PCCA Overview

Emil Sturniolo, Chief Scientist, NetMotion Wireless
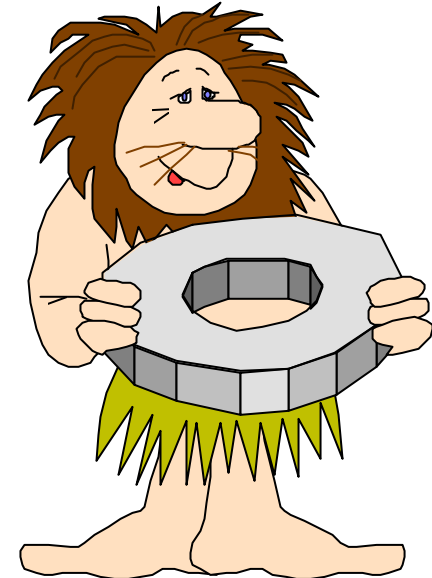
PCCA Board of Directors

and

Technical Editor, PCCA STD-201

October 15, 2002

Mission Statement

- **Promote interoperability for mobile computing and communications through standards, recommendations and testing**

- History:
  - Formed 1992
  - Standards development
  - Technical recommendations
  - Wireless cookbook
  - Interoperability workshops
  - Technical mini-conferences

Members

Advanced Wireless and Telecom, America OnLine, AT&T Wireless, Broadbeam, Cingular Wireless, Cisco, Ecutel, Ericsson, Flash Networks, Hughes Network Systems, IBM, Intel, Lucas Valley Technologies, MCC, Megisto Systems, Mobile Computing Communications Consortium (MCPC), Mentor Engineering, Microsoft, Motient, NetMotion Wireless, Nokia, Novatel Wireless, The Open Group, Outlook4Mobility, The Pacific Group, Physio-Control, Rysavy Research, Sierra Wireless, Strix Systems, Susteen, Toshiba, Trace Research and Development Center, WaveWare Communications, VoiceStream Wireless, WideRay, Xybec Solutions
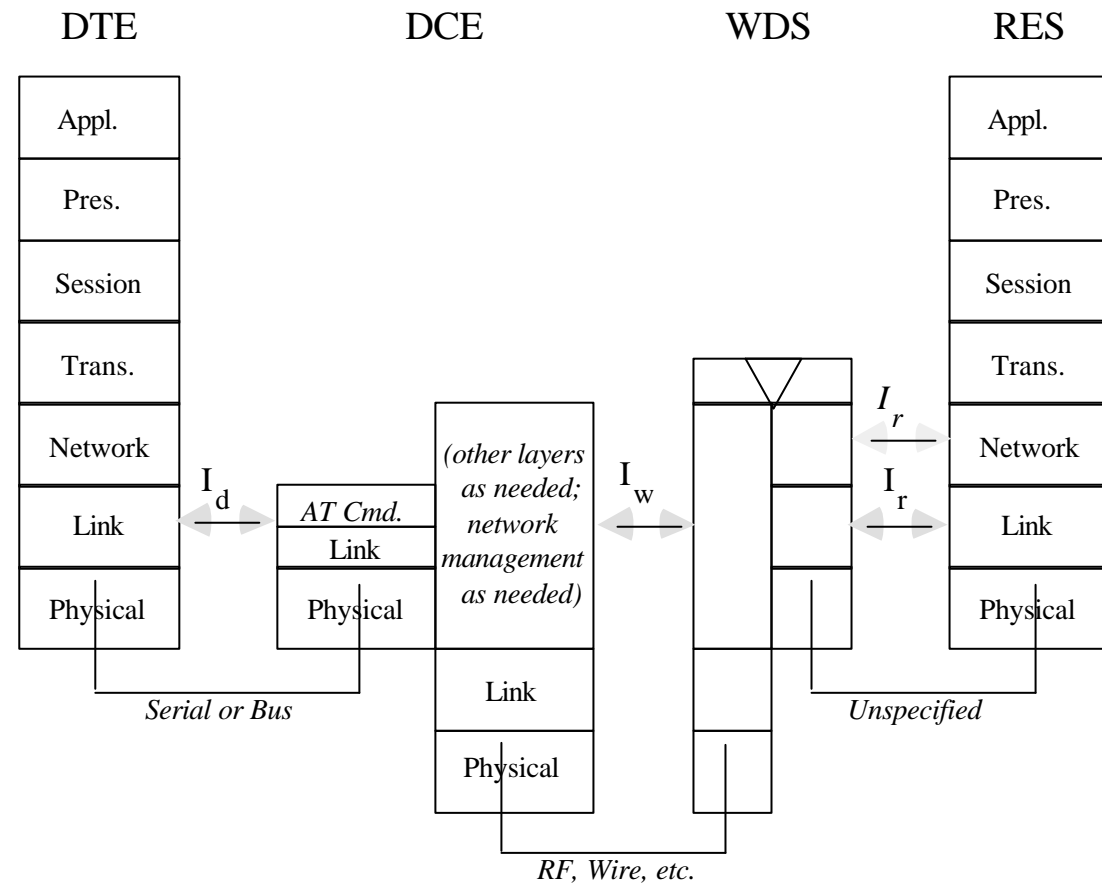
...And more

