



Etterfølgende to dokumentene beskriver vår kompetanse innen

1. Mobile løsninger for bl.a. mobiltelefoner, PDA er, operativsystem og servere.
2. Integrasjon av SMS.



VisualSoft Technologies

The art of seeing the invisible

Capabilities in Mobile Technologies

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1. Overview

VisualSoft has wide range of expertise in mobile application development, wireless security, mobile networks and has delivered innovative solutions and services tailored to the specific needs of different industry segments.

The cost-reduction, speed to market, improved customer service/retention, compliance with legislation are the major drivers that are forcing organisations to transform their businesses. VisualSoft has a proven business and delivery model that is flexible coupled with the teams' demonstrated experience in the technology area helps to design and develop cost effective solutions

VisualSoft has a dedicated team of professionals who research and work on cutting edge technologies in the mobile space that helps us to come out with efficient, value added wireless solutions.

2. Mobile Competency

- Mobile Devices
 - Mobile Phones
 - Personal Digital Assistants (PDAs)
 - Palm, Pocket PC, Handheld PC, RIM, Symbian
- Operating Systems
 - Microsoft WinCE
 - Palm OS
 - Symbian OS
- Mobile Servers
 - Microsoft Mobile Information Server
 - Oracle 9i Application Server as Wireless Edition
 - Sybase iAnywhere Everyplace Server
 - IBM WebSphere Wireless Edition

3. Areas of Expertise

- Personal Productivity Applications
- Handheld Security Solutions
- Wireless Security Solutions
- Mobile Middleware Solutions
- Mobile Messaging Solutions
- Mobilising GroupWare Solutions



- Mobilising Enterprise Solutions
- Call Center Solutions
- Enterprise and Convergent Portals
- Single Point Turnkey Solutions

4. Mobile development at VisualSoft

Enterprise Applications

- **VisualSoft Project**
 - Developed for WAP devices
 - Palm devices
 - WinCE devices
- **VisualSoft eSales**
 - Developed for WAP devices
 - WinCE devices
 - developing for iMode

Security Solutions

- **VisualSoft MobileCrypt**

VisualSoft MobileCrypt is a Run Time Library using RSA Encrypt and Decrypt (PKCS#1 standard) that addresses all the secure wireless application development concerns. The primary goal of this API is to provide the following features for Palm, RIM Applications

 - Privacy
 - Data integrity
 - Authentication
- **VisualSoft Palm Secure**

VisualSoft Palm Secure provides Password based Encryption for Palm Devices with a strong Encryption Algorithm-3DES of 168 Bit. It comes with features that facilitate Encryption of

 - Address Book
 - Date Book
 - To Do List
 - Memo Pad
 - Expense
 - File Streams



Windows CE Development

VisualSoft CE Suite has come up to enhance and extend the ability of Microsoft Windows CE Platform to meet the needs of embedded system designers, developers and users. This suite includes the following key applications

- VS Explorer
- VS RegEdit
- VS Search
- VS Secure
- VS Wallet
- VS Zip
- VS ProcessViewer

5. Areas of Current Focus

- Mobile Networks
 - 2.5G, 3G Protocols – UMTS, GPRS etc.
- Mobile Messaging
 - SMS – Short Messaging Service
 - EMS – Enhanced Messaging Service
 - MMS – Multimedia Messaging Service
- Wireless Security
 - Handheld Security
 - WTLS Based Security
- Mobile Middleware Solutions
 - VisualSoft Mobile Data Access

6. Team Competency

VisualSoft's team has competency in

- Mobile Development Environments
 - Code Warrior, AppForge for Palm OS
 - Embedded VB, Embedded VC++ for Win CE
 - Nokia WAP Toolkit 3.0 and Open wave SDK 5.1
 - Symbian 6.0 SDK – Quartz C++
 - J2ME
 - MMIT and .NET Compact Framework



- Mobile Networks
 - GSM, CDMA, TDMA, GPRS, UMTS
- Mobile Application Development
 - Mobile Middleware
 - Conduit Development
 - Palm Query Applications
 - Handheld Security Solutions
- Experience
 - 10 years of Experience on Mobile Application development for various Mobile Devices
 - 6 years of experience on various operating systems like Palm OS, Win CE and Symbian OS.
 - 6 years of Development experience in C, C++, and Java for Mobile Applications.
- Skill Sets
 - C, C++, VC++, VB, Java
 - XML, XSL
 - JSP, ASP, Servlets
 - WML, cHTML, XHTML, VoiceXML

7. Project References

A US based organisation, provides premier mobile delivery solutions that enable businesses to mobilise their existing applications and infrastructure. Enterprise Everywhere™, the company's mobile application platform, enables partners, clients, and customers to rapidly and cost-effectively develop and deploy mobile applications taking critical business information/data from any source to multiple devices including PDAs, Internet-enabled phones, two-way pagers, and interactive TV set-top boxes.

