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**EU-MESH: Enhanced, Ubiquitous and Dependable
Broadband Access using MESH Networks**



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Observations

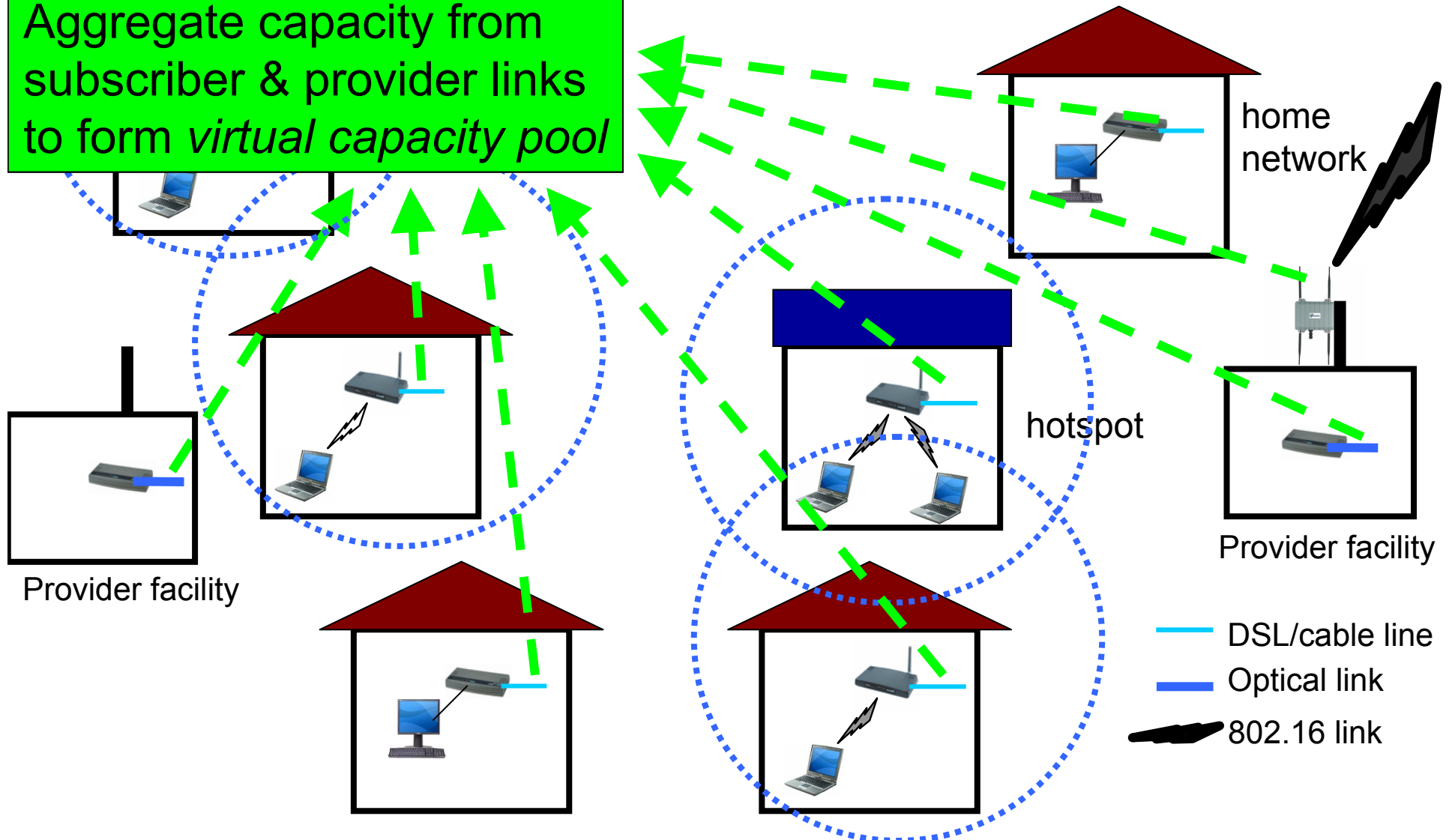


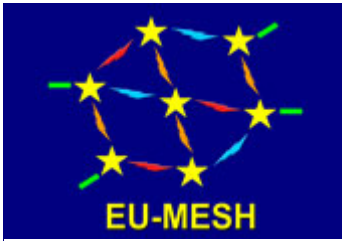
- Fixed/wired broadband access limited by **single broadband subscriber line**
 - isolated, unevenly utilized ⇒ **unused communication resources**
- **Separate** wired and wireless access networks
 - isolated wireless hotspots with **non-uniform coverage**
 - city-wide/community wireless meshes with **few Internet gateways**
- **Wireless multi-hop mesh** technology is key for providing **ubiquitous broadband access**
- **Existing mesh products** lack significant features
 - based on **proprietary solutions**
 - **sub-optimal** channel and power control
 - assume **few fixed** Internet gateways
 - no comprehensive **security**



