



Ramstein Aerospace Medicine Summit NATO STO HFM-364 Technical Course



Garmisch – Partenkirchen, 21 -24 March 2023

Col Marina Lopes

Head of the Aeromedical Center

Lt Col Helena Ribeiro

Flight Surgeon Aeromedical Center



ABOUT US



OUR MISSION

Promote health

Medical Certification

Training for flight crew

FLIGHT SAFETY

Specialized Training

Scientific research



THE MYTH OF

ÍCARUS - first aircraft accident ?



Hot air balloon

- Montgolfier brothers
- Demonstration to the French court



1903



1° World War

- Golden Age of Aviation
- First aircrafts designed for combat

1939



Space Flights

- 1° Spacial flight- Yuri Gagarin
- 1° Man on the moon- Neil Armstrong

1972 / Present



UAV

- Unmanned aircraft
- Hypersonic Missiles
- Long-Range

1783



Flyer

- Brothers Wright
- First flight of an engine-powered aircraft

1914



2° World War

- War-induced technological leaps in aircraft design and performance recast the nature of air warfare

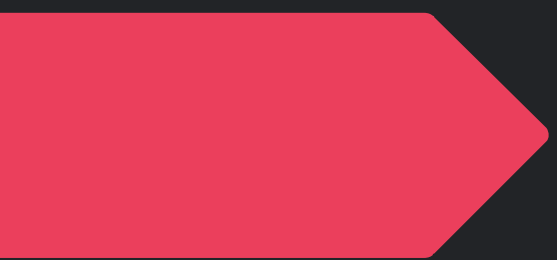
1961 / 1969



Hight performance aircrafts

- Multi-role combat aircraft

Present





Flights all over the world

- Epidemic Dynamics
Aviation as a vector of vectors

BIG CHALLENGES FOR THE FUTURE!

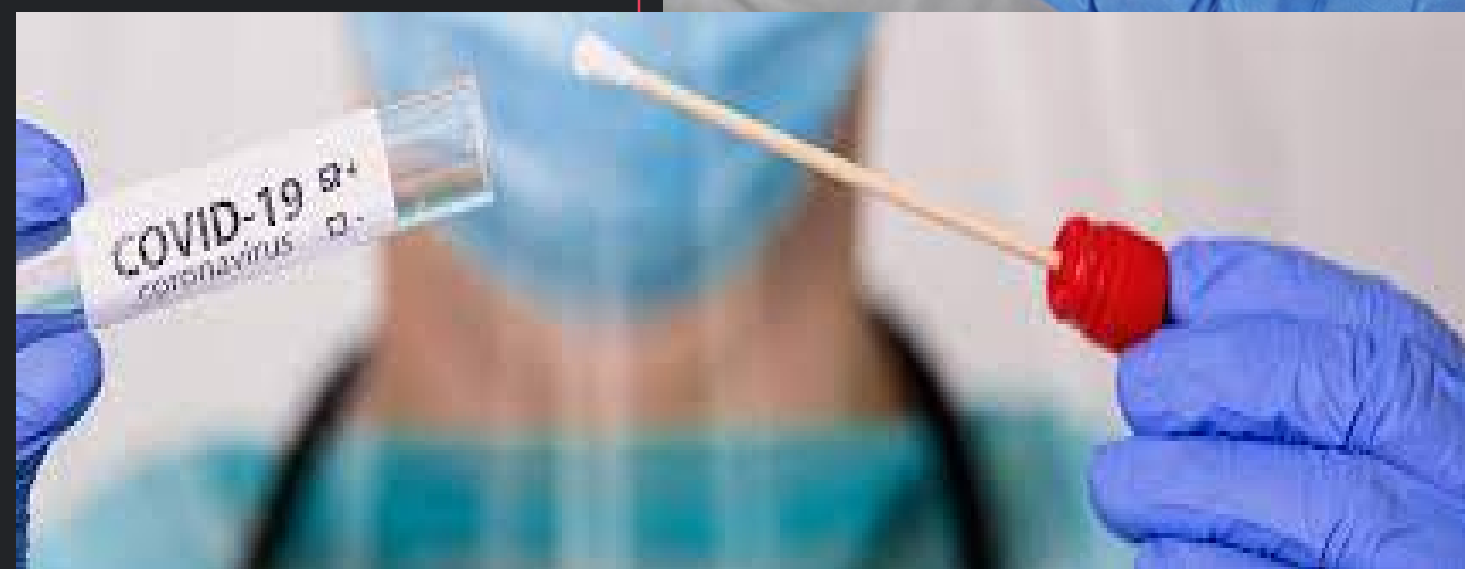
- Epidemics and Pandemics
- War
- Climate Change
- Demography
- Technological Evolution

