mobile application design

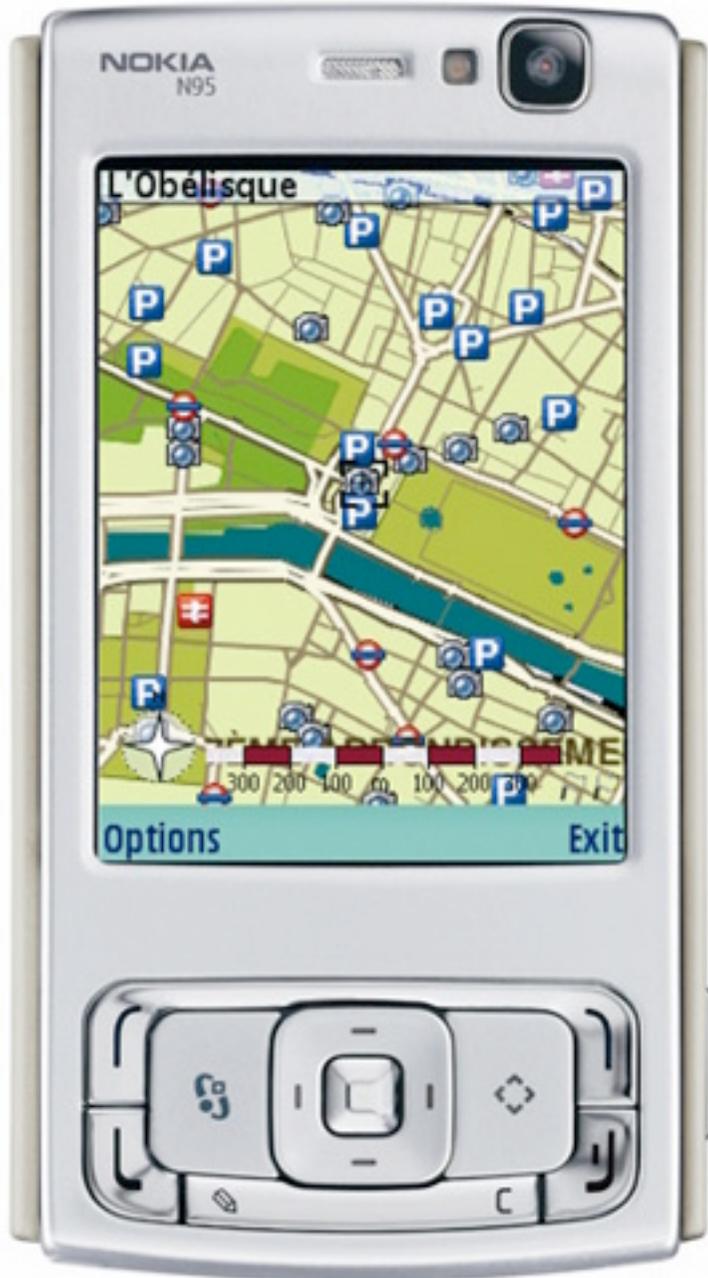## week 4: Networking + Media

michael sharon

Menu

- **Review: Homework, Setup**
- **Presentations:**
- **Phone of the Week**
- **Tips'n'tricks**
- **Deployment**
- **Multimedia**
- **Networking**

Phone of the week

Nokia N95

Nokia N95

- GPS!!!
- Bluetooth 2.0
- USB 2.0
- WiFI
- QVGA
- 5 Megapixel camera
- Tons more

Samsung i560

Samsung i560

- S60 3rd Edition
- GPS!!!
- Slider
- 3G
- 3.2MP camera
- QVGA screen

Review: Homework / Setup

Presentation

Tips'n'tricks: Eclipse

Directory Structure

Preferences

type filter text

- ▶ General
- ▶ Ant
- ▶ Help
- ▶ Install/Update
- ▼ J2ME
  - Device Manage
  - New Midlet Sui
  - Over the Air
  - ▼ Packaging
    - Obfuscati
    - Preverification
- ▶ J2ME Polish
- ▼ Java
  - ▶ Appearance
  - ▶ Build Path
  - ▶ Code Style
  - ▶ Compiler
  - ▶ Debug
  - ▶ Editor
  - ▶ Installed JREs
  - JUnit
  - Properties File
- ▶ Plug-in Developme
- ▶ Run/Debug
- ▶ Team

