Voyage 3550-3650 MHz Experiment Proposal

1 Introduction

Voyage's mission is to build an extremely affordable point-to-point transportation solution for the world. Self-driving cars are the enabling technology to do just that. At Voyage, we know it's not about the destination—it's all about the journey, and making each one better than the last. That's why we're working to create safer, more comfortable and more affordable automotive options for communities all across North America.

We believe a connected world is a prosperous and sustainable world. And we aim to deliver that forward. For more information please visit our website: https://voyage.auto/

2 Experiment Description

Voyage is working with its partner company Nokia to evaluate and trial a private LTE system operating in the frequency range of 3550-3650 MHz to establish its suitability to support the communications of the autonomous cars for our communities.

This trial will consist of one fixed site base station and will be located inside the geographical region described in Section 2. Up to 4 mobile devices will operate within the area of the fixed base station. The intent is to operate the LTE uplink/downlink 24 hours per day 7 days per week.

The main objectives of this trial are to prove that private LTE over CBRS can be used as superior mobile connectivity technology for our autonomous cars, improving safety and enhancing overall communications quality which contributes to the general acceptance and broader usage of this mobile technology.

3 Transmitter Information

Up to 5- 20 MHz LTE RF channels per base station will be operated within the requested frequency range at any one time.

The maximum EIRP for mobile and fixed site is listed in Table 1. The fixed site support MIMO and the defined power is the maximum radiated power for an individual antenna. A directional antenna may be used but it's listed as OMNI to not restrict orientation.

Table 2 defines the deployment radius where the fixed cell site will be located during testing period.

Table 1 Transmitter Information

Type	Transmit Frequency (MHz)	Conducted TX Power (dBm)	Maximum Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	ERP (dBm)	ERP (W)	Maximum Transmission Bandwidth (MHz)	Emissions Designator
Fixed	3550-3650	33	18	51	126	49	76.94	20	20M0W7W
Mobile	3550-3650	23	0	23	0.2	20.15	0.12	20	20M0W7W

Table 2 Fixed Site Location Radius and Mobile Operational Radius

		Operational Center Point		Fixed Site Location and Mobile Operational Radius	
Location Description	Location #	Lat	Long	Miles	km
San Jose Test site	1	37°18'24.33"N	121°45'15.14"W	0.62	1

4 Interference Coordination

Immediate requests for Voyage to stop transmission should be emailed to mac@voyage.com. Alternatively, a shutdown requested can be submitted through Alan Mond who can be contacted at 248-953-3496 or alan@voyage.com