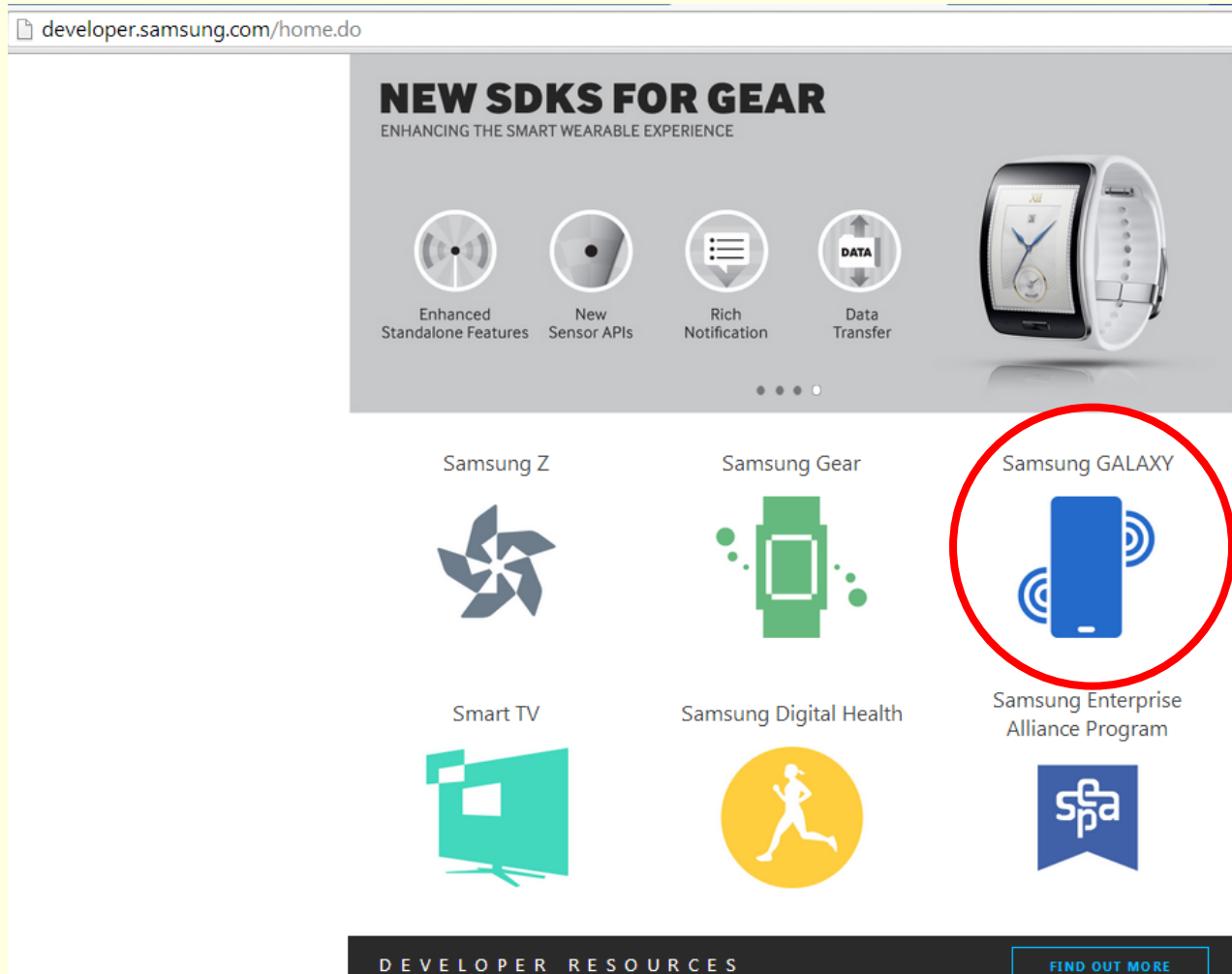


SAMSUNG MOBILE SDK OVERVIEW

Instructor: Nguyễn Kiêm Hùng

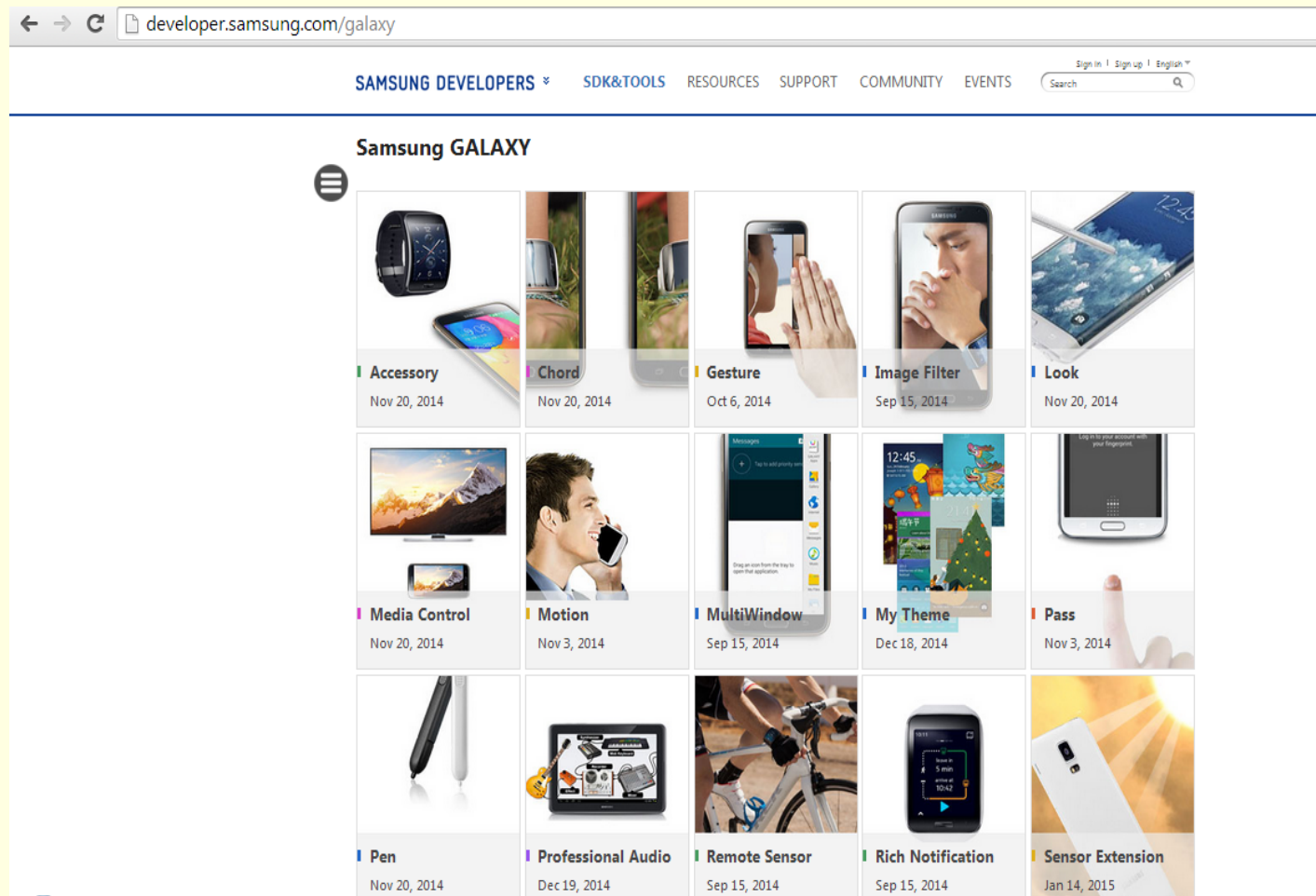
SAMSUNG DEVELOPER

- <http://developer.samsung.com/>



SAMSUNG GALAXY

- <http://developer.samsung.com/galaxy>



SAMSUNG GALAXY

■ Samsung SDK Packages

- ❖ **Accessory:** Connect accessory devices to Samsung smart devices
- ❖ **Chord:** Share content between devices in the same subnet
- ❖ **Gesture:** Use events generated by hand gestures in front of devices
- ❖ **Image Filter:** Various types of filters for processing your images and applying various effects
- ❖ **Look:** Specialized widgets for extended functions for the Android View System
- ❖ **Media Control:** Share videos, music and photos between network devices
- ❖ **Motion:** Collect motion information from device and use it in your application
- ❖ **MultiWindow:** Run multiple resizable applications simultaneously
- ❖ **My theme:** Design your own themes and sell it on Galaxy Apps
- ❖ **Pass:** Use fingerprint recognition features in your application
- ❖ **Pen:** Develop applications such as S Note, that use handwritten input
- ❖ **Professional Audio:** Create virtual instrument applications with Android
- ❖ **Remote Sensor:** Collect remote Sensor data, such as a pedometer data
- ❖ **Rich Notification:** Away for developers to reach users with a minimal amount of effort
- ❖ **Sensor Extension:** Use sensors which are not supported by Android
- ❖ **Visual View:** Add various animation effects to your applications

SAMSUNG GALAXY

- Each SDK package includes the following contents:

Contents	Description
Libraries	jar or .so library files to use APIs of the SDK.
Documents	The Javadoc API reference and programming guide for instructions on how to install and develop applications with the SDK.
Sample applications	Sample applications to show how to use APIs in the SDK.
Tools	Tools to help the application development with the SDK



Libraries



Documents



Sample applications



Tools

SAMSUNG GALAXY

■ Type 1

- ❖ Including: *Pen, ImageFilter, Chord, Visual View, etc.*
- ❖ No special requirement other than API level.

