

CHECK



Finland – Hybrid Network in use

Hybrid network covers mobile broadband needs of mission critical users

Twenty year

Finland is looking to the future and planning how to get the most benefit from a network that will increasingly provide high speed data facilities to its users. Based on five steps, the plan looks ahead to the hybrid network that covers user needs all the way until 2035.

A transformed network

➔ During these five steps, the narrowband TETRA network will transform into a TETRA critical voice service server and the operator will learn how to operate a broadband network. Users will have a high-speed data service that enables them to benefit from data applications and to develop information-centric ways of working.

In Finland, we are witnessing a secure and controlled evolution towards a hybrid network for mission critical users. Their experience points the way for other critical users to examine how they can best use radio communication and broadband.

Critical content via TETRA, non-critical via broadband

Setting up an MVNO and using commercial broadband

Step 1

➔ Step one is to set up a mobile virtual network operator (MVNO) to meet increased data requirements. This will be accomplished by supporting the provisioning of users on a broadband network. Initially, externally purchased subscriber identity module (SIM) cards will be used, with the next phase being to own and control subscribers in the LTE core.

Step 2

➔ Critical voice and messages will run in the narrowband network, with high-speed non-critical (but secure) data running in the commercial broadband network.

plan

maps out Finland's hybrid network

Own dedicated broadband in some areas

Step 3

➔ Step three will see expansion of the owned LTE core to an owned dedicated broadband radio access in chosen locations, providing critical-grade data services.

Excellent voice services in both networks

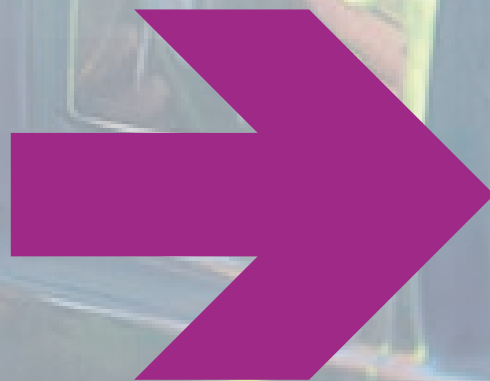
Step 4

➔ When critical Voice over LTE standardization is ready and the TETRA supplier supports group calls over LTE on the TETRA side, the two networks can be connected. This will mean the same voice services are available in both narrowband and broadband — in the dedicated networks on critical service levels and in the commercial operators' networks up to the levels they can provide.

Mature broadband takes over

Step 5

➔ The final step is dismantling the TETRA radio access once broadband service availability and reliability meets public safety requirements. In some, mainly rural, areas, this might occur only when the spare parts stock for the narrowband network runs out.



This item is based on an article that was previously published in RadioResource International magazine, Quarter 4 2014, by Jarmo Vinkvist, Tero Pesonen and Matti Peltola.



Finland's 5 steps to critical broadband to bring fast mobile data-access to field operations

VIRVE currently serves around 34,000 subscribers from all public safety and security services and armed forces in Finland, guaranteeing its users uninterrupted network performance and quality of service.

Airbus Defence and Space has been awarded a major contract to modernize VIRVE, renew about one third of the TETRA network's elements and update software over the next five years. The project aims to ensure the high functionality and performance of the radio network far into the future and support the customer's long-term strategy.

Demand for high-speed broadband data services is building, so an evolution path from TETRA technology in the 2020s leads to LTE technology. This can be achieved in phases, using the current TETRA switches as critical communication servers for the LTE-network. A step-by-step also reduces the probability of misjudgments and poor investments. A hybrid solution consisting of a combination of dedicated networks owned by the authorities and commercial networks is proving to be an efficient answer for a country like Finland.



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