The Mobile Development Environment™ (MDE™) is used to mobilise business applications or data to be viewed on any mobile device. The Mobile Development Environment™ is made up of the mContent Toolkit and the mCustomApps Toolkit.

VisualSoft is involved in developing the mCustomApps Toolkit for the MDE™. The mCustomApps Toolkit allows developers, partners and system integrators to easily mobilise business applications. The form-based interface allows users to build the screens they would see on a device, enabling them to see the end result.



The development team is into creating the applications by manipulation of widgets or components. These components are populated from a Device Profile database, which clearly identifies the device and its underlying development environment (Palm OS, RIM SDK, and KVM). Using the interactive GUI, a clean, correct XML data file is published to the server that defines the User Interface requirements. The XML file will then be exported to a code generator. This Interface requirement can be easily imported by custom code into other development environments if required.

SMS Component – VisualSoft Approach:

VisualSoft is developing an SMS Component for the developers to integrate SMS functionality in their applications. It is a COM Component by which one can easily develop small applications with SMS sending and receiving capabilities in just a few minutes using Visual Basic or any other 4GL tools.

As discussed above the methods of sending SMS, VisualSoft is following the 2nd approach i.e. Sending SMS messages with a direct link to SMSC. Here different SMS protocols come into the picture. The SMS protocols used are SMPP and UCP.

Generally, this component can be used in a wide range of products and services. Some of them are as follows:

- Simple Person-to-Person messaging
- Notifications (alerts)
- Inform stock investors of changes in the stock market
- Deliver weather forecasts on requests
- In Schedulers to remind you on appointments
- Notify users of new mail when they are not online.
- Notify problems or lost connections to corporate networks or other system faults.
- Corporate eMail facility
- Electronic Commerce Applications
- Customer Service
- Vehicle Positioning

*** End of the Document ***



MobileApps

a premier provider of Mobile Infrastructure Software Solutions

Background

The client is a provider of mobile delivery solutions that enable businesses to mobilize their existing applications and infrastructure. The company's mobile application platform enables partners, clients, and customers to rapidly and cost-effectively develop and deploy mobile applications. The Mobile Development Environment (MDE) is a visual, drag-and-drop, GUI interface for mobilizing backend applications and content.

Challenge

Our client required a solution for the Mobile Development Environment (MDE) to help their customers mobile-enable their businesses. Using the MDE, the customers in turn would be able to develop, customize and manage the application based on their requirements.

The client was looking for solution to address the challenges to quickly develop and deploy customized mobile applications. The client formed Strategic Alliance with VisualSoft to:

- Conceptualise, design, develop and deploy a toolkit with a GUI Builder and Code Generator
- Deploy a custom browser that can interpret and render user interfaces to mobile devices
- Generate Markup Language for the custom browser for deployment on the server
- Seamlessly integrate with business' existing applications and infrastructure

Speaking on the alliance with VisualSoft, the CEO of our client company emphasized that *“VisualSoft’s product development strengths including expertise in components and frameworks besides the in-depth understanding of networking, multiple devices, multiple platforms and environments, have been instrumental in setting up the partnership”*.

Value Proposition

VisualSoft was key to conceptualise, design and develop the mission-critical application. We provided daily build of binaries to the client that they would integrate into the mainstream of the product. Thus evolving the process of build-release lifecycle. We did proof-of-concept and provided options based on Java and Microsoft platforms.

VisualSoft was equipped to address the challenges that the client faced to develop the application. Our experienced mobile application developers took charge to address the customer requirements in our world-class Mobile Labs in our state-of-the-art Technology Development centre. Our client's main reason to entrust this product development, R&D and outsourcing responsibility can be attributed to our

Solution Overview

Customer Profile

The client provides premier mobile delivery solutions that enable businesses and service providers to mobilize their existing applications and infrastructure.

Business Situation

The requirement was a Mobile Development Environment with a Toolkit to help its customers mobile-enable their applications. Its customers in turn would be able to develop, customize and manage the application based on their requirements

Tools and Technologies

- VC++ 6.0 (MFC and ATL)
- JDK 1.2.2 or above
- WebLogic server
- MS XML
- XSL
- Java Script
- EJB
- DHTML
- MS Access 2000