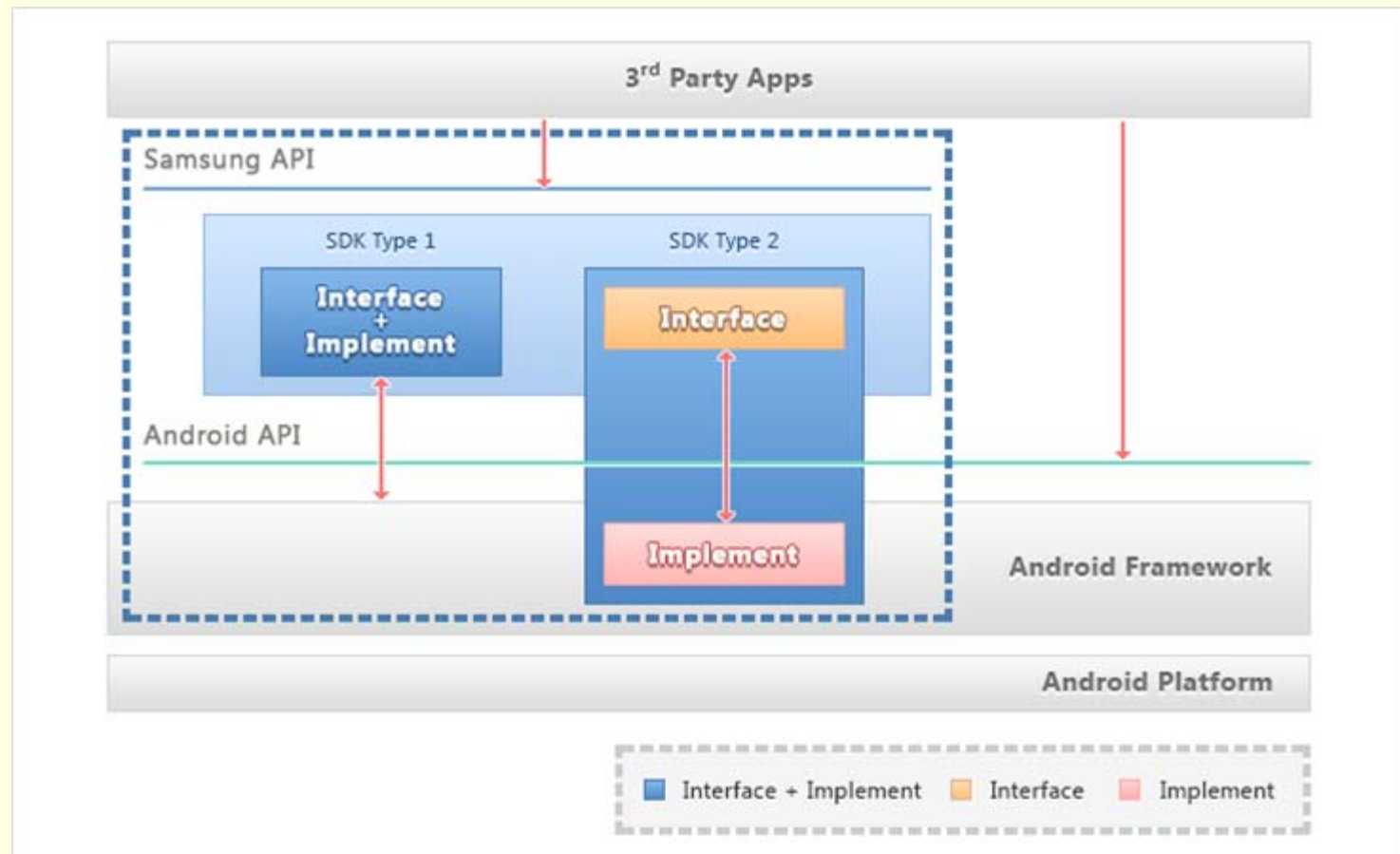
■ Type 2

- ❖ Including: *MultiWindow, Gesture, Motion, MediaControl, Pass, etc.*
- ❖ Require hardware or software support enabled on device.
- ❖ E.g. *Air Gestures* are available only on devices with the *Gesture Sensor*

UX	Image Filter	Look	MultiWindow	My Theme	Pen	Visual View
Wearable	Accessory	Remote Sensor	Rich Notification			
Sensor	Motion	Gesture	Sensor Extension		Security	Pass
Connectivity	Chord	Media Control			Audio	Professional Audio

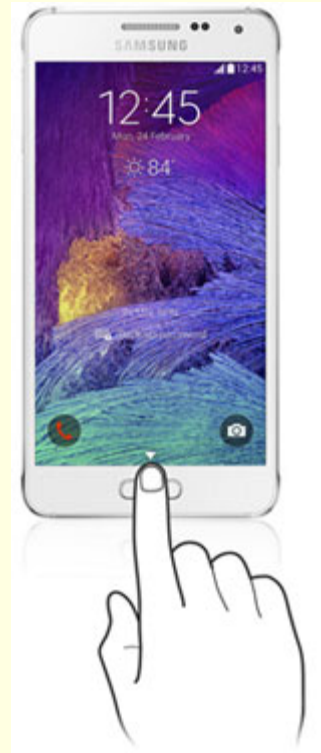
SAMSUNG GALAXY

- **Samsung SDKs located at the top and bottom of the Android API**
 - Type 1: Available for all Samsung devices
 - Type 2: Unavailable for some Samsung devices.



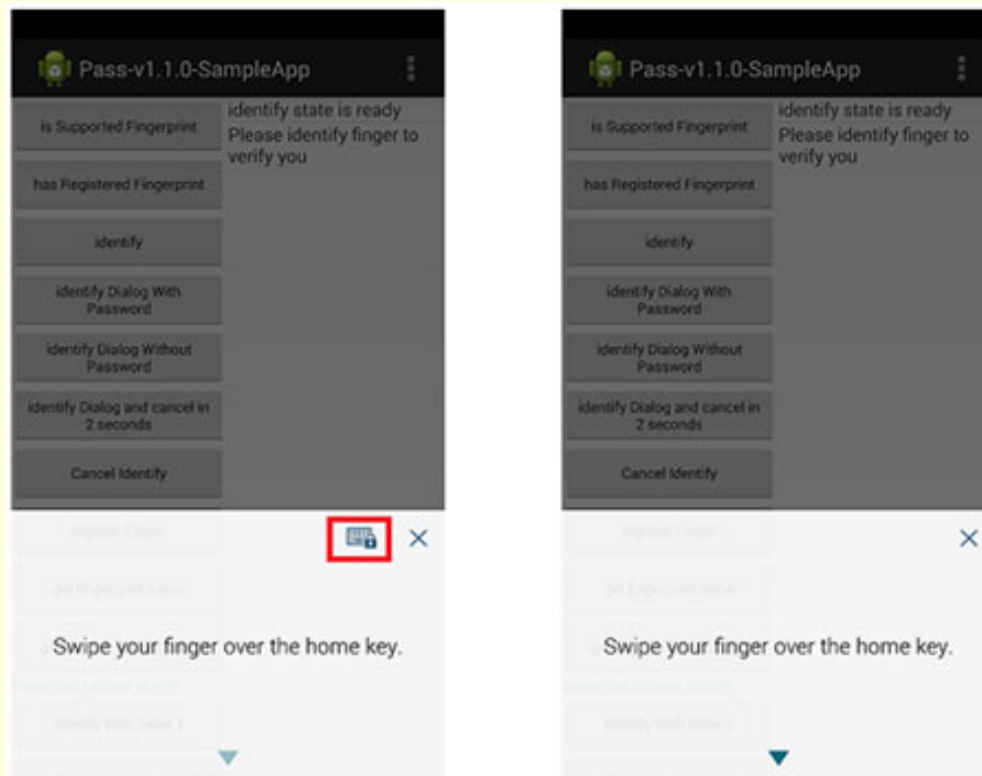
PASS SDK

- **Allows you to use fingerprint recognition features in your application**
 - Provide reinforced security.
- **Requirements:**
 - Devices with Android 4.2 Jelly Bean (API level 17) or higher support Pass
 - Requires Fingerprint sensor (Only supported by device with Fingerprint sensor)



PASS SDK

- Can use a default or customized user interface (UI) for fingerprint recognition
- fingerprint recognition UI is available with or without a Password button.



PEN SDK

- S PEN is a new type of input device available on Note range of devices.
- Requirements:
 - Devices with Android 4.0 Ice Cream Sandwich (API level 14) or higher support Pen.
 - Between minimum resolution of 480x800 and maximum resolution of 1600x2580 are supported.
 - Some functions such as writing pressure or hover can be limited if Pen is not used.



PEN SDK

- allows you to develop applications, such as S Note, that use handwritten input
- uses a pen, finger or other kinds of virtual pens for input

Advantages of S Pen

1

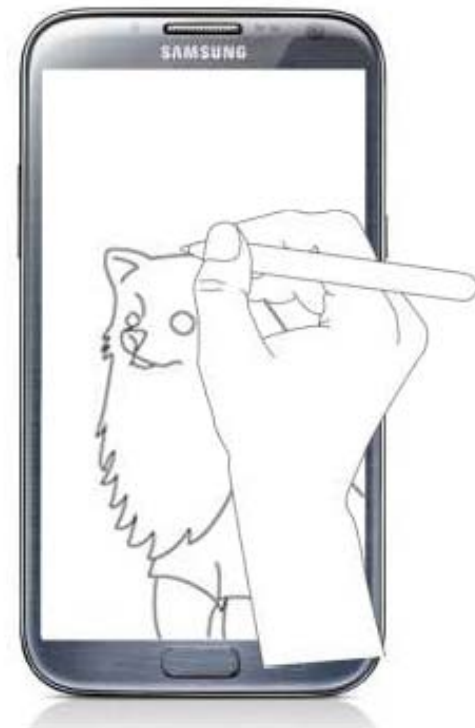
Precise and quick response
Supports pen pressure

2

No power consumption
Lightweight hardware

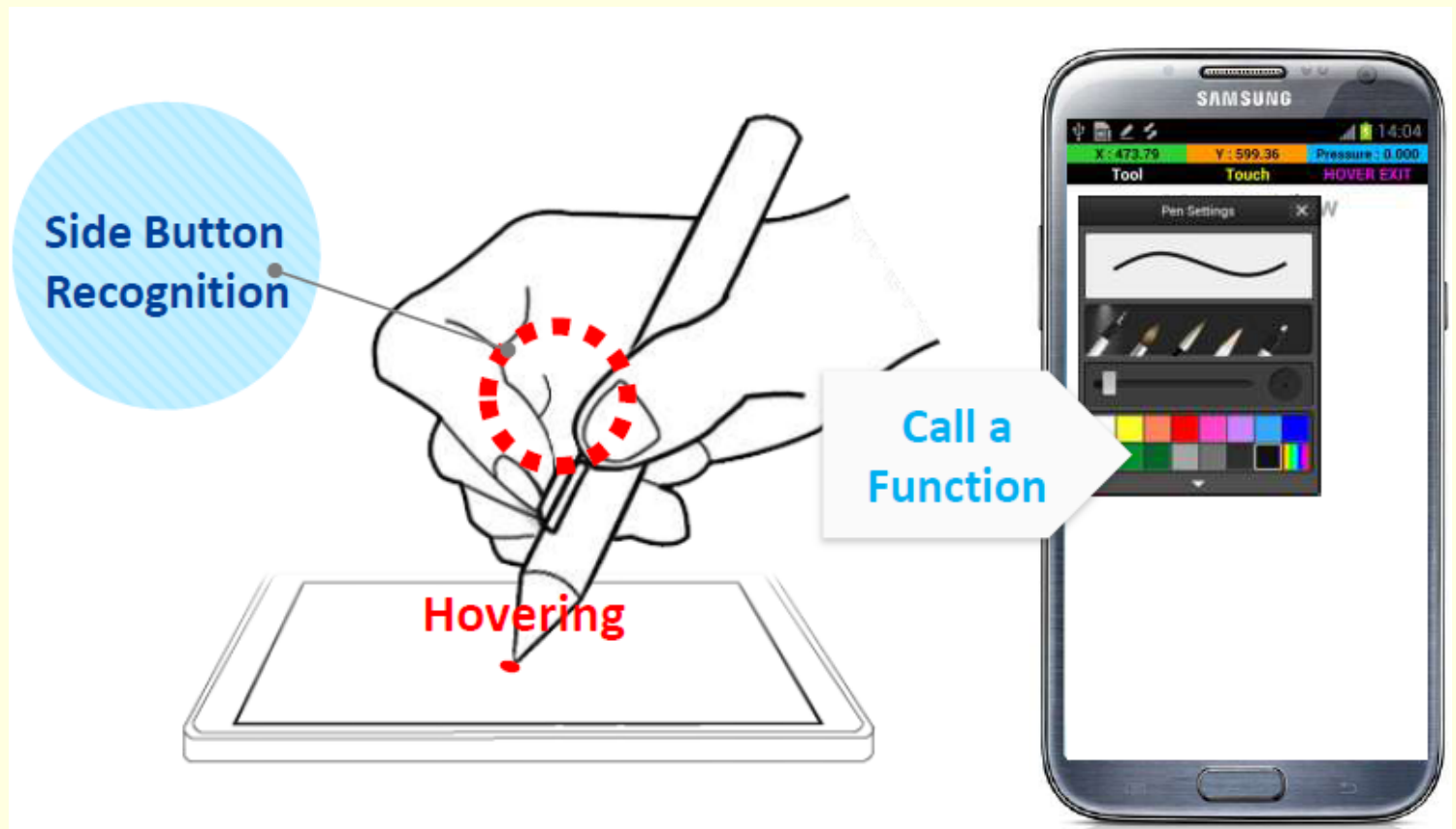
3

Side button, pen hovering
→ A new UX



PEN SDK

- What's the Benefit?
 - Recognize the side button with or without contact.



