

Fast Time to Market for Video Services

SmartCall Suite with Host Media Processing
Reduces Development Time Dramatically



Executive Summary

SmartCall Suite is a sophisticated development and deployment tool, which has been empowered for fast video service delivery with the video streaming capabilities of Dialogic® Host Media Processing Software. Video services can now be programmed in minutes instead of months through a robust drag-and-drop interface, and then deployed quickly.



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Business Challenge

Because of the wide acceptance of broadband and convergence, the way in which business, entertainment, and other products can be disseminated is changing rapidly and radically. The spread of 3G or equivalent networks is impelling video services via cell phone into the mainstream. Demand is exploding, and the possibilities seem limited only by the human imagination.

Here are just a few of the video-enabled applications currently planned for delivery: video portal, entertainment, tourist information, political campaigning, banking, and help desk.

Video Portal

The key differentiator between 3G technology and 2.5G technology is the ability to converge video with voice and data. A video portal can move far beyond the previous generation's voice portal technology, supplying rich and informative video content to subscribers anytime, anywhere on their cell phones. The list of choices seems endless: sports clips, stock market information, fashion news, up-to-the-minute traffic and weather reports, and coming attractions for the latest films with the ability to buy tickets and add restaurant reservations for a night on the town. As video-enabled cell phones become ubiquitous, the ability to provide a video portal with the widest variety of attractive services is likely to become a key differentiator for a service provider — and an important source of new revenue.

Video Entertainment

Airline passengers suffering through flight delays will no longer have to find a special kiosk in a crowded airport to stave off boredom and commuters on buses and trains will no longer have to stare endlessly out the window. They can now watch film clips, favorite TV episodes, game shows, talk shows, instructional sessions, or news programs on their cell phones. By integrating video IVR, service providers can offer these attractive options to their customers, moving such services quickly from luxuries to necessities.

Video Banking

Customer who need updates on their loan applications or who have questions can call their bank representatives and not only speak to them but also see them “face-to-face”

with video banking. A bank offering this type of “personal” service is more apt to keep its existing customers and attract new ones.

Video Help Desk

Video can take customer service to the next level. Not only can customers see agents face-to-face, but they can also watch demonstrations of new products while waiting in the hold queue or help themselves to “how-to” installation or troubleshooting videos.

The Bay Talkitec Solution

All of the video-enabled services described in the previous section are very intriguing. However, all these new services become far less exciting if it takes months to program each one in C or some other high-level language. Bay Talkitec has found a way to dissolve this roadblock to revenue elegantly with its SmartCall product, a software suite that includes middleware (a telephony engine or soft switch) and an application development tool (SmartCall ADT).

By porting the SmartCall Suite to a host media processing environment, Bay Talkitec can provide immediate video streaming capabilities for video services via Dialogic Host Media Processing (HMP) Software. With the SmartCall Suite and Dialogic HMP software, Bay Talkitec has created a proven development interface that allows video applications to be programmed in minutes instead of the months a single application can require when coded from scratch. The video applications can then be deployed quickly in an HMP environment.

See Figure 1 for a sample SmartCall ADT interface screen.

The SmartCall Suite is extremely versatile. Figure 2 provides a quick reference graphic of the features and functions available for automated programming. These are aligned across the top of the interface screen in Figure 1.

Here is an expanded list of features and functions organized by classes of features available through the SmartCall Suite in an HMP environment:

- Message Features
 - Play a message
 - Record a message at a user-defined location

