

VoIP access on public WLAN hotspots

WeRoam initiative for wireless VoIP roaming

Voice has a tremendous potential to generate traffic on WiFi. WeRoam is starting an initiative to align the commercial models between VoIP service providers and hotspots operators.

Voice as the killer application for public WLAN

The voice communication industry is experiencing an unprecedented evolution with the deployment of VoIP. The number of handsets that have a dual mode stack GSM and SIP has been constantly increasing in the past year and many new devices have been announced. Users of those devices dream of an integrated VoIP/Public WLAN offer that would cut their GSM roaming costs. Needless to say, wireless VoIP has the potential to become the primary source of revenues for hotspot operators.

However, the commercial success of wireless VoIP depends on two factors: a good user experience and a commercial model that fits the value chain of the WLAN industry. The former has to be driven by client software vendors. The latter is the responsibility of the WLAN operators and aggregators.

Issues with the commercial models

A mobile device can only be reachable if it is registered on the network. This is true for GSM as well as for SIP. GSM operators have understood that users are not willing to pay "just" to be reachable. A visited network therefore provides a signalling channel free of charge when mobile phones roam on its network. The user is only charged when he or she initiates or receives a call. For both PSTN and GSM users, the basic billing element is a second of voice.

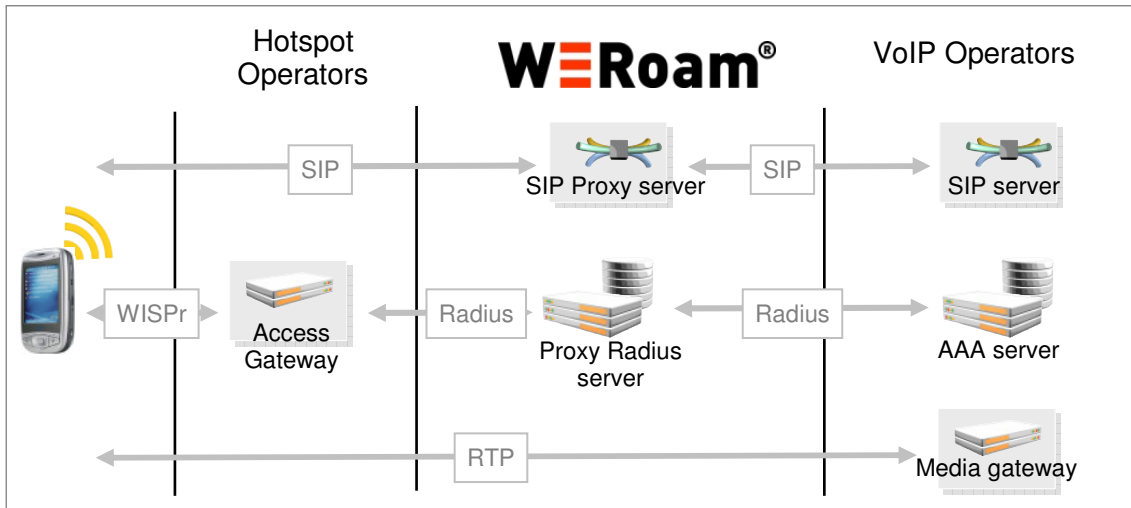
This model is not available today on public WLAN. For his or her SIP client to be registered on the network, a VoIP user must establish a WLAN

session that gives access to the Internet. As soon as the session starts, the user is billed for WLAN usage even if he or she is not using any bandwidth. The commercial models of a VoIP operator - where the payment is based on voice - and a Public WLAN operator - where the user pays as soon as he or she has access to the Internet - do not match.

Another issue is the price per minute for access. Typical retail VoIP services offer calls to PSTN for 3 euro cents per minute. An additional access rate of 8-10 euro cents per minute is perceived as impossible to market by VoIP operators. A lower rate is also justified by operational considerations: VoIP has limited requirements in terms of bandwidth compared to normal data access and sessions are thought to be longer.

WeRoam architecture for wireless VoIP access

WeRoam has developed an open architecture that facilitates the integration of VoIP services on public WLAN. The architecture follows the GSM principle whereby the hotspot operator provides a free SIP signalling channel between a SIP device and a SIP proxy server in this case operated by WeRoam. WeRoam performs a SIP routing function towards the VoIP operators. This architecture has the advantage that once the initial configuration is made, WeRoam can enable new VoIP operators to roam on the WLAN networks without any modification on the hotspot operator's side.



Upon initiation or reception of the VoIP calls, as access to the Internet will be necessary to setup the RTP flow, the software client will initiate a WLAN session through the normal WISPr interface. With this behaviour, the WLAN usage time matches elegantly the time of the voice conversation and can therefore be billed as an IOT on top of the voice minute.

We believe that the voice service should benefit from a preferential rate for WLAN access as it uses limited bandwidth and will result in higher usage per user. From our customer survey, the market is ready to absorb WLAN access rates of 4 euro cents per minute.

WeRoam is also working with client software vendors to ensure that the SIP stacks integrate a WISPr interface and provide a tight integration with the WLAN components to ensure a good user experience.

WeRoam initiative for VoIP access on public WLAN hotspots

A hotspot operator can easily join the wireless VoIP initiative of WeRoam. To do so, the operator must

- Whitelist SIP ports on the two IP addresses of WeRoam SIP proxy servers to let through SIP signalling
- Provide a preferential rate for VoIP traffic.

The hotspot operator does not need to invest in any new infrastructure. WeRoam will use the same WISPr prefix for VoIP and for data sessions. Billing of the VoIP traffic at a special rate will be based on the realm.

WeRoam is a trademark of Swiss company Comfone AG. Comfone provides roaming services to over 300 operators in 125 countries worldwide. Its services portfolio includes signalling, data, clearing, hubbing and convergence services.

WeRoam's patented open roaming platform connects to nearly 60 WISPs and offers an aggregated footprint of more than 23.000 hotspots. Key solutions found in GSM technology have been adopted to make up the WeRoam service. This positions WeRoam as the only open roaming platform supporting username/password and SIM based authentication for WLAN Roaming. All solutions easily integrate with existing products of Internet, Enterprise, GSM and VoIP service providers.

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