

From: [PATEL, CHETAN](#)
To: [Rivera, Carlos I.](#)
Cc: [MUTHUSWAMY, ESWARAN](#); [Hite, Jason](#); [Lin, Susan](#)
Subject: -EXT-RE: Discuss - General Atomics Test of LTE IOPS on Band 14 over the Anza Borrego desert.
Date: Thursday, May 16, 2019 1:51:30 PM

WARNING: This message is from an external source. Evaluate the message carefully BEFORE clicking on links or opening attachments.

Please send us a detailed schedule and I will let the performance manager know. I should have a contact person doing the test so if we see anything, we can instantly call as a stop switch.

I think, we may need to coordinate this to LA market as well to see if they have any objections due to Catalina islands or Navy Base. As for the spectrum, ATT does not own BAND1 so we are OK.
Chet

From: Rivera, Carlos I. <Carlos.I.Rivera@ga-asi.com>
Sent: Thursday, May 16, 2019 12:52 PM
To: PATEL, CHETAN <cp2626@att.com>
Cc: MUTHUSWAMY, ESWARAN <em574v@att.com>; Hite, Jason <Jason.Hite@ga-asi.com>; Lin, Susan <Susan.Lin@ga-asi.com>
Subject: RE: Discuss - General Atomics Test of LTE IOPS on Band 14 over the Anza Borrego desert.

Hi Chet,

We would like to perform our “over the ocean - 100 miles out” manned flight cellular testing on June 19. What process would like for us to follow in terms of coordination (establishing the day’s lines of communications, the “Stop Button” in case any problems arise, etc.)?

Also I would like to ask if on the same day that we test on LTE Band 14, could we also test 3G WCDMA voice on Band 1 (specifically TX: 2135 – 2140 MHz and RX: 1945 – 1950 MHz) out in the same spot over the ocean.

I’d be happy to set up a conference call if you think it’s best for coordination.

Kind regards,
Carlos
m. 858-753-8433

P.S. We met earlier this week with Chris Sambar to brief him on our airborne cellular network for disaster recovery (FirstNet support) and humanitarian assistance (route 911 calls to PSAP). We informed him that the National Guard is going to be putting this solution on their Air National Guard MQ-9 UAVs. Mr. Sambar saw value in this solution (especially since it helps FN at no cost to his budget 😊) and asked for a three-way meeting between the Air National Guard, AT&T/FN, and GA-

ASI for coordination purposes.

From: PATEL, CHETAN <cp2626@att.com>
Sent: Friday, March 29, 2019 2:23 PM
To: Rivera, Carlos I. <Carlos.I.Rivera@ga-asi.com>
Cc: MUTHUSWAMY, ESWARAN <em574v@att.com>; FILLEY, MICHAEL J <mf3714@att.com>; LEWIS, MIKE <ml2487@att.com>; BANCHONGSIRICHAREON, SOONTORN <sb3291@att.com>; Hite, Jason <Jason.Hite@ga-asi.com>; Lin, Susan <Susan.Lin@ga-asi.com>; Lozada, Godfrey <Godfrey.Lozada@ga-asi.com>; Oyekan, Aziz <Aziz.Oyekan@ga-asi.com>
Subject: -EXT-Re: Discuss - General Atomics Test of LTE IOPS on Band 14 over the Anza Borrego desert.

Yes 100 mile off shore is not a problem.

Sent from my iPhone

On Mar 29, 2019, at 1:34 PM, Rivera, Carlos I. <Carlos.I.Rivera@ga-asi.com> wrote:

Hi Chet,

Would a hundred miles offshore be a workable solution for AT&T? The proposed lat/long for the aircraft loiter is 32.594338 and -118.857295.

Thank you for your consideration.

Carlos

<image005.jpg>

From: PATEL, CHETAN <cp2626@att.com>
Sent: Wednesday, March 20, 2019 10:26 AM
To: Rivera, Carlos I. <Carlos.I.Rivera@ga-asi.com>; MUTHUSWAMY, ESWARAN <em574v@att.com>; FILLEY, MICHAEL J <mf3714@att.com>; LEWIS, MIKE <ml2487@att.com>; BANCHONGSIRICHAREON, SOONTORN <sb3291@att.com>; Hite, Jason <Jason.Hite@ga-asi.com>; Lin, Susan <Susan.Lin@ga-asi.com>; Lozada, Godfrey <Godfrey.Lozada@ga-asi.com>; Oyekan, Aziz <Aziz.Oyekan@ga-asi.com>
Subject: -EXT-RE: Discuss - General Atomics Test of LTE IOPS on Band 14 over the Anza Borrego desert.