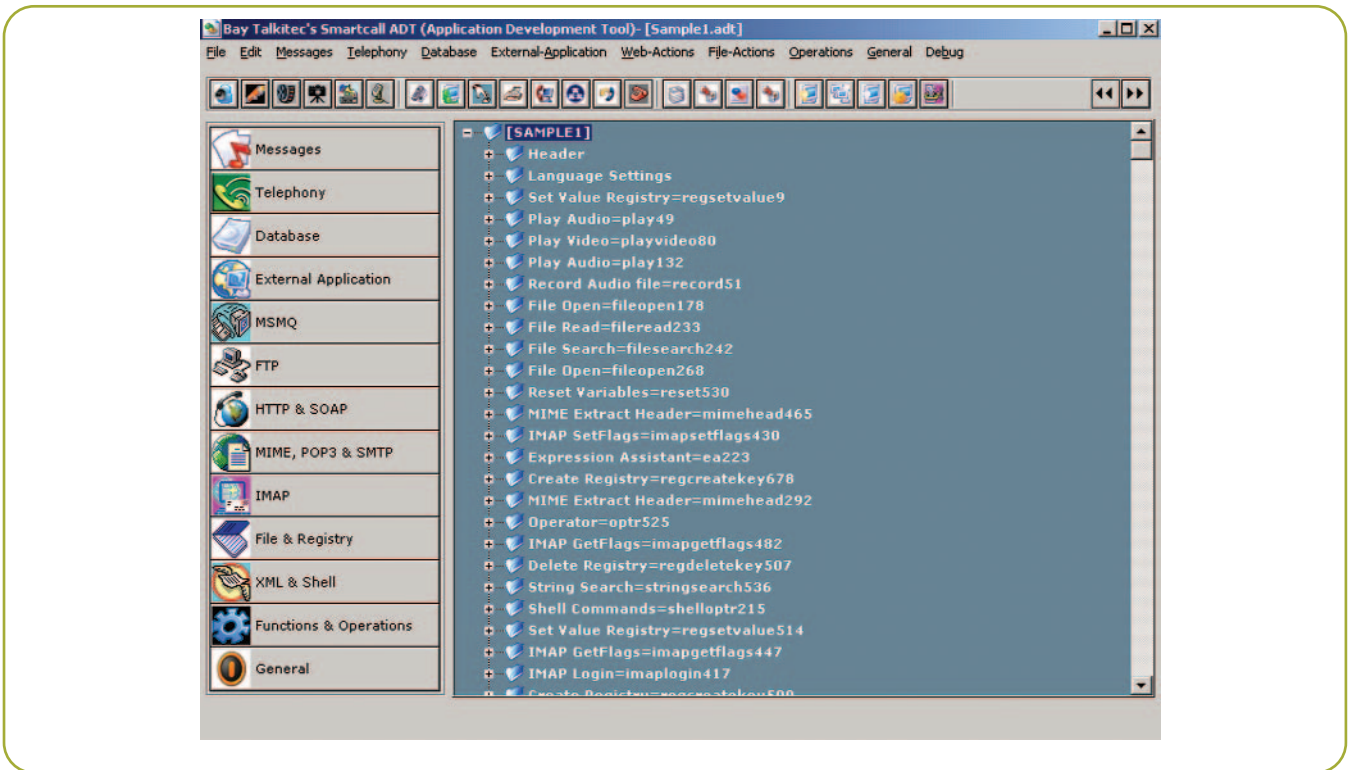


Figure 1. SmartCall ADT Interface Screen

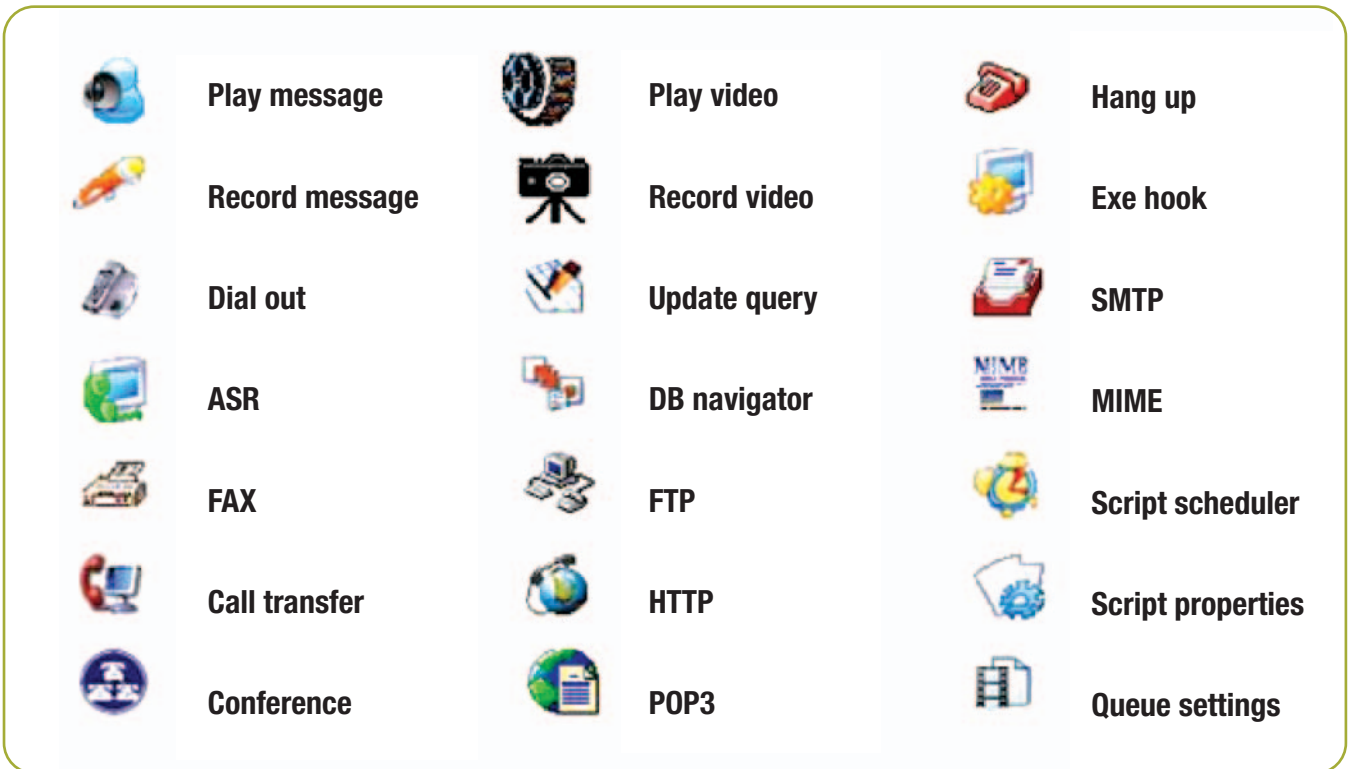


Figure 2. Features and Functions

- Video Features
 - Play a video
 - Record a video at a user-defined location
- Telephony Features
 - Automatic Speech Recognition (ASR)
 - Call transfer to a specific location
 - Conference between IVR, agent, and caller
 - Dial out for outbound marketing campaigns
 - Send and receive faxes
 - Gather pulse/MF tones from the caller and perform business logic
- Database Features
 - Retrieve records from the database
 - Execute stored procedure
 - Update records in the database
- Web Collection
 - File Transfer Protocol (FTP): transfer files to and from an FTP server
 - Hyper Text Transfer Protocol (HTTP): retrieve documents from the World Wide Web
 - Post Office Protocol (POP3): retrieve mail from a POP3 server
 - Internet Mail Access Protocol (IMAP4): retrieve mail from an IMAP4 server
 - Simple Mail Transfer Protocol (SMTP): send mail using SMTP
 - Multipurpose Internet Mail Extension (MIME): format messages containing non-text, multipart, or “non-USA” formatted text
 - Simple Object Access Protocol (SOAP): communicate with SOAP servers
- File Collection
 - File operations: create, access, and delete files
 - Extended Markup Language (XML): create and access XML files
 - Shell: create, access, and delete folders and files
- Miscellaneous
 - Send and receive data over socket through a TCP/IP connection
 - Transfer calls to a call center agent
 - Provision an external application hook in confidential areas and areas of complex business process involvement
 - Text to Speech (TTS) conversion

Technologies

Two major technologies come together to enable the fast time to market for video services discussed in this paper: Dialogic HMP software and the SmartCall Suite from Bay Talkitec.

