## Description of demonstration :

1. Introduction

Recently, camera has used as input device for capturing information because of the spread of camera, convenient input of information, and acquisition of diverse information in the real world. Camera as input device has some advantages that provides convenience of use and captures instantly information in the field. However, camera image is captured under inconsistent input condition that results in image variation and distortion. In addition to, camera image is very sensitive to illumination. So, it is difficult to recognize camera document image captured in real world even though characters in image which connotes significantly and briefly the state of things in the fields. In this demonstration, camera document recognition system will process real world document image and recognize characters in camera document image.

2. System Architecture

Camera document recognition system goes through three steps such as preprocessing, character extraction, feature extraction, camera document image is recognized. Image transformation, image enhancement, region-based binarization and noise removal have preprocessed to extract appropriately character region in preprocessing step. Character is extracted from background image using merge-split method. Feature vectors are extracted and extracted character is recognized. Four kinds of camera such as web camera, digital camera, cellular phone camera and PDA camera are used to capture image.
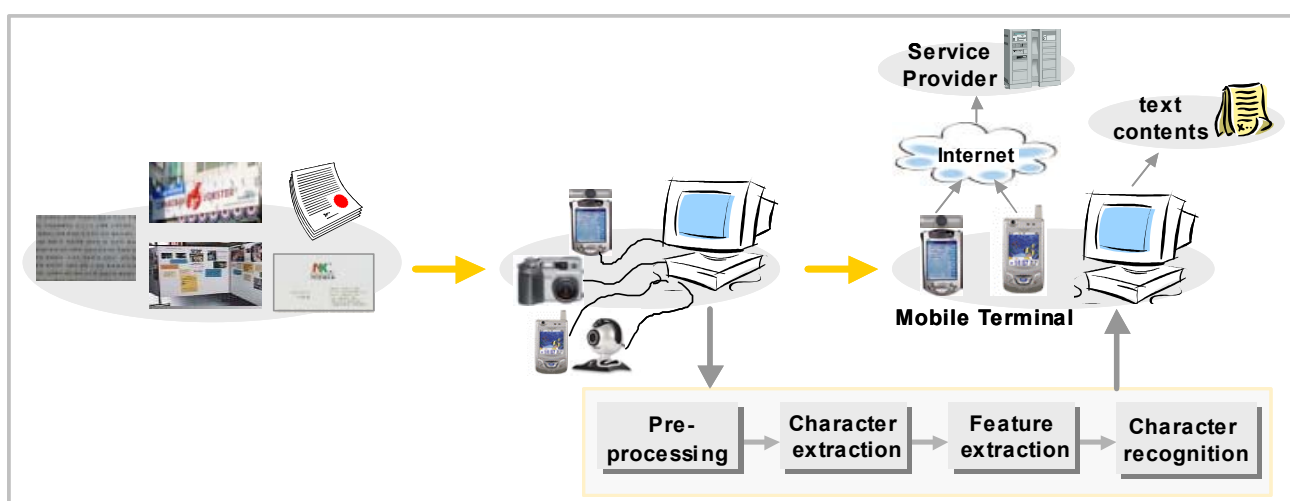
< The flow of camera document recognition system>
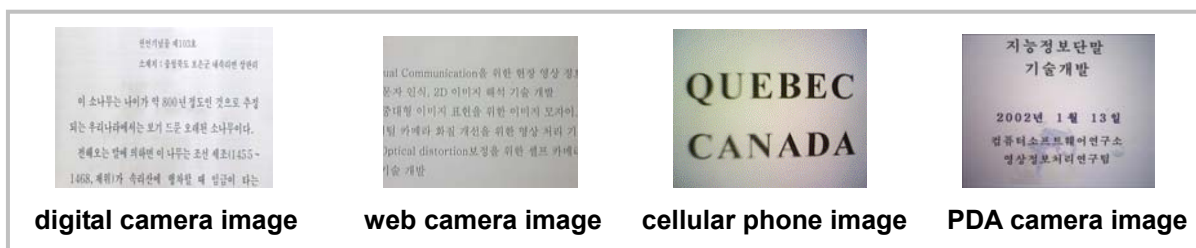
< Sample images captured by cameras>

<Result images of each step>
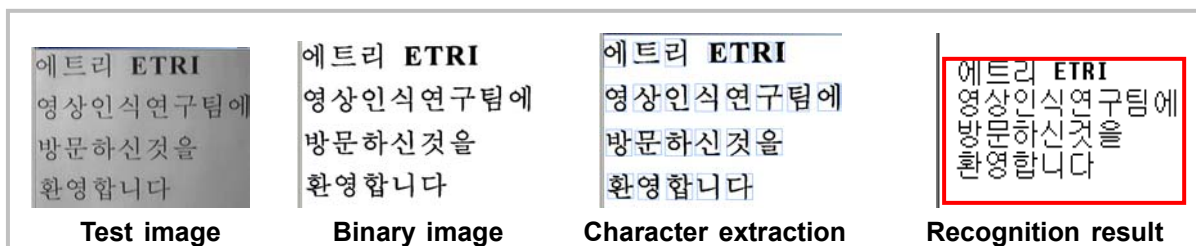
Various kinds of document images can be recognized which are presentation paper, monument image, paper, name card, car number, signboard *etc*. Sample image captured by each camera is transformed into gray and binary image. Recognition result after character extraction can be saved as text file. The text file is applied to edit document or to send e-mail to other user. And also the text file can be transferred to mobile terminal to searching information or translation into other language using internet.

3. Advantages

■ Excellent algorithms for correction of distorted image, image enhancement and binarization of camera document image
■ High speed processing time
■ Recognition of various kinds of camera documents

4. Applications

■ Robot traveling system
■ Information searching and translation into other languages using PDA or cellular phone
■ Text reading computer
■ Easy transformation of mass document images to text contents
■ Possibility of real application of camera document recognition using various kinds of commercial cameras