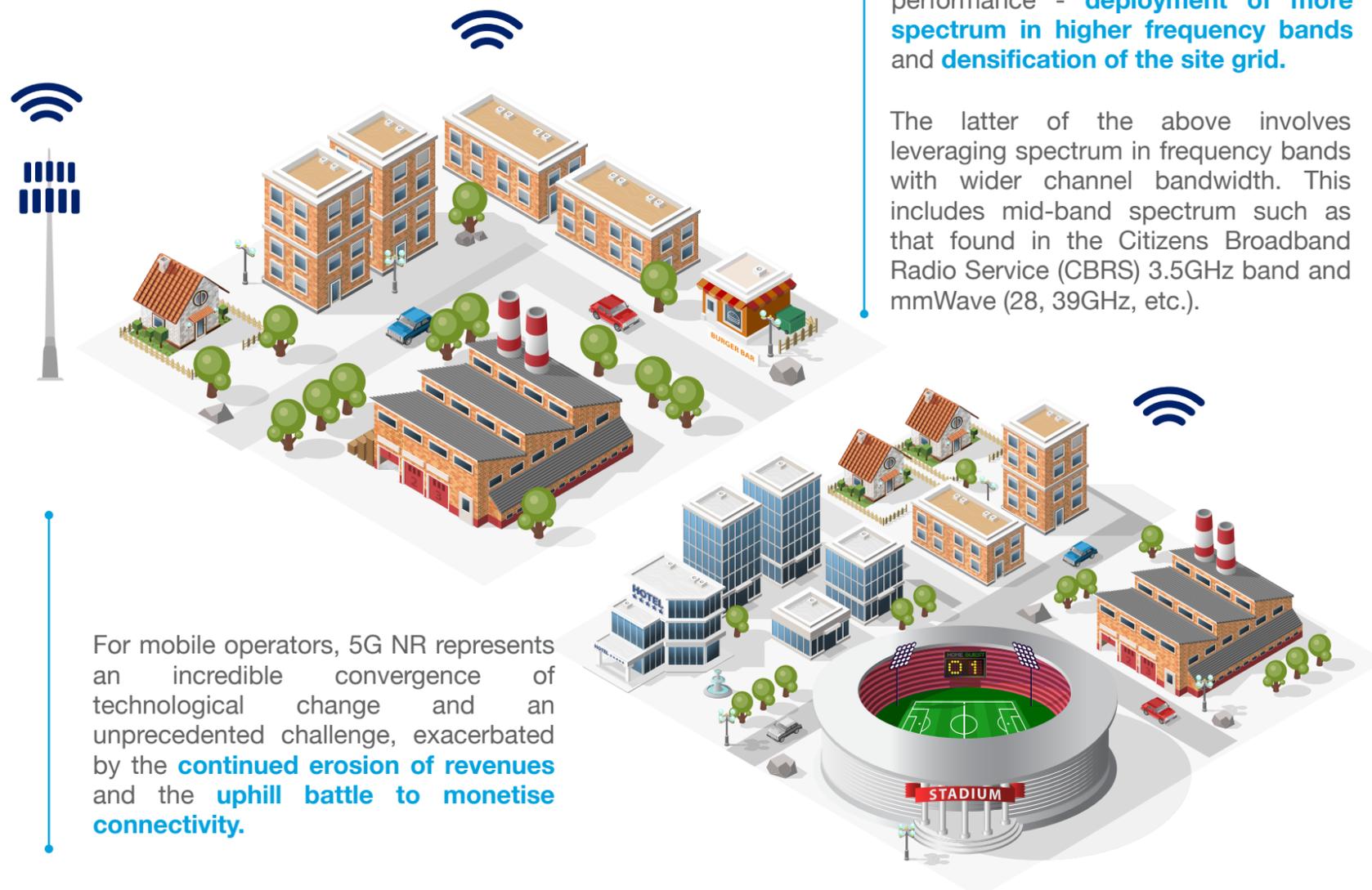


# THE RELATIONSHIP WITH 5G, SMALL CELLS AND NEUTRAL HOSTS



There is a pivot towards two complementary strategies to drive a radical enhancement of network performance - **deployment of more spectrum in higher frequency bands** and **densification of the site grid**.

The latter of the above involves leveraging spectrum in frequency bands with wider channel bandwidth. This includes mid-band spectrum such as that found in the Citizens Broadband Radio Service (CBRS) 3.5GHz band and mmWave (28, 39GHz, etc.).

Small cells operate in **frequency bands that are closely similar to macrocell networks** and at **low power to enable aggressive spectrum re-use**. Small cells can **boost spectral efficiency** dramatically enhancing network performance.

The gravitation towards higher frequency bands with 5G NR will introduce **new signal attenuation challenges**, significantly reducing the ability of macrocells to provide wide-area and indoor coverage. **Massive densification of the site grid with small cells** is the answer to the coverage and capacity challenges of 5G.

Small cells operate **in frequency bands that are closely like macrocell networks** and at low power to **enable aggressive spectrum re-use** and can boost spectral efficiency by an order of magnitude, dramatically enhancing network performance.

Small cells are a simple and cost-effective method for mobile operators to provide **on-demand coverage and capacity** in high-density locations.

**Neutral Host** has emerged as a compelling model to **enhance network performance** at locations that are not viewed as commercially viable by mobile operators.

The **neutral host provider** becomes a **miniature mobile operator** with **localised coverage and capacity** onto which others can roam. This enables **mobile operators to achieve massive densification** of the macrocell network more **cost-effectively** and **reduces visual pollution by eliminating the duplication of active infrastructure**.

For mobile operators, 5G NR represents an incredible convergence of technological change and an unprecedented challenge, exacerbated by the **continued erosion of revenues** and the **uphill battle to monetise connectivity**.