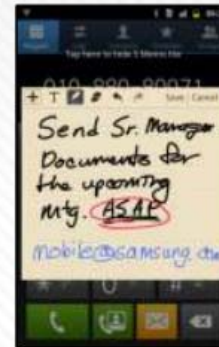
PEN SDK

■ Some use cases

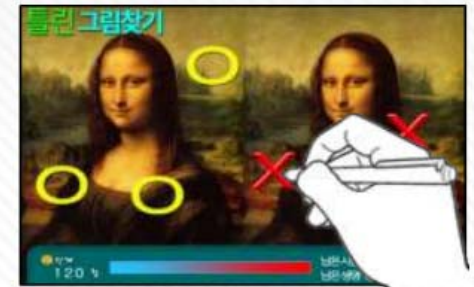
Graphics



Memo & Planner



Game



SNS



Education



B2B



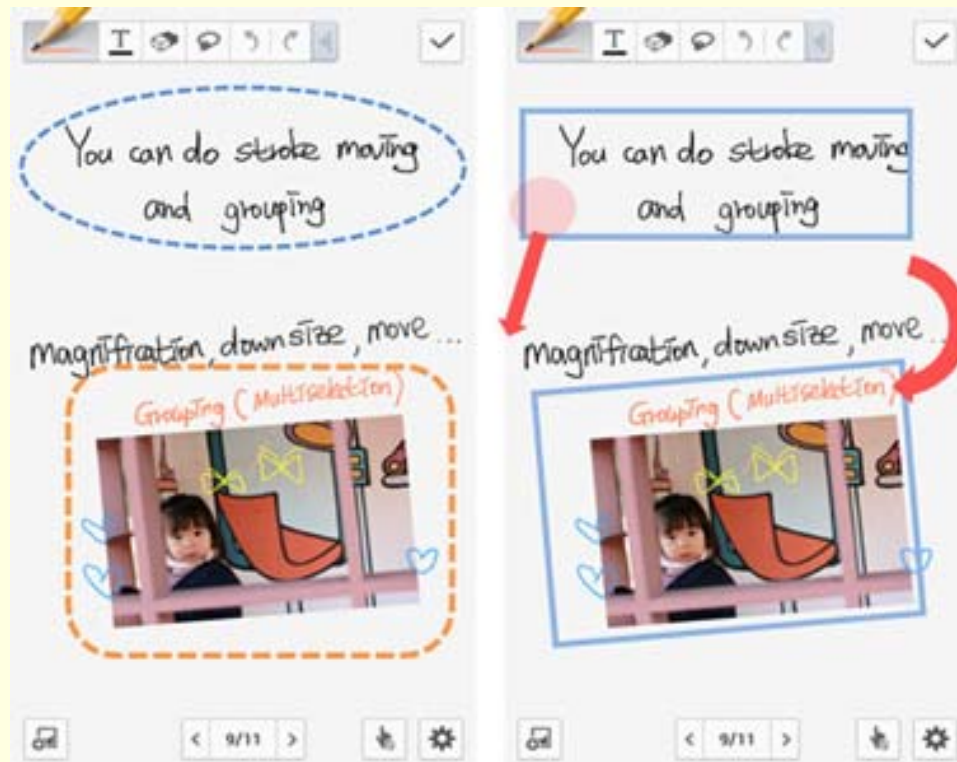
PEN SDK

- Pen supports the following features:
 - Advanced edit
 - Recognition

PEN SDK

■ Advanced edit:

- a drawing engine based on Stroke
- offers advanced edit functions, such as selection, multiple selection, group/ungroup, move forward/backward, and zoom in/out



PEN SDK

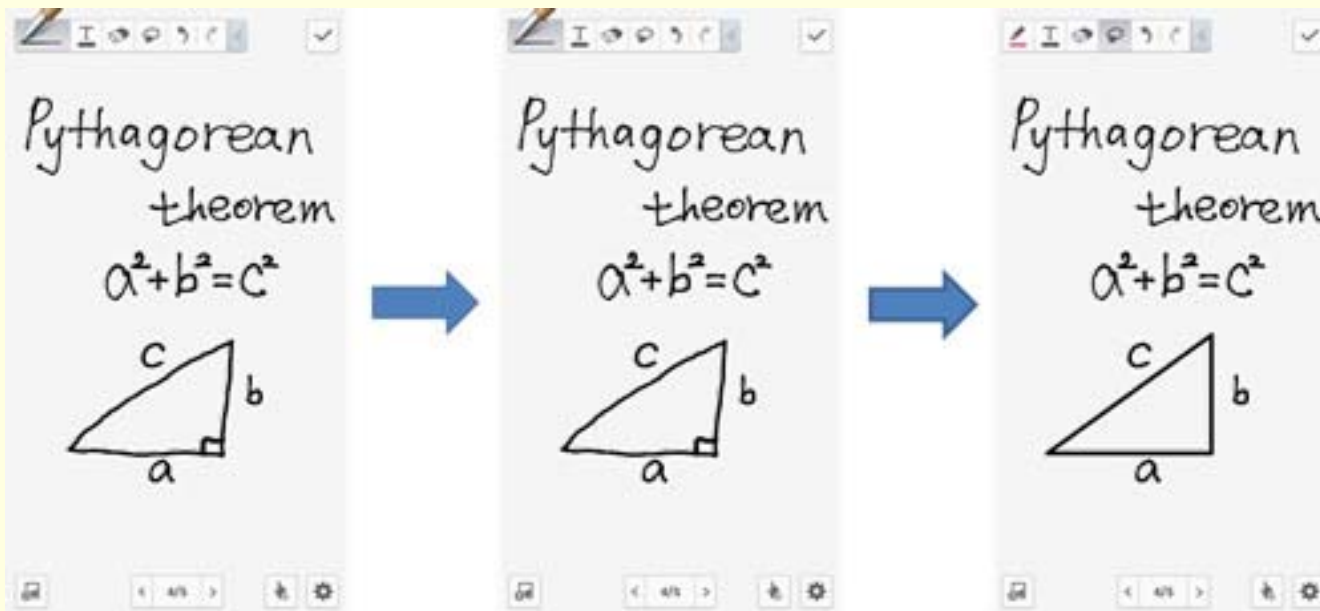
- **Advanced edit:**
 - **Pen:** Various tools such as brushes, color pens and more



PEN SDK

■ Recognition:

- to convert objects written on the canvas to drawings

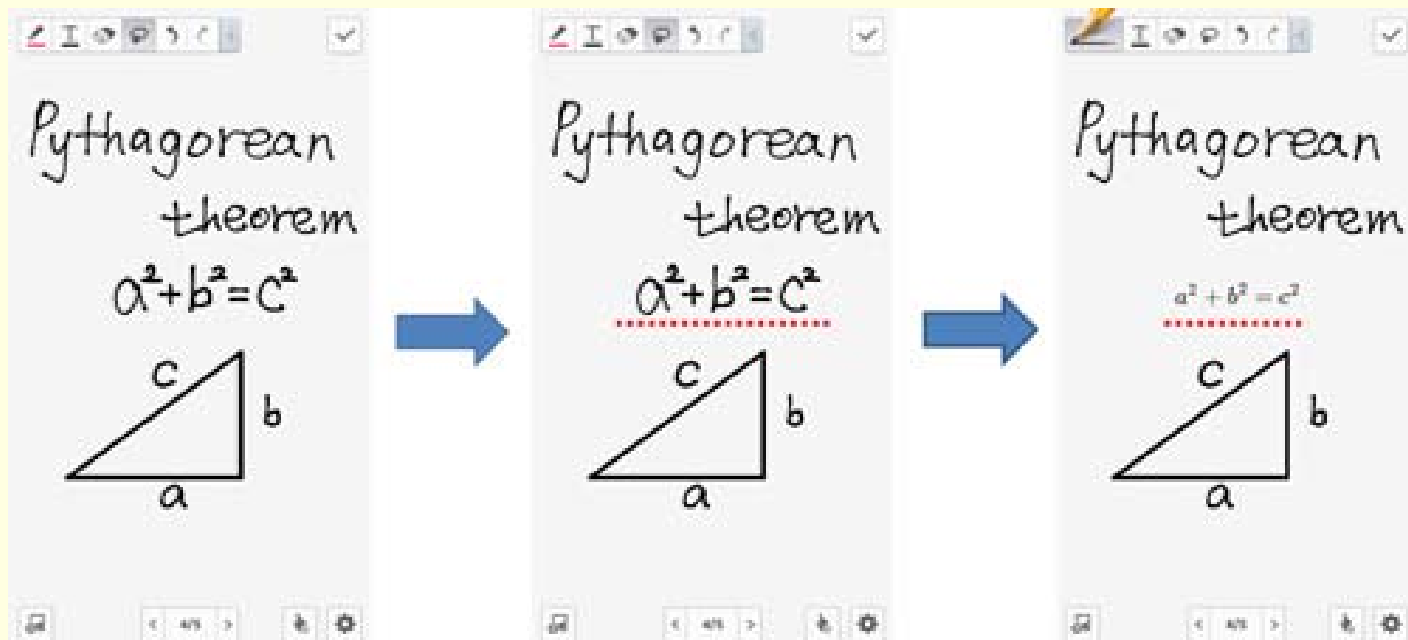


Draw a triangle and select it to have the system recognize it as an object consisting of lines

PEN SDK

■ Recognition:

- to convert objects written on the canvas to drawings

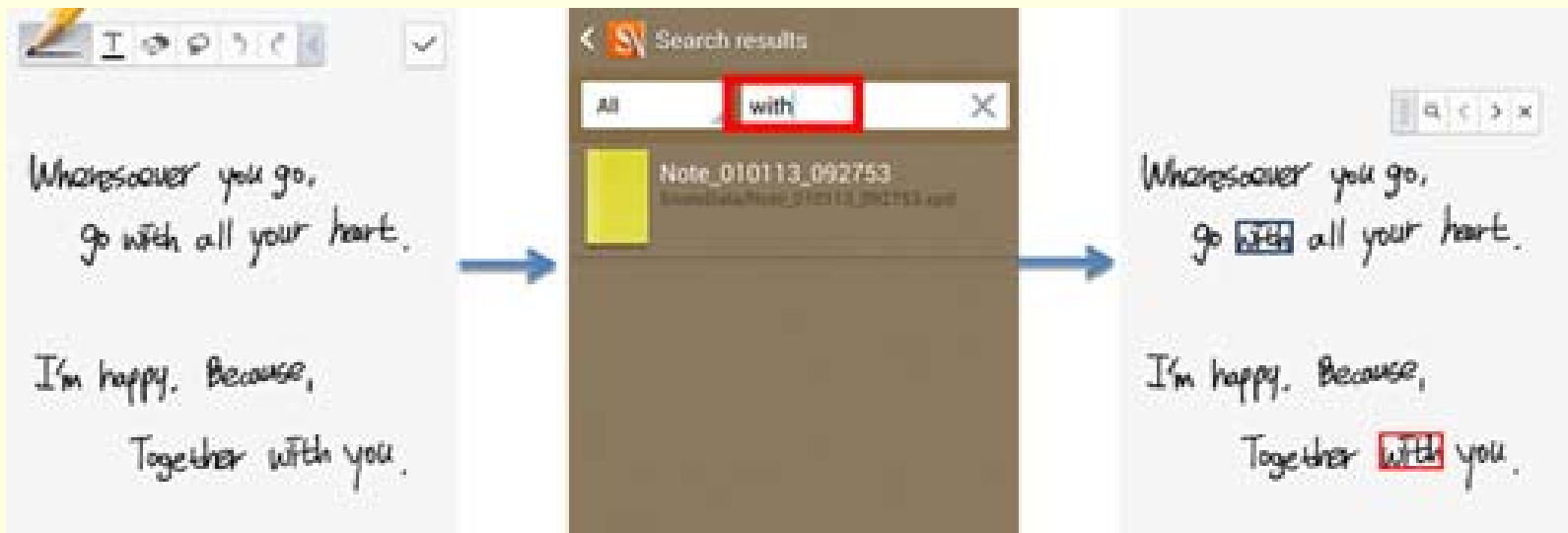


Write a formula to convert the image into a digital format.

