

resources within the United States had been utilized to engage in what was essentially political espionage.

Since the late 1970s when the Church Committee issued its report, we have had exponential growth in the ability of government and the ability of everyone else, for that matter, to obtain and process data and information. In most ways, it has been a real blessing. It is a great thing.

It is also important for us to keep in mind the extent to which our papers and effects are no longer found exclusively within physical file cabinet files within someone's home or office. In many instances, they can be found elsewhere in electronic form.

Our security and our liberty need not and ought never to be viewed as irreconcilably at odds with each other. Many civil liberties and privacy experts joined together in an effort known as the PCLOB a few years ago—the Privacy and Civil Liberties Oversight Board—and concluded a few years ago that our privacy and our liberty are not at odds with each other. In fact, our privacy is part of our liberty. We are not truly free unless our personal effects and our private information can belong to us and not simply be open game for the government.

It is sad and tragic that in order for this to come to light, it took an assault on freedom so bold and so shameless as to loop in the President of the United States. With this and other revelations that have come to light in recent days and weeks and months and over the last few years, we can't forget that these entities are still run by human beings with their own political views, with their own agendas. And in some cases, unfortunately—rare cases, I hope—people who are charged with protecting the people and their liberty may in some cases be inclined to be at odds with it.

It is unfortunate that the 45th President of the United States has had, quite tragically, to become the victim of this. But I ask the question, what if your information were on the line? What if you had been targeted—maybe for political reasons, maybe for reasons that had nothing to do with politics, maybe for reasons that just had to deal with a personal vendetta someone had against any American. It is far less likely that the abuse would ever have come to light.

In this circumstance, it did come to light. We can't ignore it, nor can we pretend that it couldn't happen to any one of us—and I don't mean as Members of the U.S. Senate; I just mean as Americans. In fact, each and every one of us is less capable of standing up to this and less likely to discover the abuse in the first instance. Not all of us happen to be the President of the United States.

I am grateful that President Donald J. Trump has been willing to speak truth to power and has been willing to call out the flagrant abuse of FISA and of other procedures within the govern-

ment. It is our obligation, it is our solemn duty, and it is my pleasure to do something about it. The Lee-Leahy amendment does something about it, and I invite all of my colleagues to join me in supporting it.

I suggest the absence of a quorum. The PRESIDING OFFICER. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. INHOFE. Madam President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER (Mrs. HYDE-SMITH). Without objection, it is so ordered.

Mr. INHOFE. Madam President, I ask unanimous consent that I use whatever time I shall consume.

The PRESIDING OFFICER. Without objection, it is so ordered.

#### FEDERAL COMMUNICATIONS COMMISSION

Mr. INHOFE. Madam President, by now, I think people are pretty much aware of something that happened about 2 weeks ago—an FCC approval of an application that was very, very significant. Yet not many people knew that it was going on.

I think by now it shouldn't be a surprise to anyone that I oppose this decision by the Federal Communications Commission to approve an application by Ligado Networks. Ligado's plan would use Federal spectrum in a way that will interfere with GPS and satellite communications, and despite near-unanimous objection from the rest of the Federal Government, the Federal Communications Commission has just said OK.

I said "near-unanimous." It was nearly unanimous. A week before the decision was made by the FCC, they sent a letter outlining all of the reasons that everyone should be opposed to the application made by Ligado to the FCC. Their statement was that Ligado's proposal is not feasible, affordable, or technically executable. It goes on to say how destructive this would be, how the whole country uses this GPS, and how this would alter the GPS system so that it no longer could be used with predictability.

When I say "nearly everyone," it is not "nearly"; it is everyone objected to it. I have never seen anything like this happen, to have something approved that was objected to by all of government. This letter objecting to this was signed by the Department of the Army, the Department of the Navy, the Department of Commerce, NASA, the Department of the Interior, the Department of Justice, the Department of Homeland Security, the Department of Energy, the National Science Foundation, the Department of Transportation, the U.S. Coast Guard, and the Federal Aviation Administration. That is everybody. I have never seen anything that has ever had that unanimity in being objected to. For that reason, it was never approved until April 20 by the Federal Communications Commission.

The GPS and satellite communication functions support everything: equipment that our troops use in the field, navigation for first responders, airlines—that is how airplanes keep from running into each other; they use GPS—cell phones, and ATMs. The list goes on and on.

Simply put, the FCC is jeopardizing GPS signals that Americans rely on every day. I chair the Senate Armed Services Committee. When you are conducting warfare, you are using GPS. You use GPS every day. Simply put, the FCC is jeopardizing GPS signals that we rely on for both our national and economic security for the benefit of just one company and its hedge fund investors.

Ligado may be a new name, but the problem goes back a decade, when LightSquared was created in a hedge fund deal worth \$5.3 billion. The investors put billions on the table, and the only way to get a return was to repurpose LightSquared's satellite spectrum for the terrestrial cell phone network.

In 2011, when LightSquared asked the FCC for permission to do just that, GPS and satellite communication users strongly objected due to the interference with the GPS signal. That is the problem. The signal is in the same area that purchase took place by a company at that time named LightSquared. Federal agencies like the Department of Defense, the Department of Transportation, and the National Telecommunications and Information Administration echoed these concerns.

In 2012, after it was clear that there was no way to mitigate the GPS interference in their proposal, LightSquared declared bankruptcy, so it was gone.

