



ChaserView™ for Inmarsat BGAN & Cell phone networks

Sculpture like video & Technical Overview



Overview

Based on long tradition of research and development history, Software by iPixCel, LLC, developers of innovative VideoMoverPlus™ PC based software introduces ChaserView™ software technology for optimizing the performance of video communication on mobile devices and PCs when used over wireless networks. With the new explosion of mobile devices, a new segment of multimedia is forming with the need for a robust video conferencing and content delivery system. On devices with low and fluctuating wireless bandwidth, ChaserView™ software technology possesses and creates clearer shape, smoother motion, shorter latency, and much cheaper computational cost than conventional video technologies such as H.264, MPEG or other proprietary hardware based solutions. ChaserView is not another one way streaming software for mobile devices. It is intended for low latency 2 way video and audio conferencing over low and high bandwidth wireless networks.

ChaserView™ solution is integrated and optimized for Inmarsat BGAN, cell phone networks on Pocket PCs, Hand held PCs, and select Smart Phone models. ChaserView software can run on wireless networks such as GAN and BGAN, CDMA, GSM, GPRS with bandwidths as low as 9.6 kilobits/second. (kbps) ChaserView™ - on the fly - evaluates the current network speed and displays the smoothest and most detailed video possible with the available bandwidth. Although BGAN network is a robust wireless network capable of reaching speeds of up to 492 kilobits/second if used with certain BGAN terminals, the background IP capabilities (and to some extent the Streaming class) of BGAN possesses fluctuating characteristics, therefore may be effecting a smooth video conferencing session. ChaserView™ - SCULPTURE™ codec - can dramatically reduce and counter the these fluctuation effects by advanced bandwidth probing developed for wired and wireless networks, thus presenting superior duplex audio and video experience using hand held, PDA devices. Other satellite based networks also exhibit similar fluctuations, therefore ChaserView™ software is a suitable software solution for countering the fluctuating effects of the network.

The ChaserView™ software is especially suitable for small mobile devices such as Pocket-PCs, hand held PCs and mobile phones that possess small display screens and light computational power, and if used with wireless satellite networks with limited or fluctuating bandwidths. If higher bandwidth is available such as BGAN Streaming class, ChaserView™ automatically switches to full color video. While SCULPTURE™ video displaying basic colors if encountered with low bandwidth, it displays the majority of the color information in an image while preserving the outline of face, eyebrow and other

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distinguishing features of the subject, a clear difference between ChaserView™ core technology and any competing mobile conferencing software. SCULPTURE™ video can preserve the most important outline features, improve the overall visual quality of video. For broadband it supports low-complexity full-color video. If the available bandwidth is more than **30 kbps**, full-color video can provide higher visual quality. Although ChaserView's full-color video codec is compatible with H.263 bit stream syntax but does not use the same compression/decompression method. It reduces the complexity of the encoder and preserves the video quality at the same time.

Components of ChaserView™ software

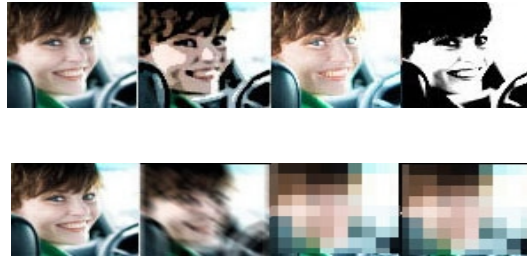
The main components of the ChaserView™ video codec solutions are:

1. SCULPTURE™ video : 9600 baud to 33k range
 - Preserve the most important outline and features of face
 - Improve the overall visual quality video by adding a few colors
 - Keeps the bit rate very low, for example 20k per second on BGAN
 - Low complexity compression with a unique mathematical formula
2. Black and White and Sculpture™ like video : 9600 baud to 45k range
 - Low bit rates supporting from 4800- 9600 baud to mobile broadband
 - Low complexity compression with a unique mathematical formula
 - Smooth motion even on low power CPU phones
 - Clear shape where facial outline is clearly displayed even in low bandwidth
 - Short latency over BGAN and Cell phone
3. Scalable multilevel video codec : 45k and above
 - Improve the overall visual quality image in a "watercolor effect" video with more gray levels if a sudden drop in bandwidth is detected.
 - Select from 4800- 9600 baud range to broadband range if detecting lower bandwidth and severe modulation
 - Keeps the bit rate low
4. Full-color low-complexity video
 - Compatible with H.263 bit stream syntax while not using the same compression and decompression of video/audio content
 - Compatible with BGAN, CDMA, GSM, GPRS, HSPDA, WiFi, Wi-Max, LTE© networks
 - Reduce the complexity of video rendering networks
 - Preserve the video quality

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The first set of screen captures below illustrate video quality at different bit rates using ChaserView™.



