Project	IEEE 802.20 Working Group on Mobile Broadband Wireless Access <http://ieee802.org/20/>
Title	**802.20.3 PICS Proforma: Introduction and Issues**
Date Submitted	**2008-05-12**
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Re:	C802.20-08-05: PICS Considerations for 802.20
Abstract	This contribution discusses the requirements for the PICS Proforma that will become 802.20.3 and suggests a method of organizing it.
Purpose	For consideration of 802.20 in its efforts develop a PICS Proforma document.
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802.20.3: PICS Proforma Considerations

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Ballot comments regarding PICS

- From the SB Comments, PICS requests
  - Comment (paraphrased): Straightforward to generate
  - Suggestion: "convert every 'shall' clause into a table entry"
- A few realities from the draft…
  - Draft currently has ~6000 'shall's and ~150 'should's
    - Many "shalls" are of a procedural nature (since procedures are carefully specified)
  - The AN is specified with mostly 'should' clauses
    - This allows infrastructure manufacturers freedom to implement in accordance with (licensed) customer wishes
    - Shall clauses are used only when absolutely necessary
- The PICS can be organized more efficiently than this!!
  - It is more efficient (and within the intent of a PICS) to consider features from a higher level rather than at a microscopic level

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Documents Governing PICS Proformas

- The ITU-T X-Series
  - provides recommendations and a framework for conformance tests and specifications

- Title: *"OSI Conformance Testing Methodology and Framework for Protocol"*
  - ITU-T X.290 - General concepts and framework
  - ITU-T X.296 - Implementation conformance statements

- Other 802 standards documents
  - IEEE 802.11, 802.16 both have PICS sections

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X.296 Intent for ICS Proforma

- An ICS proforma is essentially a set of items.
  - Should include
    - Major mandatory capabilities
    - Major optional capabilities
    - Defines 'role's that the system can operate in (eg. AT, AN)
    - The PDU's of the "protocol" are also recommended
      - each PDU can correspond to an item in the PICS proforma
- Emphasizes global implementation options
- Emphasis is on *"static"* conformance requirements
- Does <u>not</u> repeat dynamic conformance requirements from the spec
- For 802.20: Propose a "Top Down" approach to PICS

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Suggested Organization

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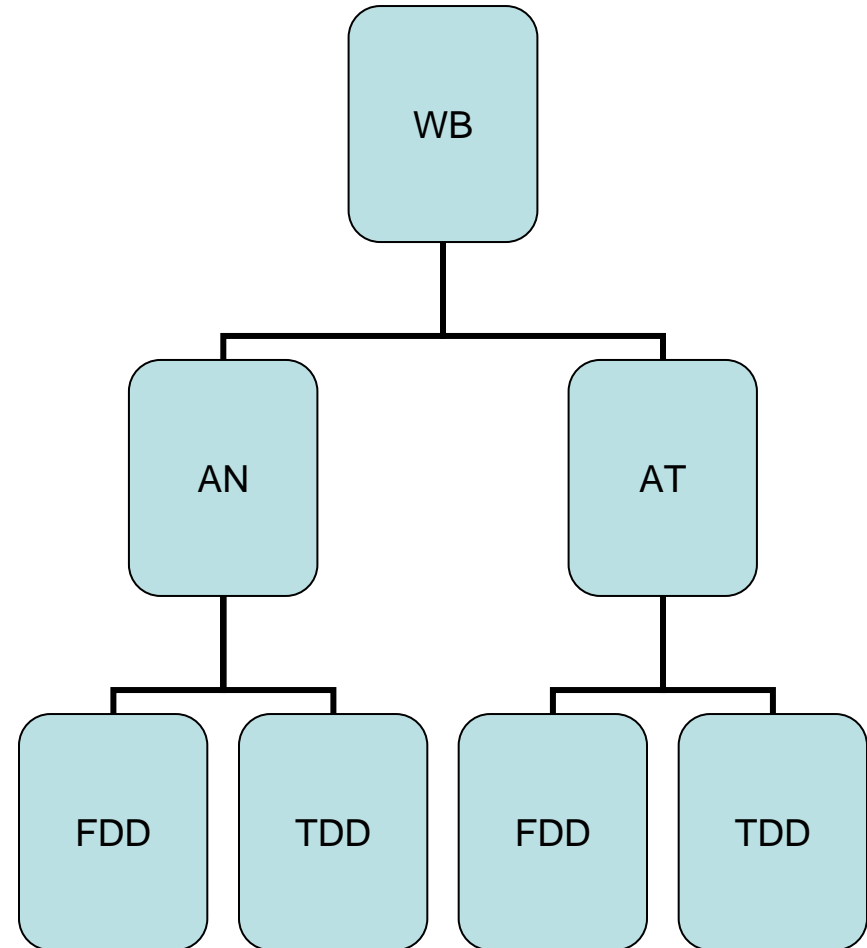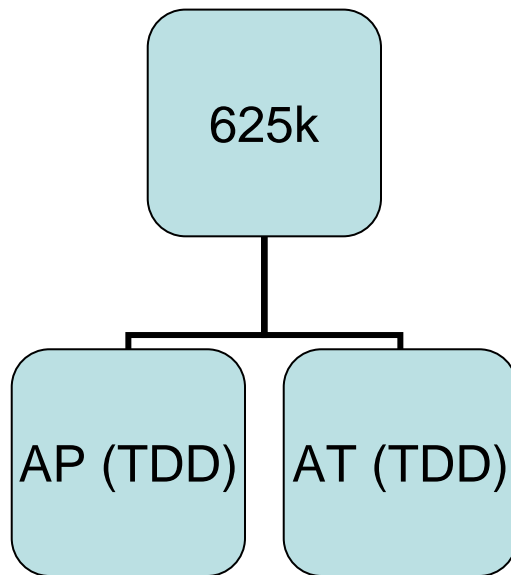
Looking at the WB Protocols

- **Services Sublayer**
  - Signaling protocol, Inter-route tunneling protocol, ROHC support protocol, EAP support protocol
- **Radio Link Sublayer**
  - QOS Management protocol, Radio Link protocol, Stream protocol, Route protocol
- **Lower MAC Sublayer (TDD/FDD differences)**
  - Packet Consolidation protocol, Superframe Preamble MAC protocol, Access Channel MAC protocol, FLCS MAC protocol, FTC MAC protocol, RCC MAC protocol, RTC MAC protocol
- **Physical Layer**
  - Physical layer protocol
- **Security Functions**
  - AES Ciphering protocol, Message Integrity protocol, Key Exchange protocol
- **Connection Control Sublayer**
  - Air Link Management protocol, Initialization State protocol, Idle State protocol, Connected State protocol, Overhead Messages protocol, Active Set Management protocol
- **Session Control Plane**
  - Session Control protocol
- **Route Control Plane**
  - Route Control protocol
- **Broadcast Support**
  - Control protocol, Packet Consolidation protocol, Security protocol, Inter-Route Tunneling protocol, MAC protocol

Conclusions

- Simplistic approach will not work well
  - Due to the complexity of the specification
  - Many "dynamic" (i.e. procedural) requirements
  - Style of requirements use "should" for infrastructure
- Intent of X.296 is a "high level" view
  - Emphasis on static requirements, roles, high level view
- An example organization/structure was presented
  - There are other possibilities, such as organizing by AN, AT
  - Organizing by "modes" as presented seems to be the best approach
  - The wideband mode has 30+ protocols (most of them required)
  - Each protocol has one or more PDUs (messages)
- How much detail beyond protocol and PDU support is useful?
  - Protocol and PDU support are the most relevant for compliance
  - Going further may introduce significant confusion

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