FUZZY LOGIC FOR UTILIZATION IN INTELLIGENCE CYCLE AND IN GENERATION OF ALTERNATIVES

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ABSTRACT

In this paper I summarize an application of Fuzzy logic in intelligence cycle, also some concept about utilization in intelligence cycle and in generation of alternatives.

Keywords: Intelligence Warfare, Fuzzy Logic, Decision Analysis, Utilization in IC

INTRODUCTION

The concept of Fuzzy Logic (FL) was conceived at the beginning of the 70s by Lotfi Zadeh, a professor at the University of California at Berkley, and presented not as a control methodology, but as a way of processing data by allowing partial set membership rather than crisp set membership or non-membership. This approach to set theory was not applied to control systems until the 70's due to insufficient small-computer capability prior to that time. Professor Zadeh reasoned that people do not require precise, numerical information input, and yet they are capable of highly adaptive control. If feedback controllers could be programmed to accept noisy, imprecise input, they would be much more effective and perhaps easier to implement.

What Is Fuzzy Logic?

In this context, FL is a problem-solving control system methodology that lends itself to implementation in systems ranging from simple, small, embedded micro-controllers to large, networked, multi-channel PC or workstation-based data acquisition and control systems. It can be implemented in hardware, software, or a combination of both. FL provides a simple way to arrive at a definite conclusion based upon vague, ambiguous, imprecise, noisy, or missing input information. FL's approach to control problems mimics how a person would make decisions, only much faster.[]

Because of the nature of intelligence predictions and decision analysis, fuzzy logic can be utilized in nearly every step of the intelligence cycle and create options for planners and decision makers. Additionally, offensive intelligence warfare can benefit from fuzzy logic by efficiently applying the least amount of force necessary to achieve the desired results. For these reasons, intelligence strategists can use fuzzy logic systems to aid in management and decision analysis. First invented as a representation method and calculus for unsure or indistinct concepts, fuzzy logic is fundamentally a multi-valued logic that permits more