

SafeMove® Mobile IP 3G network offload

SafeMove Mobile IP is a flexible and effective software-based method of offloading 3G connections to Wi-Fi networks. This seamless network switching enables operators to offload active sessions without any impact on the user, thereby increasing QoS and opening the door to new revenue opportunities.

The 3G network crunch

After significant operator investment in licenses and a slow initial take-up of services, 3G networks started to come to life in 2007. Driven by the availability of a new wave of feature-rich devices and the sudden popularity of video and music services, business users and consumers alike demanded mobile internet connectivity from wherever they happened to be.

This demand has since snowballed into a near-perfect storm that has left operators struggling to cope with an exponential increase in network utilisation while users of much-hyped 3G smartphones complain about connection speeds being slower than advertised. Inevitably this has left many operators wondering what they will do when networks reach capacity and how to meet the ever-increasing expectations of subscribers.

Potential solutions

If addressing this enormous challenge was simply a question of increasing network capacity by building more base stations then construction crews would already be busy. But the huge increase in demand for 3G data services has not been accompanied by a corresponding increase in revenues - in fact, revenues for mobile data are predicted to fall in response to increased competition and more indus-

- **Increase revenues** - sell additional 3G services to users
- **Reduce churn** - provide a better service to existing subscribers
- **Deploy easily** - flexible client software solution
- **Transparent** - users unaware of network switching
- **Seamless** - 3G services continue uninterrupted

try regulation. Putting up new base stations is a costly and long-term solution at a time when more immediate action is needed. Femtocells are gaining in popularity amongst users who need to improve the quality of the signal they receive at home or in office buildings, especially for business use. But they are an expensive solution to what users often regard as an operator problem so will probably remain a niche market.

Operators are also in discussion with each other about sharing networks to maximise the use of spare capacity which is driven by pragmatism but will be politically difficult to achieve. Others are saying that 4G networks will sweep the problem away but many experts argue that the higher download speeds will soon be swamped by even more bandwidth-intensive services.

Offload with Mobile IP

Because of the obstacles in the path of the various alternatives, Mobile IP is now being widely tipped as the solution to the operators' problems. Given that 60% of 3G services are used in the home or office where a Wi-Fi network is also present, and that these Wi-Fi networks usually offer faster, more reliable connectivity, offloading many 3G sessions to Wi-Fi is a real possibility. Mobile IP is an established industry standard protocol that allows mobile devices to be assigned a permanent IP address, even as they roam between networks or during gaps in coverage on their own network. This allows active services (eg. VoIP calls, mobile TV or business applications) to continue uninterrupted, a key aspect to successfully switching users to alternative networks. Each device is equipped with a Mobile IP client, a small piece of software that permanently monitors for the existence

of other networks. If one is identified that is higher on the list of connection preferences, the Mobile IP client establishes a connection to it before breaking the existing connection, thus achieving a seamless handover.

Benefits of WiFi

One thing is clear – however operators choose to address their network capacity challenges it must be done in a way that is totally transparent and non-invasive to the user experience. Better still, if the solution comes as an integral part of the service users do not have to invest in extra hardware in order to benefit. And this is the strength of the Mobile IP argument. Mobile IP clients can be provisioned to each device at minimal cost and, once installed, 3G offload to Wi-Fi becomes an instant reality. Both operators and subscribers benefit in different ways:

- Operators have a low-cost, flexible and easy to deploy solution for network offload that allows them to compete with new market entrants and increase revenues through the provision of new services.
- Subscribers are automatically and seamlessly switched to a faster, and usually free, network that gives them a better QoS and allows them to access the bandwidth-intensive services they really want.



Mobile devices automatically connect to the best available network and seamlessly roam from one network to another.

Seamless roaming enhances the user experience – active services continue uninterrupted and survive gaps in coverage.

About Birdstep

Birdstep Technology ASA is a leading provider of secure and seamless wireless connectivity software for operators, enterprises and mobile device manufacturers. SafeMove is a mobile VPN solution providing seamless and secure connectivity to business data for corporations and governments. EasyConnect offers advanced connection and service management solutions for network operators and laptop manufacturers.

Birdstep Technology was founded in 1996 and is since 2002 listed on the Oslo Stock Exchange under the ticker "BIRD". The company has 100 employees and is headquartered in Oslo, Norway, with competence centres in Sweden, Finland and the United States. For more information, visit www.birdstep.com.