



<https://uwidata.com/6830-top-10-major-geopolitical-trends-of-2019/>

# GEOPOLITICAL TRENDS AND TECHNOLOGY CHALLENGES

***Filipe Arnaut Moreira***

CCB – 17 May 2024



## Agenda

1. Geopolitical Trends
2. What have we learned in current Wars ?
3. Technology and Resources
4. Final Thoughts

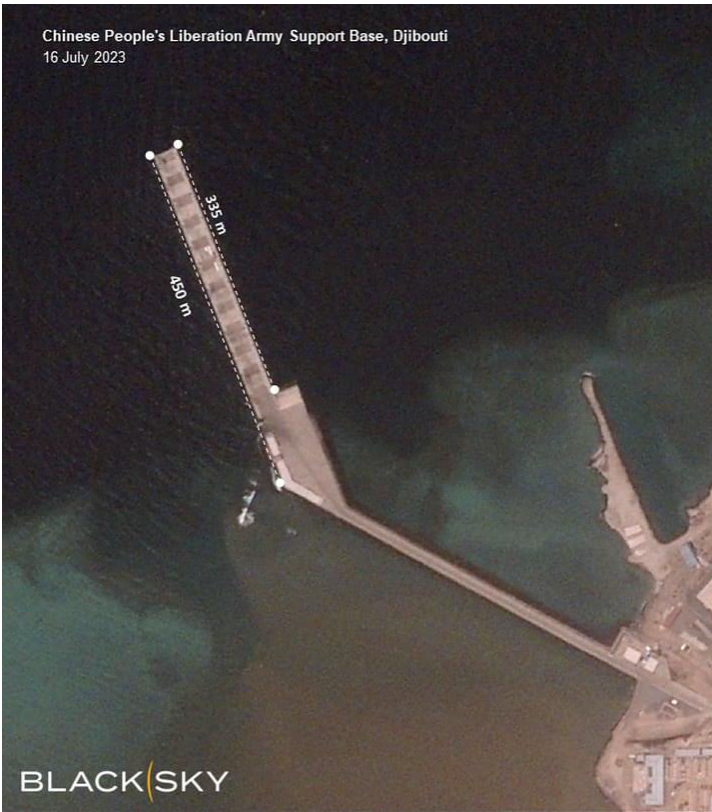




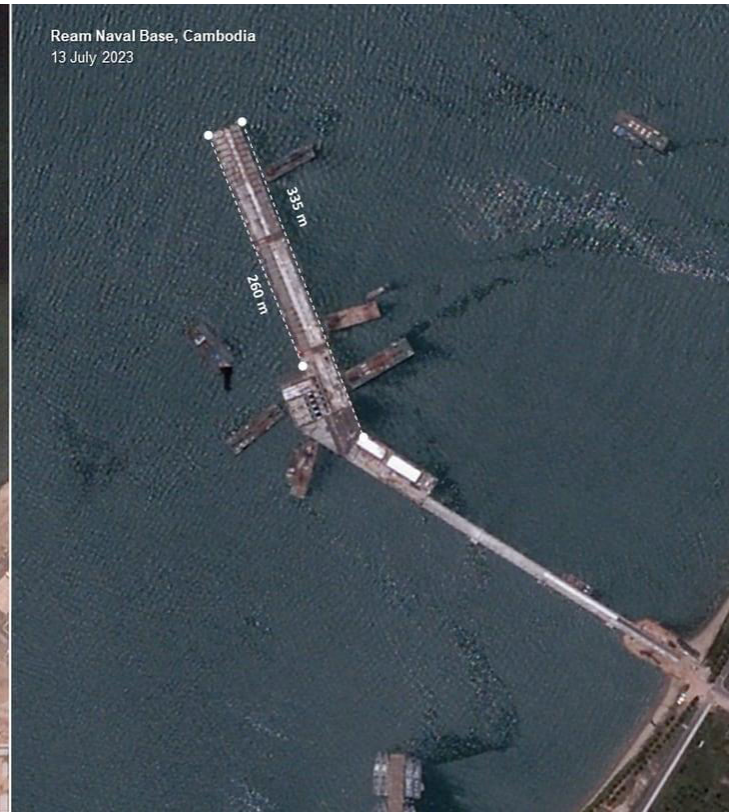
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# CHINA BUILDING NEW NAVAL BASES ABROAD



