UNIVERSITI TEKNOLOGI MARA

ASSESSMENT OF GENERATED SPATIAL INFORMATION USING UAV SENSOR FOR FLOOD RISK MAPPING

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of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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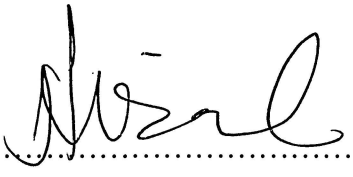
Signature of Student	:	
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CHAPTER ONE
INTRODUCTION

1.1 Research Background

Floods are among the most common and destructive natural hazards causing extensive damage to infrastructure, public and private services, the environment, the economy and devastation to human settlements. Flood could also be defined as the overflow of areas that are normally submerged with water or a stream that has broken its normal confines or has accumulated due to lack of drainage.

Common floods generally occurred in many parts of the world. They indirectly provide rich soil and nutrients, water and a means of transport, but flooding at an unexpected scale (damaging flood) and with excessive frequency can cause destruction to life, livelihoods and the environment. Over the past decades, the pattern of floods across all continents has been changing, becoming more frequent, intense and unpredictable for local communities, particularly as issues of development and poverty have led more people to live in areas vulnerable to flooding. The Fourth Assessment Report (2007) of the Intergovernmental Panel on Climate Change (IPCC) predicts that heavy precipitation events, which are very likely to increase in frequency, will augment flood risk. These floods will affect life and livelihoods in human settlements in all areas like at the coastal zones, river deltas and mountains.

On the other hand, floods by nature becomes a complex event and cause range of human vulnerabilities, inappropriate development planning and climate variability with the exception of flash floods, whose scale and nature are often less certain (Satish, Nagendra, & Ravi, 2012). Frequency of the extreme rainfall events have increased nowadays probably due to the issues resulting from the climate change (Niroshinie, Kazuaki, & Yasuo, 2016). According to Qiuhua, Xilin, and Jinming (2016) flash floods could commonly be characterized by rapid-varying overland flow as a result of complex and rapid catchment response to intense rainfall. Such that, these floods can also emerges from heavy and persistent rainfall within a very short timeframe damages infrastructure, agricultural commodities, displace people, animals, aquatic lives, and as well causes the reservoirs and dams capacity limits to exceed as a result of siltation.