

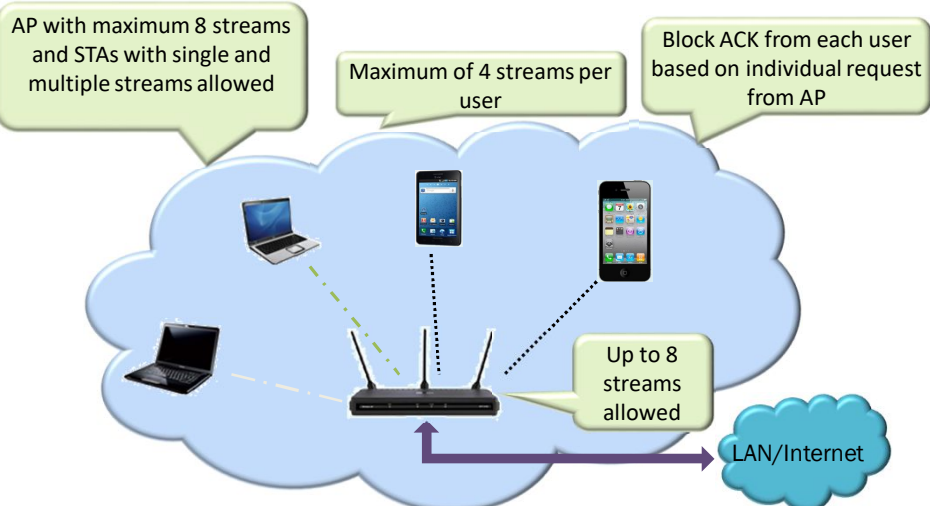
11ax MU-MIMO; how is it different from 11ac?

Dr. Srikanth Subramanian, CKO, Nanocell Networks

www.nanocellnetworks.com

srikanth.s@nanocellnetworks.com

802.11ac MU-MIMO



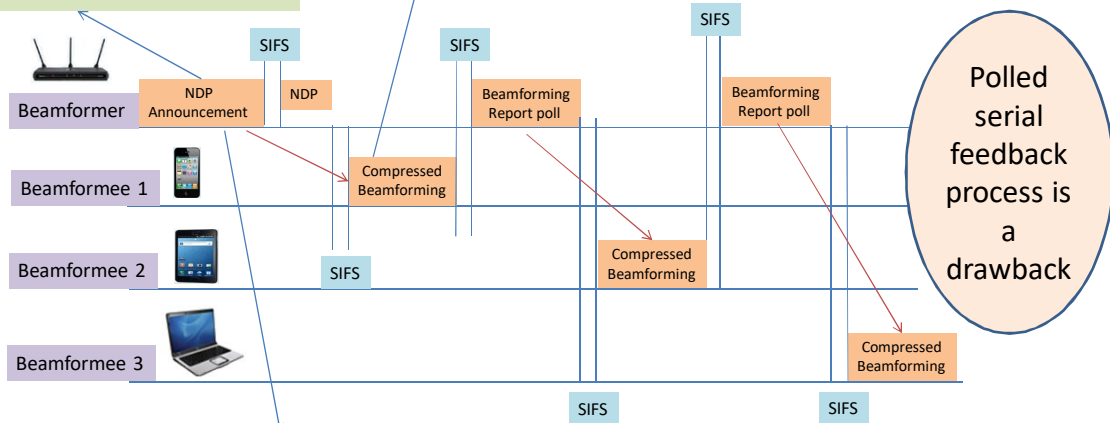
- Simultaneous transmission to a max. of 4 users possible

Only on Downlink

Channel Sounding in 802.11ac MU beamforming

- Order of sending feedback announced; SU and MU beamforming both use this frame with minor differences

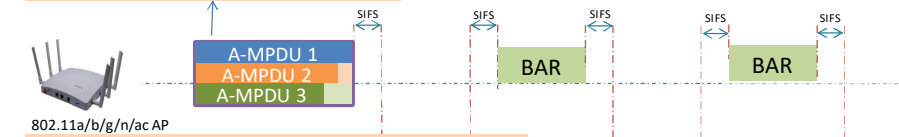
- Compressed V matrix along with other information like subcarrier level SNR can be sent ; Feedback for SU and MU cases are different; MU case has extra info.



