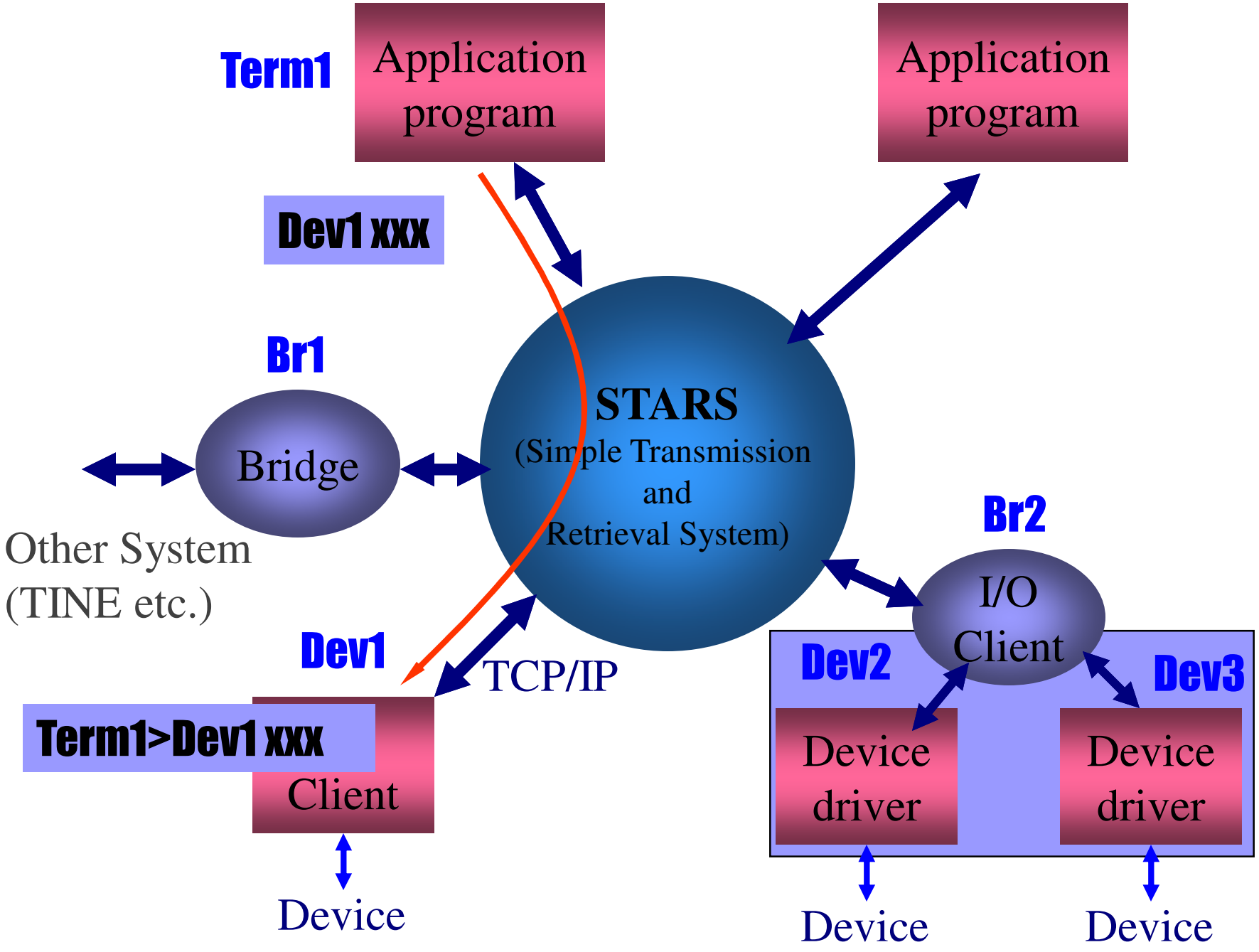
STARS .NET interface for Windows CE

Takashi Kosuge

High Energy Accelerator Research Organization (KEK)


Term1
Application program
Application program
Dev1 xxx
Br1
Bridge
STARS
(Simple Transmission and Retrieval System)
Other System
(TINE etc.)
Br2
I/O Client
Dev1
TCP/IP
Dev2
Dev3
Term1>Dev1 xxx
Client
Device driver
Device driver
Device
Device
Device

Sending Commands in STARS

NodeFrom>NodeTo Message

(My node name)

