

# Transmission Reliability Research Review

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## *Real Time Tools Outreach*

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January 27-29, 2004

Washington, D.C.



# Goals

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**Vision/Goal:** *This project will conduct additional demonstrations and enhancements to the current CERTS prototypes, focusing on dissemination for new locations outside of the Western Interconnection.*

## Key Issues being addressed:

- Identify and target host sites for current and expanded CERTS Real Time Monitoring Tools
- Work jointly with Hosts to identify their specific operational requirements, and to expand the current set of tools functionality to meet industry requirements

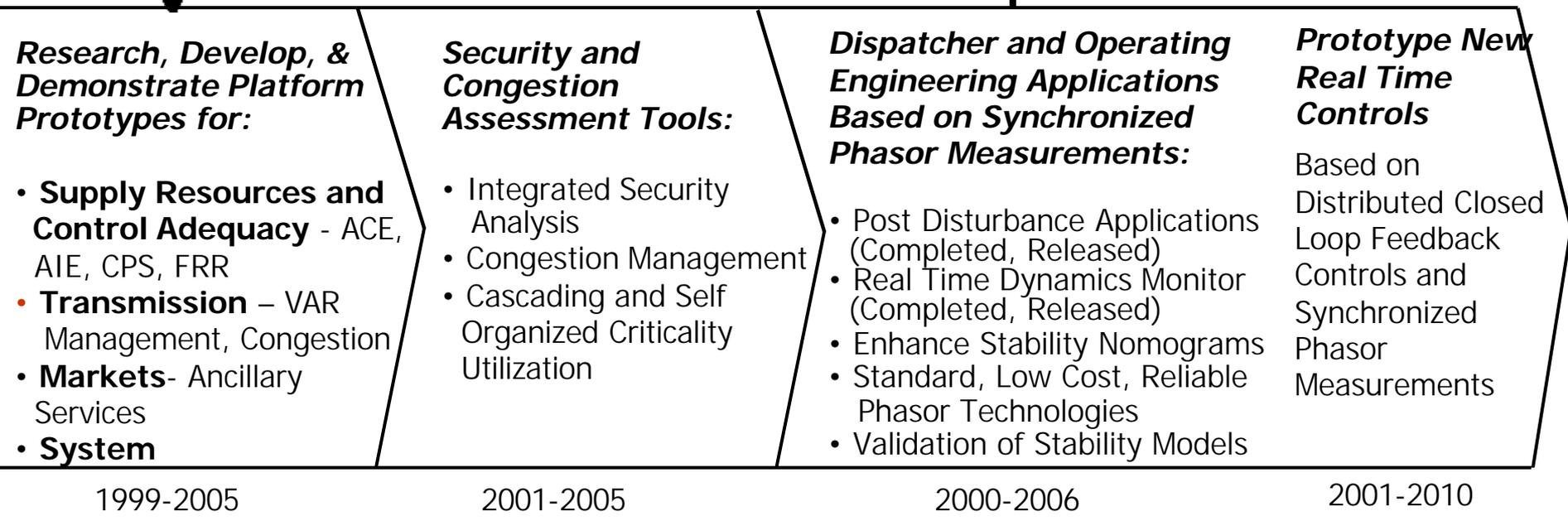


# Real Time Tools Timeframes

Performance  
Monitoring,  
Prediction and  
Tracking Platform

System Security  
Management Tools

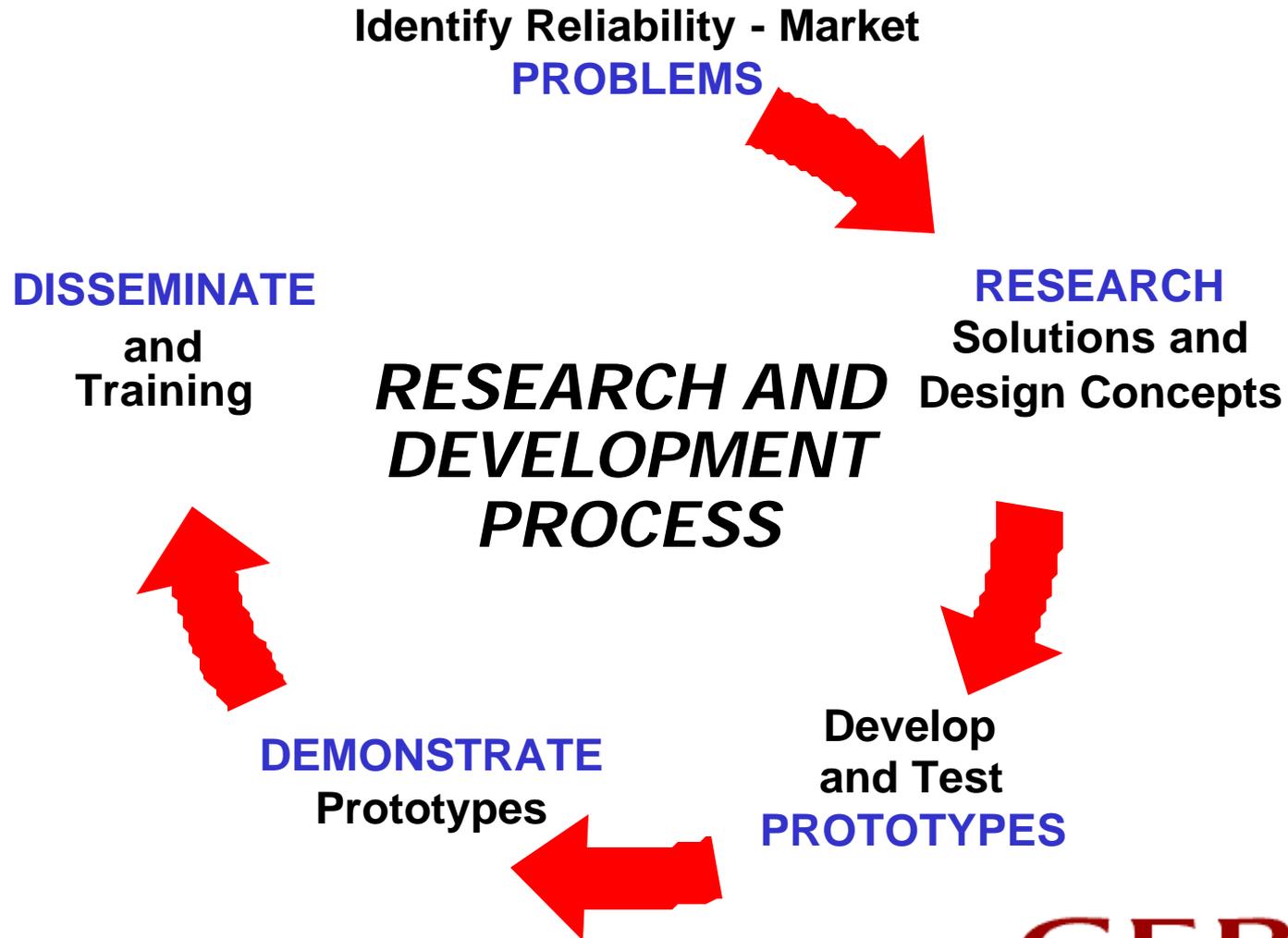
Advance Measurements and Controls



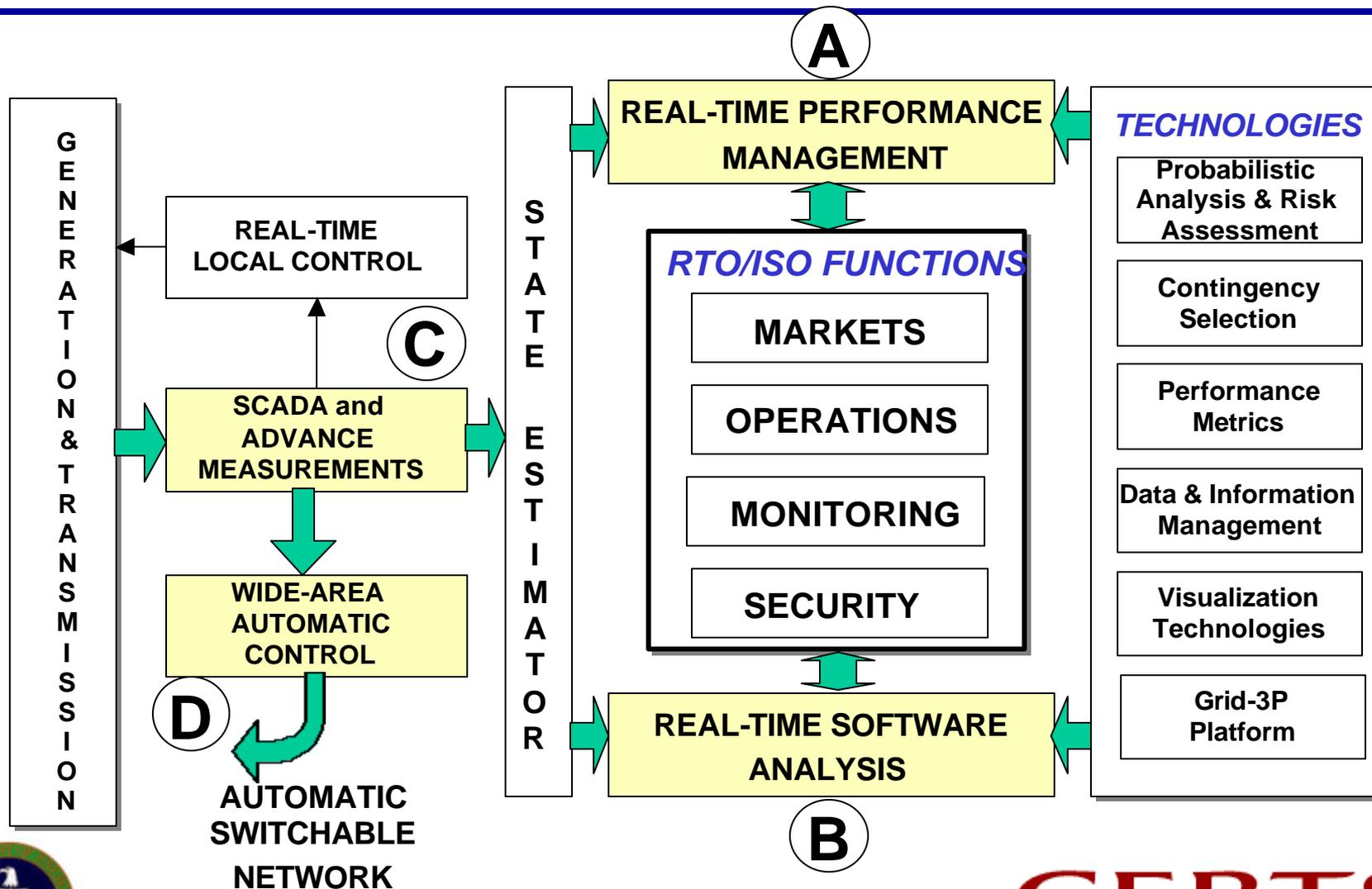
**SHORT TERM GOAL: BOTLENECK IDENTIFICATION AND RELIEVE**  
**LONG TERM GOAL: AUTOMATIC SWITCHABLE NETWORK**

# *CERTS Research and Development Process*

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# CERTS Real Time Grid Monitoring Tools Roadmap



# *Outreach Activities – Briefings/Demonstrations*

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- Wide Area Grid Reliability Monitoring
- Real Time Dynamics Monitoring With Phasors
- ACE-Frequency Monitoring
- VAR Monitoring
- Security Constrained Dispatch
- Grid Monitoring for Infrastructure Security
- TVA, ERCOT, Southern, TXU, CEA-Montreal
- Southern, EIPP\*, CAISO\*
- NERC Resources Subcommittee\*, Reliability Coordinators and Blackout Team
- CAISO\*, AEP
- PJM\*, CAISO\*
- Office of Energy Assurance, NETL

