

The computational and display engines of QuickStab® (MCE QuickStab, implemented in real-time by Iskra Sistemi, d.d.) are triggered automatically after each state estimate. The two-speedometers chart is updated with the results of the most recent calculation. The full range of PV curves, unit ranking charts and text displays, as well as off-line computations supported by QuickStab® can also be invoked manually to further analyze the real-time case.

QuickStab® in Real-Time at the Independent System Operator in Bosnia and Herzegovina

The Independent System Operator in Bosnia and Herzegovina (NOS BiH) announced the integration of ECI's QuickStab® with the interim SCADA/EMS provided by Siemens AG Österreich. The computational and display engines of QuickStab® run automatically after each successful state estimate, thus allowing the system operators to monitor the stability reserve, evaluate the impact of generators and tie-lines on the stability conditions of the Bosnian transmission network, and detect operating conditions that might lead to unacceptable stability margins.

"Bosnia is at the center of the interconnected electric markets in Southeastern Europe, where energy transactions entail significant MW transfers across an extended multi-area network," said Mr. Omer Hadzic, General Director of NOS BiH. "Therefore it is imperative that we take all the steps needed to ensure that adequate operating strategies and decisions are developed and implemented. We have been pleased with QuickStab's performance off-line and are now enhancing our daily operations with QuickStab's capability in real-time."

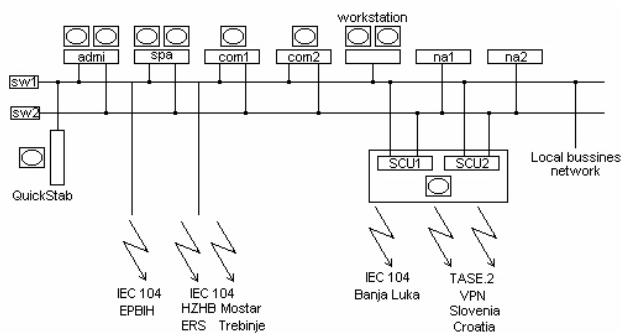


Siemens' SCADA/EMS and QuickStab® workstations side by side on the operator's console in the NOS BiH control room. The two-speedometers chart pops up automatically after each successful processing of the state estimation output.

(Photo credit: courtesy of Iskra Sistemi, dd.)

Implementation Highlights

QuickStab® was integrated with NOS BiH's interim SCADA/EMS by Iskra Sistemi (Iskra), from Ljubljana, Slovenia. The solution architecture is schematically depicted below.



Legend:

- admi and spa -- administrator servers with archives, DBA and display editors, and operators workstations. Cold standby
- QuickStab -- Windows XP processor connected to the SCADA/EMS LAN
- com1 and com2 -- communication servers. All programs for communication support as well as AGC. Hot standby
- na1 and na2 -- network analysis servers connected to the second LAN. Cold standby
- workstation -- Solaris processor for SCADA access from different room (administrator purposes)
- SCU1 and SCU2 -- Windows XP processors for data exchange with control centers from foreign countries. IEC 104 - TASE.2 based communication node for the Electronic Highway connection.

(Picture credit: courtesy of NOS BiH)

The interim system performs SCADA, AGC, real-time network analysis (network topology and state estimation), RTU communications, data exchange with other control centers, and related data management and user interface services. The state estimator runs automatically at five minute intervals but can also be invoked manually by the operator and triggered by system events. Once a state estimate has been computed, the output is stored in PSS/E format and made available for retrieval by external processes with appropriate access jurisdiction.

The "MCE QuickStab" module runs on the QuickStab® processor and polls the SCADA/EMS administrator servers at 15 seconds intervals. When a new state estimate case becomes available, it automatically triggers the QuickStab® computational engine. The stability calculations are completed within a fraction of a second. Messages indicating the

status and outcome of the various processing tasks are issued at each run. Each case that was processed successfully is then archived on the PCs connected to the "local business network" for subsequent analysis in study-mode by using the off-line QuickStab®.

The two-speedometers chart is displayed automatically after the calculations have converged. The full array of graphics and text display capabilities are also available on the QuickStab® processor, thus enabling the operator to display PV curves, unit ranking charts and tabular displays associated with the most recent run.

Unique Features and Benefits

QuickStab® stands out in the industry because it *quantifies the risk of blackout*, is extremely fast, can help develop *preventative and corrective strategies*, makes extensive use of *intuitive graphics*, and can be easily *integrated with third-party software*. The solution developed by Iskra and ECI for NOS BiH proves once again that the QuickStab® approach, computational speed and user-friendly graphics are perfectly suited for both off-line and real-time.

Contact Us

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