Omissible

Blank character

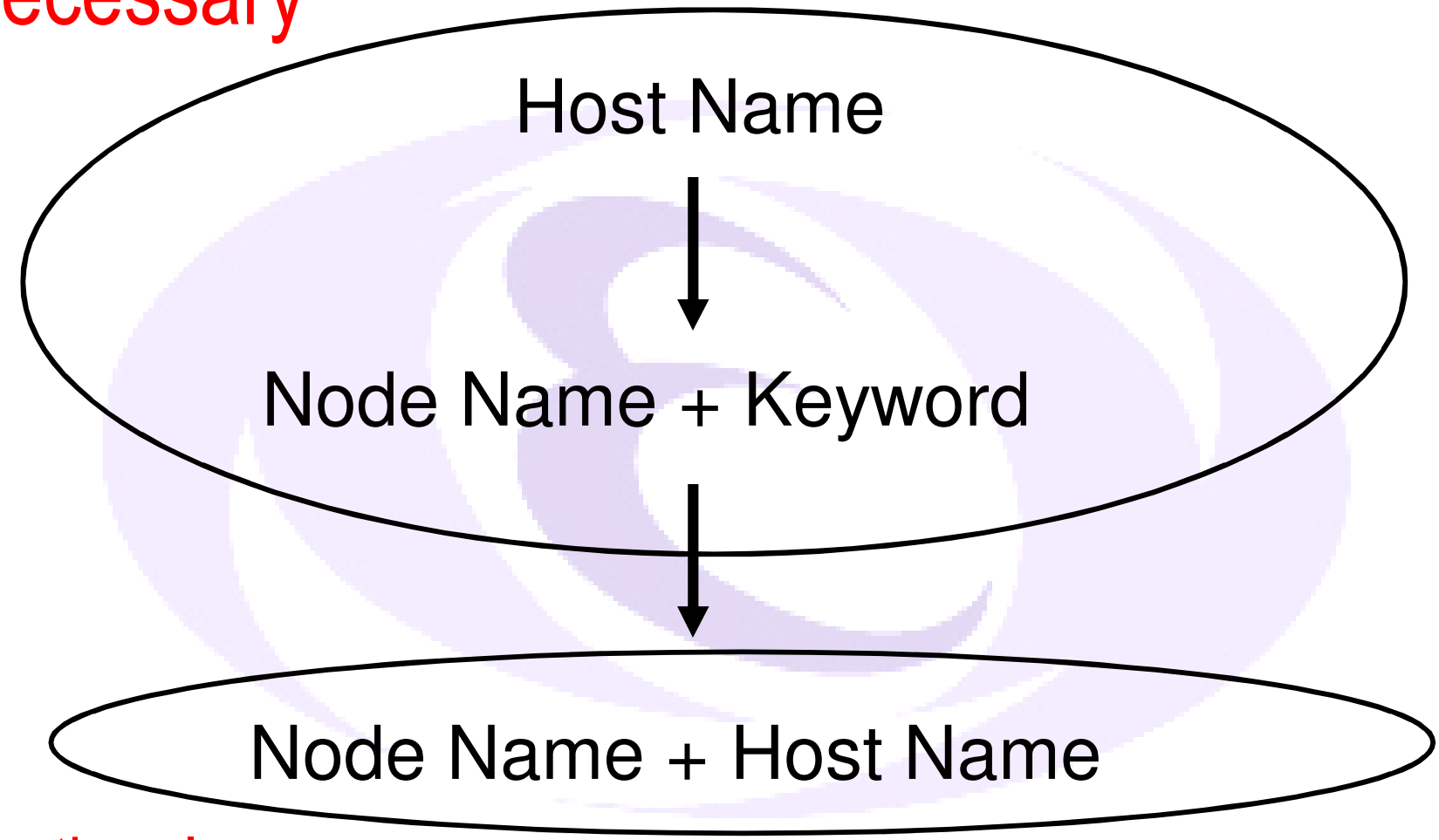
Messages @Message : Reply

_Message : Event

Message : Command

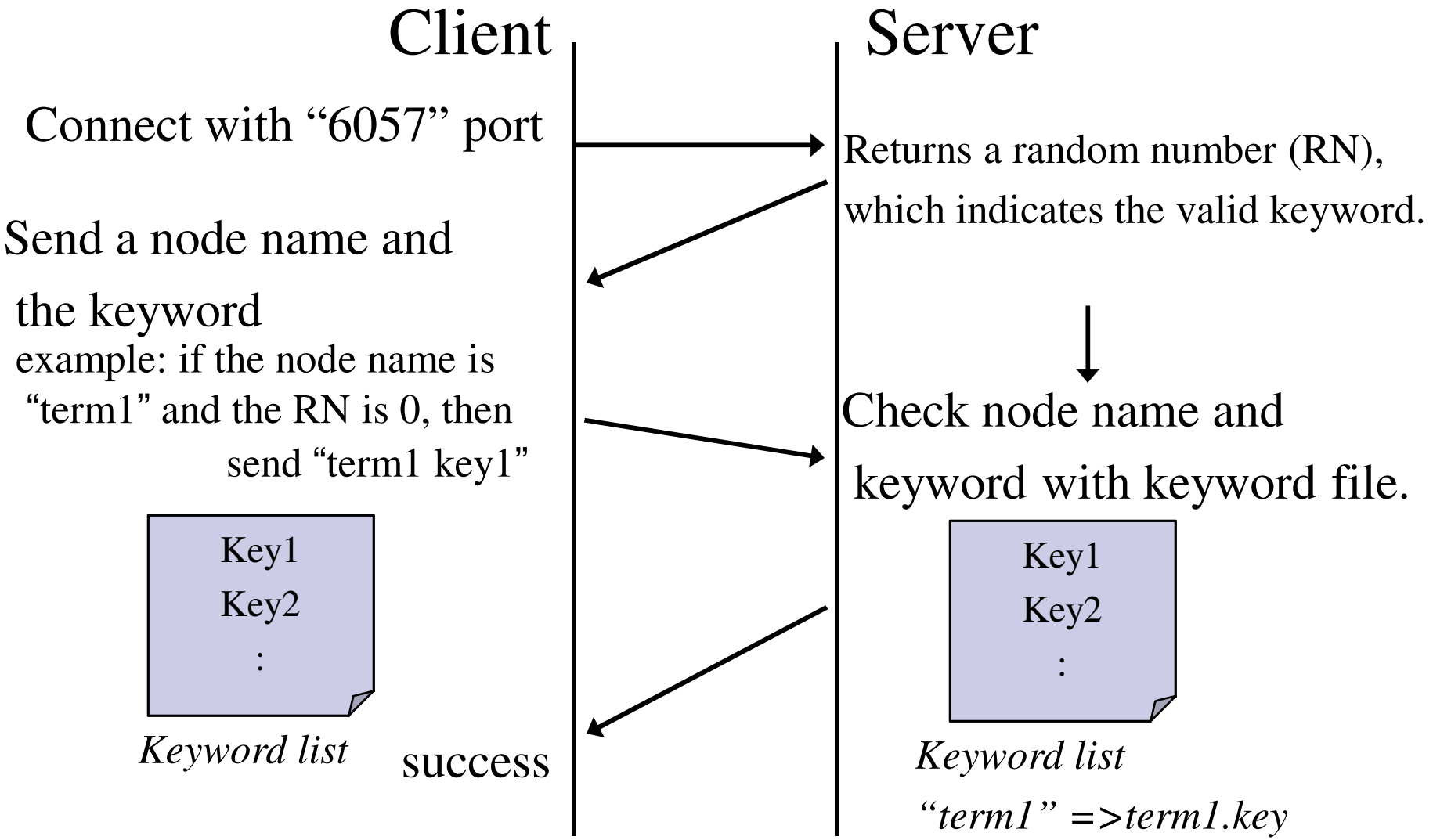
3-step certification

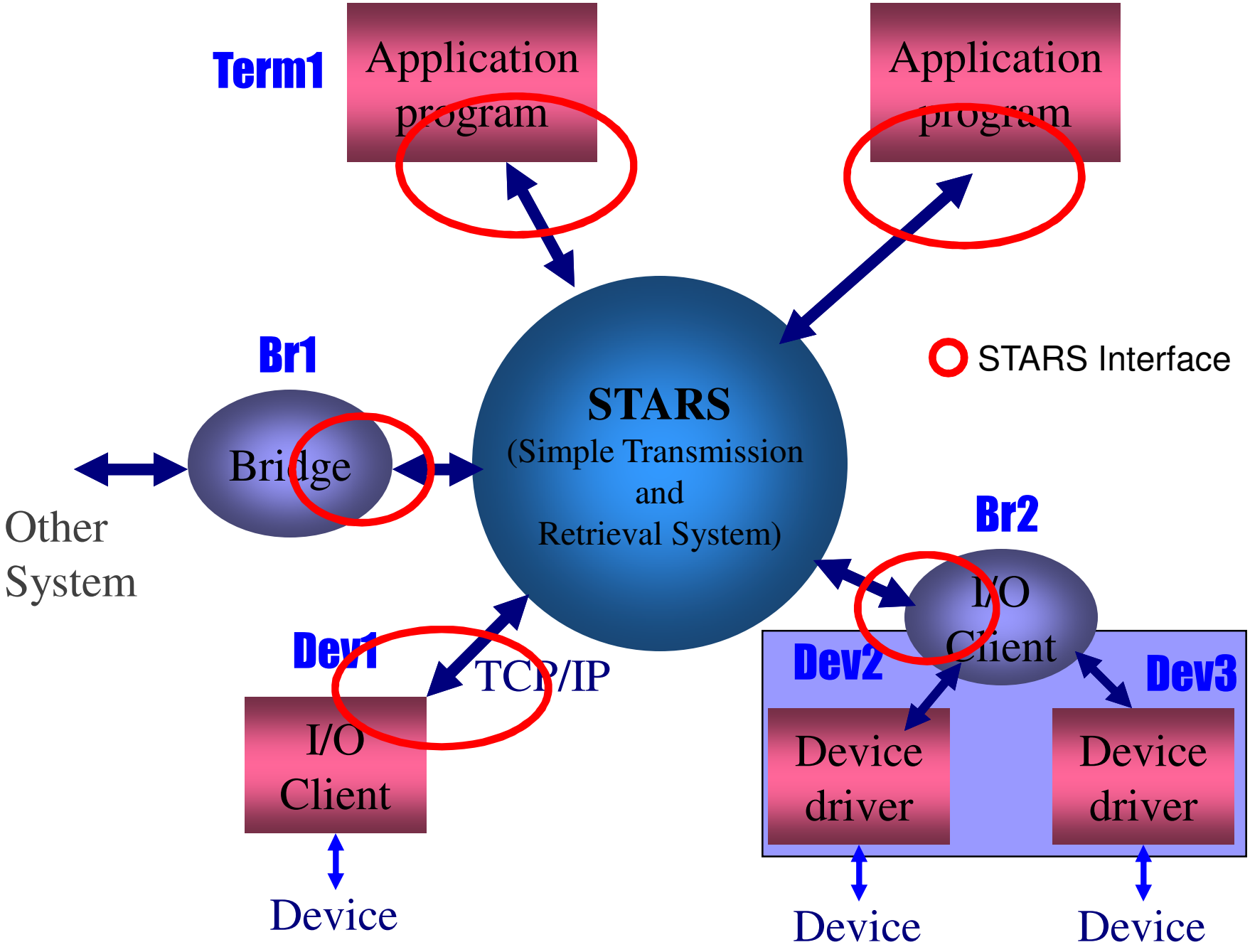
necessary



optional

Node Name and Keyword Certification

