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Montreux, Switzerland

# International Drone Working Group (IDWG) 'Update'

PREPARED BY:

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CHAIR, INTERNATIONAL DRONE WORKING GROUP - ICAR

AND

**FILIP BIOCIC**

CROATIA MOUNTAIN RESCUE SERVICE



# International Drone Working Group (IDWG)

- Formed in 2020
- 2 members appointed from each of the 4 commissions (Air, Avalanche, Medical, Terrestrial)



# *International Drone Working Group (IDWG) members*

**WILL SMITH – CHAIR**

**DIARMAID SCULY – AIRCOM**

**CLAUDIO ARTONI – AVCOM**

**PENDING APPOINTMENT- AVCOM**

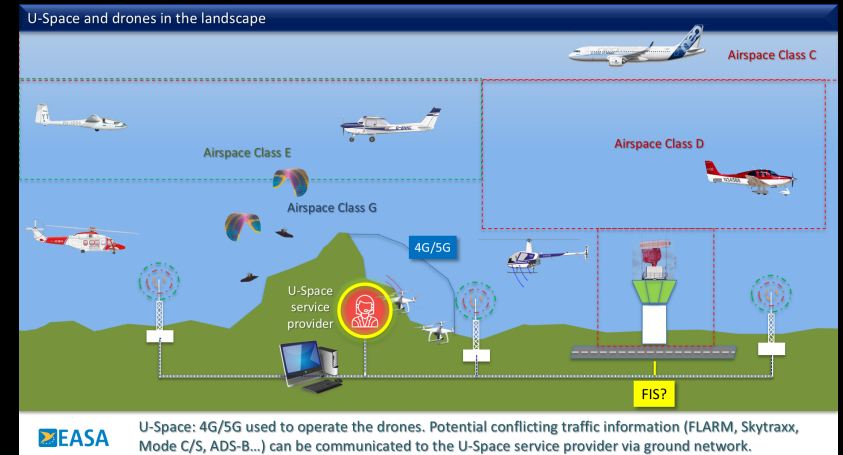
**PETER PAUL – MEDCOM**

**GIACOMO STRAPAZZON MEDCOM**

**FILIP BIOICIC – TERCOM**

**JORGEN NORDQUIST - TERCOM**

*2 Members from each Commission – Formed in 2020*



**Unmanned Aerial Systems (UAS)  
'drones'  
Use in SAR**

**Risks**

**Benefit**



# TERMINOLOGY

- UAS - Unmanned Aerial System
- UAV - 'drone'
  - Fixed Wing / Rotor (VTOL)
  - Size / Weight / Range / Altitude
- Ground Based Controller
- PIC - Pilot in Command
- Visual Observer
- Person operating the controls

