



<http://unity3d.com>

# Unity + Vuforia SDK



愛迪斯科技 南區互動工程師 鄭博元

[oakley@axis3d.com](mailto:oakley@axis3d.com)



# 教學內容

Vuforia SDK介紹

開發者註冊

申請License Key

建立辨識圖卡

下載套件

Unity+Vuforia SDK 整合

導覽地圖互動



ManyCa



# What's Vuforia SDK?



# Vuforia SDK

The screenshot shows the Vuforia developer website. At the top, there's a navigation bar with links for 'Search', 'Resources', 'Target Manager', and 'Support'. A user profile icon for 'KimAxis' is also present. Below the header, a main banner features a hand holding a smartphone displaying a 3D wireframe model of a dog. The text 'Discover The Power Of The Cloud' and 'Vuforia cloud recognition allows your app to see more than 1 million images' are displayed, along with a 'Learn More' button. Below the banner, there are three main sections: 'Select Real World Objects' (with an icon of a book), 'Design Your Experiences' (with an icon of a smartphone), and 'Build Your App' (with an icon of a wrench). Each section has associated text and a 'Download the SDK' button.

vuforia developer Search Resources Target Manager Support KimAxis

Discover The Power Of The Cloud

Vuforia cloud recognition allows your app to see more than 1 million images

Learn More

Select Real World Objects

Choose Your Targets  
Product packaging, print materials, game boards – there are many real world objects that you can bring to life with your Vuforia app. Get started now!

Create Your Targets  
Vuforia allows you to create Targets either through the Target Manager or the Vuforia Web Services (for Cloud Recognition apps).

Design Your Experiences

Author Compelling Content  
With Vuforia, you are limited only by your imagination. Create immersive 3D experiences with industry leading tools such as Maya, 3ds Max and Blender.

Rework Reimagined  
Why recreate what you already have? Vuforia allows you to re-use all of your existing web content including text, photo slideshows and videos.

Build Your App

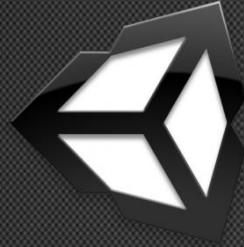
Choose Your Tool and Go!  
Every app has unique requirements. Each developer has his preferred development environment. By supporting multiple tools, Vuforia gives you the flexibility to pick the right tool for the job. Vuforia supports Xcode, Eclipse, and Unity.

Download the SDK

- 高精確率的辨識。
- 號稱可以雲端方式處理100萬的辨識目標。
- 使用者可自行於程式進行中定義新的辨識圖片
- 可針對英文的字母和單字進行字型辨識。
- 最大可同時追蹤並執行5個辨識圖片。

Qualcomm的開發者官網位址，一開始須自行申請免費測試帳號：  
<https://developer.vuforia.com/>





註冊Vuforia開發者



註冊

## Qualcomm® Vuforia™ Developer Portal

[Log In](#) | [Register](#)

[Home](#)   [Pricing](#)   [Downloads](#)   [Library](#)   [Develop](#)   [Support](#)

*April 7, 2015*

### Beyond Mobile: Expanding Vuforia to Digital Eyewear

We're proud to announce that we're extending our Beta program for Digital Eyewear to all developers. Many thanks to those of you who have already provided valuable feedback.

For those of you just starting out with Digital Eyewear, here's what's new!



# 填寫資料

## Qualcomm® Vuforia™ Developer Portal

[Log In](#) | [Register](#)

[Home](#)   [Pricing](#)   [Downloads](#)   [Library](#)   [Develop](#)   [Support](#)

### Register

\* required field

**First Name:** \*

**Last Name:** \*

**Email Address:** \*

This will be your login. It will not be displayed or shared.

**Confirm Email:** \*

Required

到註冊的信箱，進行帳號認證



# 申請License key



# 加入license key

Qualcomm® Vuforia™ Developer Portal

Hello guest | Log Out

Home Pricing Downloads Library **Develop** Support

License Manager Target Manager

## License Manager

Whether you are developing or deploying, you need a license key to use the Vuforia 4.0 SDK.

Add License Key

Name	Plan	SDK	Status	Date Modified
Workshop	None	Mobile	Active	Apr 20, 2015 20:18

要使用之前，一定要先加入一個License Key



# 設定license key名稱與方案

可選擇開發方案，目的是  
移除浮水印或是辨識圖卡  
數量會超過1000筆以上...  
等

測試可以不選用方案，即  
可使用



[Back To License Manager](#)

## Add License Key

**Application Name**

You can change this later

**SDK**

Please select which SDK your app will use

Mobile    Digital Eyewear BETA

**Deployment Plans (optional)**

A deployment plan is required for the following:

- To remove the Vuforia watermark
- To use the cloud recognition service with more than 1,000 recos or more than 1,000 targets
- For internal use apps

Select Plan

App Deployment Plans [FAQ](#)

	Bronze	Silver	Gold	Platinum
Price	\$99/mo	\$399/mo	\$999/mo	Contact Us
Monthly Reco Usage	5,000	25,000	100,000	100,000+
Cloud Targets	100,000			100,000+
Apps for Internal Use	X			✓
Support	Community Forums			Direct

[Next](#)



# 註冊辨識圖卡



# 建立一組辨識資料

Qualcomm® Vuforia™ Developer Portal

Hello guest ~ | Log Out

Home Pricing Downloads Library Develop Support

License Manager Target Manager

## Target Manager

Use the Target Manager to create and manage databases and targets.

Add Database

Database	Application
workshop_test	Workshop

### Create Database

Name:

Type:  Device  Cloud

Workshop (Mobile)

To create a license key please go to the [License Manager](#)

Cancel Create

建立資料，設定資料名稱與類型



# 建立一個辨識圖卡

Qualcomm® Vuforia™ Developer Portal

Hello guest | Log Out

Home Pricing Downloads Library Develop **Support**

License Manager Target Manager

Target Manager > workshop\_test

**workshop\_test** [Edit Name](#)

Type: Device

Application: Workshop [View Reco Usage](#)

Targets (1)

Add Target Action Download Database

Target Name	Type	Rating	Status	Date Modified
 pic	Single Image	★★★★★	Active	Apr 20, 2015 20:20

選擇資料後，新增一個目標



# 建立一個辨識圖卡

1. 選擇目標類型
2. 選擇檔案
3. 設定圖卡寬度
4. 設定名稱
5. 加入

Add Target

Type:

Single Image       Cuboid       Cylinder       3D Object

File:

.jpg or .png(max file size 2mb).

Width:

Enter the width of your target in the scene units. The size of the target shall be on the same scale as your augmented virtual content. The target's height will be calculated automatically when you upload your image.

Name:

Name must be unique to a database. When a target is detected in your application, this will be reported in the API.



# 確認辨識圖卡資訊

星星數量越多，  
越容易被辨識

License Manager    Target Manager

Target Manager > workshop\_test > img

img

Edit Name Remove



Type: Single Image  
Status: Active  
Target ID: 543dd49c2fba46498137bb53b2bc2e1e  
Augmentable: ★★★★★ (highlighted with a red box)  
Added: Apr 20, 2015 20:49  
Modified: Apr 20, 2015 20:49



# 下載辨識圖卡資料

Home Pricing Downloads Library Develop Support

License Manager

Target Manager

Target Manager > workshop\_test

## workshop\_test [Edit Name](#)

Type: Device

Application: Workshop [View Reco Usage](#)

Targets (2)

Add Target

Action ▾

Target Name

img

pic

Type

Single Image

Rating

★★★★★

Status ▾

Active

Date Modified

Apr 20, 2015 20:49

Single Image

★★★★★

Active

Apr 20, 2015 20:20

## 勾選圖卡，並下載

### Download Database

All targets in database will be downloaded

Name:  
workshop\_test

Select a development platform:

SDK (Eclipse, Ant, Xcode, etc.)  
 Unity Editor

Cancel

Download

Download Database



# 下載SDK



# 選擇Unity Extension

**Qualcomm® Vuforia™ Developer Portal**

Home    Pricing    Downloads    Library    Develop    Support

SDK    Samples    Tools    BETA

## Vuforia SDK 4.0

Use the Vuforia SDK to build mobile vision applications for Android and iOS. Apps can be built with Eclipse (Java/C++), XCode (C++) and Unity - the cross-platform game engine.

