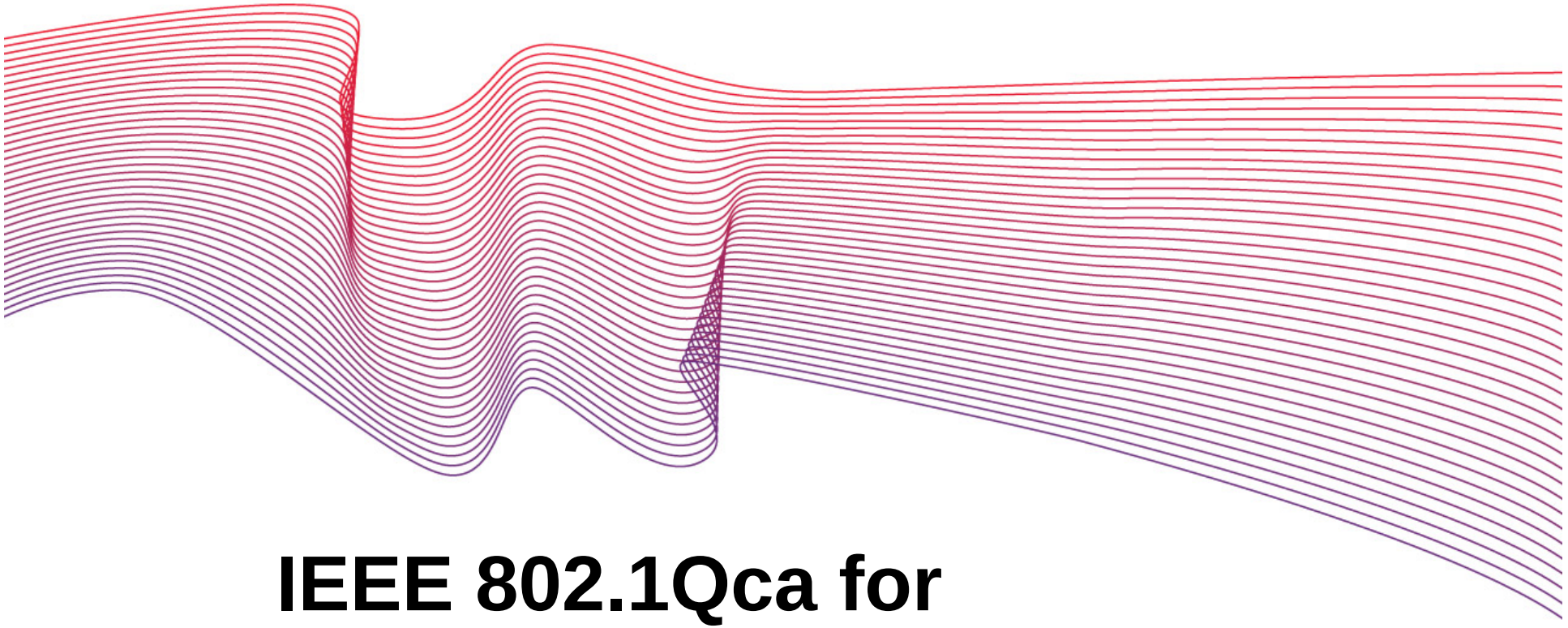

IEEE 802.1Qca for Small Networks