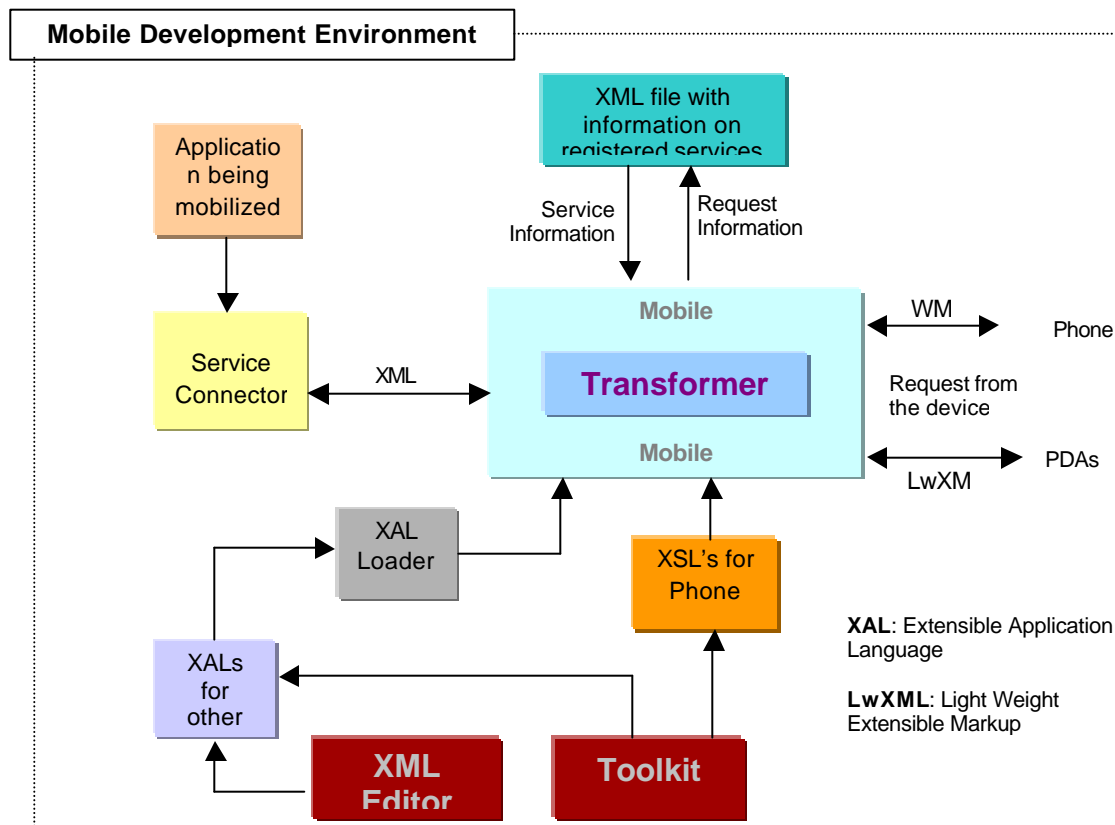
Case Study – Mobile Application



vast experience in product development using component-based methodologies and usage of large-scale object frameworks. Thus enabling their “Go-To-Market strategy”, with a cost and time advantage.

Solution

Our teams designed and developed the mobile application to convert data from existing applications into a format suitable for mobile business. It creates extraction rules for elements suitable for mobile devices, and delivers that data to the user in a manner specific to each device. Intuitive interfaces and a drag and drop environment are provided with help to facilitate the use of application with minimal effort.



We used an open object framework that allows developers to define new objects and object subclasses to capture the precise information required to customize the service. It provides hosting the information on the server for reliable content transmission without depending on proprietary network limitations.

The GUI Builder allows user to design the interface on a wireless device. It allows creating applications by manipulation components. The Device Profile database (in MS Access) populates the controls, menus, and component libraries for the devices. The database identifies the limitations of the device and its underlying development environment (Palm OS, RIM SDK).

The GUI Builder gathers all information in the XML file - data input and data output sent to the server. Using this the appropriate code is generated on the devices. In case of WAP enabled phones, WML is generated on the server side that is downloaded to the phone. The MDE's GUI interface and expansive list of device emulators allow partners and clients to create, preview and edit the mobilized applications or content in real-time, as it appears on the device. A comprehensive WYSIWYG builder was developed that helps users to preview the look and feel of the application on the devices. After the application GUI has been defined, the code builder publishes a clean, correct XML data file, which defines the User Interface requirements. The XML file is then exported to a Code Generator that finally generates the XSL.



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Short Messaging Service (SMS)

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Short Messaging Service (SMS) Technical Document

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SMS Technical Document

What is SMS?

The Short Messaging Service (SMS) is the ability to send and receive text messages to and from mobile telephones. The text can comprise of words or numbers or an alphanumeric combination. Each short message is up to 160-character length when Latin alphabets are used and 70 characters in length when non-Latin alphabets such as Arabic and Chinese are used.

SMS is a relatively simple messaging system provided by the mobile phone networks. SMS messages are supported by GSM, TDMA and CDMA based mobile phone networks currently in use.

The service makes use of a short message service center (SMSC), which acts as a store-and-forward system for short messages. The wireless network provides for the transport of short messages between the SMSC's and wireless handsets. In contrast to the existing text message transmission services such as alphanumeric paging, the service elements are designed to provide guaranteed delivery of text messages to the destination. A distinguishing characteristic of the service is that an active mobile handset is able to receive or submit a short message at any time, independent of whether or not a voice or data call is in progress. SMS also guarantees delivery of the short message by the network. Temporary failures are identified, and the short message is stored in the network until the destination becomes available.