[Download SDK for Android](#)  
vuforia-sdk-android-4-0-103.zip (6.52 MB)

[Download SDK for iOS](#)  
vuforia-sdk-ios-4-0-103.zip (16.43 MB)

[Download Unity Extension](#)  
vuforia-unity-mobile-android-ios-4-0-105.unitypackage (32.34 MB)

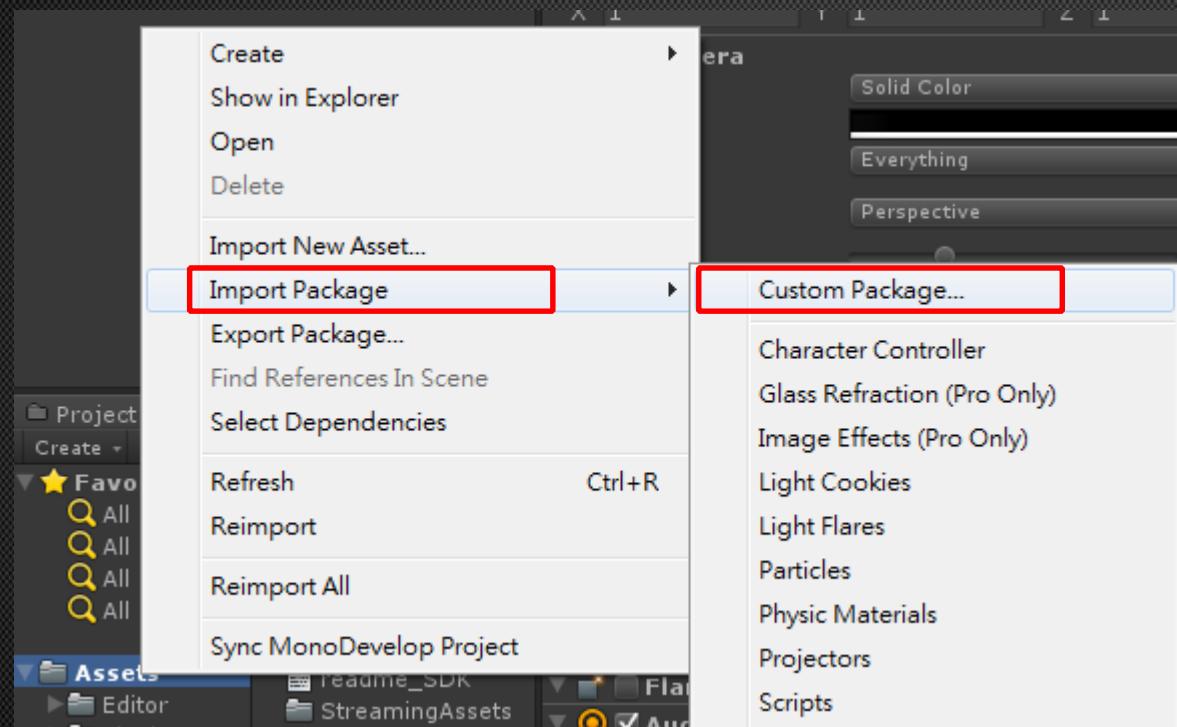
[Release Notes](#)



# 套件匯入



# 匯入套件

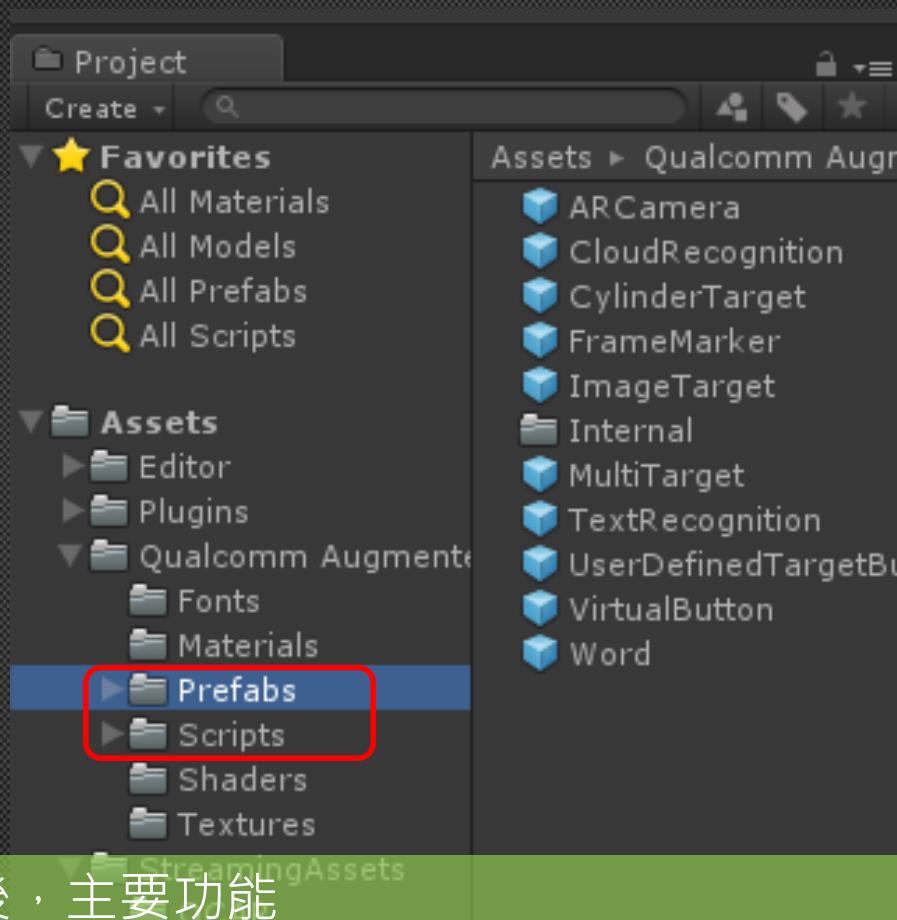


vuforia-unity-mobile-android-ios-4-0-105.unitypackage  
 workshop\_test.unitypackage

新建一個Unity專案，將Vuforia SDK與辨識圖卡套件一起匯入



# Vuforia SDK內容



匯入Vuforia SDK後，主要功能

「Prefabs」資料夾內是放置Qualcomm所有的功能模組。

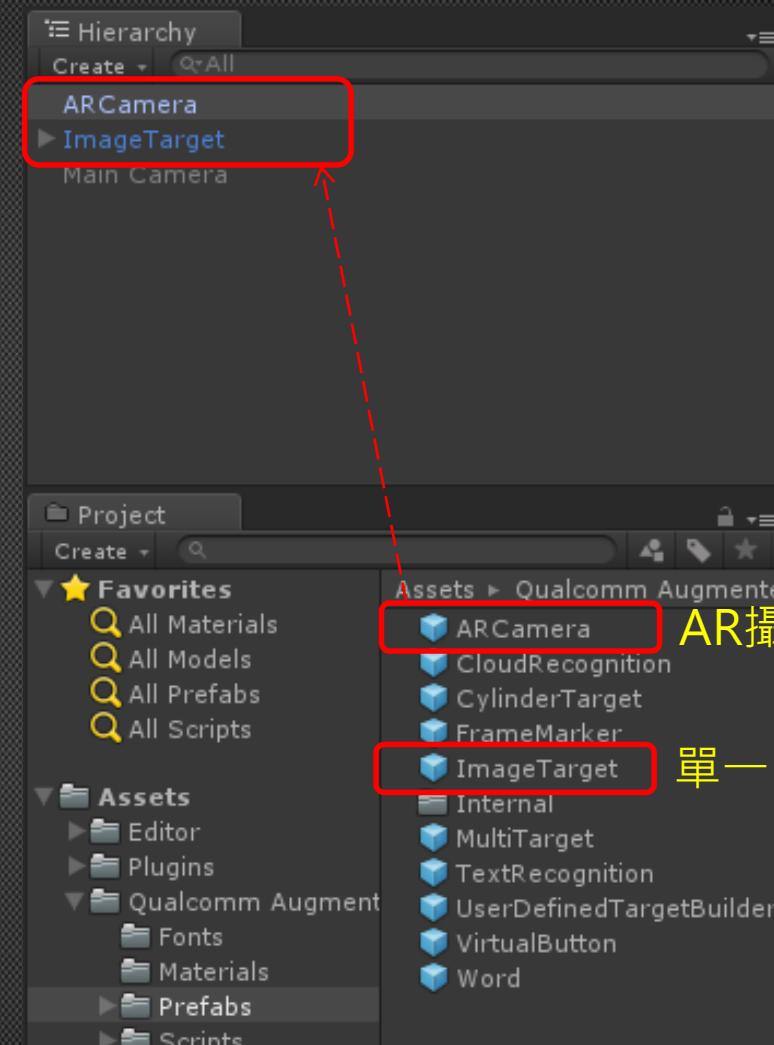
「Scripts」是放置Qualcomm針對使用情況而事先寫好的所有Script。



