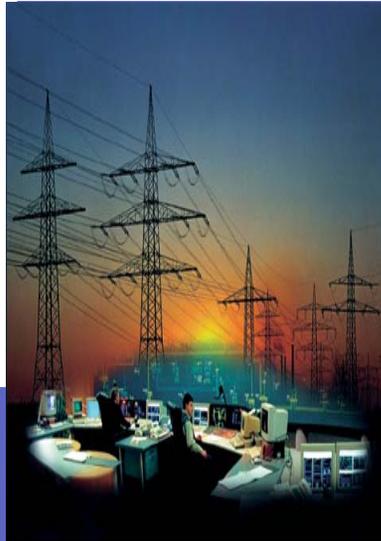


**Ullattil Manmadhan
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RES 521 and PSGuard



What does ABB do in this area??

- We have PMU's - the product
 - The RES 521 phasor measurement unit
 - The IEEE 1344 PMU View tool
 - Remote HMI
- A comprehensive WAM system
 - The PS Guard
 - Basic system – data concentrator
 - Application modules
 - Voltage stability monitoring
 - Frequency stability monitoring
 - State Calculation support
 - Line thermal monitoring
 - Oscillation monitoring
 - Phase angle monitoring
 -



RES 521 Phasor measurement unit

- Submits time tagged phasors of AC voltages and currents up to 60 Hz
- Synchronized sampling in different substations (GPS) 1microsec
- Additional functions such as f, df/dt,
- Trigger functions for:
 - Abnormal frequency
 - Abnormal df/dt
 - Overcurrent
 - Undervoltage
- Communication, TCP/IP (to PC or data concentrator) and UDP
- Synchrophasor data format IEEE Std 1344-1995, PC 37.118
- Analogue Inputs(12I+6V), Binary Inputs(8BI), Binary Outputs(12BO)



ABB