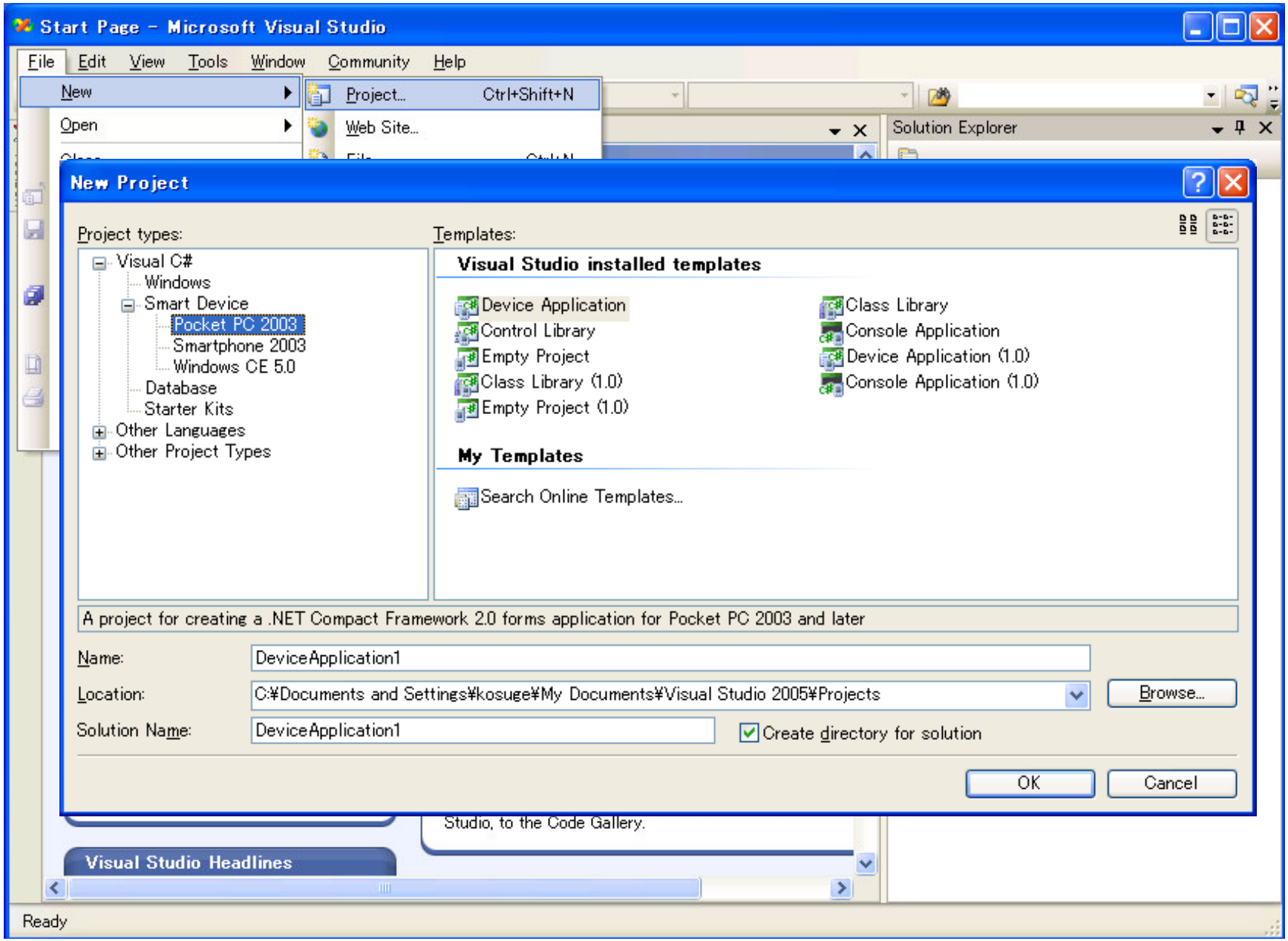


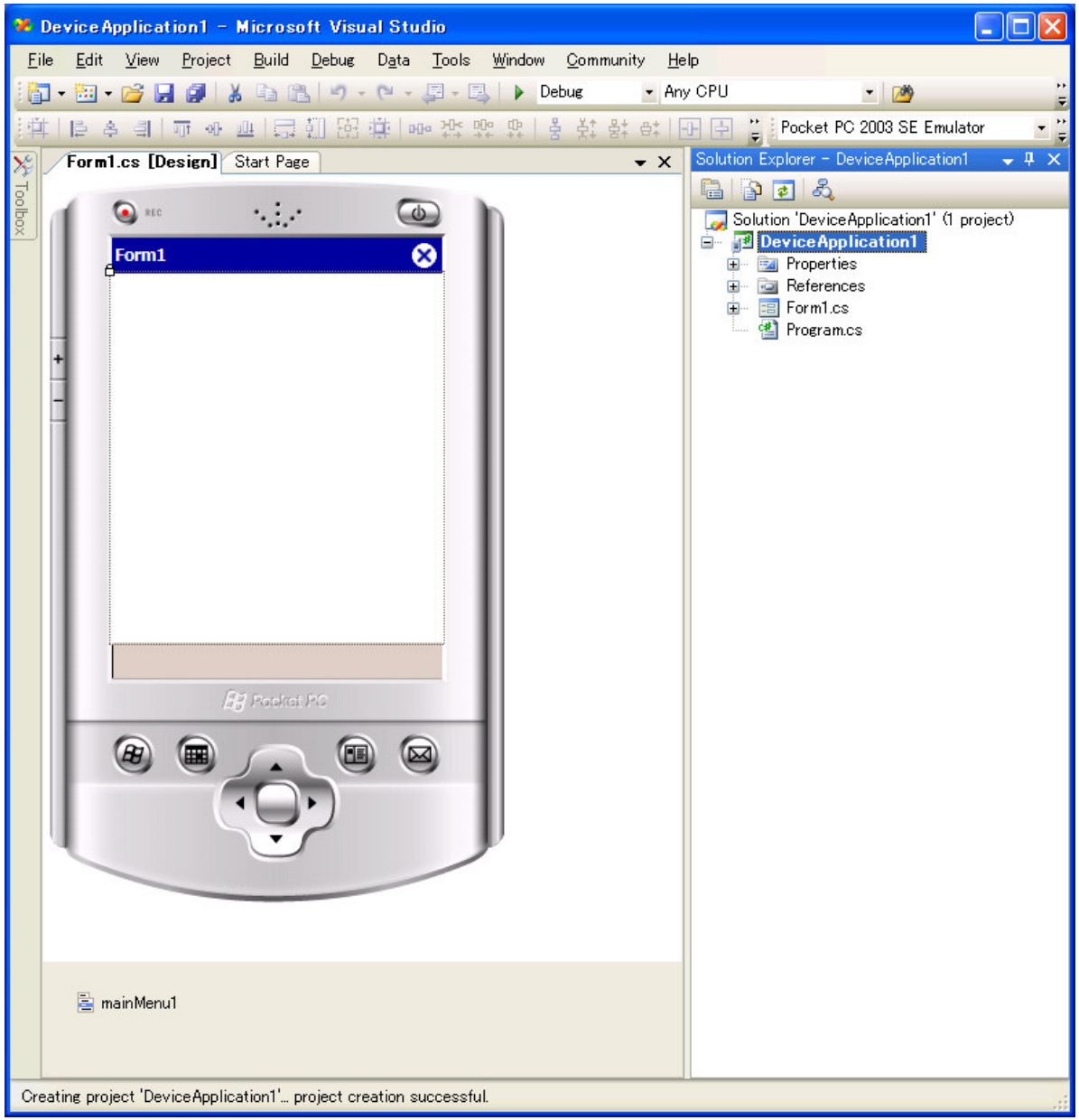

Term1
Application program
Application program
STARS Interface
Br1
Bridge
Other System
STARS
(Simple Transmission and Retrieval System)
Br2
I/O Client
Dev1
TCP/IP
I/O Client
Dev2
Dev3
Device driver
Device driver
Device
Device
Device

