Newland

SCANNING MADE SIMPLE

PT60 Narvalo

MT70 to PT60

application migration guide

Revision History

Version	Description	Date
V1.0.0	Initial release.	September 5, 2017

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Chapter 1 About This Manual

Purpose

Most of NLS-MT70 (hereinafter referred to as “the MT70”) applications can run on NLS-PT60 (hereinafter referred to as “the PT60”) smoothly and directly. However, due to differences in some APIs and hardware information between MT70 and PT60 applications, some MT70 applications need to make some code modifications and rebuild in order to be compatible with PT60. This manual is the bible on how to migrate MT70 applications to PT60, including things that shall be paid attention to, and how to set up your own programming & rebuilding environments.

Scope of Application

This manual is applicable to the PT60.

Since the PT60 is equipped with RS9110 WiFi module while MT70 with Summit WiFi module, migration of MT70 application using Summit WiFi SDK to PT60 requires certain changes to be made to the corresponding API first.

Chapter 2 PT60 Application Development Environment

Newland provides two SDKs for MT70/PT30/PT60 application development: **uTools For MT70_PT30** for C/C++ applications and **uToolsCE_NET** for .NET applications.

Installation and Use of uTools For MT70_PT30

uTools For MT70_PT30, which is add-on software based on Visual Studio 2005 or Visual Studio 2008, is a software development tool particularly designed for the creation of MT70/PT30/PT60 applications.

uTools For MT70_PT30 supports standard Windows CE APIs, integrates MFC library and provides visual GUIs, with which developers can develop C/C++ applications quickly and conveniently.

Installing uTools For MT70_PT30

◆ Download uTools For MT70_PT30 at **http://www.newlandaidc.com/h-pd-66.html#pfc=%7B%22groupIds%22%3A%5B8%5D%2C%22id%22%3A1%2C%22sc%22%3A%7B%22key%22%3A%22name%22%2C%22desc%22%3Afalse%7D%7D&_jcp=3_8**.

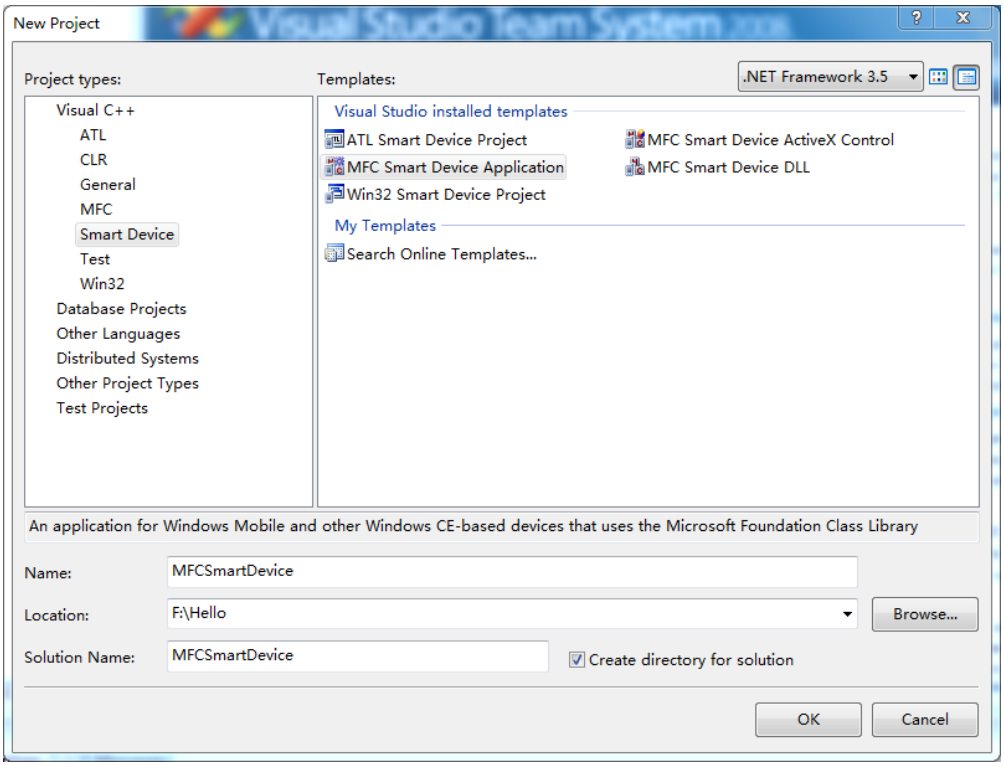
◆ Double-click on the file.

