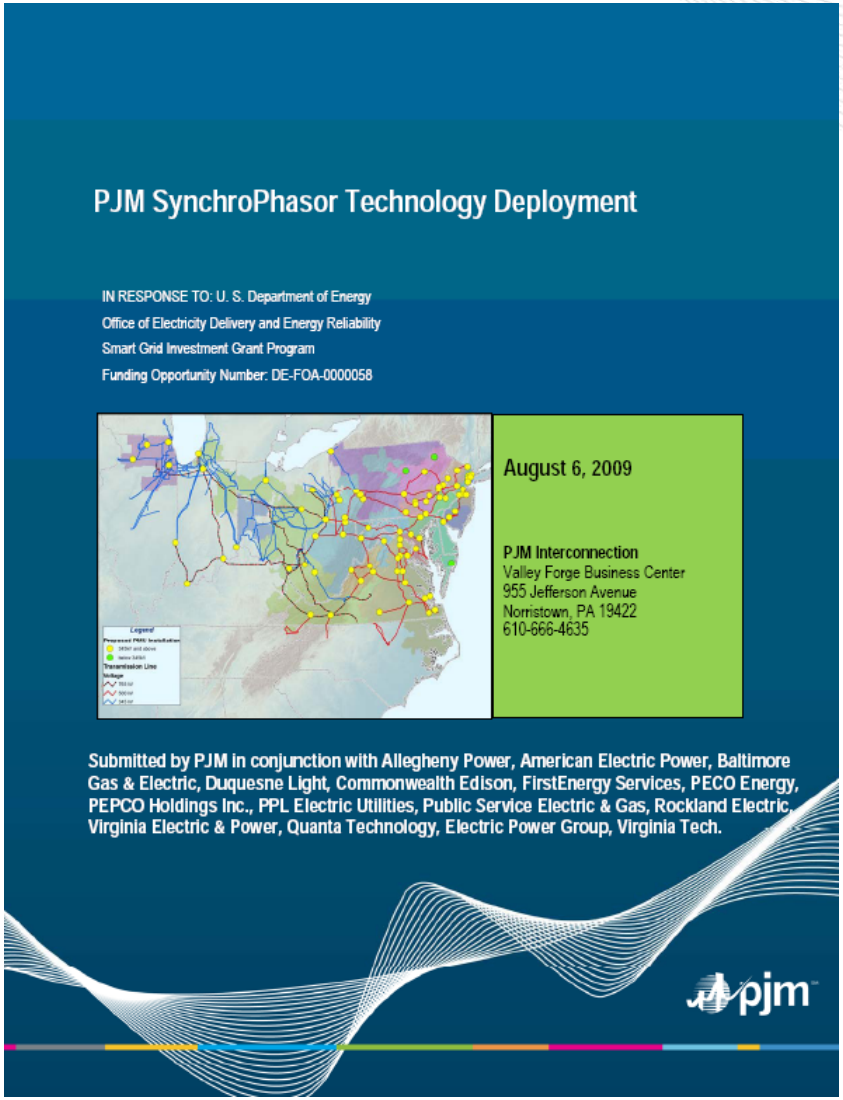


PJM SynchroPhasor Development Project

Registry Database

Mahendra Patel
Applied Solutions, PJM

Location Information

	Entry Type	Value	PJM Comment
Location	Company Name:		Maximum 50 Characters
	ISO/RTO Name:		
	Substation Name:		Maximum 50 Characters
	Substation location: Latitude – Longitude::		Maximum 15 Characters
	Time Zone		Time Zone of the Substation. This is different than the data time stamp which for PJM project is in UTC
	Contact Information for Phasor Data:		
	o Name		
	o Phone		
	o Email		

PMU Information

Phasor Measurement Unit Information	**PMU** IDCODE		As per assigned IDs; see 'ID Code assignment' worksheet for the IDs available for your company's PMU/PDCs
	PMU In Service Date		mm/dd/yyyy
	STN		Maximum 16 Characters; As defined in 'STN and CHNAM' work sheet in this excel file
	PMU Manufacturer		Maximum 50 Characters
	PMU Model (Name and Version)		Maximum 35 Characters
	PMU Firmware Version		Maximum 15 Characters
	PMU Class		'P' or 'M' (2011 std.) or '0' or '1' (2005 std.)
	PMU Reporting Rate		Reporting Rate

