

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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Federal Communications Commission
Office of Secretary

In the Matter of)
)
Wireless Fixed Access)
Local Loop Services)
)
Petition for Allocation of Radio Spectrum)
in the 2 GHz Band for the Provision)
of Wireless Fixed Access)
Local Loop Services)

RM No. 8837

To: The Commission

MOTION FOR LEAVE TO SUBMIT LATE-FILED COMMENTS

The Society of Broadcast Engineers, Incorporated (SBE), by counsel, respectfully requests leave to submit the accompanying late-filed comments for consideration in the above-captioned matter, or, alternatively, to consider them as written *ex parte* comments. As grounds therefor, SBE submits as follows:

1. The Commission has yet to take action in response to the instant rulemaking petition. As a result, no prejudice will result to any party. Indeed, given the number of commenters, and the importance of the precedent which will result from decision on this matter, additional comments will provide the Commission with more information on which to base its decision.

2. Although SBE was aware of the proposal when it was first placed on public notice, petitioner DSC Communications Corporation made substantial changes to its proposal in late-filed reply comments. Thus, the potential impact of this rulemaking, if adopted, on broadcast auxiliary spectrum allocations has only recently been determined. Given the significance of these proposed effects, SBE required additional time to thoroughly consider the proposal as amended and for its volunteer officers and directors to formulate its comments.

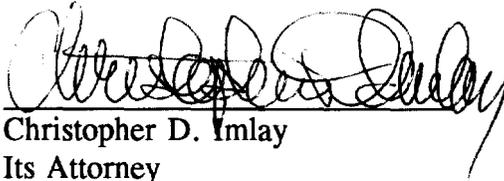
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For the foregoing reasons, SBE requests that the Commission grant leave to submit the accompanying late-filed comments. In the alternative, SBE asks that the Commission consider them as written *ex parte* comments.

Respectfully submitted,

**THE SOCIETY OF BROADCAST ENGINEERS,
INCORPORATED**

By:

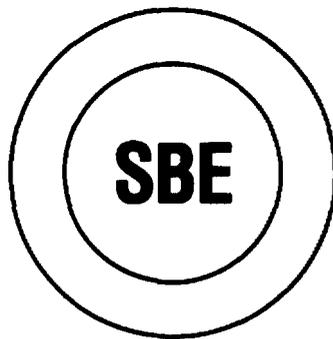

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December 16, 1996

**Comments of the
Society of Broadcast Engineers, Inc.**

**RM 8837
Petition for Allocation of Radio Spectrum
in the 2 GHz Band for the Provision of
Wireless Fixed Access Local Loop Services**



December 6, 1996

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SOCIETY OF BROADCAST ENGINEERS, INC.
Indianapolis, Indiana

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Washington, D.C. 20554

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To: The Commission

Comments of the Society of Broadcast Engineers, Inc.

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members in the United States, hereby respectfully submits its comments regarding the above-captioned Petition for Rule Making relating to allocation of 2 GHz spectrum for Wireless Fixed Access Local Loop services.

I. DSC Proposal

1. On June 10, 1996, DSC Communications Corporation ("DSC") filed a Petition for Rule Making requesting allocation of spectrum in the 2 GHz band for a proposed new service, which it calls Wireless Fixed Access Local Loop services, or "WFA-LL." DSC proposes that this service be used to complete the last link between a common carrier provider and individual customers. That link is currently provided by local telephone companies, generally in the form of twisted copper pairs for voice grade or limited speed facsimile transmissions (otherwise known as plain old telephone service, or "POTS"), or by fiber optic links (for higher bandwidth Integrated Services Digital Networks ("ISDN") communications*), or by cable television companies, in the form of coaxial cable drops. DSC proposes to provide, in effect, a "bypass service" which it contends would be in the public interest.

* Contrary to the definition for ISDN given at Page 10 of the DSC Petition, ISDN is an acronym for Integrated Services Digital Network, and not "Integrated Software Defined Network."

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II. Use of Lower Microwave Spectrum Frequencies to Provide Fixed, Point-to-Point Ultra Short Haul Links is Fundamentally Not in the Public Interest

2. First, SBE submits that it is appallingly spectrum inefficient to use precious 2 GHz band microwave frequencies, with their favorable propagation characteristics, for short-haul (less than 17 kilometers), ultra-short-haul (less than 5 kilometers), or ultra-ultra-short-haul (less than 1,000 meters) telephone company or cable television company bypass purposes. If microwave spectrum is to be used for such purposes (including ultra-ultra-short haul links of 500 meters, in urban areas, according to the DSC Petition), then the higher microwave bands, above 23 GHz, should be used.

3. The fundamental principle of reserving the lower microwave bands for longer point-to-point links is well established in the FCC Rules; for example, Private Operational Fixed Service (POFS) stations have minimum path length requirements (Section 101.143 of the FCC Rules), as do TV Broadcast Auxiliary fixed stations (Section 74.644 of the FCC Rules). Although these rules do not absolutely prohibit short (less than 17 kilometer) paths at the lower microwave frequencies, they discourage applicants from doing so by limiting the equivalent isotropic radiated power (EIRP) that can be used for such short paths. Combined with the minimum transmitting antenna requirements, this means that an applicant foolish enough to insist on using the lower microwave bands for very short paths must attenuate the output of typical 1 to 2 watt microwave transmitters by 20 to 30 dB in order not to exceed the EIRP limitation for short paths. Applicants are usually able to figure out for themselves that a few milliwatts of transmitter power into a 6-foot Category B transmitting dish doesn't make much sense, and that a higher microwave band, where smaller diameter antennas are both permitted and adequate, should be selected.

