A Modular Framework of River Weir Operations for Water Resource Management Systems

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Abstract—This paper proposes and evaluates a modular framework of river weir operations for water resource management systems. The proposed modular framework is used to model a series of river weirs and estimate the water discharge (i.e., water flow rate). Small modules are designed to represent weirs and perform water flow rate computation. The modules interact with each other to form an estimation of the river water discharge. Since there are many types of weirs and they are interconnected in a variety of patterns, modules are designed to conform to the weirs' characteristics. This paper describes how the proposed modular framework, called LIλT framework, is modeled. The evaluation of the LIλT framework focuses on validity and the accuracy of the LIλT framework in the real-world applications. The results show that the LIλT framework can be applied for the real river weirs in the Mae Chan River, Thailand.