New Midlet Suite

Specify preferences for new J2ME projects

☑ Force Java 1.1 Compliance

☑ Automatically Use Resources Directory in New Projects

Resources Directory: res

Restore Defaults   Apply

Cancel   OK

Preferences

Build Path

Specify the build path entries used as default by the New Java Project creation wizard:

Source and output folder

◯ Project

⦿ Folders

    Source folder name: `src`

    Output folder name: `bin`

As JRE library use: `JRE container`

---

type filter text

- ▶ General
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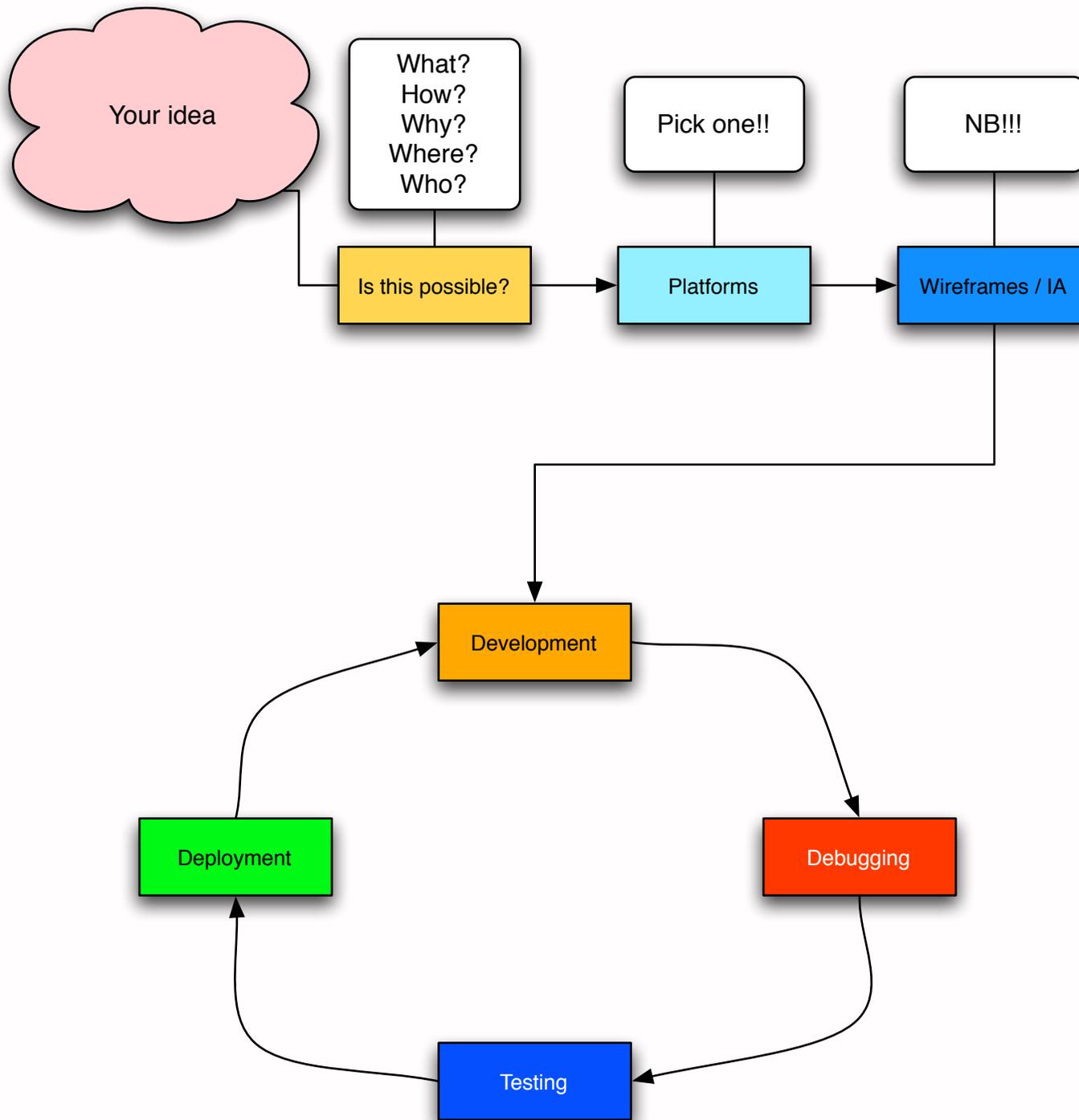Restore Defaults   Apply

Cancel   OK

Flashback!