Years later, LightSquared got enough new Wall Street hedge fund money to emerge from bankruptcy and be renamed "Ligado" and again pushed for repurpose of the satellite spectrum for its network. That is exactly the thing that the predecessor company tried to do for a long period of time, and they were denied, and they were justly denied. They shouldn't have been able to do that.

There was never any idea that an application by an operation like this would be acceptable. After extensive testing and analysis, experts at nine Federal agencies have unanimously concluded that Ligado's proposal, even with updates, will still interfere with GPS signals and satellite communications. That is the one I just read. They were unanimous in doing this. Of course, we read the names of the agencies that were involved. This is something everyone agreed with. We can't find anyone who disagreed with it except Ligado itself—the ones who would end up with a lot of billions of dollars, and I am not sure where it would go.

They rely on GPS for navigation, logistics, and precision-guided missiles in training and on the battlefield. But at the end of the day, this is about much more than risking our military

readiness and capabilities. Ligado's proposal will hurt the American economy. Our farmers rely on GPS to harvest their crops. Our truckers and our airlines rely on GPS to move supplies and people safely. Our maritime industry depends on GPS to place channel markings. Weather forecasting relies on satellite communications to save lives and property when tornadoes and hurricanes and floods strike our communities. I am from Oklahoma. We know what hurricanes are. In fact, we were in our basement two times in 1 day about a month ago with those threats. That is how you determine where they are and how serious they are, and it saves lives.

The FCC—Federal Communications Commission—has put all of this at risk by approving Ligado's application. There wasn't a lot of opposition out there talking about it because they had not been approved for a number of years. It has never been approved before. And all of that was now at risk, just as of a week ago.

This is a complex issue. Here is an easy way to think about how Ligado's network would interfere with our GPS signals. "Once Ligado turns its service on, it will be like trying to hear leaves rustling over the roar of 100 jet engines." This is according to Under Secretary of Defense for Research and Engineering, Dr. Michael Griffin, an expert in this field.

The FCC has included certain mitigation measures in approving Ligado's application, but these are fundamentally flawed in every practical sense. They would make Ligado the fox guarding the henhouse. How can Ligado be impartial in deciding whether its own system is causing interference? It is not going to happen, and everybody knows that. Ultimately, the taxpayer and consumer will be left to pay to fix the interference. Ultimately, the people of America will end up paying for this.

What I am most upset about is the failure in the process behind this decision. A few people made a hasty decision over the weekend. Keep in mind, it was in the middle of the national crisis. We have a national crisis. Everybody knows that is going on right now. Everyone is having to live differently than they have ever lived before, so people are concentrating on that. No one was looking.

It was against the judgment of a unanimous conclusion by the Interdepartment Radio Advisory Committee, which included nine Federal agencies, as well as private sector stakeholders dependent on GPS and satellite communications.

As far as I can tell, this is the first time that the FCC made a decision over the weekend, completely discounting the universal opposition to the proposal. A week before this decision was made, it was universal. They decided—and this is a group in the hearing that we had—we had really talented people there, scientists, making

all of the decisions. They talked about how the decision was made over a weekend, during a national crisis we were dealing with, and on a Sunday. I went back and checked, and we could not find any time a decision that was made by the FCC on a Sunday or on a weekend. They don't do that on weekends.

On top of that, this decision was opposed by everybody in a letter they received a week before.

Just look in the Wall Street Journal. Mark Esper is the Secretary of Defense. Mark Esper had an article there that said.

The FCC has set conditions to ensure GPS won't be affected. Don't be fooled.

It would be affected.

Independent testing and analysis conducted by nine federal departments and agencies show that allowing the Ligado's proposed system—including its proposed modifications—to operate in close proximity to the GPS spectrum would cause harmful interference to millions of GPS receivers across the United States.

Actually, the band that is used for GPS is called the L band. It gets a little bit complicated. The area that people are concerned about, and that the Ligado is trying to say they are correcting, was an area that was in a different band all together. I think it was the C band and the S band.

I think this is the first time a decision has ever been made—even discounting the universal opposition who oppose it—in response to this unprecedented and unwise decision. I am leading a letter to the FCC outlining critical national security concerns and urging the FCC to rescind the order.

Mr. President, I ask unanimous consent that the letters by the NTIA be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

APRIL 10, 2020.

Re Ligado Networks LLC, License Modification Applications (as amended), IBFS File Nos. SAT-MOD-20151231-00090, SAT-MOD-20151231-00091, and SESMOD20151231-00981; SES-AMD-20180531-00856, SAT-AMD-20180531-00044, SAT-AMD-20180531-00045 (IB Docket Nos. 11-109 and 12-340).

Hon. AJIT PAI,  
*Chairman, Federal Communications Commission, Washington, DC.*

DEAR CHAIRMAN PAI: On behalf of the executive branch, the National Telecommunications and Information Administration (NTIA) submits the enclosed supplemental materials for consideration by the Federal Communications Commission (Commission) regarding the above-referenced license modification applications of Ligado Networks (Ligado), as amended. This letter and its enclosures are provided for inclusion in the record of the application proceedings, supplementing my letter to you dated December 6, 2019, in which I indicated that NTIA was "unable to recommend the Commission's approval of the Ligado applications."

I enclose a letter from the Deputy Secretary of Defense to the Secretary of Commerce dated March 24, 2020. In the letter, the Deputy Secretary, citing 10 USC §2281, states that "approval of the Ligado application

would adversely affect the military potential of GPS and the Department of Defense is strongly opposed." "After reviewing the existing public record of the Ligado proceeding," he continues, "I believe the information Air Force has submitted to the IRAC would be of significant value to the FCC in making its decision regarding Ligado's license modification application. I therefore request that you have NTIA communicate this additional information to the FCC expeditiously to be put on the public record." I received a similar and consistent letter from senior officials of the Department of Defense on March 12, 2020.