Contributed by Philippe Klein, Broadcom

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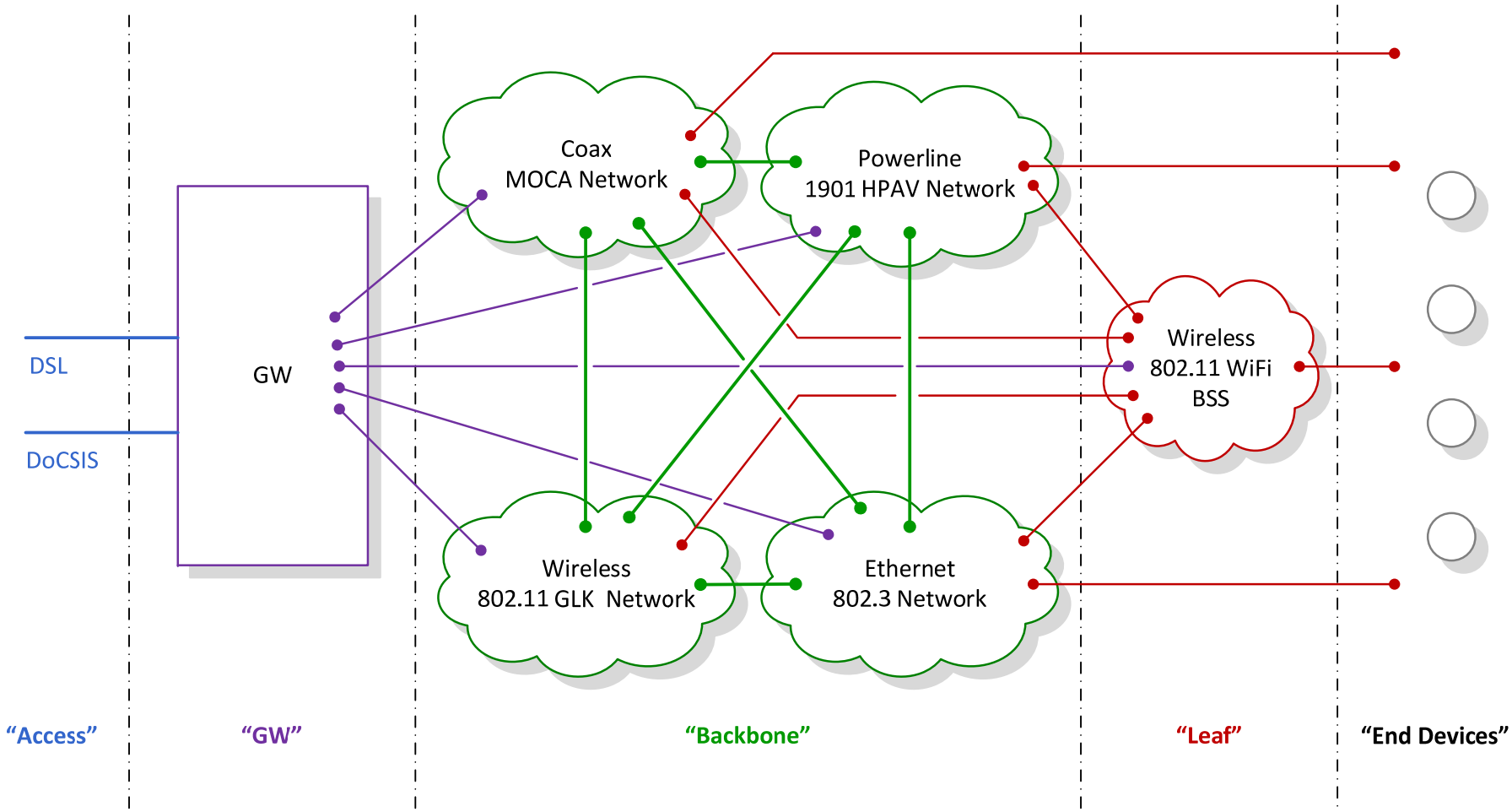
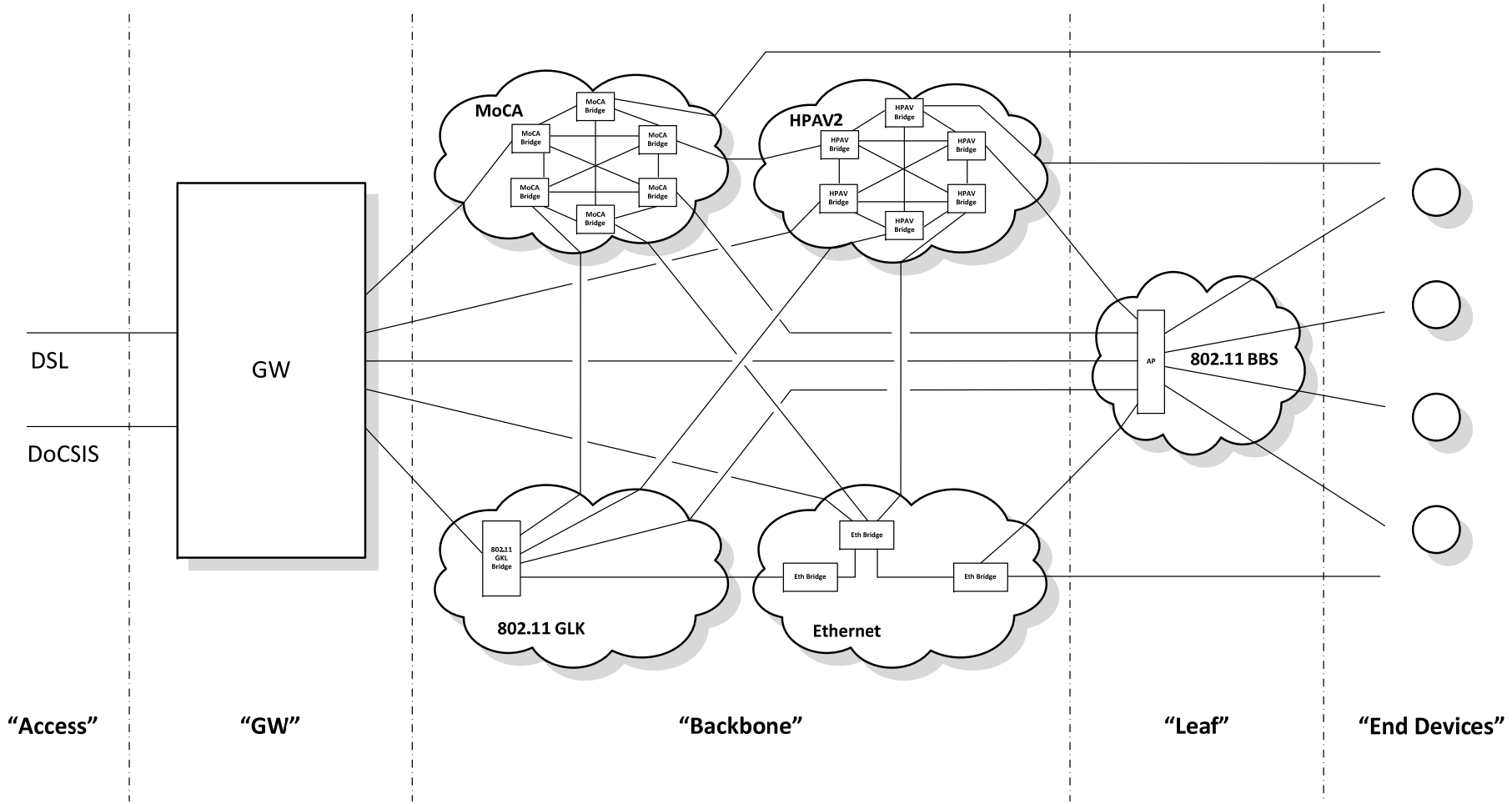
