

RSA® Conference 2022

San Francisco & Digital | June 6 – 9

SESSION ID: MASH2-T09

Cyber and Modern Conflict: The Changing Face of Modern Warfare

Niloofar Razi Howe

Sr. Operating Partner
Energy Impact Partners
@Niloofar Howe

TRANSFORM



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Hacked electric car charging stations in Russia display 'Putin is a d*ckhead' and 'glory to Ukraine'

Fred Lambert - Feb. 28th 2022 10:13 am PT [@FredericLambert](#)



Decentralized, Distributed and Privatized War Capabilities

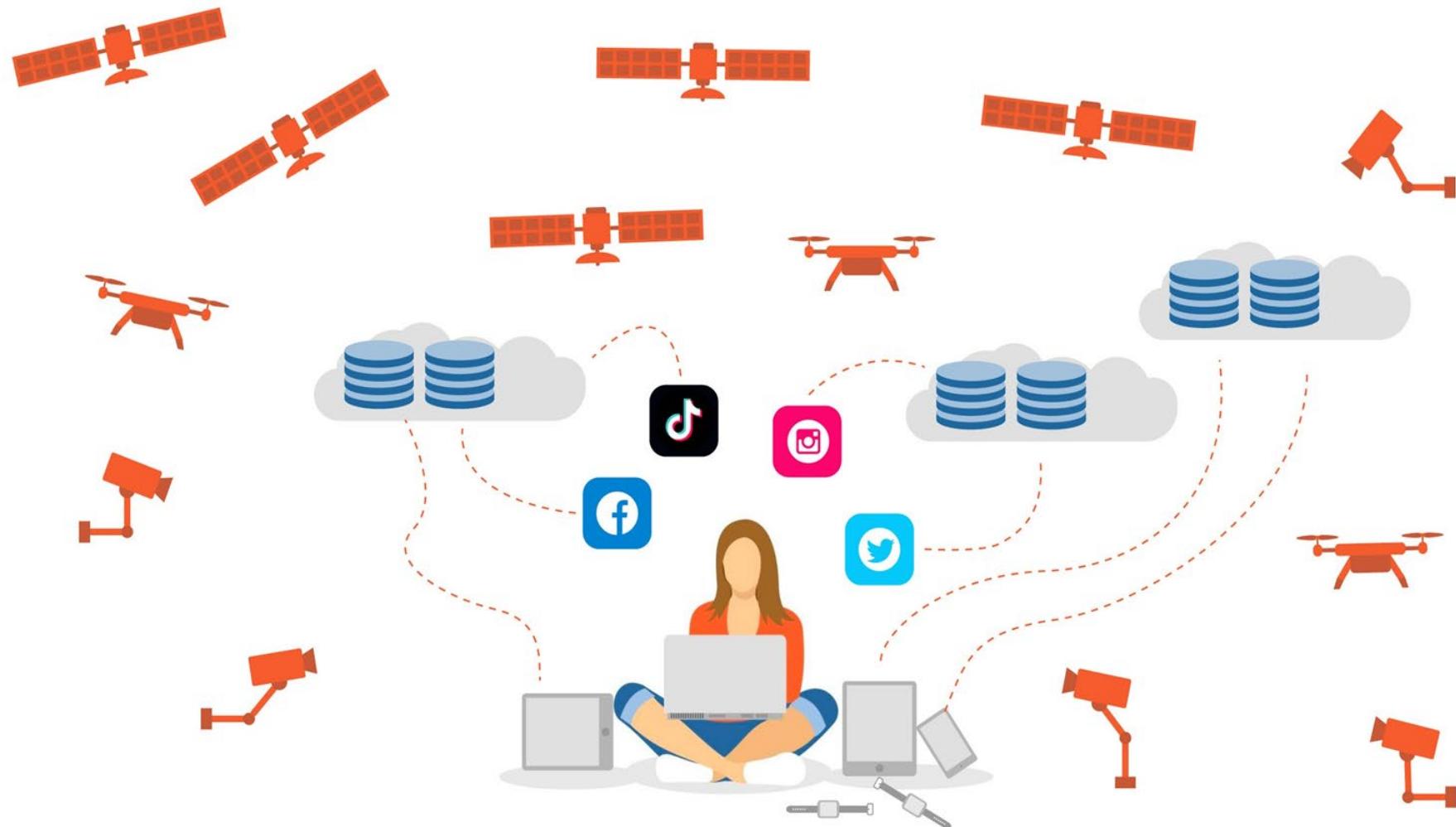


Illustration from: vectorportal.com

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Entanglement: Our Hyperconnected Ecosystem



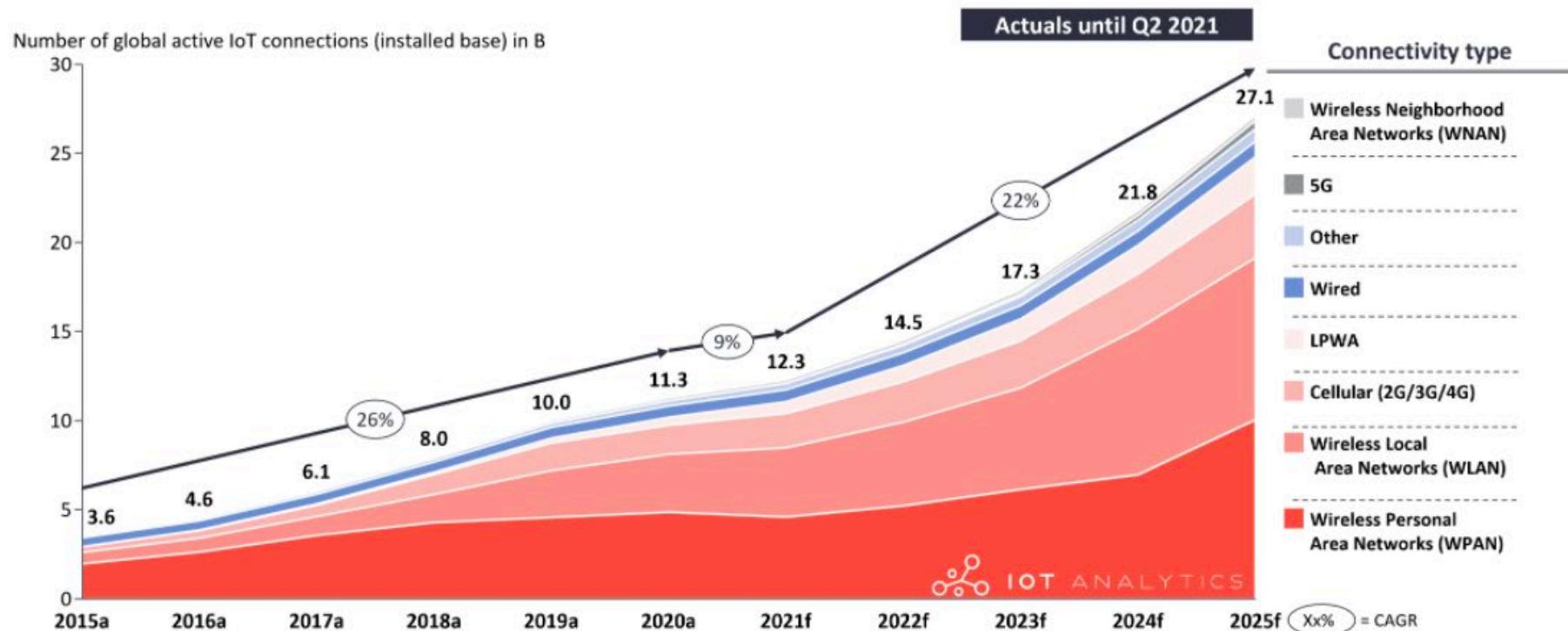
ATTACK SURFACE GROWING FASTER THAN HUMAN MASTERY



September 2021

Your Global IoT Market Research Partner

Global IoT market forecast (in billion connected IoT devices)



iot include any computers, laptops, fixed phones, cellphones or tablets. Counted are active nodes/devices or gateways that concentrate the end-sensors, not every sensor/actuator. Simple one-directional communications technology not included. Wired includes ethernet and fieldbuses (e.g., connected industrial PLCs or I/O modules). Cellular includes 2G, 3G, and 4G. LPWA includes unlicensed and licensed low-power networks. WPAN includes Bluetooth, Zigbee, Z-Wave, or similar. WLAN protocols. WMAN includes non-short-range mesh, such as Wi-SUN. Other includes satellite and unclassified proprietary networks with any range.

Research. September 2021 – Please remember to cite IoT Analytics as the source (with link) when re-sharing this content as per our copyright policy

Hacked electric car charging stations in Russia display 'Putin is a d*ckhead' and 'glory to Ukraine'

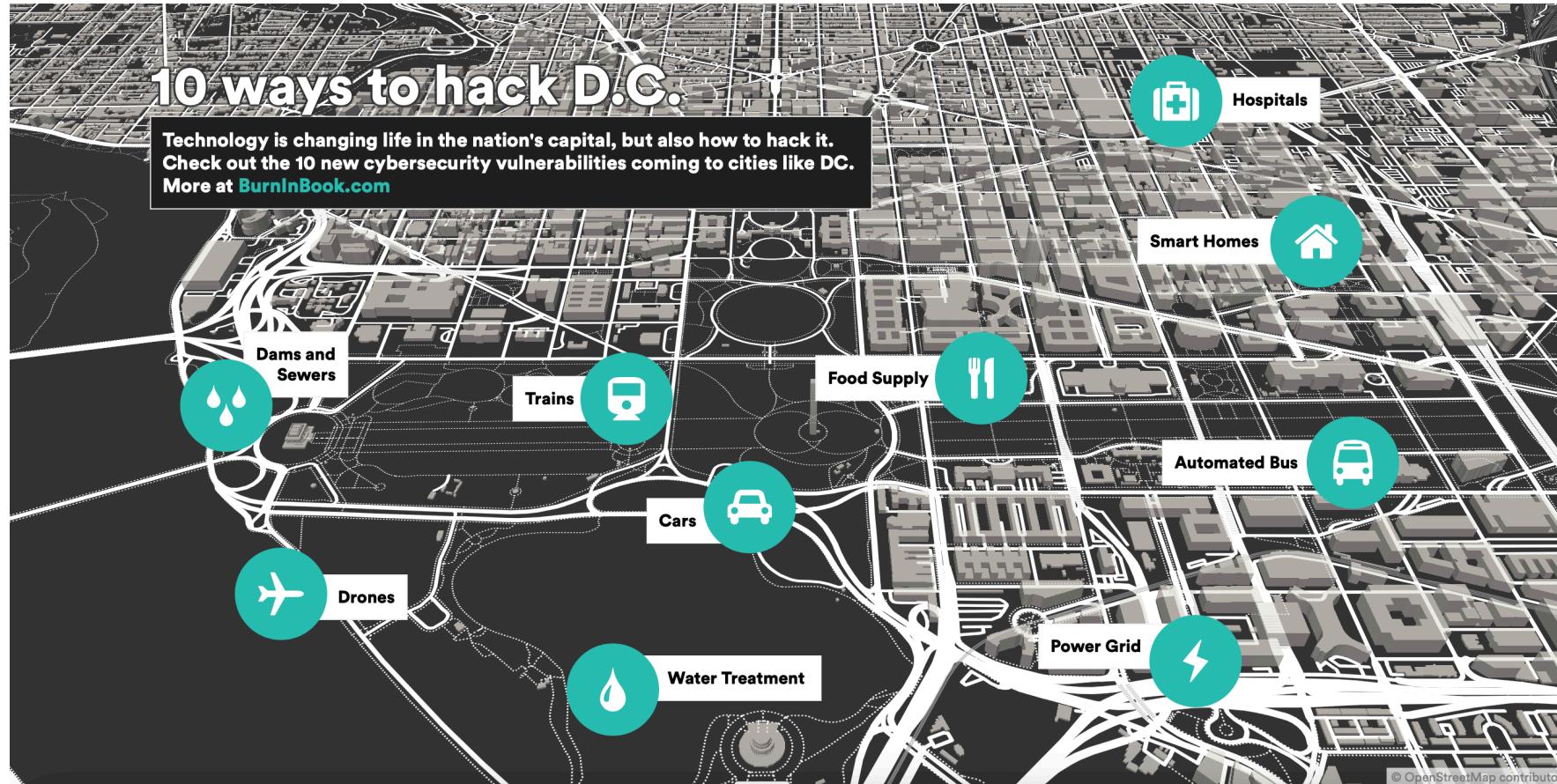
Fred Lambert - Feb. 28th 2022 10:13 am PT [@FredericLambert](#)



10 Ways To Hack DC: The Future of Cybersecurity and Cyberthreats

By: Peter Warren Singer

Last updated on June 13th, 2020



IS THIS AN ACT OF WAR?