The letters refer to the enclosed memorandum from the Air Force—joined by several executive branch departments and agencies—providing supplemental information to the Interdepartment Radio Advisory Committee (IRAC) that detailed numerous expected impacts Ligado's proposed license modifications would cause. The memorandum concluded that Ligado's modifications "would cause unacceptable operational impacts . . . and adversely affect the military potential of GPS," and further noted that "Ligado's proposed accommodations of identifying and then repairing or replacing potentially-impacted legacy equipment is not feasible, affordable or technically executable."

NTIA notes that in a 2011 Order and Authorization, the Commission's International Bureau declared that its processes for authorizing then-LightSquared to commence commercial operations on its MSS L-band frequencies would be complete only "once the Commission, after consultation with NTIA, concludes that the harmful interference concerns have been resolved." We believe the Commission cannot reasonably reach such a conclusion.

Should you have any questions about this submission, please do not hesitate to contact me.

Sincerely,

DOUGLAS W. KINKOPH,

*Associate Administrator,*

*Performing the Delegated Duties of the Assistant Secretary for Communications and Information.*

DEPUTY SECRETARY OF DEFENSE,

*Washington, DC, March 24, 2020.*

Hon. WILBUR L. ROSS, JR.,  
*Secretary of Commerce,*  
*Washington, DC.*

DEAR MR. SECRETARY: On December 6, 2019, the Acting Assistant Secretary of Commerce for Communications and Information and Administrator of the National Telecommunications and Information Administration (NTIA) sent a letter, on behalf of the Executive Branch, to the Chairman of the Federal Communications Commission (FCC) recommending rejection of the license modification request of Ligado Networks. The Air Force, on behalf of DoD and endorsed by the interagency, has provided additional supplemental information to the Chairman of the Interdepartment Radio Advisory Committee (IRAC) on expected national security and defense impacts to Global Positioning System (GPS) operations if the proposed license modification request were granted. I request this additional information be transmitted by NTIA to the FCC for inclusion in the public record of the Ligado proceeding (FCC International Bureau Docket Numbers 11-109 and 12-340).

Per 10 U.S.C. 2281, the Secretary of Defense "may not agree to any restriction on the GPS proposed by the head of a department or agency of the United States outside DoD that would adversely affect the military potential of GPS." Approval of the Ligado application would adversely affect the military

potential of GPS and the Department of Defense is strongly opposed. After reviewing the existing public record of the Ligado proceeding, I believe the information Air Force has submitted to the IRAC would be of significant value to the FCC in making its decision regarding Ligado's license modification application. I therefore request that you have NTIA communicate this additional information to the FCC expeditiously to be put on the public record.

I have consulted with my Chief Technical Officer and Chief Information Officer and both agree.

Your personal attention to this matter would be greatly appreciated.

Sincerely,

DAVID L. NORQUIST.

OFFICE OF THE SECRETARY OF DEFENSE,

Washington, DC, March 12, 2020.

DOUGLAS W. KINKOPH,

*Associate Administrator, Office of Telecommunications and Information Applications, Performing the non-exclusive functions and duties of the Assistant Secretary of Commerce for Communications and Information, National Telecommunications and Information Administration, U.S. Department of Commerce, Washington, DC.*

DEAR MR. KINKOPH: On December 6, 2019, you sent a letter on behalf of the Executive Branch, to the Chairman of the Federal Communications Commission (FCC) stating that the National Telecommunications and Information Administration (NTIA) is unable to recommend the Commission's approval of the Ligado applications. The Air Force, the Executive Agent for the Department of Defense (DoD) for the Global Positioning System (GPS) and DoD's member of the Interdepartment Radio Advisory Committee (IRAC), has provided additional information to the Chair of the IRAC, endorsed by other interested agencies on expected national security and defense impacts to GPS operations if the proposed Ligado license modification request is granted by the FCC. The Department requests this additional information be transmitted to the FCC for inclusion into the public record of the Ligado proceeding (FCC International Bureau Docket Numbers 11–109 and 12–340).

Consistent with the authority delegated by the Secretary of Defense in DoD Directive 4650.05, "Positioning, Navigation, and Timing (PNT)", the undersigned agree with the enclosed memorandum for the IRAC Chair. Specifically, FCC approval of Ligado's license modification would cause unacceptable operational impacts and adversely affect the military potential of GPS. The Secretary of Defense, pursuant to 10 USC §2281, "may not agree to any restriction on the GPS System proposed by the head of a department or agency of the United States outside DoD that would adversely affect the military potential of GPS". After review of the public record of the Ligado proceeding, the Air Force's memorandum submitted to the IRAC Chair would be critical to the FCC in making its decision regarding Ligado's license modification application. The Department remains strongly opposed to the granting of the license modification sought by Ligado. Accordingly, the Department requests NTIA to provide this additional information to the FCC and that such information be expeditiously submitted in the public record.

Your personal attention to this matter would be greatly appreciated.

DANA DEASY,

*Department of Defense  
Chief Information  
Officer.*

MICHAEL GRIFFIN,

*Under Secretary of Defense for Research  
and Engineering.*

FEBRUARY 14, 2020.