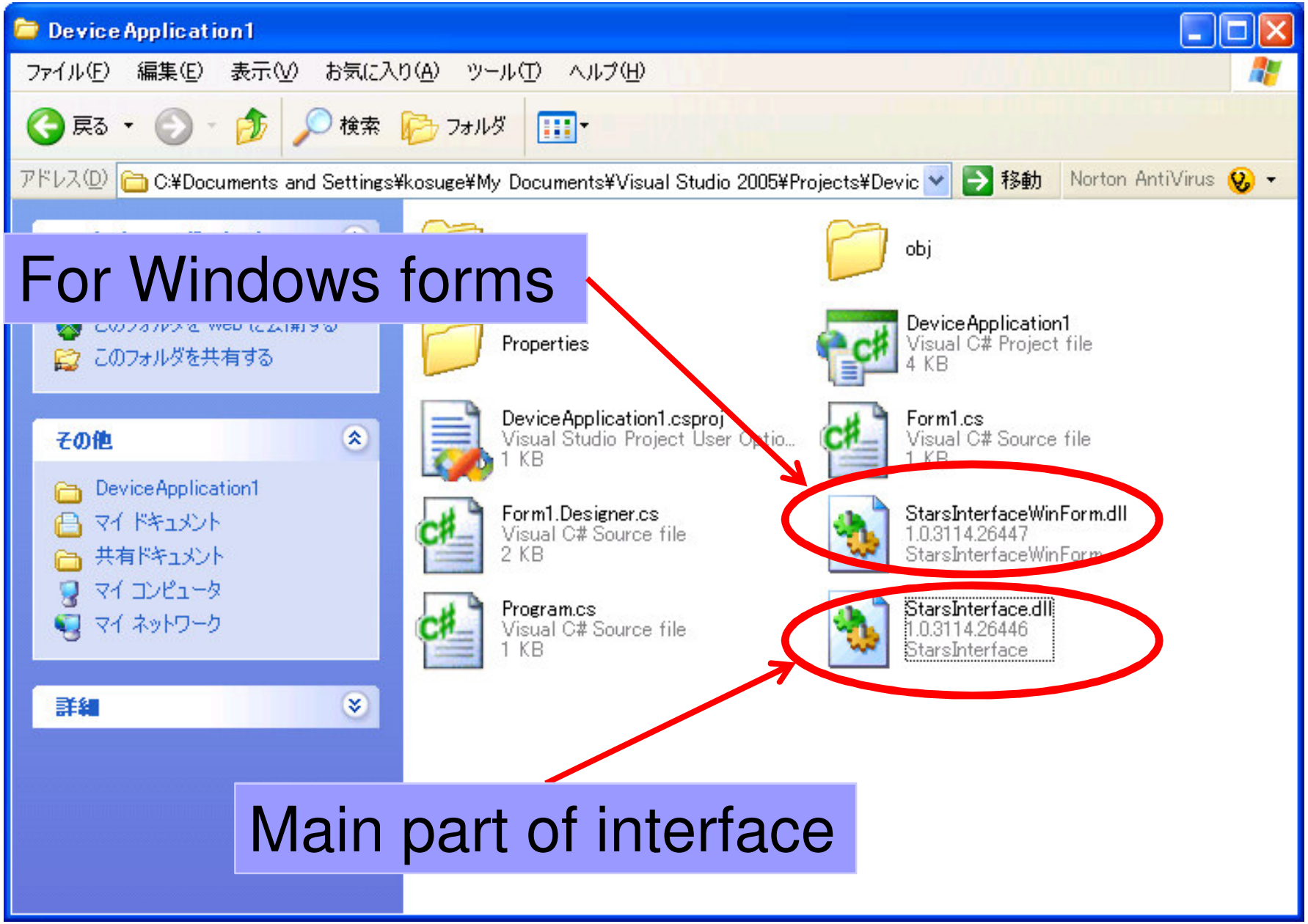
STARS Interface Libraries

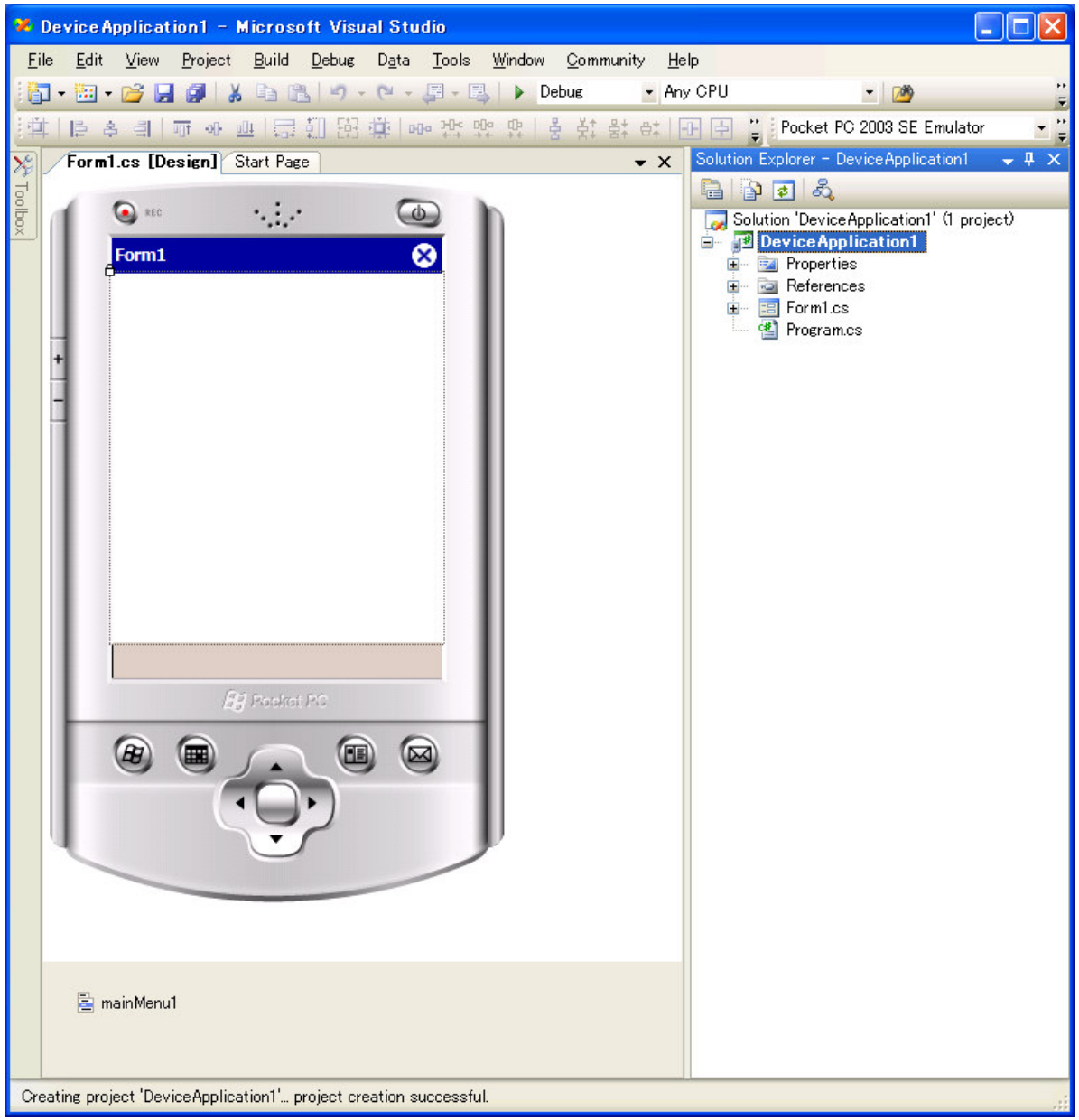
- Perl Module
- C Library
- Active X Control
- .NET Interface (works on Windows, Mono)
- .NET Interface for Windows CE

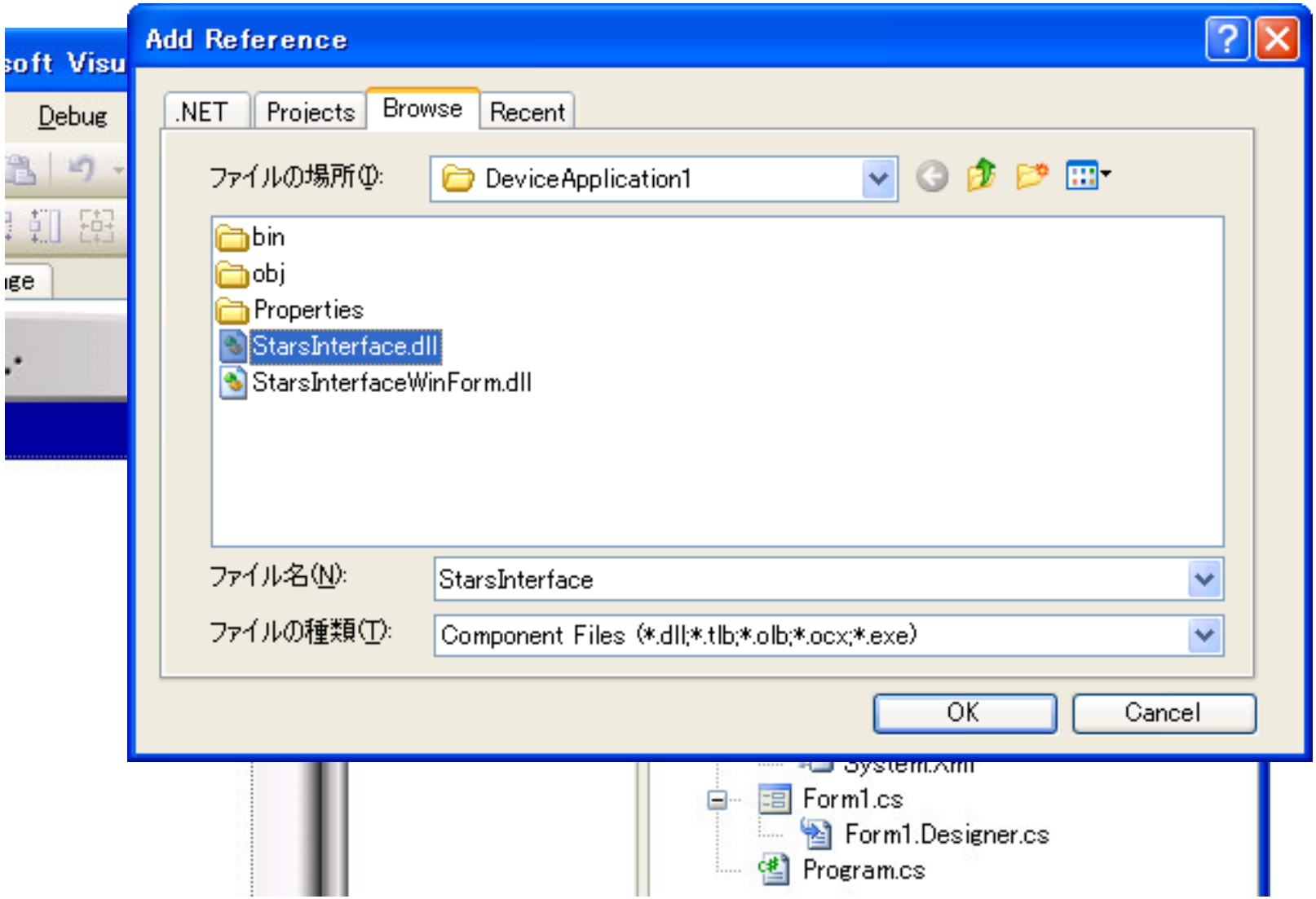
Development of STARS Client with STARS .NET Interface for Windows CE

