

**MULTIPURPOSE COMMUNICATION PROTOCOL BETWEEN ERA  
GLONASS VEHICLE TERMINAL AND OPERATOR FRAMEWORK.  
PROTOCOL REFERENCE IMPLEMENTATION TESTS –  
EMERGENCY SERVICES CALL**

**SCH OKR «ERA GLONASS»**

**Source code deployment instructions**

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## 1. Hardware Requirements

- CPU - Pentium IV;
- CPU speed – 1.5 GHz;
- RAW - 256 МБ;
- OS - Windows XP SP2 (SP3);

## 2. Software Prerequisites

### 2.1 Microsoft Visual Studio 2008.

This IDE required for building test applications.

### 2.2 GNU tool- chain (GCC 3.4.4 or higher, MAKE)

GCC and MAKE can be used either as a part of any LINUX distribution, or within one of cross-platform Windows tool-chains:

- CYGWIN 1.2 or higher ([www.cygwin.com](http://www.cygwin.com))
- MSYS ([www.mingw.org](http://www.mingw.org))
- YAGARTO ([www.yagarto.de](http://www.yagarto.de))

Required for testing source code for compatibility with GNU ARM tool- chains.

### 2.3 PC Lint

Required for testing source code for compliance with MISRA-2004 rules.

## 3. Deployment

Extract archived file egts-1-1.zip to some folder with appropriate tool. This folder has referred bellow as \$(EGTS).

## 4. Building test applications

4.1 Start Microsoft Visual Studio 2008 command shell by calling the START menu START >Programs > Microsoft Visual Studio 2008 > Microsoft Visio Tools > Visual Studio 2008 Command Tools. Also the shell can be started by calling batch file \$(Microsoft Visual Studio)\VC\vcvarsall.bat in Windows command shell.

4.2 Change current directory to \$(EGTS)\build\ win32.vc.90.make

4.3 Edit file \$(EGTS)\build\win32.vc.90.make\Makefile.mk. Set the value EGTS\_ROOT to the proper full path to \$(EGTS) folder.

EGTS\_ROOT=<abs. path to \$(EGTS)>

Save changes.

4.4 Run a command

> nmake -f Makefile.mk

4.4 No errors should be reported in building output. Check if files \$(EGTS)\probes\probe1.exe, \$(EGTS)\probes\probe2.exe, \$(EGTS)\probes\sms\get\pdu\_get.exe, \$(EGTS)\probes\sms\set\pdu\_set.exe appeared.

## 5. GNU GCC building

5.1 Start a GNU command shell (CYGWIN or other) and change current directory to \$(EGTS)/build/ gnu

5.2 Run command

> make

5.4 No errors should be reported in building output.

5.5 In case of cross-platform Windows building, Make sure that files \$(EGTS)/probes/probe1.exe, \$(EGTS)/probes/probe2.exe, \$(EGTS)/probes/sms/get/pdu\_get.exe, \$(EGTS)/probes/sms/set/pdu\_set.exe appeared. Tests sessions can be performed with this files just in appropriate command shell.

## 6. PC Lint Setting-up

6.1 Perform installation and configuration of PC Lint in a common way.

6.2 Edit file\$(PC LINT)\std.lnt. The file must looks like this:

au-misra2.lnt

co-msc90.lnt

lib-w32.lnt

options.lnt -si4 -sp4 -e904 -e961 -e970 -e717 -e960 -e974 -e715 -e830 -e926 -e928 -e818 -e757 -e526 -e714 -e788 e571 -e756 (single line)

6.3 Options description

au-misra2.lnt - enable MISRA-2004 analyzer

MISRA-2004 warnings. Standard aberration described in “Source code specification”

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- e904       inhibit MISRA-2004 warning  
           Return       statement       before       end       of       function  
           'egts\_pop(egts\_state\_t \*, unsigned char \*)' [MISRA 2004 Rule  
           14.7]
  - e961,       inhibit MISRA-2004 warning  
           Violates MISRA 2004 Advisory Rule 12.1, dependence placed on  
           C's operator precedence; operators: '+' and '-'
  - e960       inhibit MISRA-2004 warning  
           Violates MISRA 2004 Required Rule 17.4, pointer arithmetic  
           other than array indexing used
  - e970       inhibit MISRA-2004 warning  
           Use of modifier or type 'int' outside of a typedef [MISRA  
           2004 Rule 6.3]
  - e926,
  - e928       inhibit MISRA-2004 warning  
           cast from pointer to pointer [MISRA 2004 Rule 11.4]

Exhaust diagnostic and info messages.

- e717       inhibit warning  
           do ... while(0)
- e974       inhibit info message  
           Worst case function for stack usage: *String*
- e714,
- e715       inhibit diagnostic message  
           Symbol '*Symbol*' (*Location*) not referenced
- e830       inhibit diagnostic message  
           cation cited in prior message
- e818       inhibit diagnostic message  
           Pointer parameter '*Symbol*' (*Location*) could be declared ptr  
           to const
- e757       inhibit diagnostic message  
           global declarator '*Symbol*' (*Location*) not referenced
- e526       inhibit diagnostic message  
           Symbol '*Symbol*' (*Location*) not defined
- e788       inhibit diagnostic message

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enum constant 'Symbol' not used within defaulted switch
-e768 inhibit diagnostic message
global struct member 'Symbol' (Location) not referenced
-e755 inhibit diagnostic message
global macro 'Symbol' (Location) not referenced
-e571 inhibit diagnostic message
local typedef 'Symbol' (Location) not referenced
-e756 inhibit diagnostic message
global typedef 'Symbol' (Location) not referenced
-e769 inhibit diagnostic message
global enumeration constant 'Symbol' (Location) not
referenced

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6.4 Edit file \$(EGTS)\build\misra\chk.bat to meet an actual path settings:

@set TOOL\_DIR=<path to LINT-NT.EXE, without \ at the end>

@set EGTS\_SRC\_ROOT=<path to EGTS root folder, without \ at the end >

@set SYS\_INCLUDE\_DIR=<path to (MS Visual Studio\ VC\include), without \ at the end, usually "c:\Program Files\Microsoft Visual Studio 9.0\VC\include">