*Djibouti*



*Cambodia*

***China has already the largest navy in the World !  
Building or looking for the use of naval bases everywhere  
Indication: Challenging the World Order***



# TO IMPOSE A WORLD ORDER



<https://norfolktalesmyths.wordpress.com/2018/03/19/rule-britannia/>

***A Global Economic Power***  
***A Superior Military Instrument***  
***Ability to Project Force***



# THE CRISIS OF GLOBAL POLICY COORDINATION



<https://www.infoescola.com/geografia/assembleia-geral-das-nacoes-unidas/>

***The Multilateral System was invented to protect the Weak  
It is now blocked to protect the Powerful  
We are fragmenting into blocks again ...***



# A MORE COMPLEX INTERNATIONAL SYSTEM



***The disruptive power of non-state actors***

***The non-elected fora : G-20 , G-7***

***International Organized Crime: Narcotics, Human Trafficking ...***



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# HOW TO STOP AN INVASION ?



***No, sanctions will not deter anyone ...  
Only a Military Force can deter a military invasion***

# CRITICAL SYSTEMS



<https://areferencia.com/europa/zelensky-admite-que-falta-de-misiles-expos-usina-de-trypilska-a-ataque-russo/>

***One needs to allocate resources to protect critical systems  
Trypilska was the main electrical thermal power station in Kiev  
April 2024: 11 missiles launched against Trypilska  
7 intercepted. 4 hit the target.***



# DYNAMICS OF A LONG WAR



***Focus shifts from the front line to the rear***  
***From Combat Units to Storage Units***  
***From Strategic Reserves to Production***  
***In the Long Haul is Resources that count***



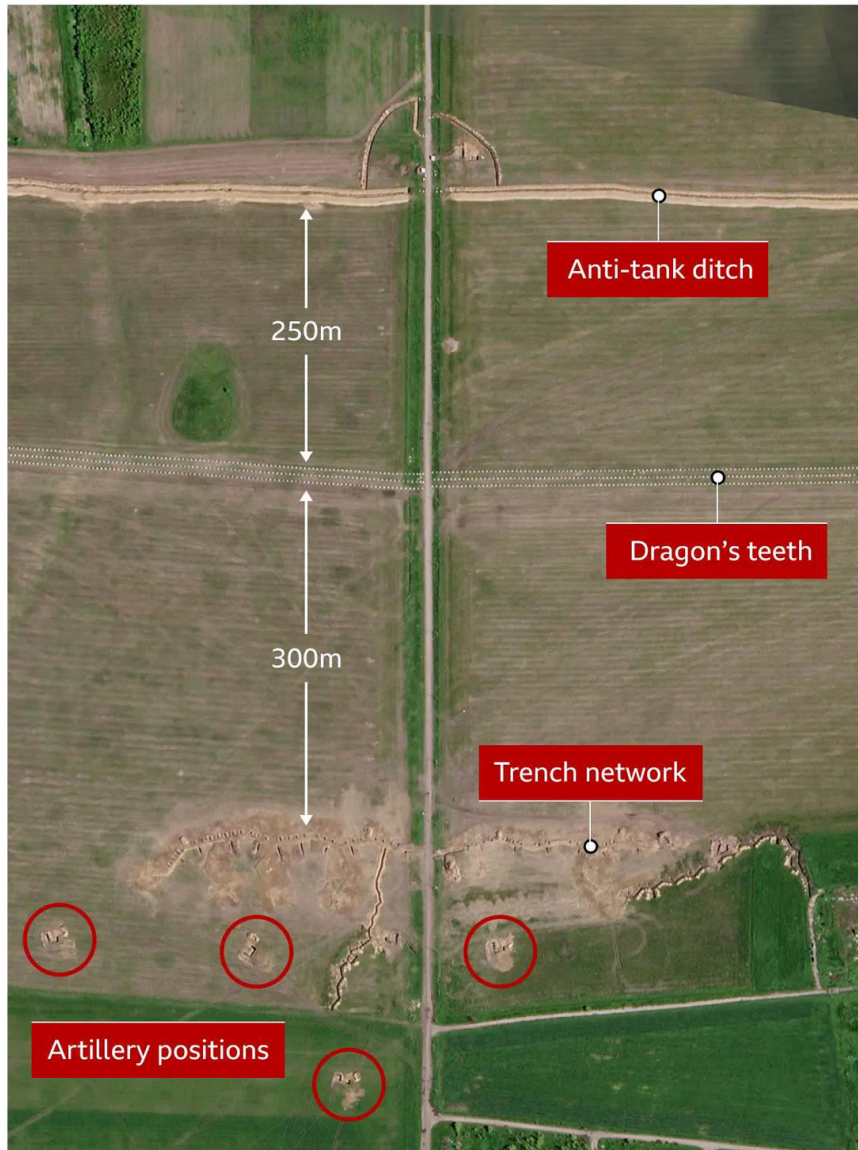
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# WHAT IS USEFUL IS NOT NECESSARILY NEW

