Using Small Cells for Spectrum Monitoring

Spectrum Management and Interference Detection in 3.5 GHz
SpiderCloud Enterprise Small Cell System

- Self-organizing, easy-to-deploy, scalable, 3G/LTE small cell network for enterprises
- Services Node manages interference between Radio Nodes, Macro-cellular network
Commercial Small Cells Offer Spectrum Monitoring

Commercially deployed small cells monitor:
- Multiple frequency bands
- Multiple air-interface technologies
- Capable of decoding broadcast channels
- Report RSSI, cell identification

AU Network Nodes should report spectrum use to SAS
- Relatively small cost overhead; better than asking mobile devices to monitor spectrum
Benefit of Requiring AU Network Nodes to Monitor Spectrum

- Detect spectrum misuse
  - SAS can use spectrum reports to monitor if transmissions from certain authorized users is visible outside licensed area

- Detect GPS spoofing
  - SAS can use spectrum reports provided by multiple small cells to create RF signature for each location