# 單一圖卡辨識



# 放置AR物件



拖曳ARCamera物件與ImageTarget物件至場景內



# 設定AR攝影機

The screenshot shows the Unity Editor interface with the following details:

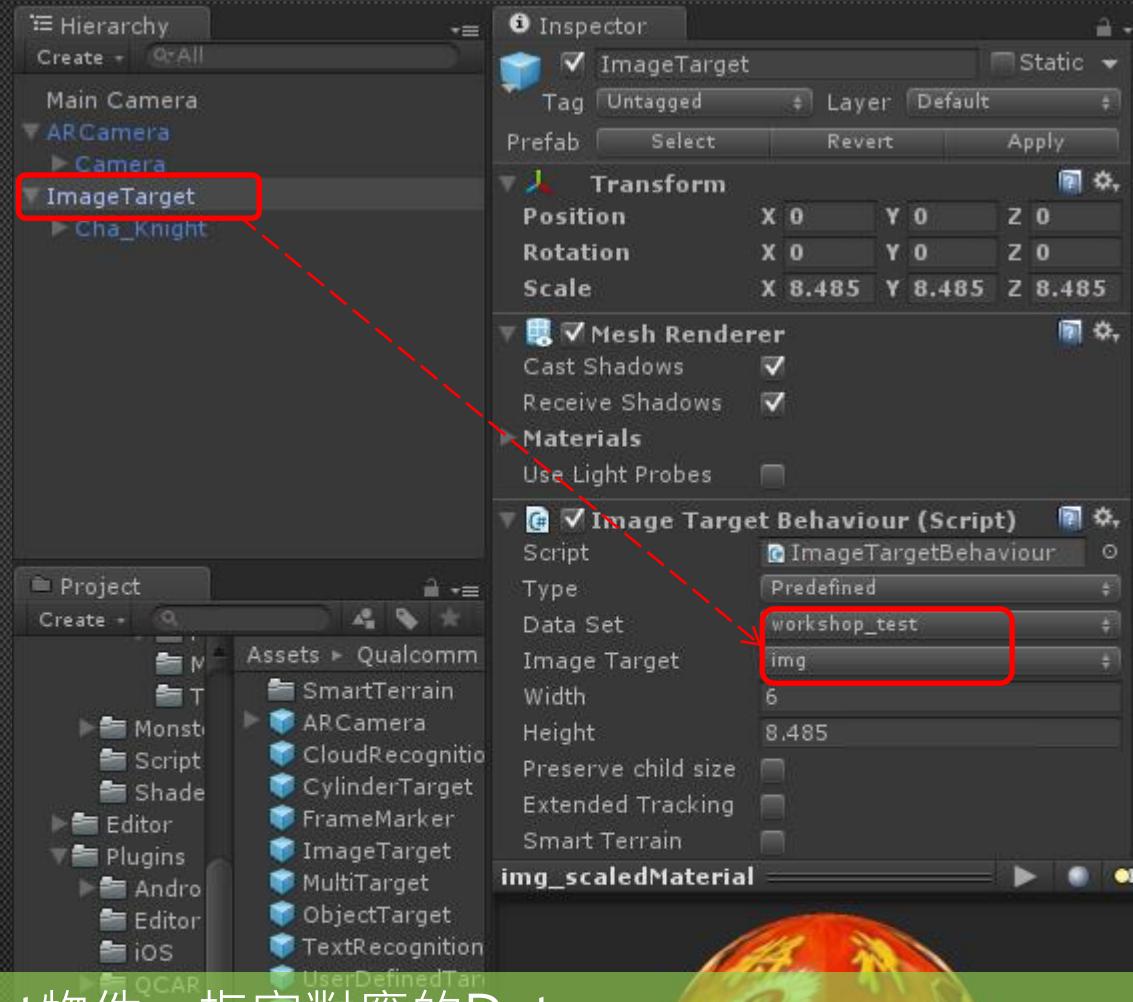
- Hierarchy Panel:** Shows the scene structure with "Main Camera" at the root, followed by "ARCamera", "Camera", "ImageTarget", and "Cha\_Knight". The "ARCamera" node is highlighted with a red box.
- Inspector Panel:** Focuses on the "ARCamera" component.
  - Transform:** Position (X: 200, Y: 600, Z: 100), Rotation (X: 90, Y: 0, Z: 0), Scale (X: 1, Y: 1, Z: 1).
  - Audio Listener:** Enabled (checked).
  - QCARBehaviour (Script):** Enabled (checked).
    - App License Key: 3734c17d7fb24f5eb504faf6671
    - Camera Device Mode: MODE\_DEFAULT
    - Max Simultaneous Targets: 1
    - Delayed Loading Objects: Off
    - Camera Direction: CAMERA\_DEFAULT
    - Mirror Video Background: DEFAULT
    - World Center Mode: FIRST\_TARGET
  - Data Set Load Behaviour (Script):** Enabled (checked).
    - Load Data Set works: checked
    - Active: checked
  - Smart Terrain Tracker Behaviour (Script):** Enabled (checked).
    - Automatic Start: Off
  - Web Cam Behaviour (Script):** Enabled (checked).
    - Play Mode Render View: checked
    - Don't use for Play Mode: Off

輸入License Key  
可回開發者網頁  
取得

載入資料



# 設定辨識圖卡資料



指定辨識圖卡

設定ImageTarget物件，指定對應的Data



# 設定ARCamera

依照需求，調整相關參數

Max Simultaneous Image Targets  
Synchronous Video  
Camera Direction  
Mirror Video Background  
World Center Mode

