



# ***THE TERRA ACT OF 2021***

***VIRGINIANS FOR SAFE TECHNOLOGY, LLC  
MARY BAUER, SEPTEMBER 10, 2021***

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# VA4ST'S MISSION

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Fredericksburg, VA 22405



# AGENDA

- **VA4ST MISSION AND BACKGROUND**
- **NATIONAL HEALTH FEDERATION ENFORCEMENT CAMPAIGN**
- **THE FRANKLIN'S BEE IS NOW AN ENDANGERED SPECIES**
- **WHAT IS THE NATIONAL TERRA ACT OF 2021?**
- **WHY THE TERRA ACT?**
- **PROTOTYPE HARDWARE AND SOFTWARE FOR ELECTRONIC TRACKING AND ENFORCEMENT OR RF RADIATION (RFR)**
- **SYSTEM MODIFICATION UPDATES NEEDED/RECOMMENDED**
- **BILL REVIEW AND SPONSORSHIP STATUS**
- **TIMELINE AND ROADMAP FOR SUCCESS**
- **OTHER VA4ST PROJECTS COMING UP-VA BIRD MORTALITY; HB 817 DIGITAL DEVICE USE HEALTH & SAFETY GUIDELINES**

# THE TERRA ACT OF 2021

- TRACKING
- ENFORCING AND
- REDUCING
- RADIATION IN
- AIR

NATIONAL BILL  
PROPOSAL FOR 2021

# PROPOSED TERRA ACT OF 2021

## The TERRA Act of 2021

### Ttracking, Enforcing and Reducing Radiation in Air

#### *Decreasing Emission Levels from Wireless Telecommunication Facilities and Devices*

*The proposed TERRA Act is a legislative request for a mandatory new green federal regulatory process to reduce the climate change impact from wireless telecommunication facilities, devices, and other communication technologies by monitoring, tracking, enforcing and reducing non-ionizing radiation emission levels to accelerate net carbon zero objectives.*

# THE TERRA ACT OF 2021

Radio frequency radiation (RFR)  
Green house gas (GHG)

## Most important tech data in the TERRA ACT of 2021

- **5G is an energy hog! (3.5X)**
- **RF mitigation = less RFR**
- **RF mitigation = less power**
- **RF mitigation = less GHG**

# NHF 5G CAMPAIGN

<https://national-health-federation.rallycongress.net/ctas/enforce-mitigate-5g-wireless-broadband-emissions>

## Enforce & Mitigate 5G Wireless Broadband Emissions

If industry can't comply with wireless radiation limits, government must mitigate its antenna deployment

National Health Federation Campaign:

### Enforce & Mitigate Radio Frequency Radiation Limits for Broadband Deployment

April 29th, 2021



The National Health Federation supports the extent to which the infrastructure bill's broadband section relies on wired deployment via fiber optics - a wondrous technology proven safe, fast and secure. [1] What concerns scientists and families is not wireless per se, but rather wireless without enforcement of its radiation emission limits.

While twelve other countries monitor and enforce emission limits, there is no American check on Radio Frequency Electro-Magnetic Field Radiation (RF-EMF) emissions; [2] Americans interested in the extent of radiation emissions of nearby antenna are reduced to participating in volunteer efforts. [3] Protecting life and property and national security makes two of the purposes of the Federal



12. Antennas continue to go up throughout our neighborhoods without our informed consent and without any means to opt out.  
Contact your Representative now!

First, Enter Your Zip Code

Submit



# NHF 5G CAMPAIGN

## Enforce & Mitigate 5G Wireless Broadband Emissions

### TRANSFER OF POWER TO NGO'S

- 5G marketing hype says 5G is harmless advanced tech for your convenience, but should it be safer?
- Is 5G proliferation too inefficient and expensive and not so advanced after all? Value added?
- **Go to NHF website, enter your zip code and sign the pre-written letter to go to your Congressmen and help convey why it is important for public safety to monitor and enforce the MPEL!**
- <https://national-health-federation.rallycongress.net/ctas/enforce-mitigate-5g-wireless-broadband-emissions>
- Campaign is needed because most citizen opposition to boundless 5G expansion in VA is being throttled at local and state level (aka VA is a Dillon Rule state)
- **5G it is the most important health topic of this decade!**
- Property devaluation of up to 20% is a key risk to installing 5G in residential neighborhoods
- There is no opt-out and informed consent for 5G even though it 'claims' to be a public utility
- VA4ST's focus is on smart cities and the rise in power of NGO unelected representatives that will inevitably infringe on residents' privacy rights and silence constituent's voices to elected officials
- 5G in residential neighborhoods is needed more for data mining and surveillance than for streaming unneeded super fast videos and for suburban national defense as assigning social equity scores and business 'innovation indices' derived from the data collected or 'extracted' is the objective
- Violates ADA building/housing accommodations for EHS or other medical conditions adverse to Wi-Fi

# NHF 5G CAMPAIGN

## Most important health data in the TERRA ACT of 2021

- 5G is the most important health topic of the decade possibly leading to another **IMMINENT** public health crisis when fully deployed
- Many will be unaware of the real root cause of their **sudden** illnesses
- Education on the bioeffects that can occur over continued use of wireless handheld devices is essential for the educated consumer and to maintain health (near field/close proximity v. far field use)
- **RFR exposures can be WORSE inside your home! Take control back of your indoor environment and protect your children!** Routers, WIFI, cell phones, tablets, alarm systems, baby monitors, in home smart technologies, iphone watches and interoperability of devices. **Unplug when not using and hard wire whenever possible! Minimize your EMF footprint at home.**

