

## **Locust Geographic Information System (GIS) Workshop**

Tashkent, Uzbekistan, 6-8 November 2013

### **Presentation of the Automated System of Data Collection (ASDC) as well as related software and hardware**

#### **Demonstration of field data collection by ASDC**

*- Items 4 and 5 of the Provisional Agenda -*

All countries of Caucasus and Central Asia (CCA) conduct regular monitoring on at least one of the three locust species, the Asian, Italian or Moroccan locusts. The purpose of developing the Automated System of Data Collection (ASDC) is to improve the gathering of locust, environmental and weather information during field surveys and control operations. It relies on a software that simulates the FAO standard "Locust Survey Form" and "Spray monitoring Form", which were approved in 2009 during the Regional Consultation on Locusts in CCA.

The ASDC consists of two applications: an Inspector's application and an Operator's application, developed in the "Institute of Space Technics and Technologies" of Almaty, Kazakhstan. The Inspector's application is designed for data collection during field survey and sends automatically information to the server. The Operator's application allows data validation followed by distribution and visualization of data from the survey sites.

Software of Inspector's application spreads through Internet by the service "Google Play" (<https://play.google.com/>). Currently, the installation package can be downloaded (it will be free during Year 3 of the Five-Year Programme) from <http://locust.istt.kz>. The optimal hardware for the Inspector's application is a tablet with the following technical parameters: a dual-core processor with a frequency of at least 1.0 GHz; RAM at less than 512MB, display 7"; link WCDMA: 850/2100 MHz; rear camera is not less than 5 megapixels; built-in GPS; Android operating system version 4.0 or later; the battery lasts for over -time (not less than 2500 mAh).

With the Inspector's application installed on the tablet, the field observer is able to use the manual touch screen to record data in a user database, which simulates the FAO standard forms. Simultaneously, the geographical coordinates of the surveyed or controlled area are determined using the built-in GPS. After completion of the field survey or control operations, data are sent to the server through mobile communications and the Internet.

During the GIS Workshop, field demonstration of data collection by ASDC will be carried out. It will allow familiarization with the user interface of the Inspector's application and demonstration of how to use it. To that end, a manual in Russian and English languages will be introduced and distributed. It explains how to setup the software and run the equipment, select the appropriate survey or spray monitoring form, insert and transmit the data.

The use of the Operator's application will be demonstrated during the presentation of access to and management of collected locust-related data (Item 9 of the Provisional Agenda). This application is designed for GIS database administrator. User's Interface is also implemented therein. With the interface, the user can map the location of the survey or locust control sites, look at the list of available reports or directly to the information.

Software of Operator's application is necessary to receive and store data of survey and control of locusts. It should be placed on the server computer with the following technical and program specifications: (1 ) quad processor with a frequency of 2.0 GHz and above; RAM 2048 MB; monitor 1024 x 768, motherboard with Intel 965 and better, 2 hard drives of at

least 100 GB; adapter for SIM card with WCDMA communication channel: 850/2100MHz; Internet connection with speed of more than 56 kbit / s. (2 ) Operating System Windows XP SP3 ( 32/64 bit); browser Internet Explorer of 7th version or later or other technology compatible with Flash technology; Adobe Flash Player 10.

Currently the Operator's application is made in the form of Flash application. To run it is necessary to type «<http://locust.istt.kz>» in the address line of internet browser. In the future functioning of the Operator's application is associated with virtual hosting, which should support the following technologies: PHP scripting language interpreter, version 5.3.0 or later; Apache Web Server, version 2.0 or later; database management system MySQL, version 5.0.2; FTP access; disk space 4Gb; allocated frequency of processor at least 500MHz; allocated operative memory is not less than 256MB; the ability to install SSL certificates.