Sample Mobile Development Process

Multimedia

MMAPI (JSR-135)

- MIDP 2.0

- Audio playback / record

- Video playback / record

- javax.microedition.media
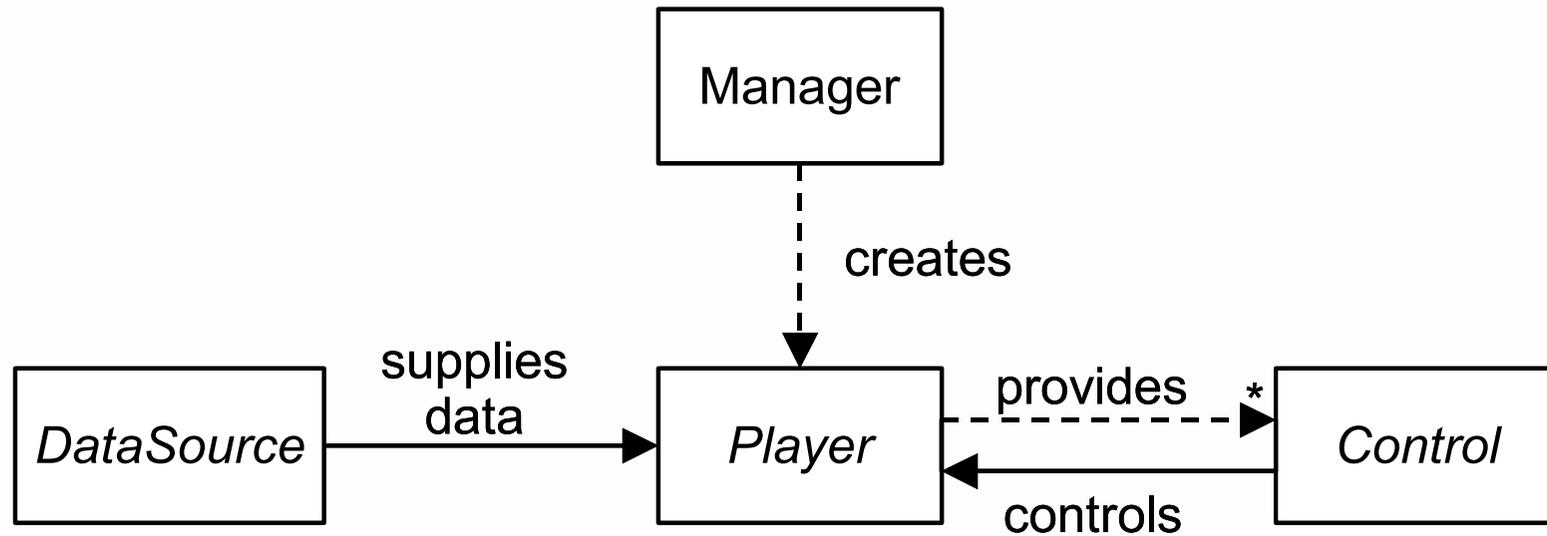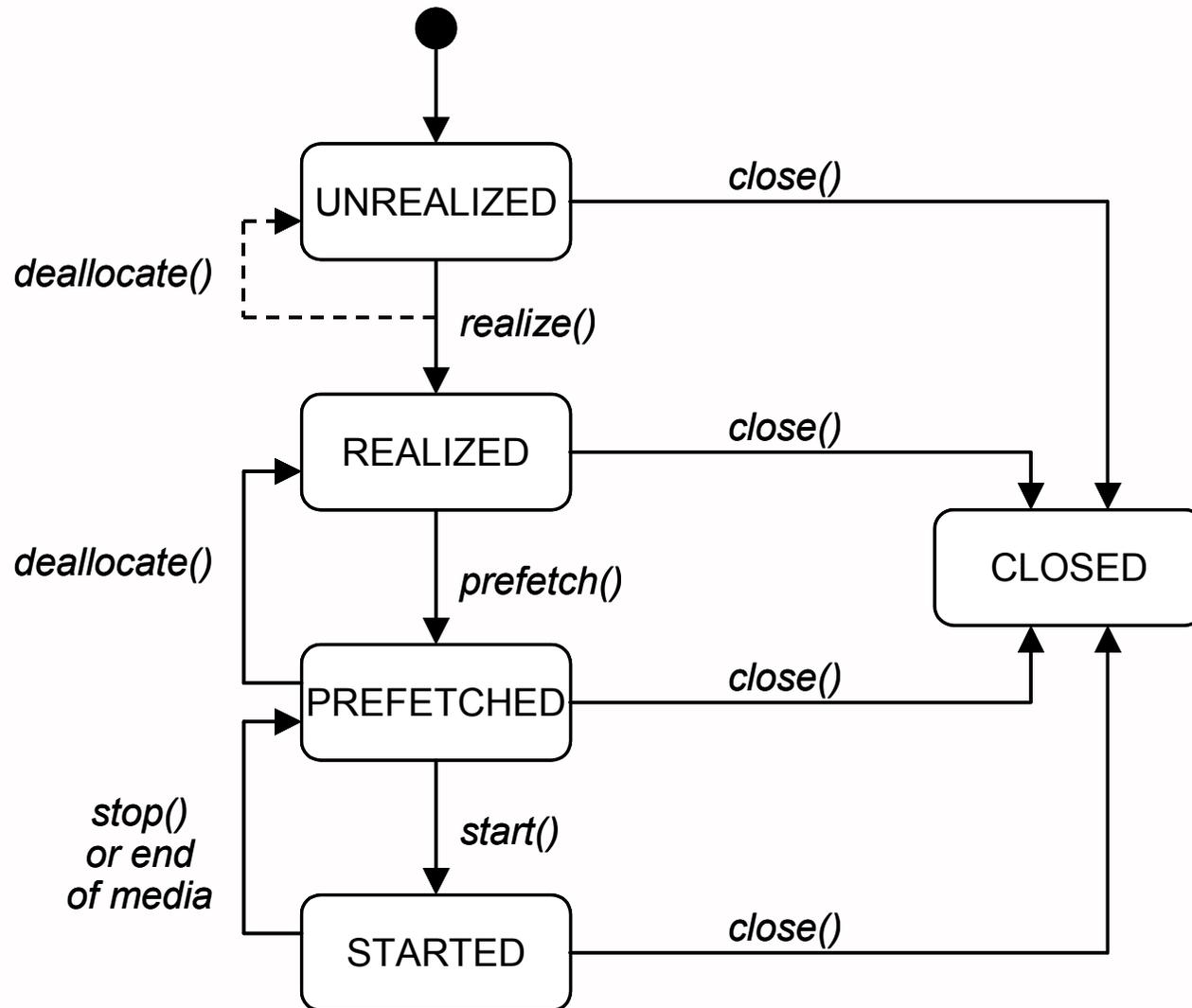
MMAPI Architecture

