

MapleWorks™ Technologies'

Technical Expertise *Background*



Welcome

MapleWorks Technologies, headquartered in Canada's silicon valley, is an experienced source of software development services for developers of telecom products for both the service provider and enterprise markets. We deliver trustworthy on-shore engineering and technical support services. This *Backgrounder* gives you details of our skills, knowledge and work experience.

Extensive technical skills and knowledge

MapleWorks Technologies has a technical staff with extensive product development and deployment experience in the telecommunications sector. Though a young company, the staff members have an average of 14 years of experience covering the telecommunications sector as well as other related and ancillary areas including application development.

Some of the skills and knowledge that MapleWorks brings to the table can be broken down into the following areas:

WiFi and WLAN Development

- 802.11i security and authentication protocols
- Wireless access points and gateways
- Wireless element management systems
- WiMax and mesh networks
- VoIP on WiFi

Intrusion Detection Systems, RF design and Security

- Wireless networks intrusion detection and IDS management systems
- Vulnerability/Security analysis, design and development for wired and wireless networks
- Wireless networks RF management
- IP Security: Radius, 802.1x, Firewall, PKI, IPSec, TLS/SSL, SSH

Networking Technologies development

- Layer 2 and Layer 3 Switching
- IP Security: Radius, 802.1x, Firewall, PKI, IPSec, TLS/SSL, SSH
- LAN Technologies: Ethernet, spanning tree, fast spanning tree, VLANs, packet priority
- WAN Technologies such as PPP, Frame Relay and ATM
- Routing Technologies such as OSPF, BGP, MPLS, IS-IS etc.
- TCP/IP protocol suite

Network Management Systems Development

- SNMP monitoring including Managers, Agents, Traps and MIB design
- NMS and EMS architectures

Database Design and Development

- Relational, object, XML DB technologies

Wireless/Cellular Networks and Technologies Development

- GSM/TDMA/CDMA

- WCDMA/TD-SCDMA/EV-DO
- UMTS UTRAN (NodeB, RNC),
- UMTS Media Gateway,
- All IP UTRAN,
- SS7 transport, SCTP and backhaul/Sigtran
- CDMA 1XRTT BSC(packet data subsystem and voice vocoding subsystem) and Open RP

Application of Web and J2EE Technologies

- J2EE
- Templates, frameworks
- Struts
- JSP
- Application Servers

Test tools and test automation

- Automation frameworks
- Performance testing for data, voice and VoIP networks
- Test tool and test script development

Voice over IP technology development

- Protocol stacks: SIP, H323, MGCP, NCS, Megaco, RTP, RTSP, SDP
- VoIP systems development covering Gateways, IP Telephones, Soft Switches and Soft Phones
- Packet Infrastructure dealing with slip, jitter, Ethernet to TDM conversion, codecs and packetization

TDM based telephony development

- Switching including carrier and enterprise products
- Signaling such as SS7, TCAP, IDN BRI, ISDN PRI, SONET
- Wireless Communications such as GSM and UMTS
- Voice Applications such as Centrex and Key system features
- Advanced Intelligent Network platforms and applications such as pre-paid card, E800, and Local Number Portability
- Voice Quality including Echo cancellation, codecs

Services Platform Development

- Application Development: SIP SLEE, SOAP, JAIN SLEE
- Speech Platforms and technologies, VoiceXML, MRCP, TTS, ASR
- Computer Telephony Interface (CTI) protocols such as CSTA and TAPI
- Service deployment and delivery platforms such as WebLogic, JBOSS, Apache/Tomcat and .NET

Systems Architecture

- System design for Performance, Reuse and Reliability
- Carrier Grade Systems design

End-to-End Development Processes, Tools, Operating Systems

- Requirements Management
- Waterfall and Iterative Design processes
- RUP
- Quality Assurance
- Customer Support