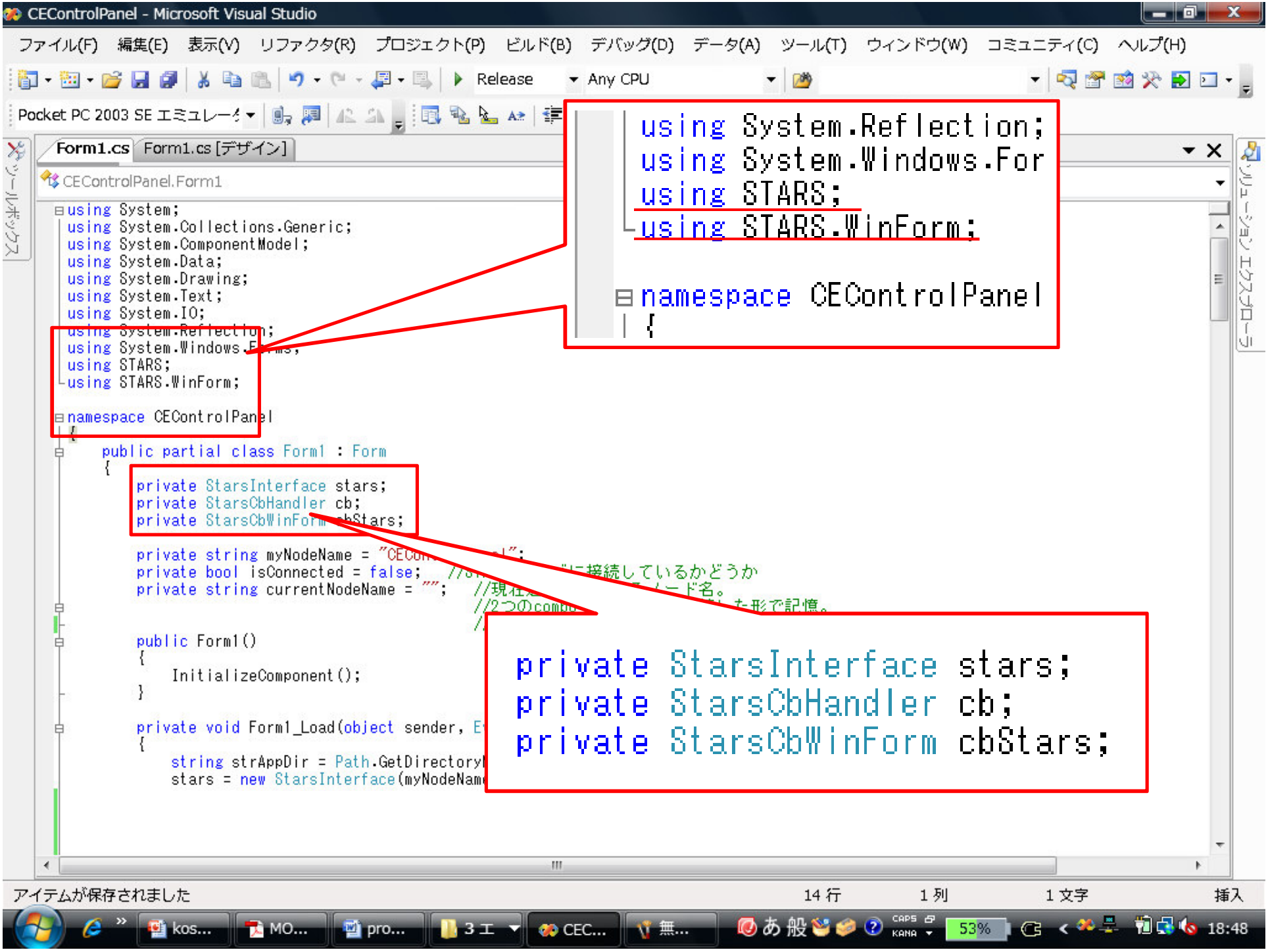

Start Page - Microsoft Visual Studio
File Edit View Tools Window Community Help
New
Open
Project... Ctrl+Shift+N
Web Site...
Solution Explorer
New Project
Project types:
Visual C#
Windows
Smart Device
Pocket PC 2003
Smartphone 2003
Windows CE 5.0
Database
Starter Kits
Other Languages
Other Project Types
Templates:
Visual Studio installed templates
Device Application
Control Library
Empty Project
Class Library (1.0)
Empty Project (1.0)
Class Library
Console Application
Device Application (1.0)
Console Application (1.0)
My Templates
Search Online Templates...
A project for creating a .NET Compact Framework 2.0 forms application for Pocket PC 2003 and later
Name: DeviceApplication1
Location: C:¥Documents and Settings¥kosuge¥My Documents¥Visual Studio 2005¥Projects
Browse...
Solution Name: DeviceApplication1
Create directory for solution
OK
Cancel
Studio, to the Code Gallery.
Visual Studio Headlines
Ready

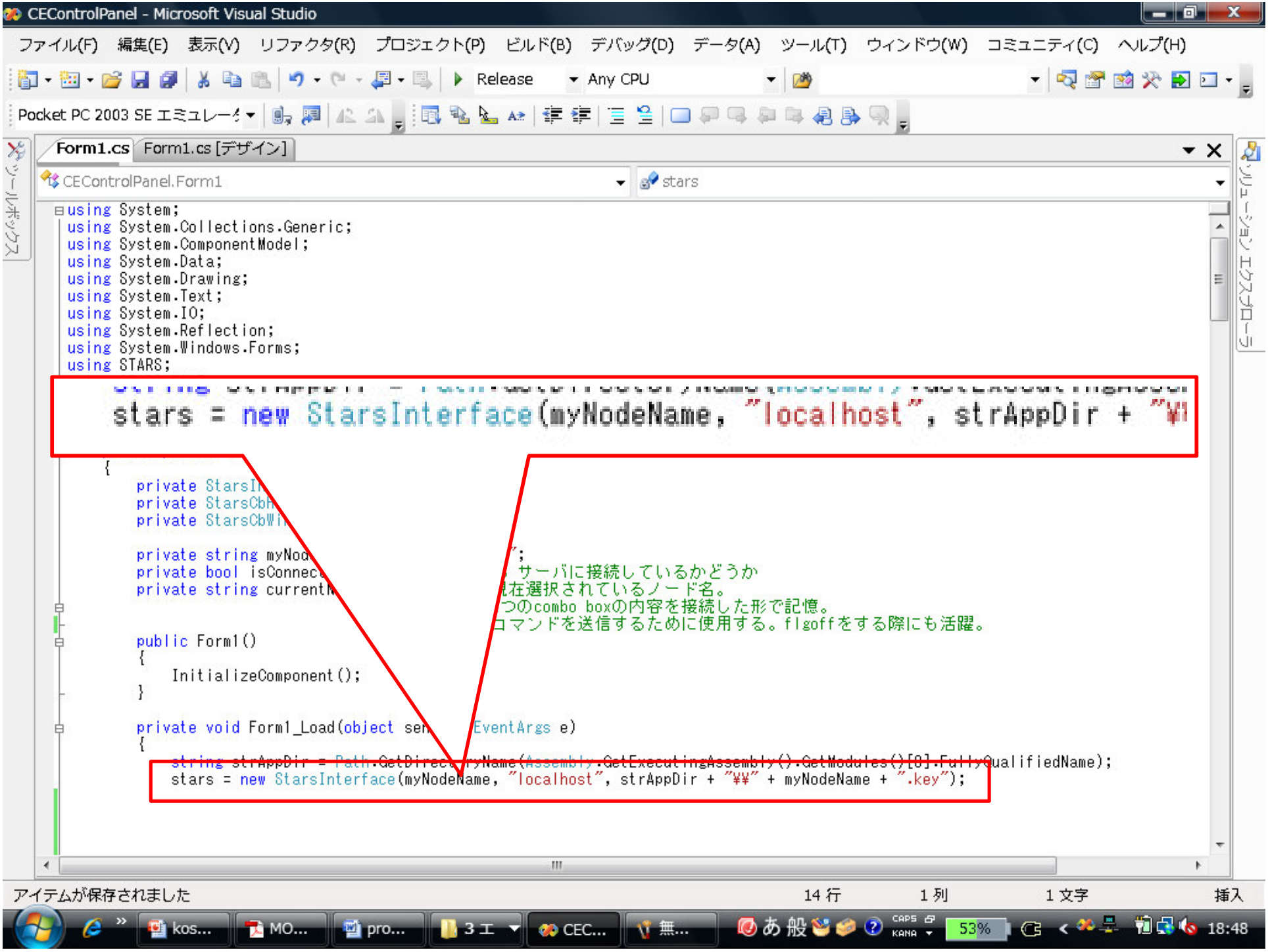

DeviceApplication1 - Microsoft Visual Studio
File Edit View Project Build Debug Data Tools Window Community Help
Debug
Any CPU
Pocket PC 2003 SE Emulator
Toolbox
Form1.cs [Design]
Start Page
Form1
Pocket PC
mainMenu1
Solution Explorer - DeviceApplication1
Solution 'DeviceApplication1' (1 project)
DeviceApplication1
Properties
References
Form1.cs
Program.cs
Creating project 'DeviceApplication1'... project creation successful.

