Synchrophasor Technology at **Colombian New Control Center**

Experiences on implementation

XM **Colombian Power System Operator**











We visualize the synchrophasorial technology like the platform that **<u>complements</u>** SCADA supervision and would **<u>support</u>** the system in some scenarios of unavailability.







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Measurements















User Interface Used in Control Room



iSAAC

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Now our Operational SCADA use Angles measured provided by PMUS

- Tests for Hybrid State Estimator, Started
- Understand and verify the results
 - Identify aspects to improve if needed

Each New PMU is added to Hybrid State Estimator





- Involve Operators to Synchrophasor technology and show its advantages.
- Operators must take an active role to feedback synchrophasorial platform.

Propose - Receive feedback - Consolidate

Aspects to Improve

- Amplitude and damping chart.
- Frequency as input signal to Power Swing Recognition.
- Access to Synchrophasor data through external queries.
- Chart with the maximum and minimum frequency measured.
- Islanding detection using angle differences and time criteria.
- Geographical and multilevel map.
- Capability to set voltages and power flows that the user consider important to supervise on a multilevel maps.
- Platform where user creates their own on line or historical x-y charts.





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