

Eastern Interconnect Phasor Project

Phase I Implementation Φ_1

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Φ_1 Scope

The scope of the Phase I Implementation Task Team is two fold.

- Firstly, the Task Team will develop a plan, including costs, that accomplishes the Phase I objectives of rapidly integrating 30 monitors and four data collection sites across the Eastern Interconnection utilizing existing and new field devices.
- Secondly, the Task Team will oversee the implementation of the agreed upon plan.

Revised 12/3/2003

Φ_1 Scope, R1

- Thirdly ...
 - the Task Team will oversee the connection of at least two Phasor Data Concentrators (PDCs) together in a data sharing configuration.

Revised 2/2003

Plan and Process

- While the $\Phi 1$ TT is tasked with developing a plan and process for installing PMU...
- This task is more relevant to “Phase II” than to $\Phi 1$
 - Given the magnitude of the Eastern Interconnect (number of lines and busses)
 - The goals of interconnecting PMU, and ... any PMU is a *good* PMU

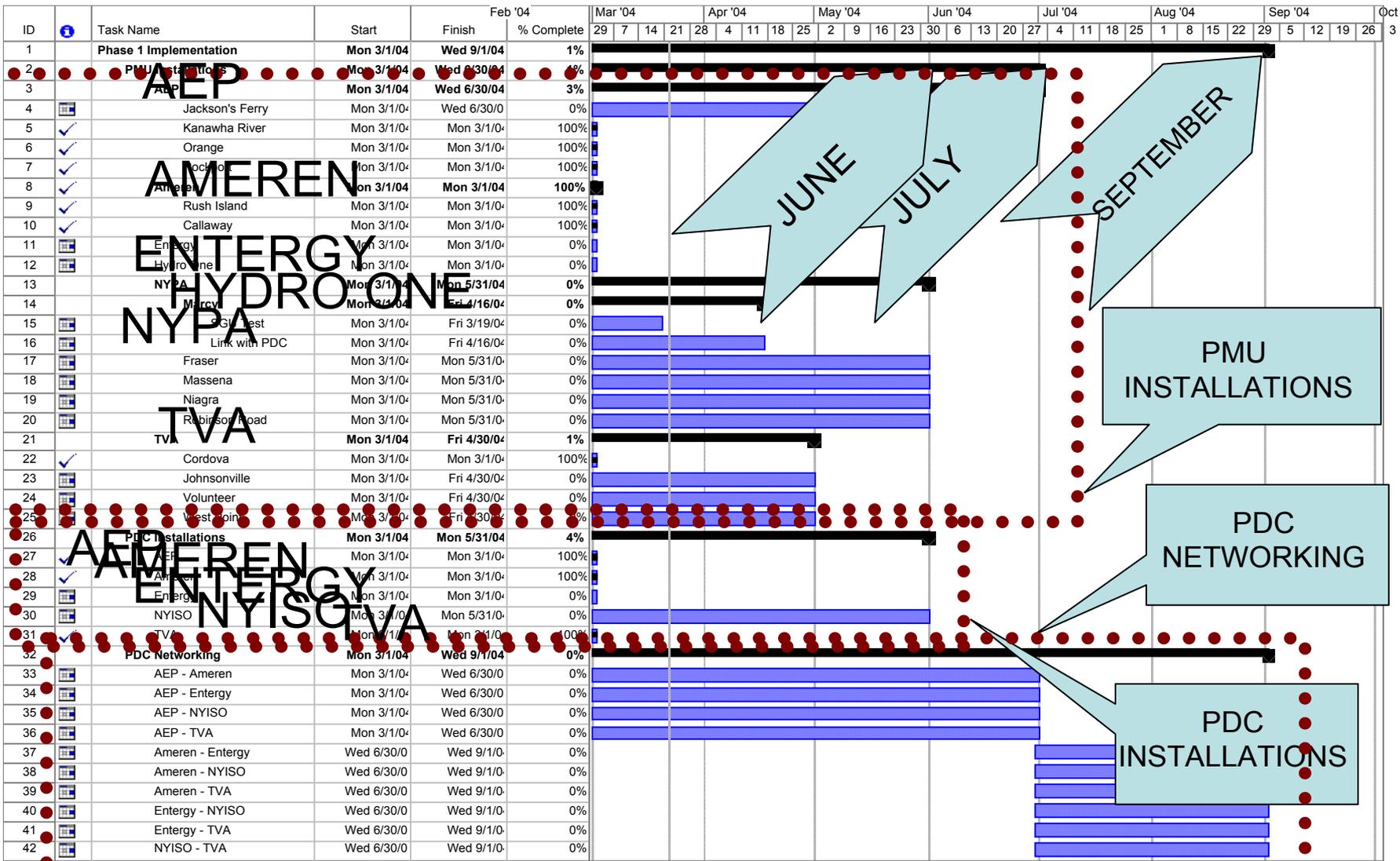
Action Item

- Plan and Process for siting or accepting future PMU (beyond the initial ± 30)
 - Assume a world where PMU functionality is imbedded in a “traditional” substation IED (relay, or interchange meter)
 - What are the qualifications for accepting a PMU into the EIPP Network?

