Dynamic Spectrum Access for SAS

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SAS in 3.5 GHz

- Aligned with FCC's SAS proposal
  - 3 tiers of service: Incumbents, GAA, PA
  - All 3 tiers in one part of the band
  - GAA and incumbents in the other part of the part
- Spectrum sharing
  - Geolocation database approach similar to TVWS
  - Identifying beacon for PA devices
  - Listen before talk

Use Cases

- Small-cell networking 2X2 MIMO @ 200 mW
  - Network access
  - Devices connectivity
- Last mile/backhaul 2X2 and 3X3 MIMO @ 1W EIRP
  - Point-to-point capability with early device
  - Possibly point-to multipoint in the future

Evolution of DB Approach

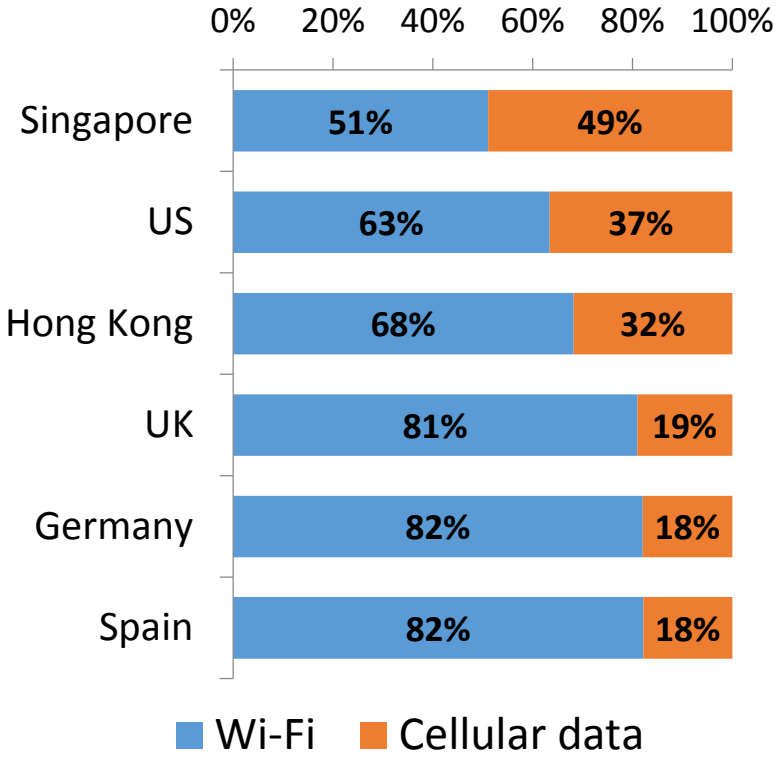
- SAS communicates to a device the power it can operate at a given location. Specifying a reduced power level allows for a reduction in licenees' protected contours to maximize spectrum use while avoiding the production of harmful interference
- DB query includes last channels used by the device. This helps in spectrum management for a given region. As an option, a device can report back to SAS what channels will be used
- DB provides information to the querying device RF indicator to allocated channels around the device’s location. This includes noise floors

Success in Unlicensed Spectrum (Thanki)

Wi-Fi…

- ❑ is in 440 million homes[1]
- ❑ is the primary means of delivering data to end users:
  - 69% of smartphone and tablet traffic[2]
  - 57% of all PC and laptop traffic – *more than ethernet*[3]

Wi-Fi carries the majority of the world's smartphone data[4]



Source: 1,2,3) Thanki (2012) 4) Informa

Framework for 3.5 GHz Regulation

- ❑ Allocation of at least 50 MHz for GAA devices
- ❑ Operation of GAA devices unlicensed under Part 2 and Part 15
- ❑ Consideration of appropriate limits in the Priority Access tier
- ❑ Leverage the work done in TVWS 802.11af, IETF PAWS, and ETSI BRAN