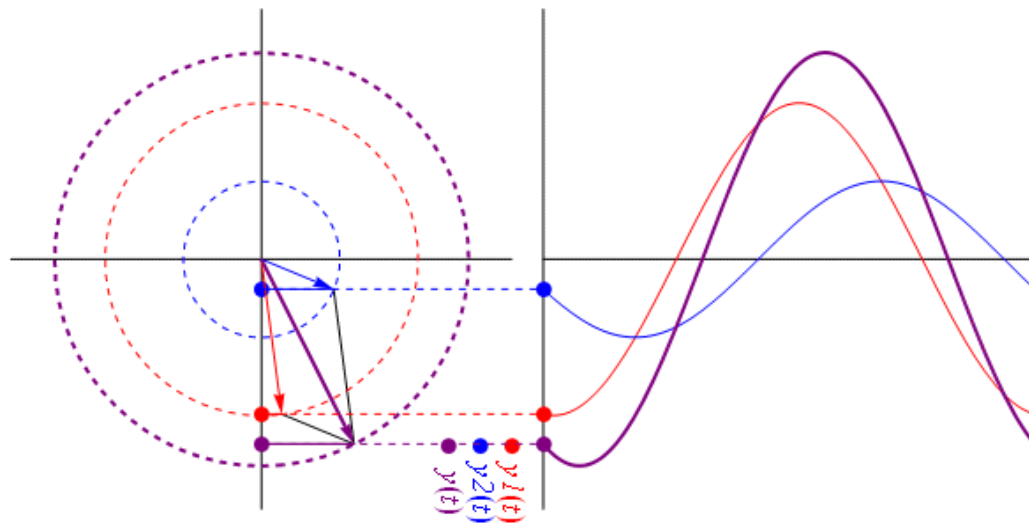


# PJM SynchroPhasor Technology Deployment

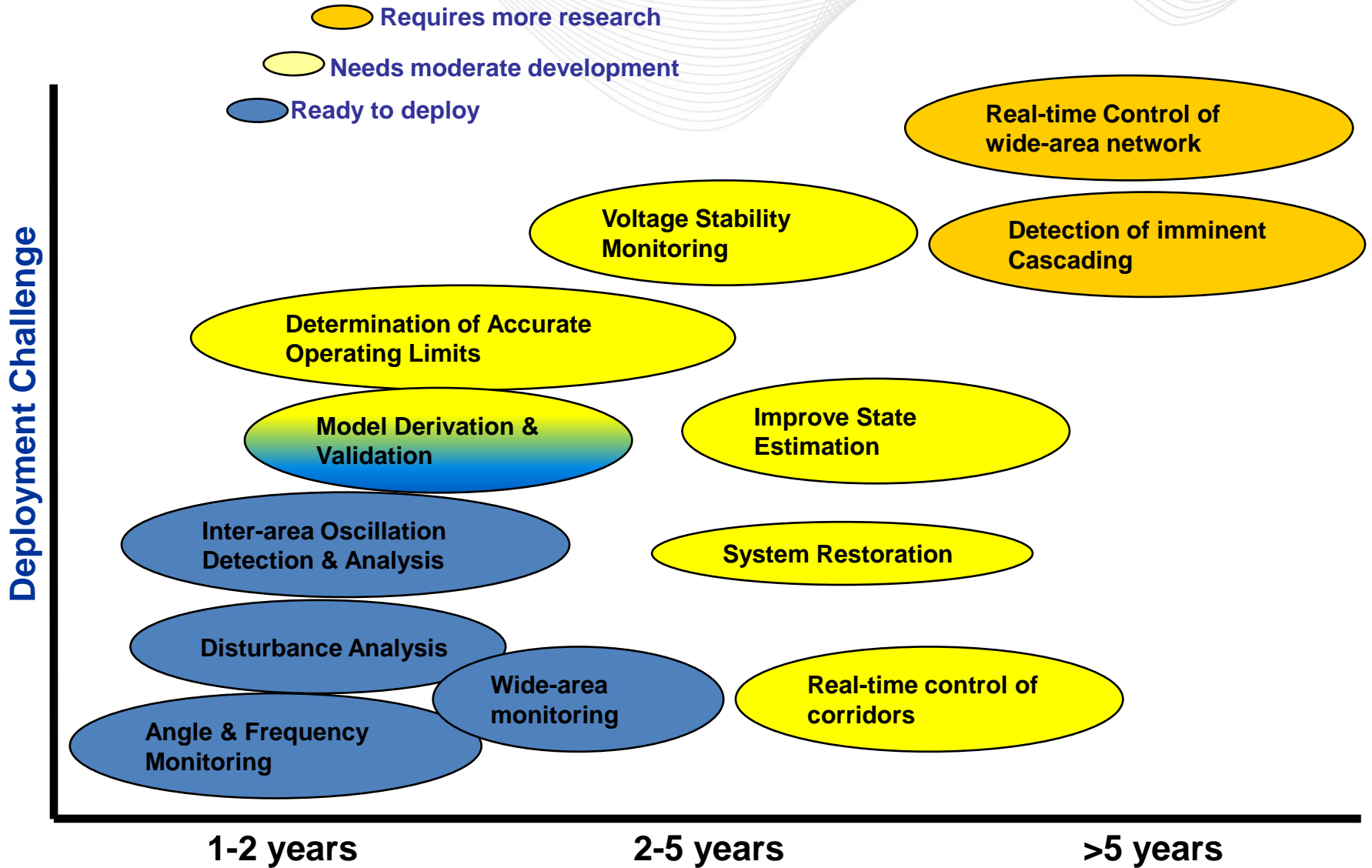
**Propose to Install SynchroPhasor Measurement Devices  
at (i) new Generation Interconnections  
& (ii) at Substations with control work associated with major  
RTEP projects**



**Planning Committee Meeting  
May 12, 2011**

**Aaron Berner  
PJM**





**The system will provide data from;**

- **Approximately 70 EHV buses with PMUs out of about 400 EHV buses in PJM**
- **Approximately 82 buses out of more than 7475 PJM buses in EMS (about 13500 total buses in EMS)**
- **Only a few Generator and Load Buses with PMUs**

**At the conclusion of the project we will still be handicapped with severe scarcity of Measurement Points.**

## Challenges resulting from sparse observability of the system:

- **Data validation (e.g. detection and elimination or correction of bad data) will be difficult**
- **When data is sparse, developing reliable applications that can sustain loss of a few data points is difficult**
- **For generator and load model development and verifications, we need high resolution data (SynchroPhasor data) at generator and load buses.**

**We recommend to install SynchroPhasor Measurement devices:**

- **At all new Generator Interconnections or Upgrades of larger than 75 MVA (Manual 14D)**
- **Where relaying or other controls installations or changes are associated with Major RTEP projects**

- **We will draft required additions to Manual 14D for endorsement by SOS/OC.**
- **Upon SOS/OC endorsement, we will propose these recommendations for approval by MRC.**