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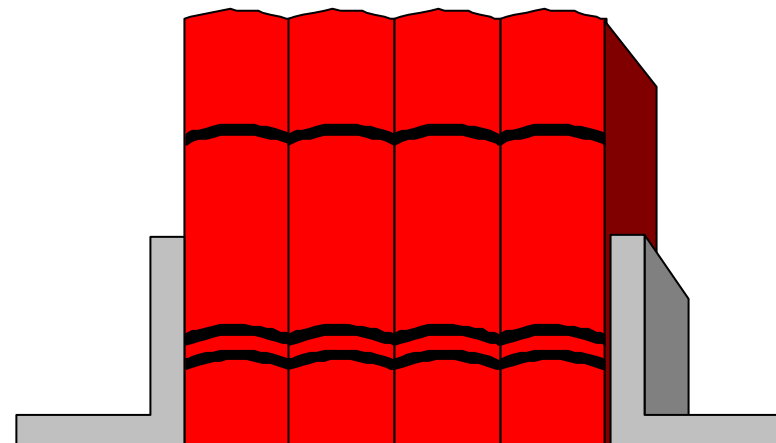
Emil Sturnilo, NetMotion Wireless

PCCA STD-101

- Standardized AT commands for wireless networks

DTE	DCE	WDS	RES
Appl.			Appl.
Pres.			Pres.
Session			Session
Trans.			Trans.
Network	*(other layers as needed; network management as needed)*		Network
Link	AT Cmd. Link		Link
Physical	Physical		Physical

I_d

I_w

I_r

I_r

Serial or Bus

Link

Physical

RF, Wire, etc.

Unspecified

STD-101 Annexes

- Annex A - scope of new annexes
- Annex D - packet assembler disassembler
- Annex I - analog cellular modems
- Annex F - miscellaneous commands (wireless specific)
- Annex L - CDPD Commands
- Annex O - Wake-up Commands (contributed by MCPC)
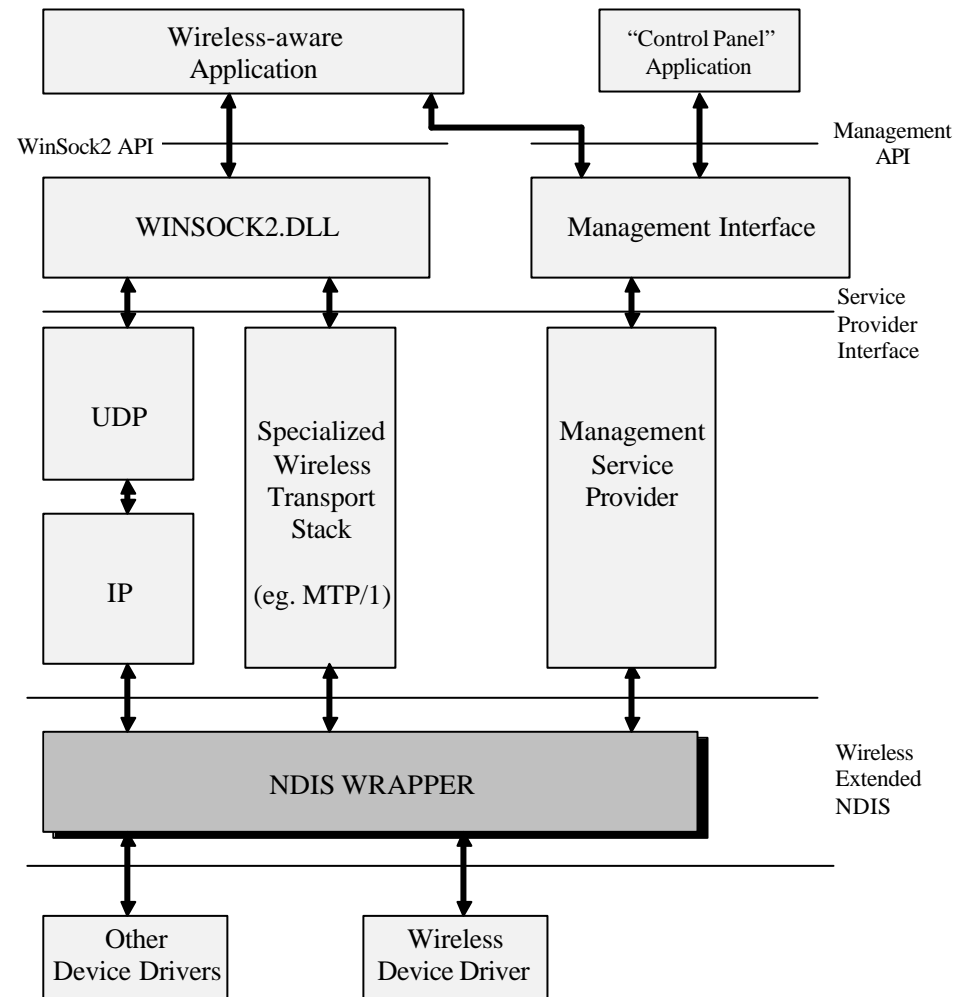
PCCA Annex F (TIA-678 Annex B)