Host Media Processing

Dialogic HMP software is a Dialogic communications building-block technology. When installed on a system, an application such as the SmartCall Suite “sees” a Dialogic® board with DM3 architecture, but all media processing occurs on the host processor. To help accelerate time-to-market and the migration of existing applications to IP, the software also supports two direct application programming interfaces (APIs): R4 for media processing and Global Call for call control.

Dialogic HMP software uses a built-in network interface card (NIC) to provide IP connectivity. It supports the industry-standard H.323 and Session Initiation Protocol (SIP) protocols for call control, and the H.450.2 supplementary services protocol for call transfers. IP multicast support (transmit only) facilitates implementation of features such as announcements and listen-only conferences with a large number of participants.

Dialogic HMP software also supports RTP protocols for media streaming over IP in the G.711, G.723.1, G.729a, and G.729ab formats, using a standard Ethernet NIC for network connectivity. To help improve the quality of media streaming over the network, the software supports frame sizes of 10 ms, 20 ms, and 30 ms (for G.711), multiple frames per packet for G.723.1 and G.729ab, and features such as Quality of Service (QoS) threshold alarms and packet loss concealment. Other QoS features include the ability to detect and report timeouts in RTP and RTCP sessions to the application.

When deployed in an IP network, Dialogic HMP software supports the initiation and termination of a multimedia (audio/video) call, which includes SIP-based call control and H.263 video format. Dialogic HMP software provides synchronization between voice and video streams for playback on IP video phones and video-enabled soft clients and connection to a 3G-324M gateway on a 3G network. Dialogic HMP software can also deliver only the audio portion of a video call when played to an audio-only endpoint.