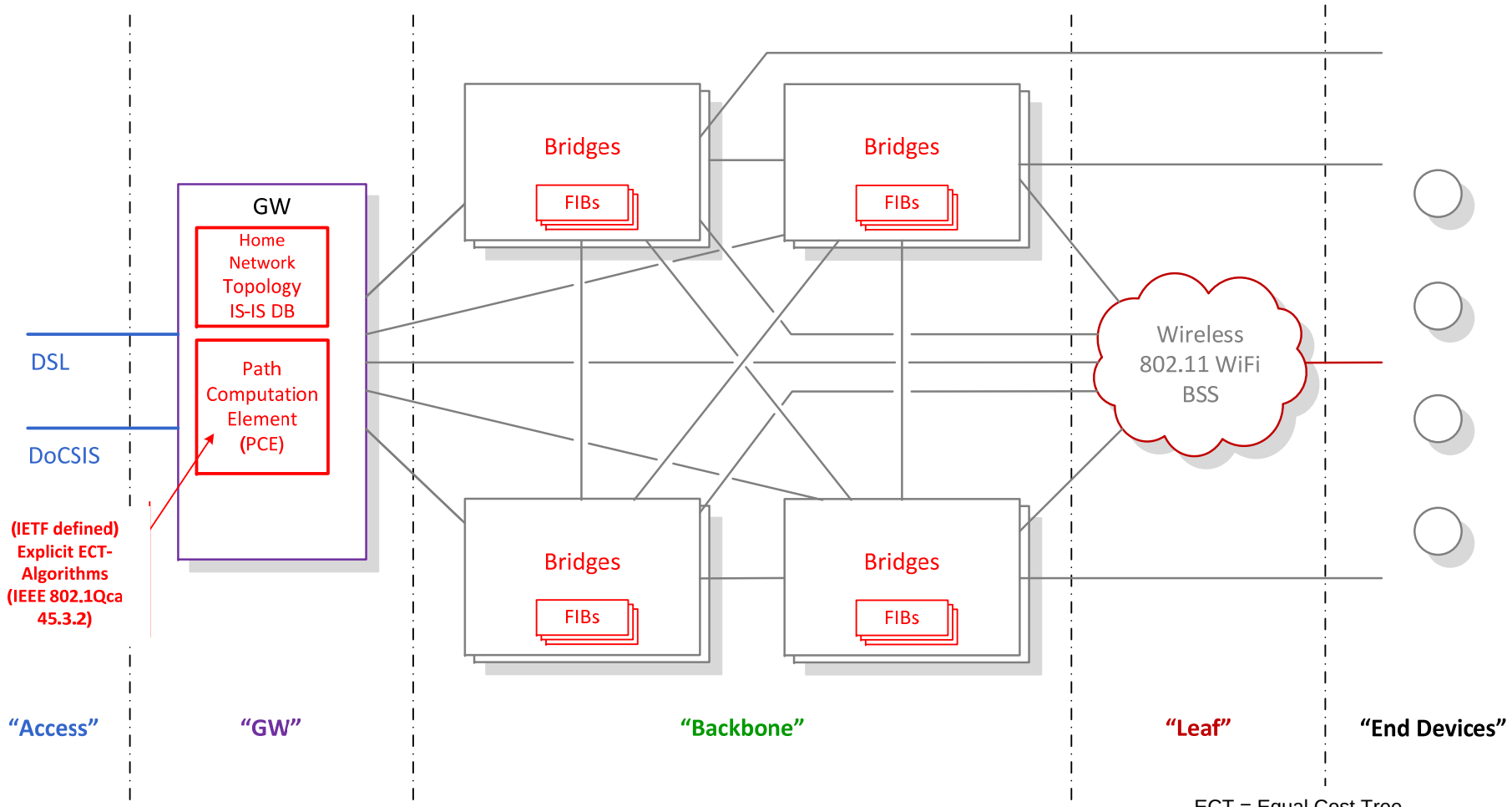
HYBRID HOME NETWORK CONNECTIVITY