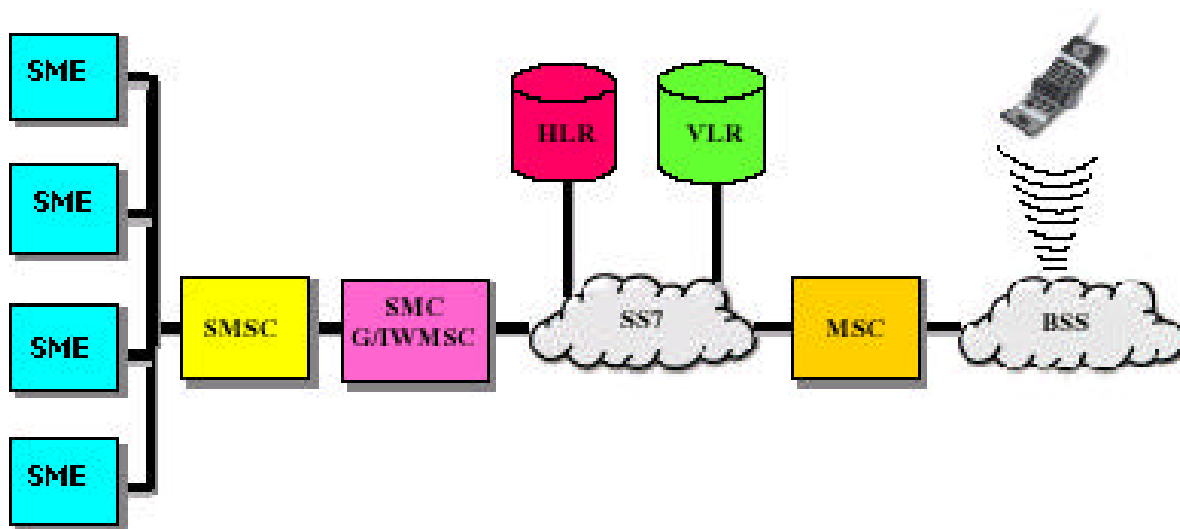
Benefits of SMS:

The benefits of SMS to the service provider are as follows:

- Increased call completion on wireless and wire-line networks by leveraging the notification capabilities of SMS.
- An alternative to alphanumeric paging services
- Enabling wireless data access for corporate users
- Provision of value-added services such as e-mail, voice mail and fax mail integration, reminder service, stock and currency quotes and airline schedules
- Provision of key administrative service such as advice of charge, over-the-air downloading and service provisioning.

The benefits of SMS to subscribers' center around convenience, flexibility, and seamless integration of messaging services and data access. From this perspective, the benefit is to be able to use the handset as an extension of the computer. SMS also eliminates the need for separate devices for messaging, as services can be integrated into a single wireless device—the mobile terminal.

SMS Architecture



SME: Short Messaging Entity

SMSC: Short Messaging Service Center

SMSC/IW MSC: SMS-Gateway/Interworking Mobile Switching Center

HLR: Home Location Register

MSC: Mobile Switching Center

VLR: Visitor Location Register

BSS: Base Station System

Short Messaging Entities: Short Messaging Entity (SME) is an entity, which may receive or send short messages. The SME may be located in a fixed network, a mobile station or another service center.

Short Messaging Service Center: Short Messaging Service Center (SMSC) is responsible for the relaying and store-and-forwarding of a short message between an SME and mobile station.

SMS Gateway/Interworking Mobile Switching Center: The SMS-gateway mobile switching center (SMS-GMSC) is an MSC capable of receiving a short message from an SMSC, interrogating a home location register (HLR) for routing information, and delivering the short message to the visited MSC of the recipient mobile station. The SMS interworking MSC (SMS-IW MSC) is an MSC capable of receiving

a short message from the mobile network and submitting it to the appropriate SMSC. The SMS–GMSC/SMS–IWMSC are typically integrated with the SMSC.

Home Location Register: The HLR is a database used for permanent storage and management of subscriptions and service profiles. Upon interrogation by the SMSC, the HLR provides the routing information for the indicated subscriber. The HLR also informs the SMSC, which has previously initiated unsuccessful short message delivery attempts to a specific mobile station, that the mobile station is now recognized by the mobile network to be accessible.

Mobile Switching Center: The MSC performs the switching functions of the system and controls calls to and from other telephone and data systems.

Visitor Location Register: The visitor location register (VLR) is a database that contains temporary information about subscribers. This information is needed by the MSC to service visiting subscribers.

The Base Station System: All radio-related functions are performed in the base-station system (BSS). The BSS consists of base-station controllers (BSCs) and the base-transceiver stations (BTSs), and its primary responsibility is to transmit voice and data traffic between the mobile stations.