World's Biggest Data Breaches & Hacks

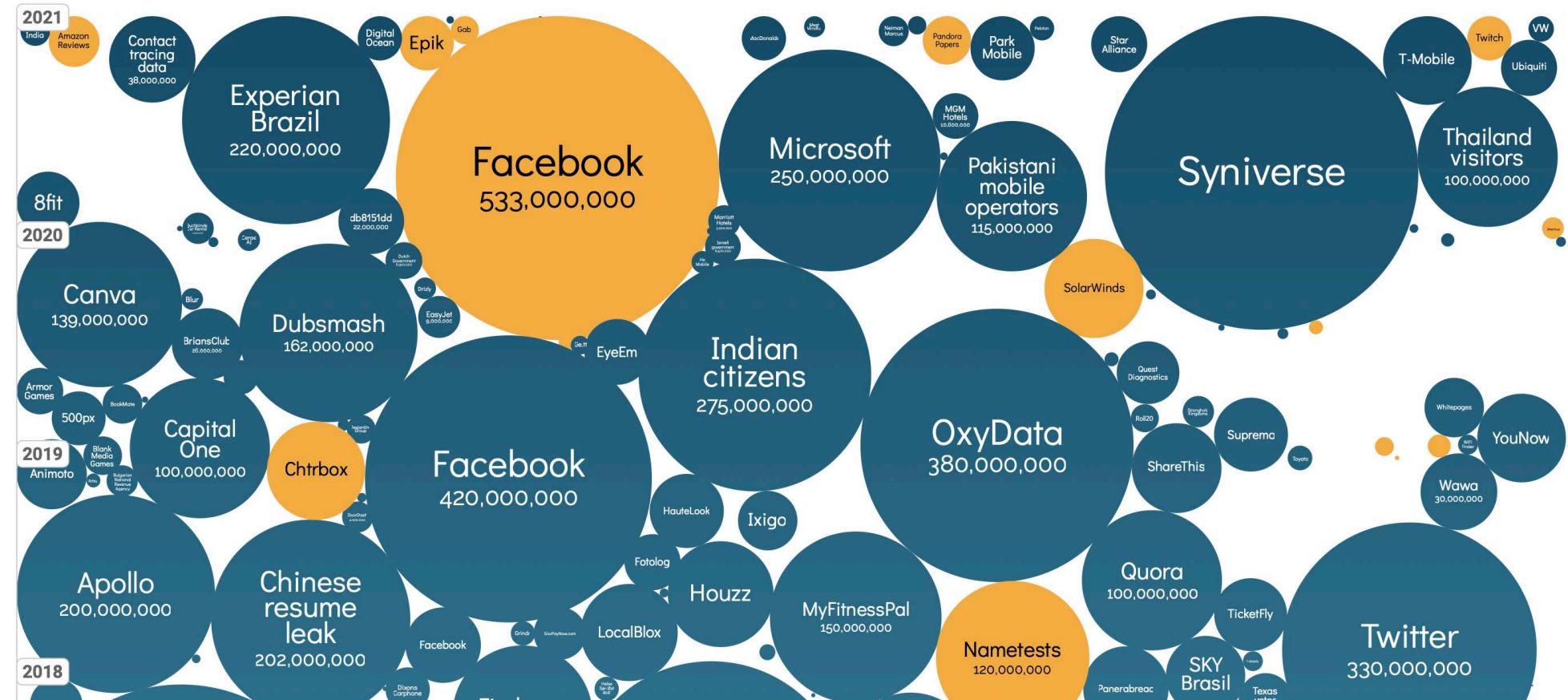
Selected events over 30,000 records

UPDATED: Oct 2021

size: records lost

filter

search...



IS THIS AN ACT OF WAR?

Russian Hacking Cartel Attacks Costa Rican Government Agencies



May 17, 2022

Kate Conger and David Bolaños



IS THIS AN ACT OF WAR?

WIRED

BACKCHANNEL BUSINESS CULTURE GEAR IDEAS SCIENCE SECURITY

SIGN IN

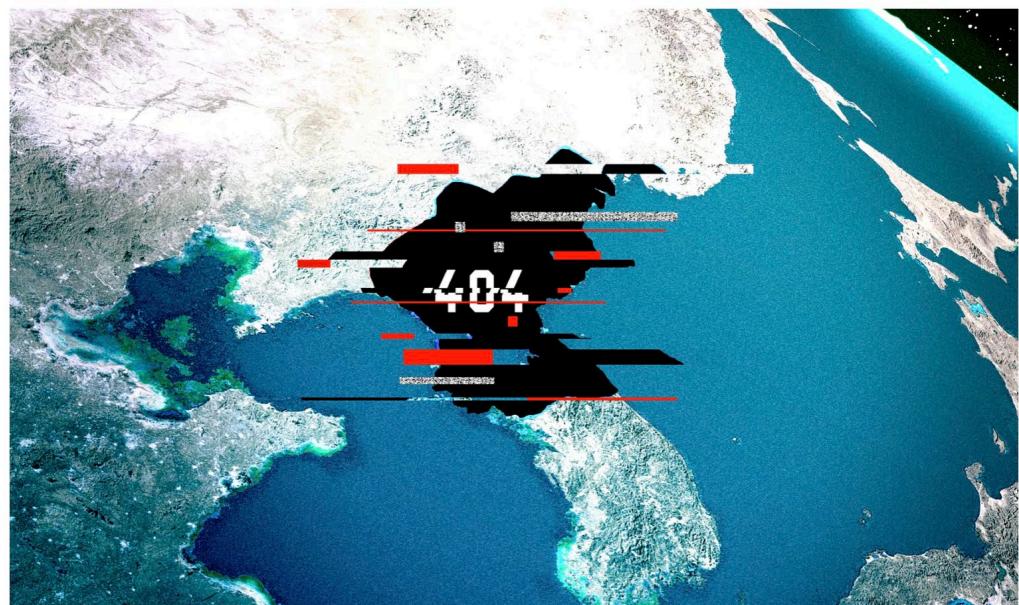
SUBSCRIBE

ANDY GREENBERG

SECURITY FEB 2, 2022 11:43 AM

North Korea Hacked Him. So He Took Down Its Internet

Disappointed with the lack of US response to the Hermit Kingdom's attacks against US security researchers, one hacker took matters into his own hands.



"I want them to understand that if you come at us, it means some of your infrastructure is going down for a while." ILLUSTRATION: ELENA LACEY; GETTY IMAGES

IS THIS AN ACT OF WAR?

Viasat network cyberattack linked to newly discovered Russian wiper

Published April 1, 2022

By [David Jones](#)
Reporter

in f t p e



COMPUTING

Russia hacked an American satellite company one hour before the Ukraine invasion

The attack on Viasat showcases cyber's emerging role in modern warfare.

Anastasia Vlasova via Getty Images

RSA Conference 2022

LILY HAY NEWMAN

SECURITY MAR 30, 2022 9:01 AM

Researchers Used a Decommissioned Satellite to Broadcast Hacker TV

What happens when an old satellite is no longer in use but can still broadcast? Hacker shenanigans, that's what.



SINGLE POINT of FAILURE

Decentralized Distributed and Privatized War Capabilities



'I'm grateful to him for supporting Ukraine with words and deeds': Zelensky thanked Elon Musk for sending Starlink systems to Ukraine

Sarah Al-Arshani Mar 5, 2022, 8:36 PM



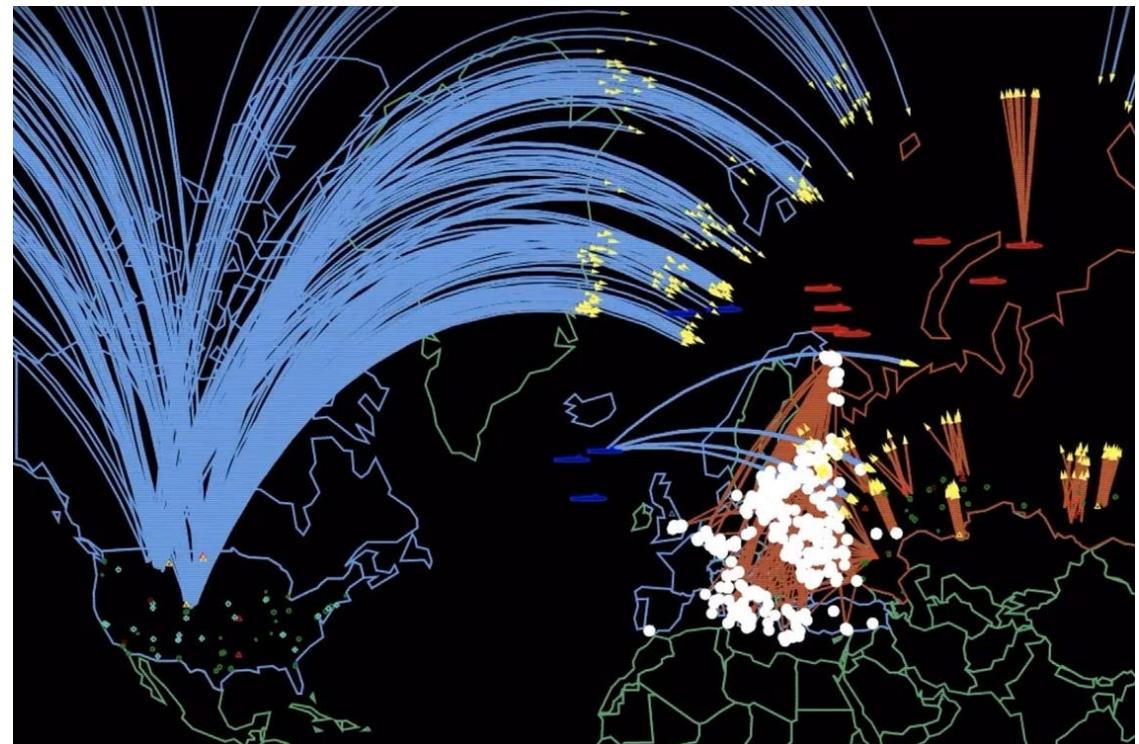
The Cyber Attribution Problem

Whereas a missile comes with a return address, a computer virus generally does not.”

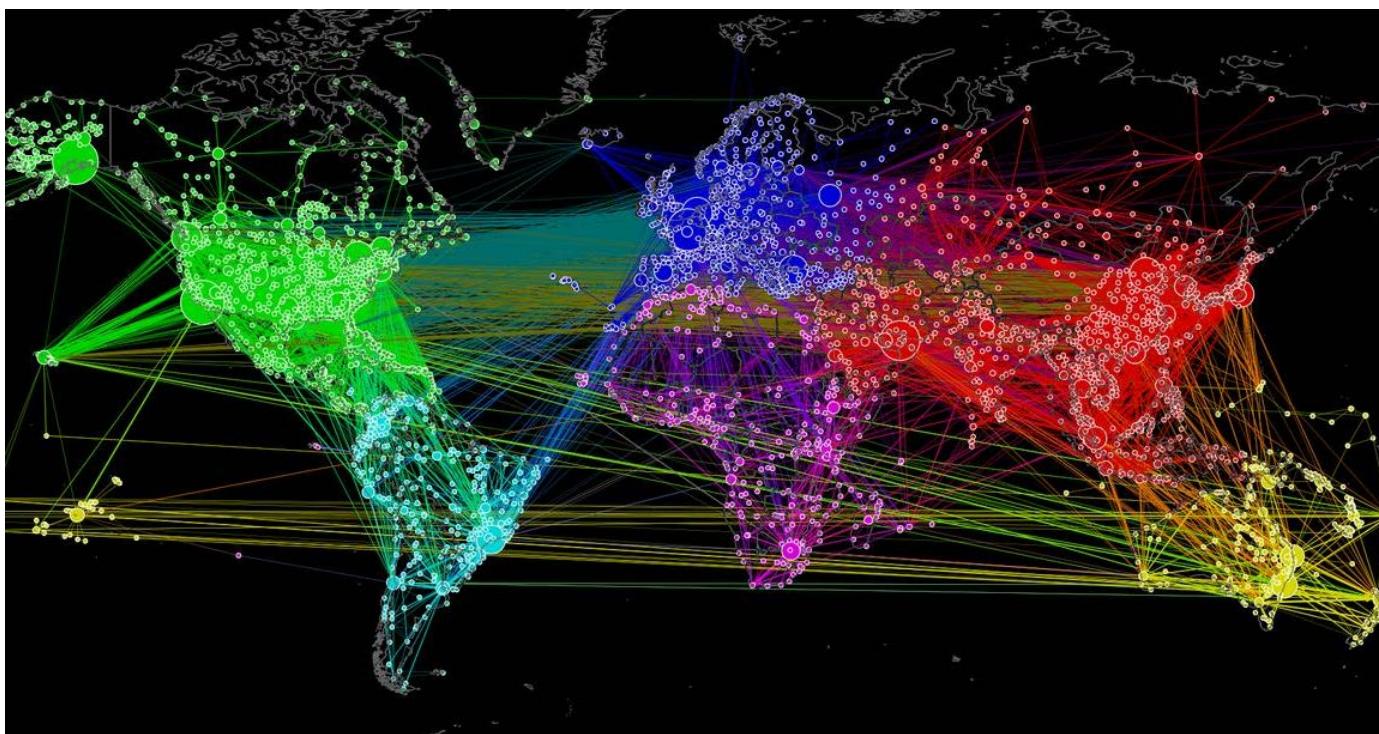
2010

—William Lynn, U.S. Deputy Secretary of Defense,

Missile Launch



Cyber Attack



The Cyber Attribution Problem- Deny & Deceive

ACCUSE

U.S. Accuses China of Hacking Microsoft

SolarWinds: How Russian spies hacked the Justice, State, Treasury, Energy and Commerce Departments

