# 4G LINKED RADIO SYSTEMS


ETELM

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**The Integration Revolution - The End of Proprietary Technology ?**

Etelm, a manufacturer of advanced private communications systems based in Paris has launched a solution that could lead to the end of proprietary technology and solutions in mobile radio systems. Etelm, along with other industry leaders has released a range of basestation technologies connected to a single, internationally recognised standard Core Network allowing inter-communication between subscribers of different technologies.

LTE's Evolved Packet Core [EPC] network is the most advanced, distributed IP based transmission network for mobile communications, standardised by 3GPP for advanced 4G LTE technology. Etelm has utilised this powerful core network to launch fully integrated solutions combining 4G-LTE, TETRA, Analogue and DMR technologies all over the same LTE Core. In addition Etelm is offering the gateway free, LTE-S1 software engine as a Software Development Kit License [SDKL] to any mobile infrastructure vendor wishing to support technology integration and integrate the LTE interface into their own infrastructure products.

"We have already launched integration of 4G-LTE with TETRA, DMR & Analogue basestations and are in discussions with several vendors of different mobile communications technologies that have expressed an interest in Fully Integrated Open Systems, including P25 manufacturers and other vendors of TETRA & DMR technologies" commented Etelm Sales Director Paul Ward. "We recognise that no single technology can meet the needs of all users, and indeed many users would benefit from the ability to mix different technologies over the same network. This solution can allow LTE high speed mobile data, to co-exist with proven and secure narrowband technologies without the need for gateways."

The ability to use a single core network for any technology has significant commercial benefits for users, as it reduces the networking costs and avoids being locked-in to a single technology and a single vendor. "We often receive requests from clients for inter-system interface as they want to open up competition, either due to functionality or cost related issues and need to avoid being 'hand-cuffed' to a specific vendor"

added Ward, "Mobile radio users with proprietary technology have been frustrated by dramatic cost increases or obsolescence issues, which can only be resolved by updating their networks, resulting in significant cost and major risks. So by integrating multi-technologies from multiple vendors, this reduces the reliance on any single vendor. Additionally, the advanced LTE EPC Core network provides a single transmission network now and in the future for any technology. The Etelm approach allows any base station to connect directly to the Core using the LTE-S1 connection, thereby avoiding black-box gateways which are always limiting and create single points of failure".

Users can mix different technologies over the same core network, allowing the most appropriate technology to be deployed regionally to cater for issues such as coverage, frequency spectrum, data-rates, functionality, security or cost. A UHF digital trunked technology suitable for high traffic density in urban areas can now be merged with a VHF conventional system with wider coverage area for less populated rural areas, and 4G Services may be included over a single backbone network. Also the benefit to the client of controlling the supplier rather than the supplier controlling the customer cannot be understated!

TETRA, P25 & DMR each have their own interoperability standards between subscriber vendors however this solution is the first to offer a full inter-system interface allowing basestations of different technologies and from multiple vendors to inter-operate over a single transmission network. GSM successfully achieved this by adopting infrastructure standards and this resulted in technological advances and cost reductions to the benefit of users – the rest is history!

Etelm has identified a major opportunity for the industry to offer fully integrated solutions utilising the LTE EPC Core network as the standard for all mobile communications technologies, all inter-communicating over a single IP based network. The network can have high levels of resilience, redundancy and security built-in based on the operational demands.

The solution may be adopted as a private network or integrated into the LTE core of a commercial mobile network operator, as operators are also deploying LTE's EPC core networking standard – so this approach opens up several options for the user based on their preferred business model and unique spectrum availability, operational and security needs.

Understandably for mission critical users the concept of rapidly changing technology represents a substantial risk – not just financially but also for life safety. The operational risk can be mitigated by gradual migration and the commercial risk can be dramatically reduced by adopting a fully integrated approach to their transmission network, based on open international standards. The ability to select different technologies from multiple manufacturers on a single network, opens up major commercial advantages. Etelm's approach is an ideal migration strategy as it is possible to integrate existing systems with newer more advanced technology, merge communications between existing and new fleets and create user groups of subscribers with different technologies.

The ability to integrate several standard mobile radio technologies with 4G LTE over a single international standard network provides users with a futureproof solution to prepare for new high speed mobile data and future advances in the rapidly developing telecommunications market. Additional benefits will be realised by using the 4G LTE core platform, as applications operating on the same network can be developed using the industry standard API to provide software applications and tools open to any mobile technology residing on the same core.

In Etelm's view full interoperability is long overdue and full Integration of all technologies over the latest advanced international standard Core Network is the optimum way forward. Mr. Ward confirmed "We recognise that Interoperability cannot be achieved by a single company, but with the LTE Core it is a major opportunity to give Users what they want but it requires support from the whole mobile communications community. We invite users to support the Integration Revolution and Vendors to support the case for inter-operability"

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