



Portable Computer and
Communications Association

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Newsletter

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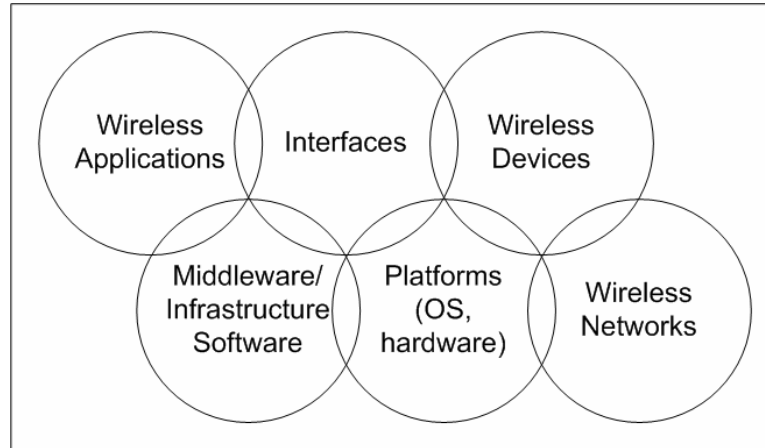
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INTRODUCTION

This is the third quarterly newsletter of the PCCA. The newsletter summarizes PCCA activities, and provides perspective on the objectives of the PCCA.

The PCCA's objective is to examine the overlap of:



Other standards groups tend to focus on the individual parts in their specifications, but the PCCA takes a broader view to determine how all the parts function together to produce effective and easy-to-use solutions.

PCCA AND STANDARDS

The PCCA began as a standards organization, and successfully developed various standards such as wireless extensions to AT command sets that have been officially accepted by standards organizations such as the TIA, ITU and 3GPP.

More recently, the PCCA has been focusing on interoperability issues that span applications, interfaces, devices, middleware, platforms and networks. The PCCA holds technical meetings that examine these issues through presentations and analysis, and also conducts workshops where participants can test their products and services.

With respect to standards, the PCCA plays an important role in examining how well standards address market needs, and what interoperability issues remain. Where standards are deficient, the PCCA may develop recommendations or specifications that help fill the gaps. An example is "AT via IP", a specification the PCCA developed that defines how AT commands can be transported over an IP channel. AT commands are standardized, IP is standardized, but using the two in combination was previously vendor specific.

Another area the PCCA plans to examine soon is the session initiation protocol (SIP), which will play a fundamental role in next generation telecom networks and enables Internet VoIP and multimedia. But it does not fully address the needs of mobile networks where devices may be moving from one type of network to another.



BOARD ELECTIONS COMING UP

The PCCA board is elected for a two-year period by the PCCA membership. The term of the current board expires March 31, 2004. We would like to thank board members for their important support of the organization and strategic guidance.

The board participates in a quarterly conference call, and an annual meeting currently scheduled for October 21 at Wireless IT in Las Vegas. The overall commitment level is relatively low, but gives board members a unique opportunity to influence the direction of the organization.

If you are a PCCA member and are potentially interested in board-level participation beginning next year, please let us know and we can provide more information.

The current board, listed alphabetically by name, is as follows:

Dan Croft, Motient
Nadi Findikli, Sony Ericsson
Masahiro Hataguchi, Mobile Computing Promotion Consortium
Mike Hlavaty-Laposa, AT&T Wireless
Terrill Moore, MCCI
Dang Nguyen, Toshiba America
Robert O'Hara, Microsoft
Peter Rysavy, Rysavy Research
Andrew Seybold, Outlook 4Mobility
Ronald M. Smith, Intel
Emil Sturniolo, NetMotion Wireless
Norman Toms, Sierra Wireless

Note that due to organizational changes, some board members have changed since the last election.

NEXT MEETING – NOVEMBER 12 – HOTSPOT TECHNICAL DEVELOPMENTS

The next PCCA meeting will be November 12 in the San Francisco Bay Area, CA. Thanks to iPass for hosting this meeting.

iPass

Since not everybody else is familiar with iPass, the following is from their corporate backgrounder located on their Web site:

"iPass Inc. (www.ipass.com) provides software-enabled enterprise connectivity services designed to give employees secure access to information and applications on the corporate network from virtually any location in the world. As a virtual network operator (VNO), iPass offers enterprise employees a range of Internet protocol-based connectivity technologies, including wired and wireless broadband service at airports, hotels and conference centers worldwide. The iPassConnect™ smart client can be deployed across multiple computing devices and operating systems within an enterprise. Once deployed, the iPass service gives the corporate IT department control over how network resources



are accessed. Founded in 1996, iPass is headquartered in Redwood Shores, Calif., and employs more than 265 people throughout North America, Europe and Asia Pacific.”