BRIDGED LANS



“OPTIMIZED” SDN MODEL



- Single Topology DB in the GW
- Single Path Computation Element computes Explicit Trees only

ECT = Equal Cost Tree
PCE = Path Computation Element
FIB = Forwarding Information Base

ADVANTAGES

- **Optimize resources / reduce cost**
- **Simplify interoperability / improve compliance**
- **Reduce development time & testing**
- **Improve reliability**
- **Prevent coherency issues**

WHAT IS MISSING?

802.1QCA

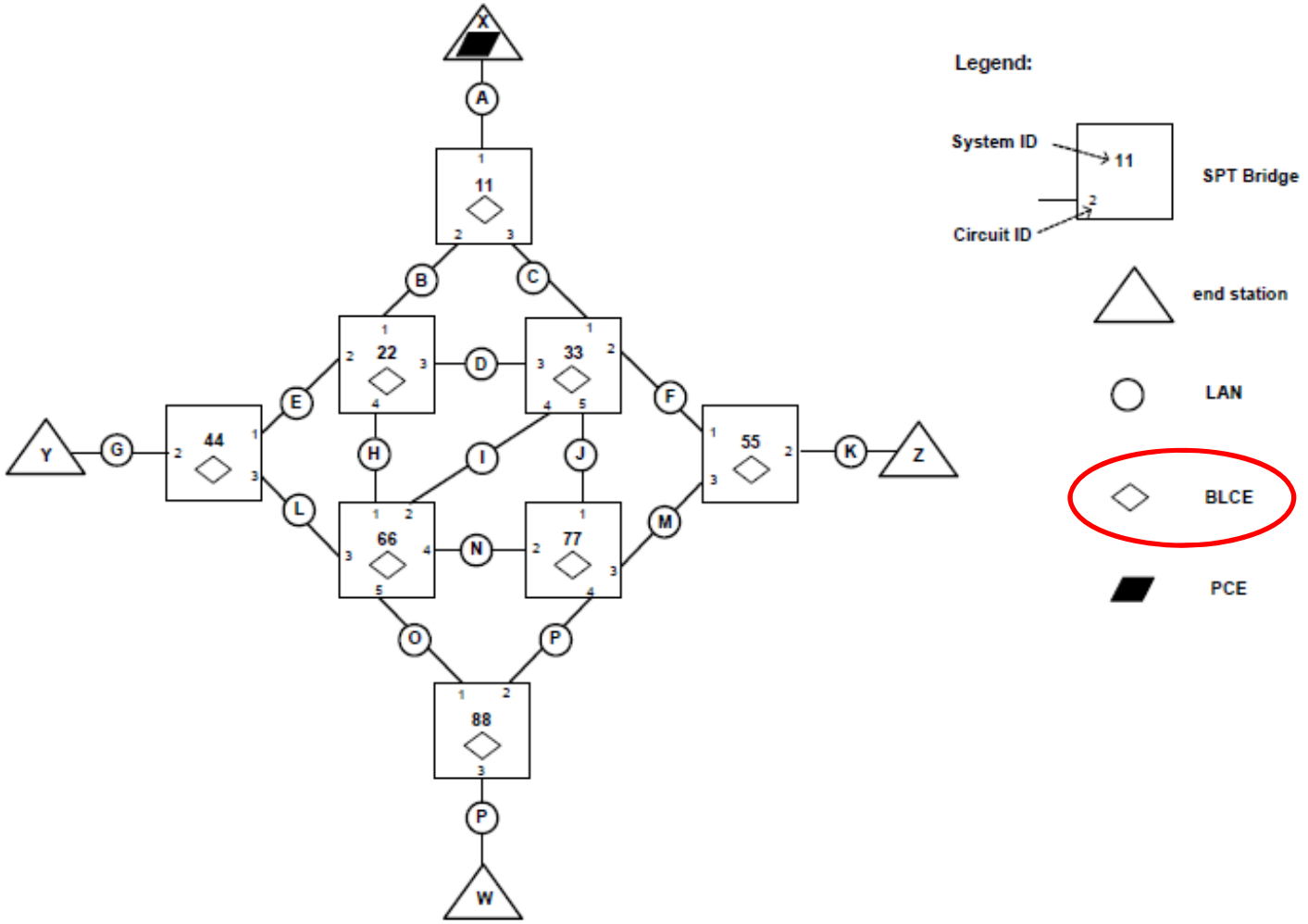


Figure 45-1—An SPT Region controlled by a single PCE

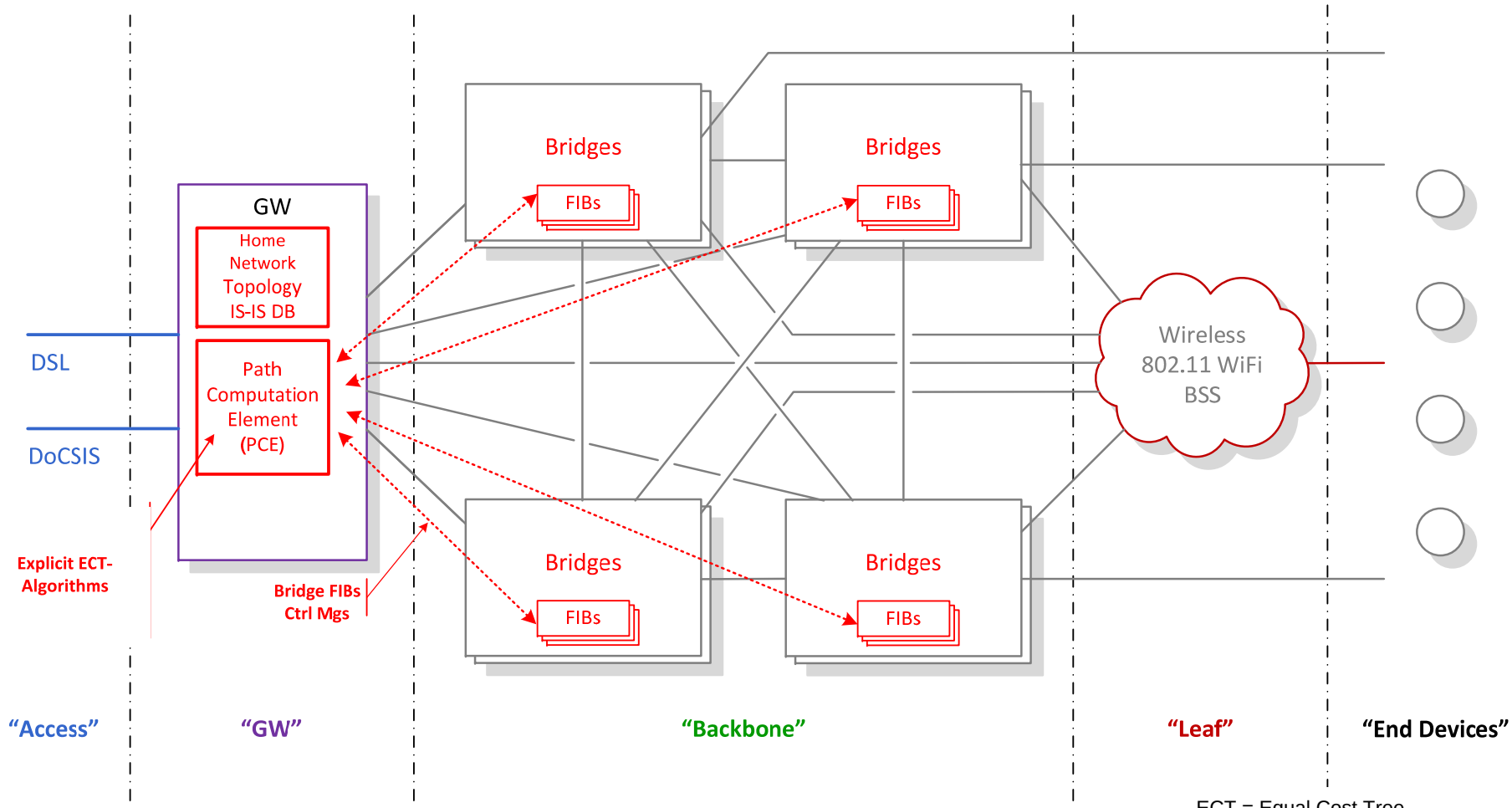
802.1QCA - BLCE

- **Bridge Local Computation Engine (BLCE) definition:**