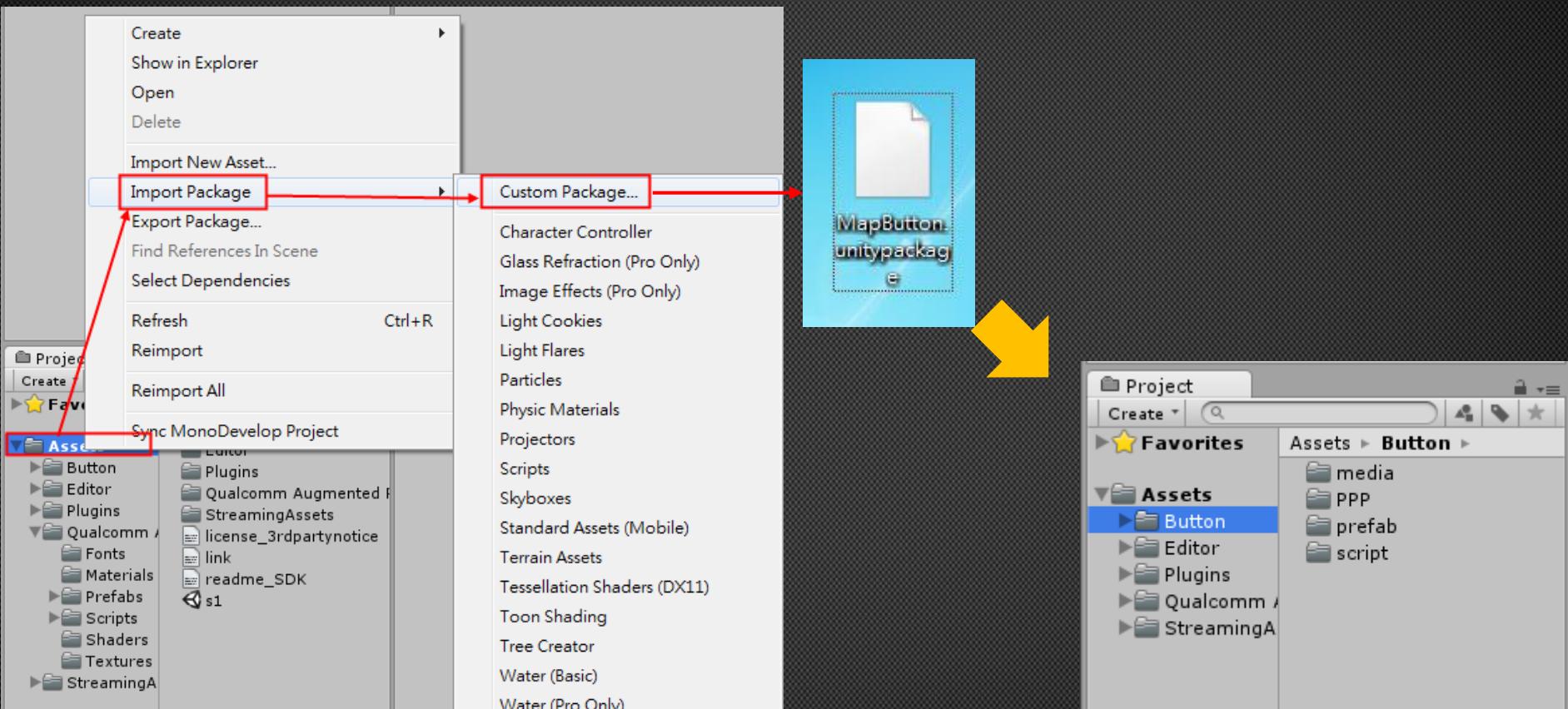
CAMERA\_DEFAULT → 調整攝影機方向  
DEFAULT  
FIRST\_TARGET → 設定世界座標中心