- Other 802.11ac users will defer access till all feedback is received; duration set in frame
- Some bandwidth is consumed for the sounding procedure

802.11ac MU-MIMO Exchange

- Different MCS & streams allowed

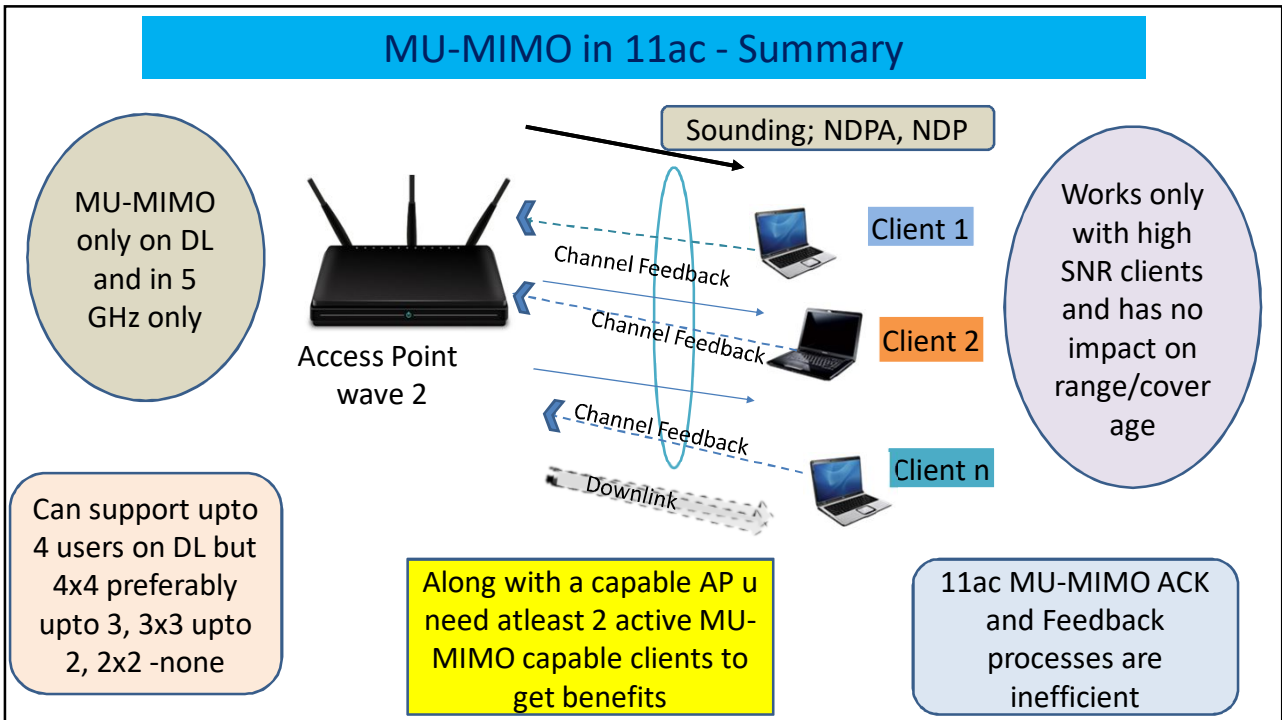
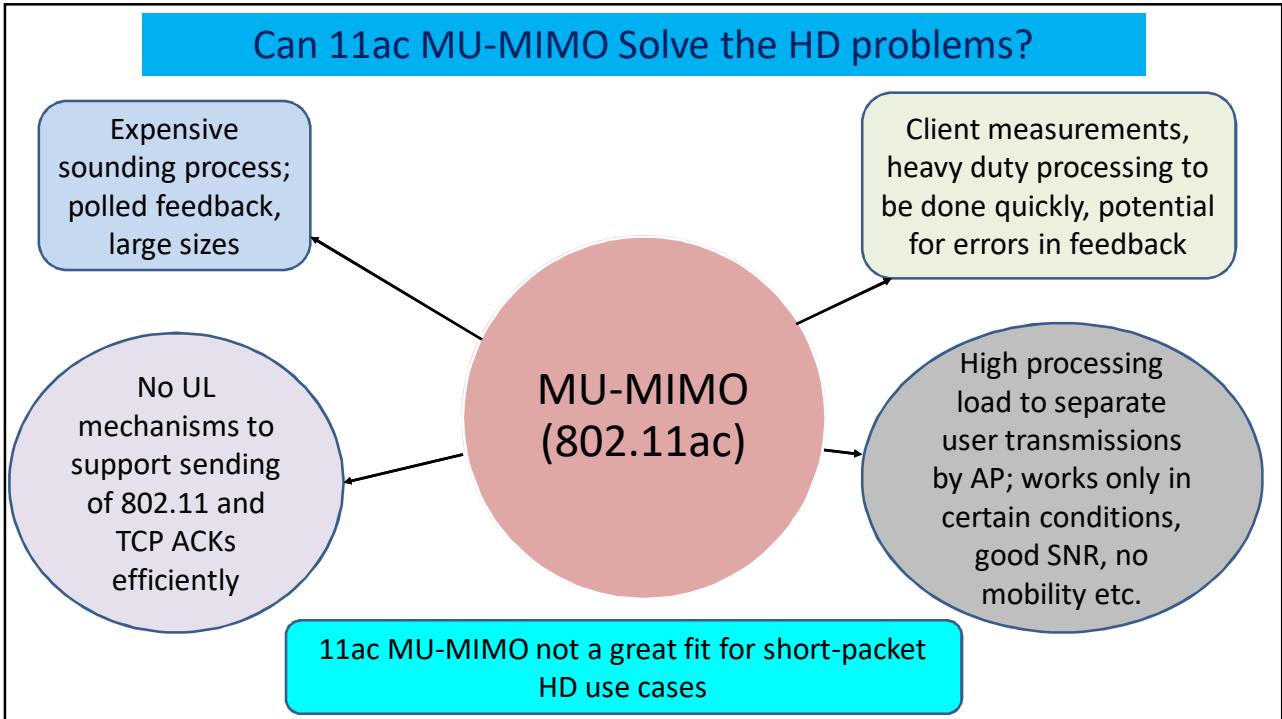