PEN SDK

■ Recognition:

- to convert objects written on the canvas to drawings



Handwritten Text Search

GESTURE SDK

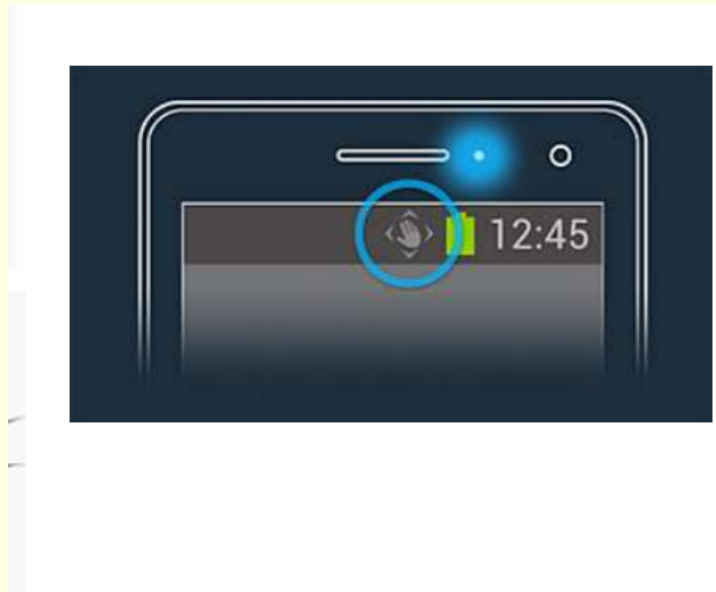
- **Recognize Hand Movements in front of Samsung Smart devices**
 - Does not require touching the screen



GESTURE SDK

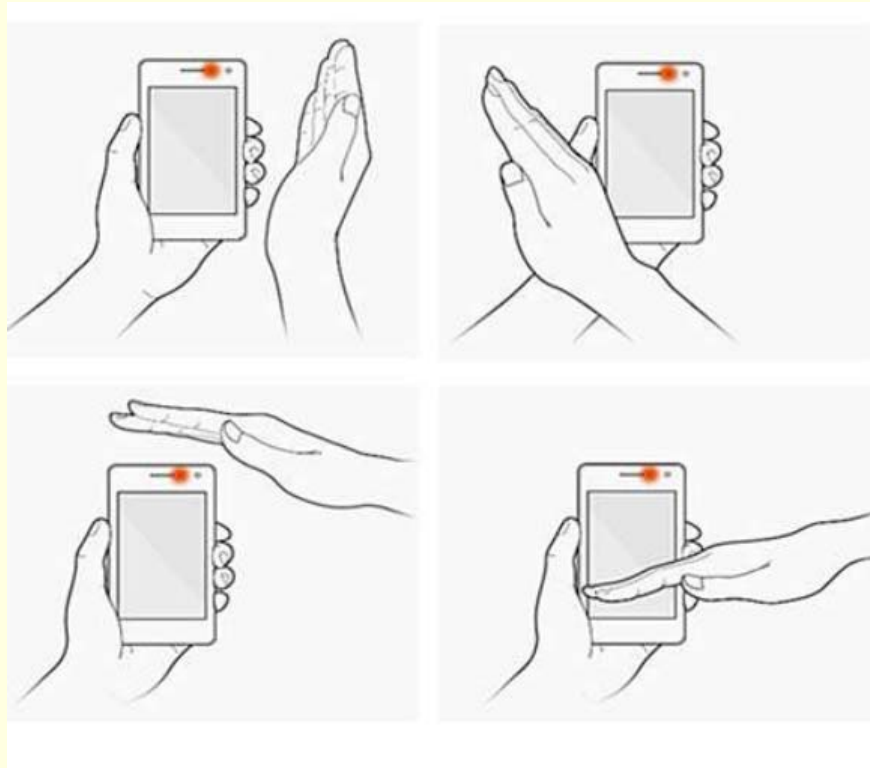
■ Requirements:

- Devices with Android 4.3 Jelly Bean (API level 18) or higher support Gesture except Galaxy S4 due to a hardware issue.
- The hand gesture requires a Samsung smart device with a gesture sensor.



GESTURE SDK

- The hand feature indicates the angle and speed of the hand movement
- **Respond** to the gesture event with various actions, such as play a song, mute the device, activate voice commands, answer an incoming phone call, or even turn the pages of an e-cookbook, etc.



LOOK SDK

- Look package consists of new Android views that are used in conjunction with the S pen.
- Requirements:
 - All Look API functions require S-Pen
 - These functions are only available on devices that support Look
- Functions:
 - Cocktail (Edge Screen)
 - Writing Buddy
 - Air Button
 - Smart Clip
 - Pointer Icon



LOOK SDK

■ Air Button

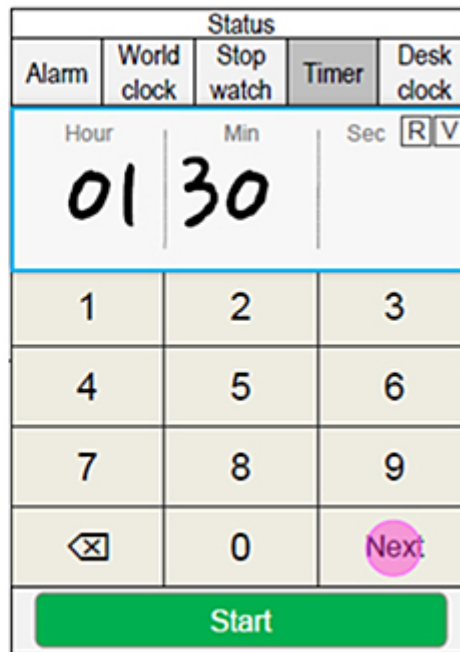
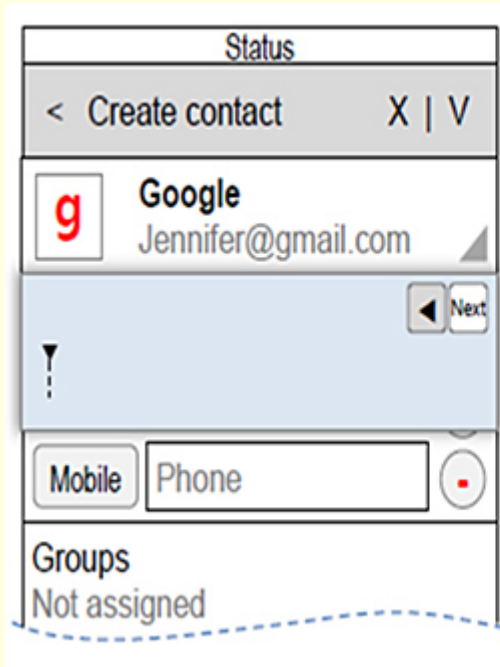
- Ideally invoked when S pen side button is pressed near the screen; show context-appropriate contents.
- Allow you use S-Pen to view contents, select menus or insert images for quick access to recent contents or menus



LOOK SDK

■ Writing Buddy

- an editor appears when you point your S-Pen near the target view
- Easy handwriting recognition in your application.



LOOK SDK

■ Smart Clip

- allows you to capture and extract Metadata such as texts and URLs and to crop screenshots using S-Pen

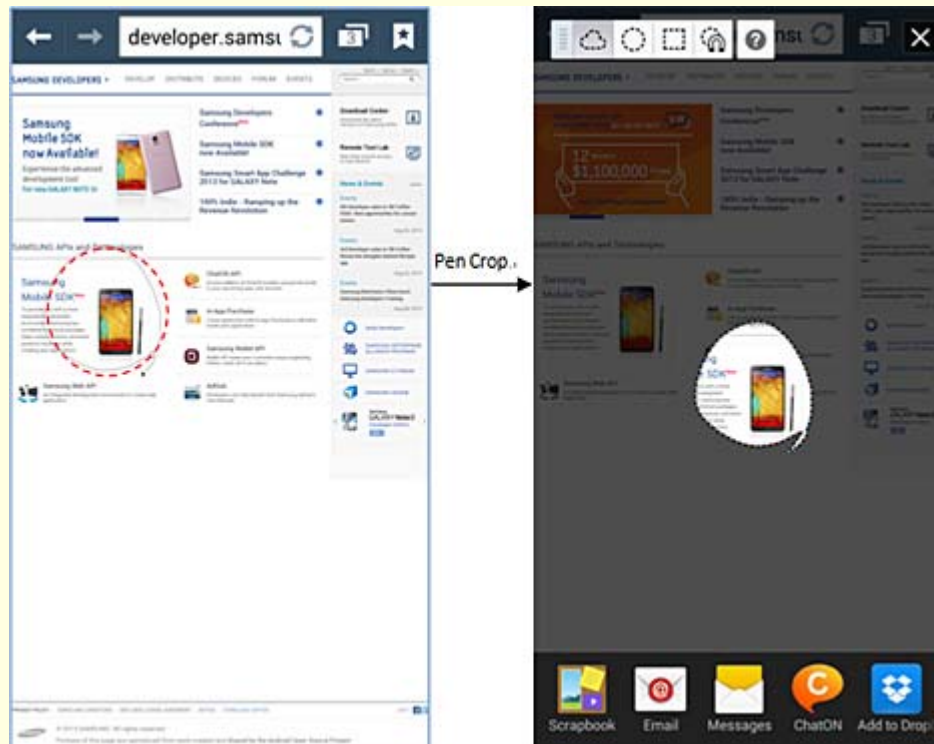


Image Filter SDK

- Image Filter offers you various types of filters for processing your images and applying various effects.
- Requirements:
 - Devices with Android 4.1 Jelly Bean (API level 16) or higher support Image Filter.



Image Filters SDK

- You can use Image Filter to:
 - choose from 33 filter effects
 - adjust filter levels



- adjust the transparency.



MultiWindow SDK

- Running multiple apps in one screen using multitasking
- Requirements:
 - Runs only on Android devices that support MultiWindow
 - Devices with Android 4.1 Jelly Bean (API level 16) or higher
 - Supports Note 3 model and later devices

MultiWindow SDK

- **Split Style: divides screens equally**



MultiWindow SDK

- **Free Style:** enables the resizing of applications as desired.



