

Form 442 Question 7 Experimentation Description

PSCR will work under a Cooperative Research and Development Agreement with a vendor to evaluate operation of prototype devices using 3GPP Direct Mode Sidelink for public safety communications. This solution is implemented on user equipment (UE) devices operating at power levels ranging from 0 dBm (0.001 W) to 23 dBm (0.20 W), possibly increasing to 26 dBm (0.40 W) or 29 dBm (0.80 W). No base station is utilized.

The objective of testing will be to measure performance of device-to-device sidelink and relays at ranges up to the physical limit of to 1.7 km within the US Department of Commerce Table Mountain Field Site and Radio Quiet Zone. No impact to incumbent users in the requested spectrum is expected.

The proposed experimental program has a reasonable promise of contributing to the development, extension, and utilization of the radio art by evaluating the real-world range, reliability, and performance of 3GPP sidelink communications for public-safety applications. Testing will characterize direct device-to-device communications under variation in separation distance in a quiet-zone radio propagation environment. Measurements will assess parameters such as usable communication range, received signal strength, link reliability, throughput, latency, and related performance characteristics.

The resulting data will improve understanding of the practical capabilities and limitations of 3GPP sidelink technology when used for public safety communications, particularly in situations in which conventional network infrastructure is unavailable, impaired, or outside coverage. The experimentation will help relate standardized sidelink capabilities to measured field performance and identify propagation, configuration, and operational factors that affect reliable communications. Accordingly, the program is expected to provide useful engineering information supporting the further development, evaluation, and potential utilization of sidelink radio technology for public-safety and other mission-critical communications.

Form 442 Question 12 Applicant Information

The Public Safety Communications Research (PSCR) Division is the primary federal laboratory conducting research, development, testing, and evaluation for public safety communications technologies. It is housed within the Communications Technology Laboratory (CTL) at the National Institute of Standards and Technology (NIST). PSCR is focused on driving research to advance communications technologies in support of the public safety community in partnership with stakeholders across public safety, industry, government, and academia.