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