**Architecture**

The following figure presents architecture overview of the project. When the camera is switched on, on the Android phone the transmission starts. The video is sent as RTP packets to the RTSP server. Users communicate with this server to view video. When RTSP server receives request from the client, it will begin forwarding the RTP packets to the user’s browser. The video is then buffered and played on the browser.

**Web**

**Browser**

**Android Mobile Camera**

**RTSP Server**

**RTP Packet**

**Figure: Architecture Diagram**

**Android Mobile Device:**

Android is a recently developed operating system designed for mobile devices. It was developed by Google and uses a Linux based kernel, Java compatible libraries along with the just-in-time compiler for development in the Java programming language. It supports many hardware components. Common hardware consists of cameras, a Wi-Fi communications chip, Bluetooth sender and receiver and a color touch screen. The Android Application Program Interface (API) contains many functions and classes to control the cellular devices. This functionality is all available in a single device with at least a day worth battery life.

In our project we use platform Android 2.2.

**Real –Time Streaming Protocol:**

The main protocol that is used in Streaming is RTSP i.e. Real Time Streaming Protocol. RTSP is an application level protocol that aims to provide a robust protocol for streaming multimedia over many applications and to support interoperability between clients and servers from different vendors. RTSP is considered more of a framework than a protocol. RTSP is designed to work on top of RTP to both control and deliver real-time content.

**How does RTSP Work?**

RTSP takes advantage of streaming which breaks data into packets sized according to the bandwidth available between client and server. When the client has received enough packets, the user's software could be playing one packet, decompressing another while downloading the third. This enables the user to listen or view the real time file almost immediately, and without downloading the entire media file. This applies to live data feeds as well as stored clips.

**Functions of RTSP:**

* Provides for on demand access of multimedia items such as stored real time audio/video files, live real time feeds or stored non-real time items.
* Allows interoperability between client server multimedia products from multiple vendors.
* Provides for control and delivery of real time media and associated events between a media server and large numbers of media clients.

**Differences from HTTP:**

* RTSP server needs to maintain state by default in almost all case.
* RTSP server and client can issue requests.
* The Request URI always contains the absolute URI.

**Real-Time Transfer Protocol Server:**

The RTP server receives the RTP packets from the Android device. When a viewer connects to the RTSP server and requests to play a stream, the RTP server sends the RTP packets and forwards them to the viewing users.