Three North Koreans Indicted in Sony Hack

DENY

China Denies Microsoft Hack, Says U.S. and Allies Ganging Up

'Flattered' Russian spy chief denies SolarWinds attack - BBC

North Korea denies 'righteous' hack attack on Sony

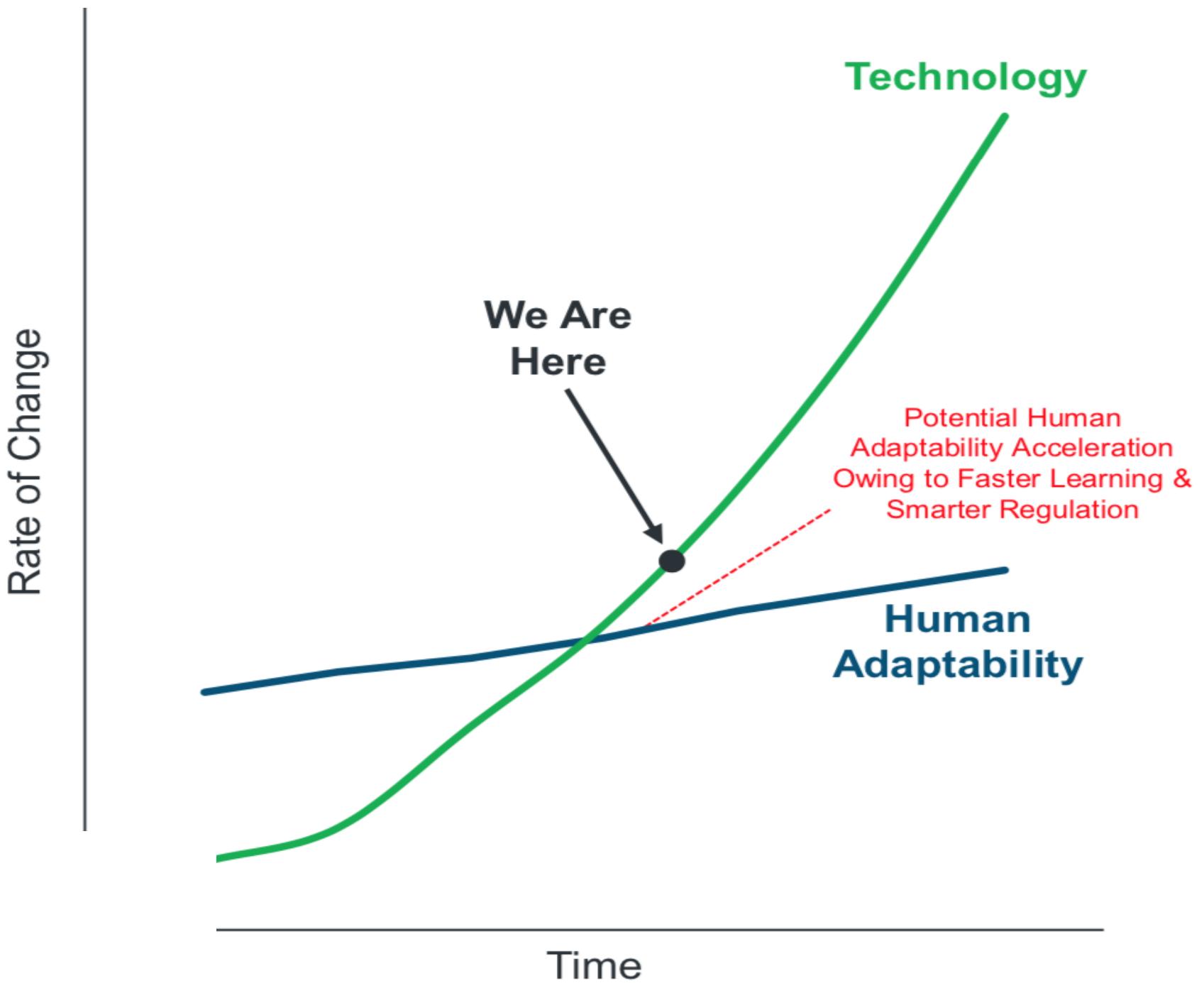
The Cyber Escalation Problem

Boots on the ground



Fingers on keyboards

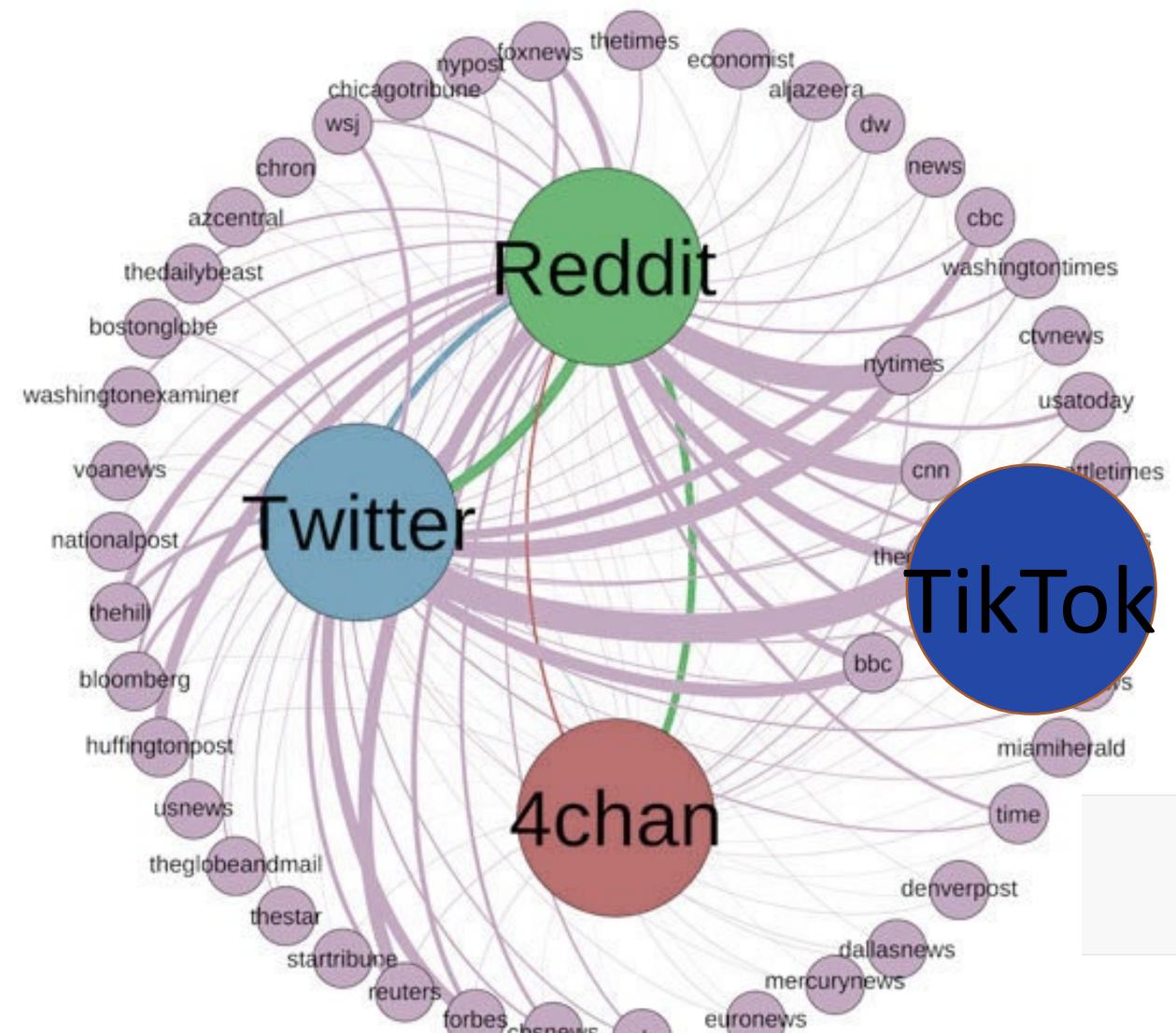




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Social Media, Social Engagement and Social Dynamics





Social Media Supply Chain

MIT News
ON CAMPUS AND AROUND THE WORLD

[SUBSCRIBE](#)

Study: On Twitter, false news travels faster than true stories

Research project finds humans, not bots, are primarily responsible for spread of misleading information.

STOCKS · Published January 29

GameStop stock short seller losses total more than \$19B, data firm says

Here's how hard the short sellers have been squeezed



REUTERS®

World ▾ Business ▾ Legal ▾ Markets ▾ Breakingviews ▾ Technology ▾ Investigations ▾ Sports ▾

September 13, 2021
7:26 PM EDT
Last Updated a day ago

Future of Money

Walmart says looking into fake press release on litecoin tie-up

2 minute read

By Uday Sampath Kumar





@ReallyVirtual

Sohaib Athar

Helicopter hovering above Abbottabad at 1AM (is a rare event).

18 hours ago via TweetDeck

Who is winning the “Like” War?

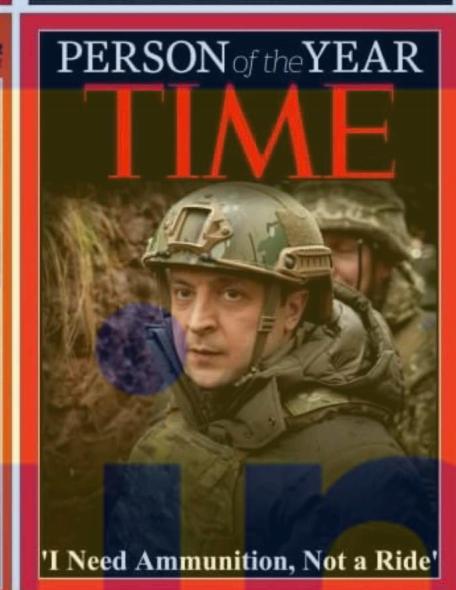


Who is winning the “Like War”?