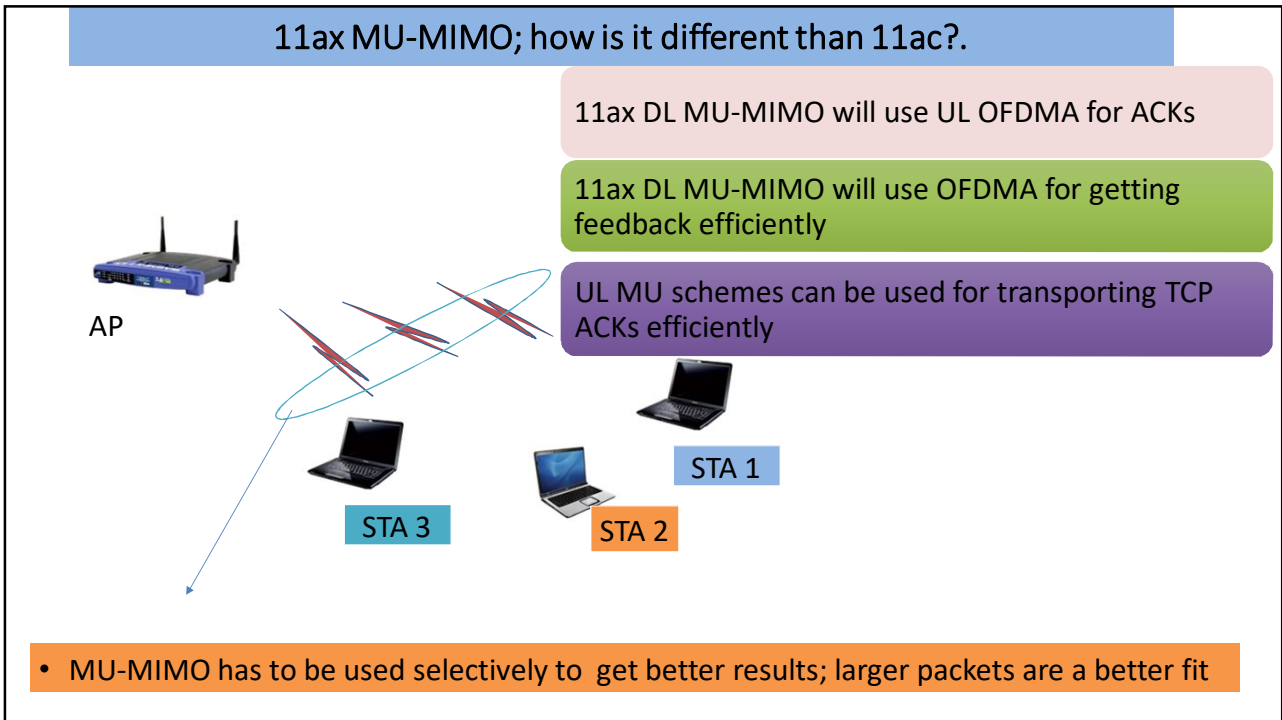
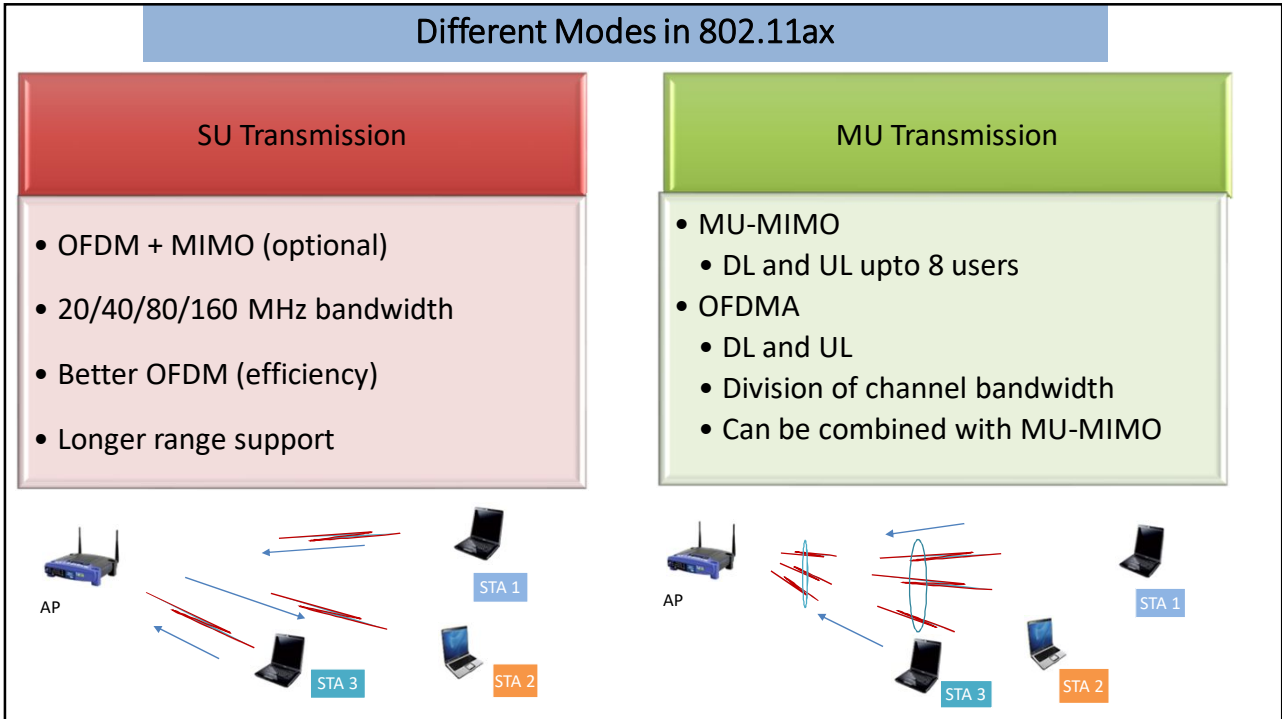
- Only primary user can be asked for implicit BA

