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Titre /*Title* : **Sample Download TMS**

Programme / *Subject* : TELIUM

Approbation de la révision / *Revision Approval* :		
	Nom ***Name***	**Fonction** ***Function***
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1. INTRODUCTION

The sample Download TMS is an application which shows how to implement downloading operations from the SAGEM Monetel TMS server. TMS stands for Terminal Management System.

The Telium SDK provides two means to perform downloading operations.

The first mean called "REMOTE" is a fully integrated facility. The operation is totally performed by the Telium Manager. The calling application has just to request the function "**remote_downloading**" (defined in the header file "Oem.h"). So, The Telium Manager monitors the process from the beginning to the end. The calling application does not get the execution anymore. The downloading operation always ends by a rebooting of the terminal. In this mode, all the display is managed by the Telium Manager. The displayed messages can be translated by the mean of the Language Library.

The second mean to perform a downloading operation is called "CALLHOST". By this mean, the calling application can monitor more precisely the downloading process. It is in charge of the display instead of the Telium Manager. The CALLHOST facility is requested by a call to the function "**CallHost**" (defined in the header file "Callhost.h"). The calling application gives the different parameters needed for the downloading process and a special handler function. The downloading operation starts and the handler function is called by the Telium System in order to notify the application of the downloading progress events.

2. REMOTE

The REMOTE facility is requested by a call to the function :

- `int remote_downloading(S_PARAM_TLCHGT *); (defined in "Oem.h")`

This function is described in the document "Telium Manager User's Guide (OPE 1275)". Please read it for further details.

The parameters of the downloading operation are given in a parameter of type "S_PARAM_TLCHGT". This type is unfortunately not translated in English.

```
typedef struct
{
  // V22 for compatibility.
  // VIP for Remote IP.
  char           type_modem;     // Modem Type
  T_NOAPPEL      t_noappel;      // Call Number
  TYPE_RES       reseau;         // Network Type
  T_TRANSPAC     t_transpac;     // X25 Address
  char           appel;          // Call
  T_CONTRAT      t_nocontrat;    // Contract Number
  T_NOLOGICIEL   t_nologiciel;   // Software Number
  char          *message;        // Message
```

```
  // Extended structure. Taken in account when the field 't_nologiciel'
  // is set with the extended tag : { 0x01, 0x02, 0x03 }.

  char           nologiciel[15+1];    // Software Number
  char           messagemdp[100+1];   // TMS Message

  // ISDN parameters.
  unsigned int   liaison_serie;       // Serial link

  // IP parameters.
  unsigned int   ip;                  // IP address
  unsigned int   port;                // IP Port

  unsigned char  login[22+1];         // PPP Login (for GPRS or ISP)
  unsigned char  password[22+1];      // PPP Password (for GPRS or ISP)

  unsigned char  apn[22+1];           // APN (for GPRS)

} S_PARAM_TLCHGT;
```

Note : the Telium Manager in order to display the downloading messages opens the DISPLAY driver. On EFT30 terminals, it causes a reboot of the terminal if this driver is currently opened by an other task (for example, a task of the calling application).

3. CALLHOST

The CALLHOST facility is requested by a call to the function :

- `int CallHost( char CallType, S_PARAM_SYSTEM_CALL *pt_ParamCall, long *PerformedActivity );`

This function and the CALLHOST process are fully described in the document "Telium System Ref Manual (OPE 1286)". Please read it for more details.

Notes :

The handler function is directly called by the system. So, this function belongs to the calling application but is executed in the system task.. The handler function is not allowed to access system resources (like drivers, files....). Just use it to store the information of the downloading progress in shared variables, displayed later from an other task.

The display of the downloading process must be operated in a dedicated task, child of the main task. Take care of not using resources currently opened by other tasks. For example : the display driver must be opened only by the child task.

4. SAMPLE PROGRAM

4.1 HOW TO COMPILE

This sample must be compiled from the SDK of version >= 4.7.
To compile under GCC, just launch the file "Build.bat". This batch file uses the NMAKE program provided by the Microsoft VC6 compiler. This program must be reachable from the PATH variable environment, or simply recopied in the GNU folder of the sample.

