Protocol Validator
Support Services Layer
Code: ERA GLONASS

2012

ANNOTATION

In this policy document, see "Overview of the program" provides the purpose and functions of the program and information about hardware and software tools to ensure implementation of this program.

In the section "Structure of the program" provides information about the structure of the program, its component parts, the links between the components and links with other programs.

In the "Setting" describes the steps to set up programs in terms of the type of application.

In the section "Testing Program" describes ways to verify that allow to give a general conclusion about the capacity of the program (test cases, running techniques, results).

In the section "Additional Features" section describes additional features of the program and methods of their choice.

In the "system programmer messages" are text messages issued in the course of configuring, testing programs, as well as during the execution of the program, a description of their contents and actions to be taken on these reports.

Contents

1. INTRODUCTION

1.1 Title

Title: Software validation of data layer support services to call emergency services protocol packets EGTS version 1.6.

Code: "Protocols" validator support services layer.

1.2 Purpose of the program

1.2.1. Software validation of the data transport layer protocol packets EGTS version 1.6 is intended for analysis, troubleshooting formations represent the value of fields and determine the acceptability and consistency of the contents of data packets the transport layer formed in accordance with the rules described in the document "Specification of the Support services Protocol. The third edition of "protocol EGTS.

1.3 PRODUCT FEATURES

1.3.1. The product provides the following basic functions:

- data loading of the package from the file path to which a parameter is specified in the start of the program;
- data loading of the package from standard input console;
- perform the verification of correctness and consistency of data values in the fields provided by the transport layer protocol;
- indicate erroneous or incorrectly filled fields of the packet to check;
- mapping in structured form field values of the transport layer of the package;

1.4 TECHNICAL INFORMATION AND SOFTWARE

1.4.2. For the operation using the following software:

- MS Windows XP SP3/Windows 7 x86/x64;

2. PROGRAMME STRUCTURE

2.1. The system consists of the following software components:

- executable application validator;
- sample file of the package.

On x86 and x64 platforms use different executable files.

EGTS_validator.exe for x86 platforms and EGTS_validator_x64.exe for x64.

3. INSTALLATION AND SETUP

3.1 Installing the software validator

Installation is a way to copy files from the distribution media to the user in any convenient location.

Additional settings or configuration is required.

3.2 Running the program

Running the program should be carried out from the command line. We must distinguish several ways to transfer information in the packet to be checked:

- through the transfer program as a parameter to a full or relative path to the data of the package;
- with the input of the package from the flow of water is the standard console (including those with the ability to redirect from a file);
- by specifying (using startup parameters) of a special directory in which files will be expected appearance of the packages to be inspected;

The following startup parameters when starting the program:

- -h - display help information about startup;
- -f: <filename> - specifies the path to the file that contains the test data packet;
- -c - if the parameter «-f» is not specified when the program starts, it is expected to enter the test data packet via the standard input stream;
- -a: <TP address> - determines the address of the telematics platform that will be used to create and packet processing;

- -n: <dir path> - path to the directory in which to file with the expected appearance of EGTS package for the validation of the data contained therein;
- -w: <dir path> - the path to the directory where the file will be copied with the data for validation;
- -o: <dir path> - path to the directory in which to copy the file containing the package EGTS formed on the basis of user input commands;
- -b: <bind addr:port> - IP address and port, which is expected to TCP / IP connection.

In the case of the third way to test the packet, the program exits after checking one bag, and continues to process incoming packets as long as the user will not be introduced «quit». In the 3rd way to specify multiple startup options -a,-n,-w, -o as they are necessary for the mechanism involved in this method.

3.3 Results of the program

The result of their work exclusively on the program displays the screen in the form of structured information presented and decrypt the contents of the transport layer of the package.

An example of the appearance of the windows of the results of the program is shown in Figure 1.

Figure 1. Screenshot of the result of the program.

4. TESTING PROGRAM

Testing of the system is produced by the test run using the sample file «test.hex» containing a packet of data from the distribution kit.

As a result of the test run on the screen should be provided with information from a structured test of the package, error checking should not be indicated.

5. ADDITIONAL FEATURES

One additional feature is the validation of the data transport layer in the tested package.
Validator also allows you to generate commands for the user terminal and create the corresponding data packets are generated according to the protocol EGTS.
To generate the commands in the window, the user must enter the type of input «command», space, name of the command and its parameters separated by single spaces. Press the «Enter».

For example, entering the command «command EGTS_ECALL_REQ 79411111620 1 1» produces a re-creation of the request packet to an emergency call for IVS, has a number of the SIM card 79411111620 (if you specify a phone number, "+" symbol is not entered), UNIT_ID = 1 and the type of call option - automatic.