4. For portable and mobile links, large diameter Category B or better parabolic dish antennas are, of course, impracticable, and for this reason minimum antenna standards do not apply. Further, technical justifications for the lower microwave bands can be made: for example, a portable 1.9 GHz Personal Communications Services ("PCS") device needs to make up for the antenna limitations inherent in a hand-held, battery-powered, light-weight communications device by taking advantage of the more favorable propagation characteristics of microwave frequencies in the 2 GHz band. It is for these same reasons that broadcasters use the 2 and 2.5 GHz TV Broadcast Auxiliary bands primarily for TV Pickup stations, especially where those stations involve weight, size, and power consumption critical uses such as man-pack portable coverage at political conventions, race car-mounted live feeds

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during major automotive races, or toboggan-mounted cameras during the winter Olympics. In stark contrast, a cellular-like telephone/cable bypass system between fixed points is under no such limitations.

5. SBE therefore submits that even if the Commission decides that it would be in the public interest to create a "last 500-meter" bypass service, then the frequencies to be used for such short-haul, ultra-short-haul, and ultra-ultra-short-haul links should be 23 GHz or above. To suggest using 2 GHz band frequencies is wildly spectrum-inefficient and blatantly not in the public interest.

III. SBE Objects to DSC's Frequency Plan B

6. In the event the Commission nevertheless feels that it would be in the public interest to create a WFA-LL service in the 2 GHz band, SBE wishes to go on record of objecting to DSC's Frequency Plan B, 2,037.5–2,076.0/2,111.5–2,150.0 MHz, which would use frequencies for the Uplink (Subscriber Terminal ("ST") to Central Terminal ("CT")) services on 2 GHz frequencies now occupied by 2 GHz TV Broadcast Auxiliary Channels A3 (part) and A4 and A5 (all).

7. DSC provides no technical exhibits demonstrating that its proposed use of TV Broadcast Auxiliary 2 GHz frequencies would not cause interference to existing electronic news gathering ("ENG") or sports-related TV Pickup stations, or to fixed, point-to-point studio-to-transmitter (STL) or Inter-City Relay (ICR) links. Indeed, all that DSC says, at Page 36 of its Petition, is that

"where coexistence with other services is required, the appropriate technical rules will need to be modified to ensure adequate protections of all involved services."

SBE submits that such a cavalier treatment of how existing users in the bands coveted by DSC would be protected is, by itself, grounds for dismissing the DSC Petition without action.

IV. Proposed Frequencies Would Interfere with NASA and NOAA

8. SBE further notes DSC Frequency Plan B, as well as its Frequency Plans C (2,110.5–2,145.0/2,165.0–2,200.0 MHz), Frequency Plan D (2,160.0–2,198.5/2,310.0–2,348.5 MHz), and Frequency Plan F (2,401.0–2,439.5/2,310.0–2,346.75 MHz), would all be likely to cause interference to space research conducted by the National Aeronautics and Space Administration (NASA) and by the National Oceanic and Atmospheric Administration

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(NOAA). Unlike the long-term and proven compatible sharing that has existed between 2 GHz TV Broadcast Auxiliary stations and NASA/NOAA space research frequencies, SBE notes that International Telecommunications Union (ITU) studies of frequency sharing between the Space Science Services and high-density mobile or point-to-point users not employing highly directive terrestrial aperture antennas would be incompatible uses. Indeed, ITU Resolution 211 recommends that Administrations “do not introduce high-density or conventional type land mobile systems in the 2,025–2,110 MHz and 2,200–2,290 MHz bands.”

9. SBE’s interest in seeing that these space research bands are protected is that the loss of these bands to WFA-LL would mean that they would no longer be available to broadcasters on a case-by-case prior coordination basis with NASA/NOAA during “overflow” situations such as the Olympics and other major sporting events. Such case-by-case sharing of space research frequencies has worked well because of the occasional and low-density nature of TV Pickup station use, in contrast to the high-density nature of the cellular-like WFA-LL systems proposed by DSC.

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V. Summary

10. SBE opposes the entire DSC Petition because of its grossly inefficient proposal to use 2 GHz band frequencies, with their favorable propagation characteristics, for short-haul, ultra-short-haul, and ultra-ultra-short-haul point-to-point terrestrial links, when much higher microwave frequencies would be appropriate for such short paths. SBE specifically objects to DSC's Frequency Plan B, because that plan proposes to use frequencies already allocated to the TV Broadcast Auxiliary services. SBE secondarily objects to DSC's proposed Frequency Plans C, D, and F, because such use would likely cause interference to NASA and NOAA missions, and preclude an overflow resource that is now available to broadcasters on an occasional and case-by-case, prior coordination basis.

Respectfully submitted,

Society of Broadcast Engineers, Inc.

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December 6, 1996

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