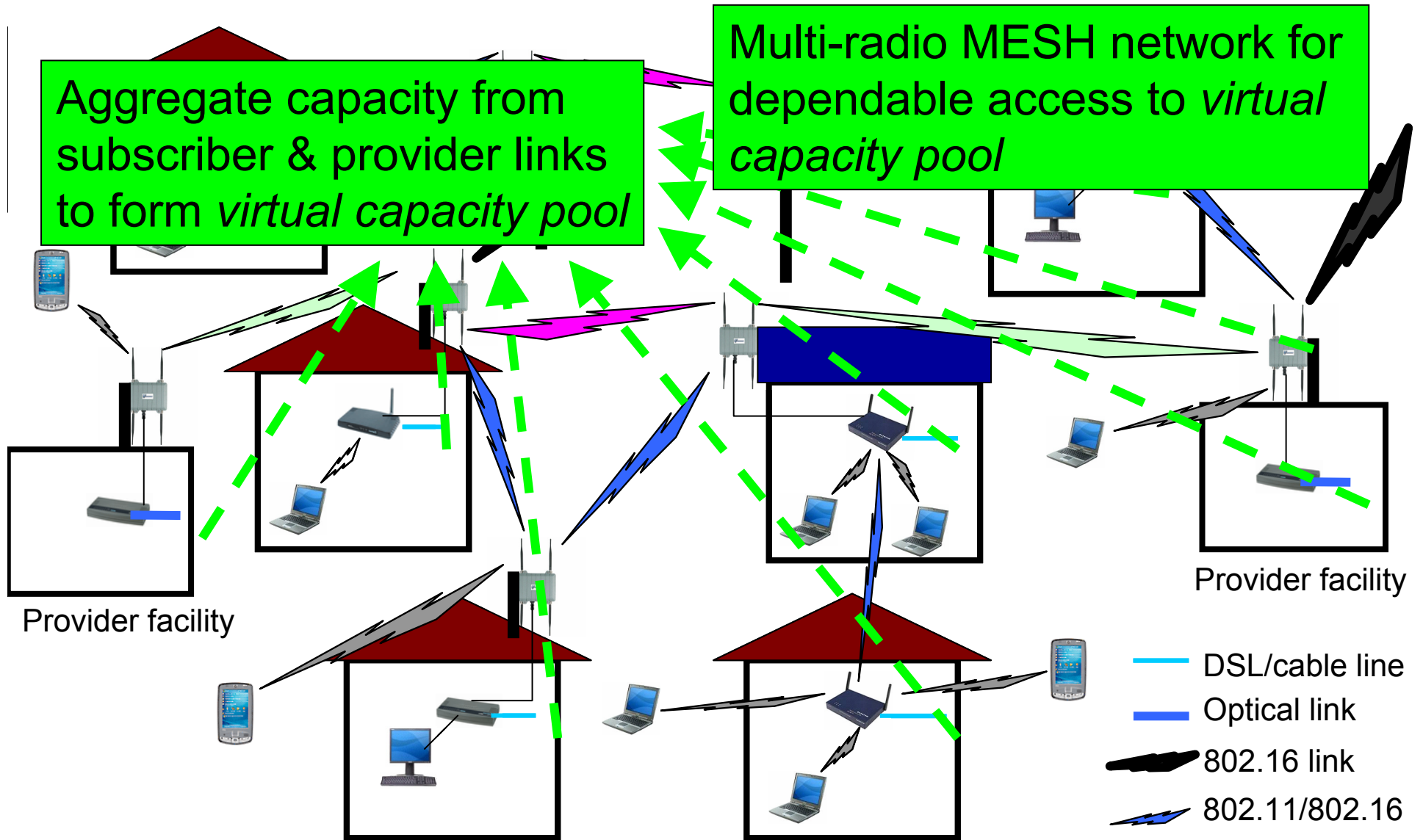
Our vision for enhanced, ubiquitous, and dependable broadband access

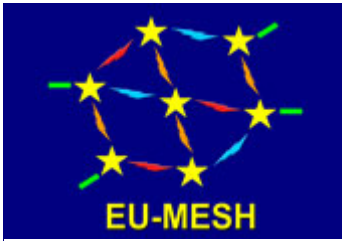
Aggregate capacity from subscriber & provider links to form *virtual capacity pool*