Background

Wireless hotspots have gained a lot of attention, particularly as the number of hotspots has increased dramatically, and WLAN technology has become prevalent. The debates of whether hotspots are complementary or competitive with 3G cellular go on, as does the nature of an effective business model, but nobody can deny that hotspots are becoming an important part of the networking landscape.

The goal of this meeting is to examine the latest technical developments affecting hotspots, including standards, interoperability and interaction with cellular data networks. This will include an overview of smart client connectivity methods, wireless security considerations including the use of VPNs and the application of IEEE 802.1X to public networks and cellular based authentication methods such as EAP SIM.

At this meeting, we also plan to analyze something we are calling service continuity, which refers to how wireless devices should behave when network coverage is marginal, or in the presence of multiple networks. For example, should a multi-mode device always try to acquire a WLAN connection when both a WLAN and cellular data connection are available? Under what conditions should it move from one WLAN network to a different one? It could get expensive at an airport to automatically purchase multiple 24 hour blocks of service from different operators. For a cellular data connection, if coverage is weak from one operator, should the device connect to another operator? The PCCA is considering the development of profiles that define exactly how devices operate in these conditions. Vendors could then design to these profiles, and applications could specify which profiles to use.

Preliminary Agenda

Meeting time: 8:30 AM to 4:30 PM. The preliminary agenda is as follows.

- Introductions
- Organization update and future meetings
- Host Presentation: iPass
- Presentation: Wireless security developments
- Presentation: Smart client interaction with hotspot networks, iPass
- Presentation: IEEE 802.1X applied to public networks
- Presentation: SIM based authentication - status and issues
- Presentation: Service continuity approaches, Jan Forslow, IP Unplugged
- Presentation: Joe Fried, Flash Networks
- Presentation: Open Group Secure Mobile Architecture, Emil Sturniolo, NetMotion Wireless
- Discussion and analysis

We are currently soliciting contributions to this meeting.



Meeting Logistics

This information will be available soon.

Registration

If you are interested in attending this meeting, please register by sending e-mail to pcca@pcca.org. Please include your name, company name, e-mail address and phone number.

Meetings are intended primarily for PCCA members. However, non-member organizations that have not attended a prior PCCA meeting, interested in the topic and wishing to learn about the PCCA, may attend on an introductory basis for a fee of \$375 per person. This fee can be applied towards membership. For others, please contact us for alternative arrangements.

MEMBERSHIP UPDATE

By Gloria Kowalski, director, PCCA.

The PCCA welcomes two new members to the PCCA: Psion Teklogix and Qualcomm.

Psion Teklogix

Here is information that Psion Teklogix has provided for this newsletter:

Psion Teklogix, Associate level, <http://www.teklogix.com/>. Representative: Rüdiger Rabe.

Psion Teklogix provides solutions for mobile computing and wireless data collection. The product portfolio includes:

- rugged, wireless hand-held and vehicle-mount terminals including terminals for freezer, condensing, and intrinsically-safe environments
- complete infrastructure for wireless local-area networks based on the IEEE 802.11 standard as well as proprietary narrow-band systems operating in licensed bands
- terminal emulation gateways for optimized, wireless access using host emulations such as IBM 3274, IBM 5250, HP 2392, ANSI, HTML
- SAP integration services

The corporate headquarters of Psion Teklogix are located in Mississauga, Canada. Psion Teklogix has 43 sales and support offices in 20 countries. To date, Psion Teklogix has implemented more than 15000 installations in over 60 countries.

Psion Teklogix was formed in September 2000 as a result of the merger between the U.K.-based Psion Enterprise division of Psion PLC, and Canada-based Teklogix Inc. Teklogix was founded in 1967.



Qualcomm

The PCCA welcomes Qualcomm, particularly as Qualcomm has participated in quite a few PCCA meetings over the years. Qualcomm's membership will help ensure that the issues that the PCCA emphasizes span both CDMA and GSM/UMTS interests.

Qualcomm, Associate level, <http://www.qualcomm.com/>. Representative: John Hannan.

From the Qualcomm web page: Qualcomm is best known as the company that pioneered Code Division Multiple Access (CDMA) technology, which is now used in wireless networks and handsets all over the world. By making very efficient use of radio frequency spectrum, CDMA allows more people to share the airwaves at the same time - without cross-talk, static or interference.

Today, with tremendous advances in CDMA and the advent of complementary technologies such as position location, Internet access and streaming media, Qualcomm is uniquely positioned to drive the industry forward with a new wave of breakthrough developments.