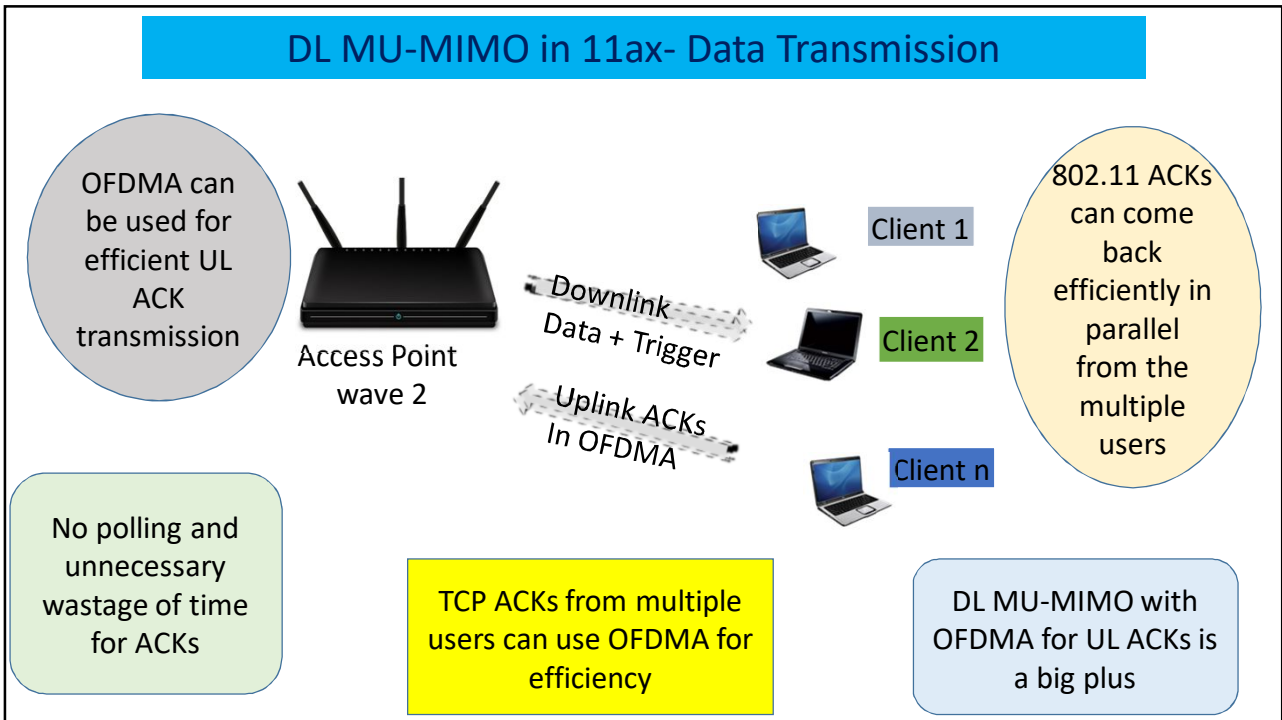
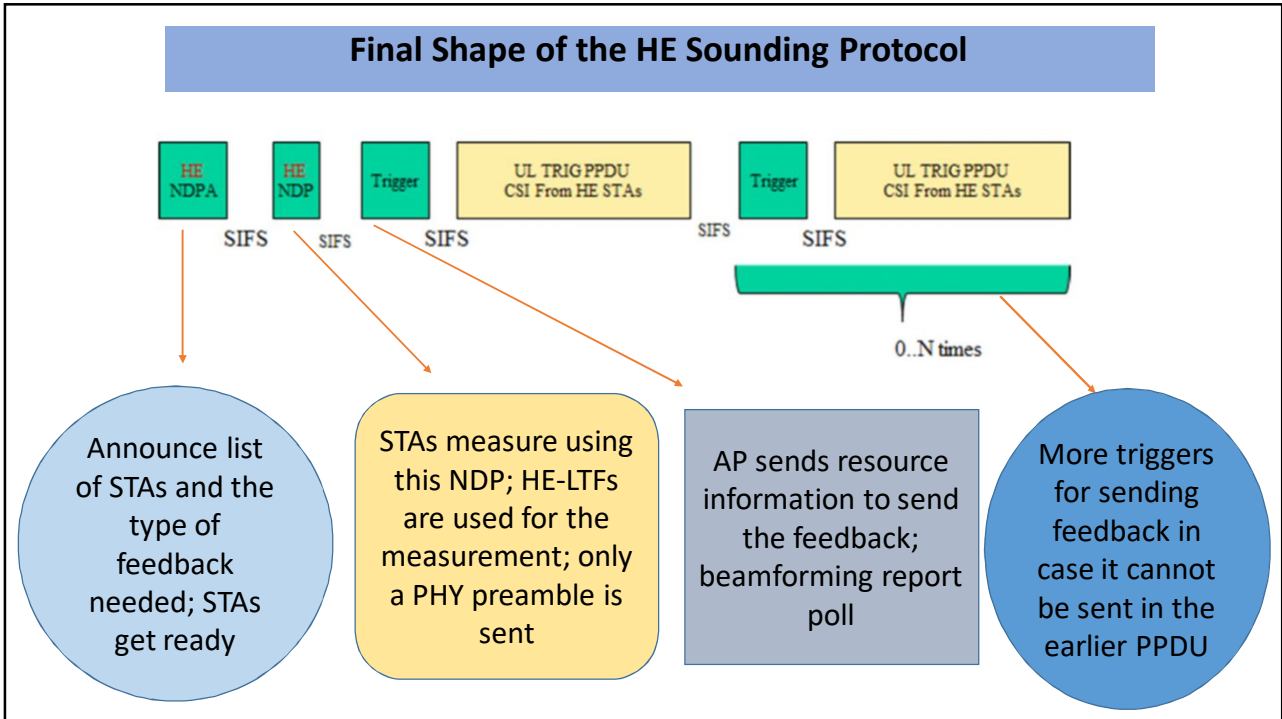
- BA policy set appropriately for other users

