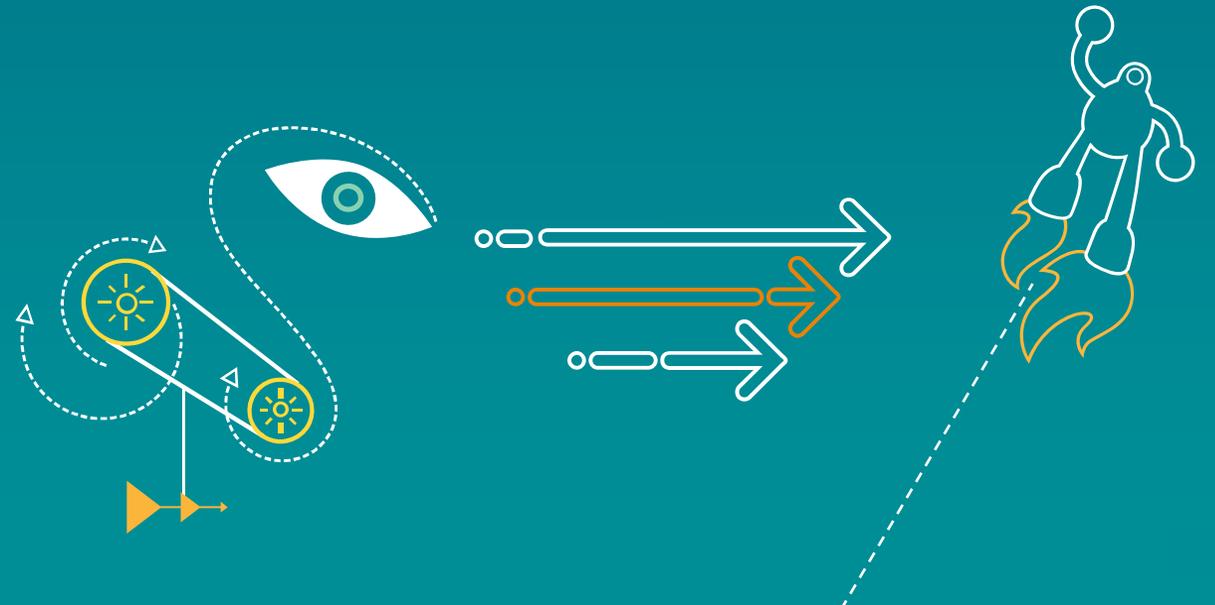


November 10, 2015

CableLabs and Qualcomm Wi-Fi/LTE-U Coexistence Study – Test Results

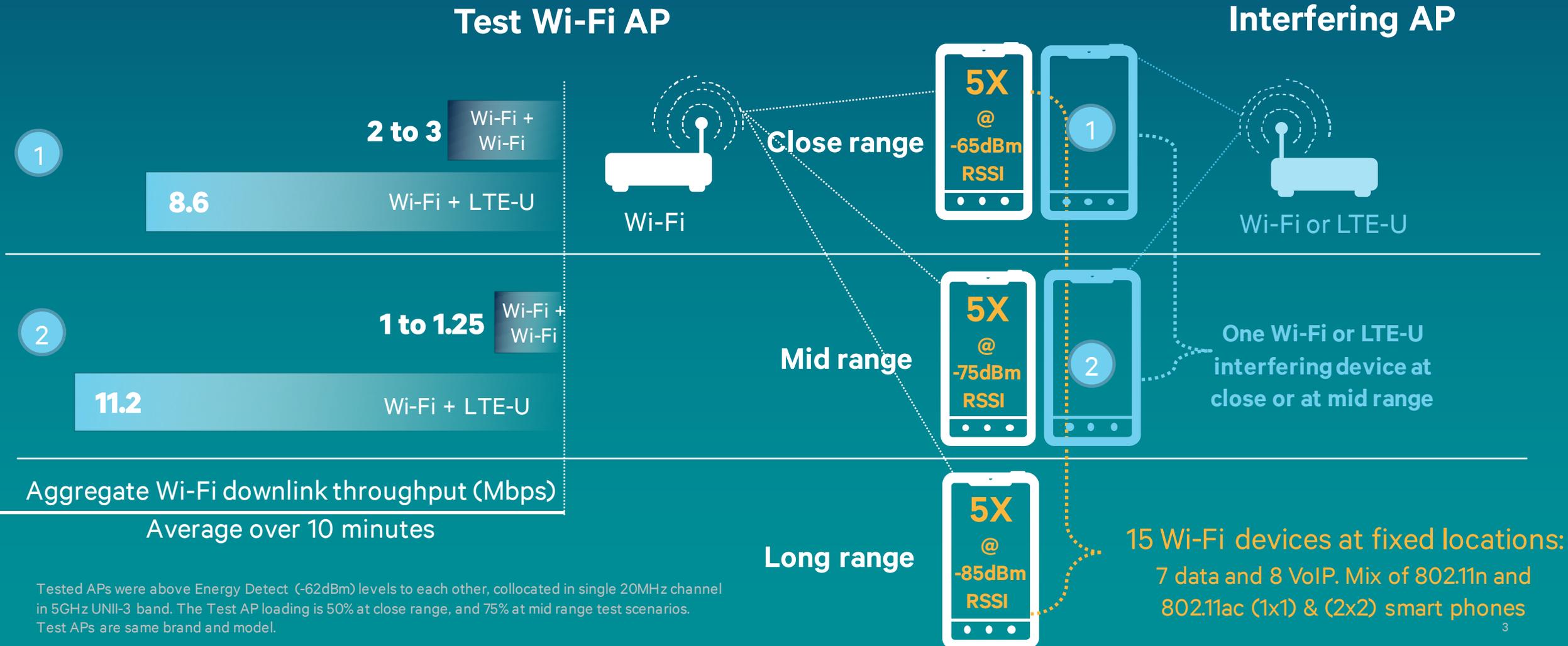


Summary

- Qualcomm's three-week trial with CableLabs confirms that LTE-U coexists well with Wi-Fi
 - Fair coexistence using the LTE-U CSAT algorithm was demonstrated in all tested scenarios
- Qualcomm followed CableLabs guidance to define the tests
 - This included the test scenarios, density of nodes, Wi-Fi equipment vendors and combinations analyzed