# Franklin's Bumble Bee 2021 Endangered Species

<https://www.oregonconservationstrategy.org/strategy-species/franklins-bumble-bee>

## CONSERVE

### FRANKLIN'S BUMBLE BEE

- OVERVIEW
- KEY CONSERVATION ISSUES
- ECOREGIONS
- CONSERVATION OPPORTUNITY AREAS
- STRATEGY HABITATS
- STRATEGY SPECIES

- AMPHIBIANS
- BIRDS
- MAMMALS
- REPTILES
- FISH
- INVERTEBRATES
- PLANTS AND ALGAE
- METHODS FOR DETERMINING STRATEGY SPECIES






Photo Credit: Peter Schroeder

**OVERVIEW**

Species Common Name	Species Scientific Name
Franklin's Bumble Bee	<i>Bombus franklini</i>
<b>Federal Listing Status</b>	
Species of Concern	

**ECOREGIONS**



Federal Register  
August 24,  
2021

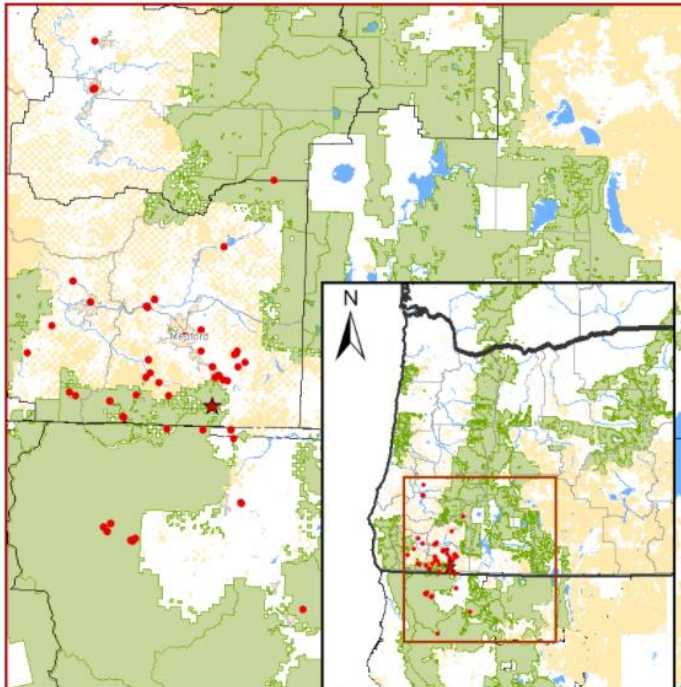
Effective  
September  
23, 2021

# FRANKLIN'S BEE HABITAT

<https://defenders.org/blog/2019/10/protecting-franklins-bumble-bee>

## Franklin's bumble bee *Bombus franklini*

- *Bombus franklini* locality
- ★ *Bombus franklini* recent locality
- Bureau of Land Management
- National Forest




<https://www.ecfr.gov/cgi-bin/text-idx?SID=cf9350ba861b1c31dc900ded562ee7cd&mc=true&node=20210824y1.7>

- Bee habitat is in the Northwest US (Oregon and California) mainly on Bureau of Land Management and US Forest Service (USFS) public lands
  - Bee habitat is the smallest of any bumble bee in the world
  - Bee habitat was declined protection under ESA because 'it was not prudent' \$\$\$\$
  - Added to the list of Endangered Species under the Endangered Species Act (ESA) this year per 50 CFR 17.11
  - Suspect diseases from managed bees and pesticides are responsible for the die-off
  - Last seen in this area in 2006
  - Unlikely there will be any reversal of ESA critical habitat decision (Oct 2019)
- <https://xerces.org/blog/trump-administration-weakens-endangered-species-act>

# AMAZON 60 GHZ SLEEP RADAR

<https://www.newsbreak.com/news/2305494094486/amazon-hopes-to-track-your-sleep-habits-with-radar>

< View more in  Music

## Amazon hopes to track your sleep habits with radar

By J. Fingas

Engadget 2021-07-10

Google's latest Nest Hub might not be the only device to track your sleep using radar. Bloomberg reports that Amazon has received an FCC waiver to let it use 60GHz radar for sleep tracking. As with Google's tech, you could check for sleep issues without having to wear a device like the Halo band.

[www.engadget.com](http://www.engadget.com) 

Comments / 0

See all >

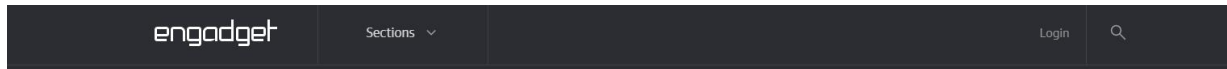
What are your thoughts?

Post

[Community Policy](#)

# AMAZON 60 GHZ SLEEP RADAR

<https://www.engadget.com/amazon-sleep-tracking-radar-fcc-approval-161031226.html>



## Amazon hopes to track your sleep habits with radar

The Google Nest Hub might have fresh competition.



**J. Fingas**  
@jonfingas  
July 10th, 2021



In this article: radar, news, Amazon, gear, sleep, sleep tracking, Echo, health, Echo Show, FCC, smart speaker



A red advertisement for State Farm insurance. It features a woman's portrait and the text 'Reeves Insurance Agency Inc. Anne Reeves, Agent, Fredericksburg, VA 22405'. A 'Get a Quote' button is visible. The State Farm logo is at the bottom.