- Sent in response to BAR from AP for each user

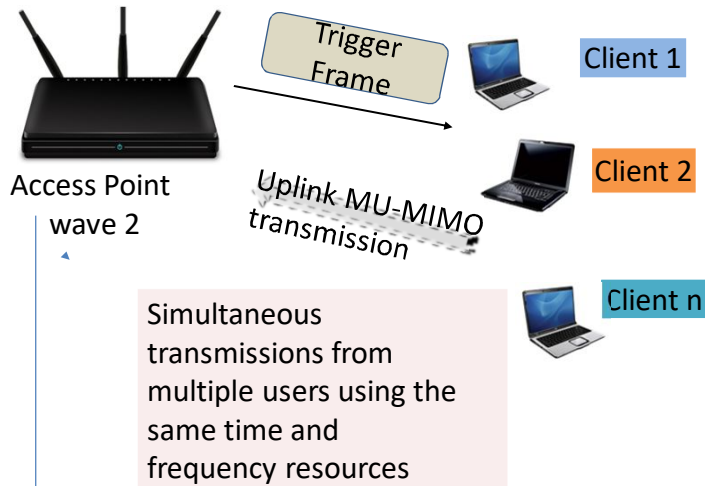
- Traffic to different users can belong to different QoS category







UL – MU-MIMO



No feedback needed for UL –MU-MIMO

UL MU-MIMO involves extra work at AP, but the problem of multi-user handling has similarities to multi-stream handling..

OFDMA on UL faces synchronization challenges but potentially simpler than UL MU-MIMO

Synchronization across users and power is the biggest challenge in UL MU

AP processing framework not very different as compared to normal MIMO

WIFI KNOWLEDGE SUMMIT
 Build a community of WIFI practitioners and enthusiasts through knowledge and experience sharing.
 March 9, 2018 | Bengaluru

mojo Networks nanocell IIT Bombay IIT Madras

For more details, visit www.wifi-ks.org.