

World Food Programme

Grasp Manual

An Overview

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Introduction:

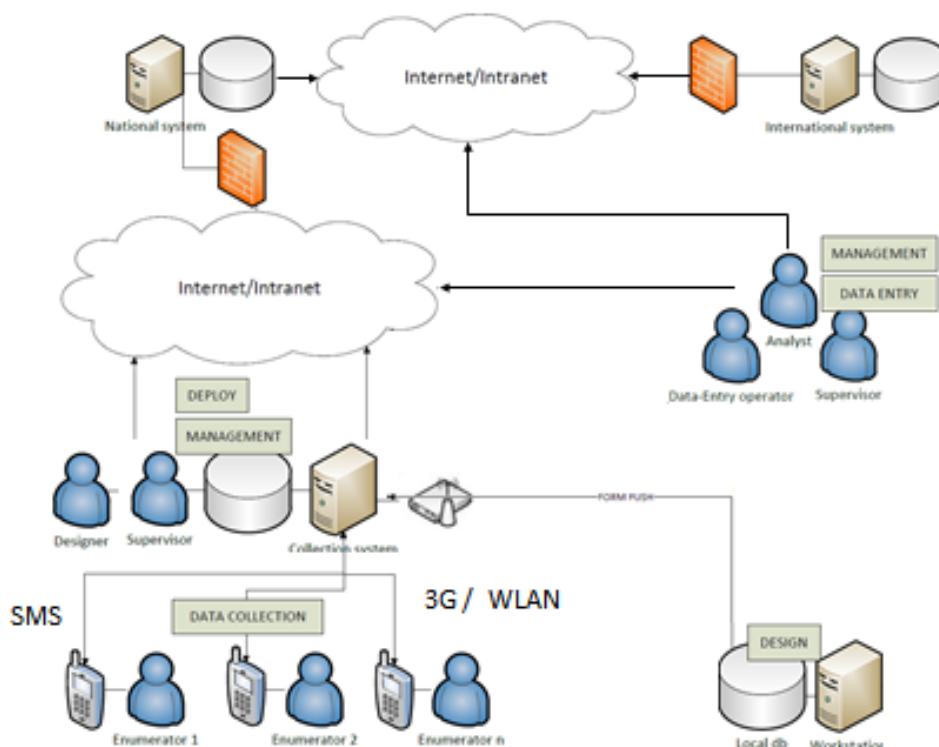
GRASP is a platform for data collection using mobile tools. It consists of a suite of applications for data collection using mobile tools:

- GRASP Mobile: An Android app for managing data collection of large questionnaires on tablets or smartphones. Data is received and transmitted either through SMS text message, 2G/3G mobile internet or WLAN.
- GRASP Workstation: A modified version of FrontlineSMS that enables questionnaire design through a simple drag & drop interface, and manages data transmission by managing the GSM modem hardware and using a contacts book of all enumerators
- GRASP Management: web-based reporting and workstation management tool, which can also be used as a web-based data entry tool for data entry clerks

GRASP is conceived for flexibility. It can be run standalone on a Windows laptop with a GSM modem for a small data collection exercise or it can be installed on a distributed system with servers in a hierarchy (for example National, Regional and Global databases). The data collection can be performed on low profile smartphones or on larger tablets (only Android from version 2.3 upwards) or even on paper and entered over a web page data entry form.

The software has been designed by WFP VAM, developed building upon Frontline SMS and Open Data Kit. It is free and open-source and relies on a MS SQL Server database (including MS SQL Server Lite – free version limited to 10 GB of data).

Mobile / Paper Data Collection/Reporting System



GRASP Installation: Hardware / Software specifications for GRASP data collection setup and installation

1.1 Specifications for GRASP Server

Note: The GRASP server can be any PC from a laptop to a rack server, depending on the usage required from the system.

1. Operating System: Microsoft Windows 7 or Windows 2008
2. RAM 3 GB minimum
3. Hard Disk 60 GB minimum
4. USB 2.0 - number of USB ports as per number of modems required (see below)
5. Backup System: DVD Writer or tape system
6. Network Gigabit card
7. Console: Screen, Keyboard, Mouse etc as appropriate to access the system
8. JAVA JRE 6 or 7 installed

9. Access to a Microsoft SQL server 2008 R2 (also free Express Edition is supported)

Note: If installed on the GRASP server, check the GRASP documentation ("Install Microsoft SQL Server and Management Studio" file) for important post-install configuration of MS SQL Server

1.2 Network Connection

The server has to be accessible on internet using a static IP address if either of the following 2 conditions are required:

- The data is to be sent from mobile devices not exclusively using SMS but using WLAN or mobile internet.
- The data and the analysis are to be consulted not only from the server's console but also via the web.

In this case an internet provider must provide a static IP address and guarantee continuity of service as appropriate for the use case. This is a service that can be purchased if not already available.

A domain name may be purchased to point to that IP address so that the server responds to a specific name, for example <http://data.mydomain.org>

If mobile internet (GPRS, EDGE, 3G, HSDPA etc) is expected to be used to transmit the data, then an appropriate contract must be researched with the mobile phone service providers. It is important to look at coverage and cost.

1.3 Specifications for Android mobile devices

1. Android Operating System, version 4.x preferable, minimum version 2.3
2. Preferable: 5 - 7 inch screen
3. Anti-glare screen
4. Anti-scratch protective film for screen included
5. Anti-shock carrying case included
6. Removable Battery: Minimum 6 hour duration with GSM on
7. GPS incorporated
8. GSM, 3G, WLAN, Bluetooth connectivity
9. SD or Micro-SD card slot and card included

10. Auto-flip screen
11. Cable for both charging and file transfer to/from PC

1.4 SMS data transmission

GRASP relies mostly on SMS transmission to send questionnaires to the mobile devices and to receive data from the mobile devices. Even if mobile internet is used there may be cases in which SMS may be used: to warn the users that a new form is available and that they should download it, or if network connectivity is not available and the mobile device user has data that needs to be sent.

1 or more GSM Modems are required to send/receive SMS. We advise the following device which has been successfully used to send hundreds of thousands of SMS without problems:

- [Siemens ES75 Terminal GSM/GPRS EDGE 4-band Modem](#)

It is advised to purchase at least 2 of these, depending on the number of SMS messages to be sent & received. Our advice is to start with 2 and maybe upgrade to 4 if transmission is too slow.

Note that each modem uses 1 USB port (do not rely on USB multi-port splitters).
Extra USB ports may be necessary for keyboard & mouse.

SIM cards must be bought that will support SMS messages at a low cost. It is advised to seek a contract with a mobile phone service provider that can give flat rate for SMS messaging. GRASP uses many SMS messages to send each single questionnaire, although the data is compressed. Each questionnaire can use anything between 10 and 100 SMS messages, or more depending on the size.