

DragonWave Response to French consultation

- 1) No
- 2) Yes. Or point-to-point bands where disruption of service is not acceptable.
- 3) Yes. It allows the allotment holder to “self” co-ordinate to some respect. However, there are still issues of coordinating with users in adjacent channels or in adjacent allotment zones. It is an advantage if it offers a license cost, or time to deploy advantage.
- 4) No
- 5) No
- 6) Up to 256QAM is presently widely implemented. Up to 2048QAM is presently being released with 4096QAM in near future.
- 7) 256 qam: 6.3 b/Hz, 512 qam: 7.2 b/Hz, 1024 qam: 8.0 b/Hz, 2048 qam: 8.7 b/Hz. Increased use of adaptive modulation, higher class antenna to reduce interference levels, reduced link lengths.
- 8) Used to provide high throughput where spectrum is limited, or second polarization is available at a reduced cost.
- 9) Provides high throughput for > 95% of the time, useful for packet networks which can prioritize traffic.
- 10) Use of MIMO + XPIC to achieve 4x throughput on single frequency. Other data aided interference cancelation techniques (e.g. hub site frequency re-use). Adaptive antennas, however these tend to be \$\$\$.
- 11) Yes. Requirement for higher throughput. Generally shorter links.
- 12) It is very competitive compared to other technologies, especially where wired connections are not present. It is the quickest method of deploying a network. With pico-cellular networks it will become even more competitive.
- 13) Microwave will become more prevalent as capacities exceed what is feasible on copper and cell radii become smaller, making running fiber to each site very expensive.
- 14) Microwave will have a large part in providing backhaul to picocells. A requirement is the ability to use small aperture antennae. This is to deal with the twist and sway of the structures which these sites are typically attached to, but also for esthetics as the equipment tends to be at street level. Additionally, area licenses enable the operator to perform their own interference analysis/design.
- 15) Point-to-multipoint microwave technology can play a role in rural connectivity. Usually local topography is a limiting factor in terms of its effectiveness.
- 16) ..
- 17) ..
- 18) One possible use in the future is for backhauling intelligent vehicle highway systems (IVHS)
- 19) Seeing a demand for higher capacity links requiring > 56MHz channel size.
- 20) It depends on the rules of using multiple channels. If you do not need to meet the mask requirements for the individual channels, but rather just the mask at the top and bottom edges

of the aggregated channel, then there is little advantage to larger channel sizes. If you need to meet the individual channel masks, this would require a multicarrier transmitter, which is generally more \$\$\$.

- 21) From a spectrum management point of view it makes more sense to limit the channel sizes. However, from a deployment point of view, you would like to achieve your required throughput with as little equipment as possible. This pushes you to want larger bandwidths as opposed to using XPIC or multiple narrower channels.
- 22) Same as 21
- 23) ..
- 24) If there is excess spectrum (as in a new band), larger channels make more sense.
- 25) ..
- 26) It is available.
- 27) ..
- 28) 42,55,60,50,52,65, 90 GHz, wider channels (up to 112 MHz), light or un licensed for > 55 GHz.
- 29) No
- 30) ..
- 31) ..
- 32) ..