802 Architecture Group
Intent

• Improve alignment between WG projects and existing 802 architecture by:
  – Identifying current problems, omissions, conflicts, ramifications, and their potential resolution
  – Identifying potential refinements or changes to the architecture
  – Providing a regular forum in which such discussion can take place, in a lower pressure environment than is possible during the core Plenary cycle.
Mechanism

• A meeting per Plenary cycle
  – Chaired by 802.1 Chair
  – Time slot: 2-5 PM Sunday prior to Plenary
  – Participants: Initially, WG Chairs plus one (or more) “architects” or “technical leads”; long term, whoever the Chair determines is appropriate/willing
  – Meeting Topic: Architectural issues known to each WG & how they might be resolved

• First meeting: July 2004
Purpose

• To actually have a recurring discussion on architectural issues
• To improve cross-WG discussion/understanding
• To promote a common view
Outputs

• Not detail document oriented
• Consensus, frame of mind, consciousness raising
• Maybe slideware if appropriate
• Topics/thoughts for the focus of the next discussion
• Encouragement to WGs to fix identified problems in appropriate ways
• Simple architecture
• Preservation of layering
Actions

• SEC to formally establish the activity as a SEC standing committee.

• WG Chairs to appoint max 2 nominated participants per WG
  – Qualifications for participants: Capable of generating a durable architecture. Capable of knowing the difference between an architecture, a product, and a standard. Respected within their WG as subject matter experts.

• Report to SEC on status at each meeting.
Known issues – 802.1

• MAC Service definition (currently a revision PAR in place)
• QoS – could be better expressed
• Security expressed as a set of procedures after network entry
• Management – scope and interface
  – Commonality of MAC/PHI management interfaces
• MIB definition for service discovery
• Where work gets done – 802.1 vs 802.X
• Process – ensuring due diligence
• Max frame size
• Position/location awareness
Known issues – 802.3

• QoS/class of service
  – Timing, synchronous, guaranteed bandwidth, low jitter/latency, congestion management…

• Protocol definition vs scope

• Security/link agg

• Ethernet/TCP-IP interdependence
  – Do we care about anything non-TCP?

• Dual homing/resilience/robustness

• Link vs Mixing Segment

• Max frame size
Known issues – 802.11

• QoS/class of service
  – Timing, synchronous, guaranteed bandwidth, low jitter/latency, congestion management…
• Protocol definition vs scope
• Security
• Bridging compatibility – handling of multicasts
• LLC – acts as a block to passing additional (e.g., QoS) parameters
• Mesh
• What is the (future) .11 architecture
  – Structure of an AP
  – DS
  – …etc
• (Signal) Power/channel management
Known issues – 802.15

• Are PANs different from WLANs?
  – We hope the answer is “No” (wrt the MAC service)
• Security
  – What functionality is needed
  – Who does what aspect
• Bridging compatibility – handling of multicasts, no clause 6 section for .1D
• LLC – acts as a block to passing additional (e.g., QoS) parameters
• Mesh (not the same as the .11 issue though)
• QoS
• Architectural consistency across three MACs
• (Signal) Power/channel management
Known issues – 802.16

- Security
  - has to roll its own EAP transport as .1X/AF
  - is above the LLC
  - No PKI model in .1X/AF
  - MBS – breaks security model
- Model
  - ISS definition is in flux in .1
- QoS
  - No standard way to pass upper layer QoS requirements through to MAC level QoS parameters
  - LLC acts as a block
- Bridging compatibility – handling of multicasts, no clause 6 section for .1D
- MTU discovery
- Power/channel management
Known issues – 802.17

• Security
• Frame size
• SG – improve bridging for spatial re-use
• CoS/QoS & bridging
Known issues – 802.20

• Needs to support handoff – not clear how to deal with L2 handoff in current architecture

• Security
  – has to roll its own EAP transport as .1X/AF
  – is above the LLC
  – No PKI model in .1X/AF

• QoS
  – No standard way to pass upper layer QoS requirements through to MAC level QoS parameters
  – LLC acts as a block

• Compatibility between 802.20 frame and LLC frame
Known issues – 802.21

- QoS mapping across heterogeneous interfaces
- Authentication mechanisms – different mechanisms in different technologies
- Security – how do you re-establish the security context
- Service discovery
- Power/channel management
Known issues – 802.22

• May be in danger of all of the above
Proposals for resolution

• Due diligence issues – need to fix 802 procedures
  – TJ to propose to SEC that the rules for forwarding to SB & RevCom be strengthened
  – WGs should review projects against PAR/5C requirements during the development cycle

• Each WG:
  – Prioritize issues
  – Characterize the problem
  – Propose approach to resolve, or identify as intractable
  – Identify other groups (802 or external) that may be affected
Topics for next meeting (November ’04)

• Solicit input on:
  – Further refinement of current issues list
  – New issues to be added
  – Proposals for resolution of issues on the list

• Report back on issues that are currently being addressed