Research Article
Global Positioning System Assisted Intelligent Wireless Video Processing and Monitoring Systems Using Mobile

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Abstract: ATM monitoring systems involves constant monitoring in order to access live and recorded video from different locations. Especially in banking systems CCTV and IP ATM monitoring systems some resources involved are limited or expensive. Advances in programming paradigms in ANDROID OS have allowed increasing the dynamism and flexibility in video ATM monitoring using GPS system. In this study we proposed an ATM monitoring system for banking applications, using a GPS assisted mobile device and admin can monitor the banking activities even from his home.

Keywords: 3G mobile, ATM android OS, digital storage mechanism, GPS device, IDE

INTRODUCTION

In the present days the human life has become a machine, as such every human need to monitor his children, employees and further purposes. So in order to take an account of such purposes application software is developed with features that can overcome those monitoring needs.

3G Mobile GPS based monitoring system uses the latest 3G mobile communications technology, in order to meet the ATM monitoring application need of Banking users. Video ATM monitoring application software is made handy, user-friendly. ANDROID-platform is implemented to offer the flexibility. This GPS based video ATM monitoring offers less cost and abides by low infrastructure usages.

Objectives of the study: Video ATM monitoring systems have increase their needs of dynamism in order to allow the different users to monitor the system selecting different QoS depending on the system status and to access live and recorded video from different localizations, for example, from their mobile devices. More concretely, in IP ATM monitoring systems some resources involved are limited or expensive so dynamic recon figuration could become competitive advantage for system integrator and designers able to offer flexible applications adaptable to users' needs. Advances in programming paradigms have allowed increasing the dynamism and flexibility of distributed environments. Concretely, Service-Oriented approaches provide means of developing decoupled applications in heterogeneous networks by defining the concept of service. A service, in the SOA context, is an entity that receives and sends messages through well-defined interfaces, allowing building more complex applications that increase the value of the system. This concept can be applied to QoS-aware (Quality of Service) systems, in order to ease the configuration and reconfiguration of applications. Besides android is a software stack for mobile devices that includes an operating system, middleware and applications that can be suitable for the development of the end-user ATM monitoring application.

In this system, for processing the video and for ATM monitoring TV's and Computers are used for capturing from the Camera's and then 90% of the connection between the computers and the video cameras are wired, which leads to serious disruption. More infrastructures are needed to maintain as they need an adequate maintenance, similarly the existing system costs heavily as such they are difficult to be afforded by the small and medium enterprises. Then human power is required at the monitoring centre for monitoring purpose.

Now, let us analyse the drawbacks that are present in the existing systems. (Estevez-Ayres *et al.*, 2007):

- Continued power supply which has the less flexibility
- Video Processing (JMC Video) Hardware Control mechanism Video Recording addresses and needs uninterrupted network connections
- This systems are highly costlier needs a specific person for the monitoring the ATM monitoring
- If the Admin is not able to attend duty due to sickness or any other reason, he is not able to monitor the activities

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ADVANTAGES

This recommendation system will overcome the problems that we face in the existing:

- In this Proposed System, any person can have the video ATM monitoring of our destination need in our Mobile Screen
- Easy to Afford, Implementation cost is less
- Video and sound both can be viewed and even it can be recorded
- No need of TV, Computer as a monitoring device

In this proposed system, our Mobile Phone Screen can be used to monitor the happening inside the ATM. A special application software is developed for our paper that works on the android mobile OS, which is downloaded in to mobile phone, the captured video is Processed, stored in a database and it is send to Satellite, using a GPS device. Our Mobile Screen can access the video from anywhere in the world. In addition to this, we have come up with a new methodology for rotating the Video camera completely using our mobile keys and in addition to capture the audio signals and send it to the database from which using query video data can be retrieved using GPS system (Estevez-Ayres *et al*., 2007).