VUCA WORLD: Volatility, Uncertainty,
Complexity, Ambiguity

01

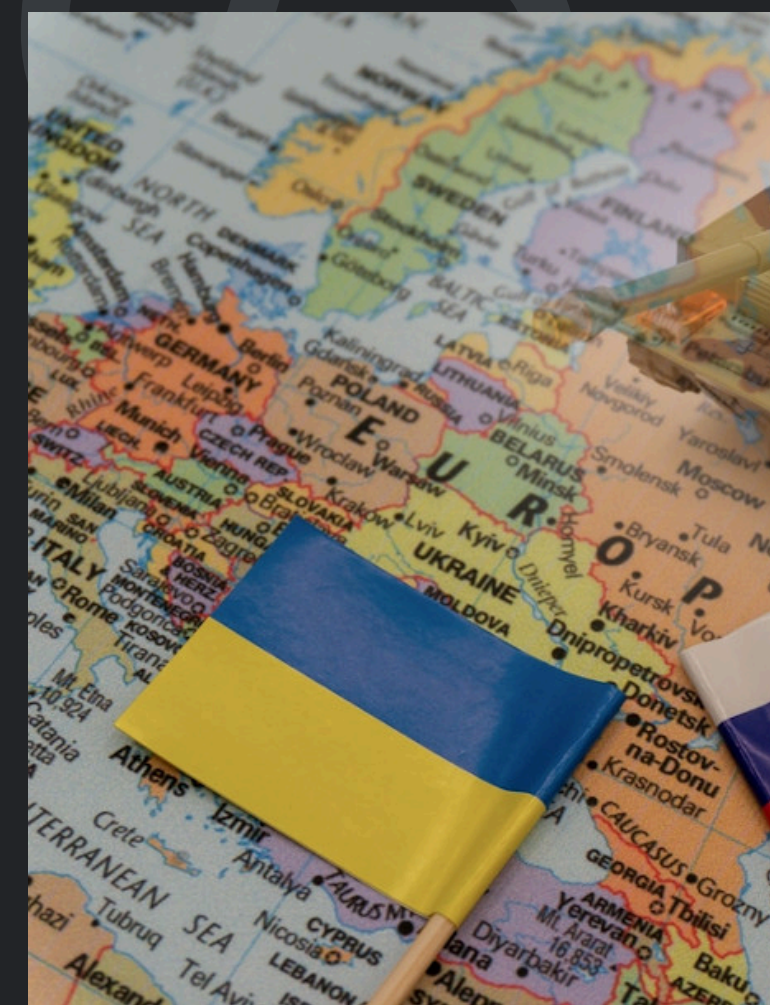
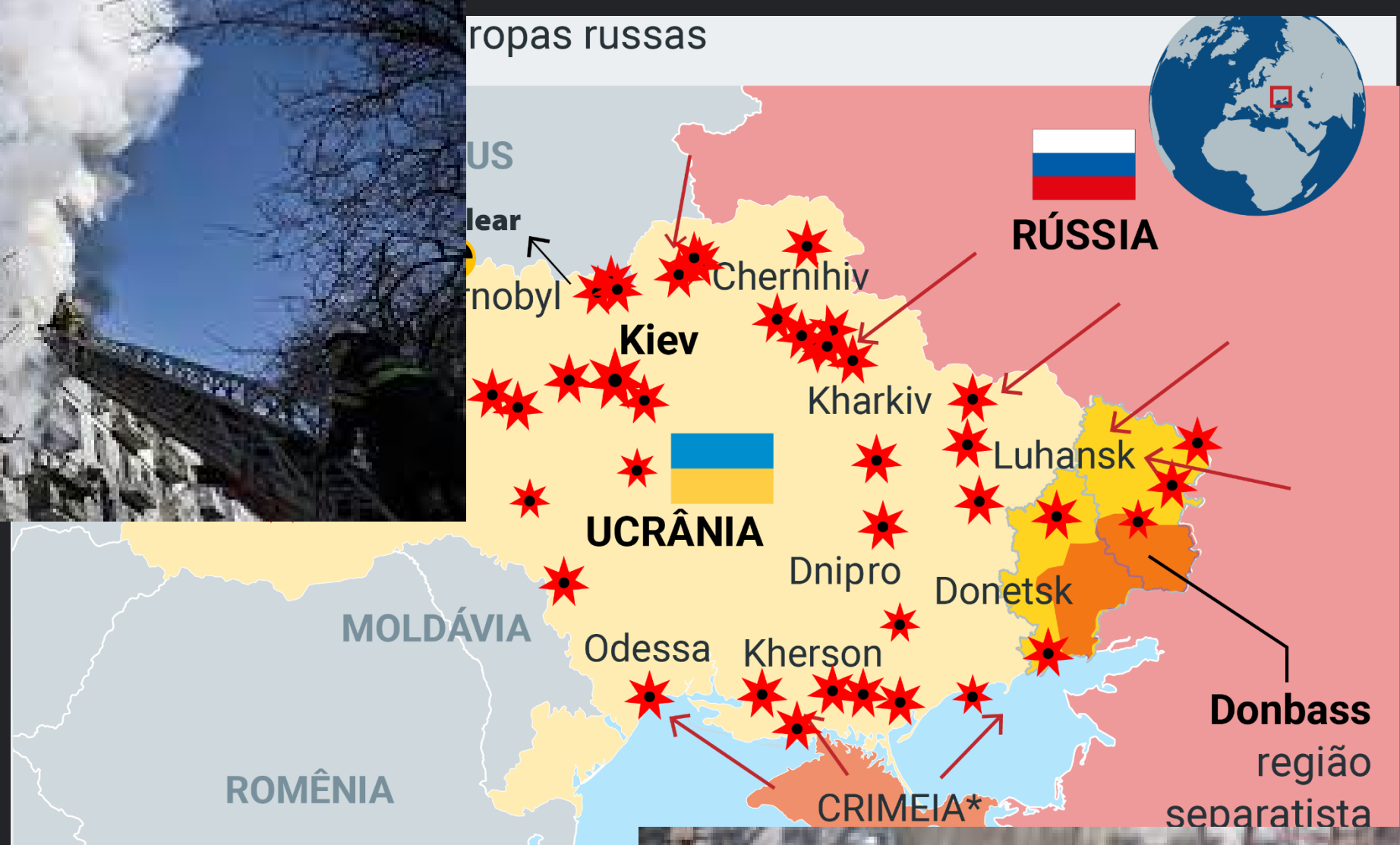
Epidemics and Pandemics