### Sponsored Links

A sponsored link featuring a small image of a person and the text 'National AA and NH/PI Health Response Partnership' and 'APIAHF'.

A sponsored link featuring a small image of a person and the text 'Hospital-Trusted Products at Home' and 'Stryker Home Care'.

# AMAZON 60 GHZ SLEEP RADAR

<https://ecfsapi.fcc.gov/file/070974410095/DA-21-813A1.pdf>



Federal Communications Commission  
Washington, D.C. 20554

July 9, 2021

DA 21-813

Brian Huseman  
Amazon.com Services LLC  
601 New Jersey Avenue, NW, Suite 900  
Washington, D.C. 20001

Subject: Request by Amazon.com Services LLC for Waiver of 47 CFR § 15.255(c)(3)  
ET Docket No. 21-289

Dear Mr. Huseman:

This is in regard to your Petition for Declaratory Ruling and Request for waiver of Section 15.255 of the Commission's rules filed on behalf of Amazon.com Services LLC (Amazon).

Amazon requests a waiver of Section 15.255(c)(3) of the Commission's rules to permit a grant of equipment authorization for its unlicensed radar device, the Radar Sensor, that would operate in the 57-64 GHz band.<sup>1</sup> Specifically, Amazon requests to operate its Radar Sensor at identical power levels and technical parameters as those granted to Google in a 2018 waiver order.<sup>2</sup> That waiver permitted Google to deploy a mobile radar in, for example, its Pixel smartphone, to enable touchless control of device functions or features at +10 dBm peak transmitter conducted output power, +13 dBm peak EIRP level, and +13 dBm/MHz peak power spectral density, with a 10% duty cycle in any 33 ms interval. In its request, Amazon further stated that it would accept an additional waiver condition intended to promote coexistence among unlicensed users in the band. As discussed below, this condition—which relates to how the radar's duty cycle is calculated—was prompted by comments from 60 GHz unlicensed communications device stakeholders and their discussions with parties interested in operating unlicensed radars under waivers of our rules.<sup>3</sup>

As with Google, Amazon describes how it plans to use its Radar Sensors to enable touchless control of device features and functions.<sup>4</sup> It further distinguishes its anticipated devices as being "non-mobile" and only operating when connected to a power source, and states that it plans to use the radar's capability of capturing motion in a three-dimensional space to enable contactless sleep tracing functionalities.<sup>5</sup>

# AMAZON 60 GHZ SLEEP RADAR

**Waiver conditions in FCC letter (pg. 4) to Amazon July 9, 2021**

“We condition the grant of this waiver on the outcome of any changes to our rules that may be adopted in a future rulemaking proceeding. We intend to revisit this waiver, as well as other 60 GHz band waivers that have been granted to date, if and when the Commission might revise its rules.

We further emphasize that grant of this waiver and the conditions we associate with it are not intended to predetermine the outcome of this or any potential future rulemaking. Operation pursuant to the waiver is expressly conditioned on compliance with the Commission’s rules except as waived, which, in this case, is limited to Section 15.255(c)(3) under the conditions we set forth below.<sup>21</sup> Where rules are modified as a result of any future Commission rulemaking Amazon’s operations will be subject to those modified rules. “



# SMART CITIES COUNCIL

- Center for Innovative Technology (CIT) is one of the 15 **global** lead partners for smart city design. See here: [Smart Cities Council | Lead Partners from Around the Globe](#)
- There is a CIT location in the state of VA that is turning counties into wireless ‘living testbeds’
- **The Smart City and Communities Act of 2021** has been introduced by Congresswoman DelBene from NY. This assigns 'smart city projects' to any city that wants them, has the signature of CIT in testbed methodology. See here: [Smart Cities Council | Announcing the Smart Cities and Communities Act!](#)
- 'Activator' provides a platform for collaborative online **global** planning for multi stakeholder projects in **150 languages and in all time zones** [Smart Cities Council | Smart Cities Activator](#). It helps you learn what other smart cities are planning around the world! They don't tell us anything about what they are doing to our communities but blast it on Activator across the world to each other instead!
- **NGO Hand-off:** See more here on the FEDERAL coordination requested for smart city design: Congresswoman Suzan DelBene (WA-01) and Smart Cities Caucus Chair Yvette D. Clarke (NY-09) introduced the [Smart Cities and Communities Act](#) to promote the use of smart city technologies and enhance federal coordination of these programs. [DelBene, Clarke Introduce Legislation to Expand Smart City Technology | U.S. House of Representatives](#)

# VIPA/CIT PURPOSE

**The Virginia Innovation Partnership Authority (VIPA) was established in 2020 to:**

1. Support the life cycle of innovation, from translational research; to entrepreneurship
2. Pre-seed and seed-stage funding; as well as acceleration, growth, and commercialization,
3. Creation of new jobs and company formation
4. **Provide a collaborative, consistent, and consolidated approach**
5. Identify entrepreneurial strengths, including the identification of talents and resources
6. Attract technology-based businesses

# VIPA INNOVATION SCORES

[https://www.virginiacatalyst.org/uploads/7/3/8/8/73883877/virginia\\_catalyst\\_loi\\_form\\_round\\_12.docx](https://www.virginiacatalyst.org/uploads/7/3/8/8/73883877/virginia_catalyst_loi_form_round_12.docx)

## Big Data Analytics

- collaborative (~state partnership at every level)
- consistent (~ approve products only for their associated impacts regardless of how much they are needed. Is that the only use of state monies? Ethical concerns?)
- consolidated (~no duplication of research); must have matching funds  
OBJECTIVE IS **COMMERCIALIZATION** AND TO **SCORE HIGH** IN BUSINESS AND TECHNICAL AREAS