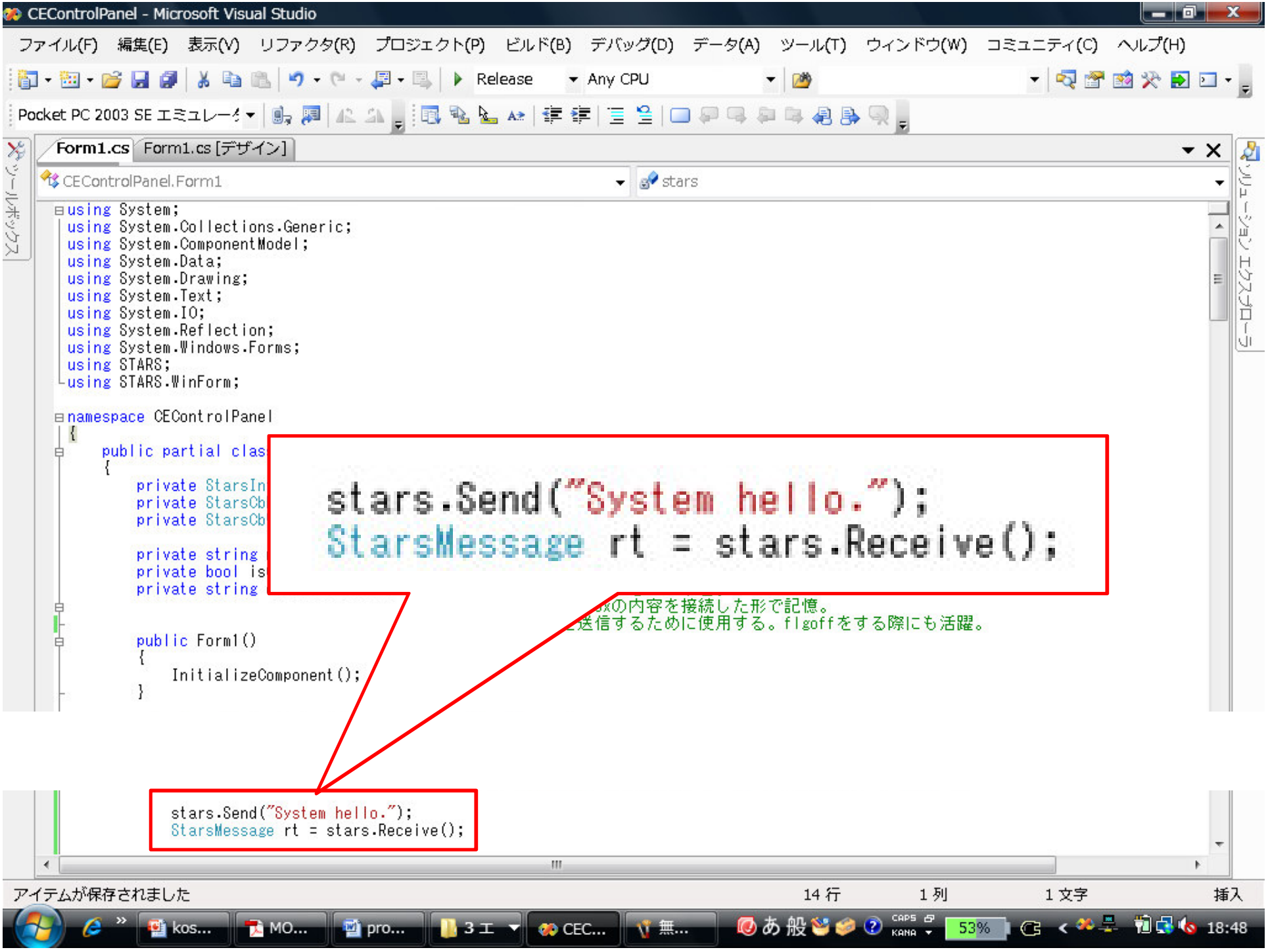

Device Application1
ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)
戻る 検索 フォルダ
アドレス(D) C:¥Documents and Settings¥kosuge¥My Documents¥Visual Studio 2005¥Projects¥Devic
移動
Norton AntiVirus
このフォルダを共有する
その他
DeviceApplication1
マイ ドキュメント
共有ドキュメント
マイ コンピュータ
マイ ネットワーク
詳細
Properties
obj
DeviceApplication1
Visual C# Project file
4 KB
DeviceApplication1.csproj
Visual Studio Project User Optio...
1 KB
Form1.cs
Visual C# Source file
1 KB
Form1.Designer.cs
Visual C# Source file
2 KB
StarsInterfaceWinForm.dll
1.0.3114.26447
StarsInterfaceWinForm
Program.cs
Visual C# Source file
1 KB
StarsInterface.dll
1.0.3114.26446
StarsInterface
For Windows forms
Main part of interface


DeviceApplication1 - Microsoft Visual Studio
File Edit View Project Build Debug Data Tools Window Community Help
Debug
Any CPU
Pocket PC 2003 SE Emulator
Toolbox
Form1.cs [Design]
Start Page
Form1
Pocket PC
mainMenu1
Solution Explorer - DeviceApplication1
Solution 'DeviceApplication1' (1 project)
DeviceApplication1
Properties
References
Form1.cs
Program.cs
Creating project 'DeviceApplication1'... project creation successful.


Add Reference
.NET
Projects
Browse
Recent
ファイルの場所(I):
DeviceApplication1
bin
obj
Properties
StarsInterface.dll
StarsInterfaceWinForm.dll
ファイル名(N):
StarsInterface
ファイルの種類(T):
Component Files (*.dll;*.tlb;*.olb;*.ocx;*.exe)
OK
Cancel
Debug
Form1.cs
Form1.Designer.cs
Program.cs

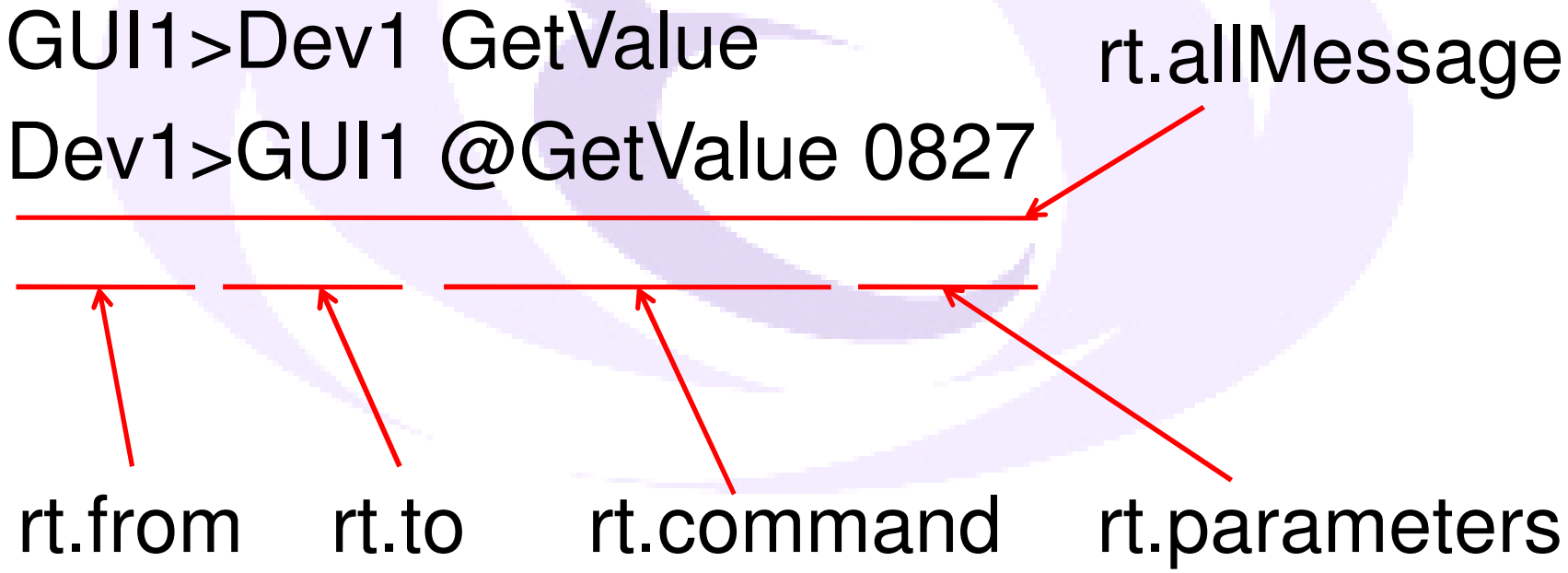

CEControlPanel - Microsoft Visual Studio
ファイル(F) 編集(E) 表示(V) リファクタ(R) プロジェクト(P) ビルド(B) デバッグ(D) データ(A) ツール(T) ウィンドウ(W) コミュニティ(C) ヘルプ(H)
Release
Any CPU
Pocket PC 2003 SE エミュレータ
Form1.cs
Form1.cs [デザイン]
CEControlPanel.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Text;
using System.IO;
using System.Reflection;
using System.Windows.Forms;
using STARS;
using STARS.WinForm;
namespace CEControlPanel
{
public partial class Form1 : Form
{
private StarsInterface stars;
private StarsCbHandler cb;
private StarsCbWinForm cbStars;
private string myNodeName = "CECon
に接続しているかどうか
private bool isConnected = false;
private string currentNodeName = "";
ード名。
//2つのcombo
た形で記憶。
public Form1()
{
InitializeComponent();
}
private void Form1_Load(object sender, E
{
string strAppDir = Path.GetDirectory
stars = new StarsInterface(myNodeNam
using System.Reflection;
using System.Windows.For
using STARS;
using STARS.WinForm;
namespace CEControlPanel
{
private StarsInterface stars;
private StarsCbHandler cb;
private StarsCbWinForm cbStars;
ツールボックス
ソリューション エクスプローラ
アイテムが保存されました
14 行
1 列
1 文字
挿入
kos...
MO...
pro...
3 エ
CEC...
無...
53%
18:48

