

PROPOSE IMPROVEMENT OF URBAN FLOODING MANAGEMENT TOOLS HCMC

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ABSTRACT

Current urban flooding is a big problem for many countries in the world, including Vietnam, most notably in HCMC. Solving flood problems is an essential and urgent issue to ensure sustainable urban development.

The study to improve this flood management tool gives a timely warning to people by traffic cameras which identify the areas of raining in the city, ensure real-time for the application and information is transmitted to people immediately.

A new feature of this study is the application of the camera which records images of the areas of the city where it is raining. Thereby, it is easy for managers to make comments and management direction later.

When the application improves this feature, it will bring high performance. The city has a more useful and practical tool.

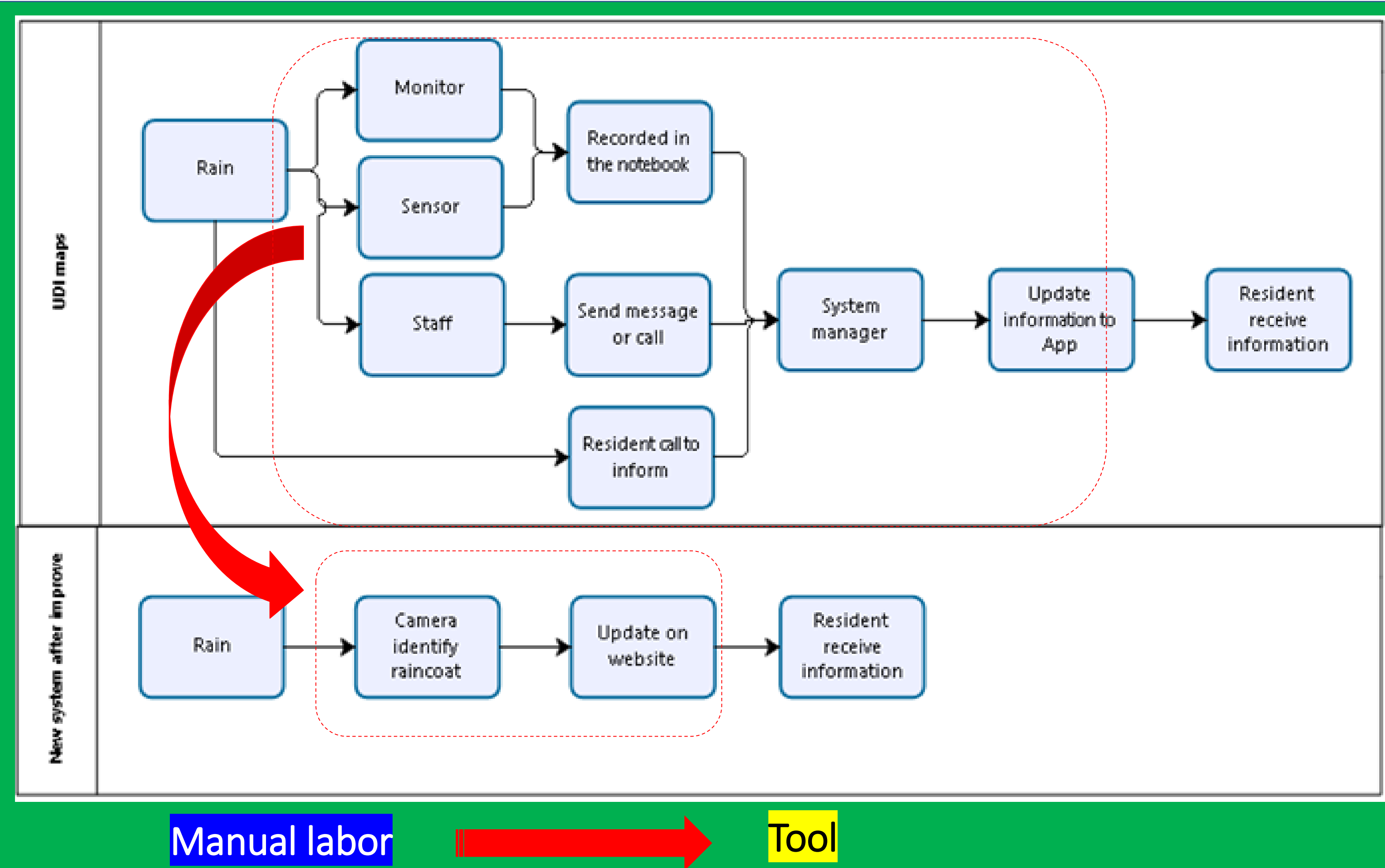
INTRODUCTION

The tool is developed on the available application (UDI maps) with more than 10,000 visitors but it has some shortcomings: improper forecasting system, slow monitoring and receiving system, the hydraulic model does not run, lack of manpower to operate.