The second set of pictures above illustrates the video quality at different bit rates using other software products.

Other features as part of the ChaserView™ video conferencing software are automatic bandwidth detection, automatic image quality improvements, and a proposed prototype of user interfaces for Pocket PC, Smart Phone with support for Microsoft Mobile OS, The current solution can be integrated with MSN Messenger, and LDEP based servers for a subscription based mass distribution model. This feature makes it easy and convenient to initiate video conferencing sessions over hand held devices using a central server to log in, register and find other users using ChaserView™ software so they can initiate conferencing across the globe. All wireless networks such as GSM, CDMA, GPRS, GAN, BGAN are supported. If a user's hand held phone does not have a camera, they can still receive the video from another user in real time.

Applications

1. Video telephony between mobile to mobile as well as BGAN to BGAN customers.
2. Low cost and easy video telephony between Personal Computers and mobile devices.
Examples include:
 - a. Military and Homeland security
 - b. Doctor – Patient Communication – Elder Care
 - c. Oil and Gas
 - d. Social networking
 - e. Customer support
 - f. Remote construction
 - g. Maritime applications for international shipping
 - h. Aeronautical applications and aerial video conferencing
 - i. Land mobile and vehicular video conferencing while on the move
3. PDA to PDA communication and real time visual collaboration.



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Stipulation

- The current implementation of ChaserView™ is a finished product supporting Microsoft Mobile OS operating systems and currently being tested with Inmarsat approved Land mobile, Maritime and Aeronautical terminals in addition to CDMA, GSM, and GPRS, VSAT and network devices such as PDA and Smart Phone equipped with Microsoft Mobile OS.

Other software products and related work



Software by iPixCel - BGANX also offers a one way streaming software product, VideMoverPlus using Microsoft© Media Encoder and VC-1 technology foundation. VideoMover™ is suitable for fast action streaming from inside moving platforms used for low latency high quality - one way video streaming.

VideoMover™ software technology is based on fast action streaming solution from inside mobile and moving platforms such as cars, trucks, boats, airplanes. VideoMover™ compression and decompression of video is suitable for vehicular (moving platform) video streaming where it can compensate for motion of camera, both physical movements and fast frame changes as focused on a dash board of vehicle. A fully functional bandwidth adjustment module is also built with the codec facilitating adjustment of frame rates with available bandwidth without sacrificing video size, color depth and overall quality of streaming. VideoMover™ is used extensively by Media TV for mobile news gathering and Police Emergency Management for visual verification of life and property damage while mobile.

Differentiating Features

ChaserView™ video conferencing is a duplex conferencing software package, which enables very low bit-rate "Sculpture" like video over narrow band networks. At low bandwidth, ChaserView™ delivers clearer shape, smoother motion, shorter initial latency, and much lower computational cost than do common technologies such as MPEG1, MPEG2, MPEG4, H.261, H.263, and H.264, or other proprietary codecs. For broadband it supports low-complexity full-color video. If the available bandwidth is greater than 30 kbps, full-color video can provide higher visual quality. ChaserView's full-color video is compatible with H.263 bit stream syntax. It reduces the complexity of the encoder and preserves

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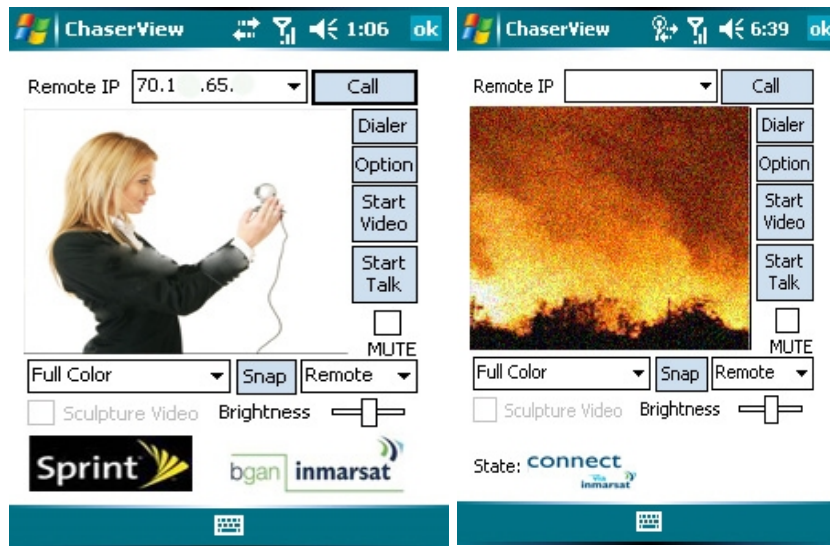
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the video quality at the same time. Further advantages of this technology include low-complexity motion estimation, low-complexity integer DCT/ IDCT, and a DCT/ Quantizer bypass technique.