- 15 various user devices were simultaneously connected to the test Wi-Fi Access Point (“AP”)
 - Tested both “best effort” TCP and VoIP traffic types split over 15 device links

LTE-U is a good neighbor to Wi-Fi — TCP data performance

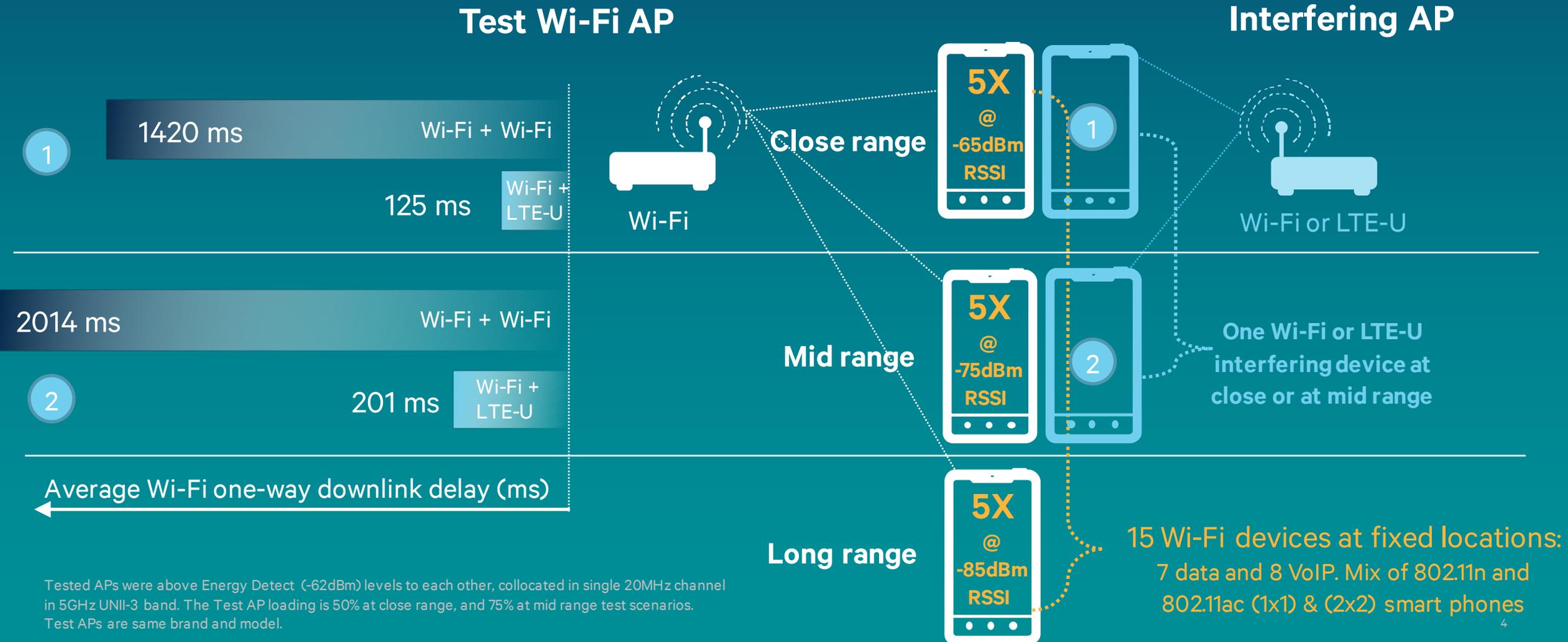
Example with same Wi-Fi vendor — low aggregate throughput due to interfering AP



Tested APs were above Energy Detect (-62dBm) levels to each other, collocated in single 20MHz channel in 5GHz UNII-3 band. The Test AP loading is 50% at close range, and 75% at mid range test scenarios. Test APs are same brand and model.