METHODOLOGY

Module description: The CCTV cameras installed need:

- Front screen designing (XML)
- Video Processing (JMC Video)
- Hardware Control mechanism
- Video Recording
- Database cum Storage Device
- GPS device

Description about the modules:

Front screen designing (XML): This ATM monitoring is possible only by developing application software for the mobile also querying the database can be achieved through the application software. The user interface is enhanced by using the application. Xml screen design are known as the layouts, the initializing screen, processing screen these are designed through the IDE's. It is developed in such a way that the application must run on the mobile screens Each of the layouts are determined through the emulator.

Video processing (JMC VIDEO): The JMC VIDEO LIBRARY is a wrapper for playing videos and grabbing video data for any of the formats that the JMC
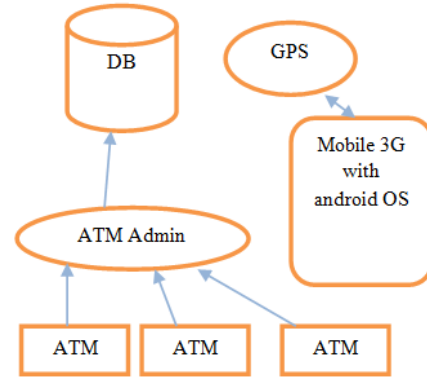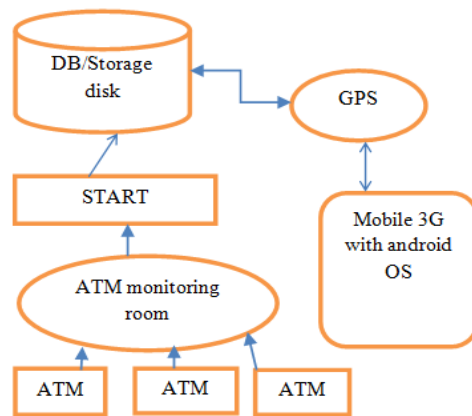

Fig. 1: Architectural diagram
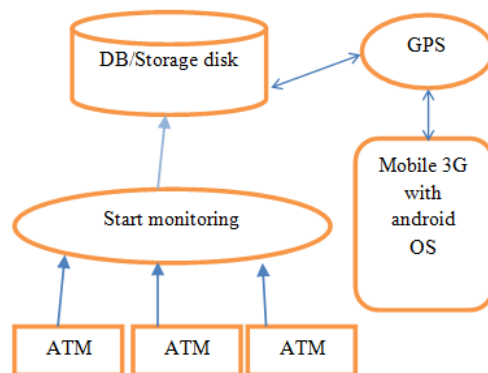

Fig. 2: Data monitoring diagram

Fig. 3: Control system diagram

library supports. The frame rates for playback are very fast, up to 300fps full screen for multiple YouTube quality fly videos playing simultaneously. The "repeat" and "bounce" Start ATM monitoring recording Mobile camera functionality here work correctly. (Estevez-Ayres *et al*., 2009) (Fig. 1 and 2).

Hardware control mechanism: The application software which developed has two options to make a control. Control through touch screen control through

keypad (by pressing 1, 3, 6, 9) Camera has an right turn of left and right motions of 45 degrees perceptions also 3 controls for GPS access (Schulzrinne *et al.*, 2005).

Recordings: There occur certain specifically conditions that the ATM monitoring must be recorded so here the recording is an advantage point. Digital storage mechanism is opted; the mediums can be hard drives, which can serve as a storage platform as well as database (OMG, 2007) (Fig. 3).

CONCLUSION

Service-oriented paradigm can be successfully applied to ATM monitoring systems, increasing their flexibility and dynamism, allowing the creating of applications of added value, such as the usage of smart phones as user terminals to control and watch over different areas.

With the coming 3G networks, huge bandwidth will be available to telecom operators and high- end video streaming will be made possible. So as service oriented architecture for ATM monitoring systems was proposed and a prototype of the system using an android terminal was described.

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