◆ Install the SDK in your desired location by following the on-screen instructions.

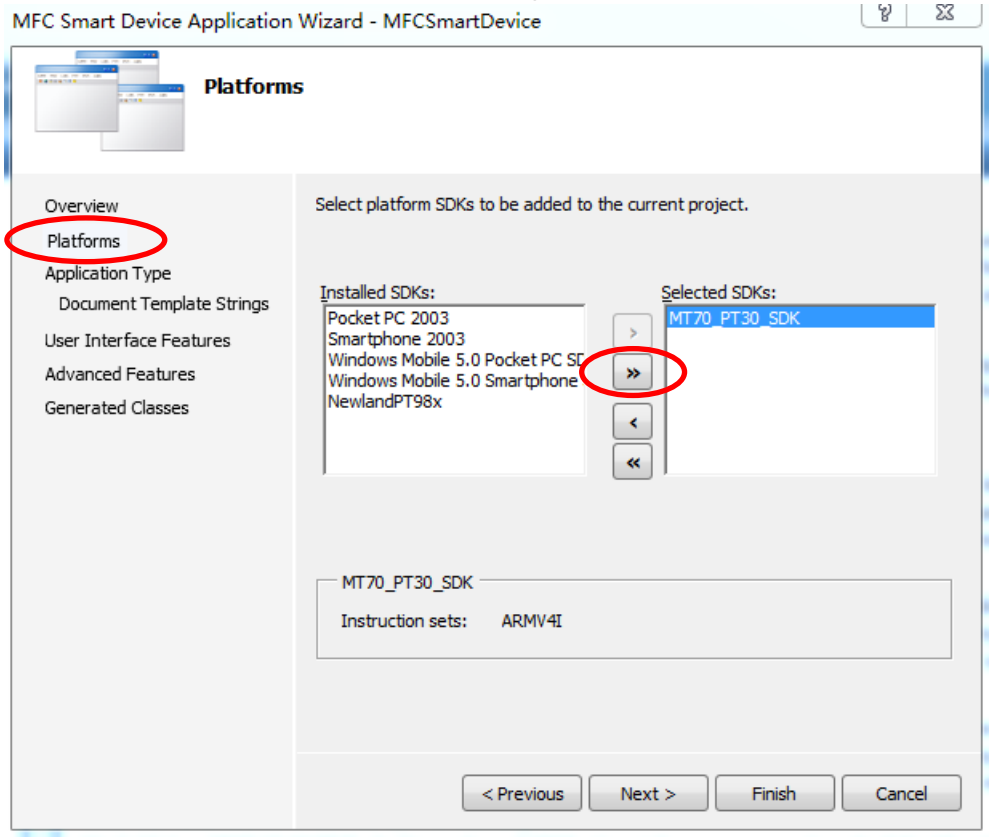
Setting up a Development Environment

Visual Studio 2008 is used in the example.

◆ Start Visual Studio 2008. Then create a new project as shown below.



- Select “MT70_PT30_SDK” on the “Platforms” page.



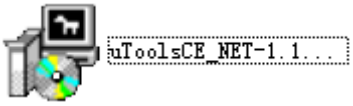
Installation and Use of uToolsCE_NET

uToolsCE_NET is an additional .NET-related dynamic library set for Newland's Windows CE devices. It contains a dynamic library NLSCAN.MacCtrl.dll and demo programs. NLSCAN.MacCtrl.dll contains classes such as scan barcode, dial-up, get system info and system control.

Installing uToolsCE_NET

◆ Download uToolsCE_NET at **http://www.newlandaidc.com/h-pd-66.html#pfc=%7B%22groupIds%22%3A%5B8%5D%2C%22id%22%3A1%2C%22sc%22%3A%7B%22key%22%3A%22name%22%2C%22desc%22%3Afalse%7D%7D&_jcp=3_8**.