UDI maps includes features: Finding Route, Status, Flood Warning, Sending flooded information

So, the aim of this tool is to improve the detection feature when the rain appears and help people to notice where it is raining. The tool supports users with reliable information sources.

PROPOSAL SOLUTION



METHODOLOGY

1. Methods of information collection

Center of the Urban Flood Control Program Ho Chi Minh City
Management Center of Thu Thiem Tunnel
FPT Information System

2. Methods of statistics and data analysis

From the collected data, synthesized and processed data using Excel software. Converting data and data into diagrams for the presentation is clear and easy to understand.

3. Camera image analysis method

Thanks to supporting technology software: OpenCV, Fifa Solution, Tensorflow

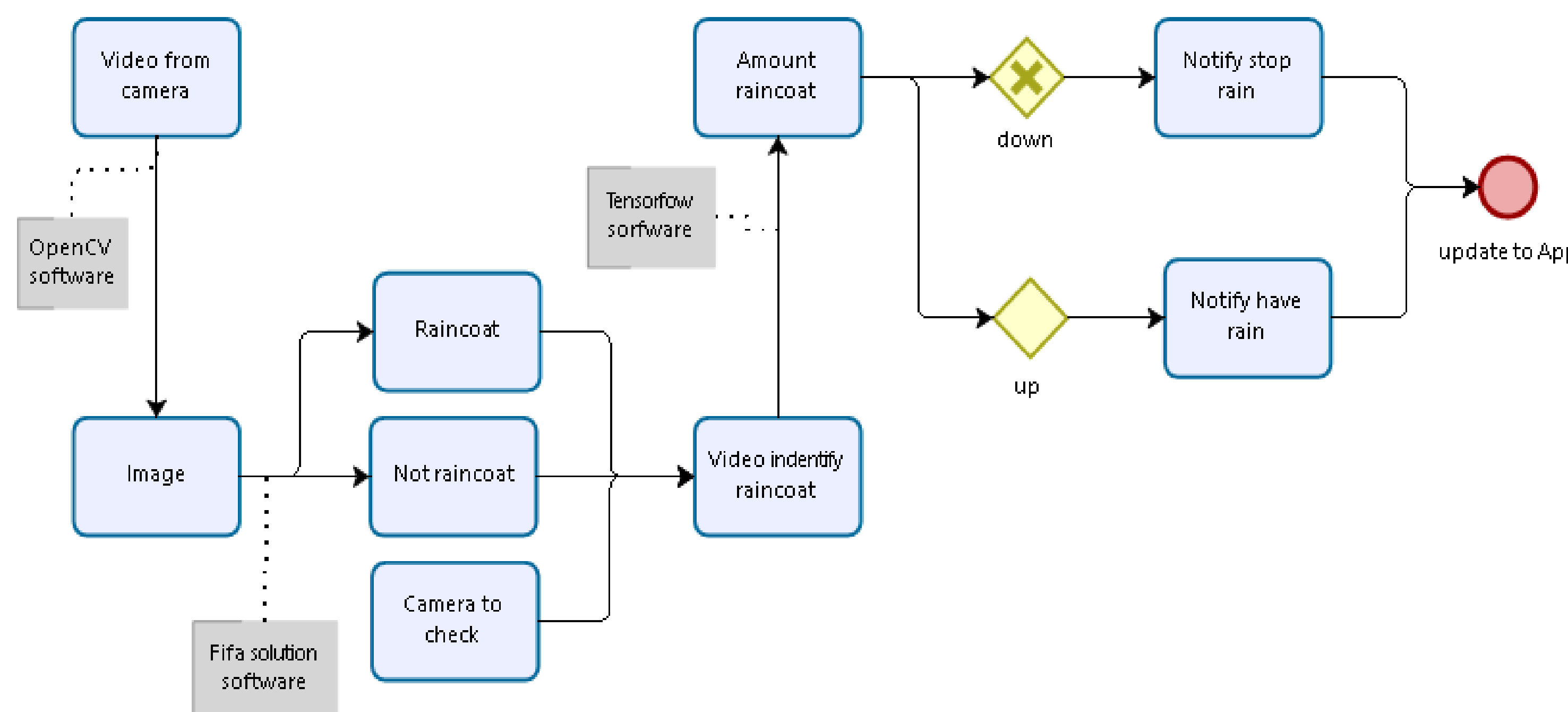
4. Methods of consultation with experts

Orientation on urban flood management by information technology
Support turn simulation theory into real model through algorithms and software

ACKNOWLEDGEMENT

We would like to express our deepest gratitude to the SAUNAC project for providing us opportunity to approach smart city and information technology knowledge and thanks to FPT for supporting us use equipment and software for this research.