Russian fortified positions



Source: Planet Labs PBC, 3 May 2023

BBC

The defences Russia is building



Source: Ria Novosti

<https://www.bbc.com/news/world-europe-65615184>

BBC

# A NEW EQUIPMENT IS SOMETHING OLD



[https://en.wikipedia.org/wiki/Lockheed\\_Martin\\_F-35\\_Lightning\\_II\\_development](https://en.wikipedia.org/wiki/Lockheed_Martin_F-35_Lightning_II_development)

## F – 35 FROM CONCEPT TO DELIVERY

***1994: Joint Strike Fighter program presented as concept***

***2009: First Test Flight***

***2011: Program is 6.5 years late and 13.5 Billion Over Budget***

***2015: Initial Operation Capability***

***Expected production: 14 per month***

***You do not design a main equipment for a current war***



# ADAPTING TO CURRENT CHALLENGES



The [Su-27](#) fighter jet went into service in 1985  
iPad in the cockpit of an Ukrainian [Soviet Su-27](#)  
The tablets reportedly make it possible to deploy U.S. [AGM-88](#)  
[High-speed Anti-Radiation Missiles](#) or [Storm Shadow](#)

# DRONES, DRONES, DRONES AND DRONES



The FPV drones take off from improvised platforms several kilometres from the front line. Depending on their size, **battery** and payload, range varies from 5 km to 20 km or more.



A soldier operates the drone using a remote controller and a headset that allows them to see the view from the **camera**. Meanwhile, another soldier looks at a tablet computer with maps and gives directions.

***500 €: Observation, Artillery Orientation, Combat ...  
Strategic, Operational and Tactical  
Bought on the Internet (with Tablets and Smart Glasses...)  
Assembled and militarized in small workshops***



# ARTIFICIAL INTELLIGENCE IN WEAPONS



Who will push the **kill button** in Autonomous Weapons ?

# SWARM DRONES



**Quantity is also a must in warfare**  
**Indian Army demonstration of Swarm Drones**



# THE RETURN OF THE ELECTRONIC WARFARE



Modified Russian T-72 tank which was used for anti-drone electronic warfare.