Memorandum for IRAC Chairman

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION,  
U.S. Department of Commerce,  
Washington, DC.

The Air Force, in the exercise of the Department of Defense's (DoD) statutory duties under 10 U.S.C. §2281, and as the Executive Agent for the Global Positioning System (GPS), and in its role as a member of the National Telecommunication Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC), hereby submits supplemental information in support of the Department of Commerce National Telecommunications and Information Administration's letter to Federal Communications Commission (FCC) Chairman Ajit Pai of December 6, 2019. Specifically, this letter provides additional detail regarding the expected impacts on national security, operational impacts to the warfighter, and effects on the military potential of GPS by the proposed license modification sought by Ligado Networks (Ligado).

Extensive and technically rigorous testing and analysis conducted over the past nine years by DoD, the National Space-based Positioning, Navigation and Timing Systems Engineering Forum (NPEF), the Department and Transportation (DOT), and the Air Force has shown—and Ligado itself has conceded—that the proposed Ligado (previously LightSquared) license modification threatens disruption of the GPS, which is a critical National Security System. As such, the Secretary of Defense, pursuant to 10 U.S.C. §2281, "may not agree to any restriction on the GPS System proposed by the head of a department or agency of the United States outside DoD that would adversely affect the military potential of GPS." It is DoD's position that FCC approval of Ligado's license modification would cause unacceptable operational impacts to the warfighter and adversely affect the military potential of GPS by negatively impacting GPS receivers. Ligado's proposed accommodations of identifying and then repairing or replacing potentially-impacted legacy equipment is not feasible, affordable or technically executable given the vast number of systems implicated, including critical national security and weapon systems. Accordingly, DoD remains strongly opposed to granting the license modification sought by Ligado.

On December 6, 2019, the Acting Deputy Assistant Secretary of Commerce for Communications and Information and the Administrator of the NTIA sent a letter to the Chairman of the FCC indicating the executive branch could not support approval of the license modification request of Ligado. This decision was supported by recommendations by the National Space-based Positioning, Navigation, and Timing Executive Committee (PNT EXCOM) and by the June and November 2019 letters from the Secretary of Defense expressing strong opposition to the Ligado license modification request.

DoD is providing this supplemental information in support of the NTIA letter with specific focus on expected national security and defense impacts to GPS, including operational impacts to the warfighter, if the proposed license modification request were granted.

The Department is providing the following specific information in three categories: 1) national defense mission categories that would be negatively impacted; 2) cost and resource implications of identifying and repairing or replacing any potentially adversely affected GPS receivers supporting national defense missions; and 3) the time, disruption, and programmatic impact to

identify and repair or replace the potentially affected GPS receivers supporting national defense missions. Individually and collectively, each of these categories would adversely affect the national defense and security of the United States. It is the Department's position that there are no practical measures to meaningfully mitigate the impact of the proposed Ligado license modification.

The mitigation measures Ligado has proposed are impractical and un-executable in that they would shift the risk of interference to, and place enormous burdens on, agencies and other GPS users to monitor and report the interference. Moreover, Ligado's mitigation proposals would not protect the vast majority of GPS receivers, such as airborne uses, that are not restricted to specific defined areas of operation such as military installations. Ligado's proposal to replace government GPS receivers that are affected by its proposed network, is a tacit admission that there would be interference, and is further addressed below in terms of cost, operational and mission impact, and timelines to replace these receivers. Additionally, the mitigation proposal by Ligado, even if technically feasible, only covers those receivers owned by the government and would leave many high-value federal uses of civil GPS receivers not owned by the government, such as high precision receivers, vulnerable to interference, as Ligado has admitted in its filings.

#### EXPECTED OPERATIONAL AND MISSION IMPACTS

The U.S. National Security Strategy emphasizes the importance of maintaining leadership and freedom of action in space as a vital U.S. interest as well as responding to any interference to the Department's critical space capabilities. The National Defense Strategy stresses the importance of building a more lethal force and strengthening (interoperable) alliances and partnerships. GPS is one such space capability critical to the lethality of the Department's forces and around which, over the years, the Department has structured its weapons systems and business processes. GPS is widely and heavily integrated throughout DoD in operations and applications including, but not limited to, precision weapons, air, land, and sea navigation, communications and network synchronization, command and control, civil engineering, and surveillance applications. Given the sophistication, classification, and the nature of how GPS receivers are embedded into all aspects of DoD testing, training, exercise and operations, it would be practically impossible for DoD to identify and repair or replace all of the potentially adversely affected receivers. These are not simple "plug-n-play" devices but would require significant time and resources to effect software modifications, trial and testing, and validation. The Department simply cannot accept such negative operational and mission impacts to our warfighting capabilities. In addition, military GPS receivers are also used by Federal civil agencies, specifically the National Aeronautics and Space Administration (NASA), the Department of Homeland Security (DHS), and the Department of State through agreements with the DoD. For example, NASA uses high-precision military GPS receivers for their launch anomaly monitoring and destruct systems. DHS and the border patrol use military GPS receivers in unmanned aerial surveillance systems (UAS). In addition, some law enforcement and intelligence agencies use military GPS in their UAS. The State Department's diplomatic security service also uses military GPS receivers. It would be untenable for the United States to pursue an initiative that undermines these capabilities, and it would

be exceptionally detrimental to national security.

Ligado's proposal would have significant effect on legacy military receivers and civil receivers used by DoD.

