Situation Data Intelligence System for a decision making in military operation

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Abstract—**The problems of insurgency are the issues in many countries nowadays. To counter against these issues, situation data related to the insurgency in the area needed to be collected and analysed to provide the best strategy for the decision making. Due to the large amount and diversity of collected data, it would be hard for the decision maker to analyse and put the right decision. This project aimed to propose a computer-based intelligent system to automatically analyse a situation, manage available resources, visualise the situation, and foretell the outcome of the situation helping decision maker to make the right decision based on available collected raw data. The system is based on the business intelligence (BI) applications, which is the tools and techniques for transforming raw data to useful information. The developed system should enable decision maker to effectively assess and deploy forces into the suspicious area with minimum risk of casuality.**

I. INTRODUCTION

Insurgency is an act of rebellion groups against a constituted authority, and is not recognized as belligerents [?]. Insurgency is used to describe an unlawful movement, in which it is not authorized in accordance with the law of the nation. Insurgency may be in the form of cell-network secrecy, terrorism, cultivating support from population, or attacks against government [?]. Insurgency directly affects the national security. In addition, insurgency causes problems in politic and economy of the nation. The problem of insurgency is a key issue of the nation and all national agencies must work together to solve the issue. To counter against insurgency, the counter-insurgency (COIN) campaign should be developed. COIN refers to comprehensive civilian and military efforts taken to simultaneously defeat and contain insurgency and address its root causes [?]. To develop a successful COIN campaign, situation data related to the insurgency must be collected and analyzed. Due to large amount of data and wide variety of data sources, it is difficult for the decision maker to evaluate the situation and put the right decision.

Business Intelligence (BI) is the tools for transforming raw data to meaningful information. The concept of business intelligence is useful not only in business world, but also in COIN. BI is capable of handling large amounts of unstructured data to help identify, develop and create new strategic business opportunities. The goal of BI is to allow for the easy interpretation of large volumes of data. [?] When BI is applied to the COIN, it can provide a tool for organizing, transforming, analyzing, and forecasting the situation. The military intelligence system based on BI would provide a decision maker with meaningful and useful information, which should help a decision maker deciding on the right strategy to counter insurgency and prevent unnecessary lost to civilian and military units. In addition, the intelligence system can foretell the and evaluate the future outcome of the situation. This predicted information would give some guidelines to a decision maker before deploying the strategy. While BI is a tool, the military intelligence is a discipline that define a number of information collection and analysis approaches to provide guidance and direction to commanders in support of their decisions. BI cannot replace military intelligence, but its analytical and visualisation techniques could be applied to conduct efficient military intelligence.

This paper provide the military intelligence system framework for the counter insurgency (COIN) strategy. The framework is based on using BI and data warehouse techniques to provide a tool for organizing, transforming, analyzing, visualizing, and forecasting the insurgency situation data. This framework specifies data collection method, data storing method, data structure, data forecasting, and data visualization. Section II of the paper provides the overview of system components.

II. BACKGROUND AND RELATED WORKS

A. Military Intelligence

Military Intelligence is a military discipline relating to information collection and analysis to provide guidance and direction to a decision-maker. Military Intelligence is achieved by assessment of a wide variety of data sources. There are 3 levels of military intelligence. Strategic intelligence is concerned with economics, political, and military capabilities. Operational Intelligence is concerned with support to an expeditionary force commander. Tactical Intelligence is focused on operations at the tactical level. All three levels require careful data collection and analysis. The process of military intelligence involves collecting, analyzing, packaging, and disseminating of informaion. With the help of information and computer technologies, military intelligence can be carried out more effectively.