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# Unstructured Supplementary Services Data (USSD)



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**Unstructured Supplementary Services Data (USSD)** is a GSM service which allows high speed interactive communication between the subscribers and applications. There is minimal delay between sending the query and receiving the response. Unlike **SMS**, **USSD** is a session-oriented service.

USSD Gateway is a platform that enables Operators to introduce messaging services with USSD as the bearer, enabling faster response times. The platform is complementary to existing SMS services, bringing faster interactive messaging to users. It acts as a Gateway between applications and the GSM network and lets you deliver **USSD messages of up to 182 characters on a network between mobile stations and applications.**

As with SMS, USSD uses the signaling channel as the bearer. However, instead of having the store and forward functionality, it is session-oriented, which means that when a user accesses a service with USSD, a session is established and the radio connection stays pen until the user, application, or time out releases it. This provides faster response times for interactive applications.

The **USSD Gateway** uses the same application programming interface that the Short Message Service Center does. Therefore, it is easy to port services based on SMS to utilize USSD as the bearer. In practice, only **USSD** specific modifications are needed to external applications.

The USSD Gateway supports GUI-based, menu-oriented Service Creation Environment for definition of menu structures and integration with content providers together with internet interfaces to static messages, web-based content providers.

This coupled with detailed statistical analysis, self-testing and resource monitoring guarantees sustained reliable service delivery from the USSD platform. USSD Gateway enhanced cell-switching features which, together with advanced session management capabilities of the USSD Session Manager enables session's preservation even when the subscriber changes cells.



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USSD Gateway's is built on Application Management and Data Transformation services architecture and delivers a future proof, high performance, telco-grade solution.

### USSD Center as Part of GSM Network

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The Home Network subscriber or the inbound roamer can send a USSD string to maintain an interactive session. The MSC connects through to the HLR in the home network (**via the SS7 network**). The HLR routes the request to the USSD Gateway/Center, which in turn routes the request to the USSD application server.

The application server checks and provides a call handling instructions response back through the same path to the serving MSC in the visited network.

**USSD Gateway is designed with high-performance platform, fault-resilient SS7 signaling unit and well-established database software.**

- Complex logic to support multiple applications within a single platform
- Scalable to multiple SS7 signaling links
- Integrates high quality products in the market that makes it a high performance, robust and reliable system.
- SMPP (Simple Messaging Peer-Peer) interface for applications to enable services.

This allows new services to get deployed rapidly and encourages existing messaging applications to leverage on USSD technology.

### The USSD Gateway includes:-

- GSM Network Interface
- USSD Center Kernel
- Dynamic Menu Creator
- SMS Redirector
- Application Programming Interface
- Graphical User Interface
- Billing Interface





## USSD Applications

Services ideal with USSD as the bearer include **mobile chat, m-commerce, prepaid balance inquiry, mobile banking, call-related services** and any other service that requires interaction between the user and the application.

- Menu Browsing
- Alternative to IVR
  - Balance Enquiry
  - Card Validity
  - Prepaid Recharge (from any visiting network also)
- Callback Service
- "Pull" based Services like informational services
  - News
  - Weather
  - Movies
  - Sports Update
  - Currency Update
  - Stock Market
  - Telephone Directory
  - Yellow Pages
- "Push" Services
  - Voting / Polling
  - Flash Emergency Information
- Customer care /service management
  - Service Activation / Deactivation
    - Voice Mail
    - MMS



- Roaming
- Reservations (Train / Movie)
- Sponsored Menu Item / Advertisement
  - Companies / Shops / Theaters can get listed on the Menu and promote their services
- Contests
- Tele-voting
- Virtual Money Transaction
- Debit Card
- Interactive Interface to Corporate ERP

### Key Benefits

#### For Operators

- USSD reduces operational costs (**unbilled voice calls, IVR maintenance costs**).
- Increases **ARPU** by offering interactive services to all your customers.
- Fast implementation of new services thanks to the menu configuration on the server side.

#### For Subscribers

- User-convenient, menu-based direct access from the mobile phone keyboard
- Fast response time to service requests
- Worldwide easy access to value-added services using the same dialing sequence

