Europe in a Mesh

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BERLIN – Having its kick off meeting this week in Berlin, nine European organizations are beginning collaboration on ‘The Network of the Future’ through the EU-MESH (‘Enhanced, Ubiquitous, and Dependable Broadband Access using MESH Networks’) project. The goal of EU-MESH to develop, evaluate, and trial a system of software modules for building dependable multi-radio, multi-channel mesh networks with QoS support that provide ubiquitous and ultra-high speed broadband access.

The system will be based on a converged infrastructure that uses a wireless mesh network to aggregate the capacity from both subscriber broadband access lines and provider fixed broadband links to form a virtual capacity pool, and provide access to this capacity pool for both stationary and mobile users. It will support low operation and management costs, through novel configuration and management procedures that achieve efficient usage of both the wireless spectrum and fixed broadband access lines. This will bring the competitiveness of existing providers, lower the barrier for small enterprises to enter the mobile broadband access market, and enable innovative services.


Current mesh systems do not achieve efficient resource utilization, have suboptimal channel and power control that prohibits large-scale deployment, and lack a comprehensive security solution combining proactive and reactive mechanisms.

To address the above, EU-MESH’s objectives are to develop algorithms that combine channel access with power and channel control to reduce interference, QoS and opportunistic routing algorithms to support scalable end-to-end QoS and efficient usage of the virtual capacity pool, location-aware automated (re-)configuration procedures that adapt to varying network conditions to provide robust connectivity, lightweight application layer procedures for seamless mobility.
over heterogeneous and multi-operator mesh networks, secure routing and handover in single and multi-operator mesh networks, and intrusion detection and mitigation mechanisms that exploit cross-layer monitoring. In addition, an external advisory committee that includes experts from both industry and academia will provide an external global viewpoint. The system will be assessed through metropolitan scale trials, from the perspective of a pure wireless network operator and a wired/wireless telecom operator.

European Commission

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