**Legacy Military GPS Receivers:** Modernized GPS receivers cannot replace all military GPS receivers currently in use. Even after the transition to modernized military receivers is completed (by 2035 at the earliest), some high precision receivers would remain vulnerable to interference from the Ligado network transmissions. Remaining legacy military receivers are unable to lock onto weak signals and lack the anti-jam capabilities more typical of more modern military receivers. In addition to continued military use, other Federal agencies and many partner nations will continue to use these legacy high precision receivers. Even as the U.S. military transitions to modernized GPS receivers, it is unclear as to when, or if, legacy GPS high precision receivers used by other critical agencies will be modernized.

**Civil GPS Receivers Used by DoD:** DoD makes use of civil GPS receivers in non-combat environments, such as surveying, flight training, training, exercises, other national security events, and scientific applications. Like their civilian counterparts, DoD surveyors and construction units often rely on high-precision GPS receivers that are exceedingly sensitive to interference from signals at nearby frequencies. As analysis indicates, these high precision GPS receivers potentially could be adversely affected at significant distances from the Ligado-proposed terrestrial transmitters, which would negatively impact high precision receiver use in major military installations near urban areas of the United States. Ligado has admitted in its filings that there would be such interference. Additionally, both civilian and commercial applications for high precision wideband-GPS provide far-reaching benefits to the public interest, including capabilities that go beyond the PNT services for which it was originally developed. The great potential capabilities wideband GPS applications hold would also be the most susceptible to the adjacent band interference from Ligado's proposed network. Further, DoD uses civil and commercial infrastructure of many types on bases and test/training ranges domestically and abroad. To the extent that operation of commercial infrastructure is degraded by Ligado's proposed signals, DoD's use of electrical power, communications networks, operation of unmanned vehicles (including UAS), precision landings, helicopter operations, collection of location based services data, first responder applications, and other applications demanding high accuracy would be at increased risk.

#### COST AND RESOURCE IMPACT

By 2024, DoD will have invested more than \$15 billion taxpayer dollars since 2000 to sustain and modernize the GPS constellation and continue to modernize GPS user equipment integration across the force. As described earlier, almost every GPS receiver fielded throughout the DoD joint force potentially could be adversely affected if Ligado's proposal is approved. As indicated in the Fiscal Year 2020 President's Budget, DoD is currently planning to spend more than \$1.8 billion taxpayer dollars to procure, integrate and test modernized GPS receivers, from 2019–2024, into user platforms across the Services. The \$1.8 billion figure will grow to a total of approximately \$3.5 billion when all of the approximately 1 million GPS receivers currently in the DoD inventory are transitioned to modernized GPS receivers before 2035. This cost includes the integration of the receivers into each of thousands of different air, maritime, and ground vehicles, as well as weapons.

Regarding Ligado's proposal to identify and repair or replace potentially affected GPS receivers owned by the U.S. government, given the classified nature of the military use and the sheer number of platforms potentially affected, Ligado could not possibly know the magnitude of the problem or the costs and operational impacts relative to military receivers. To avoid an adverse effect to the Department's capabilities if Ligado's proposal were approved, DoD would need to undertake unprecedented accelerated testing, modification, and integration actions, which is cost- and schedule-prohibitive and would likely result in significantly degraded national security. For each integration, DoD would need to take the asset out of service, test the platform to ensure that the upgrade worked as planned and did not cause a negative impact to other parts of the weapons system prior to re-fielding. To be clear, every weapons system or platform in the DoD inventory must be tested as an integrated system and it would cause significant operational impact (including substantial re-testing) if modernized military GPS receivers require further modification. Adding such a requirement to mitigate the adverse effect to the military potential of GPS from this potential interference would be extremely difficult and likely cost prohibitive given current technology.

#### TIME REQUIRED TO REPLACE IMPACTED RECEIVERS

Modification or replacement of GPS receivers within DoD has historically taken approximately a decade due to the sheer receiver numbers, complications with how receivers are integrated in thousands of platforms and systems, depot and scheduling, and global operations. The first M-code capable receivers are now going through integration and testing and will begin installation in DoD platforms beginning in 2020. The full transition is not expected to be complete until at least 2035, based on past experience transitioning from first and second-generation GPS equipment to the present third generation. Any change to the requirements for these modernized receivers as a result of approving Ligado's proposed network and the need to mitigate the resultant interference would only extend that timeline, putting DoD forces and warfighting capabilities at risk due to the rapidly evolving threats.

It is therefore DoD's position that approval of Ligado's proposal would adversely affect the military potential of GPS significantly, based on the extensive testing done by DoD and others. Consistent with 10 U.S.C. §2281, DoD cannot accept this adverse impact to military use of GPS and the resultant negative operational impacts to our warfighting capabilities. Modification or replacement of GPS receivers across the force to avoid adverse impacts from such a proposal, even if a solution were shown to be feasible, could take on the order of billions of dollars and delay fielding of modified equipment needed to respond to rapidly evolving threats by decades.

In his June 7, 2019 letter to FCC Chairman Pai, Acting Secretary of Defense Shanahan stated there are too many unknowns and the risks are far too great to federal operations to allow Ligado's proposed system to proceed. We collectively agree with that assessment. Accordingly, the Department of Defense, pursuant to its statutory duties, restates its formal objection to Ligado's request for a license modification and, along with the below signatories, requests that it be rejected.

MS. THU LUU,  
Department of the Air Force,  
Executive Agent for GPS.

