

- Project Title** Approach Alternatives, Cost-Benefit Analysis, Migration Strategy and Conceptual Design of a New SCADA/EMS System at the National Load Dispatch Center of Vietnam Electricity
- Contracting Agency** Vietnam Electricity (EVN). Project execution and supervision under the responsibility of the National Load Dispatch Center (NLDC)
- Project Organization** Prime Contractor: Energy Consulting International, Inc. The work was performed by Savu C. Savulescu with full responsibility for all the technical and project management aspects of the project
- Summary** This project represented the continuation of an earlier consulting effort¹, encompassed the definition of alternatives, cost-benefit analysis and the conceptual design of a solution that would cure the existing problems, and was conducted in two phases, governed by two different contracts, as follows:
- Definition of Approach Alternatives, Data Collection and Conceptual Design, between January and February, 2004
 - Cost-Benefit Analysis Calculations, Migration Strategy and Preparation of the Final Report, between February and April, 2004
- Background** In recent years, EVN has conducted several SCADA/EMS projects aimed at implementing modern real-time and offline information systems at the NLDC and the Northern, Central and Southern Regional Load Dispatch Centers (NRLDC, CRLDC and, respectively, SRLDC). At the time when these projects were initiated, EVN specified advanced designs predicated on, then, state-of-the-art computers, communications and software. Due to the vendors' failure to comply with the stated specifications, the dramatic changes that took place in the computer technology, and recently the advent of electricity markets, the end result of this significant effort did not meet EVN's original expectations. The problems and difficulties with the existing NLDC, NRLDC, CRLDC and SRLDC were addressed in the study Technical Review of Existing EVN's SCADA/EMS Systems, which is documented in reference¹ and was conducted between October 2002 and January 2003. The project Approach Alternatives, Cost-Benefit Analysis for EVN SCADA/EMS Migration Strategy and Conceptual Design of a New System for NLDC constitutes the continuation of the effort documented in reference¹ and is briefly summarized in this data sheet
- Objectives** The objectives of the consultancy services provided under the two contracts specified in the section Summary above encompass:
- The identification of options and alternatives available for an effective, yet timely, SCADA/EMS migration that would: protect EVN's investment in hardware and software facilities; provide able and effective info and communications support to EVN's responsibilities in the electricity market support the control and monitoring requirements of the Transmission Companies while minimizing the number of systems and the amount of

¹ Please refer to the project data sheet *Technical Review of SCADA/EMS Systems Currently Existing at Vietnam Electricity*

material and human resources needed to implement them

- The comparison and cost-benefit analysis of such alternatives
- A concise, yet complete, Functional Requirements Analysis
- A Conceptual Design for a new SCADA/EMS and power market supporting system for National Load Dispatch Center.

Scope of Work

The scope of work of Phase One included the following:

- Task 1: identify and document the Approach Alternatives and Cost-Benefit Analysis Scenario, including: developing a broad array of potential approaches for migrating from the existing SCADA/EMS landscape to a new Hierarchical SCADA/EMS, or ISO, designed from scratch to meet both the requirements of both the current vertically integrated system operation, including the control, monitoring and information needs of the Transmission Companies, and the operation of the upcoming electricity market; identifying the most attractive and cost effective approach alternatives; and establishing the premises and developing the scenarios for the cost-benefit analysis
- Task 2: meet with the EVN Project Team and consolidate the Approach Alternatives and the Assumptions and Scenario for the Cost-Benefit Analysis, including a two-day workshop with the EVN Project team to: discuss the alternatives, appraise the most attractive approaches in light of the recent technological developments and explain the cost-benefit analysis methodology; collect the cost information needed to perform the calculations; present the preliminary approach and methodology to the EVN management; and finalize the assumptions that will subsequently form the basis for the cost-benefit analysis
- Task 3: prepare the Conceptual Design for New NLDC and define the scope of the SCADA/EMS upgrades that will need to be implemented at the Regional Load Dispatch Centers

The scope of work of the Phase Two encompasses the following:

- Task 4: develop the Cost-Benefit Analysis, including the consolidation of the analysis scenarios, preparation of spreadsheets and actual calculations
- Task 5: document the results in a Final Report
- Task 6: prepare a final Executive Summary and conduct a final presentation in Hanoi

Period of Performance

February – April, 2004