

Nokia Siemens Networks Striding toward an open market with the 3G Femto Home Access Solution

Nokia Siemens
Networks

3G femto cells improve in-building coverage, bringing better quality mobile broadband services to homes for a far more gratifying user experience. What's more, they enable mobile network operators to strengthen and extend their business ties with end-users.

Nokia Siemens Networks is poised to take a lead towards an open market for femto cell customer premises equipment (CPE) with the 3G Femto Home Access Solution featuring the standardized Iu interface.

A new way of doing business

The femto cell business differs markedly from conventional mobile network deployment. Integrating myriad femto cells with radio and core networks is a daunting challenge that calls for a deep understanding of the network environment. Industry players have proposed several more or less proprietary femto network architectures. However, this technology fragmentation entails far greater total costs and limits CPE choices, it fails to put operators and users' interests first. And it complicates the two other major challenges of managing mass delivery and supporting femto CPE cost-efficiently.

Moving towards a multivendor future with Iu

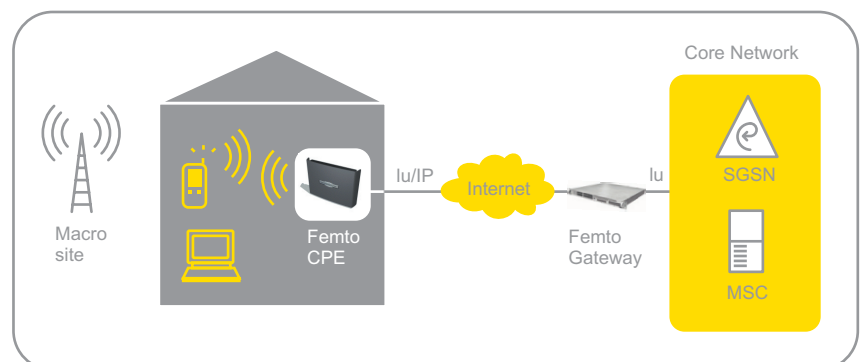
Nokia Siemens Networks' proposal – the 3G Femto Home Access Solution – rises to the challenges of cost, complexity, and diversity. Its standard Iu interface integrates femto cells into radio and core networks using a new network element called the Femto Gateway.

This Femto Gateway creates a virtual RNC interface to the legacy network. And it does this without requiring any changes to core network elements. The Femto Gateway features Iu interfaces to the core network as well as Iu/IP interface to the CPE.

A rich, varied CPE offering

The Femto Access Point incorporates the 3G Node B and RNC, with xDSL and WiFi functions optionally available. It may be operator-branded and tailored to support each operator's business strategy.

Certified by Nokia Siemens Networks, globally recognized CPE vendors can take advantage of consumer market and support channels that are already in place.



Schematic diagram of the architecture

User benefits:

- Affords simple, convenient access
- Improves the user experience
- Delivers reliable, secure, robust performance
- Enables new services, competitive prices, compelling service packages

Operator benefits:

- Boosts operator revenue by upping 3G services' air time
- Improves customer intimacy
- Enables service bundling to reduce churn
- Features standard interfaces that are independent of 3G core vendors
- Open architecture drives up CPE volume and drives down prices



3G Femto Home Access Points will be available from vendors certified by Nokia Siemens Networks.

Femto Gateway general specification

Main functions	<ul style="list-style-type: none"> • Grooming point for cellular traffic from and to multiple femto CPE • Protocol conversion between ATM to CN and IP to femto CPE • Central management instance for connected femto CPE • Alarm correlation and filtering • IPsec termination from Femto CPE
External physical interfaces	SDH: STM-1/OC-3 optical Ethernet: Gigabit Ethernet electrical (traffic), 100 Base-TX (traffic, local management)
Power interface	110/220 VAC, 50/60 Hz, -48/-60 VDC
Mechanical	Mountable in a 19" rack

Femto Access Point general specifications

(typical; specifications and supported features may vary depending on CPE vendor and operator)

Reference standards/CPE	3GPP rel.6 local area and later rel.7 and 8 applicable improvements
Reference standards/terminals	3GPP rel.99 and later releases
Mobility	Idle mode mobility and inter frequency hand-over
Configuration	Plug-and-play
Security measures	IP security tunnel
Frequency carrier	Single, UMTS band I (other bands upon market demand)
Transmit power	Typical max. 7...15 dBm, configurable
Capacity	At least 4 simultaneous normal connection/calls and one for emergency call
HSPA	Typical min. 7.2 Mbps DL, 1.4 Mbit/s UL
Additional features	Optional xDSL and WiFi
Transport protocol	Iu/IP