The Mobile Station: The mobile station (MS) is the wireless terminal capable of receiving and originating short messages as well as voice calls. The wireless network-signaling infrastructure is based on signaling system 7 (SS7). SMS makes use of the mobile application part (MAP), which defines the methods and mechanisms of communication in wireless networks, and uses the services of the SS7 transaction capabilities application part (TCAP). An SMS service layer makes use of the MAP signaling capabilities and enables the transfer of short messages between the peer entities.

Services offered by SMS

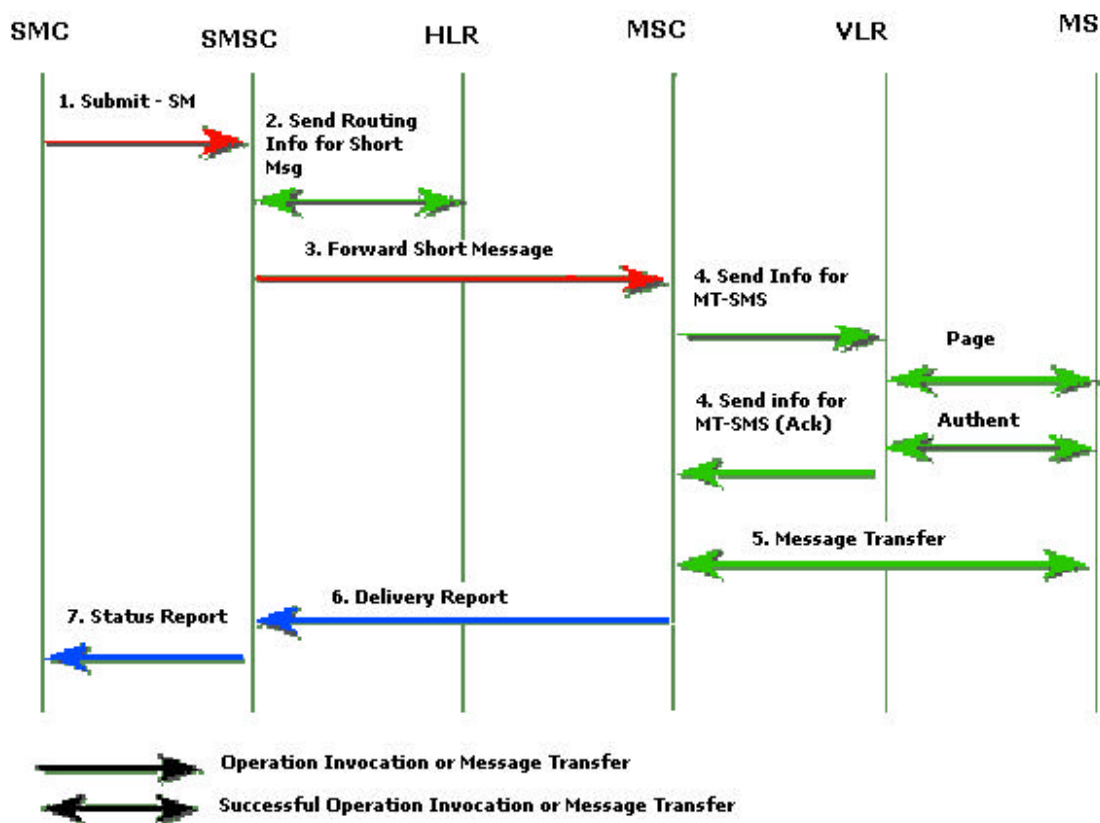
SMS comprises two basic point-to-point services

- **Mobile-Originated short message (MO-SM)**
- **Mobile-Terminated short message (MT-SM)**

MO–SMs are transported from the handset to the SMSC and can be destined to other mobile subscribers or for subscribers on fixed networks such as paging networks or electronic mail networks. MT–SMs are transported from the SMSC to the handset and can be submitted to the SMSC by other mobile subscribers via MO–SM or other sources such as voice-mail systems, paging networks, or operators.