# AR 地圖導覽



# 匯入按鈕物件

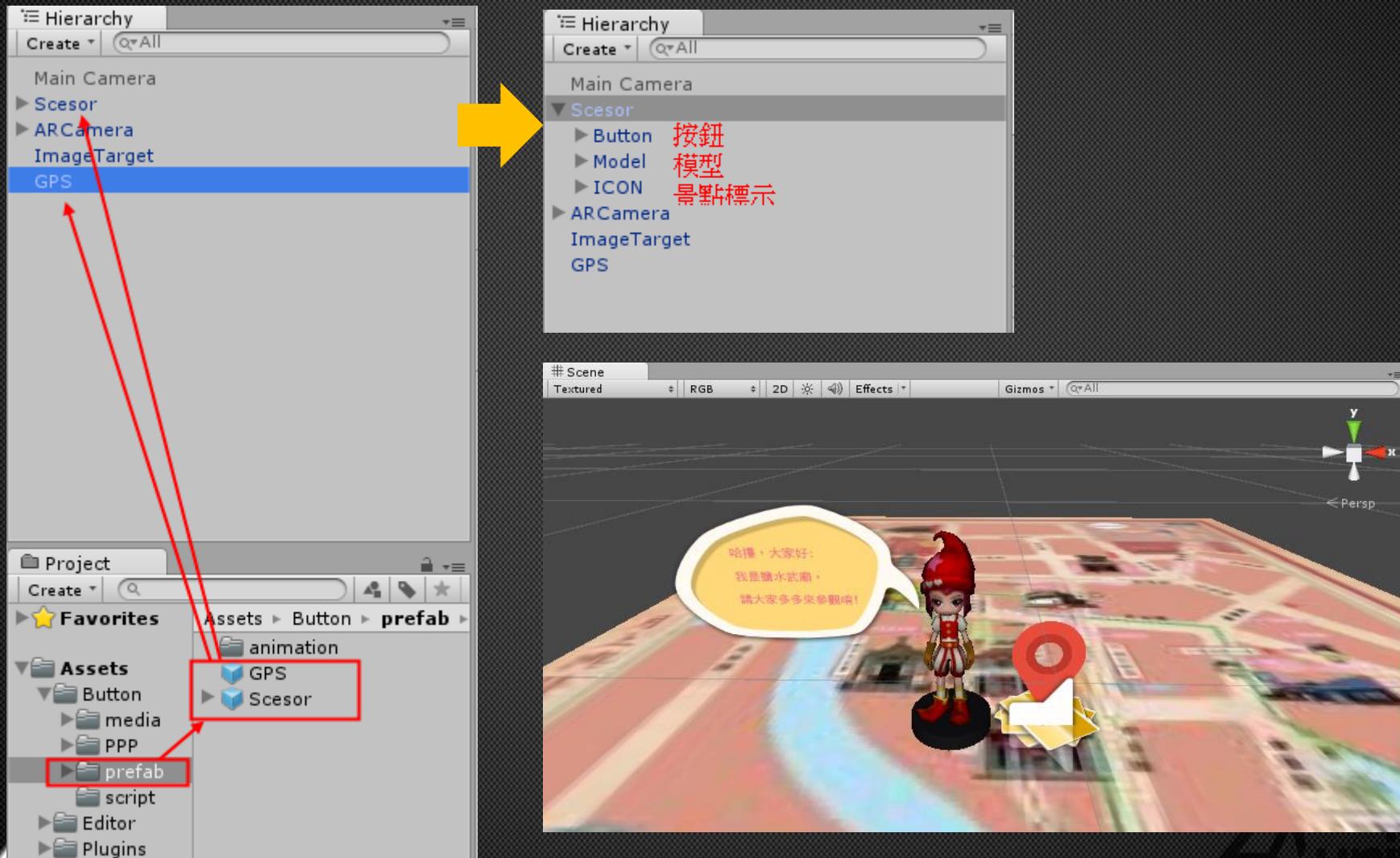


將套件匯入unity專案內





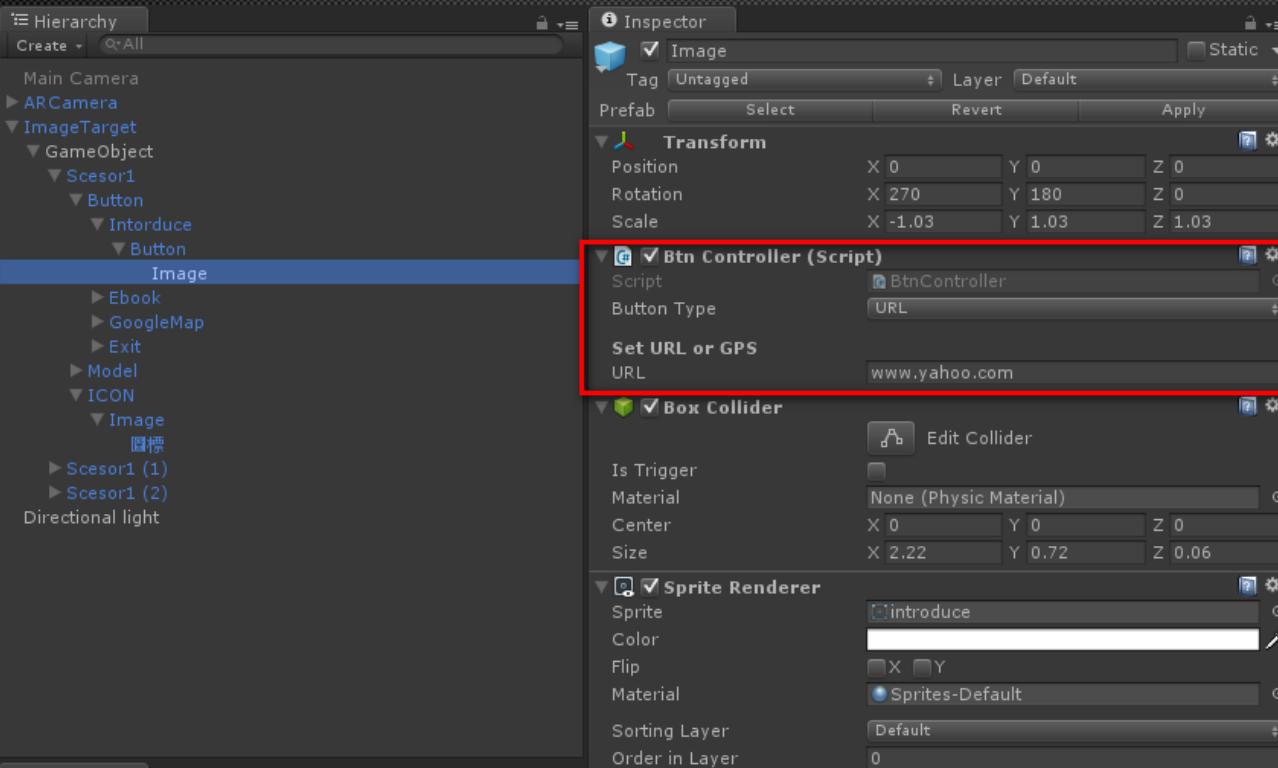
# 套用按鈕物件



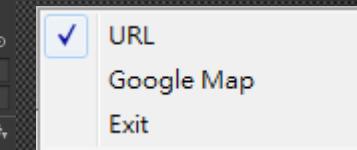
將Prefab物件拖曳至場景內



# 設定按鈕行為



展開按鈕物件，  
可以調整Image  
物件的按鈕行為



網頁  
GPS 導航  
離開



# 設定GPS行為

https://developer.vuforia.com/x M 收件匣 (1,498) - oakley@... 一則 農夫讓牛 的故事 看 專案 - Dropbox 武廟 - Google 地圖

<https://www.google.com.tw/maps/place/武廟/@23.3238234,120.2657785>

1. 開啟google map

2. 輸入景點名稱

3. 複製GPS座標

4. 貼到按鈕行為上

鹽水武廟

搜尋附近地區：飯店-餐廳

武廟  
737臺南市鹽水區武廟路87號  
規劃路線 儲存  
06 652 1264

街景服務 12 張相片  
4.8 ★★★★★ 22 篇評論 · 觀光景點  
撰寫評論 · 新增相片  
提出修改建議 · 您就是業主嗎？

Hierarchy

- Main Camera
- Scesor
  - Button
    - Introduce
      - Button
      - Image
    - Ebook
    - GoogleMap
      - Button
      - Image
    - Exit
    - 05button
    - 06button
    - 07button
  - Model
    - C001\_Char
    - Dialog
    - ICON
  - ICON

Project

- Favorites
- Assets
  - Button
    - media
  - Materials
  - PPP
  - prefab
  - script
  - Editor

Assets > Button > media

- dialog
- introduce 1
- introduce 2
- introduce 3
- introduce 4
- introduce 5
- map
- map\_icon

Inspector

Tag Untagged Layer Default

Prefab Select Revert Apply

Position X 0 Y 170 Z 0

Rotation X 0 Y 180 Z 0

Scale X 0.09 Y 0.09 Z 0.09

Mesh Plane

Mesh Collider Convex

Smooth Sphere Colli

Mesh Plane

Mesh Renderer

Cast Shadows

Receive Shadows

Materials

Size 1

Element 0 introduce 3

Use Light Probes

Bn Controller (Script)

Script BtnController

Button Type Google Map

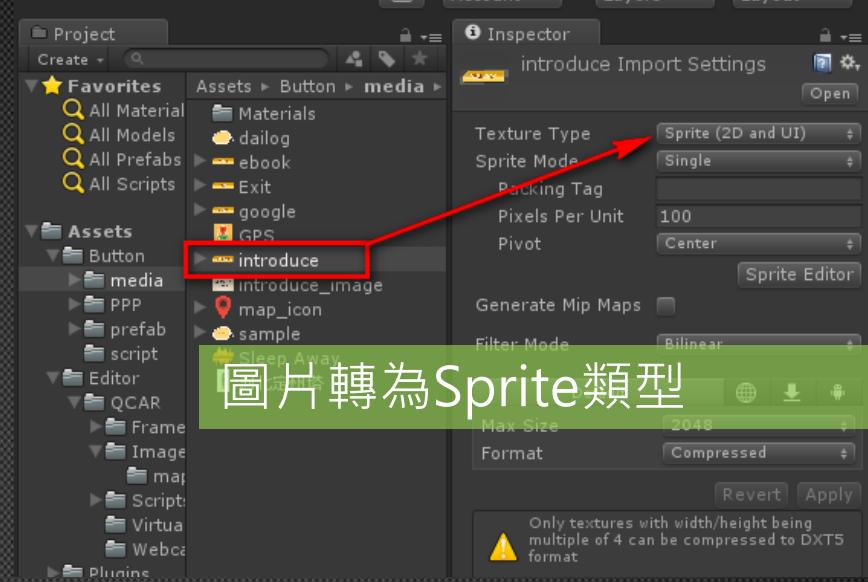
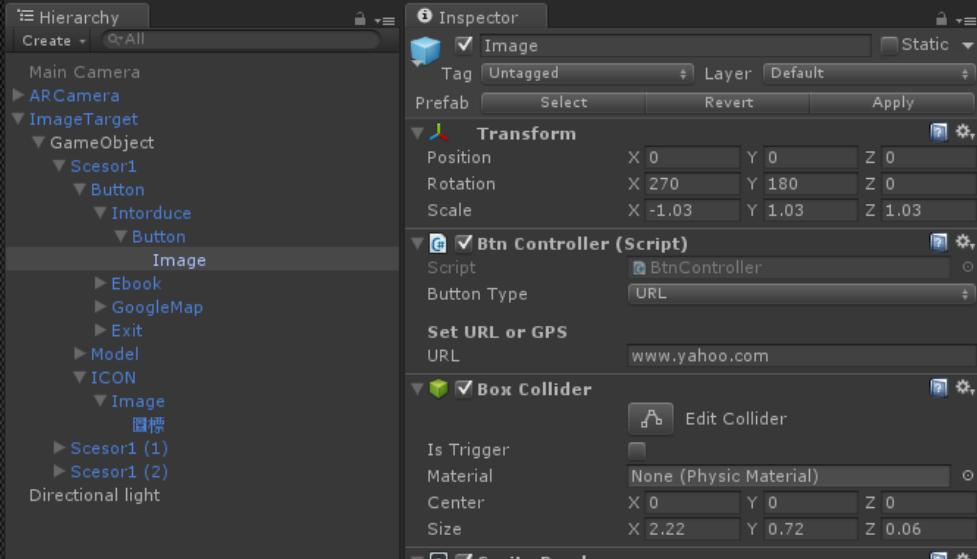
Set URL or GPS