LAST MEETING: AUGUST 19-20, EDGE

This was a two-day meeting with a workshop on the 19th and meeting on the 20th. Thanks to Cingular Wireless for hosting their EDGE network and for hosting the meeting.

August 19 - Workshop (hosted by Intel)

The following companies participated in the EDGE workshop: Analog Devices, AT&T Wireless, Cingular Wireless, Ecutel, Ericsson, Ericsson Mobile Platforms, Flash Networks, IBM, Intel, MCCI, Medtronic Physio-Control, NetMotion Wireless, Nokia, Rysavy Research, Sierra Wireless, Sony Ericsson, Toshiba and TTPCom.

See the summary of the workshop below.



Attendees

Thirty-seven people from the following organizations attended the meeting (and/or workshop):

3G Mobile, Global Communications International, Analog Devices, AT&T Wireless, Cingular Wireless, Ecutel, Ericsson. Ericsson Mobile Platforms, Flash Networks, IBM, Intel, iPass, MCCI, Medtronic Physio-Control, Microsoft, NetMotion Wireless, Nokia, Psion Teklogix, Qualcomm, Rysavy Research, Sierra Wireless, Sony Ericsson, Tartec, Toshiba and TTPCom.

Presentations

The presentations were as follows. Note that copies of all these presentations are available to PCCA members in the member's section of the PCCA Web site. If you are a member but don't have a user ID and password, contact us as per the contact information at the end of this newsletter.

Subodh Upreti, Cingular Wireless, "EDGE Plans and Business Drivers"

Subodh Upreti gave a high-level overview of Cingular Wireless' deployment of GSM, GPRS and EDGE, including time frames. He discussed the benefits of EDGE, including expected throughput rates of 75 to 135 Kbps based on three time slot devices. Cingular's EDGE deployment will be complete by end of 2004.

Presentation, Tomas Köhler, Ericsson, "EDGE Technical Presentation"

Tomas Köhler gave a detailed explanation of how EDGE technology functions. He clarified some of the common misunderstandings about EDGE. EDGE employs a variety of mechanisms to significantly improve performance compared to GPRS, including new modulation, nine combinations of modulation and coding schemes, link adaptation, incremental redundancy, and efficient packet retransmission. He also discussed what is involved in upgrading a network to EDGE and the complementary role of EDGE with respect to WCDMA.

Peter Rysavy, PCCA, "High-level review of workshop results"

Peter Rysavy reviewed the workshop results from the prior day which were highly positive. Testing revealed throughput rates of 20 to 45 Kbps per time slot, with a maximum observed throughput of 135 Kbps. Interoperability against applications, infrastructure software and platforms was excellent.

Don Hjort, AT&T Wireless, "EDGE Trial Overview"

Don discussed AT&T Wireless' deployment of GSM/GPRS, which now has more cell sites and coverage than TDMA. He discussed global endorsements for EDGE technology, and provided insight into some of EDGE's fundamental mechanisms. He also presented some EDGE field results. He noted that default Windows parameters throttle performance.

Tom Kost, Nokia, "EDGE Marketplace and Technology"



Tom discussed the most pertinent aspects of EDGE, EDGE deployment plans by operators globally, and how EDGE can be used to either increase throughput speeds or to increase network capacity. Studies suggest that 90% of customers will be satisfied with 2 to 4 time slot EDGE devices. In addition to existing wireless applications, EDGE will enable new applications such as audio and video streaming. Tom expects consumer-based applications to be a significant driver in the adoption of EDGE technology.

Alan Shen, Microsoft. "Wireless WAN Support in Windows"

Alan Shen explained how the network version of Windows (code named Longhorn) will natively support wireless WANs, including GPRS/EDGE/UMTS and CDMA2000. The architecture will be based on Universal Plug and Play (UPnP), and for phones, will support USB and Bluetooth links. Other links, e.g., IR, can be used but require the vendor to provide drivers.

Greg Matthews, TTPCom, "Implications of EDGE on Real Devices"

Greg Matthews gave a summary of how EDGE works, and then discussed practical considerations in implementing EDGE devices. He presented the different categories of devices and design considerations for each, including modems, multimedia handsets and smartphones. He estimated the cost increase in the bill of materials due to EDGE as less than 10%. Taking multiple factors into account, battery life should be unaffected.

Nadi Findikli, Sony Ericsson, "Product Roadmap"

Nadi Findikli gave an overview of Sony Ericsson's EDGE modem card, the GC82. This is a multislotted class 10 device with 4 slots down, 2 slots up (5 max at any moment in time.) It operates in North American 850 MHz and 1900 MHz bands. This product will be available Q4, 2003. The product supports both dial-up networking and NDIS interfaces.