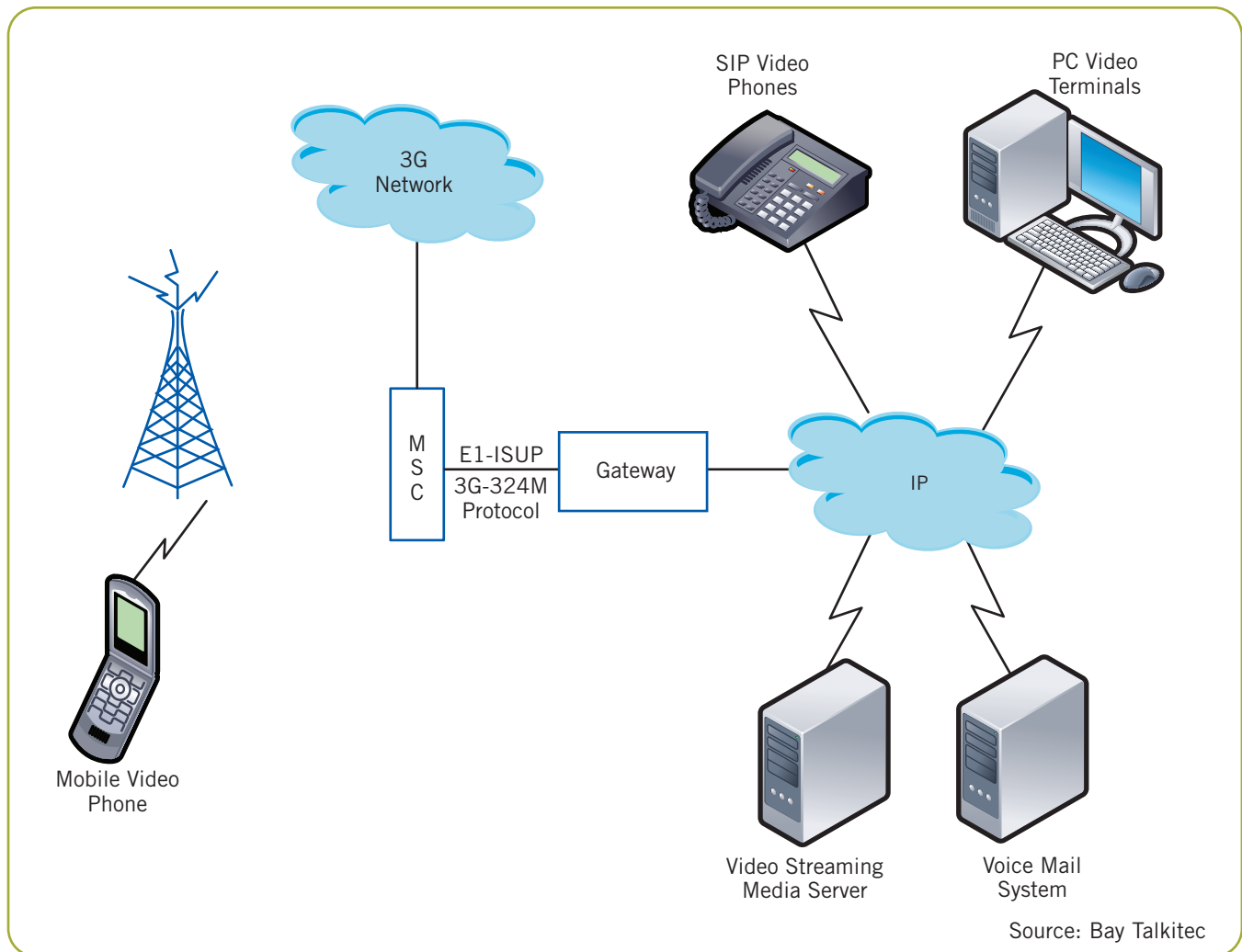


Figure 3. Network Architecture for Video Messaging

SmartCall Suite

The SmartCall Suite includes middleware (a telephony engine or softswitch) and an application generator called the SmartCall Application Development Tool (SmartCall ADT).

Applications that can be developed with the SmartCall Suite include IVR, Contact Center, Speech-Enabled IVR, Short Message Service (SMS) IVR, and email manager scripts. The telephony engine included in the suite can then be used to run applications after a runtime license is purchased.

Figure 3 illustrates how video messaging can be deployed in a 3G network using SmartCall. A standard mobile configuration connects to an IP network where a video streaming server with a telephony engine, soft switch, and HMP software work together to implement the video messaging application on the IP network.