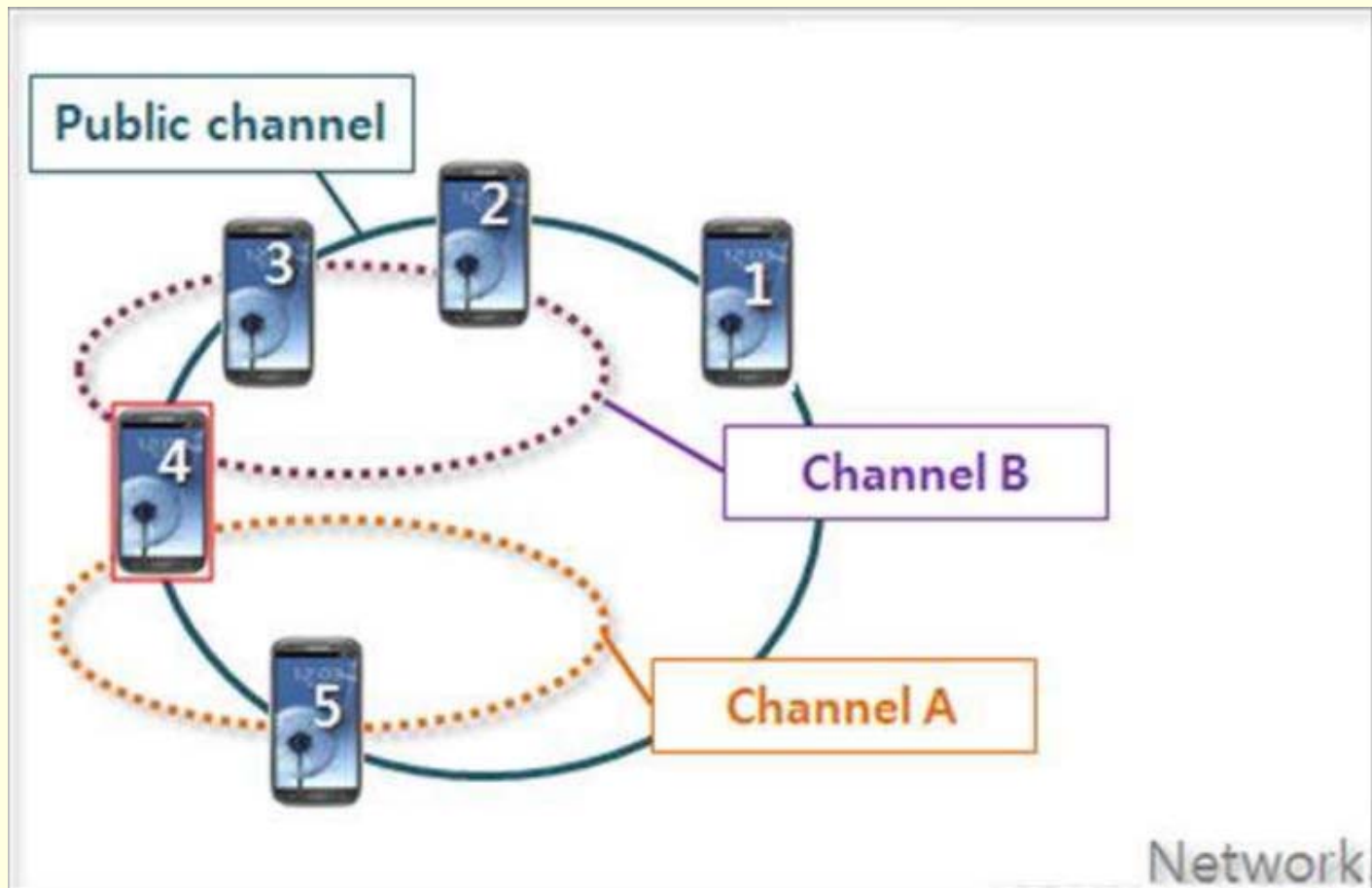
Chord SDK

- Chord Allows you to easily share messages and content between devices in the same (local) subnet in real-time
- Requirements:
 - Devices with Android 4.0 Ice Cream Sandwich (API level 14) or higher support Chord.
 - Chord does not support Atom x86 for Android API 17



Chord SDK

- Every node is part of public Chord channel.
- Only nodes using your app can connect to that channel



Media Control SDK

- Create apps that share music, videos, and photos between network devices.
- Requirements:
 - Devices with Android 4.0 Ice Cream Sandwich (API level 14) or higher
 - Compatible with DLNA certified products



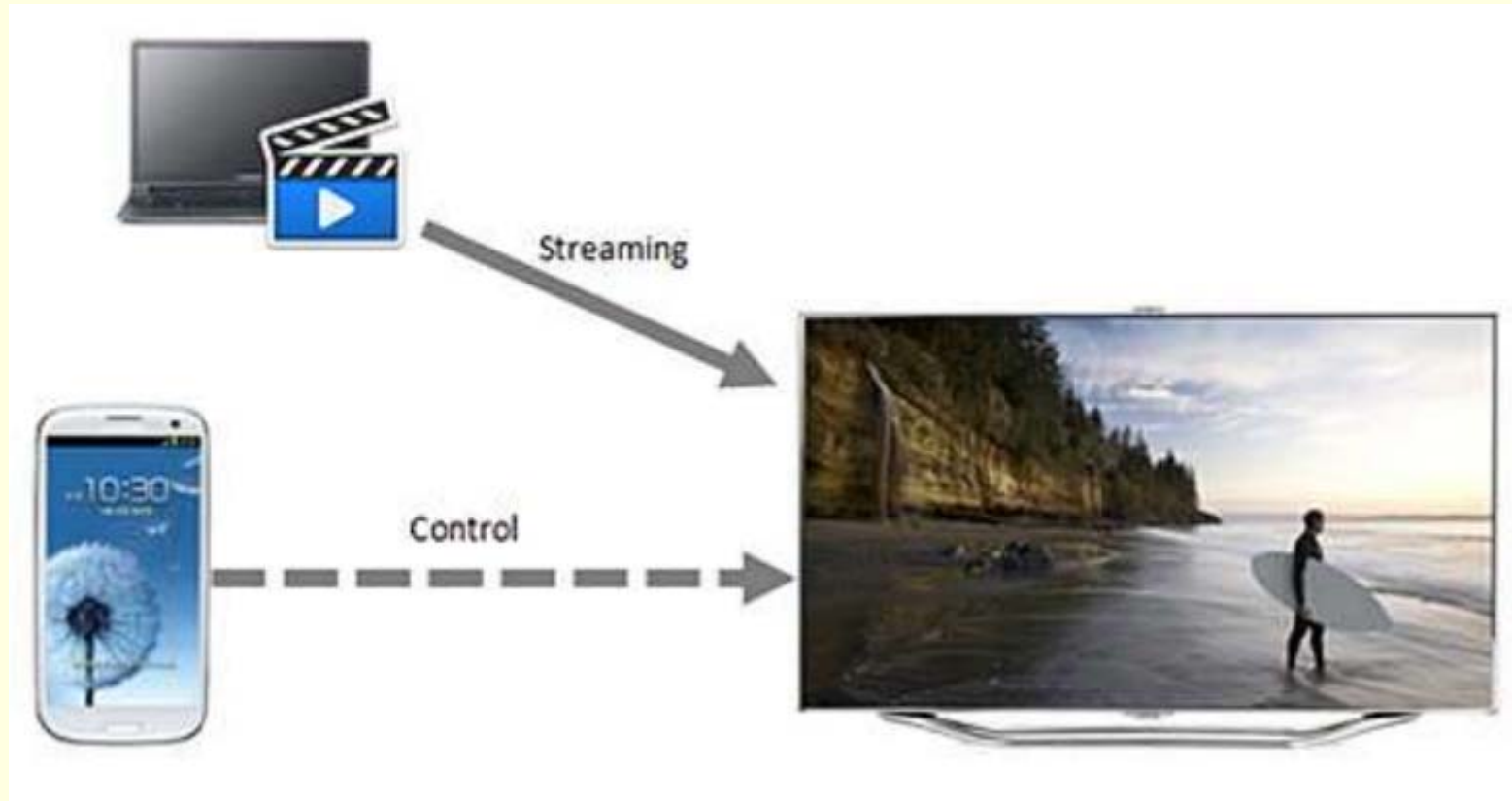
Media Control SDK

- You can use Media Control to:
 - Play media files saved on your device on another device



Media Control SDK

- You can use Media Control to:
 - Search for media files on a DLNA media server and play them on another device



Media Control SDK

- You can use Media Control to:
 - Play media files saved on a web server on another device



USING SAMSUNG SDK

■ System Requirements

- JDK (Java Development Kit): required for developing and running Java applications.
 - Download and Install Java 8 for Microsoft Windows:
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>
- Android Studio (Including IDE + ADT plug-in, Emulator ...): provides everything you need to start developing apps for Android
 - Download and install Android Studio:
<http://developer.android.com/sdk/index.html>

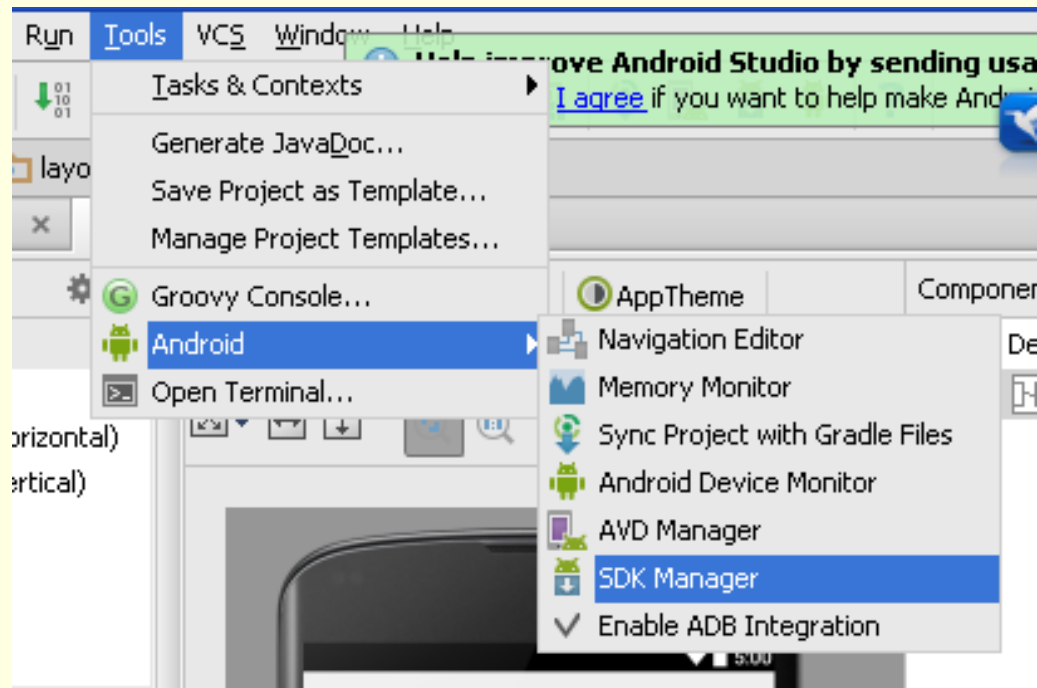
USING SAMSUNG SDK

■ Downloading the Samsung SDK

- Downloading the SDK on the Samsung developer site:
 - <http://developer.samsung.com/galaxy>
- Downloading the SDK with the Android SDK Manager:
 - The Android SDK Manager is a component tool of Android Studio
 - Provides an easy interface to access the Android SDK and external Add-on SDKs

DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

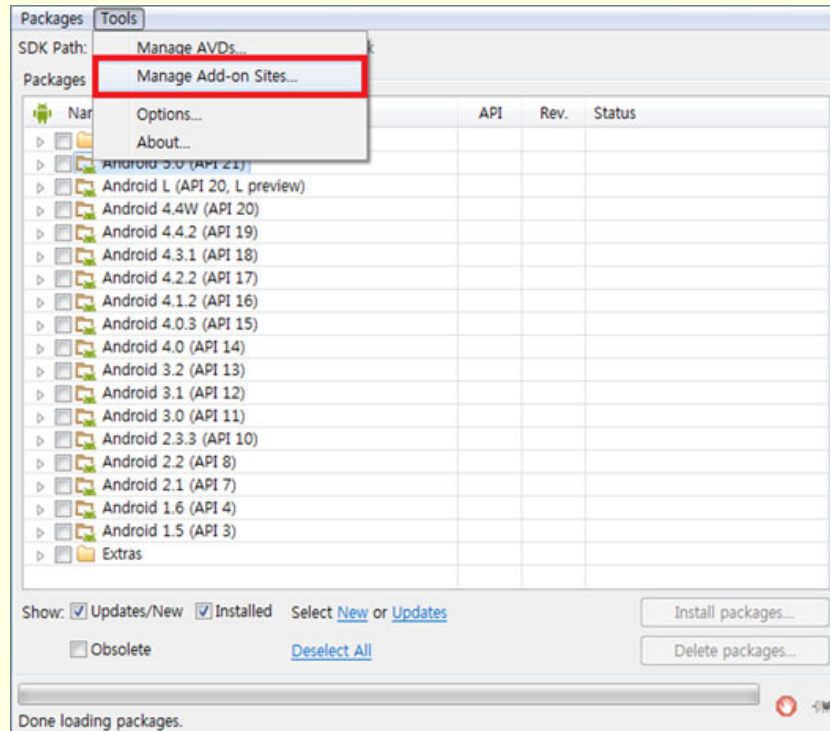
- Making a list of Add-on SDKs in the Android SDK Manager
 - Open Android Studio and select **Tools** → **Android** → **SDK Manager**



<http://developer.samsung.com/technical-doc/view.do?v=T000000182>

DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

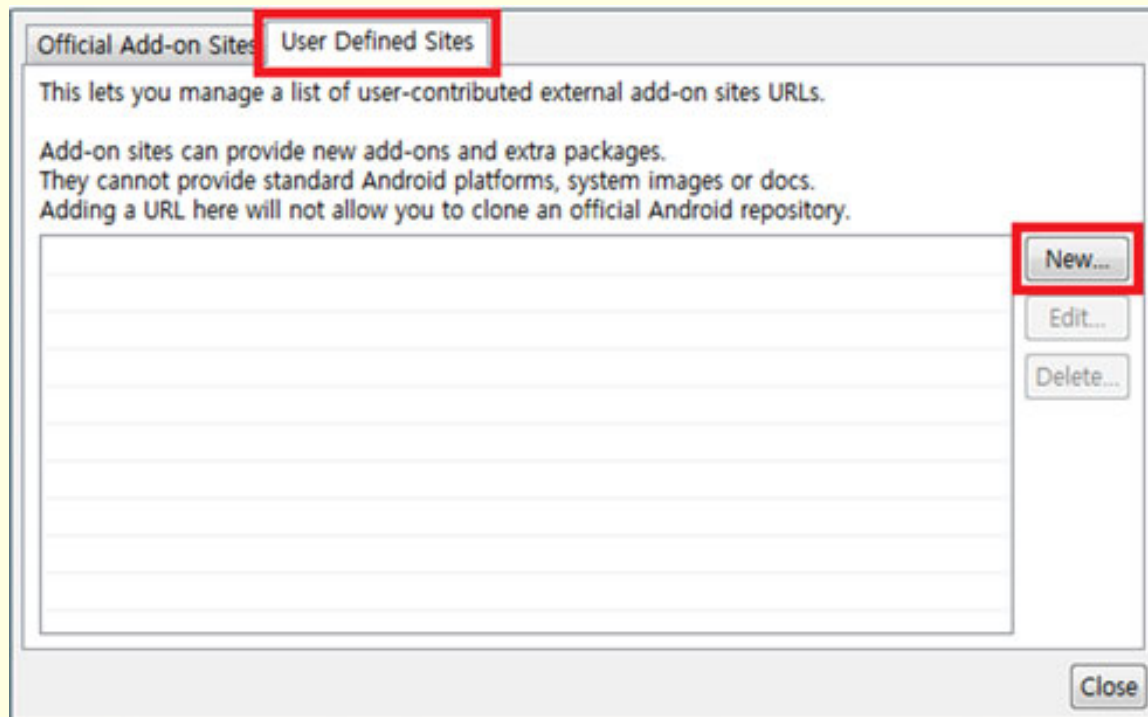
- Making a list of Add-on SDKs in the Android SDK Manager:
 - Select **Tools** → **Manage Add-on Sites...** in Android SDK Manager



<http://developer.samsung.com/technical-doc/view.do?v=T000000182>

DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

- **Making a list of Add-on SDKs in the Android SDK Manager:**
 - Click the '**User Defined Sites**' tab in the Add-on Sites window in Android SDK Manager.

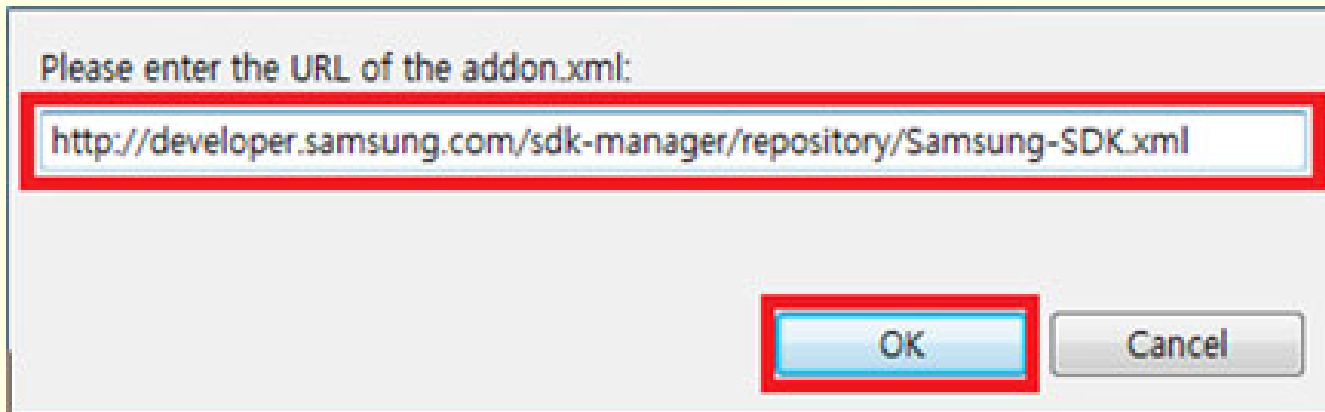


<http://developer.samsung.com/technical-doc/view.do?v=T000000182>

DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

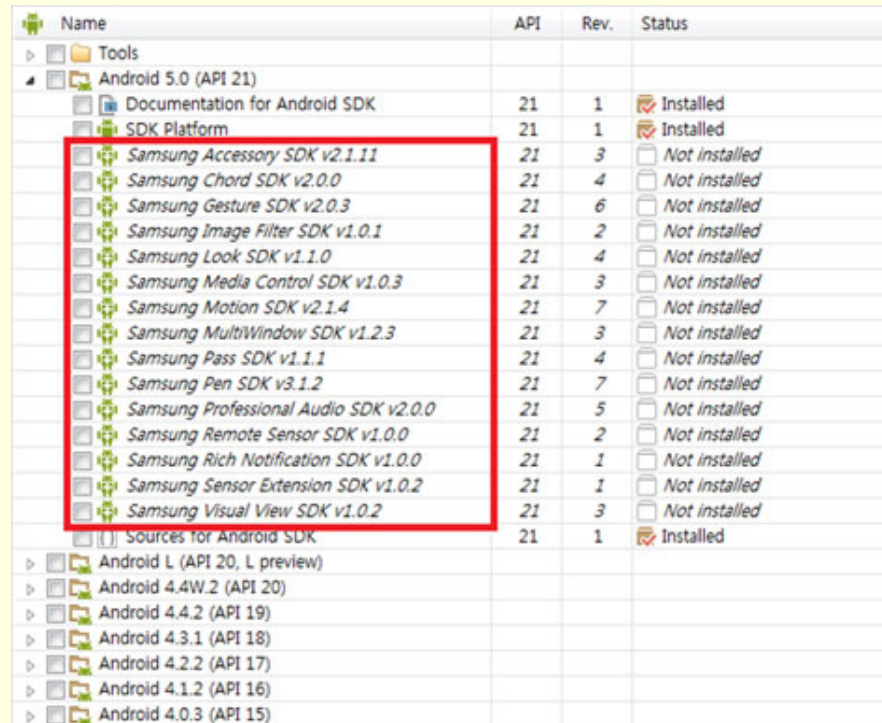
- **Making a list of Add-on SDKs in the Android SDK Manager:**
 - Insert the URL on the window as shown below and click the OK button.

URL: <http://developer.samsung.com/sdk-manager/repository/Samsung-SDK.xml>



DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

- **Making a list of Add-on SDKs in the Android SDK Manager:**
 - After loading has completed, Samsung SDKs are listed in Android SDK Manager as below.

