

Floreat Voice over IP (VoIP) Software Suite (Voice over Packet Software)

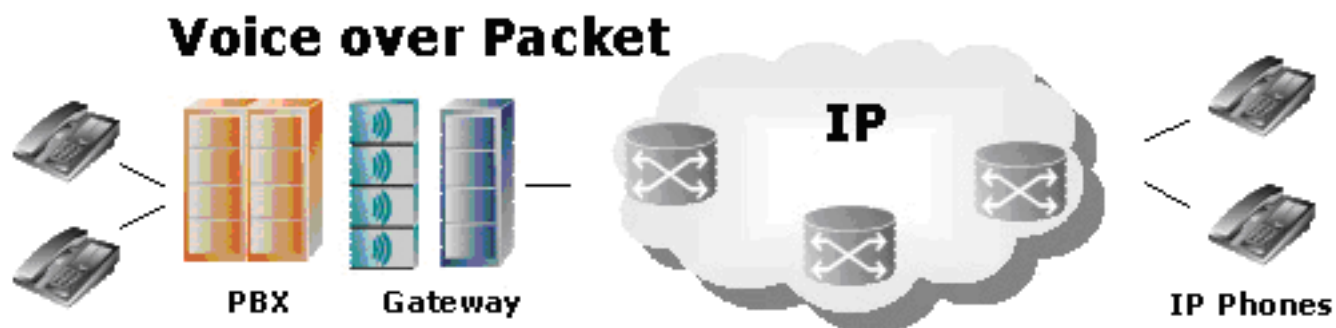
IP Telephony is the exciting technology that takes full advantage of the intrinsic power of the Internet Protocol (IP) by integrating voice, fax and data over an IP network. Voice over Internet protocol (VoIP) technology provides small to medium sized enterprises and small offices/ home offices with the opportunity to take full advantage of their data connections.

Normal data traffic is carried between PCs, servers, printers, and other networked devices through a company's worldwide TCP/IP network. Each device on the network has an IP address, which is attached to every packet for routing. Voice-over-IP packets are no different. Thus, Voice over IP is the technique for sending real-time voice over data networks including the Internet or internal IP network.

IP communications refers to the transmission of packetized voice, data, video, wireless, and multimedia applications via an integrated enterprise infrastructure based on circuit-switched and TCP/IP technologies and protocols. It is the next generation of networking technology that is capable of handling all types of traffic and delivers more services than were available with separate voice and data networks as well as improved telephone services. It also offers efficient use of bandwidth by having voice and data share the same connections.

Floreat provides next generation communications software that fully utilizes IP's robust capabilities. Our VoIP software suites provide high-quality and exceptionally clear voice communications. Our VoIP suite is utilized in standards based H.323 and SIP stacks and it includes:

- a) speech codecs software conforming to ITU-T recommendation and in some cases proprietary audio codecs software where both ends of the session of a call is controlled by the same provider or user; in both cases compression algorithms have been designed to minimize packet size for quick and easy transport across IP networks
- b) Telephony software; Call Progress monitoring and generation, DTMF detection and generation, Echo Canceller (G.168 and G.165), VAD, CNG
- c) Jitter buffer management and Packet Loss Concealment (PLC)



Floreat's VoIP Package

Speech Vcoders (Audio codecs software):

- [G.711](#)
- [G.729/B](#)
- [G.729A/B](#)
- [G.723.1](#)
- [G.726](#)

Telephony Software:

- [DTMF detection and generation](#)
- [Call Progress monitoring and generation](#)
- [Echo Cancellor; G.168 – Digital Network Echo Cancellor, G.165 – Line Echo Cancellor](#)
- [VAD](#)
- [CNG](#)

Jitter Buffer Management and Packet Loss Concealment (PLC)

The Jitter Buffer management smoothes play out of audio in an IP packet based reception. The packets received by the gateway have varying delays. They may also arrive in out-of-sequence, some packets are lost over the network, issues such as out-of-order arrival of packets, packet loss and variation in delays results in poor quality of speech. A jitter buffer management and packet loss concealment (PLC) is adopted to compensate the jitter in packet arrivals and out-of-order packets, it arranges the packets in the sequence and sends them to the decoder with correct sequence and frame time. This also compensates the lost packets by playing back the last packet.

Floreat's Jitter buffer management provides dynamic buffer size adaptation in response to network conditions. This adaptation can be configured to a desired level of packet drop, since there is a trade-off between the delay due to the jitter buffer and the packet loss; a big jitter buffer adds the delay that results in less packet loss and vice versa.

Floreat also provides well tested and field proven Real Time T.38 Fax over IP and Store & Forward T.37 FoIP software along with Group 3 Fax modem software (G3 Fax). The FoIP software suite support speeds up to 33.6 Kbps (Super G3 fax modem) as well as color image transfer, which is ideal for embedded applications.

Floreat's VoIP software is modular, re-locatable and re-entrant to support multi-channel capability. It can operate within a multi-tasking environment or as a single task. Floreat's VoIP software is supported on various DSPs and processors as well as offered in fixed and floating point C.

Floreat's VoIP software can be integrated with Floreat's other data modem, fax, FoIP, DSVD, imaging and video software for various applications.

Floreat supports its software on the following DSPs, Controllers and Processors

- TI C5000 and C6000
- Intel Pentium fixed and floating point and XScale
- ADI Blackfin (BF53x), SHARC 21xxx
- ARM 7/9/9E, MIPS
- PowerPC, STM, SuperH cores, Philips Nexperia
- CEVA (formerly DSPG's licensing division)
- Ported by customers to their processors:
 - NEC
 - STM
 - Zilog

- ▶ For further information on the standard, please click [ITU Standards](#).
- ▶ For our brief profile, please click [Company Profile](#).
- ▶ For further inquiry, please send us an [Inquiry Form](#) or send an email to info@floreatinc.com.