RESULT 1: Video show the ability to identify raincoats, giving warnings

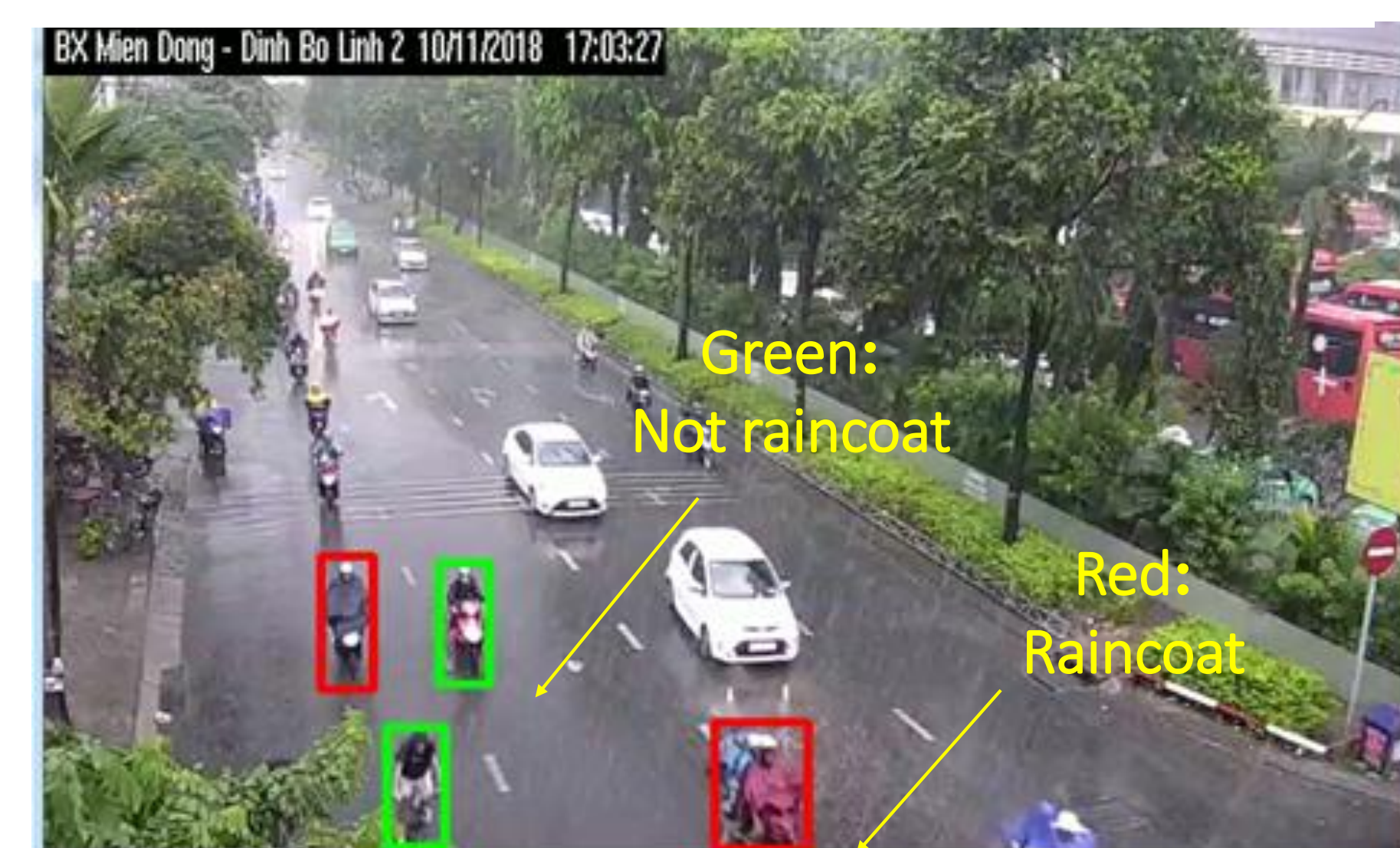


Step 1: Transfer video to image

Step 2: Image processing: use FIFA SOLUTION software on website mina.stis.vn to mark raincoat image.

