Generalità sistemi APR
CIV	Regolamentazione Civile
SENS	**Radiotecnica , Avionica e Sensori**
MAN	Elementi di Manutenzione
SV	**Sicurezza del Volo**
OPS	**Procedure Operative & ORM**
CART	Cartografia e Navigazione
MSG	Messaggistica, Procedure Operative
INT	Attività integrative
SIM	Familiarizzazione al simulatore APRM
ADM	Admin, Test e studio/recupero test, esami orali

Simulator training

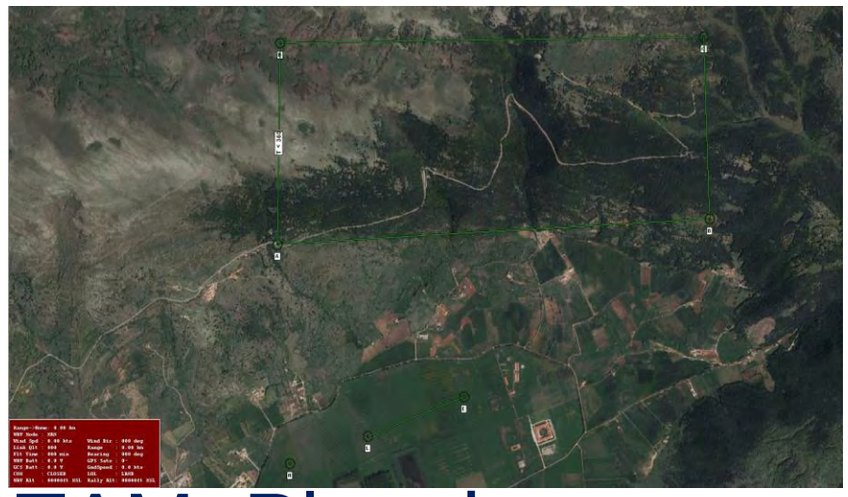
- Plan the mission and fly it
- Ck-List, Operational Risk Management
- Emergencies, Flight Safety Concepts







Simulator training – Sample Mix



- Objective: Search and Rescue, Disaster relief
- Mission
  - Mission Preparation: Freq. Plan, NOTAM, Planning, METAR/TAF, ORM, etc...
  - Mission Briefing: Operational objectives
  - Pre-Flight Ck-list
  - T/O, Level Off, Turns, Altitude Changes, NAV, Loiter, EO/IR Sensor, Maintaining LOS, Finding TGT, Landing Pattern, Land/Handover.
  - Debriefing



300+ Students



- ESERCITO
- AERONAUTICA
- MARINA
- CARABINIERI
- GUARDIA DI FINANZA
- VIGILI DEL FUOCO
- CORPO FORESTALE
- CROCE ROSSA ITALIANA
- CAPITANERIA DI PORTO