## For Bioscience seed money ‘grants’ <https://www.virginiacatalyst.org/>

- Innovator must be assigned an **Innovation Index**
- Innovator must have an **industry partner**
- Innovator must have **2 ‘EDU investigators’** or state research university partners
- Innovator must state an **“unmet need”** for improving human health and know the size of that untapped market
- Innovator must forecast an **‘economic impact’** – jobs, revenue and profit

# SMART CITIES COUNCIL

<https://smartcitiescouncil.com/member-levels/global-lead-partners>

## Lead Partners from Around the Globe



**AWS**  
Amazon Web Services (AWS)  
Worldwide Public Sector helps government, education, and nonprofit customers deploy cloud services to reduce costs,



**Pennoni**  
Pennoni continues to dedicate its services to smart and sustainable initiatives, ensuring our project choices and designs prioritize smart



**SUEZ**  
Our world is ever-changing – and with it, comes growing pains. A growing population means we're using more resources and leaving a bigger footprint on the environment.



### Current Lead Partners

- Accenture
- AWS
- Center for Innovative Technology (CIT)
- Cox Communications
- Crown Castle
- Johnson Controls
- Lendlease
- LVX Global
- Oracle
- Paradox Engineering
- Pennoni
- Sensus
- SUEZ
- Sylvania Connected Solutions SCS
- WeGO

# 5G THERMAL MPE LIMIT (MPEL)

The TERRA Act addresses bioeffects mainly above the thermal limit because:

- There is **NO** FCC dispute that this can and does happen
- Streamlines the process to justify an MPEL enforcement process to get **started – low hanging fruit**
- **The thermal limits are being exceeded and granted approval to do so by FCC waivers for consumer devices used close to the body – how would you know?**
- **THERMAL HEATING IS OFTEN ACUTE AND IMMEDIATE--  
NEXT PHASE TO IMPLEMENT 60 GHz**

# NHF 5G CAMPAIGN

## Enforce & Mitigate 5G Wireless Broadband Emissions

The TERRA ACT is a federal regulatory bill with 4 parts:

Track, Enforce, Reduce and Educate/train

### ENFORCE THE MPEL (Maximum Permissible Exposure Limits per 47 CFR 1.1310e(1))

- ✓ Legislative control plan to Track, Enforce and Reduce Radiation in Air
- ✓ Holds Communications Technology (CT) industry accountable for their contribution to green house gas (GHG) production and RFR overexposures
- ✓ Reduces power consumption and RFR thru regulatory mandates such as 47 USC 324 (*use minimum power needed for desired communication*) and requires hardwiring for fixed access points (*LIFT ACT?*)
- ✓ Direct correlation to the amount of RFR emissions and the power levels consumed and CO2 GHGs
- ✓ Safety training made publicly available to schools and employers on best practices for digital device use

### OTHER MITIGATION MEASURES TO REDUCE EMFs

- Sufficient curb set backs
- White space wireless free zones
- Wired broadband instead of wireless where feasible as “least intrusive method” and for fixed point access
- Tracked community EMF measurements made publically available
- **Legislatively reduce the MPEL to consider non-thermal bioeffects (indirect approach to this aspect)**
- Fund continuous safety medical research as new tech evolves

# NHF 5G CAMPAIGN

Enforce & Mitigate 5G Wireless Broadband Emissions

## The TERRA Act of 2021 is supportive of a lowered MPEL and :

- It is not inextricably intertwined with that outcome but **can help right now!**
- It can happen independently before or after any FCC decision is made to lower the MPEL to augment changed FCC Rules and be ready to **provide metrics on MPEL compliance**
- It will enable overall lower RFR **by removing the FCC 'honor system' of MPEL enforcement** which can routinely permit the MPEL to be exceeded without penalty or remedy
- It will enable overall lower RFR by addressing the large 5G power consumption and CO2 green house gas (GHG) emissions footprints it uses which largely go unnoticed, unabated and unaddressed by Congress. **Don't ask, don't tell!**
- It will enable overall lower RFR by recommending that telecoms must do their part to mitigate their contributions to the fossil fuel based GHG emissions and should no longer be exempt from getting a free pass because **5G is an energy hog!**
- It will request removal of **inconsistencies in federal public policies** with the Paris Accords regarding how to control the GHGs emissions and the telecom industry's contribution to it
- Both energy efficiency and consumption and infrastructure consolidation have to be incorporated into any future telecom wireless infrastructure design to mitigate long term health and environmental deep impacts – **time is up!**

# 5G Frequency Bands

## Frequency bands for 5G:

- **Low Band**            400 - 1000 MHz (Mainly AT&T 4G LTE/5G)
  - **Mid Band**            2500 - 6000 MHz (sub 6 Wi-Fi typically at 2.45/ 5.0 GHz)
  - **High Band**            Anything above 6 GHz (Wi-Fi typically at 60 GHz) mmWave starts at 30 GHz
- 
- **Example:** An example of a mmWave high band antenna system is the Active Denial System (approximately 95 GHz) used for crowd control  
<https://jnlwp.defense.gov/About/Frequently-Asked-Questions/Active-Denial-System-FAQs>
  - **5G Tutorial:** How exactly does 5G Work by Engadget  
<https://www.youtube.com/watch?v=9EgXz1CEfQw&feature=youtu.be&t=904>