URL 23.3238234,120.26577

Noris 3D TECHNOLOGY

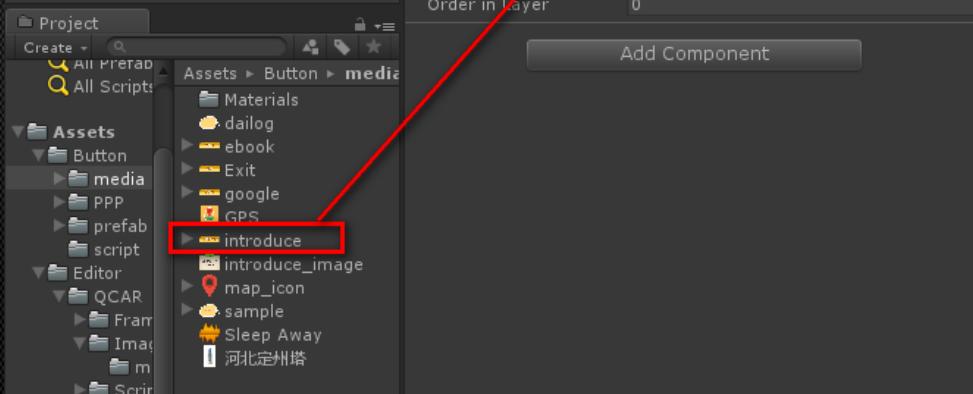


# 替換按鈕圖片



1.點選按鈕

2.拖曳圖片給Sprite Render

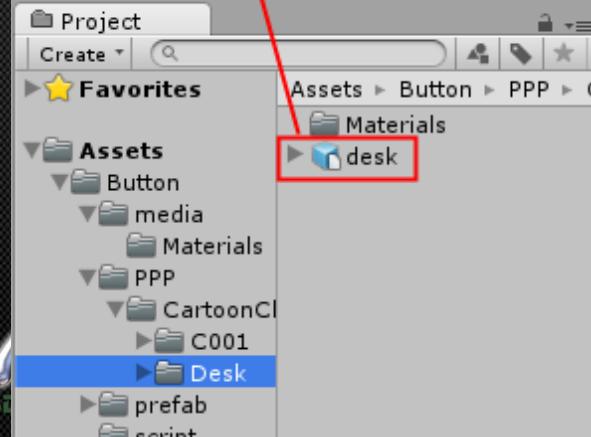




# 加入模型



# 加入新模型





# 設定對話框圖案



The screenshot shows the Unity Editor interface with three main panels:

- Hierarchy Panel:** Shows the project structure with objects like Main Camera, ARCamera, ImageTarget, Game Object (Scesor1), and Dialog.
- Project Panel:** Shows the Assets folder structure. A red box highlights the "Dialog" object in the Hierarchy panel, and a red arrow points from it to the "sample" sprite in the Project panel. The Project panel also lists other assets such as Materials, Models, Prefabs, Scripts, and various image files.
- Inspector Panel:** Shows the properties of the selected "Dialog" object. The "Sprite Renderer" component is selected, with the "Sprite" field set to "sample". Other settings include Position (-2.155, 1.502, 0), Rotation (0, 0, 0), Scale (0.7429, 0.7939, 0.7429), and Order in Layer (0).

將圖片拖曳到Dialog裡的  
Sprite Render上



# 替換景點標示



# 設定套用材質球

The screenshot shows the Unity Editor interface. The left side is the Project panel, which lists various assets like Main Camera, ARCamera, ImageTarget, GameObject, Scesor1, Button, Introduce, Image, Ebook, GoogleMap, Exit, Model, ICON, and Image. The 'Icon' tab is highlighted with a blue bar at the bottom. The right side is the Inspector panel, which shows the properties for a selected object. In the Assets list under 'Assets/Button/media', there is a folder named 'introduce\_image' containing a file named 'map\_icon'. The Inspector panel shows the 'Transform' and 'Sprite Renderer' components. The 'Sprite' field in the 'Sprite Renderer' component is set to 'map\_icon'. A red arrow points from the 'Icon' tab in the Project panel to the 'map\_icon' file in the Assets list. Another red arrow points from the 'map\_icon' file in the Assets list to the 'Sprite' field in the Inspector panel.