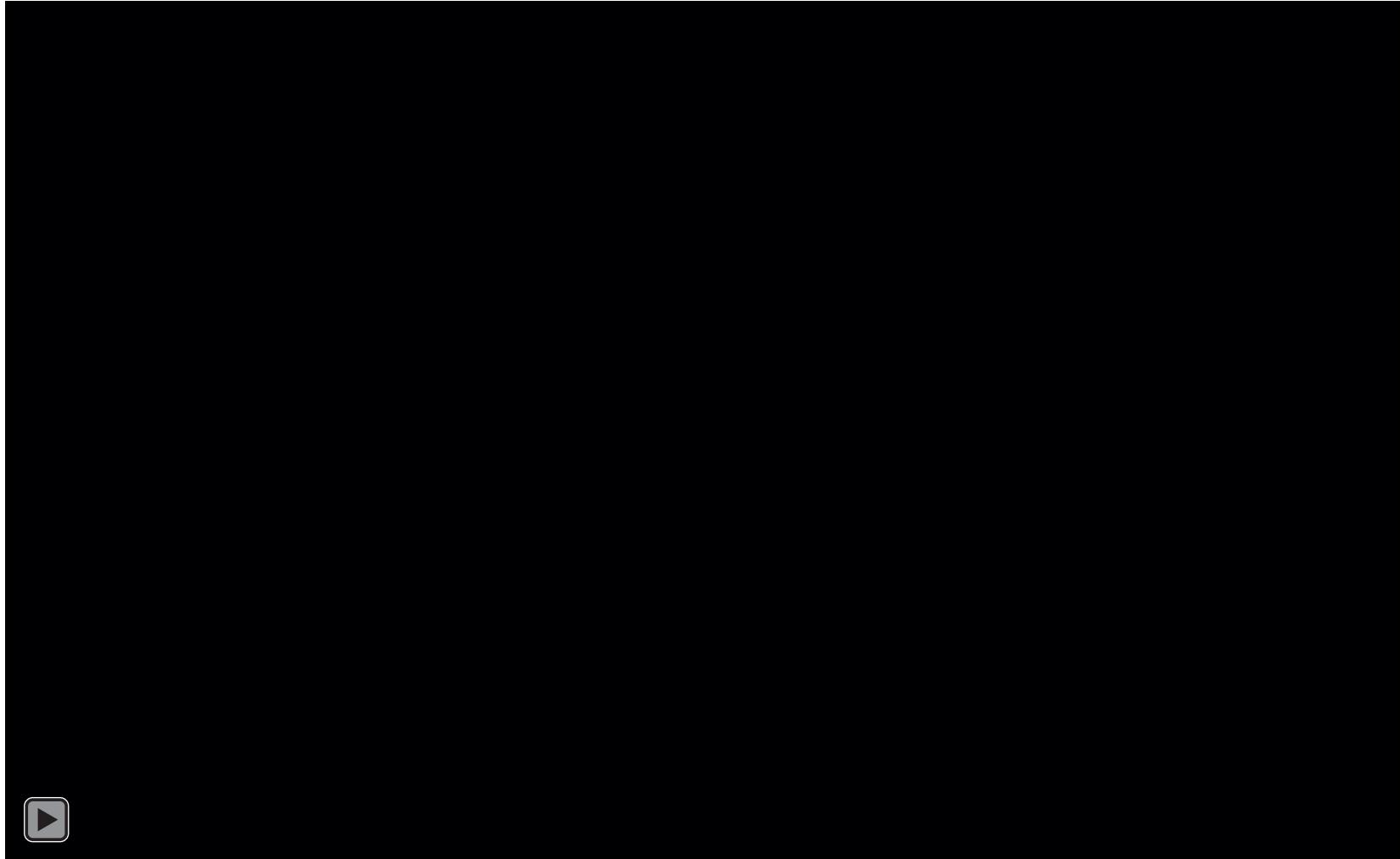


Why winning the “Like War” matters

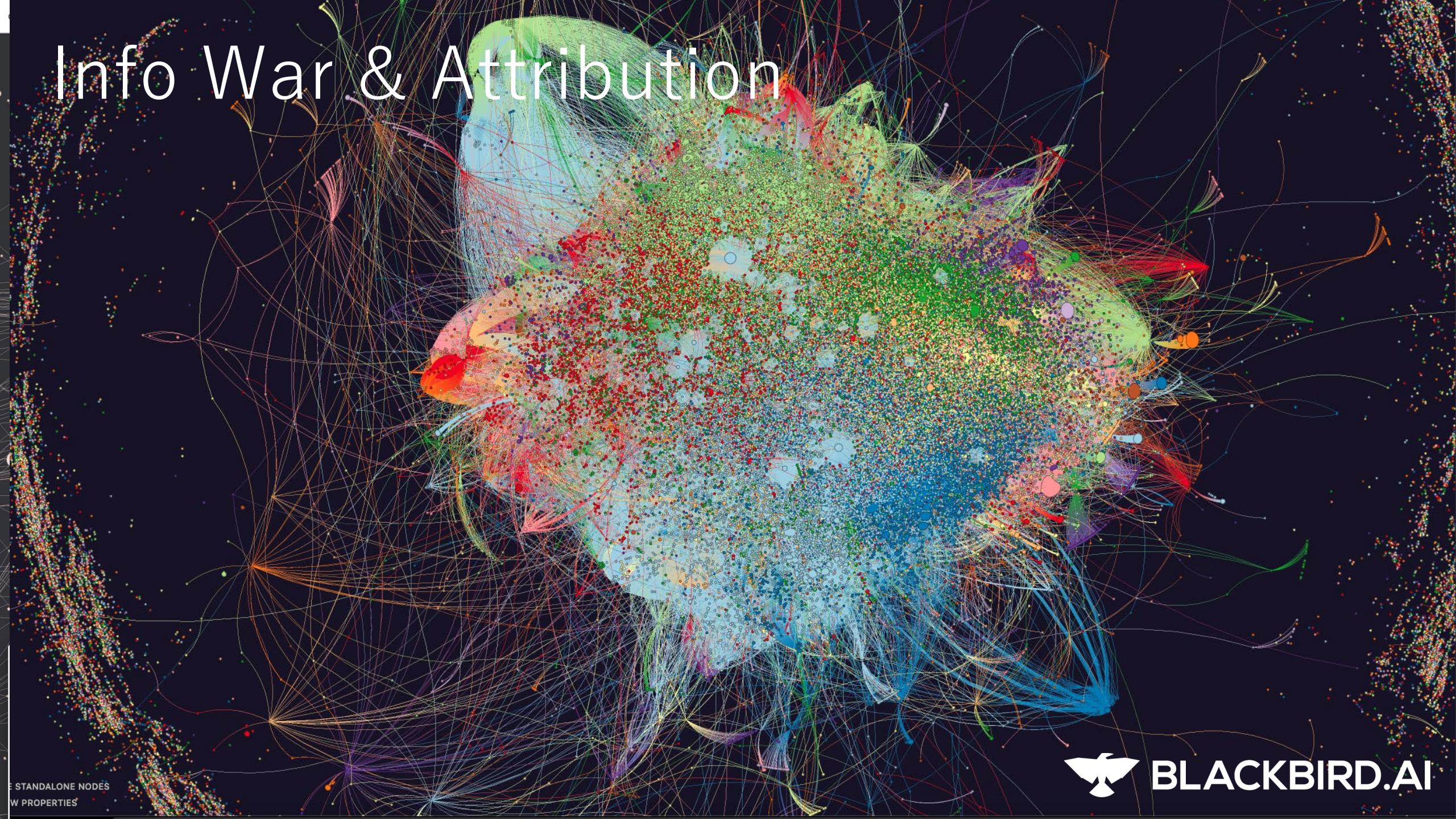
W



The Problem of Deep Fakes



Info War & Attribution



STANDALONE NODES
W PROPERTIES



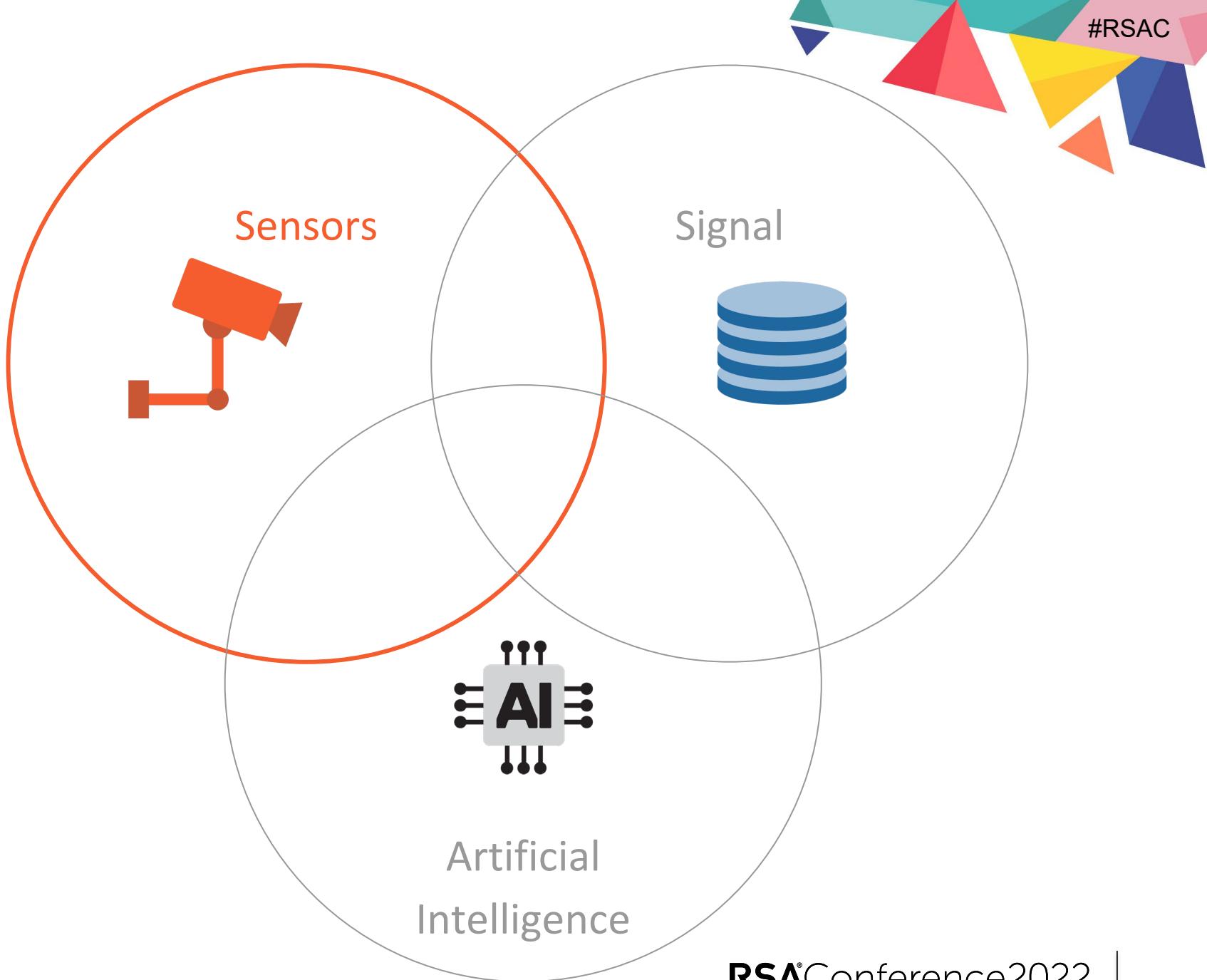
BLACKBIRD.AI

RSA® Conference 2022

**Data explosion at the nexus of
the physical and digital**



Physical / Digital Fusion



The Scientist and the A.I.-Assisted, Remote-Control Killing Machine

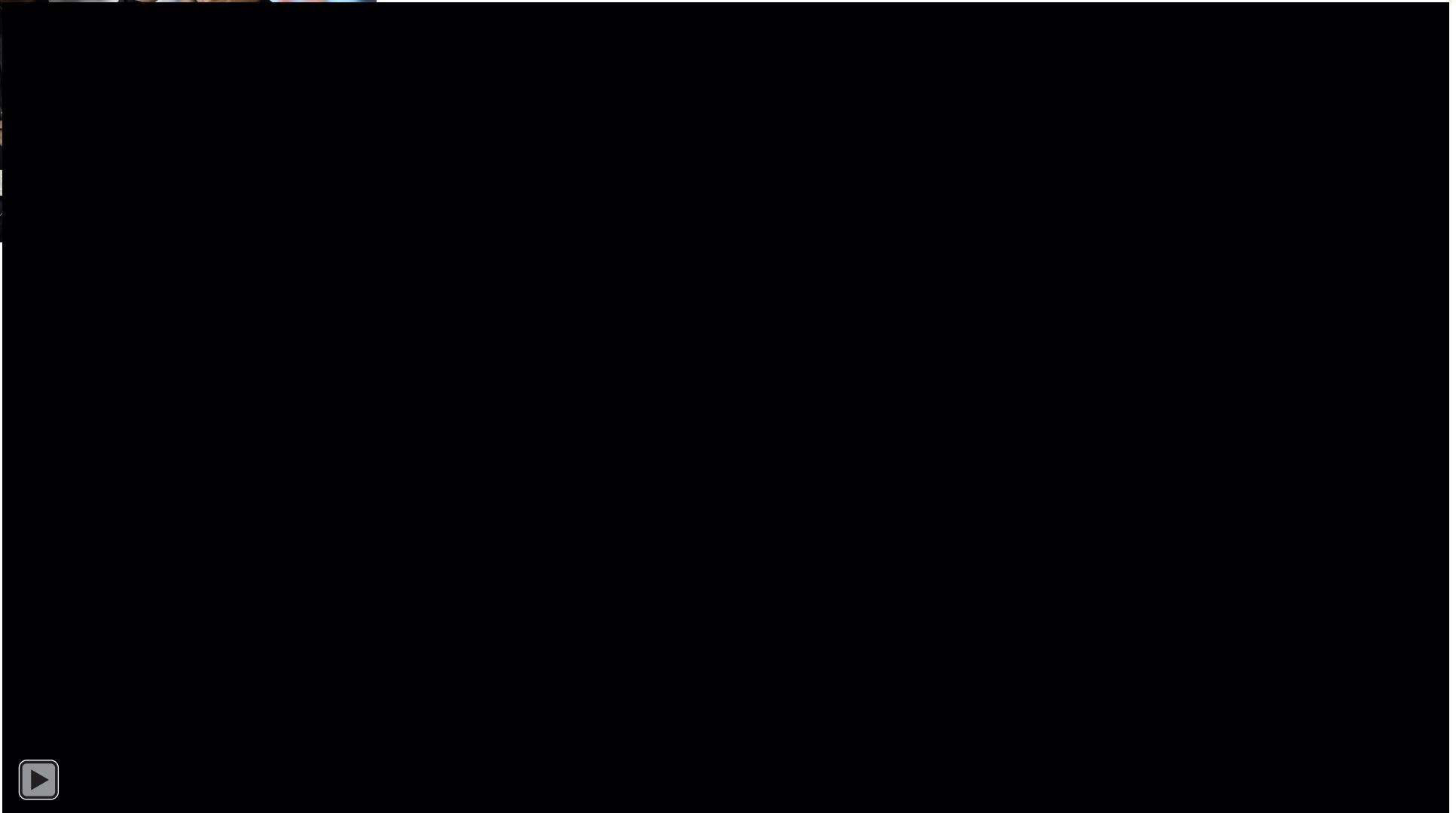
Israeli agents had wanted to kill Iran's top nuclear scientist for years. Then they came up with a way to do it with no operatives present.