- 2003-2004: SARS (Ásia)
- 2004-2005: Vírus Magburg (Angola)
- 2008-2009: Cólera (Zimbabué)
- 2009: Gripe A H1N1/09 (Mundial)
- 2010-presente: Cólera (Haiti)
- 2012–presente: Síndrome respiratória do Oriente Médio – MERS (Mundial)
- 2013–2016: Ébola (África Ocidental)
- 2015-presente: Zika (Mundial)
- 2016: Febre amarela (Angola)
- 20219: COVID
- 2025: ?
- 2030: ?



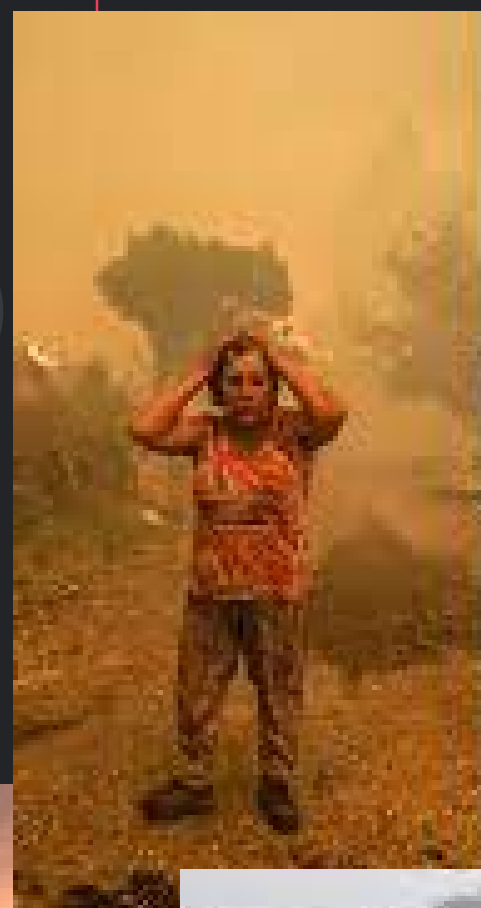
02 Armed conflicts

- 1978 – now: Rebelião Curda Turquia
- 2011-now: guerra civil Síria
- 2015- now: guerra civil Lemenita
- 2015 – now: conflito sul Arábia Saudita
- 2015 – now: Insurgência na Tunísia
- 2016 – now: Crise separatista nos Camarões
- 2020 – now: Guerra da Etiópia
- 2022 – now: Guerra da Ucrânia