Demo/Prototype

ChaserView™ prototypes and finished products are ready for purchase for Pocket PC, Smart Phones today and are currently available for private label, partnership, and bundle opportunities . Screen shot 1 below shows the PC application prototype for Inmarsat BGAN and Cellular networks. Screen shot 2 below illustrates the Pocket PC user interface. Note: The Pocket PC is equipped with a web camera for two-way video conferencing.



Screen shot - Pocket PC

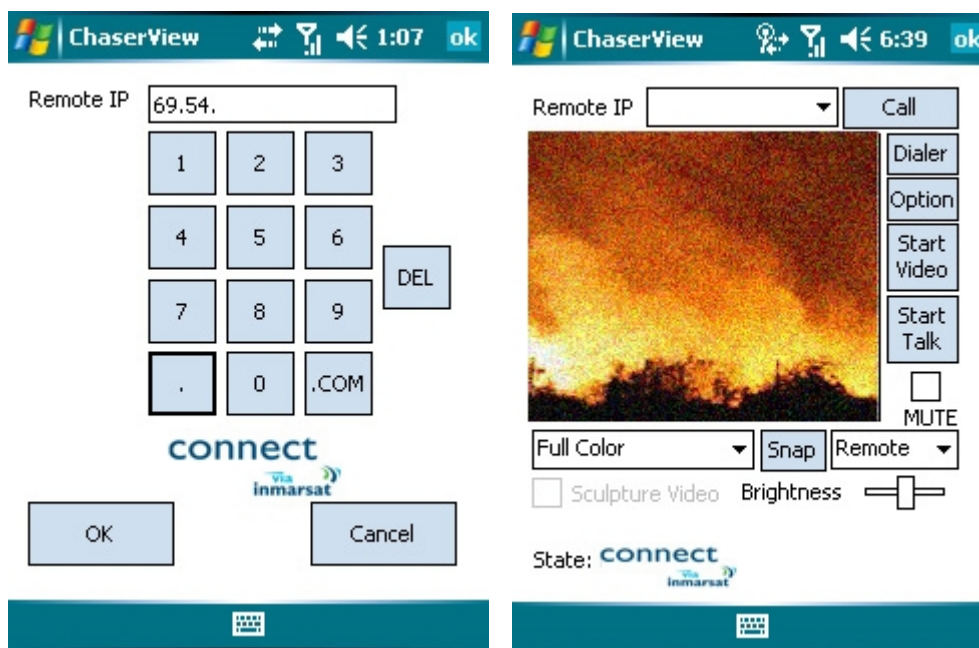
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Development Status

Designed and dreamed for 10 years
First prototyped version in Summer 2009
Release date: June 2009
Revised for Pocket PC, Smart Phones: October, 2009

Technical Specifications



Main features of ChaserView™ software:

- Ultra portable hand held device for video conferencing via wireless networks
- Ultra sophisticated BANDWIDTH MANAGER for wireless networks
- Direct connect from BGAN terminal to any land line or cell service
- Uses background IP - no need for using Streaming class
- Uses BGAN WiFi from WiFi capable terminals
- Private video communications with exclusive software features
- *Not another H.264 codec* - next generation compression and decompression of video over wireless networks

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Benefits of ChaserView video conferencing software:

- *Ultra portable conferencing solution for Inmarsat BGAN, Sprint & Verizon CDMA, AT&T networks*
- Duplex video conferencing not another high latency one way streaming software
- Low latency 2 way conferencing over all wireless networks
- Sculpture™ video when there is very little bandwidth
- Black & White video when there is more bandwidth
- Full color video when there is enough bandwidth
- Bandwidth manager built in sensitive to connect to 9600 baud to 1.2 mb range over cell phone
- Works with PDA and select group of Smart Phones
- Best software choice for social networking portals



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