GPS Security Module

# Position of SM in the application



# GPS security Module API

typedef struct GpsSecurityModule GpsSecurityModule;

/\*! Create a GPS Security Module instance

This function is called to create a GPS security module instance.

it return PAL\_Ok if a security module instance is created and the pointer to

the instance is stored at the location pointed by the parameter securityModule.

Call GpsSecurityModuleDestory when the GPS Security module is not needed.

@param securityModule pointer to the location where the pointer to the created

security module will be stored.

@return PAL\_Error PAL\_Ok if a GPS security module is created successfullly.

@see GpsSecurityModuleDestory

\*/

ABPAL\_DEC PAL\_Error

GpsSecurityModuleCreate(GpsSecurityModule\*\* securityModule);

/\*! Destory a GPS Security Module instance

This function is called to destory a GPS security module instance that

has been created by GpsSecurityModuleCreate

@param securityModule GPS security module instance that has been created

by GpsSecurityModuleCreate.

@return PAL\_Error PAL\_Ok if the GPS security module is destoryed successfully .

@see GpsSecurityModuleCreate

\*/

ABPAL\_DEC PAL\_Error

GpsSecurityModuleDestroy(GpsSecurityModule\* securityModule);

/\*! Convert a WGS84 GPS location to an encrypted GPS Location

This function is called to encrypt a WGS84 GPS Location to an encrypted GPS

location that is used by encrypted map data.

@param securityModule GPS security module instance that has been created

by GpsSecurityModuleCreate.

@param wgsGpsLocation GPS Location with WGS84 lat/lon

@param chinaGpsLocation GPS Location with shifted China lat/lon

@return PAL\_Error PAL\_Ok if the GPS location is converted successfully.

\*/

ABPAL\_DEC PAL\_Error

GpsSecurityModuleEncrypt(GpsSecurityModule\* securityModule,

ABPAL\_GpsLocation\* wgsGpsLocation,

ABPAL\_GpsLocation\* chinaGpsLocation);

# Build Environments

Windows WIN32 Build Environment

### Software Required

* Microsoft Visual Studio 2005
* NIM Core SDK 1.5.0.1 release for win32 CoreSDK\_1.5.0.1\_win32\_internal.zip

### Build Procedures

1. Extract NIM Core SDK CoreSDK\_1.5.0.1\_win32\_internal.zip to C:\
2. Extract GPS Security module gpssm.zip to c:\
3. Setup build environment variables by running batch file c:\gpssm\build\config\_win32.bat
4. Start Microsoft Visual Studio 2005 and open GPS Security Module solution file c:\gpssm\gpssm\_win32.sln
5. Select Build configuration “Release”
6. Build from Menu “Build” -> “Rebuild Solution”
7. Build results are located at c:\gpssm\output\win32\Release: gpssm10.dll and gpssm10.lib
8. Unit test executable is located at c:\gpssm\output\win32\Release: unittests.exe

Windows Mobile Build Environment

### Software Required

* Microsoft Visual Studio 2005
* Windows Mobile 6 Standard SDK
* NIM Core SDK 1.5.0.3 release for winmobile: CoreSDK\_1.5.0.3\_winmobile\_internal.zip

### Build Procedures

1. Extract NIM Core SDK CoreSDK\_1.5.0.3\_winmobile\_internal.zip to C:\
2. Extract GPS Security module gpssm.zip to c:\
3. Setup build environment variables by running batch file c:\gpssm\build\config\_wm.bat
4. Start Microsoft Visual Studio 2005 and open GPS Security Module solution file c:\gpssm\gpssm\_wm.sln
5. Select Build configuration “Release Windows Mobile 6 Standard SDK (ARMV4I)”
6. Build from Menu “Build” -> “Rebuild Solution”
7. Build results are located at c:\gpssm\output\winmobile\Release: gpssm10.dll and gpssm10.lib

# BREW

### Software Required

* BREW SDK 3.15
* ARM compiler 3.0
* NIM Core SDK 1.5.0.1 release for BREW CoreSDK\_1.5.0.1\_brew\_internal.zip

### Build Procedures

1. Extract NIM Core SDK CoreSDK\_1.5.0.1\_brew\_internal.zip to C:\
2. Extract GPS Security module gpssm.zip to c:\
3. Setup build environment variables by running batch file c:\gpssm\build\config\_brew.bat
4. Run batch file make.bat in directory c:\gpssm\build\projects\make
5. Build results are located at c:\gpssm\output\winmobile\Release: gpssm10.o

# Linux

### Software Required

* GCC compiler 4.2.4 or newer
* NIM Core SDK 1.5.0.0 release for Linux X86 CoreSDK\_1.5.0.0\_linux\_x86\_internal.zip

### Build Procedures

1. Extract NIM Core SDK CoreSDK CoreSDK\_1.5.0.0\_linux\_x86\_internal.zip.zip to ~
2. Extract GPS Security module gpssm.zip to ~
3. Set the following environment variables
   * export NIMCORE\_SDK\_INC=~/ CoreSDK\_1.5.0.0\_linux\_x86\_internal/include
   * export NIMCORE\_SDK\_BIN=~/ CoreSDK\_1.5.0.0\_linux\_x86\_internal/lib
4. Run ‘make’ in directory ~/gpssm/projects/make
5. Build results are located at ~/gpssm/output/linux/x86/libgpssm.so

# Test Input Parameters

Testgpssm.c contains the following are 10 locations around [**Tiananmen Square**](http://maps.google.com/maps?f=q&source=s_q&hl=en&geocode=&q=39.906101,+116.386980&sll=39.905793,116.386982&sspn=0.010082,0.008787&ie=UTF8&ll=39.905794,116.386982&spn=0.010082,0.008787&z=17), Beijing

1) Latitude: 39.905994, Longitude: 116.386562

wg\_lng=429047422

wg\_lat=147109456

wg\_heit=16

wg\_week=1569

wg\_time=256850

2) Latitude: 39.906101, Longitude: 116.386980

wg\_lng=429048963

wg\_lat=147109850

wg\_heit=16

wg\_week=1569

wg\_time=256851

3) Latitude: 39.906068, Longitude: 116.387731

wg\_lng=429051731

wg\_lat=147109729

wg\_heit=16

wg\_week=1569

wg\_time=256852

4) Latitude: 39.906035, Longitude: 116.388482

wg\_lng=429054500

wg\_lat=147109607

wg\_heit=16

wg\_week=1569

wg\_time=256853

5) Latitude: 39.906060, Longitude: 116.389394

wg\_lng=429057862

wg\_lat=147109699

wg\_heit=16

wg\_week=1569

wg\_time=256854

6) Latitude: 39.906134, Longitude: 116.390446

wg\_lng=429061740

wg\_lat=147109972

wg\_heit=16

wg\_week=1569

wg\_time=256855

7) Latitude: 39.906175, Longitude: 116.391197

wg\_lng=429064508

wg\_lat=147110123

wg\_heit=16

wg\_week=1569

wg\_time=256856

8) Latitude: 39.906159, Longitude: 116.392366

wg\_lng=429068818

wg\_lat=147110064

wg\_heit=16

wg\_week=1569

wg\_time=256857

9) Latitude: 39.906183, Longitude: 116.393793

wg\_lng=429074078

wg\_lat=147110153

wg\_heit=16

wg\_week=1569

wg\_time=256858

10) Latitude: 39.906208, Longitude: 116.394823

wg\_lng=429077875

wg\_lat=147110245

wg\_heit=16

wg\_week=1569

wg\_time=256859