◆Unzip it and double-click on the file.

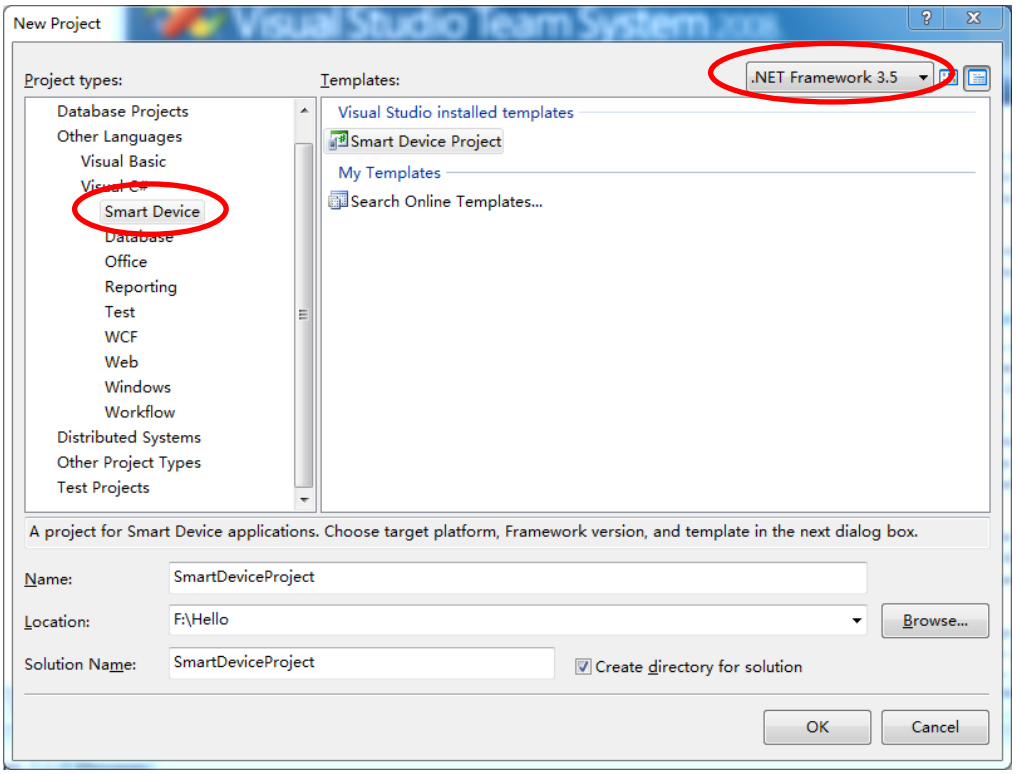


◆ Install the SDK in your desired location by following the on-screen instructions.

