Creo - Let There Be Voice Over IP

*Creo, fSONA and Lasercom Team Up
On Optical Wireless VoIP Network*

Creo is a global company with key strengths in imaging and software technology. Founded in 1983, they are best known as the company which pioneered computer to plate technology and the world's strongest advocate of thermal imaging. With over 4,200 employees and 25,000 customers, Creo is helping printers worldwide adopt digital production methods which reduce costs, increase print quality and allow them to serve their customers more efficiently.

Recently, Creo outgrew their corporate campus headquarters located in Vancouver, Canada and found themselves without space for a team of telemarketing employees. High vacancy rates in the area meant that finding a suitable location for the new satellite office was not difficult – one was secured just across the street. Setting up essential network services, including telephone systems, for the twenty-person team proved a bit more challenging. It goes without saying that for a team of telemarketers, telephone service is critical.

The decision to move the telemarketing group to the satellite office was made in early April with the group scheduled to be operational in the new offices by May 1st. This left only three weeks to plan, implement and test the new voice network. Russell Adams, Creo's Network & Telecom Manager for North America, was responsible for establishing a point of presence (POP) to provide voice services to the satellite office. The office was only 600 meters away but as the building was owned by a third party and was located across a public street, issues such as gaining approval to lay fiber-optic cable or obtaining roof rights for wireless systems, had to be considered.

Adams considered a number of alternative technologies, including laying fiber-optic cable, leasing a pair of T1 lines, as well as optical wireless. While fiber-optic cable offered all the bandwidth they could ask for, the expense of laying fiber, $30,000 at a minimum, was high given that Creo was only planning to keep the telemarketing team at the satellite office for two years. Plus it was unlikely they would be able to complete the necessary negotiations and trenching within their three week time frame. A pair of T1 lines along with a small PBX could provide the needed access but with nowhere near the bandwidth of fiber. As well the need for a PBX would add another upfront expense to this option. The next alternative to be evaluated – optical wireless – turned out to have the exact combination of qualities Creo needed.

Optical wireless, also known as Free Space Optics or FSO, was a technology Adams was aware of because one of the leading suppliers of the equipment, fSONA, was also located in the Vancouver area. With optical wireless, Adams could provide all the bandwidth needed for the telephone system and have plenty left over for Internet and LAN access. In addition, the fSONA equipment would easily achieve a return on investment within twelve months, and probably much sooner. This was important, not just in light of the need to conserve resources, but because at Creo all projects must have an obvious ROI with twelve months just to be considered. In addition, the large number of office vacancies in the area meant that establishment of roof rights did not become an issue.

Another benefit was that instead of deploying a separate PBX to the satellite office, Adams could make use of the Nortel 9150 remote office Voice over IP (VoIP) solution. Adams also considered using a Cisco VoIP solution but the Nortel product offered all the needed features plus it was capable of integrating with the Symposium call flow system they were already using at the main office. Initially Creo is running the Symposium system over the optical wireless link but the satellite call center can upgrade to their own system at any time. All this and at the end of the two years, instead of being left with a bill for services, Adams will instead have a superb backup link.

VoIP solutions require low-latency connections in order to maintain a high quality of service, ideally less than 100 milliseconds. As well, problems can arise if the amount of latency fluctuates, often referred to as "jitter". SONAbeam™ optical wireless systems have latency characteristics that are identical to that of fiber-optic cable, effectively zero. In addition, the latency of a SONAbeam™ link will never fluctuate making SONAbeam™ an ideal transport method for VoIP applications.

With proper planning, fSONA optical wireless links take less than a day to install. Working with Lasercom, a local company that specializes in the provision of wireless solutions for carrier and enterprise customers, a SONAbeam™ 155-E Fast Ethernet link was selected for the job. Lasercom was able to deploy the link quickly due to both their experience with optical wireless systems and the success of their pre-planning. During this phase Lasercom was sensitive to the fact that Creo is housed in a very aesthetically pleasing building. They were careful not to let the equipment detract from the look and flow of the building. The fact that the SONAbeam™ 155-E has a very small footprint helped to minimize the visual impact. Once the equipment was delivered, Lasercom had the systems installed promptly, leaving Creo an extra five days to test the network before the telemarketing group moved in.

"I enjoyed working with Russell on this project," commented Robert Lanz, Director of Business Development for Lasercom. "He really opened up the organization and allowed me the latitude to deploy the link with complete unencumbered access and internal support from Creo. As a result there were no issues or areas of disconnect in getting the link up and running. Russell and the rest of the Creo crew were excellent to deal with and even though we did not expect any problems with this deployment, we were still thrilled that this was an uneventful project."

Adams is currently using SNMP monitoring on the network's routers which allows him to remotely monitor the link on a real-time basis. Adams has not heard one complaint from the group of telemarketers. "The link has been successfully providing voice over IP access to the group of telemarketers for close to a month with no hiccups or problems," stated Adams. "I'm extremely satisfied with the SONAbeam and would certainly recommend it to others. I only wish all my interactions with vendors went this smoothly. Now that I have seen for myself how well this technology works, I consider it part of my arsenal and would not hesitate to use it again." Once the group has moved out of the office, Adams plans to keep the SONAbeam™ on hand as a DRP system.