ISRAEL USED ROBOT MACHINE GUN TO KILL IRANIAN NUKE SCIENTIST

Mohsen Fakhrizadeh assassinated by a sniper
1000 miles away using cameras





#RSAC



■ Provinces participating
Uyghur alarms

Uyghur Alarms

Uyghur Analytics Spreading
Across China

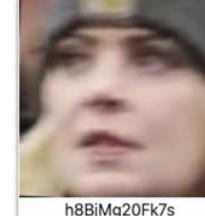
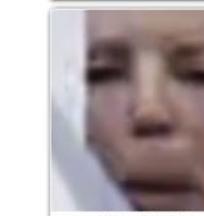
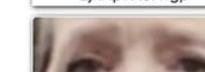


Privatized Government Capabilities: Faces of the Riot

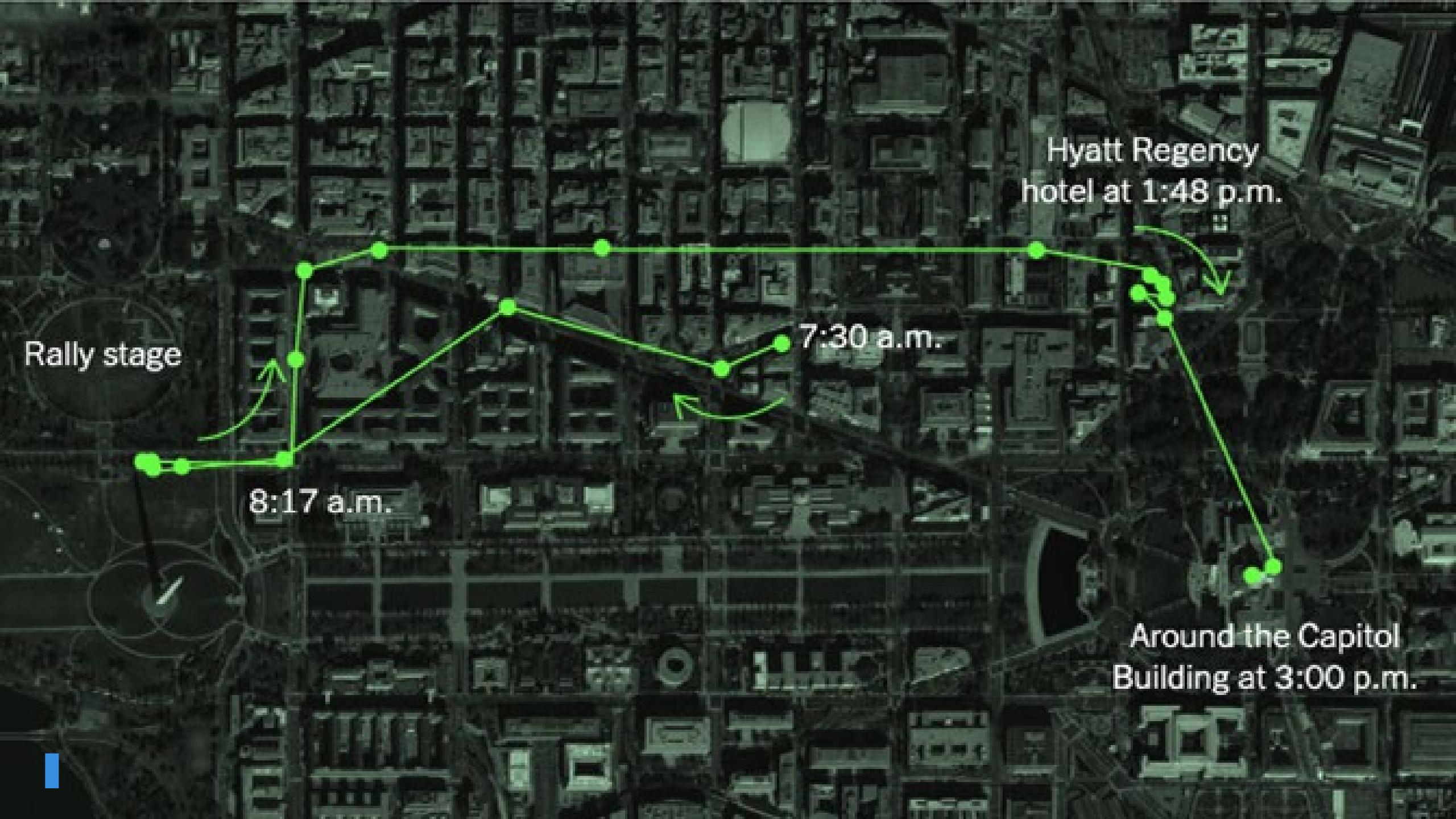
FACES OF
THE RIOT

DISCLAIMER:
DO NOT ATTEMPT YOUR OWN INVESTIGATION INTO ANYONE SHOWN ON THIS WEBSITE. REPORT THEM TO THE FBI USING [THIS LINK](#) INSTEAD. THANK YOU.
See an incorrect image (not a face, not a rioter, etc)? Send a message to [@RiotFaces](#) on twitter.
Please include a screenshot of the image as well as the text under the image.

Previous 4 Next Go 5 rows/page ▾

 Km2S7d92uPH8	 h8BjMg20Fk7s	 cmzbWnPi5Jgs	 rSygHXIxTYOV	 tfjhpJnZ8uOu	 kAv6wX8KsD1i
 7Fu9YJVZmNkj	 Oc9WgHNGpAhE	 0jaHRfXYTxdk	 u9hBZAW6V6Ft	 h8BjMg20Fk7s	 XZeZIBxC6R64
 jSsr328EmUH	 h8BjMg20Fk7s	 a6R6xt7VEDuE	 tfjhpJnZ8uOu	 h8BjMg20Fk7s	 EjkHpFX9ATgp
					





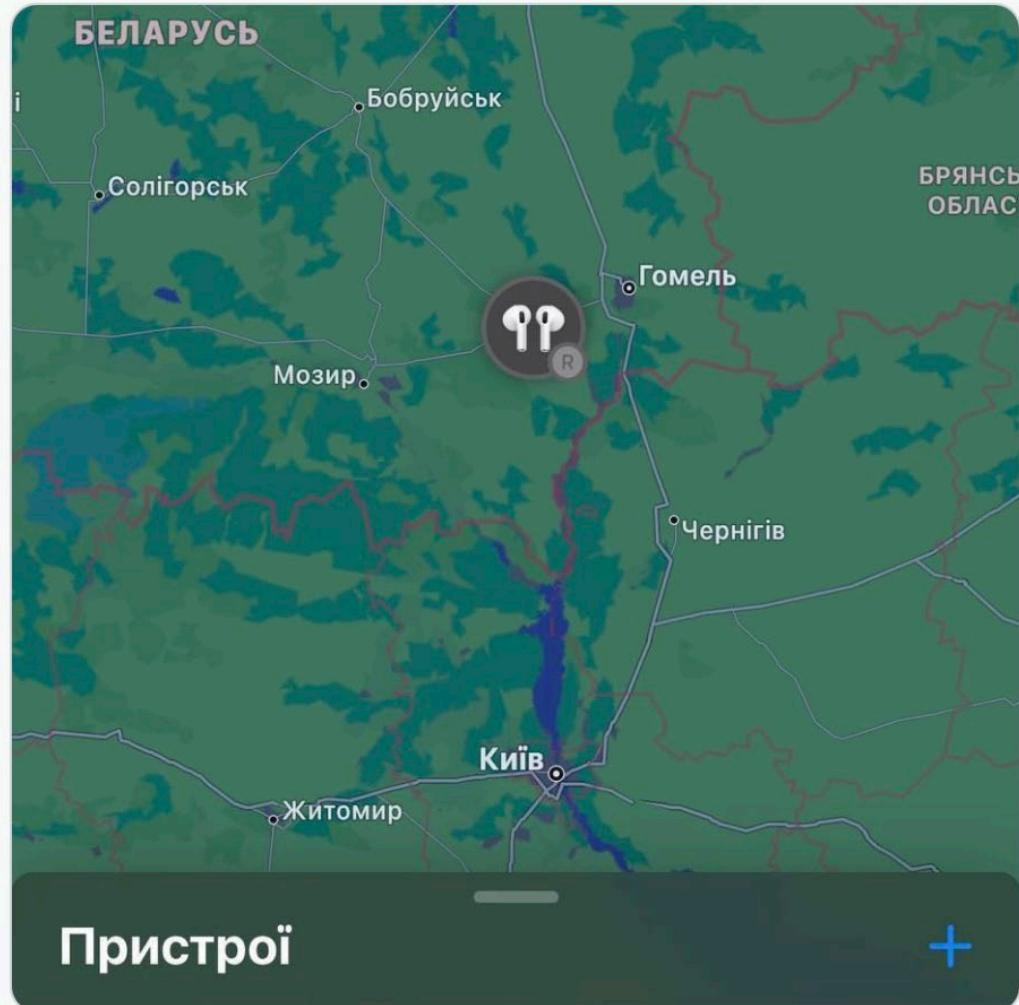


Franak Viačorka

@franakviacorka



Ukrainians are locating their devices on the territory of the Homiel region, Belarus, where part of the Russian army retreated.



6:58 AM · Apr 5, 2022

i

#RSAC

Ukrainians using ad
tech as well as
FindMy tracking
capability to locate
Russian troops

