CHAPTER 7

REQUIREMENT ANALYSIS TOOLS AND TECHNIQUE

7.1 Overview

Consistent research enabled detailed data on the Remote Monitoring CCTV system to be gathered. This is necessary to produce a quality remote monitoring system. Each research carried out analytically evaluated and appraised (when appropriate) the existing software samples.

Stated below are some of the study methods implemented during the analysis phase.

- Testing and Evaluating Existing Software
- Fact finding - Interview
- Fact finding – Internet research

7.2 Testing and Evaluating Existing Software

By testing and evaluating a sample of the existing software, the developer gains ideas for a new product. This sampling provides a basic knowledge about the

operation of the system. To study more about the existing CCTV software, the developer investigated some of the current CCTV software available in the market. From the testing and analysis of JVC C2U network camera software, the developer identified the need of the products focusing and positioning flexibility.

Below are the software that were tested and analysed:

- JVC C2U network camera software
- Smart Guard surveillance software

7.3 Fact finding - Interview

Testing existing software would not provide sufficient information for the developing of a good prototype as the developer's opinion might be biased. Therefore, interview sessions were conducted to obtain more knowledgeable opinions. This technique proved to be an abundant source of qualitative information whereby individual's opinion', subjective activities and problems were obtained. Many developers prefer this approach as to other fact - finding techniques, as this approach directly obtains the user's requirement and transforms the ideas into software. Interview is an effective way of obtaining data where illiterate individuals or other individuals who are not able to communicate effectively in writing, interview is an effective way of fact-finding means. However, it is the interviewee's co-operation that determines the success of the interview.

An with Mr. Soo (*Senior CCTV Engineer*) of Cipher Tec (M) Sdn Bhd (A CCTV sales and distribution company) was conducted on the 15th February 2002. The interview questions are included in the appendices.

7.4 Fact finding – Internet research

The Internet has been the main information source for gathering information for this project. Other sources include journal, magazine, newspaper, periodicals and books whether of the technical or non-technical source. Technical sources include sample-programming code (http://www.planet-source-code.com/), while non-technical sources include general information and news of CCTV and remote monitoring system.

7.5 Requirement analysis method - Data flow diagram

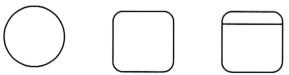
Data flow diagram is a data flow analysis approach that uses some symbols to create a pictorial representation of data movement within a system. This method was developed and promoted by two organisations, namely Yourdon, and Gane & Sarson (James A Senn, 1989). There are four basic symbols used in drawing the data flow diagram.

They are:

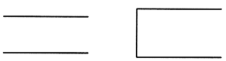
Entity

Data flow

Process



Data store



7.5.1 Context diagram

The context diagram is the initial part of data flow diagram. It is also known as the 0 level diagram. In this diagram, there will be only one bubble and it is usually interfaced with more than one external entity. Its main purpose was to identify the system's boundary, the interfaces and the environmental component that interacted with it.

7.5.2 Lower level diagram

Modelling with data flow diagram technique requires a top down approach. An initial overview of the system model was expanded into more detailed model.

The diagram below shows the process of remote monitoring system using Microsoft Visio 2000.