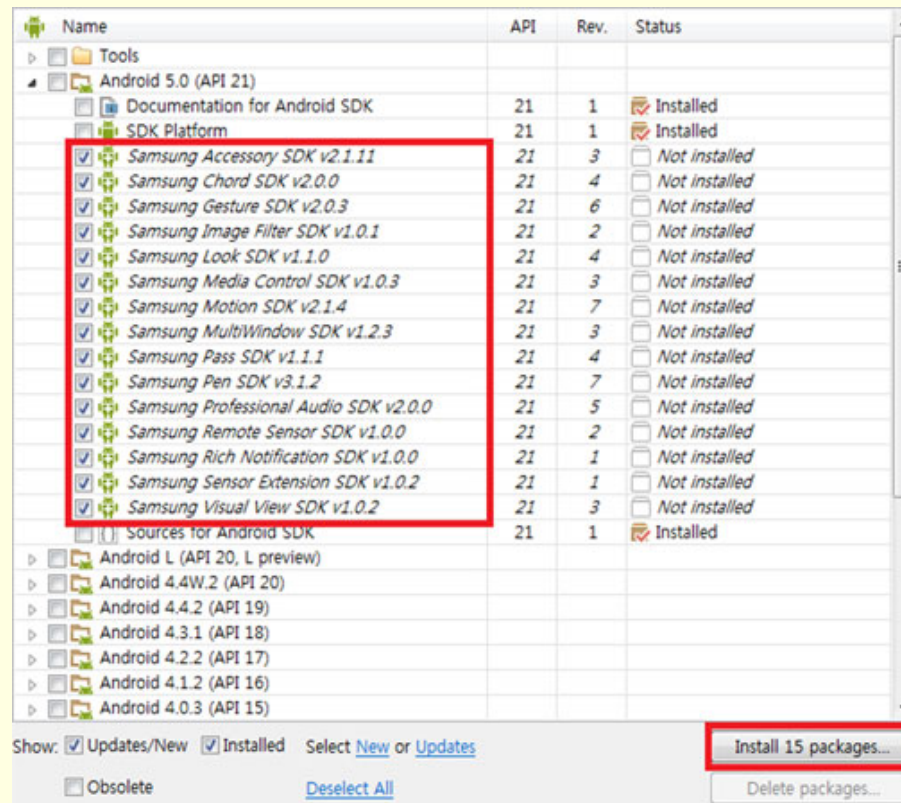


Name	API	Rev.	Status
Tools			
Android 5.0 (API 21)			
Documentation for Android SDK	21	1	Installed
SDK Platform	21	1	Installed
Samsung Accessory SDK v2.1.11	21	3	Not installed
Samsung Chord SDK v2.0.0	21	4	Not installed
Samsung Gesture SDK v2.0.3	21	6	Not installed
Samsung Image Filter SDK v1.0.1	21	2	Not installed
Samsung Look SDK v1.1.0	21	4	Not installed
Samsung Media Control SDK v1.0.3	21	3	Not installed
Samsung Motion SDK v2.1.4	21	7	Not installed
Samsung MultiWindow SDK v1.2.3	21	3	Not installed
Samsung Pass SDK v1.1.1	21	4	Not installed
Samsung Pen SDK v3.1.2	21	7	Not installed
Samsung Professional Audio SDK v2.0.0	21	5	Not installed
Samsung Remote Sensor SDK v1.0.0	21	2	Not installed
Samsung Rich Notification SDK v1.0.0	21	1	Not installed
Samsung Sensor Extension SDK v1.0.2	21	1	Not installed
Samsung Visual View SDK v1.0.2	21	3	Not installed
Sources for Android SDK	21	1	Installed
Android L (API 20, L preview)			
Android 4.4W.2 (API 20)			
Android 4.4.2 (API 19)			
Android 4.3.1 (API 18)			
Android 4.2.2 (API 17)			
Android 4.1.2 (API 16)			
Android 4.0.3 (API 15)			

<http://developer.samsung.com/technical-doc/view.do?v=T000000182>

DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

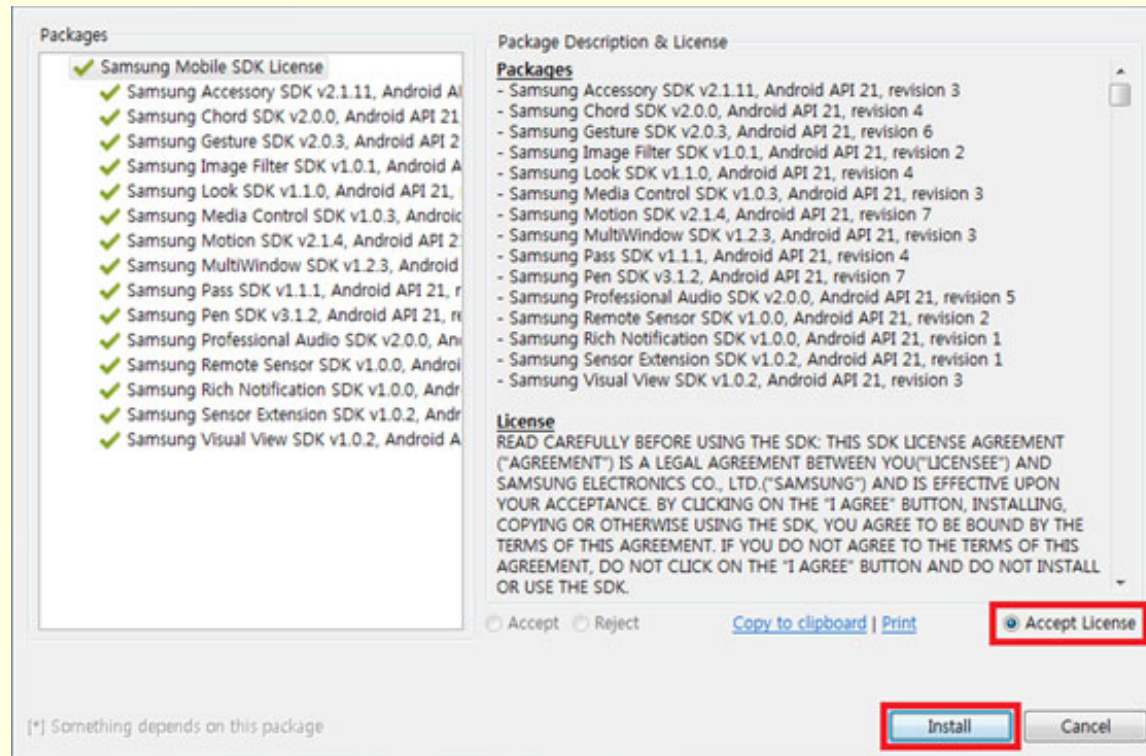
- Installing SDKs for Samsung mobile devices:
 - Select each SDK that you would like to use. Click the **"Install packages..."** button to start the installation.



<http://developer.samsung.com/technical-doc/view.do?v=T000000182>

DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

- Installing SDKs for Samsung mobile devices:
 - Select each SDK in the list and click the '**Accept**' button or click '**Accept License**' for installing all SDKs.



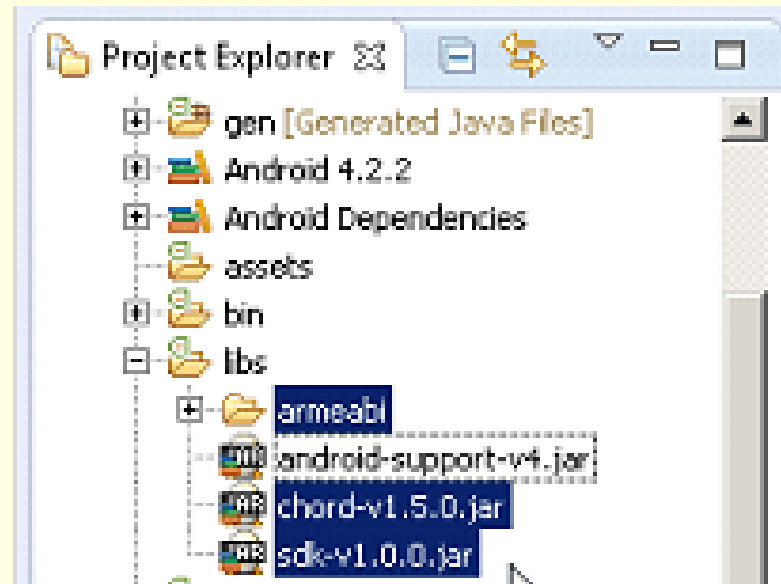
<http://developer.samsung.com/technical-doc/view.do?v=T000000182>

DOWNLOADING SAMSUNG SDK WITH ANDROID SDK MANAGER

- **Installing SDKs for Samsung mobile devices:**
 - You can confirm installed SDK in the Add-on sub directory of the Android SDK directory.
 - The directory contains the following folders:
 - ✓ **Docs:** Programming guides and API references
 - ✓ **Libs:** .jar and .so files for the SDKs
 - ✓ **Samples:** Sample application for each SDK
 - ✓ **Tools**
 - ✓ **Extras:** Additional support data for use during development

GETTING STARTED

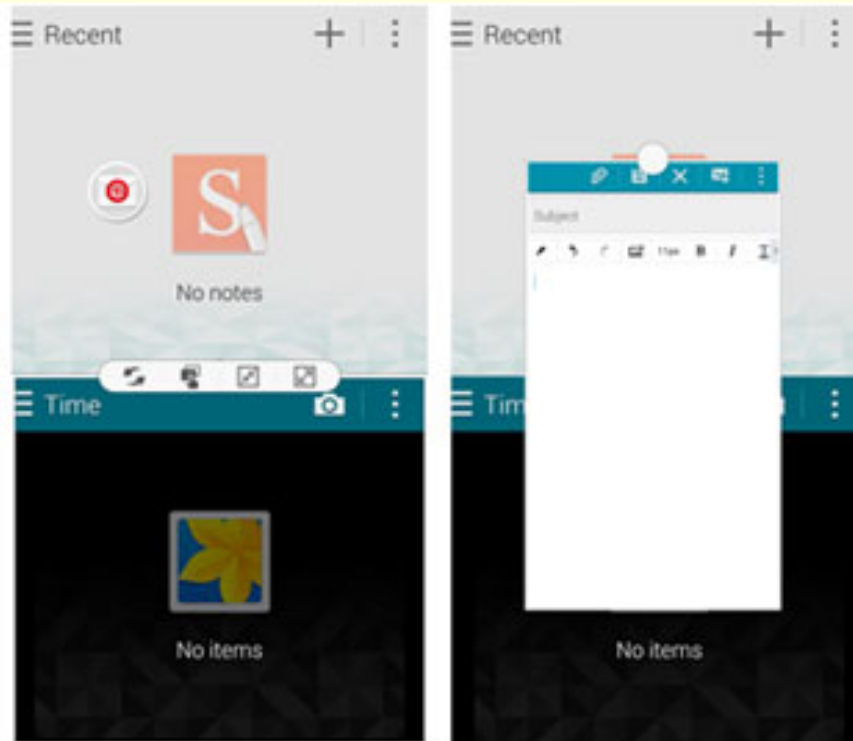
- **Creating a New Project in Android Studio**
- **Adding a Library of the Samsung SDK to the newly created project and use the APIs for that SDK in your application.**
 - Copy the SDK .jar and .so files to the 'libs' folder in your new project to use the SDK you need for your application.