Hi Team,

Thanks for the info. I can only speak for San Diego . The other proposed location is in Arizona Market. But that area does seem to be more isolated than Imperial County. As for the third location, doing it over the ocean West of San Diego. , that would depend how far as Propagation over water and LOS can hit the San Diego coastline of 70 miles with a lot of sites.

Hope that helps.
Chet

From: Rivera, Carlos I. <Carlos.I.Rivera@ga-asi.com>
Sent: Tuesday, March 19, 2019 1:44 PM
To: MUTHUSWAMY, ESWARAN <em574v@att.com>; PATEL, CHETAN <cp2626@att.com>; FILLEY, MICHAEL J <mf3714@att.com>; LEWIS, MIKE <ml2487@att.com>; BANCHONGSIRICHAREON, SOONTORN <sb3291@att.com>; Hite, Jason <Jason.Hite@ga-asi.com>; Lin, Susan <Susan.Lin@ga-asi.com>; Lozada, Godfrey <Godfrey.Lozada@ga-asi.com>; Oyekan, Aziz <Aziz.Oyekan@ga-asi.com>
Subject: RE: Discuss - General Atomics Test of LTE IOPS on Band 14 over the Anza Borrego desert.

Dear Chet, Warren, Michael, Mike, and Soontorn:

Thank you for your participation in last week's conference call regarding our request for airborne cellular network testing near the Anza Borrego desert; it was very informative. It's a shame that we missed testing in that area prior to AT&T initiating Band 14 and AWS-3 service.

Following the conference call, the GA-ASI team met to come up with next steps and these three suggestions were raised for aerial testing:

- **Option 1: AT&T to recommend a location which hasn't been placed in FirstNet service yet**

Based on your knowledge of AT&T's LTE Band 14 deployment plans, is there another area that AT&T still has not placed these bands into service and could serve as a candidate area for our airborne testing for a day or two? It doesn't have to be in San Diego County; it can be over any county or state so long as can avoid interference.

- **Option 2: GA-ASI proposes a more remote location, further away from roads, population and AT&T towers (see Maps 2 below)**

We would like to propose an area east of Yuma, AZ and west of Phoenix, AZ (shown in Map 1 below) which is significantly farther from AT&T towers than the Anza Borrego desert test area we discussed on Thursday (left red rectangle below). Whilst transmissions from our airborne eNodeB would not reach your AT&T cell sites below at noise levels (-118 dBm at ??? bandwidth), they would be considerably attenuated based on the distances involved (see Map 2). The airborne test would take place 50 miles from Arizona State Routes 95 and 85, and 30 miles from Interstates 8 and 10.

- **Option 3: Propose testing offshore, west of San Diego**

Testing offshore could be a last option.

Attached is the information that you requested during our conference call. Please let me know if you have any questions or concerns with this information.

We look forward to receiving your feedback.

MAP 1. Visual size comparison of proposed test area vs. Anza Borrego

<image001.png>

MAP 2.

Proposed test area

<image002.png>

Best regards,
Carlos

Carlos I. Rivera
Sr. Program Manager
Comm & Cyber Assurance
Mission Systems
General Atomics Aeronautical Systems, Inc.
16761 Via Del Campo Court
San Diego, CA 92127

Cell: (858) 753-8433
Office: (858) 762-7136
Email: Carlos.I.Rivera@ga-asi.com

The information contained in this electronic message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. This message may also contain technical data, export of which is restricted by the International Traffic in Arms Regulations (ITAR). Disclosure to foreign persons without prior U.S. Government approval is prohibited. Violations of these export laws and regulations are subject to severe civil and criminal penalties.

This message may include Company Sensitive and/or Proprietary Information. If the reader of this message is not the intended recipient, you are informed that any dissemination, copying or disclosure of the material contained herein, in whole or in part, is strictly prohibited. If you received this message in error, please notify the sender by reply e-mail and delete all copies of this message.

-----Original Appointment-----

From: MUTHUSWAMY, ESWARAN <em574v@att.com>

Sent: Monday, March 11, 2019 5:16 PM

To: MUTHUSWAMY, ESWARAN; PATEL, CHETAN; FILLEY, MICHAEL J; LEWIS, MIKE;
BANCHONGSIRICHAREON, SOONTORN; Hite, Jason; Lin, Susan; Lozada, Godfrey;
Oyekan, Aziz; Rivera, Carlos I.

Subject: -EXT-Discuss - General Atomics Test of LTE IOPS on Band 14 over the Anza Borrego desert.

When: Thursday, March 14, 2019 12:00 PM-1:00 PM (UTC-08:00) Pacific Time (US & Canada).

Where:

Hi Carlos,

I am sending this invite out since it is easier for me to look up calendars internally. Hope this slot works for everyone. We may or may not need the full hour.