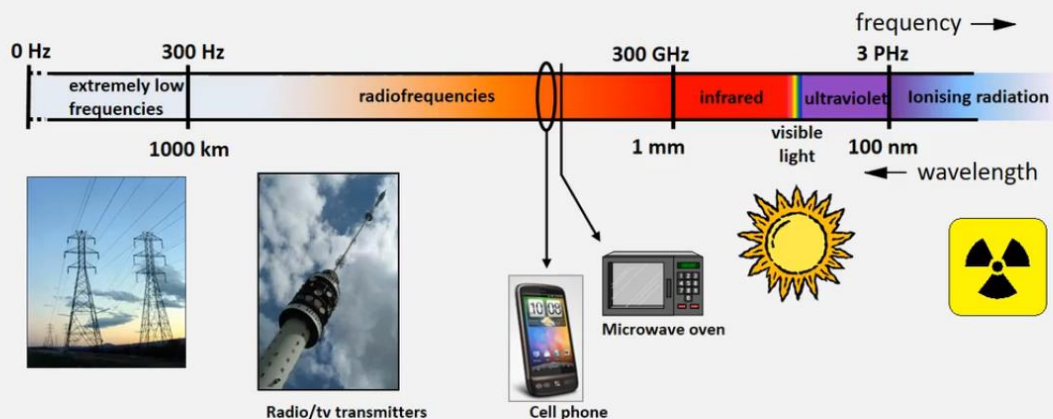
# ICNIRP MPEL GUIDELINES

<https://www.icnirp.org/en/activities/news/news-article/rf-guidelines-2020-published.html>



## Purpose of the guidelines

- To protect people exposed to radiofrequency electromagnetic fields in the range 100 kHz to 300 GHz



# 5G Power Consumption

- 5G uses 3.5 times more fossil fuel based power for 5G base stations than for 4G base stations (more antennas, more power, more transmitting with IOT data)
- The Communications Technology (CT) industry is poised to consume 51% of the world's energy and produce 23 % of all GHG emissions by 2030 thereby jeopardizing our net carbon zero US national objectives with the Paris Accord. (Huawei 5G Power White Paper here: <https://carrier.huawei.com/~media/CNMG/Downloads/Spotlight/5g/5G-Power-White-Paper-en.pdf>)
- The CT industry gets a free pass on how they damage the environment, nature and our health while other industries are fined or have to set aside land for CO2 sequestration/reforestation
- There are inconsistent federal public policies in the area of carbon emissions produced by the CT industry. A high level initiative is underway in 2021 to bring them into alignment. Tasked to do this is the **National Climate Change Task Force** consisting of 21 federal agencies and headed by former EPA Administrator, Gina McCarthy, now National Climate Advisor. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/18/readout-of-the-second-national-climate-task-force-meeting/>
- Proposed TERRA Act of 2021 will bring these GHG emissions federal policies into alignment with other federal policies and address some pivotal RFR safety enforcement concerns that have been neglected for the past 20 years

# MPEL SOFTWARE AND HARDWARE

**TERRA Act of 2021 proposes to:**

**Add software to monitor the power inside and MPEL outside (*WaveControl*)**

- Example is a propriety software made by Israeli company to enforce the MPEL
- MPEL software currently used in Israel for past 10 years
- It uses a system that monitors all the towers 24/7 by connecting to the computers of the cell tower companies' monitoring system and transmits to EPA
- Each tower is **assigned an emissions permit** and entered into the tracking system
- Emissions are also monitored 24/7 in the field with solar sensor stations near cell towers where there is a specific concern and is available to view on Israeli EPA website here:  
<http://www.monitem.co.il/gmap/index.html>
- *WaveControl* Capability: Broadband measurement range is **up to 3 kHz in LF and 60 GHz in HF**
- Can log and probably adjudicate permit violations using an optional feature for an online remote control management system wireless interface

# WaveControl Sensor Stations

[https://www.wavecontrol.com/rfsafety/images/data-sheets/en/MonitEM\\_Datasheet\\_EN.pdf](https://www.wavecontrol.com/rfsafety/images/data-sheets/en/MonitEM_Datasheet_EN.pdf)

WAVE GUARD ([waveguardtechnologies.com](http://waveguardtechnologies.com))

## MonitEM

### Continuous measurement of electromagnetic fields

A permanent monitoring system that allows on-going scrutiny of the emission levels of any source of electromagnetic radiation (mobile telephone antennas, WiFi, high-voltage power lines, etc.) and verification that they meet the safety standards established by the competent authorities and regulations in each country. The measurements taken can be published via the Internet to the different stakeholder communities.



Compliance with ITU K.83



**CONTINUOUS MONITORING (24/365)**  
of electromagnetic fields in specific locations (cities, schools, hospitals, etc.).

**BROADBAND MEASUREMENT**  
that allows economies of scale in deployment of monitoring networks to cover large areas.

**CONTROL CENTRE**  
with web interface for remote management of monitoring stations and display of electromagnetic field levels on any computer with Internet connection.

**EASY TO INSTALL**  
anywhere. Autonomy ensured by solar power supply and wireless communication.

**RESISTANT TO HARSH WEATHER CONDITIONS**  
thanks to IP66 protective casing, making it resistant to heavy rainfall, high temperatures, dust, etc.

**COMPLIES WITH ITU-T K.83 RECOMMENDATION**  
which specifies standards for implementation of networks for continuous measurement of electromagnetic emissions.