## 1. 開啟ICON物件

## 2. 設定圖標物件的貼圖

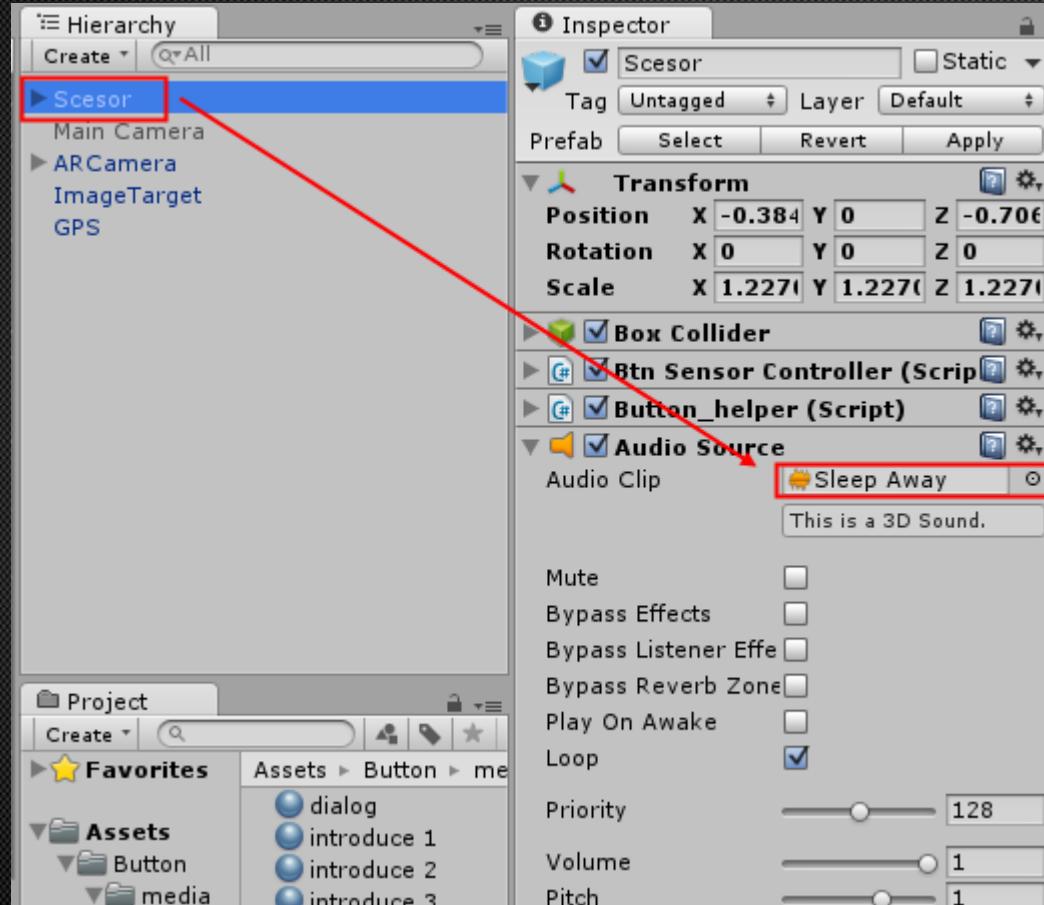




# 設定景點導覽聲音



# 設定景點導覽語音片段



1.先匯入.mp3格式檔案

2.點選Sensor物件

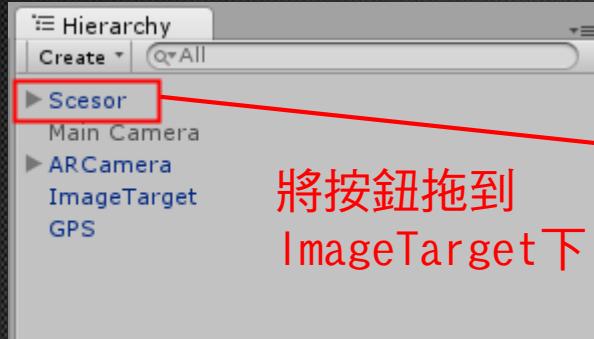
3.替換Audio Source音效



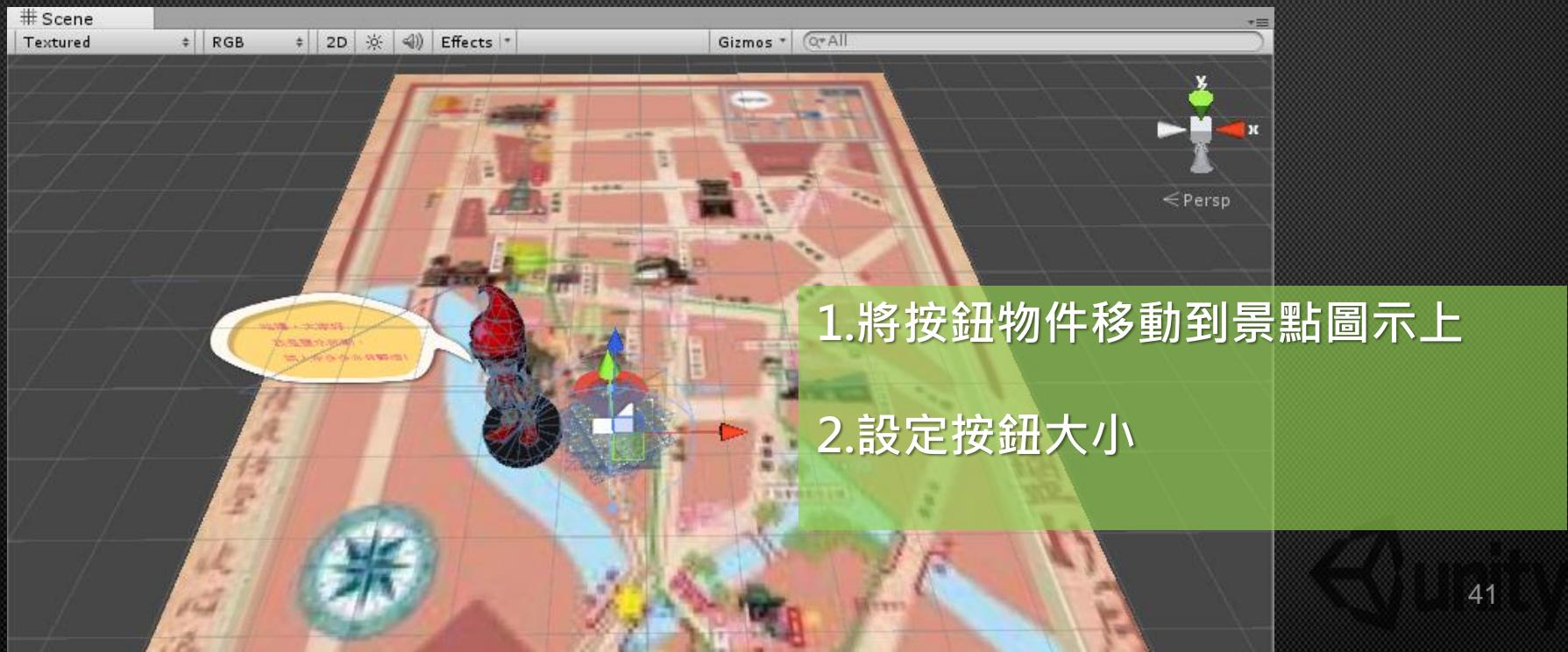
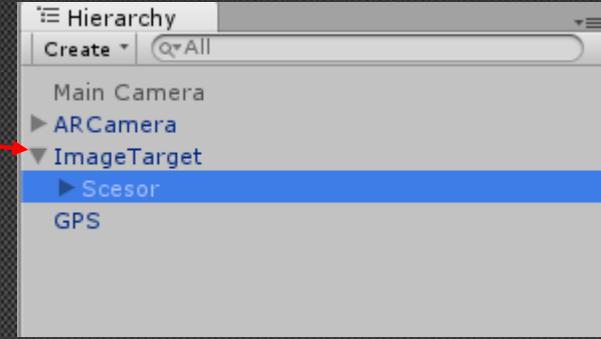
# AR景點設定



