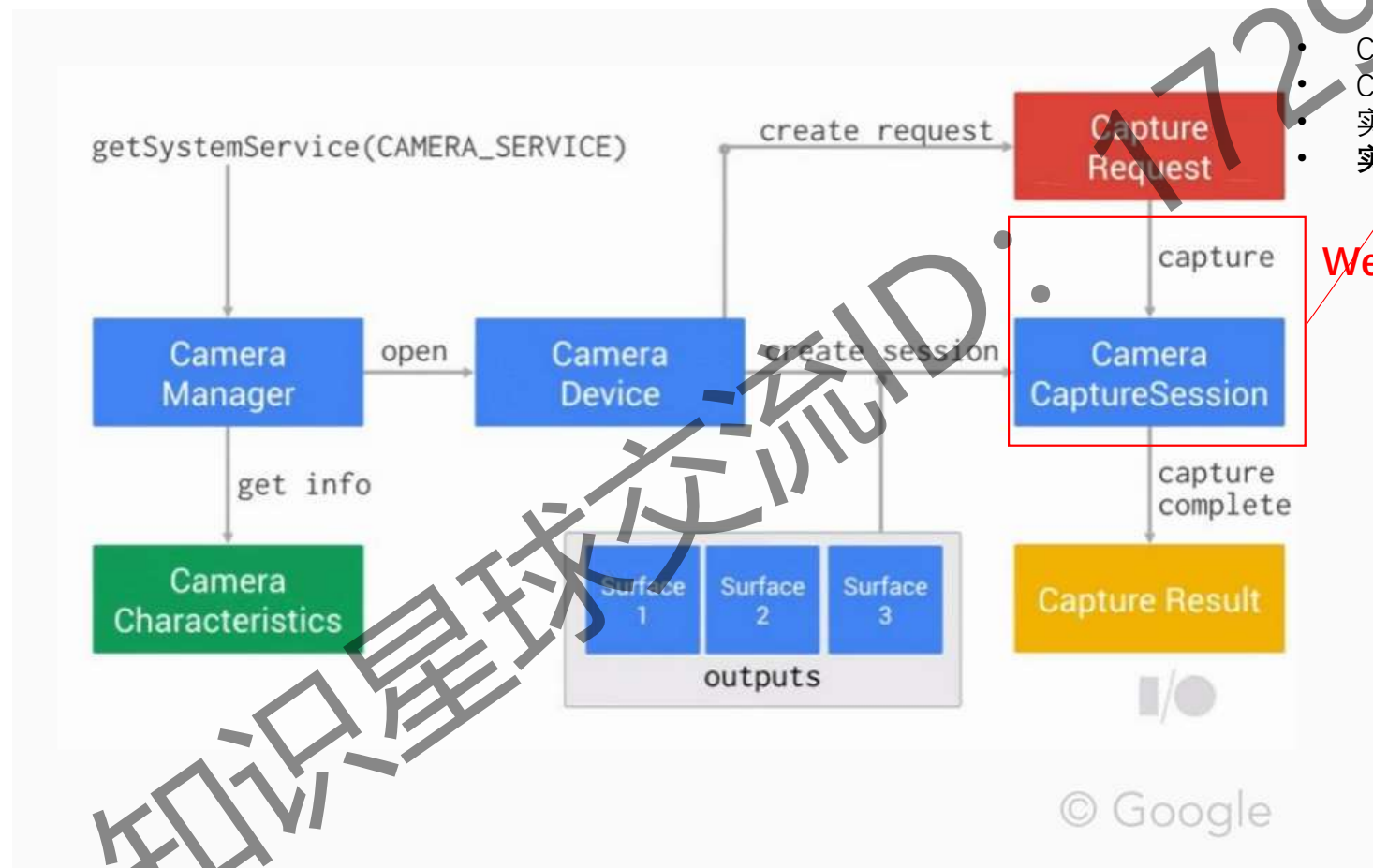


Android Camera2 API专题

第29讲

实战：slowmotion (repeating burst)

课程体系



- CameraCaptureSession详解
- CameraCaptureSession.CaptureCallback详解
- 实战：连拍 (capture burst)
- 实战：slowmotion (repeating burst)

We are here

Agenda

- 判断是否支持Slow Motion
- Slow Motion支持的Size和FPS
- Camera流程控制
- MediaRecorder流程控制

判断是否支持Slow Motion

- **Camera方面**

- Capability
 - 是否支持REQUEST_AVAILABLE_CAPABILITIES_CONSTRAINED_HIGH_SPEED_VIDEO
- StreamConfigurationMap
 - getHighSpeedVideoSizes()不为NULL
 - 每一种Size对应的getHighSpeedVideoFpsRangesFor不为NULL
- 实战代码
 - GeekCamera2\app\src\main\java\com\deepinout\geekcamera\cts\helpers\StaticMetadata.java# **isHighSpeedVideoSupported**

- **Video Encoder方面**

- 从CamcorderProfile判断是否支持High Speed Quality的Profile
- 实战代码
 - GeekCamera2\app\src\main\java\com\deepinout\geekcamera\cameracontroller\CameraController2.java# **getFpsFromHighSpeedProfileForSize**

选择Slow Motion支持的Size和FPS

- 遍历Camera支持的Size和FPS，对每一种Size和FPS的组合去检查CamcorderProfile是否支持
- 实战代码
 - GeekCamera2\app\src\main\java\com\deepinout\geekcamera\cameracontroller\CameraController2.java#**doInitSupportedHighSpeedVideoSizes**

Camera控制流程(1/2)

- Session创建

- 创建SessionConfiguration时, Session Type要设置为SessionConfiguration.SESSION_HIGH_SPEED
- 只配置一个Preview Surface + 一个Video Recording Surface, 不支持Video Snapshot
- 实战代码
 - GeekCamera2\app\src\main\java\com\deepinout\geekcamera\cameracontroller\CameraController2.java#**createCaptureSession**

- Repeating burst request创建

- 调用CameraConstrainedHighSpeedCaptureSession#createHighSpeedRequestList, 根据一个request产生一组CaptureRequest
- 实战代码
 - GeekCamera2\app\src\main\java\com\deepinout\geekcamera\cameracontroller\CameraController2.java#**setRepeatingRequest**

Camera控制流程(2/2)

- Repeating burst CaptureRequest的个数 (Batch Size) 是如何决定的?
 - 录像过程中预览一般30FPS就足够了, 因此Batch Size的计算会想办法将预览帧率限制在30FPS

```
// Request list size: to limit the preview to 30fps, need use maxFps/30; to maximize  
// the preview frame rate, should use maxBatch size for that high speed stream  
// configuration. We choose the former for now.  
int requestListSize = fpsRange.getUpper() / 30;  
List<CaptureRequest> requestList = new ArrayList<CaptureRequest>();
```

- 举例240FPS的CaptureRequest List有8个Batch Size



MediaRecorder控制流程

- 将CamcorderProfile中的值设置给MediaRecorder
- setVideoFrameRate
 - Slow Motion
 - 建议不要录制Audio
 - 通过setVideoFrameRate设置的video frame rate要小于capture rate, 建议为30
 - 高帧率视频
 - Video frame rate与capture rate相等
- 实战代码
 - GeekCamera2\app\src\main\java\com\deepinout\geekcamera\preview\VideoProfile.java#**copyToMediaRecorder**

Thanks