RSA Conference 2022



HawkEye³⁶⁰

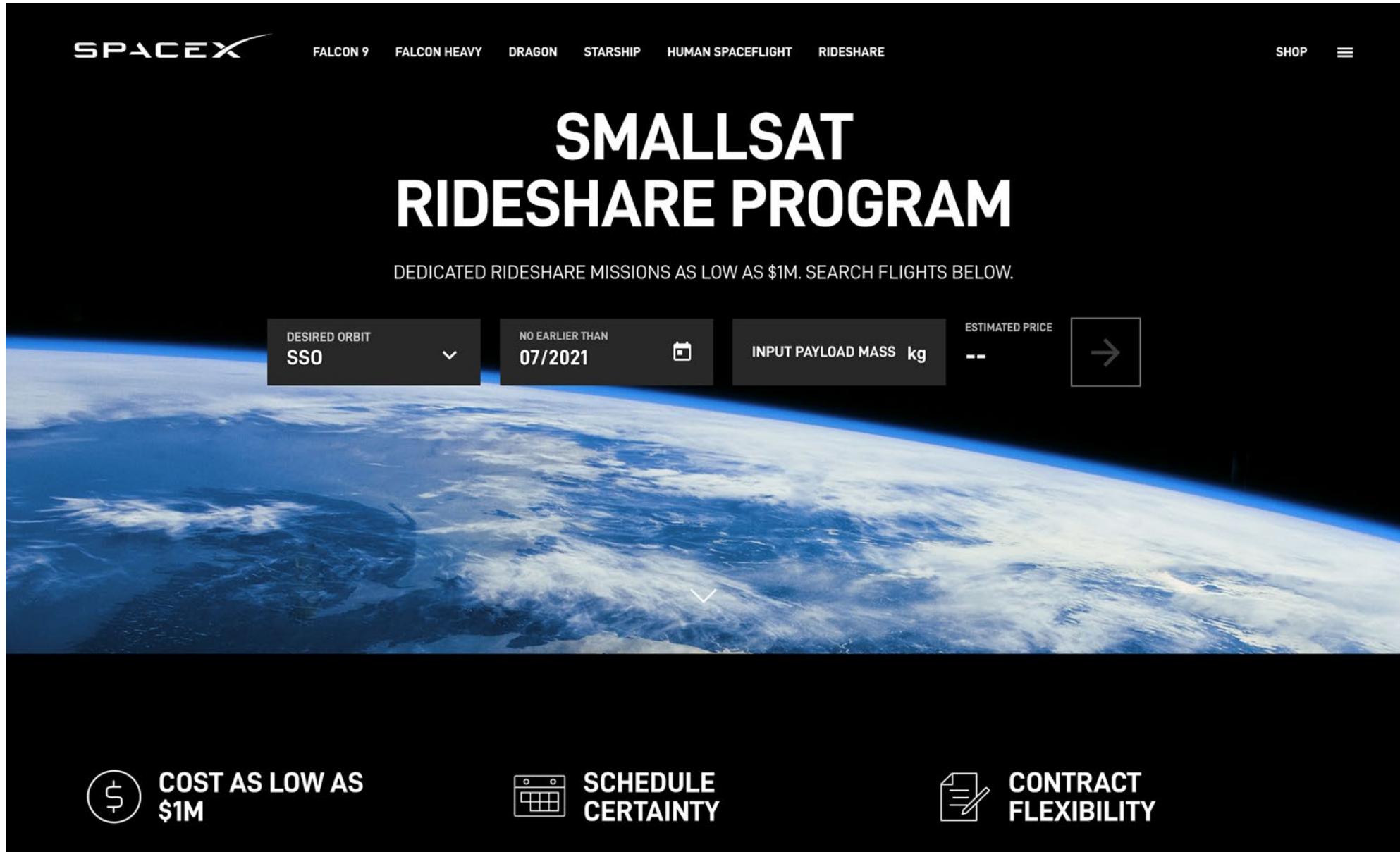
GENERAL VESSEL ACTIVITY
REMAINS LOW

WUHAN

WUHU

SHANGAI

APRIL 12



The landing page for the SpaceX SmallSat Rideshare Program. At the top left is the SpaceX logo. Along the top navigation bar are links for FALCON 9, FALCON HEAVY, DRAGON, STARSHIP, HUMAN SPACEFLIGHT, RIDESHARE, SHOP, and a menu icon. The main title "SMALLSAT RIDESHARE PROGRAM" is displayed prominently in large white letters. Below it is a subtitle: "DEDICATED RIDESHARE MISSIONS AS LOW AS \$1M. SEARCH FLIGHTS BELOW." A search interface follows, featuring dropdown menus for "DESIRED ORBIT SSO", "NO EARLIER THAN 07/2021", "INPUT PAYLOAD MASS kg", and "ESTIMATED PRICE --". To the right of the search interface is a large button with a right-pointing arrow. The background of the page is a photograph of Earth from space, showing clouds and the blue atmosphere against the black void of space.

SpaceX

FALCON 9 FALCON HEAVY DRAGON STARSHIP HUMAN SPACEFLIGHT RIDESHARE SHOP

SMALLSAT RIDESHARE PROGRAM

DEDICATED RIDESHARE MISSIONS AS LOW AS \$1M. SEARCH FLIGHTS BELOW.

DESIRED ORBIT
SSO

NO EARLIER THAN
07/2021

INPUT PAYLOAD MASS kg

ESTIMATED PRICE
--

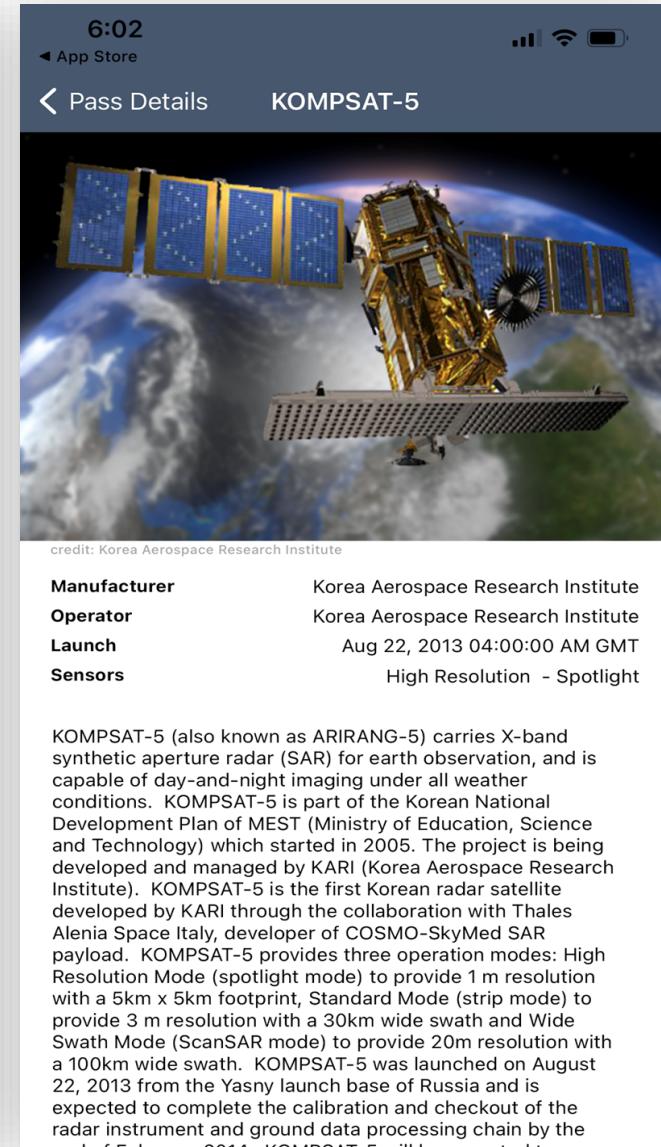
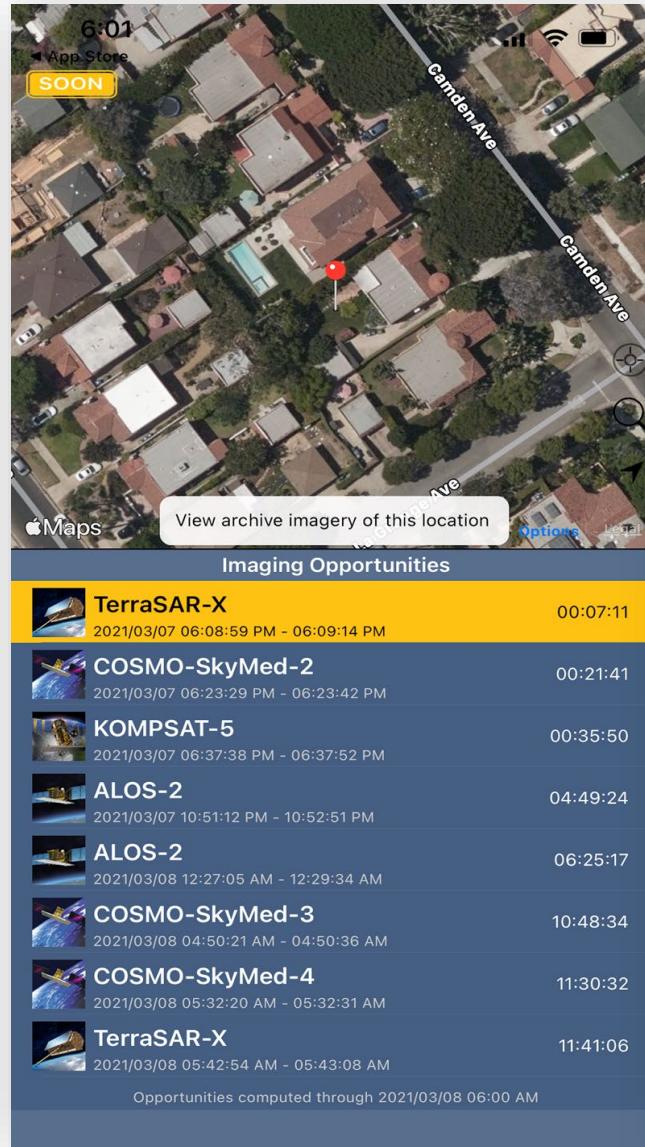
COST AS LOW AS
\$1M

SCHEDULE CERTAINTY

CONTRACT FLEXIBILITY

SpyMeSat

SpyMeSat provides real-time imaging satellite awareness, on-demand access to satellite imagery archives, and the ability to request new satellite imagery directly from a mobile device. You can take a new satellite picture of any location directly from your phone.



Satellites for hire
will soon cover
every square meter
of the planet,
fundamentally
transforming
modern conflict.

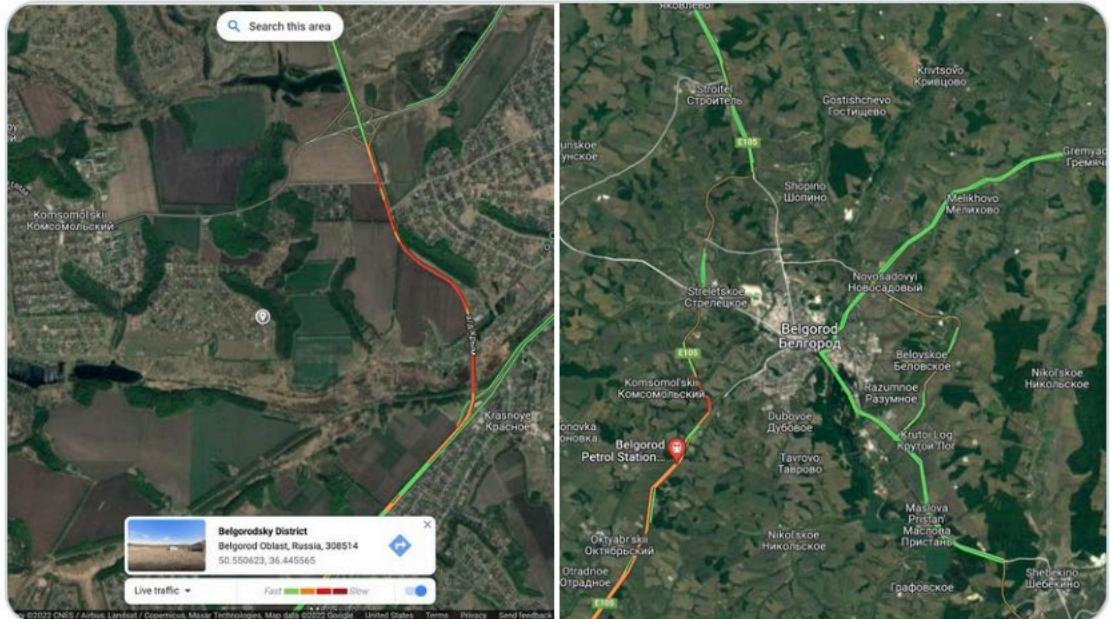




Dr. Jeffrey Lewis 
@ArmsControlWonk



According [@googlemaps](#), there is a "traffic jam" at 3:15 in the morning on the road from Belgorod, Russia to the Ukrainian border. It starts *exactly* where we saw a Russian formation of armor and IFV/APCs show up yesterday.
Someone's on the move.



8:26 PM · Feb 23, 2022



OSINT analysts are now actors in an active conflict, tweeting their findings in real time.

1,401 online **5,088 total**

Ukrainian Radio Watchers

RADIO WAR OSINT UKRAINE UKRAINIAN

Ukrainian Radio Watchers are searching for people want to help end the war. Listening to radio frequencies, decrypting Morse code, translating and transcription of the communications.

RSA® Conference 2022

**“Be careful about making predictions,
especially about the future.”**

- Yogi Berra





Dangerous Embedded Assumptions



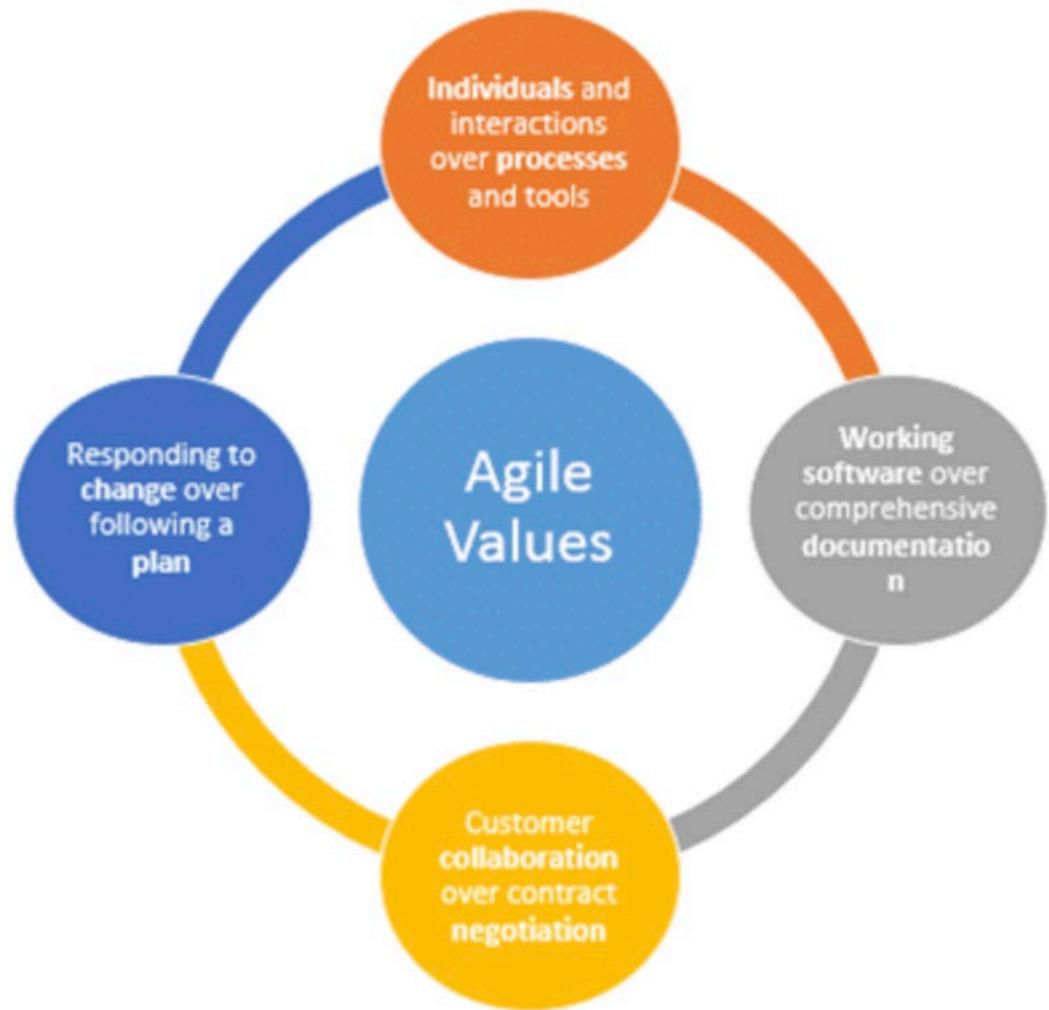
How U.S. Intelligence Misjudged the Growing Threat Behind 9/11

Among the missteps: lack of intel-sharing between agencies, tepid responses to earlier attacks and a failure to grasp the magnitude of the terrorists' ambitions.