\*Applications deployed or under development

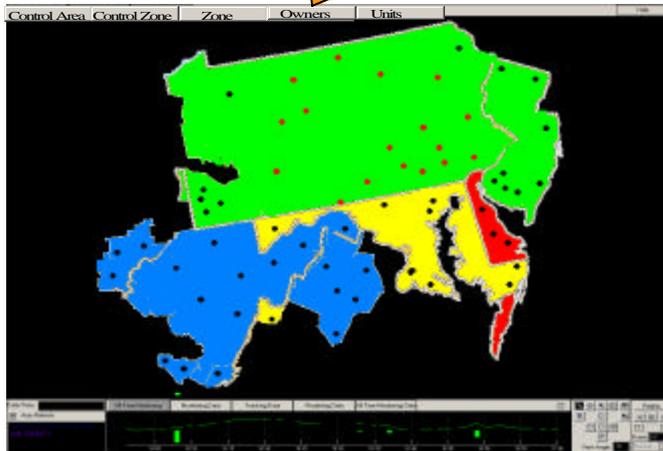


# Outreach – PJM

## Security Constraint Dispatch Visualization Solution



Control Area Control Zone Zone Owners Units



1-Panel for Each Jurisdiction

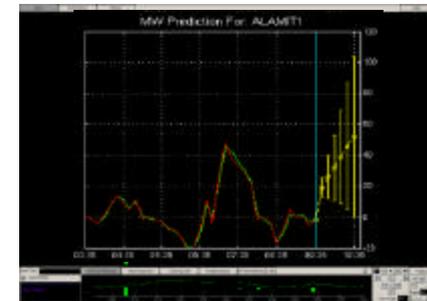


4-Panels for a Selected Jurisdiction

Historical and Near Time Prediction Metric



Maximize Panel for a Set of Metrics



# Outreach CAISO – Real Time Dynamics Monitoring (RTDM) - Frequency Response



1-Panel Visual

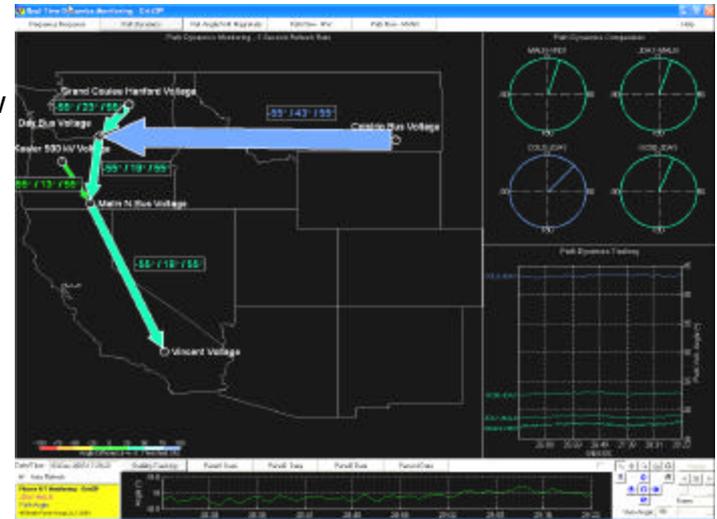


3-Panel Visual

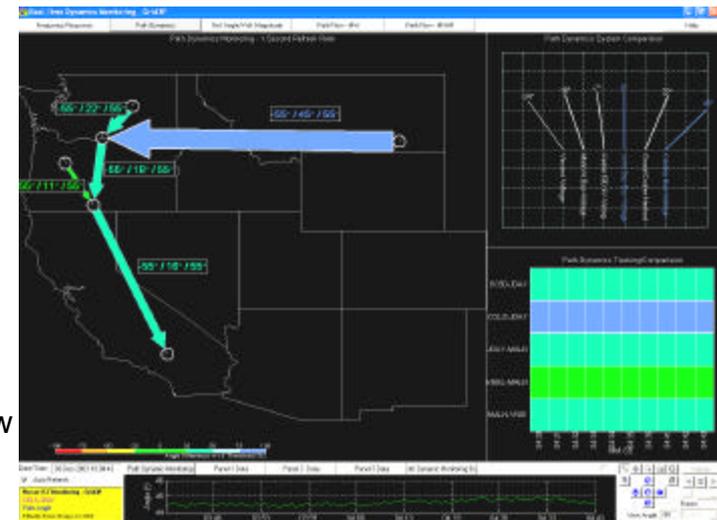


# Outreach CAISO – Real Time Dynamics Monitoring (RTDM) – Key Paths Monitoring

Local View

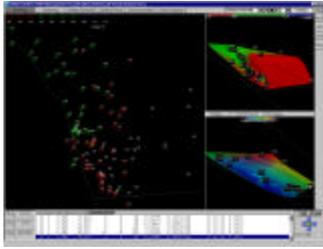


Wide-Area View

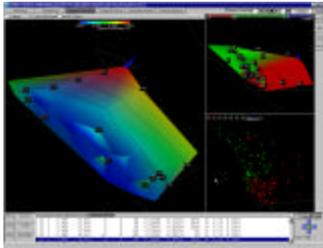


# *Outreach AEP – VAR Management*

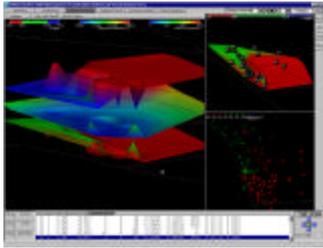
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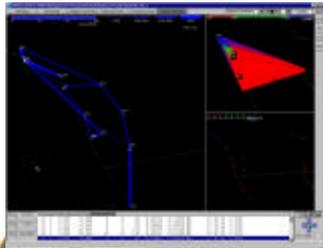
*VAR/Voltage Monitoring and Alarming*



*Sensitivities and Collapse Distances*



*Control Compliance and Corrective Actions*



*Historical Tracking and Replay*

