Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Petition for Rulemaking of Qualcomm Incorporated	)	RM-12020
	)	
	)	WT Docket No. 19-116
Public Notice	)	

REPLY COMMENTS OF THE AMERICAN GEOPHYSICAL UNION, AMERICAN METEOROLOGICAL SOCIETY, NATIONAL WEATHER ASSOCIATION, IEEE GEOSCIENCES AND REMOTE SENSING SOCIETY, AND AMERICAN WEATHER AND CLIMATE INDUSTRY ASSOCIATION

May 22, 2026

The above noted organizations from the weather, oceans and Earth science communities[1] appreciate the opportunity to provide reply comments to the Federal Communications Commission's (FCC) Public Notice seeking comments on Qualcomm Incorporated's petition for rulemaking on spectrum allocation request and service rules for sidelink operations.[2] We appreciate Qualcomm's efforts to innovate on public safety communications, which is also a key component of effective responses to severe weather events. We are concerned, however, that some of the bands where Qualcomm seeks to operate on a primary basis are relied on by existing technologies to support weather forecasting and emergency management that could face interference under Qualcomm's proposed activities.

[1] The membership of the American Geophysical Union (AGU), the American Meteorological Society (AMS), the National Weather Association (NWA), IEEE Geosciences and Remote Sensing Society (IEEE GRSS) and American Weather and Climate Industry Association (AWCIA) include the world's leading Earth scientists and meteorologists, oceanographers and hydrologists, including operational forecasters, emergency managers and broadcasters who work to keep U.S. communities safe. These skilled professionals depend heavily on technology that is reliant on specific passive observations only available in the above noted bands for their forecasts and models to better understand the Earth's atmosphere, oceans and land to predict natural hazards that impact lives, property and economies in the U.S. and across the world.

[2] *Office Of Engineering and Technology and Wireless Telecommunications Bureau Seek Comment on Qualcomm's Petition for rulemaking to Allocate Spectrum and Establish Service Rules for a New Communications Service in Portions of the 1675-1695 MHZ and 5350-5470 MHZ Bands*, Public Notice, WT Docket No. 19-116, DA 26-337 (rel. Apr. 7, 2026). https://docs.fcc.gov/public/attachments/DA-26-337A1.pdf

Impacts to weather, water and oceans technologies in the 5350–5470 MHz band

Several satellite missions that provide crucial information for weather forecasting, oceans monitoring and coastal management rely on active frequencies in the 5350–5470 MHz band. Due to the properties of these specific frequencies, these sensors can penetrate extensive cloud cover and moderate rain and enable important weather monitoring, especially in areas dominated by cloud cover. In addition, the environmental data noted below are original measurements and not a broadcast of data that is already available elsewhere to the weather and broader environmental communities. There are multiple types of environmental remote sensing satellite observations that provide crucial information in these bands, including those noted below.

Ocean Surface Topography via Radar Altimeters: The on-orbit Jason-3 satellite, a partnership between NASA, NOAA, Centre National d'Etudes Spatiales (CNES, France's governmental space agency), and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), measures sea surface height at centimeter-level accuracy. The information from this satellite provides important insights into the warmth of the ocean since large pools of warm water, revealed as "bumps" in sea surface height measured by Jason-3, are tracked by hurricane forecasters as key inputs into intensity forecasts. Long term records of these observations also provide crucial information to inform coastal infrastructure planning given the evidence of increasing sea level rise in many areas of the U.S. and world. Current and future satellites that continue these measurements through international partnership include Sentinel-6A Michael Freilich (launched in 2020) and Sentinel-3 Sentinel Radar Altimetry (expected to launch late in 2026).

Ocean Surface Vector Winds via Scatterometry: Surface wind measurements captured by scatterometers are the only way to observe surface conditions comprehensively over the ocean. These wind measurements are used for routine weather predictions over the ocean and to issue storm and gale warnings for seaborne vessels. Currently on-orbit on EUMETSAT's MetOp satellites (ASCAT sensor) and expected to be launched in 2026, 2033 and 2040 on the MetOp Second Generation B satellites (SCA sensor), these scatterometers are highly valuable since they are able to "see" through the heavy rain and clouds that are frequent in ocean environments, which is not possible at higher frequencies. The data from these sensors are also included in numerical weather models to improve the accuracy of 3-to-7-day forecasts.

Additional types of satellite remote sensing observations that provide critical information in these bands include **ice monitoring**, as well as **soil moisture and hydrology information**, all of which are obtained from **synthetic aperture radar (SAR) sensors**. As detailed in the Canadian Space Agency comment[3] in response to Qualcomm's petition, the long history of Canada's RADARSAT mission, and the current RADARSAT Constellation Mission (RCM), a three-satellite C-band SAR system operating at 5355–5455 MHz, and the next generation SAR missions being planned, provide critical information to meteorologists, hydrologists, ocean navigators and polar scientists. In addition, similar data is provided by C-band SAR sensor on Sentinel-1 operated by EUMETSAT.

All the satellite observations reliant on these bands are just as valuable to the military community, such as the U.S. Navy, as for civilian users. For example, one of the largest users of RADARSAT imagery is the U.S. National Ice Center, which is a partnership between NOAA, the Coast Guard and the Navy, relying on the data for maritime safety, environmental monitoring, and national security missions.