The following command:

- EGTS_ECALL_REQ <tel_num> <devid> <type:[0,1]> - request re-emergency call
- EGTS_ECALL_MSD_REQ <tel_num> <devid> <msgid> <transp:[0,1,2,3,]> - requery MND
- EGTS_UNIT_ID <tel_num> <devid> <auth code> - setting the UNIT_ID IVS
- EGTS_SIM_PIN <tel_num> <devid> <pin code> - setting the PIN code SIM cart, installed in the IVS
- EGTS_SELFTEST_INTERVAL <tel_num> <devid> <interval> - setting of self-test interval IVS
- EGTS_RADIO_MUTE_DELAY <tel_num> <devid> <delay>
- EGTS_RADIO_UNMUTE_DELAY <tel_num> <devid> <delay>

Description of the commands listed above command parameters have the following meanings:

<tel_num> - number of the SIM card inserted in the IVS, which sent a team;

<devid> - ID IVS (in the absence of this parameter in the IVS, you should use the value 0);

<type:[0,1]> - the type of call requested (0 manual, 1 - auto);

<msgid> - ID requested MND;

<transp:[0,1,2,3,]> - requested transport (0 - all available for the IVS 1-in-band, 2-SMS, 3-Packet Data Service);

<auth code> - authorization code on the side of the IVS;

<pin code> - PIN code;

<interval> - the interval in hours;

<delay> - delay in milliseconds;

6. MESSAGES FOR PROGRAMMER

Special message system programmer in the program does not appear.

Message about errors in the program are not available.

7. PROCEDURE COMPILING AN APPLICATION FROM SOURCE CODE

As part of the distribution kit supplied source code application.

The source code is written in C + +.

To compile and build the application you must use the Microsoft Visual Studio 2008.

You need to copy on local hard drive directory contents Validator\Sources\ TransportLayer with all its contents. After that, development environment, you must open the solution file (solution) EGTS_validator.sln, located in a subdirectory TransportLayer\ EGTS_TL_validator\Solution, select Release build and run an assembly project in the standard way.

The compiled executable will be located in a subdirectory TransportLayer\EGTS_TL_validator\Solution\Release to the target system x86 (32 bit operating system). Executable for the target system x64 (64 bit operating system) will be located in a subdirectory TransportLayer\EGTS_TL_validator\Solution\x64\Release.

To build a special version of the code for the x64 platform should be in the options to select the configuration manager of the project as an active platform option «x64» and thenpress the «Close».
If you plan to build a traditional platform x86, then the options of the configuration manager of the project should be selected as an active platform option «Win32».

The appearance of the dialog manager's configuration is shown in Figure 2.

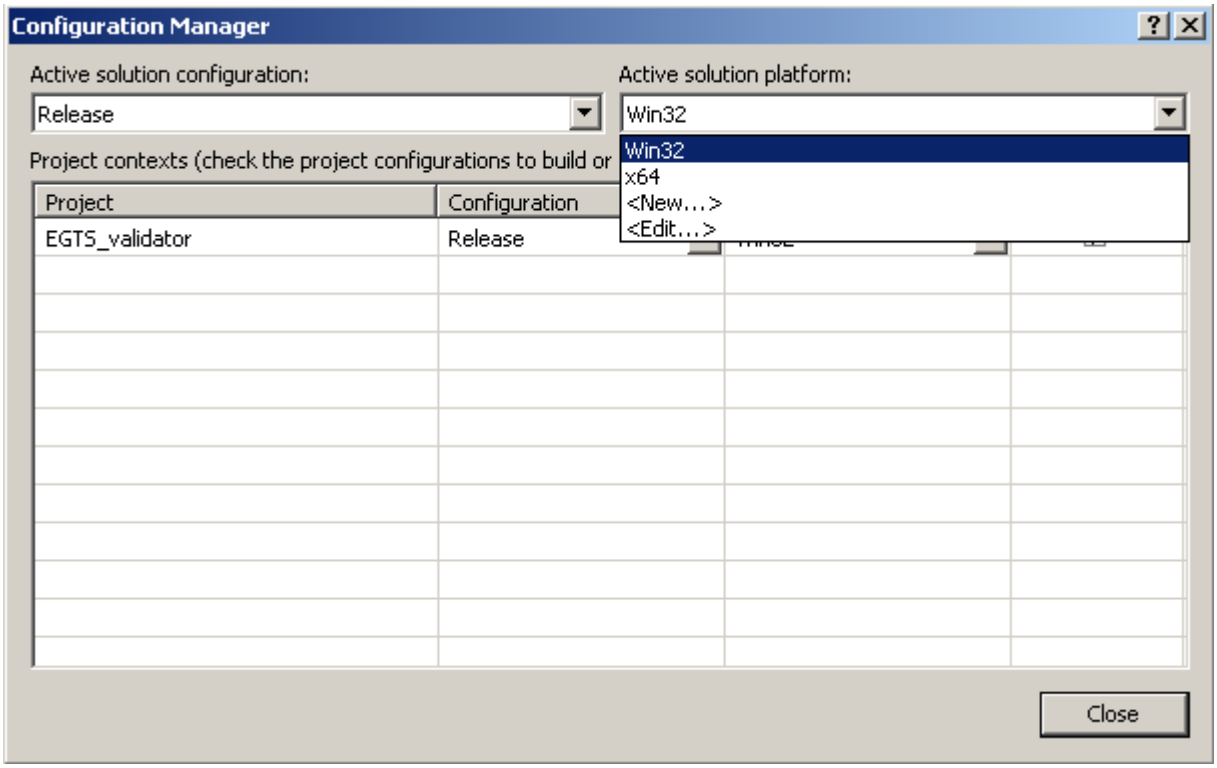

Figure 2. The dialogue manager project configurations.