  A computation engine in a bridge that performs path and routing computations. The BLCE implements e.g. SPF, CSPF, or the Maximally Redundant Trees Algorithm

- **As defined BLCE is to complex for small networks where the computation should reside in the GW only**

FIB CONTROL PROTOCOL



ECT = Equal Cost Tree
PCE = Path Computation Element
FIB = Forwarding Information Base

CTRL PROTOCOL OPTIONS

1. **Discovery:**

   Option #a: IS-IS Hello messages between neighbor nodes, then LSP msgs propagated to the GW ?

   Option #b: 1905.1 Discovery msg information “translated” to IS-IS DB ?

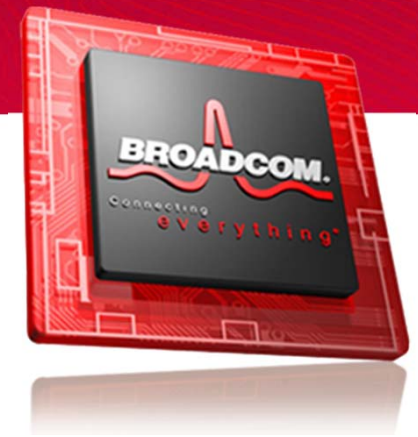
2. **FIB Control Messages**

   Option #a: New protocol ?

   Option #b: New IS-IS TLV ?

   Option #c: Extension to 1905.1 ?

THANK YOU



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