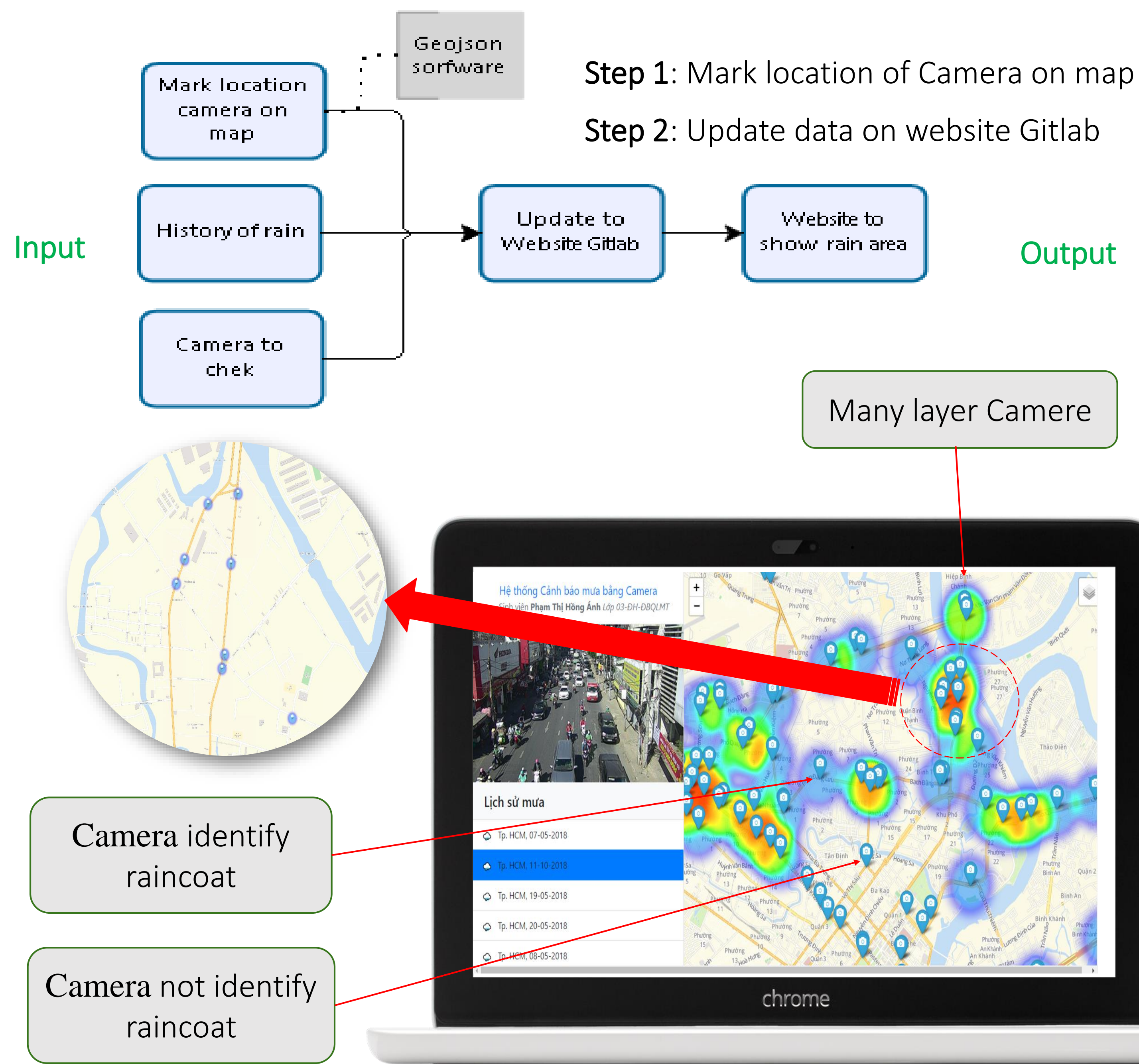
Step 3: Use Tensorflow software (framework of Google) to "train deep learning" to instruction Camera how to identify raincoat.

Step 4: Update to App



Pic 1: Video showing the ability to identify raincoats

RESULT 2: The Map Camera website simulates the location of the identified rain



Pic 2: The Map Camera Website

CONCLUSIONS

1. Create highly interactive applications for users
2. When the application has supported the user to know which areas have rain, from which the user can choose the optimal route to move.
3. Serve support for professional work to easily perform tasks
4. Open new directions for the application of science and technology to urban traffic management and improve the orientation of city development towards sustainable smart cities