

Mobile Portal

(Service Delivery Platform for Content- and Service-providers)

System Overview

PROTEI Mobile Portal is a universal platform that enables service and content providers to deploy a wide range of voice services (information, entertainment etc), and content services (content delivery) using SMS and WAP.

With PROTEI Mobile Portal, service providers can deploy new services quickly and efficiently:

- Voice information and entertainment services
- Polls and SMS voting
- Quizzes with voice and SMS access
- On-demand WAP and SMS content delivery (ring tones, logos, pictures, wallpapers, random jokes etc.); requests for content can be sent via SMS or IVR
- SMS content delivery by subscription (news etc)
- Mobile advertising

System throughput is up to 100 TPS per server. Several servers can be connected to work together in load sharing mode.

The system has a simple and easy to use web-based interface for content download and administration, service creation and for control of polls and quizzes (web-administrator).

Functionality

IVR Subsystem

The IVR subsystem provides a set of highly efficient tools for providing interactive voice services including multi-level menu, inbound and outbound announcement services. The system supports standard IVR functions and can be efficiently integrated with external information systems using open XML or ODBC interface. Using PROTEI IVR, the customer can easily create different services like balance inquiry, payment registration, service activation/deactivation, subscriber self-care services, low balance notification and so on, all with menu structures optimized for his needs.

Standard functionality:

- Interactive Voice Response (IVR) with flexible menu constructor;
- Subscriber supplementary service management;
- Balance information (balance enquiry processing);
- 'Promised payment' registration;
- Voucher (Scratch card) payment registration;
- Outbound subscriber notification (low balance etc.);
- Wide range of IVR services with intellectual call routing elements;
- Flexible service access IVR management for different subscriber groups;
- Multilanguage support;
- Full compatibility with any operator billing system;
- Open interfaces to billing systems from different vendors (XML or ODBC);
- CDR generation for all services;
- Simultaneous processing of several requests, high system throughput;
- Wide scope for configuring the system to suit specific business needs.

On-Demand Content Delivery

These services are intended for user-initiated delivery of content such as ringtones, logotypes, wallpapers, postcards and text to mobile phones. These services work in 'request-response' mode.

To order content delivery the subscriber sends a special keyword or content code by SMS. The keyword or code is used by the the system to identify the requested content. On receipt of such a message, the system analyzes its body and destination number to identify the requested service/ content. The requested content is retrieved from content storage, a message with appropriate content is created and is sent to the subscriber.

The following content types are supported:

- SMS content: text messages, text messages (Unicode), concatenated text messages, EMS, Siemens OTA, Nokia Smart Messaging, Binary messages (applets);
- MMS, WAP and WAP-push content: pictures, melodies, ringtones, Java-games, Video clips.

Additionally a web portal can be made available for subscribers. This portal can be used for previewing content and finding service codes, price information, rules and conditions for ordering content.

Content Delivery by Subscription

This group of services is intended for offsetting up regular or one-off content delivery for subscribed users. It can be used for providing a variety of information services like weather forecast, currency exchange rates, breaking news, stock quotes etc.

To receive content on a regular basis, the user sends an SMS to a dedicated service number with the keyword for the particular content service he wishes to subscribe to.

The system adds him to the mailing list for the service and when the information/content for this service is updated an SMS will be sent to all subscribed users.

Subscriptions can be canceled by sending another keyword to the same service number.

In addition to automatic subscription mode, the system administrator can also add subscribers to mailing lists manually via web-based administration tools.

The administrator can also form messages, upload content, manage the content update process, create message sending schedules (a list of time intervals allowed for mailing, mailing intensity) and manage message parameters (scheduled delivery, validity period etc).

Content can be updated manually using web-based tools, and manually or automatically using the FTP content uploading interface. Content can also be uploaded automatically from a web site using special http content import utilities.

If the size of an outgoing message exceeds the size of one SMS, the text will be split into separate SMS or a concatenated message can be created (configurable parameter).

Polls and Quizzes

The SMS quiz and SMS poll processing subsystem allows highly popular interactive SMS services like public opinion polls, competitions, quizzes and interactive games to be deployed.

Poll questions can be published in mass media or sent to potential participants using bulk SMS tools.

To participate in a poll/quiz, the subscriber sends an SMS or USSD message containing the answer to the number dedicated for the poll or quiz. Received messages are analyzed by service logic, classified according to a list of predefined voting answers and the number of answers for all answer types is calculated. Automatic replies, which can contain information such as vote acceptance confirmation, or to inform the subscriber if he has won a prize, can be sent as responses to received messages.

The system allows an unlimited number of voting services to be run and managed simultaneously. By using advanced filtering options a wide range of voting services can easily be implemented (for example each nth subscriber wins a prize etc.). Filtered messages can also be transferred to external applications.