# 設定AR地圖上的按鈕



將按鈕拖到  
ImageTarget下



1. 將按鈕物件移動到景點圖示上

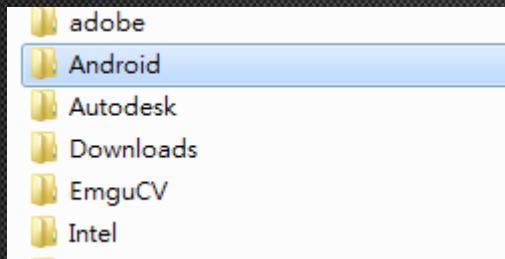
2. 設定按鈕大小

# 多平臺發佈介紹

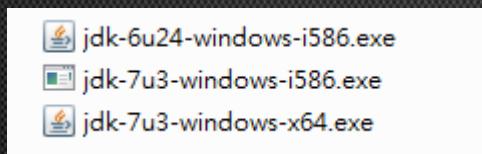


# Android遊戲發佈(1)

- 將Android SDK資料放在C碟內

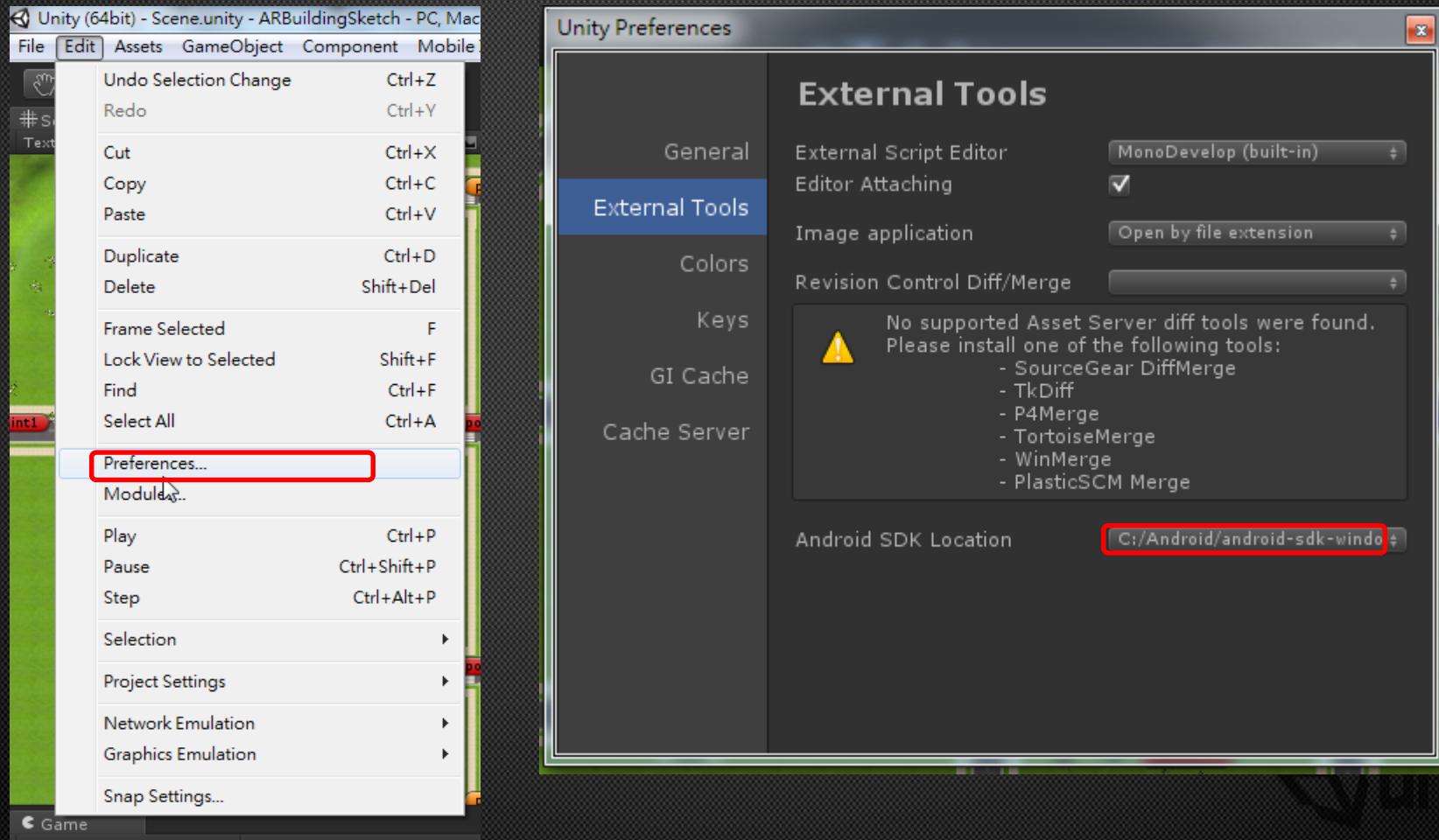


- 安裝JDK



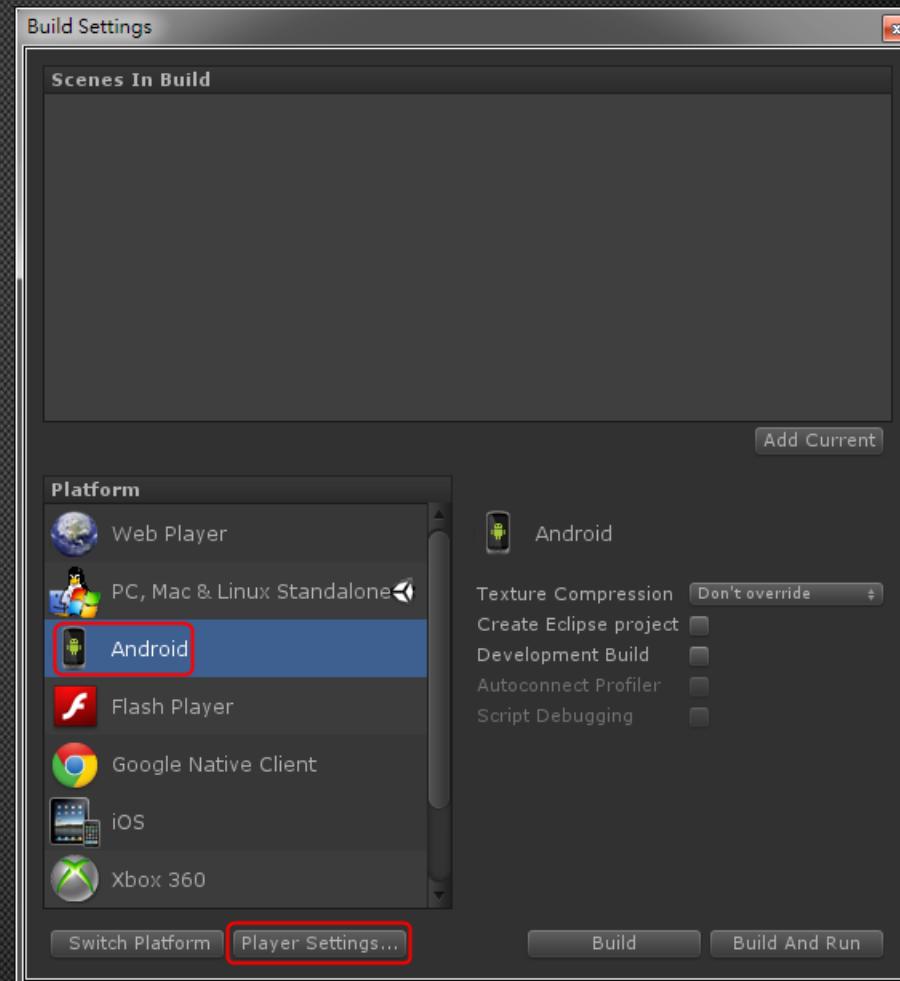
# Android遊戲發佈(2)

- 需安裝Android SDK。



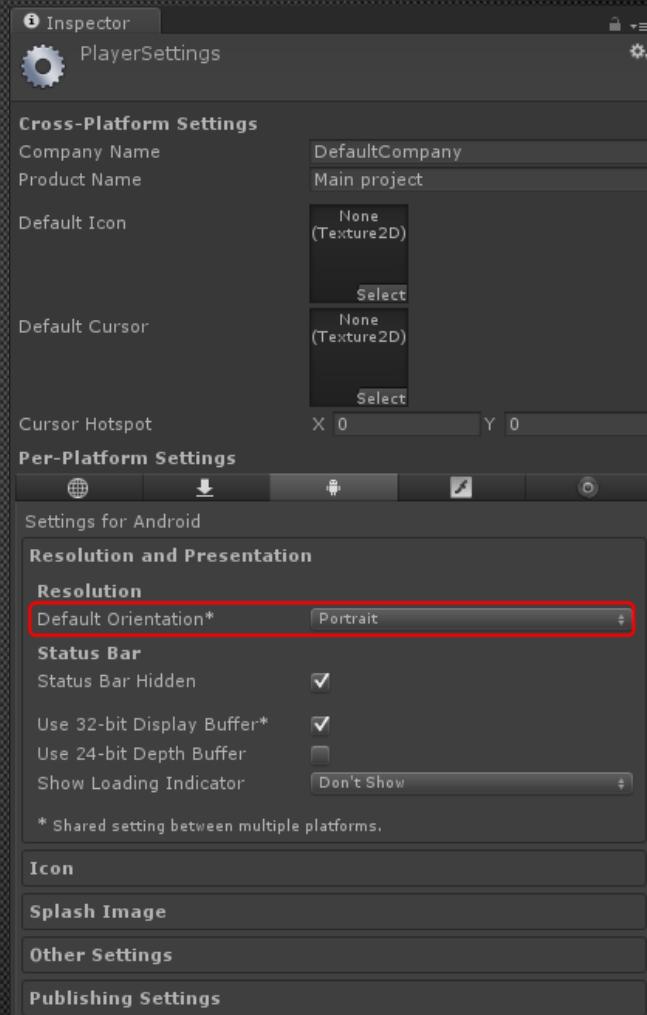
# Android遊戲發佈(3)

- 切換為 Android 平台



# Android遊戲發佈(4)

- 設定畫面的擺放方式。

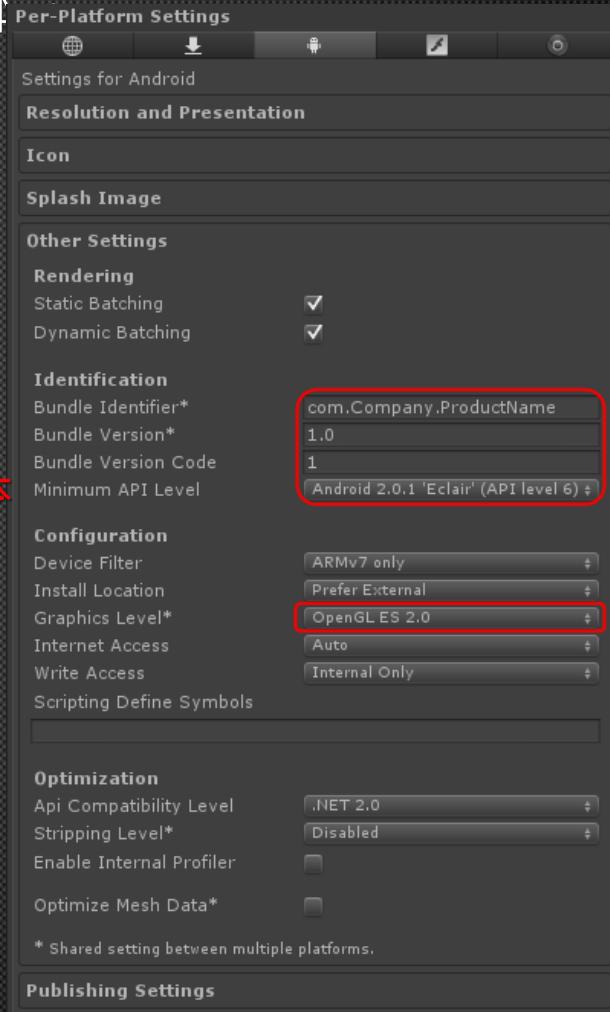


# Android遊戲發佈(5)

- 設定詳細的APK資料，最後匯出APK Debug版本

設定Bundle ID  
設定APK版本  
設定最低系統版本

設定特效版本





謝謝指教