LTE-U is a good neighbor to Wi-Fi — one-way delay reduced

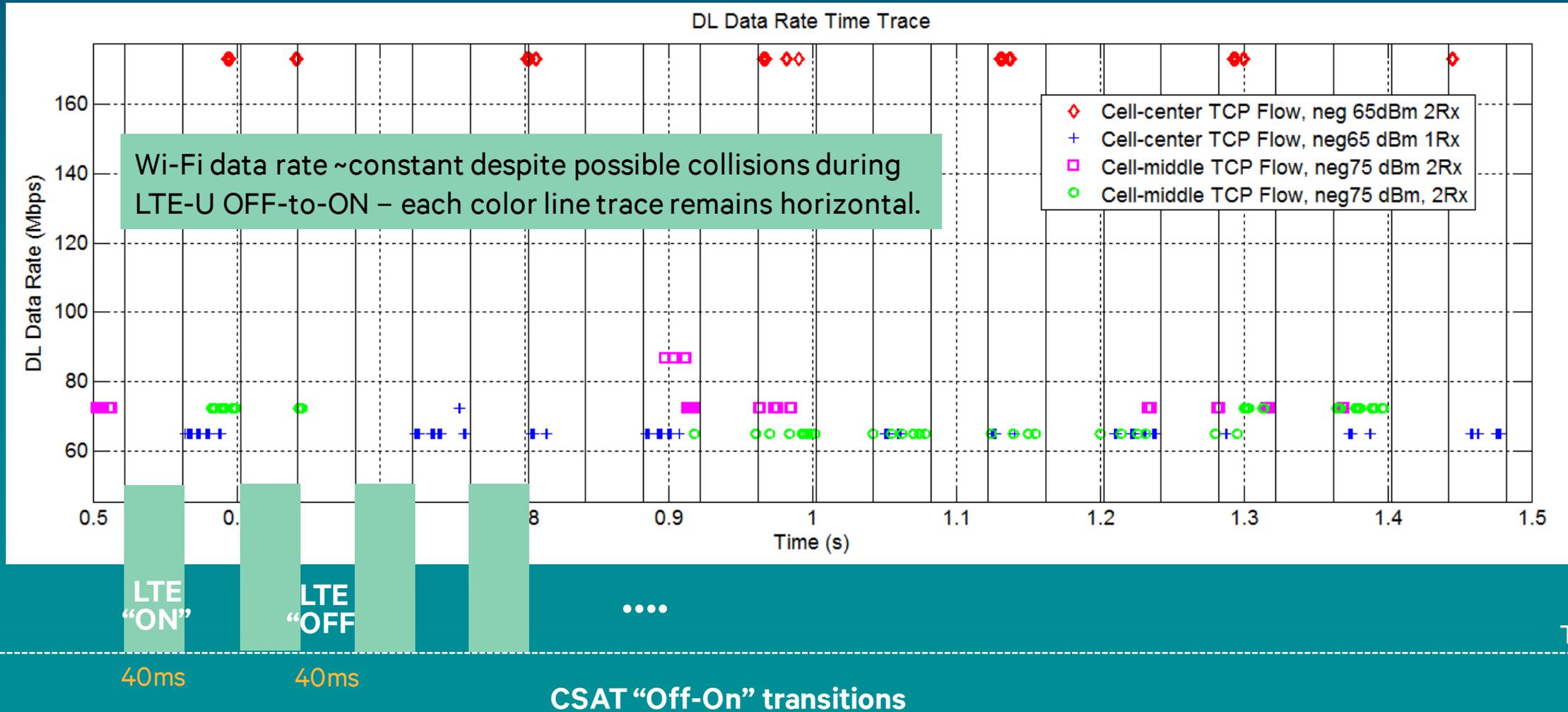
LTE-U lowers delay by an order of magnitude



Tested APs were above Energy Detect (-62dBm) levels to each other, collocated in single 20MHz channel in 5GHz UNII-3 band. The Test AP loading is 50% at close range, and 75% at mid range test scenarios. Test APs are same brand and model.

LTE-U is a good neighbor — data rates remain at same level

Downlink data rate of Wi-Fi is not affected by packet collisions at CSAT “off-on” transitions



Thank you

Follow us on:    

For more information, visit us at:
www.qualcomm.com & www.qualcomm.com/blog

©2013-2015 Qualcomm Technologies, Inc. and/or its affiliated companies. All Rights Reserved.

Qualcomm is a trademark of Qualcomm Incorporated, registered in the United States and other countries. Other product and brand names may be trademarks or registered trademarks of their respective owners.

References in this presentation to “Qualcomm” may mean Qualcomm Incorporated, Qualcomm Technologies, Inc., and/or other subsidiaries or business units within the Qualcomm corporate structure, as applicable.

Qualcomm Incorporated includes Qualcomm’s licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm’s engineering, research and development functions, and substantially all of its product and services businesses, including its semiconductor business, QCT.