Figure 1: MMAPI architecture

Player State Model

MMAPI Usage

- Check device support(stage 1)

- Check Content-Type

- Audio -

  - sampled files large

  - MIDI small

MMAPI Camera

- Capture video (mostly stills)

- Draw to Form / Screen

- Create thumbnails

- Interesting applications
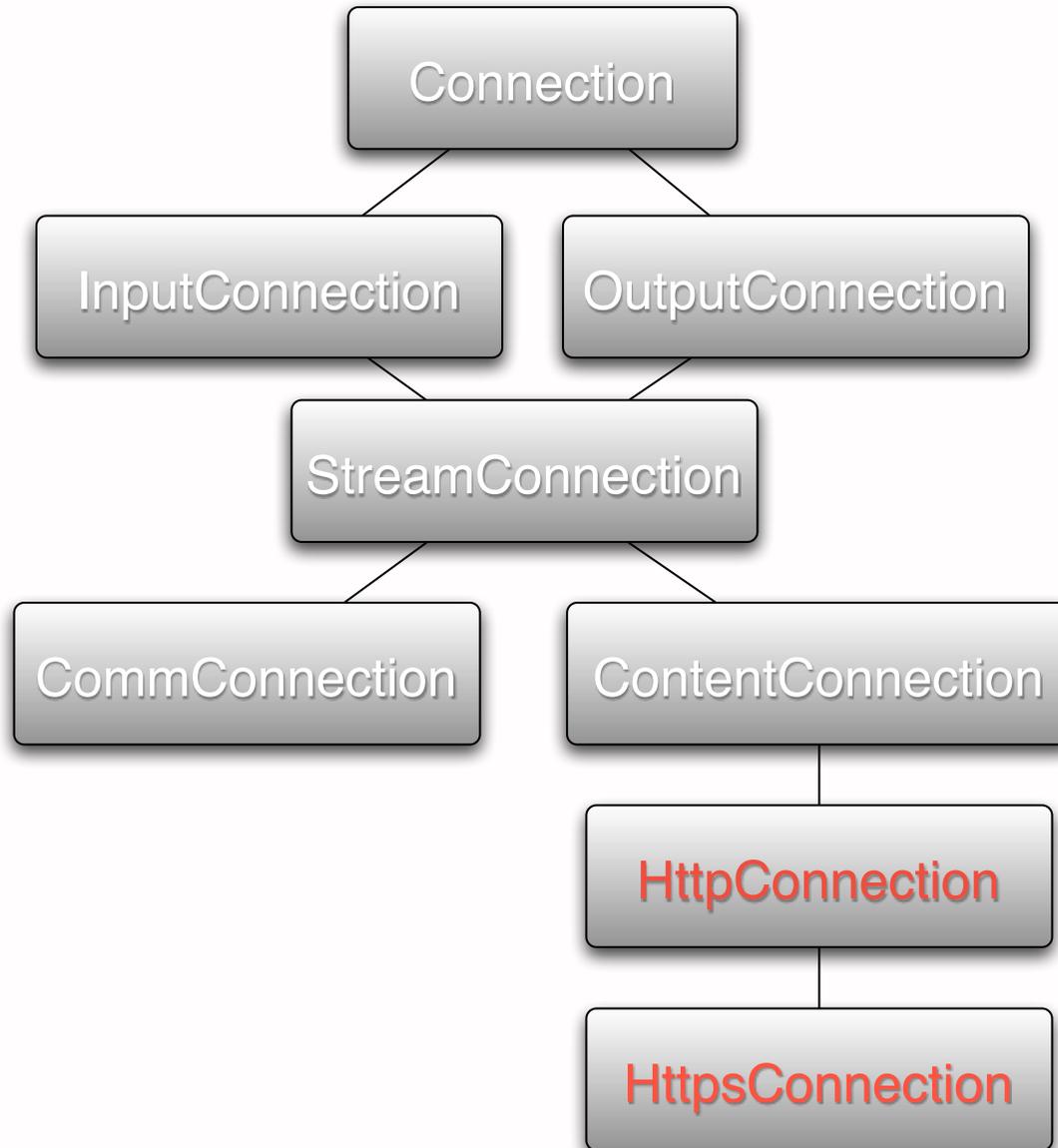
- Attack of the Killer Virus
- http://www.ojom.com/?id=16

MMAPI Questions/Issues

Networking! (not that kind)

GCF

- Generic Connection Framework

- lives in javax.microedition.io

- HTTP required in MIDP 2.0

Partial GCF Diagram

HTTP

- Powers the "dubdubdub"

- Stateless protocol

- Required in MIDP 2.0

OPERATION: HTTP

- Requests + Responses

- GET, HEAD, POST

- GET - parameters in URL (query string)

  - http://mysite.com/?this=that&p=1

- HEAD - only headers get returned

- POST - parameters passed in body

HTTP Gotchas

- POST is more complex

- Costs $$ [except for WiFi on N80 :-)]

- Affects MIDlet Security

- Set Permissions

- javax.microedition.io.Connector.http (and friends)