## DJI Mavic 2 Enterprise Dual



**CRM - Crew Resource Management**



# Unmanned Vehicles\*



Unmanned Aerial Vehicles  
UAVs



Unmanned Underwater Vehicles  
UUVs



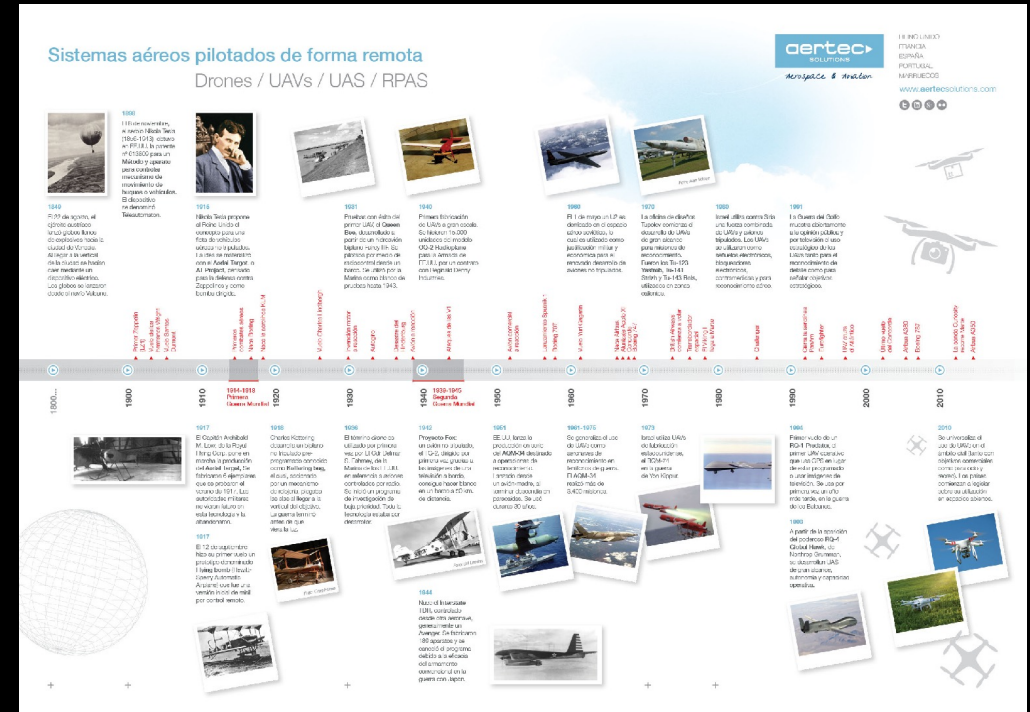
Unmanned Ground Vehicles  
UGVs

\*Without onboard human presence



# UAV DEVELOPMENT

- Ancient China hot air balloon to scare enemy at night
- 1783 (balloons)
- Military (1849)
- First photo from air 1858 ( hot air balloon)
- 1896 Alfred Nobel first camera on rocket
- Commercial
- Delivery Services
- Agriculture
- Natural resources
- AEDs, blood, snake antivenin, medications, telemedicine, life safety items



# Drones shut down London's Gatwick Airport during busy holiday travel season

Haye Kesteloo - Dec. 20th 2018 7:17 am ET

DRONE INCIDENT UK GATWICK



# Hazards




A stylized, handwritten signature logo in white, located in the bottom right corner of the page.



# DECONFLICT AIRSPACE

Prikaz na karti je informativnog karaktera i ne oslobađa korisnika od odgovornosti da se upozna sa svim važećim NOTAM i AUP/UUP porukama.



**INFO**

SAR (44° 28' 12" N 15° 27' 5" E)  
**Vrsta:** RPAS/UAS info  
**Aktivnost:** Letenje bespilotnih zrakoplova i drugih daljinski upravljanih ili neupravljanih letećih objekata s vlastitim pogonom  
**Vrijeme početka:** 03.11.2018 07:30:00 UTC  
**Vrijeme završetka:** 03.11.2018 20:00:00 UTC  
**Donja granica:** 0 ( m AGL )  
**Gornja granica:** 100 ( m AGL )  
**Polumjer:** 3000 ( m )



**IF YOU FLY, WE CAN'T**

**RECREATIONAL DRONES NEAR WILDFIRES ARE NOT SAFE**

Flying recreational drones near any wildfire zone poses a risk to firefighters and the health of the firefighters or visitors' respiratory systems.

If recreational drones are detected near a wildfire, wildfire fighting efforts may be hindered, resulting in more trees lost, more property, lives, property, and cultural resources destroyed, and more people injured or killed.

**CONTACT YOUR NEAREST LAND MANAGEMENT AGENCY OFFICE TO LEARN MORE ABOUT FLYING DRONES ON PUBLIC LANDS.**

USDA United States Department of Agriculture | Department of the Interior | **#IFYOUFLYWCANT #NODRONESINFIREZONES**





In Flight (GPS)

GPS 15 HD 74%

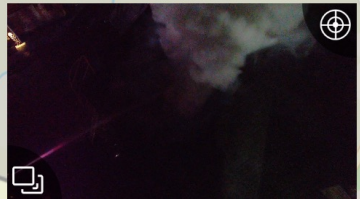
14:28



**!** A passenger aircraft is approaching. Descend as soon as possible.

**AirSense System** [Hide](#)

ICAO	Distance (km)
a***23	0.6



# CERTIFYING (REGULATIONS)



Open , specific and certify  
category for UAS



PART 107 - REMOTE PILOT  
CERTIFICATE WITH SMALL  
UNMANNED AIRCRAFT SYSTEMS  
(UAS)

# Establishing a UAS program

- Certifying (Regulations)
- Training / Equipping
  - What UAS is right?
- SOP for Operations
- Deploying for Mission



# TYPES OF OPERATION:

- SAR on land
- SAR on water
- GFF
- Special missions ( ex. Mosquito treatments , CBRN scenarios, etc..)
- 3D mapping
- Different payloads scenarios
- Making of DOF
- Risk assessment
- Aerial reconoces after earthquake



## DJI Matrice 210

# LIMITATIONS

- Battery Life
- Flight conditions - Wx, Altitude
- Payload - Center of Gravity
- Air space conflicts
- Equipment and pilot