The compilation generates the binary files 'SAMPLE.ADF' and 'SAMPLE.SGN' in the OBJ folder. The SAMPLE.SGN is not signed. The name of this file is suffixed '.SGN' for Mockup only. The sample must be signed before loading it into a terminal with its security activated.

Before compiling, please modify the header file "DefaultParams.h" to set your own default values. In this file, the current default values allow to access some TMS servers available for tests. From these servers, two applications can be downloaded with the contract n°999. These two applications 32120101 and 3A32120101.do nothing. They are only useful to show the success of the downloading operation.

All these parameters can be altered. So, please contact your program manager before calling these servers.

Note : This project can not be compiled and executed from the EFT30 simulator, because the CALLHOST facility requires multi-tasking.

4.2 USER GUIDE

The sample program demonstrates the two facilities. From the Idle screen, press the function key 'F' and select "TMS Download" to enter the application.

The main menu displays the two types of downloads :

```
0 - REMOTE IP
1 - CALLHOST
```

The REMOTE IP item displays the following menu :

```
0 - Parameters
1 - GPRS Parameters
2 - ISP Parameters
3 - Run -- IP       -->
4 - Run -- GPRS -->
```

```
5 - Run -- ISP      -->
```

0 - Parameters : allows the input of the downloading parameters (the software number, the contract number, the IP address and the IP port).

1 : GPRS Parameters : allows the input of the GPRS parameters (the APN, the PPP login and the PPP password). By default these values are set with the values entered from the Telium Manager menu.

2: ISP Parameters : allows the input of the PSTN ISP parameters (its phone number, the PPP login and the PPP password).

3 : Run -- IP --> : initiates a downloading operation directly through the IP link (for Ethernet terminals)

4 : Run -- GPRS --> : initiates a downloading operation through the GPRS link. It is recommended to be logged to the GPRS network first (the GPRS logo displayed in the top banner).

5: Run -- ISP --> : initiates a downloading operation using an external PSTN ISP.

The CALLHOST item displays the menu :

```
0 - PSTN
1 - IP
```

The sub-item 'PSTN' allows to request a PSTN downloading operation. It displays the following sub-menu :

```
0 - Parameters
1 - Run...
```

0 - Parameters : allows the input of the downloading parameters (the software number, the contract number and the TMS phone number).

1 - Run... : initiates the downloading operation.

The sub-item 'IP' allows to request an IP downloading operation. It displays the following sub-menu :

```
0 - Parameters
1 - Connect GPRS
2- Run...
```

0 - Parameters : allows the input of the downloading parameters (the software number, the contract number, the IP address and the IP port).

1 :Connect GPRS : allows the input of the GPRS parameters (the APN, the PPP login and the PPP password). Then, It initiates the connection to GPRS network.

2: Run... : initiates a downloading operation through the GPRS link. It is recommended to be connected to the GPRS network (from the previous item).

4.3 CODE EXPLANATION

The source of the sample is composed of 6 parts :

Part	Description
Entry	Monitor the entry point of the application.
Menu	Monitor the different menus and input screens
Communication	Monitor the GPRS connection
UserInterfaceHelpers	Set of graphic functions used for the GUI management
DoRemote	Monitor the REMOTE downloading process
DoCallHost	Monitor the CALLHOST downloading process

Notes :

The contract number is an alphanumeric string of 10 characters, coded differently according to the downloading mode.

For CALLHOST, it must not be null-terminated. and must be padded with blank characters, the first digit must be set to '1'. For example the contract number 999 must be coded '1999 ▭▭▭▭▭▭' { 0x31, 0x39, 0x39, 0x39, 0x20,. 0x20, 0x20, 0x20, 0x20, 0x20 }

For REMOTE, it can be null-terminated but must be padded with blank characters too The contract number 999 must coded '999▭▭▭▭▭▭\0' { 0x39, 0x39, 0x39, 0x20,. 0x20, 0x20, 0x20, 0x20, 0x20, 0x00 }.

For REMOTE only. The PSTN phone numbers used for the downloading operations must be prefixed by the character "T'.

For REMOTE : It is possible to get the parameters entered from the Telium Manager. Please use the function "**PSQ_telechgt**" defined in the header file "Param.h"