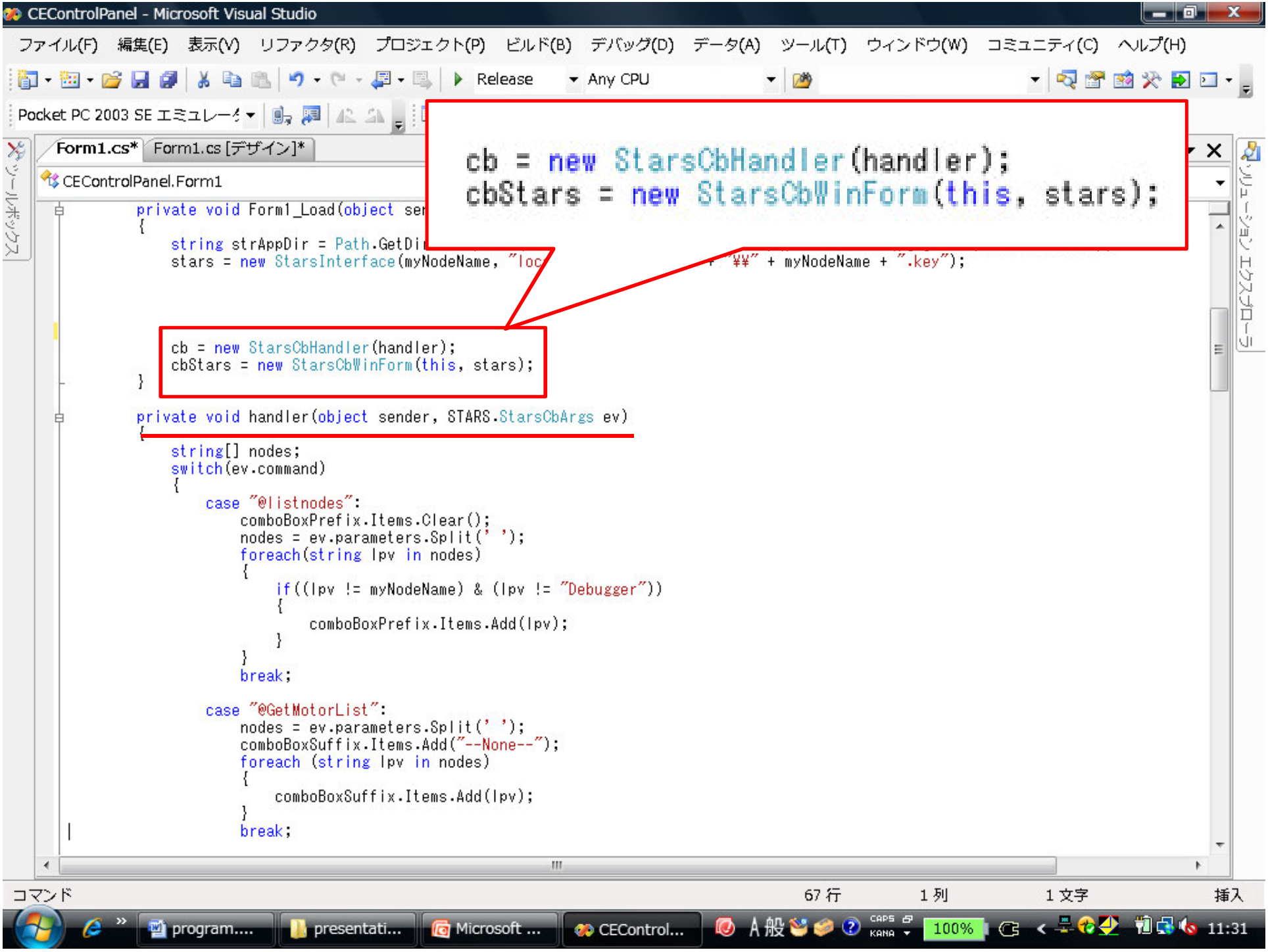

CEControlPanel - Microsoft Visual Studio
ファイル(F) 編集(E) 表示(V) リファクタ(R) プロジェクト(P) ビルド(B) デバッグ(D) データ(A) ツール(T) ウィンドウ(W) コミュニティ(C) ヘルプ(H)
Release
Any CPU
Pocket PC 2003 SE エミュレータ
Form1.cs
Form1.cs [デザイン]
CEControlPanel.Form1
stars
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Text;
using System.IO;
using System.Reflection;
using System.Windows.Forms;
using STARS;
stars = new StarsInterface(myNodeName, "localhost", strAppDir + "¥¥
private string myNod
private bool isConnec
private string currentN
サーバに接続しているかどうか
現在選択されているノード名。
つのcombo boxの内容を接続した形で記憶。
コマンドを送信するために使用する。flgoffをする際にも活躍。
public Form1()
InitializeComponent();
private void Form1_Load(object ser
EventArgs e)
string strAppDir = Path.GetDirectoryName(Assembly.GetExecutingAssembly().GetModules()[0].FullyQualifiedName);
stars = new StarsInterface(myNodeName, "localhost", strAppDir + "¥¥" + myNodeName + ".key");
アイテムが保存されました
14 行
1 列
1 文字
挿入
18:48

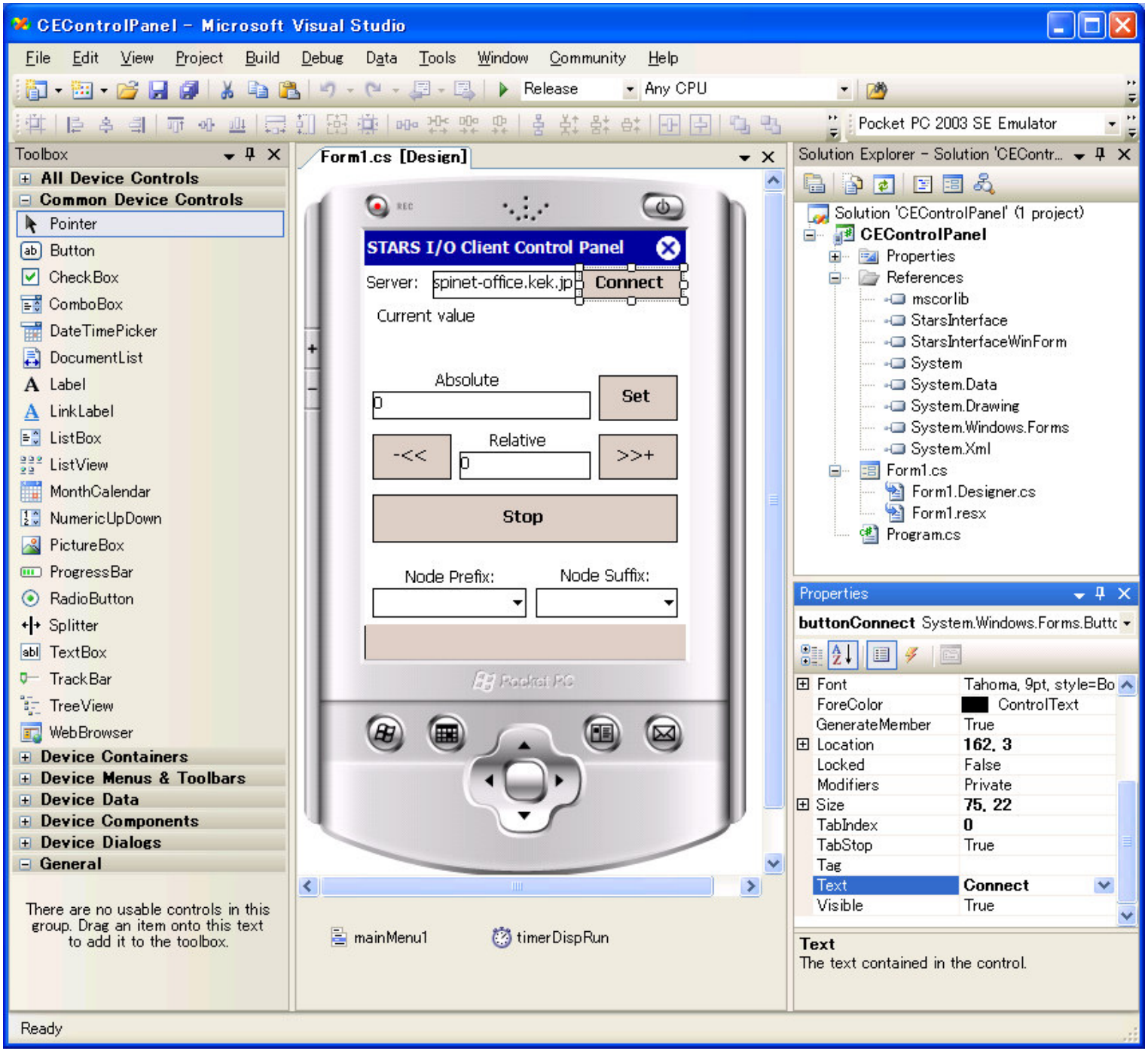

CEControlPanel - Microsoft Visual Studio
ファイル(F) 編集(E) 表示(V) リファクタ(R) プロジェクト(P) ビルド(B) デバッグ(D) データ(A) ツール(T) ウィンドウ(W) コミュニティ(C) ヘルプ(H)
Release
Any CPU
Pocket PC 2003 SE エミュレータ
Form1.cs
Form1.cs [デザイン]
CEControlPanel.Form1
stars
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Text;
using System.IO;
using System.Reflection;
using System.Windows.Forms;
using STARS;
using STARS.WinForm;
namespace CEControlPanel
{
public partial clas
{
private StarsIn
private StarsCb
private StarsCb
private string
private bool is
private string
public Form1()
{
InitializeComponent();
}
stars.Send("System hello.");
StarsMessage rt = stars.Receive();
stars.Send("System hello.");
StarsMessage rt = stars.Receive();
アイテムが保存されました
14 行
1 列
1 文字
挿入
18:48