# WaveControl Sensor Stations

MonitEM Applications. Measurement of EMF radiation in:



Industry



Telecommunications



Powerline



Defense



Medical

## HOW DOES IT WORK?



Emission Source



MonitEM



Online Control Centre



## Technical Specifications

<b>Sensor type</b>	Isotropic, RMS. Simultaneous 3-axis measurement
<b>Probe system</b>	Interchangeable, 10 Hz to 60 GHz
<b>Sampling frequency</b>	500 ms
<b>Averaging</b>	Custom sliding window (Default: 6 minutes)
<b>Data retention period</b>	Online: from 1 to 60 minutes Offline: configurable from 1 second to 60 minutes
<b>Memory</b>	Eeprom + MicroSD
<b>Wireless communications</b>	GPRS/3G Modem radiation rejection
<b>Programmable alarms</b>	Field level, low battery, hibernation, opening, calibration, communication error, probe error, temperature
<b>Operating log</b>	Temperature, communications, power supply, operating modes, etc.
<b>Power supply</b>	3 models: MonitEM Solar: Solar + battery MonitEM AC: 110-220V (50-60 Hz) MonitEM Hybrid: Solar + battery + AC
<b>Battery life</b>	> 10 days (without sun)

## Control centre (Optional)

<b>Platform</b>	On a server with Internet access
<b>Administration interface</b>	Web browser
<b>Public interface</b>	Web browser
<b>Alarms</b>	Receives and manages alarms from installed MonitEM units
<b>Customization</b>	Language, client's logo, general information
<b>Reports</b>	Automatic PDF, CSV reports sent by e-mail
<b>Compatibility</b>	Management of data from MonitEM units and portable SMP2 device

## Additional services

**Hosted Control Centre:**  
Eliminate infrastructure and server costs by using Wavecontrol's cloud server

**Warranty extension:**

# EPA RFR Sampling Stations

<http://www.monitem.co.il/gmap/index.html>

**Radio Frequency Monitoring System**  
*RF monitoring and positioning system*

המשרד להגנת הסביבה

Beer Sheva  
Beer Sheva - Hatikva 4

GPS Position: Lat: 31.246012  
Lon: 34.799382

Measurement period:  
Initial date: 28/10/2013  
Final date: --

List of sites

Map Satellite

Google

Keyboard shortcuts | Imagery ©2021 TerraMetrics | 50 km | Terms of Use

● Active sites | ● Inactive sites | ● Sites above limit

Measurement data  
Period: 15/06/2021 - 22/06/2021

Select time period for getting graphical results

[Last week]  
[Last month]

From: 15 / 06 / 2021  
Until: 22 / 06 / 2021

Get data

Frequency: | Standard limit: 0  
Maximum: 0  
Average: 0

Graph showing measurement data for the period 15/06/2021 - 22/06/2021. The y-axis ranges from 0 to 1.0. The data shows a constant value of 0.0, indicated by a red line at the bottom of the graph.

# MPEL NATIONAL DATABASE

**TERRA Act of 2021 proposes to:**

**Add a Radiofrequency Radiation (RFR) National Public Database (to amend the Communications Act of 1934!!!)**

- Mandates that the MPEL be measured at all FCC tower sites

**SEC. 2 ADDS: Radiofrequency Radiation National Public Database. WOW!!!!**

**Adds a new Section 344 to 47 USC 301 et seq.** or Part I of title III of the Communications Act of 1934

- Creates an online, public safety info database, EPA does all the post construction audits to ensure accuracy
- Hot spots in the country identified and prioritized for RF mitigation
- RF mapping for problem areas similar to Israeli mapping system example
- Procedures are consistent with what is done with other air pollutants such as VOC's
- Pubic Zoom training made available for government officials, businesses and schools on how to reduce RFR and improve wireless safety

# TERRA ACT – WHAT IT DOES

Implements a process for reviewing and updating the maximum permissible exposure limits (MPEL) for non-ionizing radiation.

Develops and deploys a robust automatic tracking system to enforce the MPEL.

**Requests** restructuring the regulatory and oversight roles of the Federal Communications Commission (FCC) to be transferred back to the Environmental Protection Agency (EPA) and requests the National Academy of Sciences for the advisory medical and health research roles instead of the Federal Drug Administration (FDA).

Implements radiofrequency radiation (RFR) mitigation measures to reduce background levels of radiation:

1. Use fiber optic cable as the preferred method of broadband connections, including in rural use cases.
2. Reduce power consumption by using the minimum power necessary for communications desired.

Reduces greenhouse gas (GHG) emissions through RFR mitigation measures or changing the fuel sources for the Communications Technology (CT) Industry.

Requires fuses to be installed to automatically limit power in strategic areas; schools, public buildings, neighborhoods, and higher density urban areas.

Establishes state managed wifi-free zones similar to non-smoking zones in schools and public buildings.



# 2019 Swiss Re 5G Risk Assessment

- Vulnerable to **hacking** by third parties, but also potential breaches from built-in hard- or software “backdoors”
- 5G has **more attack surfaces** and volumes of data can be stolen in a much shorter time due to data capacity/latency
- 5G requires **acceptance of higher levels** of electromagnetic radiation
- **MPEL increases allowed by ‘legal adaptation’ or waivers in certain jurisdictions- by FCC waivers aka Amazon and Google**
- **Rubber meets the road: Increase in liability claims (already seeing this in year 3 of the 5G accelerated deployment)**

