

Simplifying small cell deployments using cutting-edge, cloud based, wireless solutions

# viper™

Virtualised In-Premise Enterprise RAN platform

4G SOLUTION  
3G SOLUTION  
2G SOLUTION

## Small cells, simplified

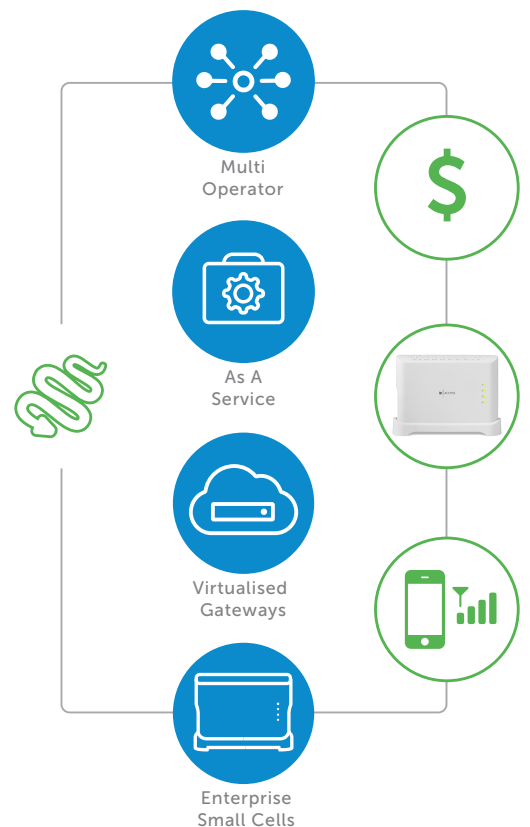
Viper is an end-to-end small cell platform from ip.access, which integrates the following components:

- A family of plug-and-play 2G, 3G and 4G small cell Access Points for small, medium and large enterprise deployments
- Virtualised Gateways which securely handle and route all traffic between the APs and the operator's core network
- SUMO™ Multi-Operator technology, allowing a single access point to provide coverage for all networks
- As A Service deployment models, including core network integration, AP deployment, and network operation

The Viper platform is targeted at Network Operators, MVNOs, Service Providers and System Integrators looking for a simple small cell solution which can be quickly deployed with minimal technical resources.

End-to-end security, automated provisioning and network configuration are an integral part of the Viper platform, with access points requiring only Ethernet and mains power connections, making small cell installation as easy as Wi-Fi.

Viper's LTE and 3G Access Points cover all major frequency bands worldwide, and support traditional licensed spectrum, Citizens Broadband, and Licensed Shared Access.

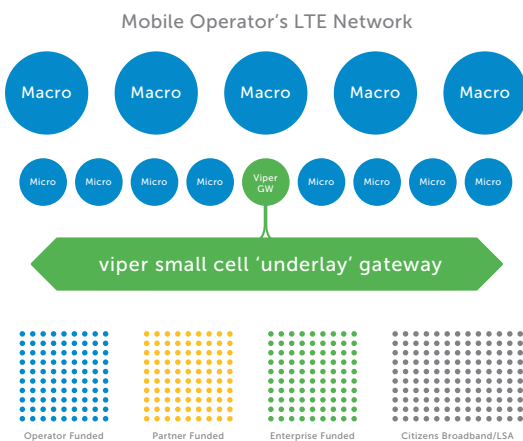


### Plug-and-play Small Cell Access Points

The Viper platform can be deployed with a large range of Enterprise and SoHo small cell APs from ip.access. Approaching 1.5 million small cells deployed globally, our award-winning SON and network listen capabilities make AP installation easier than installing Wi-Fi.

Requiring only ethernet and power connections, small cells can be installed by service partners as part of a managed rollout, or simply mailed out to end-users for unplanned deployments in small enterprises. Fully secured IP backhaul connects the APs to the Viper gateway, with no on-site gateways needed.

Access Points support 2G, 3G, LTE and TD-LTE air interfaces in a variety of worldwide frequency bands, including the new 3.5 GHz Citizen's Broadband. Capacities range from cost-optimised SoHo APs serving 8 simultaneous users, to flexible multi-band Enterprise APs supporting up to 32 active 4G users.



ip.access Viper™ small cell network deployment

### Virtualised Gateways

The Viper platform features fully virtualised gateways handling small cell security, access control, core network interfacing and network operation. The Viper gateways can be hosted in the Mobile Operator's premises, in an offsite data centre, or cloud hosted.

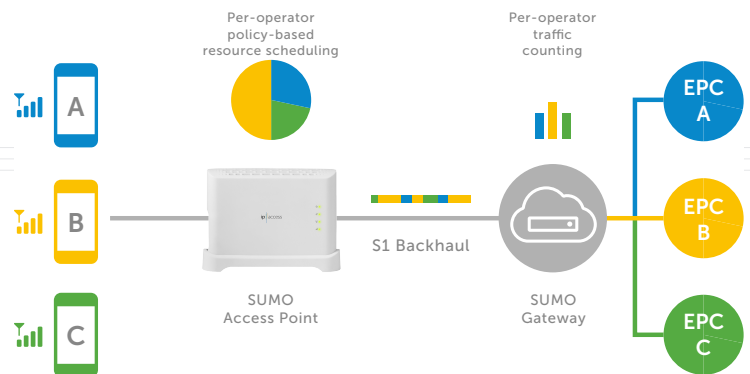
By offloading all small cell-related operations to the Viper gateway, there is minimum impact on the mobile operator's existing macro network as more small cells are deployed. The Viper gateway wraps all the small cells into a single "underlay" cell, managing handovers to and from the existing macro network, as well as handovers between small cells, for a truly scalable small cell network.

Deployment of additional small cells into the network is a simple plug-and-play process, enabling cost effective self-install by smaller businesses, and allowing AP rollouts to be funded by the network operator, channel partners, or the end-users themselves.

### SUMO™ Multi-Operator support

The Viper platform includes SUMO, ip.access' solution for multi-operator coverage from a single small cell. Many vertical markets such as hotels and property developers require multi-operator coverage, and installing one AP per operator is simply not an option.

With SUMO, the AP broadcasts multiple PLMN codes on the same spectrum, and all users see the AP as a cell within their home network. A policy based resource scheduler in the AP allocates capacity and bandwidth according to predefined rules. The Viper gateway securely routes all traffic to the appropriate core network for each operator, and traffic counters allow the traffic to be monetised.



### Small Cell As A Service

The Viper platform is fully managed As A Service by ip.access, simplifying small cell deployment. We provide all the technical expertise needed during core network integration, AP rollout, and ongoing network operations, minimising the overhead required to deploy small cells. Capex financing is also available, allowing the entire Viper network to be deployed with a simple monthly opex model.

ip.access provides ongoing operation of the Viper small cell network from our network operations centres on three continents, providing 24/7 monitoring of the small cell network, and monthly KPI reporting. Tier 1 and Tier 2 support can also be provided by ip.access' worldwide network of system integrators and service partners.