GETTING STARTED

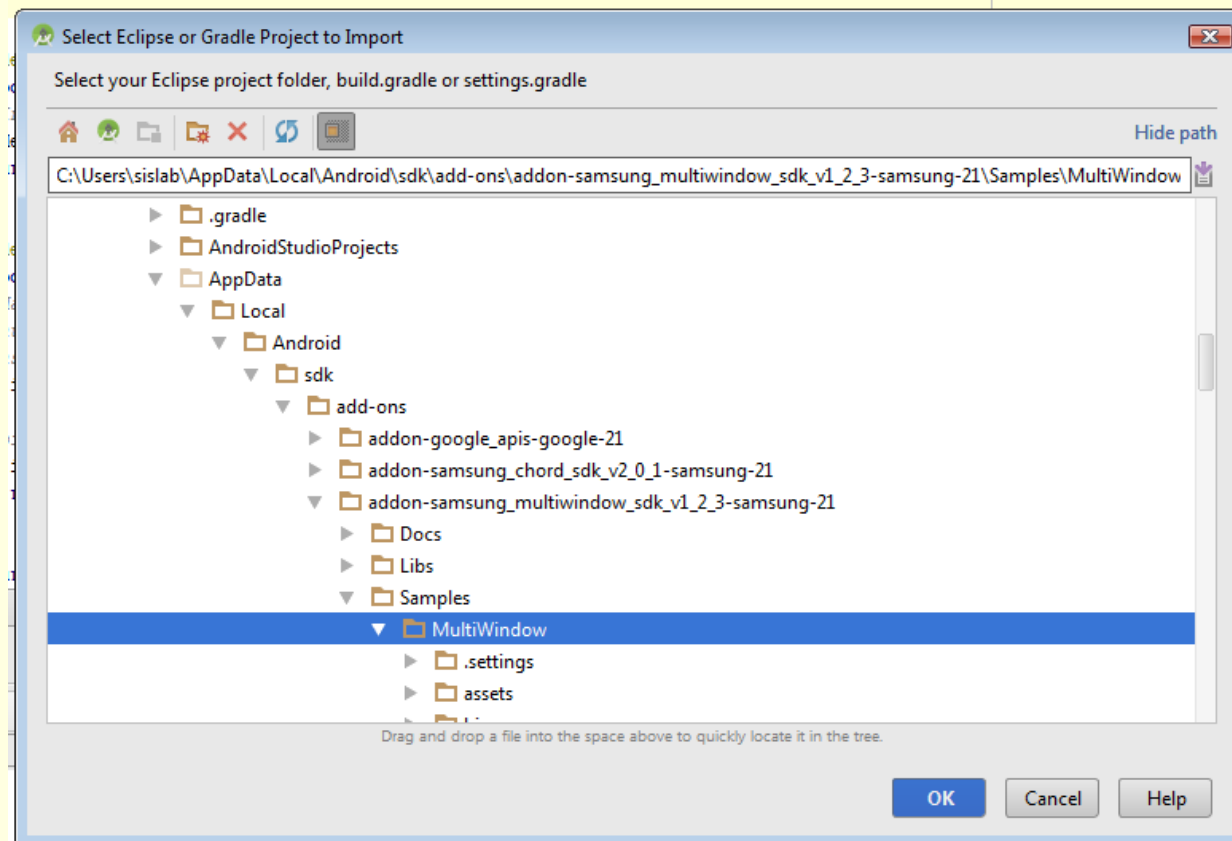
■ Running Sample Applications

- The sample application for each SDK is in the 'Samples' directory of the downloaded SDK.
- *For Example: MultiWindow sample*



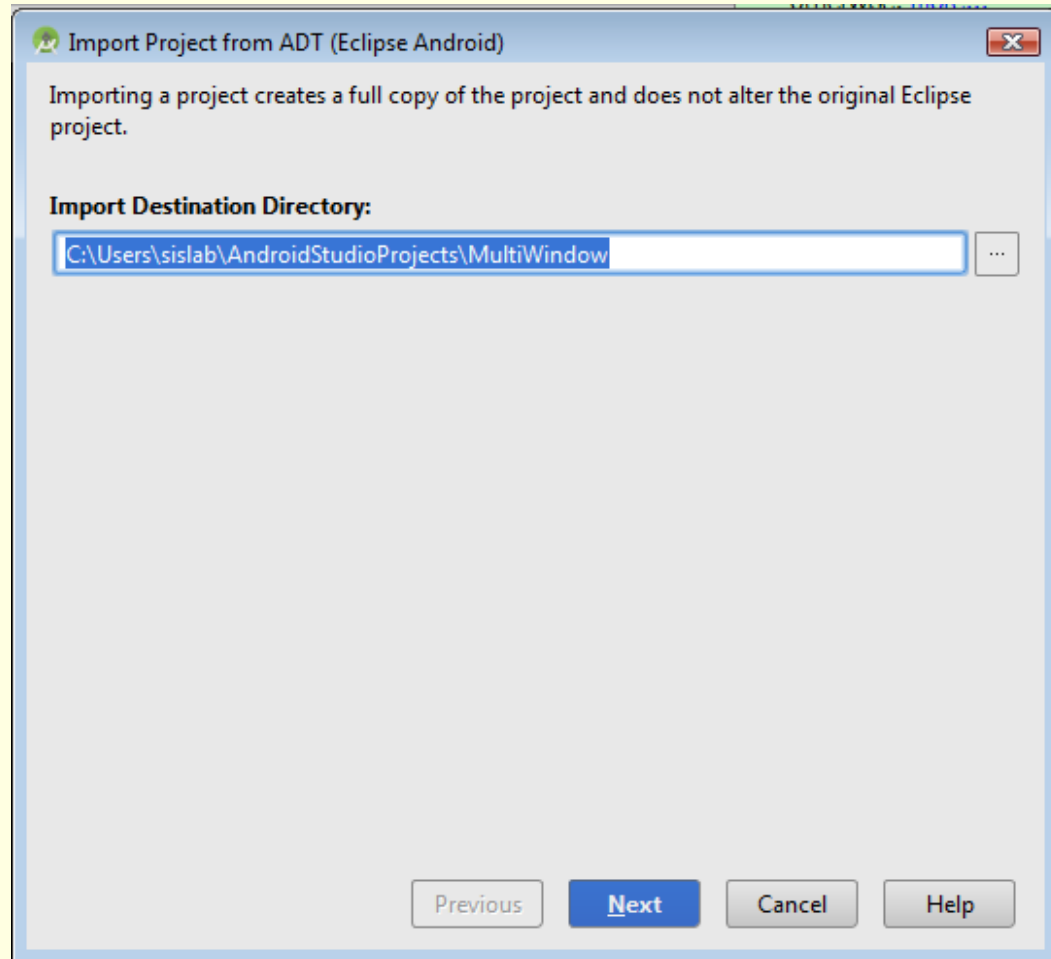
GETTING STARTED

- Run **Android Studio** and click **File → (New →) Import Project...** to open the **Import** dialog
- Select a sample project, and click **OK**



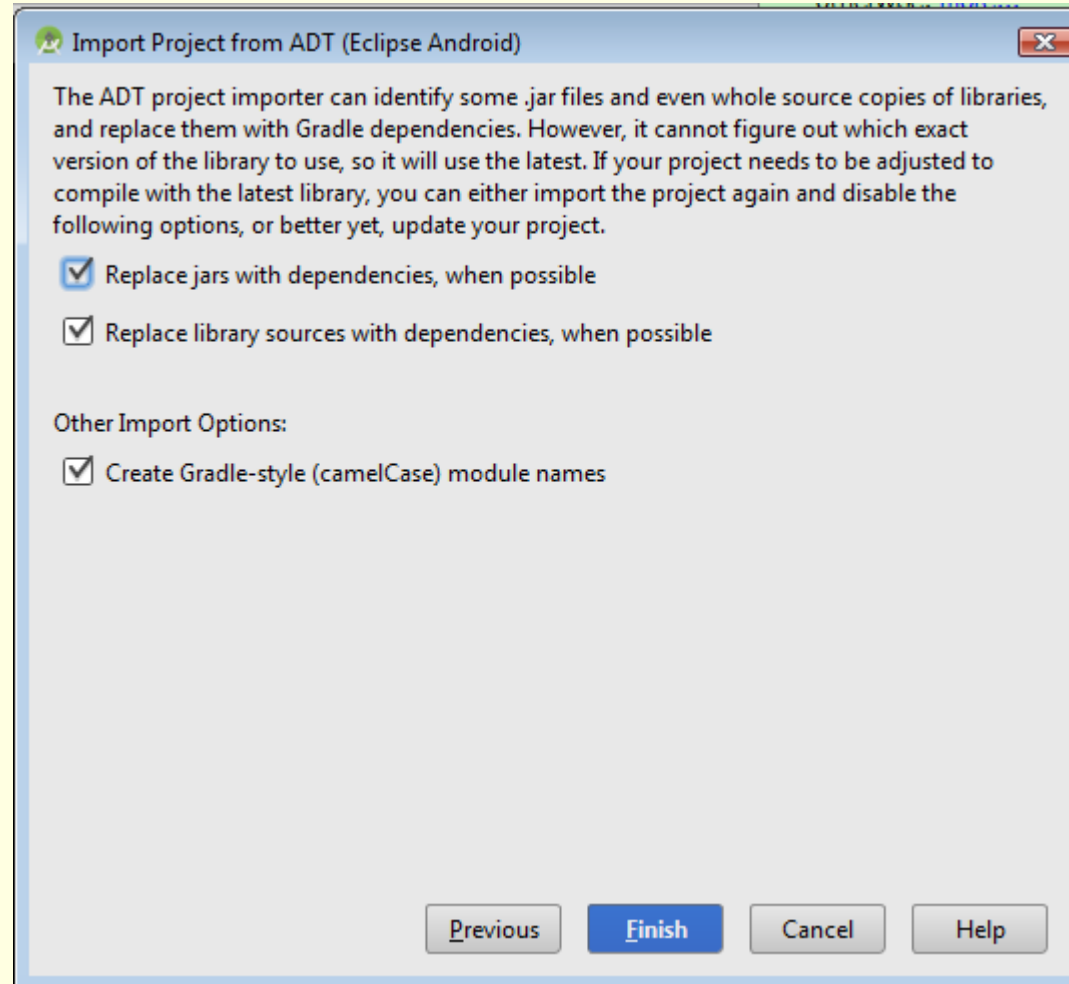
GETTING STARTED

- Click **Next**



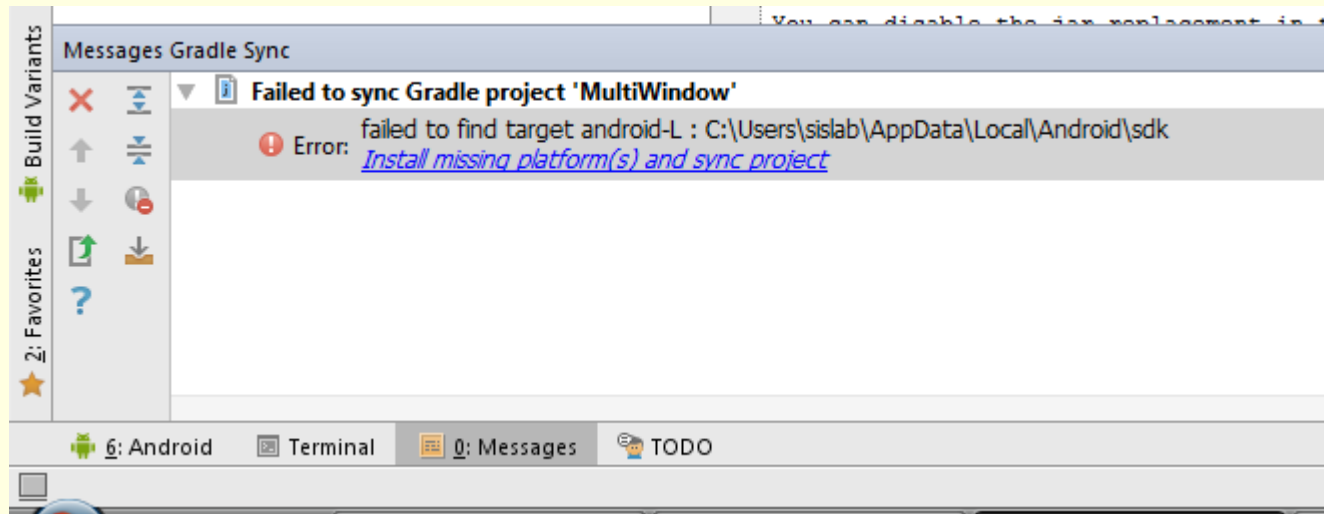
GETTING STARTED

- Click **Finish**



GETTING STARTED

- Click "*Install missing Platform(s) and sync project*" if required



GETTING STARTED

- Check **Accept** and then Click **Next**