BARBARA MARANZANI • UPDATED: SEP 10, 2019 • ORIGINAL: SEP 11, 2018

Gregg Brown/Getty Images

Challenging our Dangerous Embedded Assumptions



"Cybersecurity is National Security—speed, agility and unity of effort brought about by the connected relationship between U.S. Cyber Command and the National Security Agency is the ingredient that protects the United States against our enemies."

*-Gen. Paul Nakasone, April 5, 2022
House Armed Services Subcommittee on
Cyber, Innovative Technologies and Information Systems*



Dangerous Embedded Assumptions and Entanglement

Kessler Syndrome and the space debris problem

By [Mike Wall](#) published November 15, 2021

This feared space-junk cascade called Kessler Syndrome may have already begun.



Artist's illustration of a debris-spawning event in Earth orbit that can cause the Kessler Syndrome. (Image credit: ESA)

In preparing for battle, I have always found that plans are useless but planning is indispensable.

– Dwight D. Eisenhower



Adaptive Approach to Intelligence: Real-time disclosure of highly classified intelligence

The New York Times

U.S. Battles Putin by Disclosing His Next Possible Moves

Declassified information is part of a campaign to complicate what officials say are Russia's plans to invade Ukraine.

U.S. Says New Intelligence Shows Russian Plans To Create Pretext For Invading Ukraine

Adaptive Approach to Intelligence: Collaborative Attribution

2014

The New York Times

*U.S. Said to Find North Korea
Ordered Cyberattack on Sony*



Sony dropped plans to release "The Interview." David Goldman/Associated Press

By [David E. Sanger](#) and [Nicole Perlroth](#)

Dec. 17, 2014

2022

CYBERSCOOP

POLICY PRIVACY TECHNOLOGY WORKFORCE MONEY SPECIAL REPORTS WATCH L

THREATS

UK, EU, US formally blame Russia for Viasat satellite hack before Ukraine invasion



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Despite a massive military advantage ...

The Russia-Ukraine Military Imbalance

Comparison of selected military statistics for Russia and Ukraine in 2022

■ Russia ■ Ukraine

Ground Forces

Active personnel



Tanks



Armored vehicles



Air Forces

Total aircraft



Fighter aircraft



Naval Forces

Naval fleet



Frigates



Attack helicopters

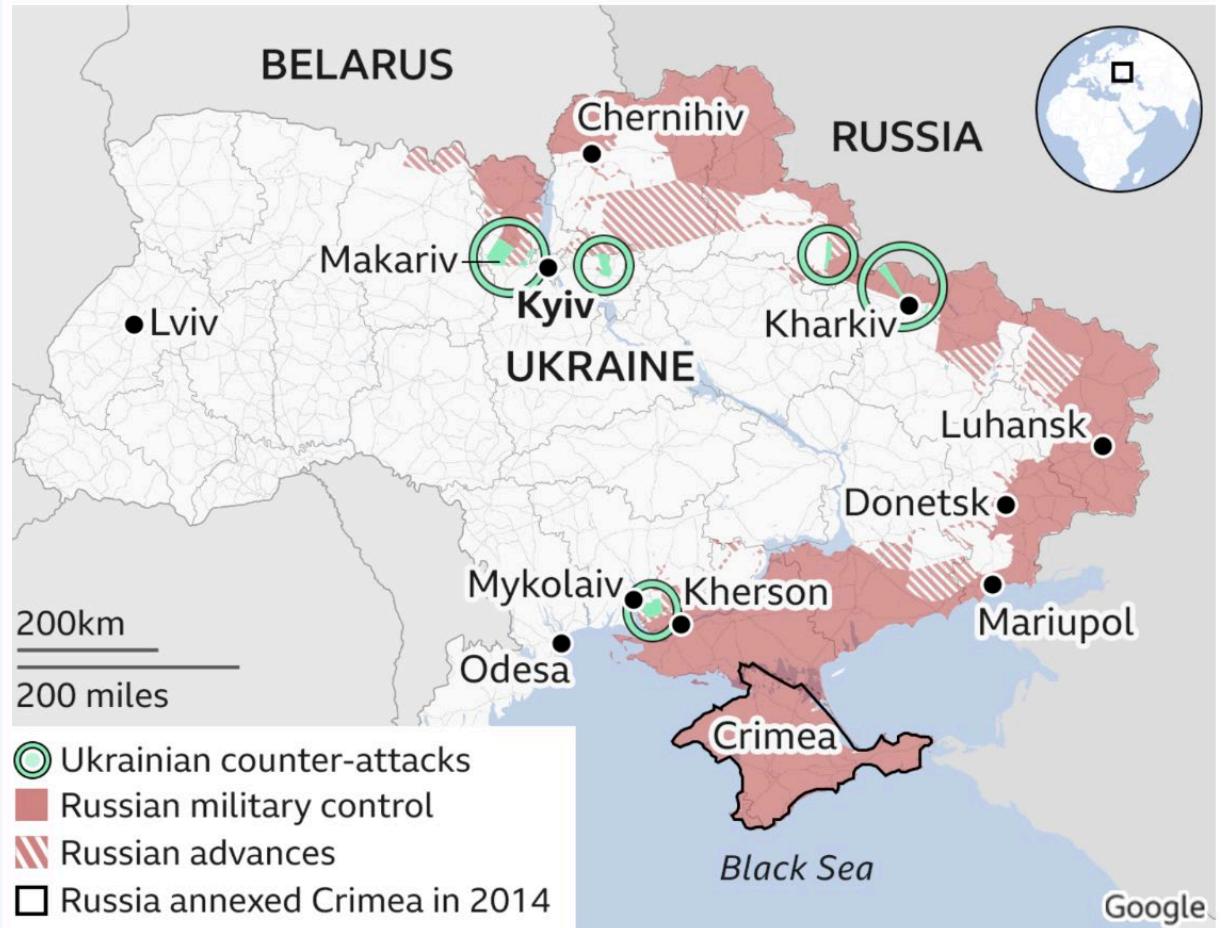


Source: GlobalFirepower



statista

Ukrainians attempting to push back Russians



BBC

Decentralized, Distributed and Privatized Agile Conflict Response

'For the first time in history anyone can join a war': Volunteers join Russia-Ukraine cyber fight

PUBLISHED MON, MAR 14 2022 1:47 AM EDT | UPDATED MON, MAR 14 2022 1:59 AM EDT



Monica Buchanan Pitrelli
@MONICAPITRELLI

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KEY POINTS

- The number of cyberattacks being waged by — and on behalf of — Ukraine and Russia since the outbreak of the war is “staggering,” according to research.
- Ukraine authorities estimate some 400,000 multinational hackers have volunteered to help counter Russia’s digital attacks, said Yuval Wollman, president of CyberProof.

Decentralized, Distributed and Privatized Agile Conflict Response



Belarusian Cyber-Partisans
@cpartisans

...

We are also doing everything in our power to help 🇺🇦 **#Ukrainians**. We plan to increase our group by 10 times to carry out our large-scale attacks more often. To do this, we need significantly more resources than have been collected so far.

2:54 PM · Mar 11, 2022 · Twitter Web App

Decentralized, Distributed and Privatized Agile Conflict Response

“WARNING”

The Conti Team is officially announcing a full support of Russian government. If anybody will decide to organize a cyberattack or any war activities against Russia, we are going to use our all possible resources to strike back at the critical infrastructures of an enemy.

2/25/2022

306

READ MORE >



Conti ransomware gang's internal chats leaked online after declaring support for Russian invasion

Zack Whittaker @zackwhittaker 11:35 AM EST • February 28, 2022



conti leaks
@ContiLeaks

<anonfiles.com/T6U9caL6x5/Scr...>
<anonfiles.com/V1Uec2Ldx/a/baz...>
<anonfiles.com/X3U4cdL6x7/baz...>
<anonfiles.com/ZfU0c0Lex7/Scr...>
<anonfiles.com/bfV9cfL5xd/Scr...>
<anonfiles.com/deVdcaLbx6/Scr...>
<anonfiles.com/f1VfcgLdxe/Scr...>
<anonfiles.com/lfV7c2L8xa/con...>
<anonfiles.com/nfVbccL9x7/baz...>

5:25 PM · Feb 28, 2022 · Twitter Web App

Decentralized, Distributed and Privatized Agile Conflict Response

WIRED

BACKCHANNEL BUSINESS CULTURE GEAR IDEAS SCIENCE SECURITY

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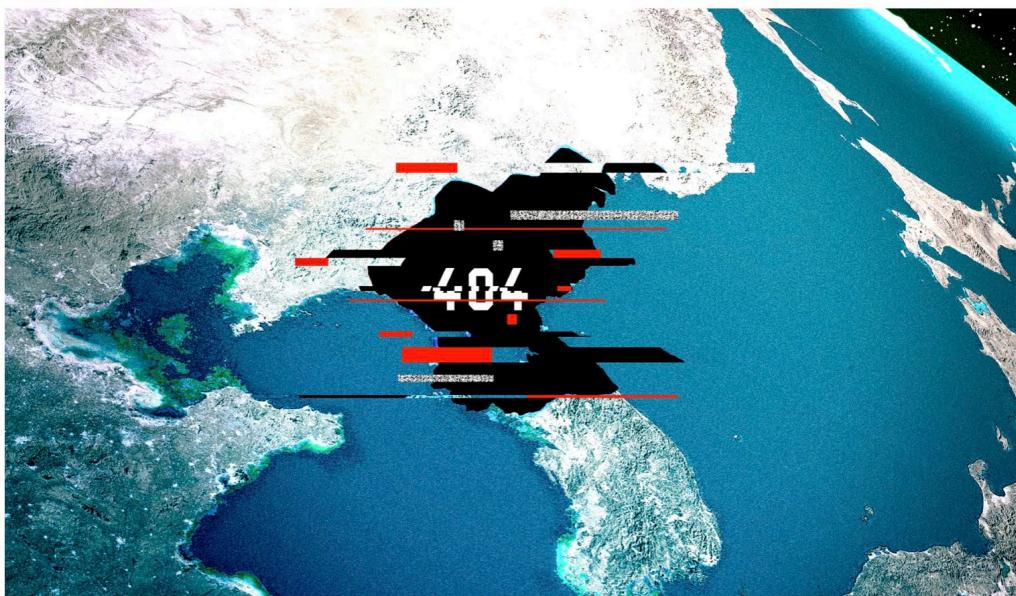
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ANDY GREENBERG

SECURITY FEB 2, 2022 11:43 AM

North Korea Hacked Him. So He Took Down Its Internet

Disappointed with the lack of US response to the Hermit Kingdom's attacks against US security researchers, one hacker took matters into his own hands.



"I want them to understand that if you come at us, it means some of your infrastructure is going down for a while." ILLUSTRATION: ELENA LACEY; GETTY IMAGES

Decentralized, Distributed and Privatized Agile Conflict Response



Mykhailo Fedorov

@FedorovMykhailo



We are creating an IT army. We need digital talents. All operational tasks will be given here: t.me/itarmyofurraine. There will be tasks for everyone. We continue to fight on the cyber front. The first task is on the channel for cyber specialists.



t.me

IT ARMY of Ukraine

You can view and join @itarmyofurraine right away.

