An incumbent 3G Mobile Operator Strategy Plan

White Paper

Advanced Wireless Technology Group

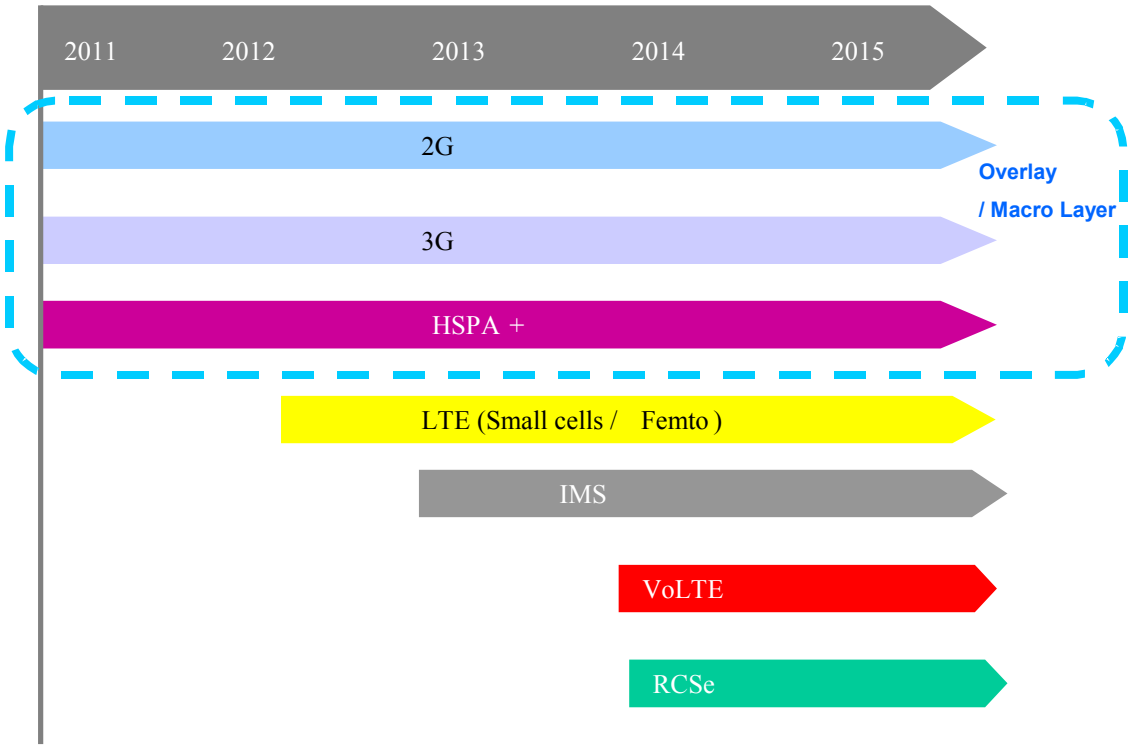
www.awtg.co.uk

Registered in UK No. 5793772HQ in London UK
Office: +44 (0) 208 933 0651
Fax: +44 (0) 208 728 9610
www.awtg.co.uk

1. HIGHLIGHTS

AWTG recommends an upgrade path for an incumbent 2G/3G operator's mobile wireless network based on keeping an overlay macro layer capable of delivering broadband data speeds matching the 2G current level of coverage by a combination of HSPA+ and 3G rollout, with the support of UMTS900. Later, LTE networks and core network evolutions are suggested to maximise the ability of the operator to deliver new services on the fixed and mobile network in a consistent, transparent and efficient way.

A high level roadmap is displayed in the next figure:



The 3G networks should be extended to match 2G coverage (98.5% population) by means of new sites and re-farming 900 MHz spectrum to deploy UMTS900 specially in rural areas where the benefit of the lower frequency can be realised reducing overall deployment cost (fewer sites)

The use of HSPA should be prioritised over early deployments of LTE macro sites. The HSPA+ sites would deliver the required data speed, providing the macro overlay broadband network on the top of the small cells LTE networks. We suggest that the deployment of LTE should target domestic customer premises (single Femtocell), business customer premises (networked Femtocell) and outdoor hotspots (networked Femtocell) by using LTE Femtocell or networked Femtocell to reduce the risk of an early deployment of a unproved LTE macro layer with its required backhaul and other core network evolutions, as well as reducing CAPEX required for a large number of additional macro LTE sites.

IMS is essential for operators to provide interconnectivity and interoperability across mobile and fixed networks and enhancement of control plane for multimedia services, separating the control and the user planes. There are two drivers to justify the investment needed to deploy IMS: RCSe and VoLTE, without which an operator will not be able to offer competition to “over the top” players.

Telecommunications carriers are showing great interests in GSMA Association’s technical specification for Rich Communications Suite (RCSe). RCSe is a platform for delivering new media services such as in-call multimedia sharing, conversational messaging and presence-enhanced contact management, all accessible through a user’s mobile phone contact list (Source: GSMA). RCSe will enable carriers to develop a new service that could be offered to billions of users across multiple administrative domains by bringing together IMS and ENUM (E.164 number mapping). IMS is critical for deploying Rich Communications Suite (RCSe). ENUM is also a key to routing RCS services across legacy CS and IP-based PS networks. The new revenue growth generated from RCS services will be the main driver for carriers to justify their investment in deploying IMS. Over 60 operators and vendors support RCSe. We recommend the implementation of RCS in 2014 when is commercially and technologically proven.

Another driver for operators to deploy IMS over their future IP-based networks is VoLTE. GSMA has recently adopted the IMS-based standard for voice and SMS over LTE (known as Voice over LTE, VoLTE). This is a significant step towards the deployment of a single common standard for delivering voice and SMS over packet-based LTE. The IMS-based solution for voice and SMS over LTE was initially developed by One Voice Initiative, a group of mobile operators and vendors. In early years of LTE, an incumbent 3G operator can rely on its 3G legacy network to deliver voice and SMS until VoLTE is implemented (2014).

The above lays out a complete high level strategy for the evolution of operators’ mobile networks. Once agreed in principle, the next steps would be to lay out the spectrum, radio backhaul and core network infrastructure requirements needed to implement the strategy.