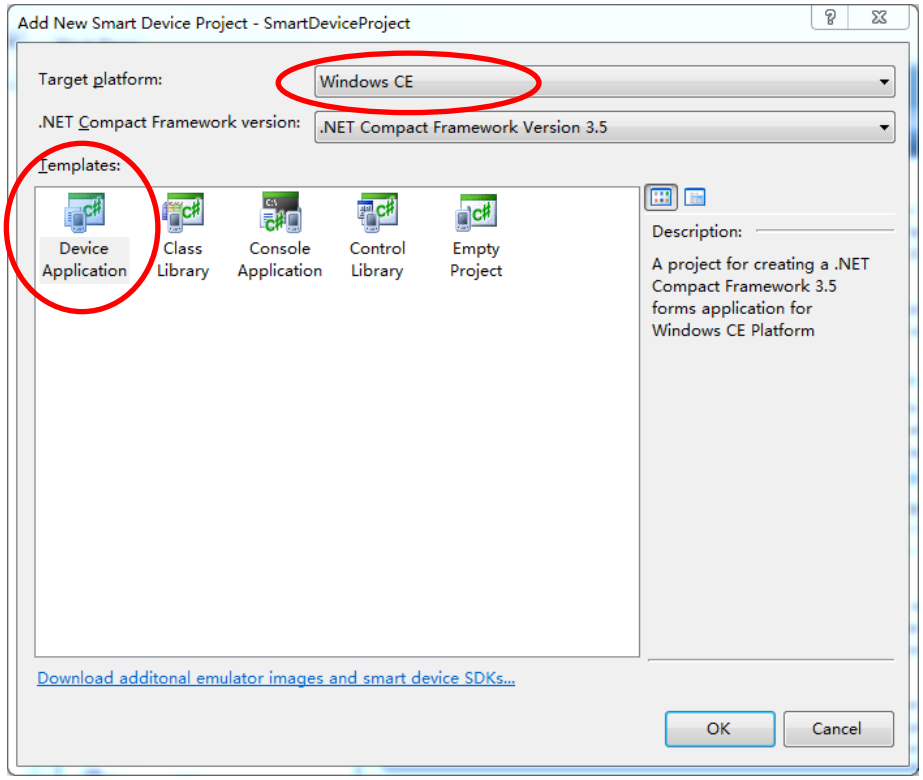
Setting up a Development Environment

Visual Studio 2008 is used in the example.

◆ Start Visual Studio 2008. Then create a new project as shown below.

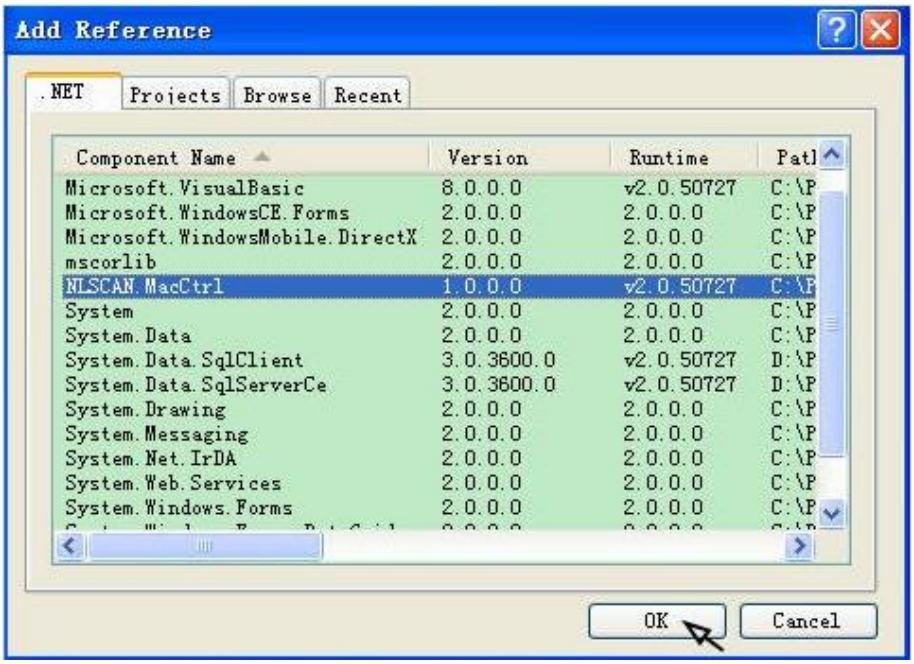


- Select the target platform and template as shown below.



- Add reference.

Click **Menu** > **Project** > **Add Reference**. Then click the .NET tab, select “NLSCAN.MacCtrl” and click “OK”.



Chapter 3 Code Migration Instructions

Code changes need to be made manually in the following situations when migrating MT70 applications to the PT60.

Summit WiFi Code Migration

The MT70 uses the API provided by Summit SDK to manage WiFi functionality whereas the PT60 uses WinCE's standard WiFi API, so the API needs to be changed accordingly when migrating MT70's Summit WiFi code to the PT60.

WZC (Wireless Zero Configuration) functions can be used to connect the PT60 to a WiFi network.

Steps required to connect the PT60 to a WiFi network: First, get PT60's wireless card info; second, get current wireless network info; third, pass the SSID obtained and password entered to the preferred wireless network list, then the PT60 will automatically connect to that wireless network.