The undersigned IRAC agencies endorse and support the position stated by the Department of the Air Force and the Department of Defense:

Ms. Sarah Bauer, Department of the Army; Mr. Kenneth Willis, Department of the Navy; Mr. Ivan Navarro, Department of Commerce; Mr. Rene (RJ) Balanga, NASA; Mr. Ramon L. Gladden, Department of the Interior; Mr. Quan Vu, Department of Justice; Mr. John Cornicelli, Department of Homeland Security; Mr. George Dudley, Department of Energy; Mr. Jonathan Williams, National Science Foundation; Mr. James Arnold, Department of Transportation; Mr. Jerry Ulcek, U.S. Coast Guard; Mr. Michael Richmond, Federal Aviation Administration.

Mr. INHOFE. Mr. President, I ask unanimous consent that the FCC article in the Wall Street Journal be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the Wall Street Journal, May 5, 2020]

#### THE FCC'S DECISION PUTS GPS AT RISK

(By Mark Esper)

Every day, tens of millions of Americans rely on the Global Positioning System. We use it for location features in cellphones, navigation for vehicles and aircraft, and financial and commercial transactions, including ATM withdrawals. And every day, the Defense Department and our colleagues across government use GPS to protect and serve the public by coordinating global trade, banking and transportation, as well as tracking terrorists and other threats to U.S. national security.

A recent decision by the Federal Communications Commission, however, will degrade the effectiveness and reliability of this critical technology. On April 20, the FCC announced its approval of Ligado Networks' application to create a cellular network by repurposing a portion of radio spectrum adjacent to that used by GPS. The power and proximity of Ligado's ground emissions on this spectrum will drown out GPS's space-based signals. If you've ever tried to talk to a friend while standing next to the speakers at a rock concert, you get the point.

In announcing its recent decision, the FCC rehashed Ligado's old arguments, wrapped in new language, to say that the company has made changes and the FCC has set conditions to ensure GPS won't be affected. Don't be fooled. The sheer number of cases of interference combined with the difficulty of attribution will make enforcement nearly impossible, not to mention expensive.

Independent testing and analyses conducted by nine federal departments and agencies show that allowing Ligado's proposed system—including its proposed modifications—to operate in close proximity to the GPS spectrum would cause harmful interference to millions of GPS receivers across the U.S. The FCC's decision will disrupt the daily lives and commerce of millions of Americans and inject unacceptable risk into systems that are critical for emergency response, aviation and missile defense. Further, it will stunt innovation in GPS; people won't use the system if they can't depend on it everywhere, all the time. For these and many other reasons, 13 federal agencies, along with leaders from a range of industries, called on the FCC to deny the Ligado request.

Ligado claims it is the solution to America's 5G woes, but its proposed license modification isn't really about 5G. There is no evidence that the company has a technically viable 5G solution. This is about one company changing the rules to maximize the

value of its spectrum, and the cost to Americans is too great to justify.

The Defense Department recognizes that 5G technology is vital to maintaining America's strategic and economic advantage over its competitors. We strongly support President Trump's call for the U.S. private sector to lead the way, and we're moving quickly to develop opportunities to share midband spectrum, a finite resource. As demand outpaces supply, spectrum sharing holds the key to U.S. dominance in 5G. The Defense Department will dedicate millions of dollars to test 5G technologies at military bases, while promoting collaboration among government agencies, academia, and allied countries to advance a 5G solution.

We need a comprehensive, whole-of-nation approach to develop technologies that affect so many. Disregarding the concerns of industry and government—objections grounded in hard data—the FCC's Ligado decision is a shortsighted giveaway that will disrupt our way of life and potentially cost the American people billions of dollars.

The first and most sacred responsibility of government is to protect and defend its people. GPS allows us to pinpoint 911 calls, launch precision airstrikes, prepare our forces for combat, and otherwise act to safeguard health and well-being. Interfering with the accuracy and reliability of GPS risks the safety of the American people and undermines national and economic security. America deserves a better alternative.

Mr. INHOFE. We can't allow this to stand, and all of America agrees. In the last 3 weeks, stakeholders from across the country and across the economy have expressed their opposition to the FCC decision.

Not just the military, but all of government and the private sector—including airlines, pilots, farmers, truckers, marine manufacturers, conservationists, equipment manufacturers and distributors, road builders, weather forecasters, and GPS device makers—are opposed to the Ligado's application.

I know my colleagues here in the Senate have heard from all of these groups, representing jobs and Americans from every single State who use these GPS and satellite services every day. This has happened nationally. People realized, all of a sudden, that GPS would be affected by this.

I ask my colleagues to consider who supports the Ligado—hedge fund investors. No one is supporting it. It is my understanding, from talking to the people close to the FCC, that the FCC was expected to reject the Ligado proposal once and for all. They had already rejected it before. It has been there. The unanimous opposition from the interagency review committee was not surprising, but the final outcome was shocking.

With all of this opposition, how could the FCC decide, in the cover of darkness over a weekend, that the unanimous concern of GPS interference was worth the risk to support the investments of hedge fund investors? I can't figure out what happened, nor can the former FCC Commissioners. Why did the FCC change its course and in such a dramatic fashion? We may never know. But we do know that Ligado has spent \$1.3 million in just 2020. That is

the company that we are talking about. They have spent \$1.3 million on lobbyists trying to convince Congress that their proposal is a good idea.

This chart shows the list of all of the lobbyists that come up to \$1.38 million. Keep in mind that is just for 3 months. Over a period of a year, you can multiply that by four. Ligado is hiring whoever they can to convince you to support the hedge fund investors. That is one of the reasons I am talking about this today. I am not sure what form it will take to reverse this decision. People have to hear from people before they realize how bad this is.