# 2019 Swiss Re 5G Risk Assessment

- Cyber exposures are significantly increased with 5G, as attacks become faster and higher in volume. **This increases the challenge of defense.**
- Growing concerns of the health implications of 5G **may lead to political friction** and delay of implementation, and to liability claims. The introductions of 3G and 4G faced similar challenges.
- Information **security and national sovereignty concerns** might delay implementation of 5G further, increasing uncertainty for planning authorities, investors, tech companies and insurers.
- Heated international dispute over 5G contractors and potential for **espionage or sabotage could affect international cooperation**, and impact financial markets negatively.
- As the biological effects of EMF in general and 5G in particular are still being debated, **potential claims for health impairments may come with a long latency.**

<https://www.swissre.com/institute/research/sonar/sonar2019/SONAR2019-off-the-leash.html>

# TERRA ACT - REASONS WHY

## WHAT IS MISSING FROM CURRENT RF SAFETY PROTOCOLS?

- **No wireless safety testing** has been required for telecom mmWave and sub-mmWave frequency deployments, therefore, 5G+ small cell infrastructure installations have not been proven safe.
- **Zero dollars for RF safety** has been appropriated by Congress for product testing and wireless safety improvements that are needed to protect the general population.
- **There is no FCC science-based MPEL** decision making or review process process that exists to routinely revise the MPEL for technology and science research updates because FDA no longer has the capacity or capability, personnel or expertise, etc., to carry out these functions.
- **There is no MPEL tracking and enforcement process** for the general population like every other major type of air pollutant currently has. Therefore, it is not known if/when the power levels and RFR emissions are exceeded to ensure thermal heating of tissue does not occur.
- **No RF mitigation measures are required to reduce the overall levels of background RFR** to avert biological harms, environmental damages and excessive CO2 emissions that can easily occur below the MPEL.
- **The CT industry does not have or want any 5G+ performance metrics gathered on themselves** that are made public and transparent to inform consumers on RF safety for their digital devices.

# TERRA ACT - REASONS WHY

## WHY DO WE NEED TO MEASURE AND REDUCE RFR?

- **Excessive RF Power Levels Without MPEL Regulation**
- 5G+ will exceed regulated power limits and the MPEL in certain jurisdictions and will have to be legislatively adopted
- **5G+ base stations are an energy hog** requiring at least 3.5 times more power than 4G base stations
- CT industry will be using 51% of global electricity by 2030
- **5G+ network testing and regulating power levels to improve public safety is by-passed** by industry thereby greatly increasing the risk and impact of harm that is passed on to the uninformed consumer

# TERRA ACT - REASONS WHY

## Greenhouse Gas (GHG) Emissions will Rapidly Increase Without Regulation

Total deregulation jeopardizes 2030 [net carbon zero objectives](#)

No federal mandate to reduce CO2 GHG from CT industry, however, CT industry will be releasing 23% of global CO2 GHG

GHG federal policies are inconsistent for telecoms and the Nation Task Force on Climate Change

Telecoms not accountable or required to mitigate their GHG emissions, [pay for their pollution](#), contribute to national 2030 net carbon zero goals

Reducing power consumption and RFR will lower GHG as will changing the fuel source for the telecom CT industry to a non-petro source

# TERRA ACT- REASONS WHY

## National Cyber Security Vulnerabilities

Power grid integrity is made vulnerable when 5G+ transmitters are hung on power lines

Cyber security will remain deficient with wireless 5G+ due to the sheer volume of IoT devices and towers that will be linked to the grid which increases the likelihood of being hacked

Data privacy can be unknowingly breached with [mesh and RFID networks](#) that can [syphon important data](#) from any wireless devices jeopardizing personal and proprietary data

5G+ system network frequency bandwidths will be shared with the [Department of Defense](#) and near band spectrum may be auctioned close to DoD's military frequencies [creating unanticipated interferences with astronomical research and weather predictions](#)

5G satellites can easily be knocked out of orbit by [satellite collisions](#) and requires more hard wiring interfaces to reduce this threat

# TERRA ACT- REASONS WHY

## Legal Issues and Public Policy

**Total deregulation violates** FCC's purpose to promote safety of life and property ([47 USC 151](#)).

**There is no strategic balance between regulated and unregulated** federal policy on 5G+ expansion which makes 5G+ networks unsafe

**FCC does not enforce an MPEL penal system** for those telecoms that violate the MPEL and knowingly endanger the general population

**It can be a breach of [fiduciary duty under 'loco parentis'](#)** for any public school administration to not protect students from the bioeffects of wifi and endanger their health and well being while at school

**Telecom industry is not insurable** and does nothing to attenuate the [high risk/high impact](#) for safety concerns due to RFR (see page 29 in link) - also see [here](#)

**Penal and criminal codes for assault and battery may apply** to certain frequency signals that penetrate the skin such as 6 Ghz which can penetrate the skin 8.1mm and cause biological harm

**Electrohypersensitivity (EHS) is [disability that is recognized by the US Access Board](#)**, but is difficult to get enforcement by public officials in most public settings/meetings/buildings

**[ADA accommodations](#) to avoid RF towers in front of your house is not being recognized** easily in the judicial court system in violation of the ADA federal policy that was made to protect the disabled

# TERRA ACT- REASONS WHY

## No Consumer Protections

[5G+ devalues property up to 20%](#) if a wireless transmission facility is placed in a right of way

5G+ violates property rights because owners cannot opt-out  
5G+ expansion violates privacy rights by commercial data syphoning and data mining

There is no requirement for safety testing of 5G+ prior to deployment

No informed consent - unauthorized massive human experimentation

[Social Equity Scoring](#) being developed by NGO's

Industry passes the risk of physical harm to the uninformed consumer instead of testing and regulating to improve public safety



# TERRA ACT- REASONS WHY

## Health Issues Due to Background RFR Increases

Children are endangered the most by CT industry deregulation. Signal penetration from wireless devices travels deeper into a child's thinner skull and "they can absorb up to ten times more radiation in the bone marrow of their skulls than adults"

Schools are rapidly installing wireless towers on their properties for profit and using wifi routers while endangering the safety of children who are in close proximity during the school days.