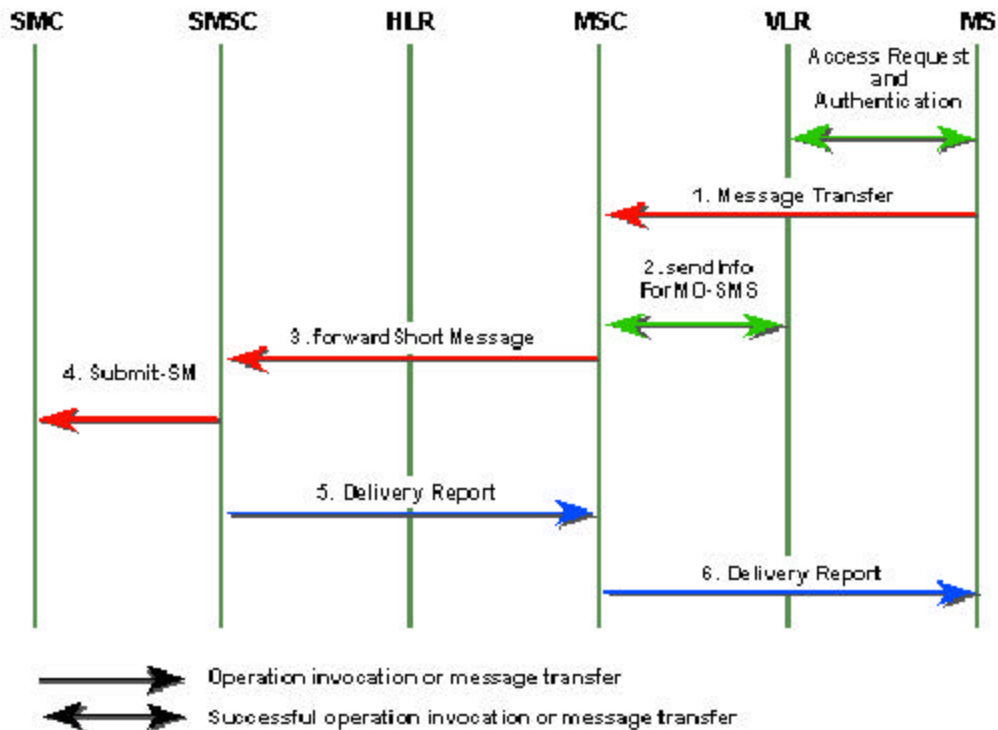
For MT–SM, a report is always returned to the SMSC either confirming the short-message delivery to the handset or informing the SMSC of the short-message delivery failure and identifying the reason for failure. Similarly, for MO–SM, a report is always returned to the handset either confirming the short-message delivery to the SMSC or informing the handset of the encountered failure and identifying the reason.

Mobile-Terminated Short Message Example:



- The short message is submitted from the SME to the SMSC.
- After completing its internal processing, the SMSC interrogates the HLR and receives the routing information for the mobile subscriber.
- The SMSC sends the short message to the MSC using the forwardShortMessage operation.
- The MSC retrieves the subscriber information from the VLR. This operation may include an authentication procedure.
- The MSC transfers the short message to the MS.
- The MSC returns to the SMSC the outcome of the forwardShortMessage operation.
- If requested by the SME, the SMSC returns a status report indicating delivery of the short message.

Mobile-Originated Short Message Example:



- The MS transfers the SM to the MSC.
- The MSC interrogates the VLR to verify that the message transfer does not violate the supplementary services invoked or the restrictions imposed.
- The MSC sends the short message to the SMSC using the forwardShortMessage operation.
- The SMSC delivers the short message to the SME.
- The SMSC acknowledges to the MSC the successful outcome of the forward Short Message Operation
- The MSC returns to the MS the outcome of the MO-SM operation.

SMS Applications

SMS was initially designed to support limited-size messages, mostly notifications and numeric or alphanumeric pages. However, many of these applications are better served if data communication capabilities could be added to the mobility of the station. Thus, a waiter who can charge a customer's credit card right at the table, at any time, instead of going to a fixed POS terminal located by the register will be able to help customers in a faster, more convenient way.

Also, the ability to track the location of a moving asset such as a truck or its load is very valuable for both providers and clients. This application, again, just needs to interchange small amounts of information, such as the longitude and latitude at a current time of the day, and perhaps other parameters like temperature or humidity. This application does not necessarily require the monitored entity to be in movement. The requirements are basically short, bursty data and a location that has digital network coverage. For example, in a neighborhood, it would be faster, easier, and cheaper to drive a truck from the local power company, which interrogates intelligent meters to obtain their current readings and then forwards them via short message to a central data processing center to generate the billing.

Similarly, delivery trucks could be alerted of the inventory of a customer running low, when the truck is close to the customer's facilities. The truck driver could place a quick phone call to the customer to offer a short-time replenishment at a low cost for the distributor.

Another family of applications that can use SMS as a data transport mechanism is banking. It is no secret that automated teller machine (ATM) and Internet transactions are less costly than transactions completed at a branch. Internet transactions are even cheaper than ATM transactions. Therefore, enabling wireless subscribers to check their balances, transfer funds between accounts, pay their bills and credit cards is valuable, not only for the subscriber but also for financial institutions.

Entertainment applications are also good drivers of SMS usage. Examples of these are simple short message exchanges between two parties ("texting") or between multiple participants ("chat"). Also, delivery of information that the subscriber can tailor to his or her lifestyle represents an attractive proposition for wireless users. Wireless Web browsing allows the users to search for information without the physical restrictions of a PC. College students certainly appreciate not having to go to the computer lab or their dorm to check e-mail or find out what the required book is for the semester that is about to start.

E-mail continues to be by far the most used wireless data application. However, handsets are evolving quickly and are including more and more functionality that supports newer applications at the same time that user friendliness increases. Probably the next big success beyond wireless Web will be Internet shopping and other e-commerce applications such as electronic coupons, advertising, etc. The potential for applications is enormous, and new needs appear to arise constantly, demanding a solution that may travel over SMS.