Frequently used WZC functions include:

Function	Description
WZCEnumInterfaces	Determine the identity of wireless card in the terminal
WZCPassword2Key	Translate a user password into a 256-bit network key.
WZCQueryInterface	Provide detailed information for the specified wireless card
WZCDeleteIntfObj	Release memory associated from a corresponding call to WZCQueryInterface

For the information of other API functions, see
https://msdn.microsoft.com/en-us/library/ee486655(v=winembedded.60).aspx

The following sample code illustrates how to get wireless network information from wireless card.

```
//////////////////////////////////////////////////////////////////////////
// pCard: Network Adapter GUID
// pIntf: Network Adapter Info
// pOutFlags: Network Adapter Configuration mask flag
//////////////////////////////////////////////////////////////////////////
BOOL GetWirelessCardInfo(PTCHAR pCard, PINTF_ENTRY_EX pIntf, PDWORD pOutFlags)
{
    TCHAR *szWiFiCard = NULL;
    // Parameter checking
    if (!pCard || !pIntf || !pOutFlags)
    {
        //RETAILMSG(1, (TEXT("Param Error.\n")));
        return FALSE;
    }
    szWiFiCard = pCard;
    *pOutFlags = 0;
    // Initialize Wireless Card information
    ZeroMemory(pIntf, sizeof(INTF_ENTRY_EX));
    // Set GUID
    pIntf->wszGuid = szWiFiCard;
    // Query wireless card information
    DWORD dwStatus = WZCQueryInterfaceEx(NULL, INTF_ALL, pIntf, pOutFlags);
    if (dwStatus != ERROR_SUCCESS)
    {
        //RETAILMSG(1, (TEXT("WZCQueryInterfaceEx() error 0x%08X\n"), dwStatus));
        return FALSE;
    }
    return TRUE;
}
```

Hardware-related Code Migration

The hardware information (such as model number, serial number and MAC address) of the MT70 is different from that of the PT60. For MT70 applications that take certain action based on judgment concerning hardware information obtained (e.g. grant/ deny permission to proceed if model number obtained is/ is not MT70), the code needs to be changed accordingly when migrating those applications to the PT30.

When developing application using C++, ***GetModelName*** can be used to obtain model number.

```
char pBuf[100] = {0};
BOOL bVal = GetModelName(pBuf, 100);
if (bVal == FALSE)
{
    //Error occurred
}
else
{
    //Shows the device name
    CString str;
    str = pBuf;
    MessageBox(str);
}
```

Keyboard-related Code Migration

The keys that exist on MT70 keyboard but cannot be found on PT60 keyboard include **Backlight** and **Ctrl** keys. For MT70 applications that involve any of those three keys, such keys need to be redefined according to PT60 keyboard when migrating those applications to the PT60.

There are two methods for redefining keys.

Method One: Redefine the key with the KeyboardRedefine app

Double click 

on the desktop of the PT60. Locate the 

app and click it. Then redefine the key(s).

For example, to redefine **.** key on the keyboard as Ctrl key, click on the key value of **.** key. Click on the arrow, select "Redefine keyboard" and then click on "Ctrl". Click  to save the setting.

Method Two: Modify the code

For example, a MT70 application uses **Ctrl** key to trigger an action, but **Ctrl** key is not available on PT60 keyboard, so **Ctrl** key is replaced by **.** key in the MT70 application when migrating the application to PT60.

Summary: Method one is simple-to-use, but redefining key(s) will affect all applications involving changed key(s). If you only want the changed keys to be used in a specific application, use method two.

Others

(1) Since the PT60 supports multiple resolutions (default: 240*400) while the MT70's screen resolution is 240*320, it is recommended to change the screen resolution of the MT70 apps to 240*320 and recompile the modified apps to make these apps compatible with the PT60. If you want to migrate MT70 apps directly to the PT60, please follow the instructions below to change the PT60's resolution to 240*320: Double click 

on the desktop of the PT60, locate the 

app and click it, select "240*320", and then click  to save the setting.

(2) The RFID, 3G, GPRS, GPS and Camera features the MT70 enjoys are **NOT** supported by the PT60.

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