- Experience using tools such as Clearcase, CVS, Bugzilla, Remedy, UML, Rose, TogetherSoft and more
- Languages: C, C++, Java/J2EE, Perl, HTML, JavaScript, XML, VXML, PHP and more
- Operating Systems: Windows, Linux, Unix Variants, RTOS (VxWorks, Chorus, QNX, pSOS) and more

Experienced project managers and engineers

MapleWorks staff members have led or participated in numerous development projects both at MapleWorks and at prior employers, a sample of the major projects that MapleWorks staff members have worked on are:

- Protocol stack development: MGCP and Megaco at Nokia and Alcatel, SIP at Nokia, PPP at Nortel,
- Voice over IP: Gateways at Mitel, Nortel, Nokia; Unified Messaging at Mitel, Softswitch at Nokia, SIP/V5 Gateway for TDSOFT Communications,
- Security development: Layer 3 VPN solution for SION International, IP security framework for Waterfall Networks, VoIP security framework for Nokia and Mitel
- Networking Technologies: Nortel's OpenIP suite, Mitel's All-in-one VoIP Gateway (model 3100)
- Experience on architecting and developing carrier grade UMTS RNC platform as well as CDMA 1XRTT BSC platform.
- Experience on CDMA 1xRTT BSC packet data subsystem architecture design.
- Experience on UMTS All IP UTRAN (SCTP for signaling, UDP for data, IPv6/IPSec) architecture and development.
- Experience on UMTS RNC Call Processing, resource management.
- Experience with general end to end architecture of GSM/GPRS, UMTS, CDMA 1xRTT/1xEV-DO, including both access network (voice/data) as well as the core network (voice/data).
- Call Processing for many PBXs and COs at Mitel, Nortel,
- Network Management Systems: Linmor NEBULA Performance Manager , Newbridge 46020 MainStreet Xpress Network Management, SNMP agent manager architecture at Catena to deliver FCAPS capability, Siemen's ERX Router Performance Manager
- Speech platform development using Nuance at Mitel, single number speech service (Emily) at Bell Canada, Speech Recognition application using Nuance and SpeechWorks at Time iCR
- Service delivery platforms: SIP SLEE for Ericsson next generation AIN, JAIN SLEE for the Nokia Next Gen IN VoIP platform development, Nortel's Multimedia Communications Server (MCS) SIP server, DeviceServer and DeviceTop systems for ESPIAL,
- Advanced Intelligent Networks (AIN) Platform and Services Development at Nortel, Ericsson, Nokia, Siemens, Stentor

Operating System Experience in Projects:

- Vxworks (VoIP switch platform Mitel, Nokia, OAM&P Catena, Alcatel ATM switch)
- QNX (Oracle Telecomputing application, Siemens L2 Switch)
- pSos (Gandalf Routers)
- Linux(Soma Networks wireless devices, Siemens L2 traffic generator, Belair Ethernet driver, Siemens SNMP switch manager, 802.11i authentication toolkit, SNMP agent)
- Solaris (enterprise application development, Nokia VoIP switch)

Conclusion

MapleWorks employs the brightest and most experienced people. Our engineers are technically savvy and skilled in technologies specific to your design needs. The project manager assigned to you will be a consistent and reliable liaison between you and the engineering team. You will be confident the commercial product will adhere to high standards of quality, and will be delivered on time and on budget.

Please contact us for more information.

About MapleWorks

MapleWorks Technologies, headquartered in Canada's silicon valley, is an experienced source of software development services for developers of telecom products for both the service provider and enterprise markets. The company delivers trustworthy on-shore engineering and technical support services. Unlike off-shore companies, MapleWorks has an experienced and expert resource base that commercializes technology on time and at half the development cost. For more information, we invite you to visit our web site at www.mapleworks.com.

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We invite clients who are looking for a trusted on-shore outsourcing partner, to get in touch with us by any of the phone or fax numbers above, or send an email to info@mapleworks.com.



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