Deciding - which tool(s) is right for each mission



# SENSOR PACKAGES



DJI Matrice 210  
Z30 Camera  
180x Zoom  
400 ft/122m AGL



# SENSOR PACKAGES



EO



FLIR



**Thermal**  
Relative temperature data

**Multispectral**  
Broad spectral data  
(between 3-5 bands)

**Hyperspectral**  
Detailed spectral data  
(several hundred bands)

**LiDAR**  
Elevation and structural  
data

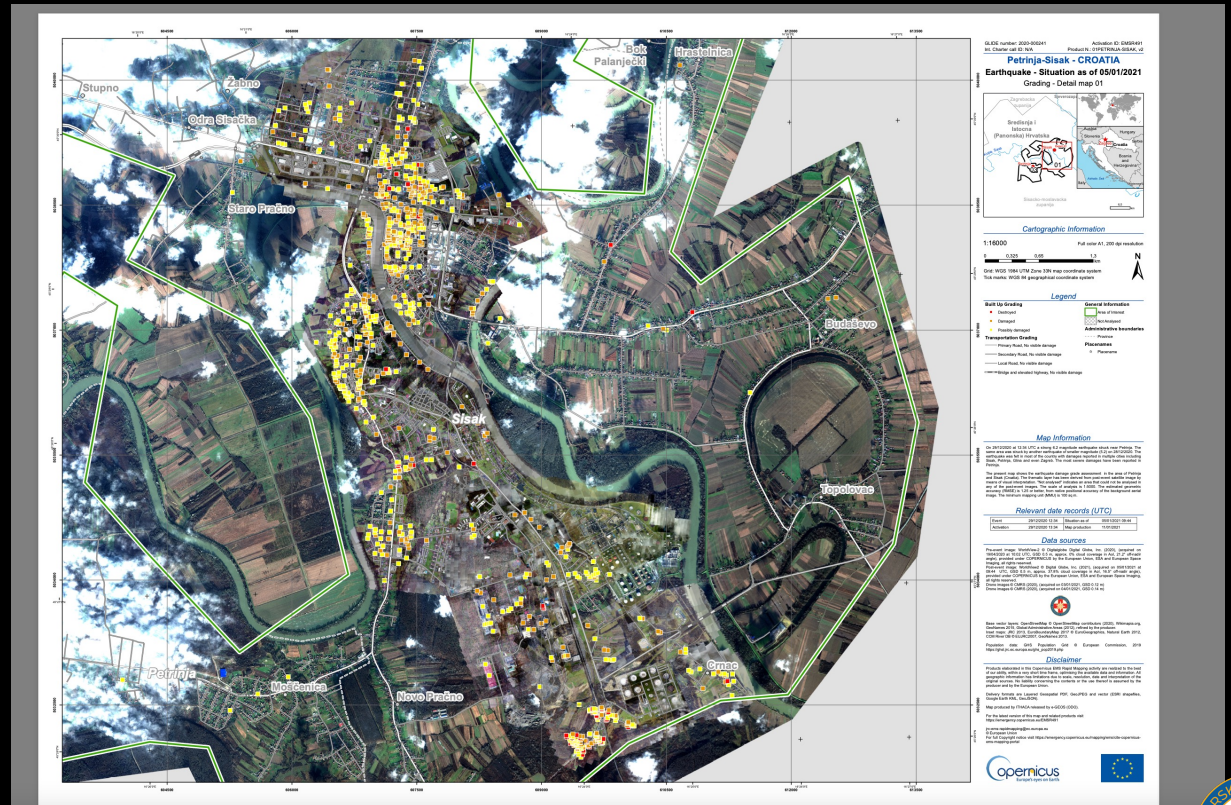
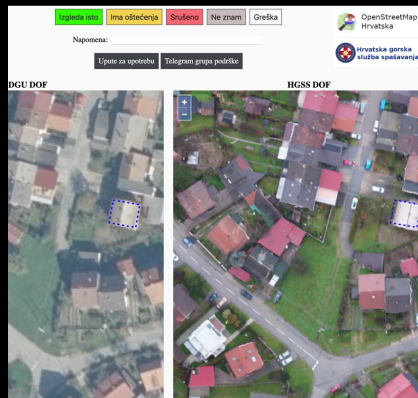
## Deployment Packages





# LARGE SCALE USE:

PETRINJA/SISAK  
2020



# DRONES IN ASAR:





Questions?

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will@wildernessdoc.com