When you have this many people—one of the individuals was a former chairman of the House Armed Services Committee and turned lobbyist. He is a guy who spent his career building the military. Obviously, he is one of the lobbyists supporting this thing.

Ligado said this order is about winning the race for 5G and beating China. Those who claim Ligado's proposal was necessary to defeat China's 5G push are deliberately mixing up two different and important spectrum issues in order to sell their product—the share of the mid-band 5G spectrum by DOD with industry and harmful interference of Ligado's signal with the low band—that is L band, which we are talking about, which is right next to GPS signals that would be used in nearly every aspect of daily life.

The Ligado spectrum they are repurposing is not in the prime mid-band spectrum being considered for 5G. Ligado's low-band spectrum was not a part of the FCC's own plan to accelerate 5G development released in September of 2018, the so-called "5G FAST Plan."

I would like to say that it is complicated, but that isn't what they did at all with this thing. Their concern was with only the L band, which is next to the GPS.

Reliable GPS satellite communication is important to everyone in America. It drives much of the Nation's economy. We shouldn't sacrifice GPS reliability for the sake of lobbyists and hedge fund investors on Wall Street.

I ask my colleagues to join me in urging the FCC to withdraw its approval of Ligado's application. Instead of moving ahead with this order, we have to reverse the order. That is the effort that is taking place right now. If they had denied Ligado's application the same as they have done for the last 10 years, there would not be a problem today. We have people with an interest in this.

The hearing that we had just on May 6 was with the people who head up Data DC and the DOD Chief Information Officer. By the way, in the private sector he was the CIO of three of the largest corporations in America. We had Dr. Michael Griffin, Undersecretary of Defense for Research and Engineering, a retired U.S. Coast Guard Admiral; Thad Allen, who is now on the National Space-Based Positioning, Navigation,

and Timing Advisory Board; and Gen. Jay Raymond, Chief of Space Operations, U.S. Space Force. That is everyone who is really knowledgeable about this. They are all unanimous in their opposition to this program.

I would ask that Members keep advised of the opportunities they have to reverse this decision. We would actually try to get the Federal Communications Commission to do that on their own.

I yield the floor.

Mr. President, I ask unanimous consent that the vote scheduled for 4:30 p.m. start at this time.

The PRESIDING OFFICER (Mr. CASIDY). Without objection, it is so ordered.

The question is, Will the Senate advise and consent to the Edgar nomination?

Mr. INHOFE. I ask for the yeas and nays.

The PRESIDING OFFICER. Is there a sufficient second?

There appears to be a sufficient second.

The clerk will call the roll.

The senior assistant legislative clerk called the roll.

Mr. THUNE. The following Senators are necessarily absent: the Senator from Tennessee (Mr. ALEXANDER) and the Senator from Nebraska (Mr. SASSE).

Further, if present and voting, the Senator from Tennessee (Mr. ALEXANDER) would have voted "yea."

Mr. DURBIN. I announce that the Senator from Vermont (Mr. LEAHY), the Senator from Massachusetts (Mr. MARKEY), the Senator from Washington (Mrs. MURRAY), the Senator from Vermont (Mr. SANDERS), and the Senator from Rhode Island (Mr. WHITEHOUSE) are necessarily absent.

The PRESIDING OFFICER (Ms. MCSALLY). Are there any other Senators in the Chamber desiring to vote?

The result was announced—yeas 62, nays 31, as follows:

[Rollcall Vote No. 88 Ex.]

#### YEAS—62

Barrasso	Graham	Perdue
Blackburn	Grassley	Peters
Blunt	Hassan	Portman
Boozman	Hawley	Risch
Braun	Hoehn	Roberts
Burr	Hyde-Smith	Romney
Capito	Inhofe	Rounds
Carper	Johnson	Rubio
Cassidy	Jones	Scott (FL)
Collins	Kaine	Scott (SC)
Cornyn	Kennedy	Shelby
Cotton	King	Sinema
Cramer	Lankford	Sullivan
Crapo	Lee	Tester
Cruz	Loeffler	Thune
Daines	Manchin	Tillis
Duckworth	McConnell	Toomey
Enzi	McSally	Warner
Ernst	Moran	Wicker
Fischer	Murkowski	Young
Gardner	Paul	

#### NAYS—31

Baldwin	Cardin	Gillibrand
Bennet	Casey	Harris
Blumenthal	Coons	Heinrich
Booker	Cortez Masto	Hirono
Brown	Durbin	Klobuchar
Cantwell	Feinstein	Menendez

Merkley	Schumer	Van Hollen
Murphy	Shaheen	Warren
Reed	Smith	Wyden
Rosen	Stabenow	
Schatz	Udall	

## NOT VOTING—7

Alexander	Murray	Whitehouse
Leahy	Sanders	
Markey	Sasse	

The nomination was confirmed.

The PRESIDING OFFICER. Under the previous order, the motion to reconsider is considered made and laid upon the table, and the President will be immediately notified of the Senate's action.

The Senator from the Iowa.

(The remarks of Mr. GRASSLEY pertaining to the introduction of S. 3693 are printed in today's RECORD under "Statements on Introduced Bills and Joint Resolutions.")

## NATIONAL POLICE WEEK

Mr. GRASSLEY. Madam President, today I come to the floor to salute and thank our Nation's law enforcement officers during this year's National Police Week. It is notable that this week dedicated to the brave men and women in blue is in the midst of the COVID-19 pandemic.