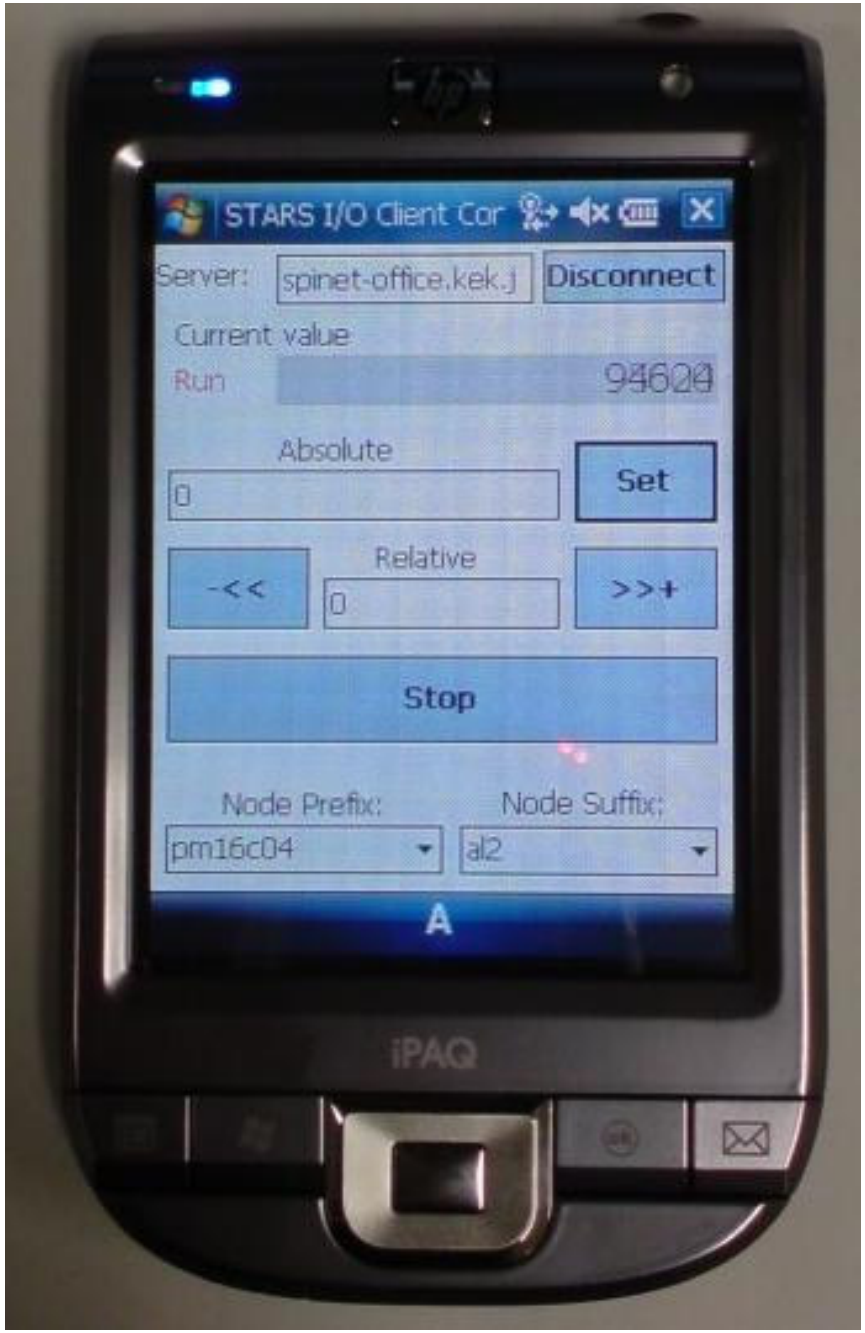
StarsMessage

```
stars.Send("Dev1 GetValue");
StarsMessage rt = stars.Receive();
```




CEControlPanel - Microsoft Visual Studio
ファイル(F) 編集(E) 表示(V) リファクタ(R) プロジェクト(P) ビルド(B) デバッグ(D) データ(A) ツール(T) ウィンドウ(W) コミュニティ(C) ヘルプ(H)
Release
Any CPU
Pocket PC 2003 SE エミュレータ
Form1.cs*
Form1.cs [デザイン]*
CEControlPanel.Form1
cb = new StarsCbHandler(handler);
cbStars = new StarsCbWinForm(this, stars);
private void Form1_Load(object sender, EventArgs e)
{
string strAppDir = Path.GetDirectoryName(Application.ExecutablePath);
stars = new StarsInterface(myNodeName, "localhost", strAppDir + "¥¥" + myNodeName + ".key");
cb = new StarsCbHandler(handler);
cbStars = new StarsCbWinForm(this, stars);
}
private void handler(object sender, STARS.StarsCbArgs ev)
{
string[] nodes;
switch(ev.command)
{
case "@listnodes":
comboBoxPrefix.Items.Clear();
nodes = ev.parameters.Split(' ');
foreach(string lpv in nodes)
{
if((lpv != myNodeName) & (lpv != "Debugger"))
{
comboBoxPrefix.Items.Add(lpv);
}
}
break;
case "@GetMotorList":
nodes = ev.parameters.Split(' ');
comboBoxSuffix.Items.Add("--None--");
foreach (string lpv in nodes)
{
comboBoxSuffix.Items.Add(lpv);
}
break;
ツールボックス
ソリューション エクスプローラ
コマンド
67 行
1 列
1 文字
挿入
program....
presentati...
Microsoft ...
CEControl...
100%
11:31


CEControlPanel - Microsoft Visual Studio
File Edit View Project Build Debug Data Tools Window Community Help
Release
Any CPU
Pocket PC 2003 SE Emulator
Toolbox
All Device Controls
Common Device Controls
Pointer
Button
CheckBox
ComboBox
DateTimePicker
DocumentList
Label
LinkLabel
ListBox
ListView
MonthCalendar
NumericUpDown
PictureBox
ProgressBar
RadioButton
Splitter
TextBox
TrackBar
TreeView
WebBrowser
Device Containers
Device Menus & Toolbars
Device Data
Device Components
Device Dialogs
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Form1.cs [Design]
STARS I/O Client Control Panel
Server:
spinet-office.kek.jp
Connect
Current value
Absolute
Set
Relative
-<<
>>+
Stop
Node Prefix:
Node Suffix:
mainMenu1
timerDispRun
Solution Explorer - Solution 'CEContr...
Solution 'CEControlPanel' (1 project)
CEControlPanel
Properties
References
mscorlib
StarsInterface
StarsInterfaceWinForm
System
System.Data
System.Drawing
System.Windows.Forms
System.Xml
Form1.cs
Form1.Designer.cs
Form1.resx
Program.cs
Properties
buttonConnect System.Windows.Forms.Butto
Font Tahoma, 9pt, style=Bo
ForeColor ControlText
GenerateMember True
Location 162, 3
Locked False
Modifiers Private
Size 75, 22
TabIndex 0
TabStop True
Tag
Text Connect
Visible True
Text
The text contained in the control.
Ready


STARS I/O Client Cor
Server:
spinet-office.kek.j
Disconnect
Current value
Run
94620
Absolute
0
Set
Relative
-<<
0
>>+
Stop
Node Prefix:
Node Suffix:
pm16c04
al2
A
iPAQ

PM16C-04 16CH STEPPING MOTOR CONTROLLER
STARS I/O Client Cor
Server:
spinet-office.kek.j
Disconnect
Current value
12345
Absolute
Set
12345
Relative
-<<
>>+
0
Stop
Node Prefix:
Node Suffix:
pm16c04
dth1
A
iPAQ
I/O
Client
STARS
(Simple Transmission
and
Retrieval System)
Wireless LAN

Conclusion

- We have developed a STARS .NET interface for Windows CE and sufficiently validated its efficiency.
- With this novel interface, the Pocket PC is expected to emerge as a powerful STARS tool.

http://stars.kek.jp/