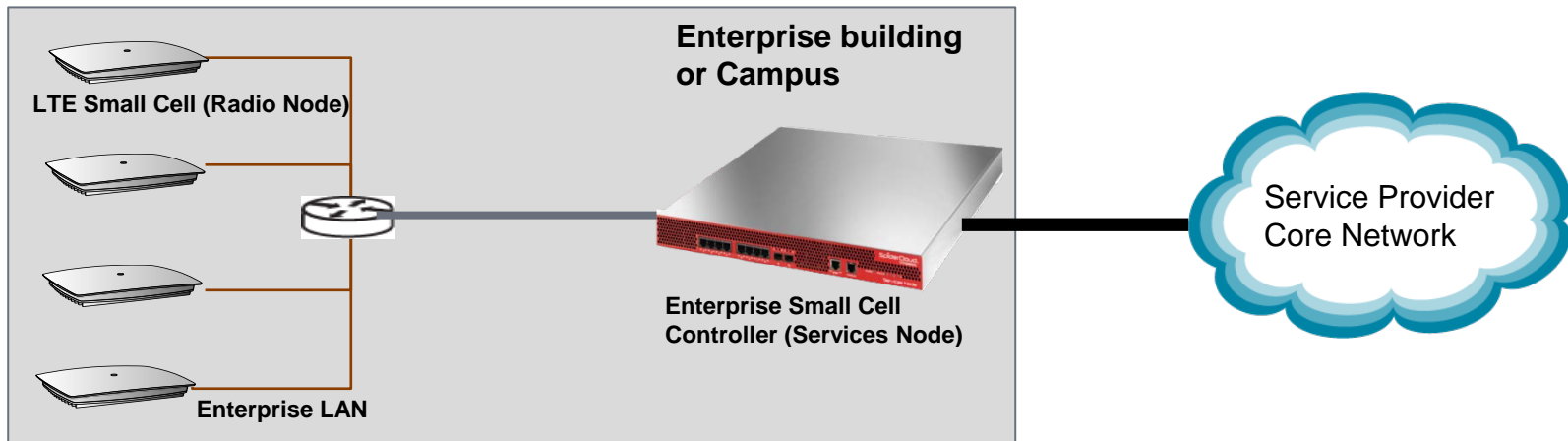


Using Small Cells for Spectrum Monitoring

Spectrum Management and
Interference Detection in 3.5 GHz

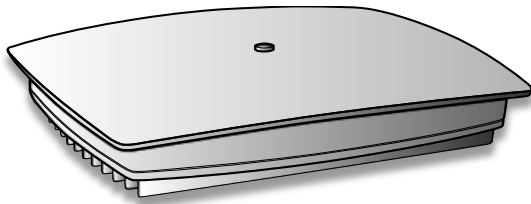
The logo for SpiderCloud Wireless features the company name in a bold, black, sans-serif font. The word "SpiderCloud" is on the top line, and "Wireless" is on the bottom line. A red Wi-Fi symbol is positioned above the letter 'i' in "SpiderCloud".

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