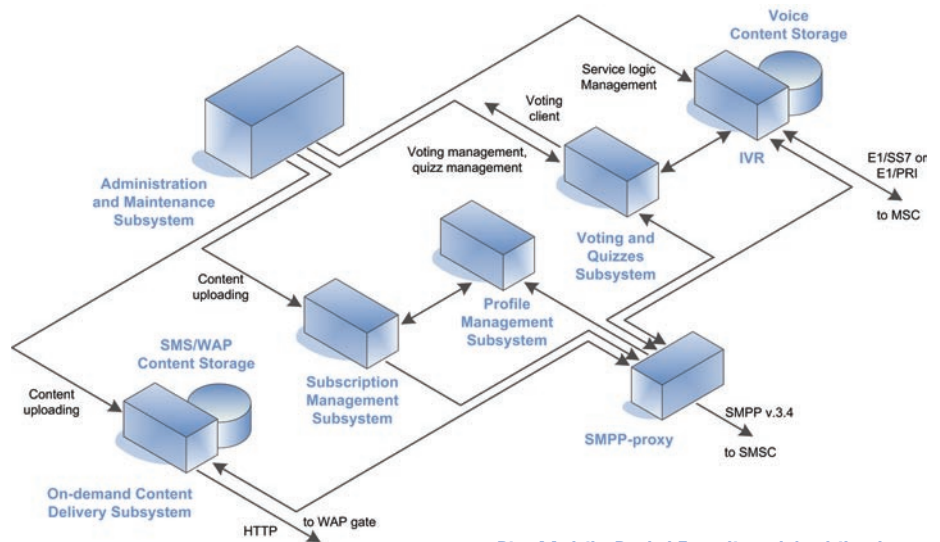
System allows setting limits for number of votes that can be accepted from one subscriber (e.g. each subscriber can send not more than three different answers during one voting).

The visual appearance of voting results charts is fully configurable. For the purpose of presenting it to the public, a chart with voting results can be automatically exported to an external data source, allowing you to use additional external applications for further processing (e.g. web or TV publishing).

Authorized access to the poll management and monitoring page can be provided for clients who have ordered polls. Polls can be started/stopped manually by the system administrator, or by the client who ordered the poll (using a web interface with authorized access). Polls can also be started or stopped automatically according to a predefined schedule.

Current poll results are available in real-time mode dynamically refreshed web page. Results are represented in table or histogram format.

CDRs are logged for all received messages and can be viewed using a web interface or can be exported as text files.



Pic. Mobile Portal Functional Architecture

Mass SMS Sending

PROTEI SMS sender is a powerful and convenient tool for mass SMS sending. The system allows bulk SMS sending with predefined mailing lists and message texts. Mailing lists can be created automatically by using information from external databases (such as the operator's billing system) or manually by the system administrator. Individual parameters can be defined for each mailing list, for example schedule, data source etc.

A convenient multilanguage graphical user interface ensures easy system deployment.

PROTEI mass SMS sending subsystem features:

- Mailing schedule management including restriction of the time intervals allowed for mailing (e.g. working hours only);
- Limiting mailing intensity (by defining mailing throughput for time interval);
- Limiting total system throughput for all mailings running at the same time;
- Automated mailing list import from external sources.

Interfaces

- Interface with MSC: E1/SS7 (ISUP), E1/PRI, SIP;
- Interface with SMSC: SMPP v3.4 over TCP/IP;
- Interface with WAP-gateway: HTTP over TCP/IP, Sending WAP-links through WAP-push SMS-messages;
- Interfaces for uploading content to the server: HTTP, HTTPS, FTP, web-based administration subsystem.

System Administration and Maintenance

System administration is carried out by editing configuration files, viewing and processing event/alarm logs and CDR files, creating call control scenarios by editing scripts, running management and configuration updating utilities or by using web-based administration tools.

Remote access to the servers for administration is available via tcp/ip/ssh or telnet. SNMP for alarm indication and statistics collection is supported.

The system Administrator has access to configuration management functions and can view CDRs and poll results for all subsystems implemented using Mobile Portal:

- IVR menu construction functions (service logic definition, voice prompt uploading);
- Content management (for on-demand services);
- Mailing list and mailing schedule management;
- Poll/quiz management;
- Statistical information and CDR viewing.

Hardware/Software Platform

- Intel platform;
- HP/DELL/Fujitsu-Siemens servers;
- Compact 19" rack mounting equipment – 1U or 2U high;
- Redundant PSU (optional);
- Embedded or external SCSI RAID HDD (optional);
- FLASH-disk solid-state reliable storage (not available for HP);
- Half-size PCI interface card (TSP);
- Linux Open Source OS.

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