1:38 PM · Feb 26, 2022



8.6K Reply Share

[Read 314 replies](#)



IT ARMY of Ukraine

For all IT specialists from other countries, we translated tasks in English.

Task # 1 We encourage you to use any vectors of cyber and DDoS attacks on these resources.

Business corporations

Gazprom - <https://www.gazprom.ru/>
 Lukoil - <https://lukoil.ru>
 Magnet - <https://magnit.ru/>
 Norilsk Nickel - <https://www.nornickel.com/>
 Surgutneftegas - <https://www.surgutneftegas.ru/>
 Tatneft - <https://www.tatneft.ru/>
 Evraz - <https://www.evraz.com/ru/>
 NLMK - <https://nlmk.com/>
 Sibur Holing - <https://www.sibur.ru/>
 Severstal - <https://www.severstal.com/>
 Metalloinvest - <https://www.metalloinvest.com/>
 NNC - <https://nangs.org/>

Russian Copper Company - <https://rmk-group.ru/ru/>
 TMK - <https://www.tmk-group.ru/>
 Yandex - <https://ya.ru/>

Polymetal International - <https://www.polymetalinternational.com/ru/>
 Uralkali - <https://www.uralkali.com/ru/>
 Eurosbenergo - <https://www.eurosb.ru/>
 OMK - <https://omk.ru/>

Banks

Sberbank - <https://www.sberbank.ru>
 VTB - <https://www.vtb.ru/>
 Gazprombank - <https://www.gazprombank.ru/>

The state

Public services - <https://www.gosuslugi.ru/>
 Moscow State Services - <https://www.mos.ru/uslugi/>
 President of the Russian Federation - <http://kremlin.ru/>
 Government of the Russian Federation - <http://government.ru/>
 Ministry of Defense - <https://mil.ru/>
 Tax - <https://www.nalog.gov.ru/>
 Customs - <https://customs.gov.ru/>
 Pension Fund - <https://pfr.gov.ru/>

Our Adversaries Will Learn and Adapt

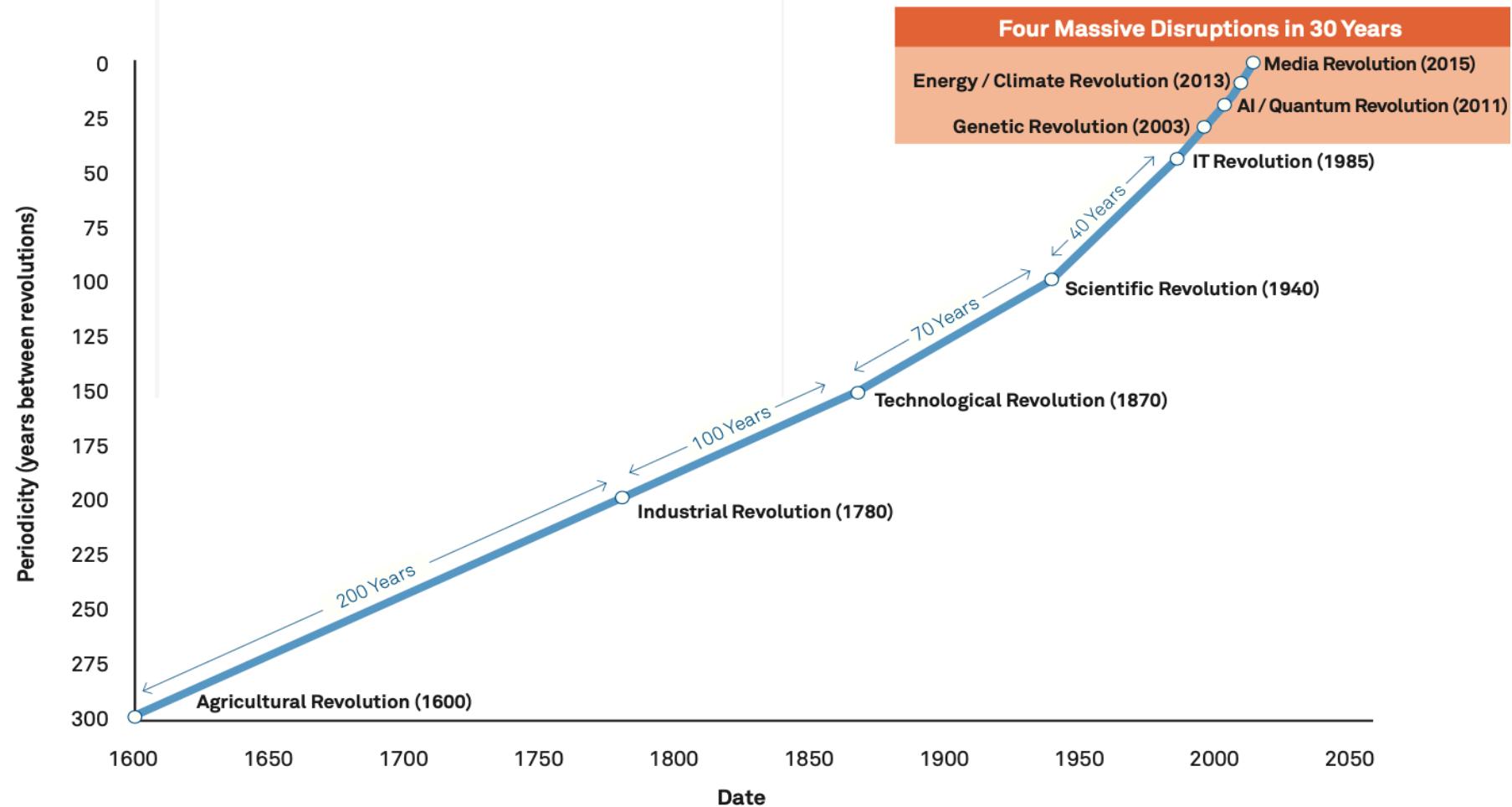
What is China Learning from the Ukraine War?

From battlefield concepts to geopolitics, Beijing is sure to be watching with avid interest- and some chagrin.

By THOMAS CORBETT,
MA XIU, and PETER W.
SINGER

April 3, 2022

Velocity of Change is Outstripping our Ability to Gain Mastery



Velocity of Change is Outstripping our Ability to Gain Mastery

Increasing social change

- Justice & Equity
- Climate
- Pandemic
- Freedom
- Economic Crises



Velocity of Change is Outstripping our Ability to Gain Mastery

MORE CONVINCED WE'RE BEING LIED TO BY SOCIETAL LEADERS

Percent who worry



67% 
+8 pts

Journalists and reporters

66% 
+9 pts

My country's government leaders

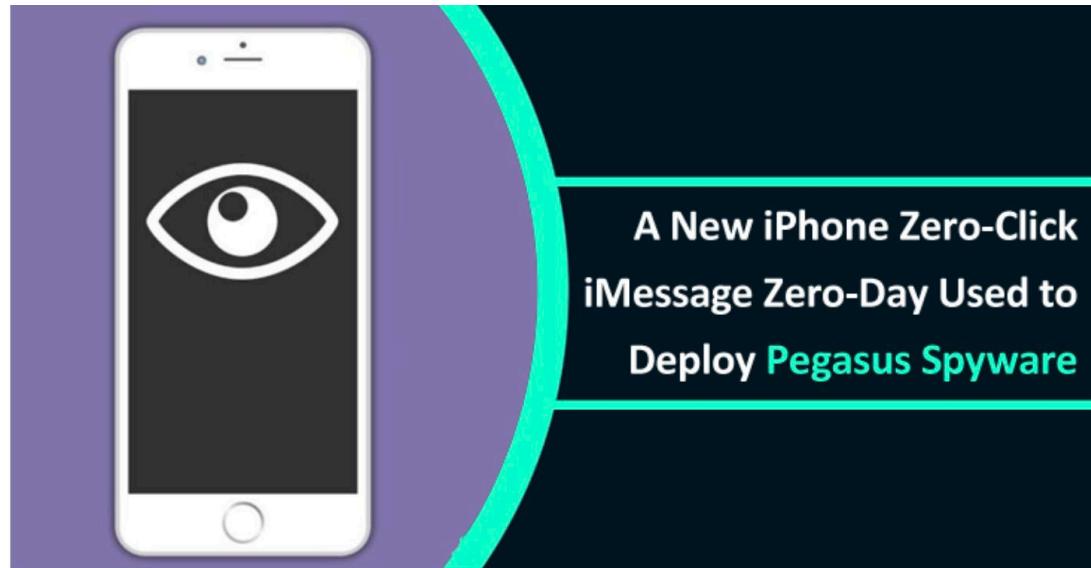
63% 
+7 pts

Business leaders

are **purposely trying to mislead people** by saying things they know are false or gross exaggerations

Edelman Trust Barometer 2022

Velocity of Change is Outstripping our Ability to Gain Mastery



ZERO-DAY INTERNET VULNERABILITY



SolarWinds hackers have a clever way to bypass multifactor authentication

Hackers who hit SolarWinds compromised a think tank three separate times.

DAN GOODIN - 12/14/2020, 10:00 PM

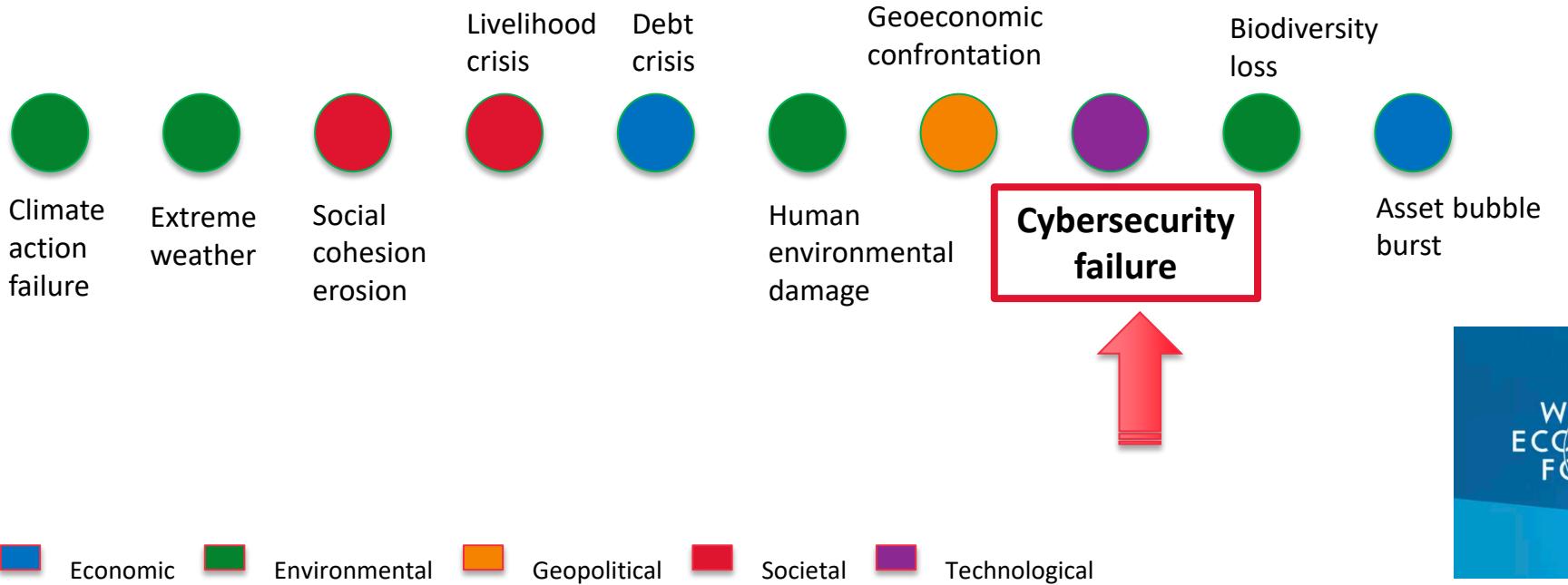


Velocity of Change is Outstripping our Ability to Gain Mastery



World Economic Forum: Top Medium-Term Global Risks

Over the next 2-5 years



Source: World Economic Forum Global Risks Report 2022

“I’m a pessimist because of intelligence, but an optimist because of will.”

- Antonio Gramsci



Key Takeaways

- **Expand your contextual awareness**
 - NSO/BYOD
 - Social exploits
 - Surveillance/Privacy
- **Build Awareness**
 - Dangerous Embedded Assumptions
 - Near Miss Deep Dives
 - Cyberwar as cyber reality
- **Get vocal**
 - Your voice, your government

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San Francisco & Digital | June 6 – 9

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Cyber and Modern Conflict: The Changing Face of Modern Warfare

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TRANSFORM