Climate Change

03

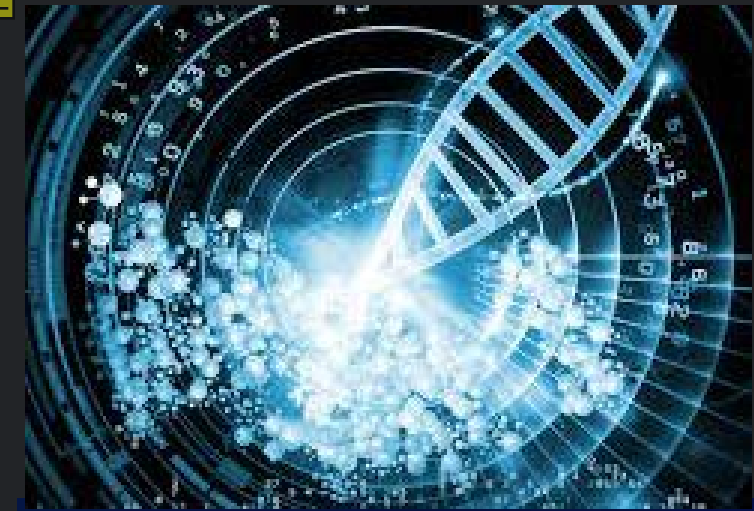




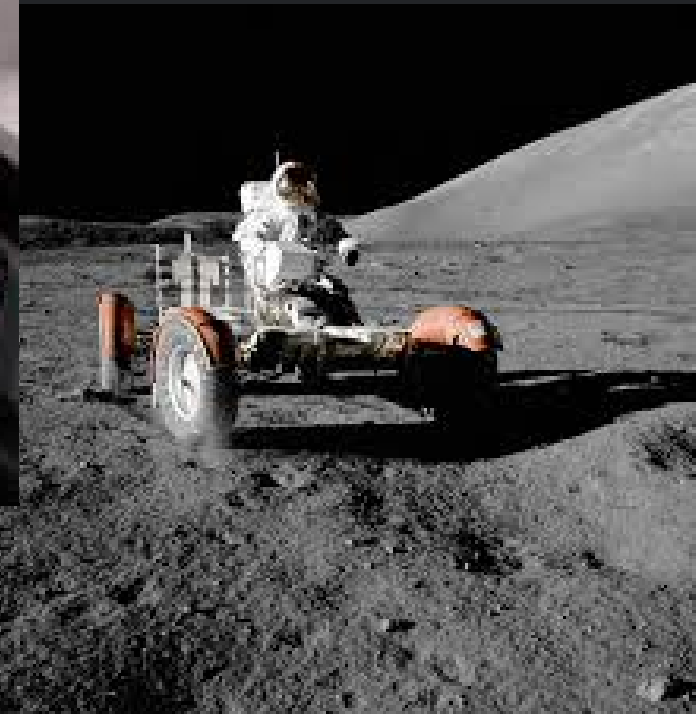
04 Demography

- Population-ageing
- Extension of working life
- Increased risk of onboard events
- Different population mobility

Technological Evolution



- Unmanned Aircraft
 - Leading Aircraft
- Artificial Intelligence
- Tourists in Space



Today's Challenges

- Is hypoxic training importante in civil aviation?
- Hypoxia Training – Hypobarism or Normobarism?
- Flights with one or two pilots?
- What are the criteria for the medical selection of UAV pilots?
- Staff reduction in the Armed Forces – How to deal with fatigue?
- Very fast technological evolution – how to keep up?



Collaboration and Cooperation between NATO Countries





NETWORK

Together we do it better





THE MOST EFFECTIVE WAY





GET IN TOUCH!

- Centro de Medicina Aeronáutica
Azinhaga dos Ulmeiros
1600 - 777 Lisboa
Portugal
- Phone: +351 21 7519500
- E-mail: cma_rececao@hfar.pt



THANK YOU FOR
ATTENTION!