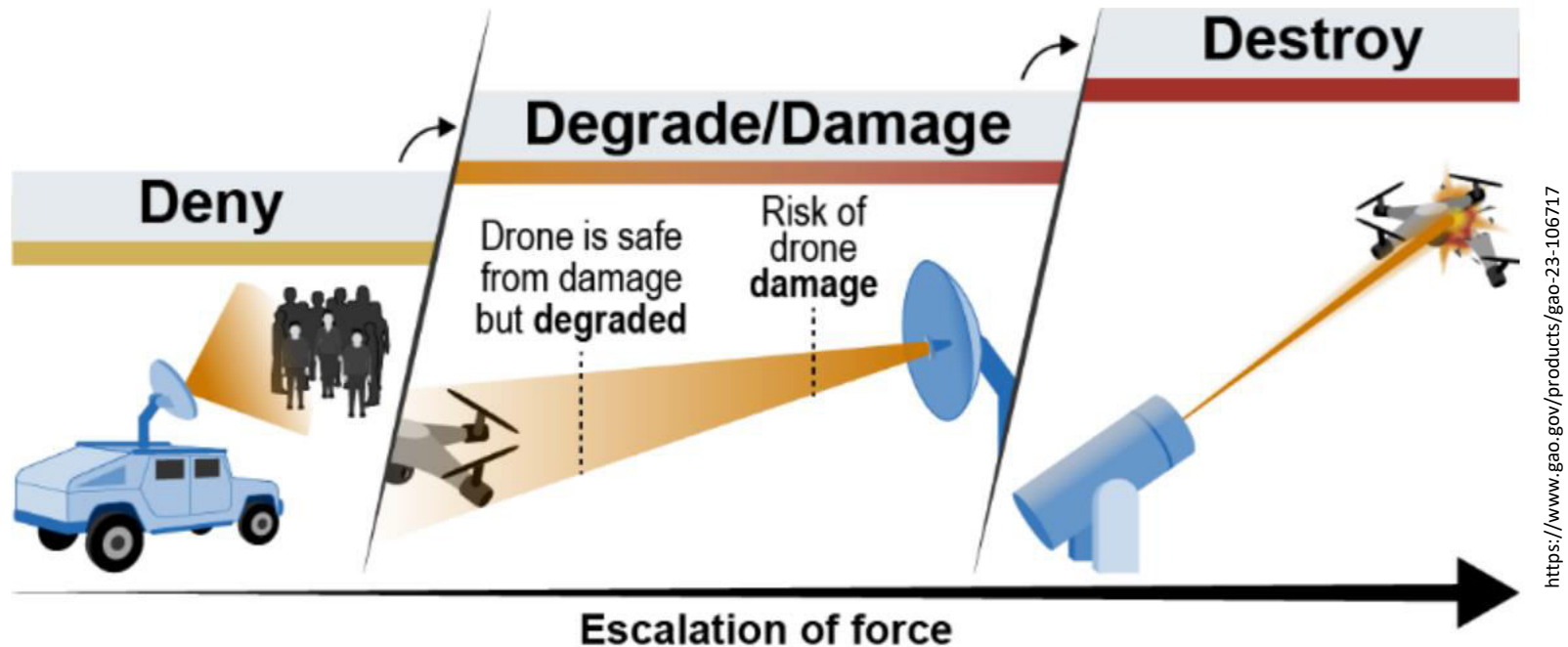


X/Rob Lee

<https://interestingengineering.com/military/russia-anti-drone-tank>

***Modified T-72 (the “Tsar”) with an EW station on top  
How to stop the drones superiority without kinetic kills ?***

# DIRECT-ENERGY WEAPONS YET TO COME



**DEWs use energy fired at the speed of light**  
**Faster and potentially less costly per shot than missiles**  
**Afected by fogs and poor weather conditions**  
**No distinction between friends and foes**





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<https://stock.adobe.com/pt/search?k=starwars>

## Final Thoughts

1. Nothing replaces the military power
2. Any old equipment can be optimized
3. Drones everywhere and for everything
4. Can we have a war without humans ?



# This Conference is on the Web

Google “Blog Arnaut”



Blog Arnaut



Click on “Geopolítica”

## Quinta dos Arnaut

*Uma quinta sobre a montanha*

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Geopolítica de África v5

2019\_04\_03 Universidade Autónoma: O Crime Organizado Transnacional

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