Prabha Aithal, Cingular Wireless, "GSM North America EDGE Task Force Activities"

Prabha Aithal reported on the EDGE task force, whose mission is "To ensure acceptance of EDGE as a 3G In-Band deployment option for all GSM operators globally." Work includes the development of carrier field interoperability test cases for EDGE devices. Future work includes performance modeling and optimization workshops and defining minimal network interoperating requirements.

Matti Salmenkaita, Tartec, "Service Performance with EDGE"

Matti Salmenkaita provided a performance analysis of EDGE that takes into account the effect of higher level protocols. Factors affecting throughput include interference, multiplexing, RLC signaling, upper layer overheads, TCP establishment, TCP slow start, cellular events and application layer overhead. The dominant effect for smaller file sizes is TCP slow start. Matti examined Web browsing, MMS and video streaming scenarios. He listed various recommendations on how applications can be optimized to provide best performance.



Conclusions

In our concluding discussion, we recorded the following:

EDGE is real and working today. It appears to deliver on its promises of increased throughput with rates as high as 180 Kbps for a four slot device. Typical rates will be lower and dependent on the device.

Usage during the workshop showed EDGE to be a truly useful networking technology.

Users will experience widely varying throughputs, inevitable with all next generation wireless technologies. Actual application throughput requires a detailed consideration of protocol overhead at multiple layers and the effects of latency. Issue: applications and services don't have easy access to current or available throughput rates.

TCP enhancements are required for optimum user experiences. Currently, manual changes are required to the Windows registry.

EDGE offers a smooth migration from GPRS.

EDGE will be widely available in North America by 2004.

EDGE has minimum impact on device cost and no net effect on battery life for comparable tasks.

EDGE users will consume more data and hence there will be downward pressure on pricing plans.

Global deployment of GPRS/EDGE provides value.

Consumer adoption could be a major driver of network use.

Microsoft proposed a fundamentally new architecture for native support of wireless WANs in future versions of Windows based on Universal Plug and Play. Question: what is impact on device cost?

Various optimizations are available for enhancing application performance, but few are in general use.

FUTURE MEETINGS

The PCCA meets once per quarter. The next meeting in November, is described above in detail. We are currently planning 2004 meetings.

February 11-12, 2004, 1XEV-DO

These are the tentative dates for the Q1, 2004 meeting. The topic will be CDMA2000 1X-EVDO, and will include an interoperability workshop. The proposed location for this meeting is San Diego. Stay tuned for further details.



Other Topics

Other topics on our agenda include:

Session Initiation Protocol: implications for wireless networks, telecom and messaging.

Wireless messaging: integration of public Internet messaging with enterprise systems, cellular push to talk and multimedia messaging. What are the opportunities, issues, enablers and barriers?

Wireless security: VPNs over wireless, hotspot security, security in multi-network environments.

If you have any ideas for topics or meetings, please let us know.

For any company wishing to host a meeting; please send an e-mail to pcca@pcca.org. Why would you want to host a meeting? There are two reasons. First, it is often less expensive to host a meeting in your local area than to travel to one. Second, the hosting company is invited to present information about its products and services in a host presentation at the beginning of the meeting.

For the latest information on PCCA meetings and other events, see <http://www.pcca.org/news/news.htm>.

SUMMARY OF CURRENT WORK

This section summarizes the work currently underway by the standards and architecture committee.

- **Quarterly Meetings.** These meetings are used to plan our work, provide updates on work projects, and then focus in depth on technical issues facing the industry. At each meeting we analyze one or more major topics using a symposium format that consists of technical presentations followed by discussion.
- **Interoperability Workshops.** The PCCA regularly holds interoperability workshops that address usage, development, and deployment of mobile devices, networks, and applications. We have held GPRS and CDMA2000 1XRTT workshops so far, using network provided by AT&T Wireless, Cingular Wireless, T-Mobile and Verizon Wireless.

ABOUT THIS NEWSLETTER

This is the newsletter of the Portable Computer and Communications Association. Effective 2000, this newsletter has been distributed via e-mail. The purpose of this newsletter is to keep PCCA members current with the activities and directions of the PCCA. This newsletter is published on a quarterly basis and is distributed to everybody on the PCCA mailing list, including both PCCA members and non-members. Prior copies of this newsletter are available at <http://www.pcca.org/news/news.htm>.



We welcome contributions. If you have any topics or articles you would like to contribute, please contact us at pcca@pcca.org. (Note: e-mail addresses are presented graphically to protect against harvesting for spam purposes.) The editor of this newsletter and chair of the PCCA Standards and Architecture Committee is Peter Rysavy, rysavy@rysavy.com, 1-541-386-7475. For questions about PCCA membership, please contact PCCA Director Gloria Kowalski, pcca@pcca.org, 1-541-490-5140.