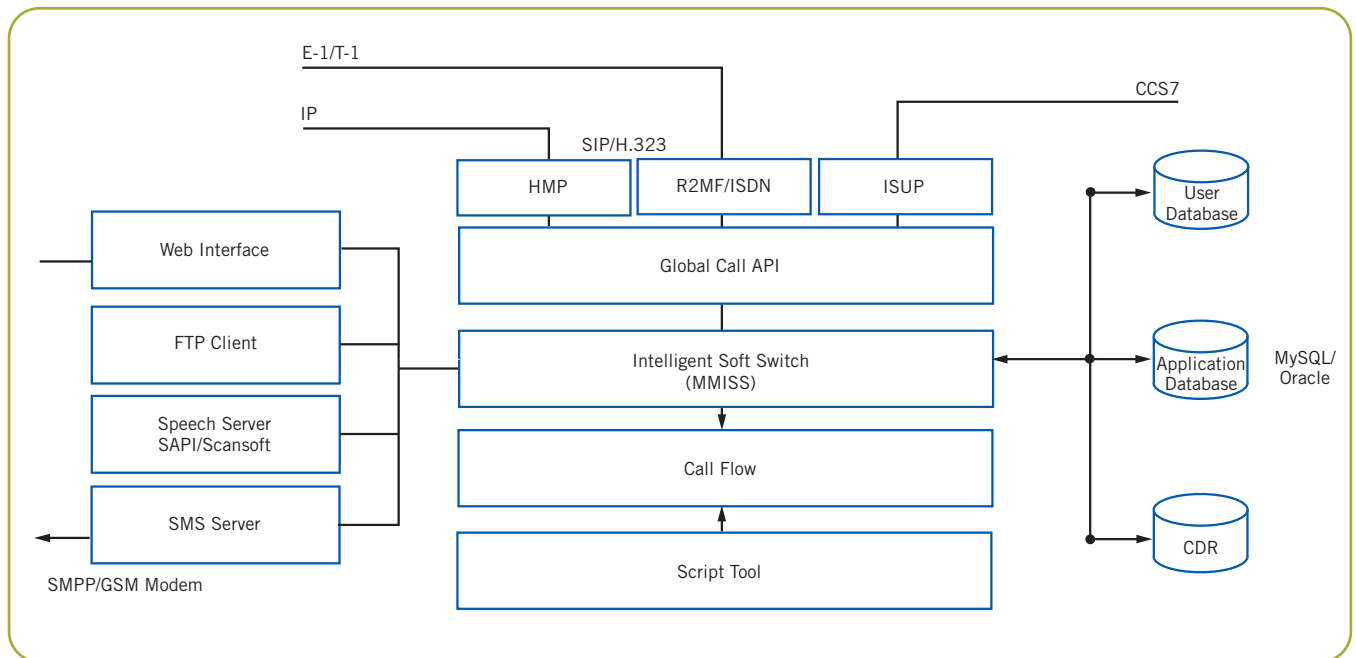


Figure 3. SmartCall Suite Architecture

Architecture

Figure 4 provides an architectural view of the SmartCall Suite when used with HMP. The multimedia intelligent soft switch (MMISS) is the core of the suite which includes a telephony server. The telephony server uses the Dialogic® Global Call API for PSTN and IP call control and the Dialogic® R4 Multimedia API for video streaming. The MMISS not only manages all the telephony calls, but also works with the database and other modules to provide user authentication, CDR information, and an administration web interface/GUI.

Summary

Achieving fast time to market is critical for success with new video services. By combining the easy-to-use drag-and-drop application development tool and robust deployment technology of Bay Talkitec’s SmartCall Suite with the video streaming available with Dialogic HMP software, video services can be delivered quickly, eliminating months of programming time.

Acronyms

3G	Third Generation
ADT	Application Development Tool
API	Application Programming Interface
ASR	Automatic Speech Recognition
BTT	Bay Talkitec
CDR	Call Detail Recording
CTI	Computer Telephony Interface
FTP	File Transfer Protocol
GUI	Graphical User Interface
HMP	Host Media Processing
HTTP	Hyper Text Transfer Protocol
IMAP	Internet Mail Access Protocol
IP	Internet Protocol
IVR	Interactive Voice Response
MF	Multi-Frequency
MIME	Multipurpose Internet Mail Extension
MMISS	Multimedia Integrated Soft Switch
MSC	Mobile Switching Center
NIC	Network Interface Card
POP3	Post Office Protocol
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RTCP	Real Time Conferencing Protocol
RTP	Real Time Protocol
SIP	Session Initiation Protocol
SMS	Short Message Service
SMTP	Simple Mail Transfer Protocol
SOAP	Simple Object Access Protocol
TCP/IP	Transmission Control Protocol/ Internet Protocol
TTS	Text To Speech
XML	Extended Markup Language

About Bay Talkitec

Bay Talkitec (BTT) is a leading computer telephony company with over 70% market segment share for its products in its home market. Incorporated in 1991, BTT has grown into a multi-product, multi-disciplinary application company. With over a decade of leadership in computer telephony, BTT has embarked on ambitious plans to extend its products into global markets. BTT products with universal design and application are finding widespread and ready acceptance throughout the world.

Bay Talkitec has its own software design center equipped with highly qualified engineers with rich experience in developing CTI tools and applications. Bay Talkitec offers a complete suite of CTI solutions and undertakes application development for specific customers upon request.

You can contact Bay Talkitec at info@baytalkitec.com or vinay@baytalkitec.com.

Learn More about this Innovative Solution

For general information, proof points, and case studies about the products described in this white paper, visit <http://www.baytalkitec.com> and <http://www.dialogic.com>.



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