Phasor Measurement Unit Information	PMU Operational Status		Free form For Example: In Service, On Outage, Not Connected to PDC, In Testing. Maximum 35 Characters
	Time Synchronization Source (for the PMU):		
	o Manufacturer		Maximum 50 Characters
	o Model (Name and/or Version)		Maximum 35 Characters
	Data Sent to - from this PMU (To be repeated for each PDC):		
	o PDC (ID Code)		As per assigned IDs; see 'ID Code assignment' worksheet for the IDs available for your company's PMU/PDCs
	o PDC Type		Substation or Regional or Central (Main)

For Voltage Phasors:

CHNAM

Data Representation: Polar or Rectangular

If line side measurement: Line Identifier & Breakers Identifiers
If Bus side measurement: Bus Identifier

Nominal Voltage

Instrument Transformer: Device, Accuracy Class, Ratio

External Measurement Adjustments Required
Scaling factors, Phasor Angle adjustment

For Current Phasors:

CHNAM

Data Representation: Polar or Rectangular

Element Identifier (Line, Transformer, Generator, Shunt)
Breakers Identifiers

Nominal Voltage

Instrument Transformer: Device, Accuracy Class, Ratio

External Measurement Adjustments Required
Scaling factors, Phasor Angle adjustment

For Analog & Digital Data:

CHNAM

Names of Analog & digital data provided

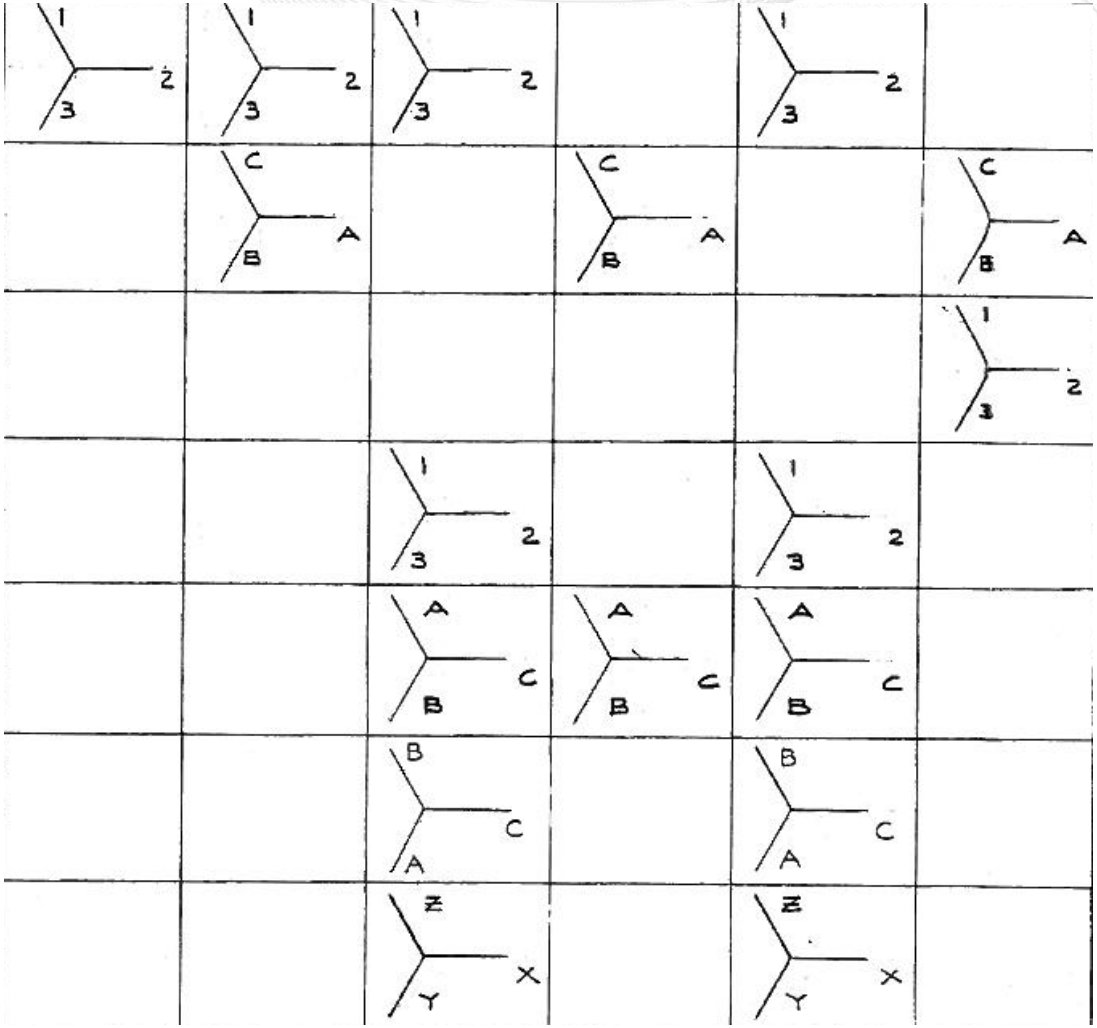
Local Archive

Retention Period

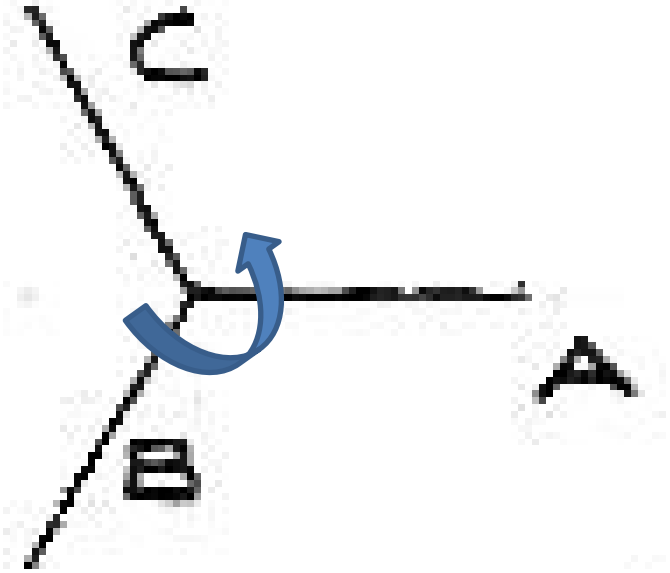
Station Name 16 bytes ASCII	STN	2 Bytes Company Identifier (as defined in sheet 'Company Identifier for STN')
		2 Bytes of Blank characters
		9 Bytes MMWG Bus Name (Use the first nine bytes from the name of one of the highest voltage Buses within that substation. If needed fill with succeeding blanks to complete nine bytes)
		1 Byte of a blank character
		2 Bytes Device ID within Station

Channel Name 16 bytes ASCII	CHNAM	**For all Values 1 Byte to Identify measurement: Phasor on Bus side – B, Phasor on Line side -- L Digital -- D , Non-Phasor Analog -- A**
		For Phasor Values: 3 Byte nominal voltage of the measurement location For Non-Phasor Values: 3 Bytes of blanks
		For Phasor Values: 9 Bytes of 'To Bus MMWG Name' or 'Bus Section Identifier' (Use the first nine bytes from the name with succeeding blanks as needed)
		For Phasor Values: 1 Byte of Circuit number for Parallel Lines or Transformers to the same "To" Bus
		2 Bytes Measurement Variable Identifier For all values: V1, Va, I1, Ia, DC, AC(Non-Phasor)

Phasing


1 2 3
1 2 3
1 2 3
1 2 3
C A B
C A B
C A B
1 2 3
1 2 3
1 2 3
A C B
A C B
A C B
B C A
B C A
Z X Y
Z X Y

A-B-C phase sequence
i.e. A leading B by 120 degrees
B leading C by 120 degrees



$$V_1 = (V_A + a\,V_B + a^2 V_C)/3$$

?