Miscellaneous Commands

- Normalized Signal Strength

- Carrier Detect Signal Strength Threshold

- Normalized Battery Level

- Normalized Channel Quality

- Carrier Detect Channel Quality Threshold

- Registration Status

- Antenna Preference

- Idle Time-Out Value

- Display System ID

- Set Personal Identification Number

- Lock / Unlock DCE

- Display Battery Charging Status

- Display Data Link Address

- Display Supported Annex F Commands

PCCA STD-201

- Wireless extensions to NDIS (Network Driver Interface Specification)

- Revision 1.1 approved in 2000

Wireless-aware Application	"Control Panel" Application

WinSock2 API ——————

Management API

WINSOCK2.DLL	Management Interface

Service Provider Interface

UDP	Specialized Wireless Transport Stack (eg. MTP/1)	Management Service Provider
IP		

NDIS WRAPPER

Wireless Extended NDIS

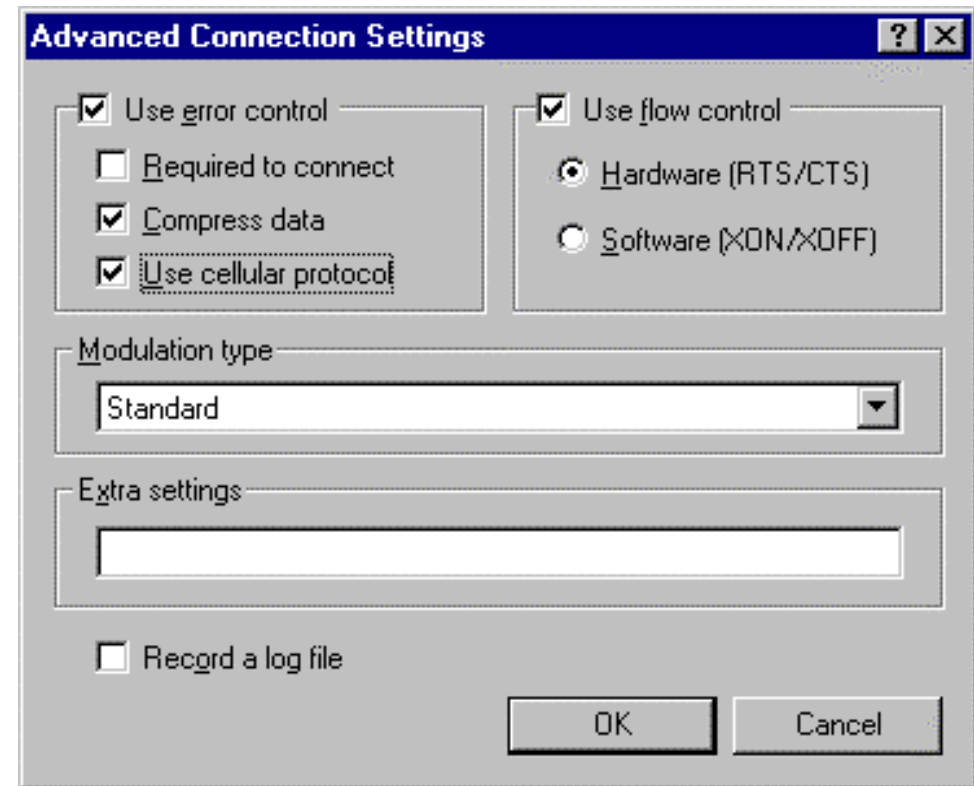| Other Device Drivers	Wireless Device Driver

8

STD-201 Common Objects

- Network types supported
- Network types in use
- Header formats supported
- Header format in use
- Indication request
- Device info
- Operation mode
- Lock status
- Disable transmitter
- Network ID
- Permanent address
- Current address
- Suspend driver

