Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

Use of Spectrum Bands Above 24 GHz for Mobile Radio Services

GN Docket No. 14-177

COMMENTS
OF
ANGIE COMMUNICATIONS USA B.V.
ON THE
NOTICE OF INQUIRY
TO EXAMINE USE OF BANDS ABOVE 24 GHZ FOR MOBILE BROADBAND

FEBRUARY 16, 2015
On behalf of Angie Communications USA B.V., we seek to comment on parts of the questions outlined in the Notice of Inquiry, released by the FCC on October 17, 2014.

**Background**

Angie Communications USA B.V. (Angie) is a Netherlands based privately held limited liability company that will invest in the building, operation and exploitation of mobile and wireless networks and Fiber-to-the-Premises systems in the USA.

Initial rollouts by Angie will start (through a local, USA, entity) by the second half of 2016, or earlier, depending on the outcome of several potential opportunities such as in Los Angeles City and Arlington County.

**Approach**

Angie intends to invest approximately $18.5B in Capital Expenditure by 2021 in order to build three distinct yet converged infrastructures:

<table>
<thead>
<tr>
<th>By</th>
<th>Infra</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>YE2018</td>
<td>Fourth generation (4G) Mobile Broadband</td>
<td>95% of USA population</td>
</tr>
<tr>
<td>YE2018</td>
<td>Fifth generation (5G) Wireless Access</td>
<td>85% of USA population</td>
</tr>
<tr>
<td>YE2021</td>
<td>1 or 10 Gbps Fiber to the Premises (FTTP)</td>
<td>5 million connections throughout the USA</td>
</tr>
</tbody>
</table>

This makes Angie the largest newcomer in the USA. It is in this spirit that we comment on the Notice.
Our Comment

Due to competitive reasons Angie has not previously commented on or confirmed any specifics regarding the use of frequency and technologies.

For the same reason, we do not intend to provide too many specific details in this Comment.

Overall, we would like to acknowledge the concerns as laid out in the Comments by Professor Theodore Rappaport, submitted to the FCC in this same regard on January 15, 2015.

It should be noted that Angie USA is part of Angie Communications International B.V., which is involved in the building of similar next-generation communications infrastructure in the Netherlands, the UK, Germany and France. Our experience in business modeling and frequency planning could be useful to the USA government, the states, the city/municipalities and the public at large.

Angie’s approach focuses not just on the mobile level. In fact, we foresee building a converged network, serving all aspects of a user’s daily communications needs today and tomorrow:

1. Mobility (at x GHz, nationwide coverage);
2. Wireless outdoor at x GHz (small cell/ pico cell, etc.);
3. Wireless indoor at tri-band 2.4GHz, 5GHz, 60 GHz (802.11ac and 802.11ax);
4. Vicinity (personal hotspot, tri-band);
5. Body (wearables etc., tri-band).
This means that Angie would (if enabled/empowered) create a unique, converged “always-on, always-following” service-network where the user will experience more freedom and have more self-aware and automatic communications without too much (or in many cases without any) efforts.

Our biggest fear, however, is that the USA will move from an unlicensed or light-licensed policy today to selling spectrum in the near future for the highest price. A shift in licensing/cost policy by the FCC could lead Angie to partly or even fully abandon its plans for the USA.

As we truly believe that the way forward lays in much the same way policy has been crafted today, we believe that the FCC should be more focused on empowering newcomers (whether nationwide as Angie proposes or local, as Rappaport suggests). This could be, for example – among others, in the form of allowing more mobile throughput (power) and more flexibility in licensing.\(^3\)

It is essential for the FCC to also understand the importance of investments in next-generation communication networks/systems by newcomers with regards to legacy/incumbent operators. It may be very well that the most state-of-the-art mobile broadband network in the very near future will be fully in the mmWave spectrum, where the mmWave frequency is used for mobility (and not just part of a Heterogeneous Network at the edge/hotspot level).\(^4\)

At Angie, we believe that because of the from-scratch approach, and because of the characteristics of its ultra-dense infrastructure, along with much-increased fiber-connectivity, its proposed Mobile Broadband/Wireless Access network would truly contain most of the main characteristics researchers and developers are looking for in 5G mobile services.
Thus, if policy by the FCC were to include empowerment of newcomers where innovation on the infrastructure-level and improved services are preferred and encouraged above monetary gains (by licensing at high auction fees), the USA would stand to benefit on all levels, creating huge advantages and opportunities for its citizens.

As the current and previous FCC commissioners have proven foresight and vision, we trust on the continued wisdom of the commissioners and advisors to make decisions and set out policies in the best interest of USA citizens.

___________________/s/__________________

Neal S. Lachman
CEO
Angie Communications International B.V.
“De Goudsesingel” Building / 5TH Floor
Kipstraat 4, 3011RT
Rotterdam, The Netherlands
T: +31 10 742 2445
E: info [a] ang.ie

February 16, 2015

1 Angie USA Project: http://ang.ie/the-projects/usa.html
3 Ibid, page 35
4 See, for example, “Multi-Gigabits Millimeter Wave Wireless Communications for 5G: From Fixed Access to Cellular Networks” by Peng Wang et al, and the MiWeBA project by Richard Weiler et al.