Comité de Operación Económica del Sistema Interconectado Nacional (COES SINAC) operates the electrical power transmission grid serving approximately 70 percent of the population of Peru. The organization is tasked with coordinating short-, medium- and long-term operations to achieve minimum operating costs while guaranteeing system security and reliability. Additionally, COES SINAC is responsible for transmission development planning.

In 2008, COES SINAC contracted Siemens PTI to deploy a transmission network modeling and on-line advanced applications solution for their operations center. The business requirements for the system included that it must operate alongside their home-grown SCADA, provide a user-friendly interface, and offer a high degree of reliability and accuracy given measurement data quality limitations.

To deliver the solution, Siemens PTI leveraged its commercial PSS®ODMS product. Engineers from Siemens PTI and COES SINAC collaborated on development of the operations network model, derived from a PSS®E planning model, imported into PSS®ODMS, then further enhanced to include node-breaker detail, measurement point mappings, substation one-line diagrams, and other necessary data for a transmission operations environment. Measurement integration was achieved via off-the-shelf adapter software from Siemens PTI and Systems Integration Specialists Company, Inc. (SISCO) based on industry-standard, near real-time data exchange protocols (ICCP and OPC DA). Siemens PTI provided State Estimator tuning services followed by operator/dispatcher training – conducted in Spanish – thanks to one of Siemens PTI’s bilingual consulting engineers based in Houston, Texas. The solution met all acceptance criteria (including a 30-day continuous system availability test) and the project was completed on schedule. PSS®ODMS has remained in production since in the COES SINAC operations center, providing continuous near real-time system simulation/analysis capabilities for improved grid security and reliability.

The PSS®ODMS product is based on the CIM (IEC 61970) standard, which has been continuously evolving and gaining international industry acceptance for more than a decade. The transmissions network model deployed at COES SINAC in 2008 was based on CIM Version 10. Since then, PSS®ODMS has evolved along with the CIM standard to support CIM Versions 12, 14 and 15. In mid-2012, COES SINAC contracted Siemens PTI to provide follow-up engineering services around their PSS®ODMS deployment: specifically, to upgrade their network model to CIM Version 15 format, verify and retune the State Estimator solution, and provide targeted training geared towards ongoing model and solution maintenance and external application integration. COES SINAC also purchased an additional PSS®ODMS module: Historical Modeling, which automatically records all changes to the base model and reconstructs – upon demand – a model from any selected point in the recorded model history. This follow-up project was successfully completed in August 2012 by Chuck DuBose and Quoc Nguyen of Siemens PTI, with additional support from the software development and project management teams.

Today, COES SINAC is well positioned to leverage the technology and know-how provided by Siemens PTI towards further advancement of their transmission system operation and planning activities.