Different ways to Send SMS:

There are different ways to send or to receive SMS. They are

- Using Modem or ISDN dial up facilities
- Direct Link to SMSC
- A GSM Device/Modem
- Through SMS Gateway

Using Modem or ISDN dial up facilities:

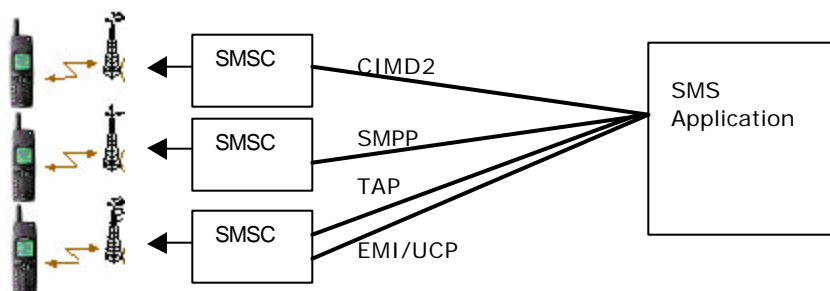
Modem: The application uses a modem to connect to SMSC. A regular modem with a phone line connected to PC is needed. The message transferring protocols here are TAP (Telocator Alphanumeric Input Protocol) or UCP (Universal Computer Protocol). UCP is preferred SMS Protocol.

ISDN: If using an ISDN card or adapter, you can use a modem driver for the ISDN device and perform modem communication as above, or you can use ISDN X.25 driver and connect to a SMSC, which offer X.25 connection.

Direct Link to SMSC:

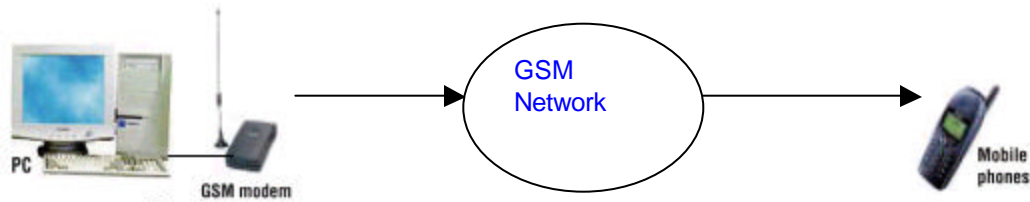
Due to the growing importance of SMS messaging and the demand for mobile availability of data more and more companies request high volume messaging solutions. That requires special connections to the network operators.

A growing number of GSM network carriers provide direct SMSC Links (sometimes referred to as 'Large customer accounts') and also so-called virtual SMSC. A direct or dedicated SMSC connection has several big advantages over using public dial-up facilities or SMS messaging based on GSM devices. Above all: speed. A TCP/IP or x.25 SMSC link (either over the internet or a leased or dial-up line to the SMSC) can handle up to some 10,000 messages per hour. The limit is only set by the capabilities of the network carrier's internal SMS infrastructure and the capacity the operator assigned to the customer. The connection type (x.25, TCP/IP) depends on the used SMSC infrastructure, i.e. the GSM network operator. The SMSC infrastructure also determines the communication protocol, i.e. UCP, SMPP, Sema OIS or Nokia CIMD.



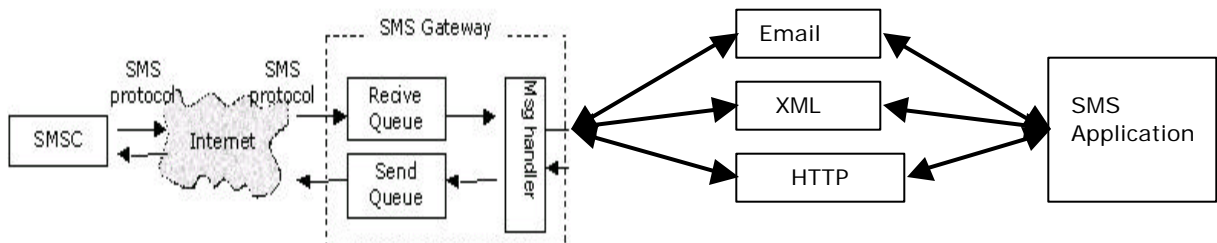
A GSM Device/Modem:

Certain GSM Phones/modems can be connected to a PC via a special cable or inserted into a PC Slot. The AT+C command set is used to communicate with the GSM device to send SMS. The SMS message is sent using the SMS “channel” of the phone, as if you were writing and sending the message directly from the phones keypad. The same method is used for GSM modem also.



Through SMS Gateway:

The SMS gateway consists of one or more gateway servers and a database server for queuing purposes.