- Base station ID
- Channel ID
- Encryption supported
- Encryption in use
- Encryption state
- Channel quality
- Registration status
- Radio link speed
- Latency
- Battery level
- External power

Microsoft Unimodem

- Universal Modem

- TAPI (Telephone API)

- Support for analog cellular modems

- Extensions for digital cellular and PCS

- PCCA made recommendations to Microsoft on August 23, 2000 for TDMA/CDMA support: accepted

Advanced Connection Settings [?] [X]

☑ Use error control
- ☐ Required to connect
- ☑ Compress data
- ☑ Use cellular protocol

☑ Use flow control
- ⦿ Hardware (RTS/CTS)
- ○ Software (XON/XOFF)

Modulation type
Standard ▼

Extra settings
[   ]

☐ Record a log file

[OK] [Cancel]

TCP/IP Recommendations

- Examined

  – Adjustable parameters

  – Window size

  – Slow start

  – Round trip time

  – Fast retransmit recovery

  – Maximum segment size

  – Dynamic link recovery

- Submitted to Microsoft 1997

- Implemented in Windows CE and Windows 2000

AT via IP (ATVIP) Standard

- Define a means for applications on the DTE to access AT commands while in an online state.
  - signal Strength
  - connected network
  - etc.
- Minimize impact on wireless modem manufacturers to support this capability
- Support of Ipv4 and Ipv6
- Provide a means to query/set the local IP address of the DCE
- Loosely based off of PCCA IP Modem Interface Standard

Quarterly Technical Meetings

- VPNs and Wireless, March 1, 2000

- The Impact of Internet Standards on Wireless Networks, May 31, 2000

- Wireless Device Interface Issues, August 23, 2000

- Mobile Management, October 18, 2000

- Wireless Data Interoperability, February 7, 8, 2001
  Joint MCPC/PCCA Meeting

- GPRS Interoperability, May 23-25, 2001

- PDAs and Wireless Networking, August 23, 2001

- Integration of Wireless Personal-Area, Local-Area and Wide Area Networks, January 16, 2002

Quarterly Technical Meetings (cont.)

- CDMA2000, Wireless VPNs, Wireless Security, April 24, 2002

  – Held in Bellevue, WA, hosted by Intel, examined how enterprise applications can best be used with GPRS and CDMA2000 1XRTT networks.

- Enterprise Applications and Cellular Data Networks, July 17, 2002

  – Held in San Francisco, hosted by Qualcomm, presented information about CDMA2000, BREW and the use of VPNs over wireless networks and wireless security issues in general

Quarterly Technical Meetings - upcoming

- **Public Wireless Hot Spots November 6, 2002.**
  - Update attendees on global developments with respect to
    - Hot spot deployments
    - Examine client-side issues,
    - Look at options for integrating hot spots with cellular networks.
    - Status of roaming initiatives
    - Usage models across WLAN and cellular
    - Form factors of devices that support WLAN and cellular
    - Best approaches for multiple radio support in mobile computers
    - Handoff/roaming mechanisms and how to trigger a network change
    - Service offerings between cellular and WLAN, e.g. voice, streaming multimedia
    - How do applications span multiple networks?
    - Status of 3GPP release 6 for WLAN support
    - Common authentication methods between WLAN and cellular
    - Billing mechanisms and approaches, e.g. integrated cellular/WLAN
    - Market drivers and inhibitors

Wireless Workshop Task Force

- Chair: Ron Smith, Intel
  - Focus on interoperability testing of all network components from the user/IT perspective
  - First workshop held on November 1999 with Wireless Data Forum on device/mobile platform issues
  - Directions: GPRS devices, 1X devices, Wi-Fi, VPNs, application level, etc.
  - Workshops held coincidentally with quarterly technical meetings.

Summary

- Network/platform/technology neutral

- Addresses technical issues in overlap of:

  – Applications/content

  – Mobile platforms

  – Wireless devices

  – Networks

- Goal: broad-market easy-to-use, manageable, wireless solutions

- Standards documents freely available

- http://www.pcca.org

Open Group and PCCA

- A win - win combination
  - Work together to expedite the adoption of mobile computing
  - Hold joint meetings (whenever it makes sense)
  - Provide additional customer/IT perspective to PCCA efforts
  - Provide additional technical expertise and input to Open Groups mobility efforts

Proposed Open Group and PCCA

- Memorandum of Understanding between groups for the exchange of ideas, information, and other applicable material

- Hold a possible joint meeting
  - Q1, 2003. Proposed topic: EDGE Technology in detail.
  - Workshop: wireless data showcase for end user organizations featuring GPRS, EDGE, CDMA2000 1XRTT, Wi-Fi

Questions?

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