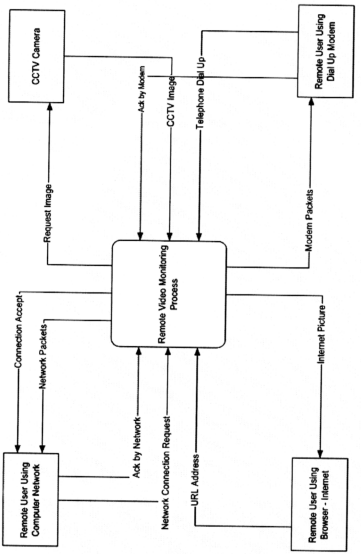


Figure 7.1 Context diagram for remote monitoring system

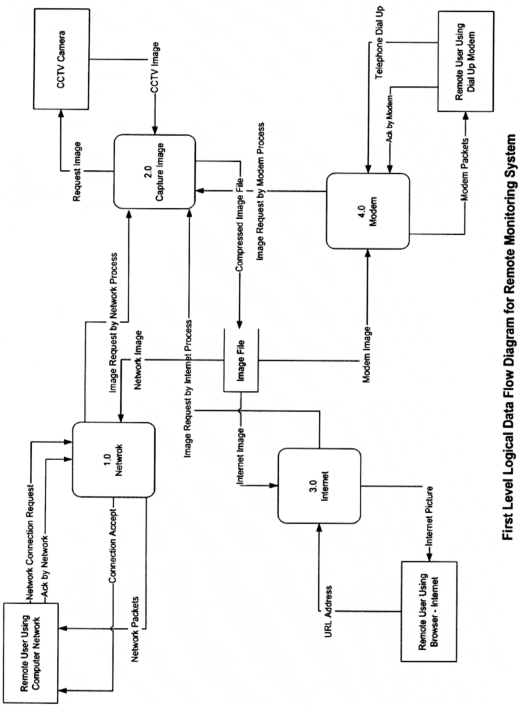


Figure 7.2 First level logical data flow diagram

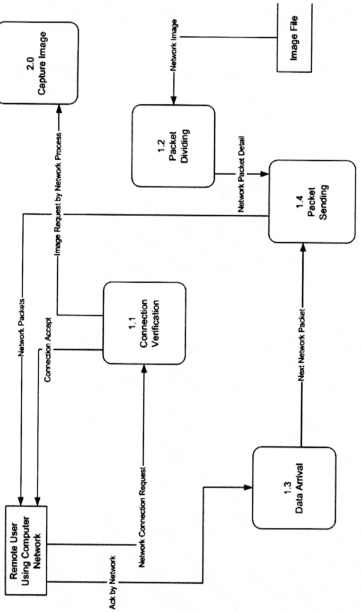


Figure 7.3 Second level logical data flow diagram for process 1

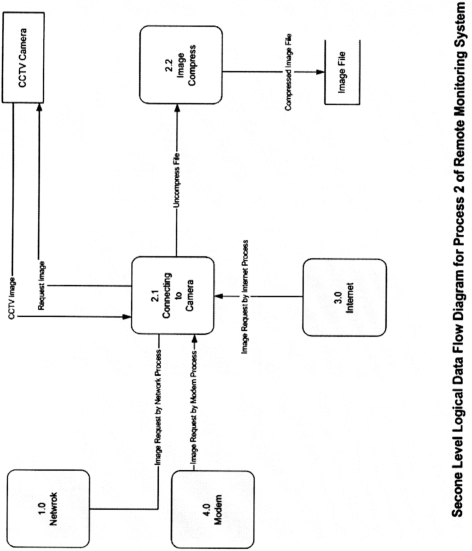


Figure 7.4 Second level logical data flow diagram for process 2

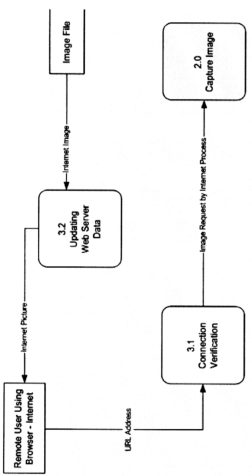


Figure 7.5 Second level logical data flow diagram for process 3

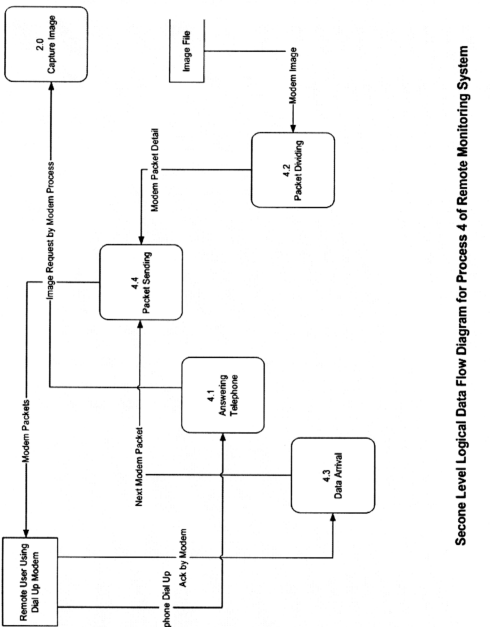


Figure 7.6 Second level logical data flow diagram for process 4