By using the SMS Gateway you only need an Internet connection to send messages, and sending an account with username and password. The messages are sent from the application by using the HTTP protocol, email, XML to the SMS Gateway. The Gateway receives the messages, charges the sending account and delivers the message to various SMSC's. The Gateway can be used for delivering SMS to almost all GSM operators in the world. Different SMS Gateways are

- aveAccess SMS Gateway
- GSM Active
- WinSMS Gateway

SMS Protocols:

There are different SMS protocols out of which some are explained below

Telocator Alphanumeric Protocol (TAP): In order to decrease holding times on input lines to alphanumeric systems, it was desirable to promote input devices which will allow off-line entry of paging information and dump this data quickly after connection to the central paging terminal. This protocol is referred to as the Telocator Alphanumeric Protocol (TAP). This protocol is compatible with special versions of small input devices available from numerous sources. It is also suitable for automatic input from a remote computer and has been distributed to numerous manufacturers of paperless TAS systems. Note that there are several options within the protocol:

- It may be used for paging with 2 fields per transaction or other services with a different number of fields per transaction.
- The use of manual input devices is provided in the log on procedure such provision is optional with the system operator.
- Optional messages to the remote entry device may be added to control responses from the central terminal. For paging, these will probably be used for a message acceptance or rejection summary at the end of a message.

Computer Interface to Message Distribution (CIMD): CIMD is used to interconnect a Short Message Entity (SME), commonly referred to as application, to a Message Center. Two different types of Message Centers currently support the CIMD protocol: the Short Message Service Center (SMSC), and the Unstructured Supplementary Services Data Center (USSD Center). The main purpose of this interconnection is to transfer messages from the SMEs to the Mobile Stations (MS) and from the MSs to the SMEs. Other kind of information can also be conveyed over the interconnection, for example status reports from the GSM network to the SMEs.

When a message has been submitted to the SMSC using the CIMD, the SMSC uses its own retry policy to attempt to deliver the message. If the delivery fails, the message is stored in the SMSC database until a delivery attempt succeeds. If a permanent error occurs, or the validity period of the message expires, the message is deleted.

When a message has been submitted to the USSD Center using CIMD, the USSD Center immediately transfers the data to the Mobile Station (MS). If the delivery fails, the message is deleted and the status of the message is made available to the SME. Nokia follows this protocol.

Universal Computer Protocol (UCP): Used mostly by European service providers. The SMSC External Machine Interface (EMI) is based on an extended subset of the UCP protocol defined for the ERMES (European Radio Messaging System) paging system. When referring to UCP in the context of the SMSC, the EMI is the extended subset of the ERMES UCP. In the SMSC the UCP protocol was chosen as the basis for the EMI because

- It saves the trouble of having to re-invent a protocol structure for an interface that is very similar to the ERMES interface to external machines.
- It allows application developers to use a single mechanism to interface to both ERMES based paging systems and the SMS.

Most mobile network operators run a UCP (Universal Computer Protocol) gateway. This gateway usually can be reached over a modem / ISDN connection or using X.25. In order to use UCP, you have to know the phone number and connection settings (parity, baudrate, etc.) of the UCP gateway.

Short Message Peer to Peer (SMPP): The Short Message Peer to Peer (SMPP) protocol is an open, industry standard protocol designed to provide a flexible data communications interface for transfer of short message data between a Message Center, such as a Short Message Service Center (SMSC), GSM Unstructured Supplementary Services Data (USSD) Server or other type of Message Center and a SMS application system, such as a WAP Proxy Server, Email Gateway or other Messaging Gateway.

The SMPP protocol delivers previously unavailable two-way messaging capabilities and enhanced security - making this option even more valuable to the business. Using the SMPP protocol, an SMS application system called the 'External Short Message Entity' (ESME) may initiate an application layer connection with an SMSC over a TCP/IP or X.25 network connection and may then send short messages and receive short messages to and from the SMSC respectively. The ESME may also query, cancel or replace short messages using SMPP.

SMPP supports a full-featured set of two-way messaging functions such as:

- Transmit messages from an ESME to single or multiple destinations via the SMSC
- An ESME may receive messages via the SMSC from other SME's (e.g. mobile stations).
- Query the status of a short message stored on the SMSC
- Cancel or replace a short message stored on the SMSC
- Send a registered short message (for which a 'delivery receipt' will be returned by the SMSC to the message originator)
- Schedule the message delivery date and time
- Select the message mode i.e. datagram or store and forward
- Set the delivery priority of the short message
- Define the data coding type of the short message
- Set the short message validity period
- Associate a service type with each message e.g. Voice mail notification.

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- Simple Person-to-Person messaging
- Notifications (alerts)
- Inform stock investors of changes in the stock market
- Deliver weather forecasts on requests
- In Schedulers to remind you on appointments
- Notify users of new mail when they are not online.
- Notify problems or lost connections to corporate networks or other system faults.
- Corporate eMail facility
- Electronic Commerce Applications
- Customer Service
- Vehicle Positioning