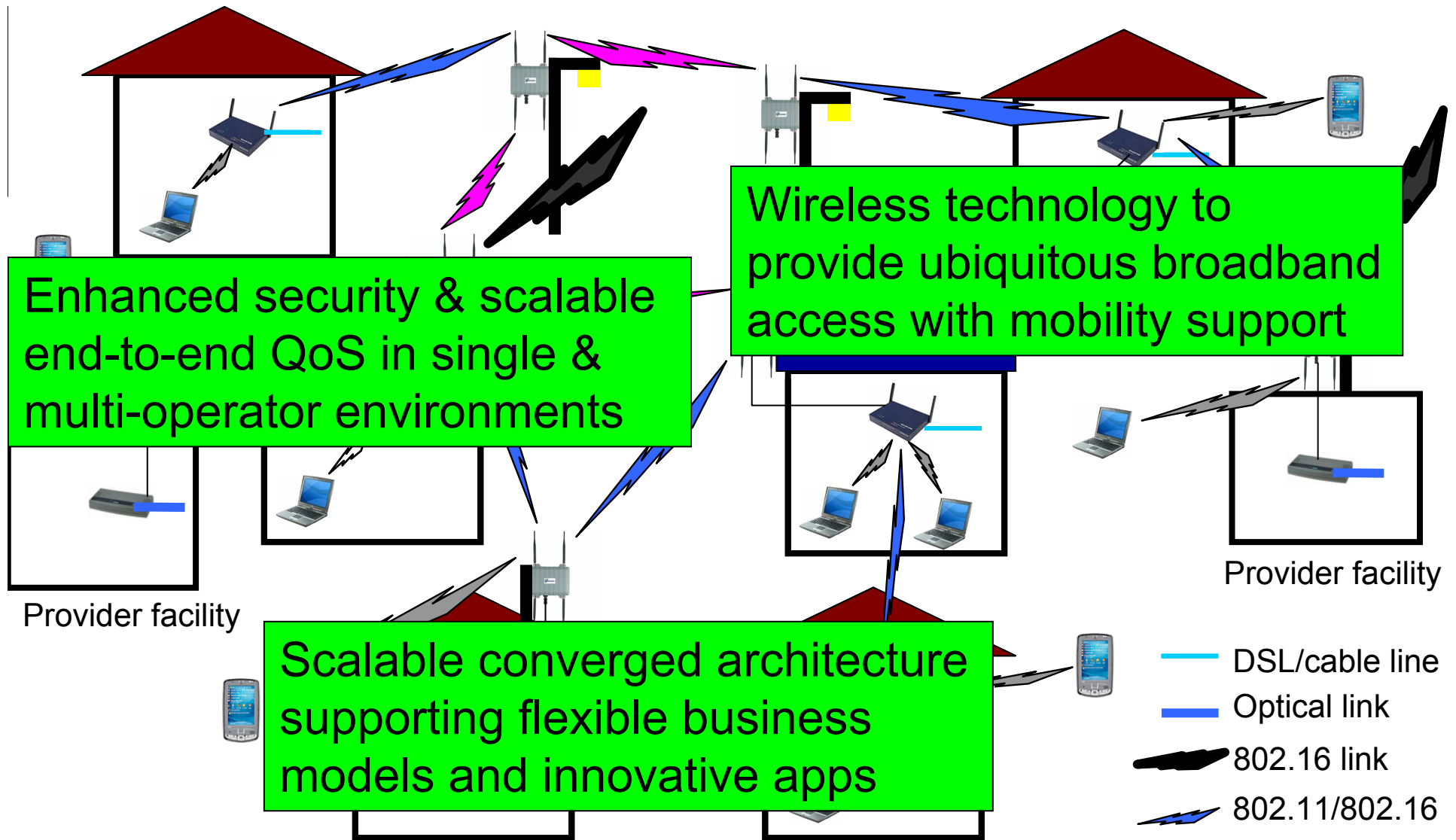


Our vision for enhanced, ubiquitous, and dependable broadband access





Our vision for enhanced, ubiquitous, and dependable broadband access





Objectives and key issues



- *Develop, evaluate, and trial* a system of software modules for building *wireless multi-radio multi-channel mesh networks* that
 - support **scalable end-to-end QoS** while **efficiently utilize wireless spectrum** and **control interference**
 - enable **fast deployment** and **reduce management complexity** and **cost**, while providing dynamic and reliable connectivity
 - support **enhanced proactive & reactive security**, and **seamless mobility** based on **cross-layer monitoring** in single and **multi-operator** environments
 - **seamlessly integrate mesh networks** with **fixed technologies** to provide **pervasive ultra-high capacity** broadband access to both **stationary** and **mobile users**, through a **converged infrastructure**
- Implement and evaluate system in **two existing metropolitan scale deployments** (Paris and Heraklion)

Jointly consider QoS, mobility, and security



Contact and partners



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