Our organizations particularly concur with the CSA in their statement:

"(T)he same emergency scenarios in which sidelink connectivity would be most needed are precisely those in which first responders rely most heavily on SAR-derived products for flood mapping, search-and-rescue planning, and damage assessment. SAR systems such as RCM and Sentinel are the primary and sometimes only source of timely, actionable imagery. Authorizing sidelink operations in the 5350–5470 MHz band would place these two public-safety objectives in direct conflict, risking the degradation of the imaging capabilities that underpin effective emergency response."[4]

Beyond the geographical location of sidelink operations, we are deeply concerned by Qualcomm's proposed in-band power limit of 36 dBm EIRP (equivalent isotropically radiated power) for sidelink devices. This power level is significantly higher than typical low-power unlicensed operations and poses a direct threat to the sensitive noise floors required by satellite-based environmental sensors.

The sensors mentioned previously, such as the Jason-3 radar altimeter and the ASCAT scatterometer, are designed to detect extremely faint backscattered signals from the Earth's surface. Introducing a high-power , terrestrial 5G device-to-device service into these restricted or sensitive bands creates a high probability of aggregate interference that could mask critical data, such as sea surface height or ocean vector winds. Any rulemaking must involve a rigorous, data-driven analysis to determine if the 36 dBm

[3] See *Canadian Space Agency* comment in RM-12020/WT 19-116 at 1. (5 May 2026). - https://www.fcc.gov/ecfs/document/105050748829163/1
[4] Ibid at 2.

EIRP limit can be reconciled with the protection criteria of the international Earth Exploration-Satellite Service (EESS).

Given the potential interference to these important weather, hydrology, coastal management, maritime navigation and safety, and national security applications, we call on the FCC to deny Qualcomm's petition based on the proposed operations in these bands. For such a petition to potentially justify a rulemaking, it is crucial for Qualcomm, together with FCC, to fund and conduct collaborative studies with NOAA and the U.S. Navy that address the use of these weather, water, oceans and coastal applications in federal, state and local government agencies, academia and the private sector in the U.S. together with international satellite agencies that deploy and partner with the U.S. on these key satellite missions. An element of such FCC/Qualcomm funded studies must include analyzing the out-of-band-emissions (OOBE) rather than simply selecting the stated values in the petition.

Impacts to weather and water technologies in the 1675-1695 MHz band

There are extensive comments in the FCC record during the past decade from our organizations expressing concerns about the sharing of 1675-1680 MHz, and the broader 1675-1695 MHz band.[5]

We appreciate the comments from the Working Group for Satellite Telemetry (WG-ST)/Satellite Telemetry Interagency Working Group (STIWG)[6] who noted concern about interference to communications services from NOAA's Geostationary Operational Environmental Satellite System– R Series (GOES-R series) including the Data Collection System (DCS) and the High-Rate Information Transmission (HRIT) from the proposed Qualcomm sidelink operations. Overall, we concur with the WG-ST/STIWG that before such a proposed rulemaking is issued, the proposed interference mitigation methods need to be studied in more detail.

Overall Response to Qualcomm Petition

While Qualcomm frames its petition as a vital enhancement for public safety, we note with concern the suggestion that access to these bands also be available to non-public safety operations on a secondary

[5] As detailed in *AGU et al* comment in 19-116 at 1-2. (28 Feb 2025) https://www.fcc.gov/ecfs/document/10301503124653/1
[6] See *Working Group for Satellite Telemetry (WG-ST), Satellite Telemetry Interagency Working Group (STIWG)* comment in RM-12020/WT 19-116 at 1. (6 May 2026) https://www.fcc.gov/ecfs/document/105060704816773/1

basis. This proposal significantly expands the potential device density beyond the controlled, intermittent use associated with first responders.

Permitting "secondary" commercial or consumer use under a license-by-rule framework would likely lead to a ubiquitous deployment of sidelink-capable 5G devices. For the weather community, this transition from "critical emergency use" to "widespread commercial use" is an unacceptable risk. The aggregate interference from millions of secondary consumer devices would create a permanent increase in the noise floor, potentially rendering the 1675-1695 MHz and 5350-5470 MHz bands unusable for the high-precision environmental monitoring that our organizations and the American public rely upon for safety and commerce. We urge the Commission to reject any allocation that allows for non-public safety commercial operations in these sensitive bands.

In conclusion, while we have valid interference concerns about the proposed sidelink operations that indicate studies are required to justify a potential NPRM, we appreciate Qualcomm's efforts to innovate in emergency communications. Specifically, we want to highlight their statement that "sidelink delivers voice, video, and text communications without relying on network infrastructure—whether in hurricane-devastated regions, wildfire zones, or deep inside buildings and tunnels where network signals are weak or obstructed."[7] These are remarkably similar words to those in our past comments about the GOES Data Collection System operating centered at 1679 MHz and its critical ability to provide robust and reliable emergency information in situations where electricity and internet are not available.[8] We hope the FCC realizes that such robustness is critical to support effective emergency management, and it is threatened by efforts to share spectrum in ways that diminish such hardened services.

Thank you for the opportunity to respond to this public notice.

[7] See *Qualcomm Incorporated Petition for Rulemaking*, in RM-12020/WT 19-116 at i. (filed 20 Feb 2026), https://www.fcc.gov/ecfs/document/10220146431094/1

[8] See *AGU et al* comment in 19-116 at 7. (28 Feb 2025) https://www.fcc.gov/ecfs/document/10301503124653/1

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