Personal injuries due to thermal heating will be more common

Electromagnetic Hypersensitivity Is not nationally recognized as a disability that is automatically eligible for accommodations with respect to 5G+

FCC and the federal government and therefore local municipalities do not permit health exemptions for averting 5G+ installations in front of their houses which violates the Americans Disabilities Act

Transfer of government officials' power to NGO's is not in public's best interest

There is no protective consumer education or obvious notice from wireless device manufacturers regarding the biological harms of RFR from WTF's and wireless devices

Transferred health liabilities from the CT industry to the end user violates consumer rights and the consumer does not have substantive recourse to recoup health financial losses from CT industry

# TERRA ACT NATIONAL REVIEW AND FEEDBACK

- Consider adding to petition for lowering the MPEL
- Consider modifying hardware to have a higher sampling rate per second
- Consider having more monitors closer to the area of concern (not placed on top of fences for instance)
- Consider automated software alerts when thresholds are exceeded, not manual as it is in described in other countries
- Must have legal language format, not informal (legislator comment)
- Model to use will be based on EPA's website for gamma radiation <https://www.epa.gov/radnet>

# TERRA ACT –THE WAY FORWARD

## THE WAY FORWARD

***Mandate a federal and state MPEL enforcement process.*** The FCC’s “honor system” used to suggest that ‘categorical exemptions’ **are a sufficient piecemeal review process for MPEL enforcement is obsolete for the beamforming technology used in 5G+ network systems and is no longer sufficient to promote the safety of the public and the environment.** A more scientifically objective and evidence-based method needs to be urgently implemented in-line with the 5G+ expansion using real time data gathering and automated MPEL violations reporting. This can be done by developing proprietary commercial software to **track** and/or control power consumption levels and archive the metrics generated to track the MPEL, reduce RFR and issue permit violations as required.

**The TERRA Act of 2021** cites the extreme impact this unregulated industry has on the environment - this time due to its significant contribution to GHG production and **poor air quality**. As a nation we now stand at a critical precipice to finally address the unabated proliferation of non-ionizing radiation pursuant to Section 1 of [Executive Order 13990](#), Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, issued January 20, 2021 under the Biden Administration. There is now a mandate to take action to resolve these inconsistent public policies.

# ACTIONS TO TAKE NOW!

- Join NHF campaign and send a letter to your state Senator and Congressman
- Go to [www.Virginiansforsafetech.org](http://www.Virginiansforsafetech.org) to sign our Stop 5G petition and/or become a subscriber.
- Set up meetings with your local government officials to see what the plans where there are small cells towers planned for your community.
- Form a 5G networking group and start thinking of legislation to propose to put some balance back in 5G regulation v. deregulation.

# FUTURE VA4ST PROJECTS

Virginia Department of Wildlife Resources Bird Death Mortality inquiry letter

- Multi-state (qty 8) problem in the US Mid-Atlantic area
- 3 bird death events since the summer of 2021
- Birds killed were mostly fledglings robins, starlings, greckles, blue jays

Virginia DOE Best Practices Health and Safety Guidelines for digital device use in the classroom implemented in VA via HB 817

- <https://lis.virginia.gov/cgi-bin/legp604.exe?201+sum+HB817> (HB 817)
- VA4ST takes a critical look at HB 817 Guidelines established after one year of 'study' that fails to protect children's health in the classroom with respect to RFR exposures [https://www.doe.virginia.gov/instruction/virtual\\_learning/digital-devices-guidelines.docx](https://www.doe.virginia.gov/instruction/virtual_learning/digital-devices-guidelines.docx)
- No science based evidence was provided to support many of the findings about laptop use and health
- Setting up meetings to discuss insufficient information for teachers and students to be adequately protected from RFR overexposures in the classrooms

# DRAFT VDWR LETTER

<https://dwr.virginia.gov/wildlife/diseases/2021-bird-mortality-event/>

VA Department of Wildlife Resources (VDWR)  
Dr. Megan Kirchgessner, Wildlife Veterinarian  
7870 Villa Park Drive,  
Suite 400 (Villa Park 3) (Headquarters)  
Henrico, VA 23228  
[megan.kirchgessner@dwr.virginia.gov](mailto:megan.kirchgessner@dwr.virginia.gov),  
804-837-5666

September 10, 2021

Dear Dr. Megan Kirchgessner:

Subject: Virginia DWR 2021 Bird Mortality Event in Northern/Northwestern VA  
<https://dwr.virginia.gov/wildlife/diseases/2021-bird-mortality-event/>

It has come to the attention of Virginians for Safe Technology (VA4ST), a Virginian based consumer advocacy group for safe and responsible technology, that there has recently been at least 3 bird mortality events since June 2021 in the general DC-MD-VA area and you are the designated point of contact in VA for this problem. The VA Department of Wildlife Resources' (VDWR) website shows information that the affected geographical areas where these sick birds have been identified are not localized, but also extended into at least 7 other neighboring or mid-Atlantic states such as Ohio, Kentucky, West Virginia, NJ, PA, Delaware and Indiana. In addition, VDWR's June 2021 report on the sick birds, described as fledgling common grackles, blue jays, European starlings, American robins and other species of songbirds, are said to have exhibited neurological signs and swollen eyes with a crusty