I am grateful to all who are working on the front lines right now, whether they are doctors and nurses or teachers and grocery store clerks. We are grateful to all of them, including a lot of jobs that I haven't even mentioned.

But this week, we have the unique opportunity just to settle on one group of people and thank them in a special way during National Police Week, and that is our police officers. Now, more than ever, we appreciate their service and dedication. Being a police officer isn't just a job. I am in public service, but I haven't been a police officer. I think it is fair to assume that they put their lives on the line more than most of us who are Members of the Senate.

It is not just a job. It is a calling. Each officer has answered that call and is dutifully serving during these very trying times that we call this virus pandemic. For that, I am—and, I am sure, everybody is—forever grateful.

I am particularly thankful for the men and women in blue who serve my fellow Iowans. I would also like to recognize the officers who serve in Washington, DC, the Capitol Police, meaning those who serve here on the Hill. They work to ensure our safety and protection, not only from criminals but also from a virus that has drastically changed the way we work in the Senate to serve our constituents, the American people, and, for me, the people of Iowa. Thank you to the policemen on Capitol Hill here for your selflessness and dedication.

COVID-19 knows no boundaries and has, unfortunately, affected hundreds of police officers. As of May 11, 101 officers have died in the line of duty from the virus. We must continue to honor members of the law enforcement community who have made the ultimate sacrifice. The circumstances of loss are a little different now but no less heroic or devastating.

As a Senator, my actions often speak louder than my words. So I am pleased to show the members of the law enforcement community how much I support and appreciate you through legislation. Every year, during Police Week, the Senate advances various bills focusing on the needs of the police community. This year is no different. To that end, I recently introduced a bipartisan bill with the title of Safeguarding America's First Responders Act. This bill addresses the unfortunate reality of officers' exposure to COVID-19.

To ensure benefits through the Public Safety Officer Benefits Program, my bill creates a presumption that if a first responder is diagnosed with COVID-19 within 45 days of their last day on duty, the Justice Department will treat it as a line-of-duty incident.

Loss of a family member in the line of duty isn't only emotionally devastating, but it also means lost wages in tough times. This bill recognizes the challenges posed by the pandemic and better ensures that officers' families will get the financial help as promised to other police officers who are killed in other ways in the line of duty. This bill enjoys wide support from multiple law enforcement groups and a group of bipartisan cosponsors here in the Senate.

The Senate is considering two other police bills that I support. Police officers have demanding jobs and experience events that often impact their mental health. The next bill is named the Confidentiality Opportunities for Peer Support Counseling Act, or we call it COPS Counseling Act, for short. This bill builds off the recommendations provided by the Justice Department in their recent report on law enforcement mental health and wellness issues.

Specifically, the bill provides confidentiality to Federal law enforcement officers by restricting individuals who participate in peer support counseling sessions from disclosing communications arising out of these sessions. With that privacy, we encourage more people to get the help they might need.

Peer support programs serve as a valuable role in providing mental health care to law enforcement and first responders. But as I have indicated, confidentiality concerns have left these programs and these professionals underutilized. This bill also encourages best practices for officers and for first responders on peer support programs across the country.

I want to thank Senator CORTEZ MASTO for leading this bill and teaming up with me on this important issue.

Lastly, I am proud to cosponsor Senator HAWLEY's bill, with a title of Law Enforcement Suicide Data Collection Act. This bill seeks to address mental illness and increasing suicide numbers among law enforcement by requiring the FBI to open a voluntary data collection program to track suicides and attempted suicides within local, Tribal, State, and Federal law enforcement.

By providing accurate and detailed information on these issues of suicide, more effective prevention programs can be implemented.

I urge my colleagues to support all three of these bills. Passing them into law is one way of saying a big thank-you to the brave men and women who serve us so selflessly in law enforcement. We owe them a debt of gratitude, particularly during the ongoing COVID-19 pandemic.

## LEGISLATIVE SESSION

## MORNING BUSINESS

Mr. GRASSLEY. Madam President, I ask unanimous consent that the Senate proceed to legislative session for a period of morning business, with Senators permitted to speak therein for up to 10 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

## VOTE EXPLANATION

Mr. MERKLEY. Madam President, I wish to state for the record that, though the difficulties of traveling across the country in the midst of the current coronavirus pandemic made it impossible for me to present in the Capitol to vote on the nomination Brian D. Montgomery, of Texas, to be Deputy Secretary of Housing and Urban Development, I would have voted 'nay' had I been present.

Few things create a stronger foundation for a thriving, successful families than affordable housing. Study after study has shown that children who grow up in a stable home do better in school and are more successful over the course of their lives. Stable affordable housing builds strong neighborhoods and communities because the members of that community are invested in its success. For generations of Americans, homeownership has been a driving force behind the building of a strong middle class, helping families build wealth through the equity generated through homeownership.

As the son of a union mechanic, I experienced this throughout my own life. My father's wages were enough to afford a modest ranch home in a blue collar Oregon community. And because of that house and that community, I was given all kinds of opportunities. I was allowed to explore my interests, whether it was taking machines apart and putting them back together again in my dad's garage or exploring the great outdoors as a Boy Scout. I was able to receive a good public education and go on to be the first in my family to graduate from college.

But far too many Americans don't have those same opportunities today. That is because the goal of affordable housing, whether buying a house or renting a decent apartment, is out of reach for too many working and middle-class families and falling further