Phase 1 – Major Bones

ID	Task Name	Duration	Start	Finish
1	Phase 1 Implementation	133 days	Mon 03/01/04	Wed 09/01/04
2	PMU Installations	88 days	Mon 03/01/04	Wed 06/30/04
26	PDC Installations	66 days	Mon 03/01/04	Mon 05/31/04
32	PDC Networking	133 days	Mon 03/01/04	Wed 09/01/04

Phase I Schedule



JUNE
JULY

SEPTEMBER

PMU
INSTALLATIONS

PDC
NETWORKING

PDC
INSTALLATIONS

AMEREN

ENTERGY

HYDROLINE

NYPA

ST. ALBANS

TVA

PDC INSTALLATIONS

AMEREN

ENTERGY

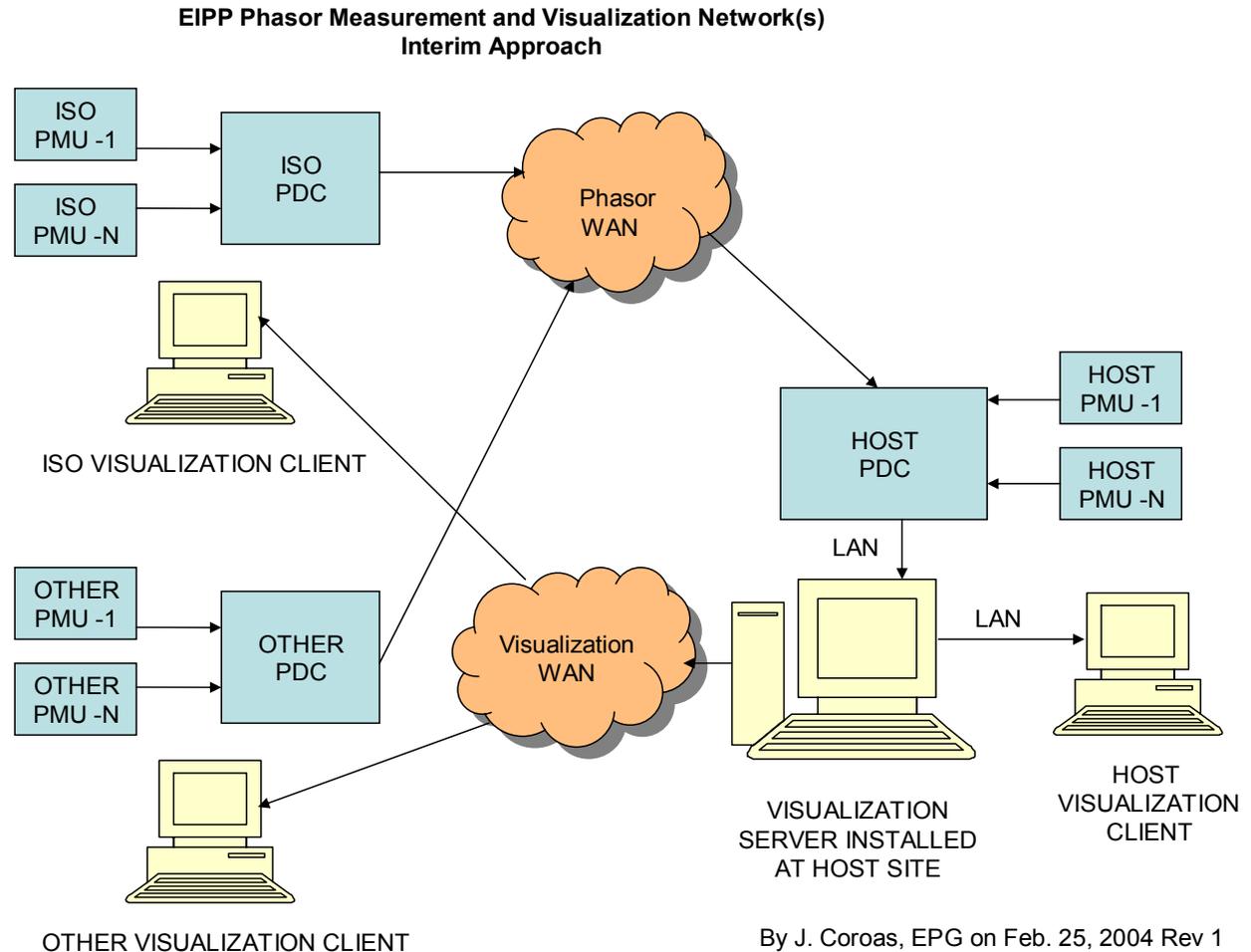
NYISO

TVA

PDC Networking

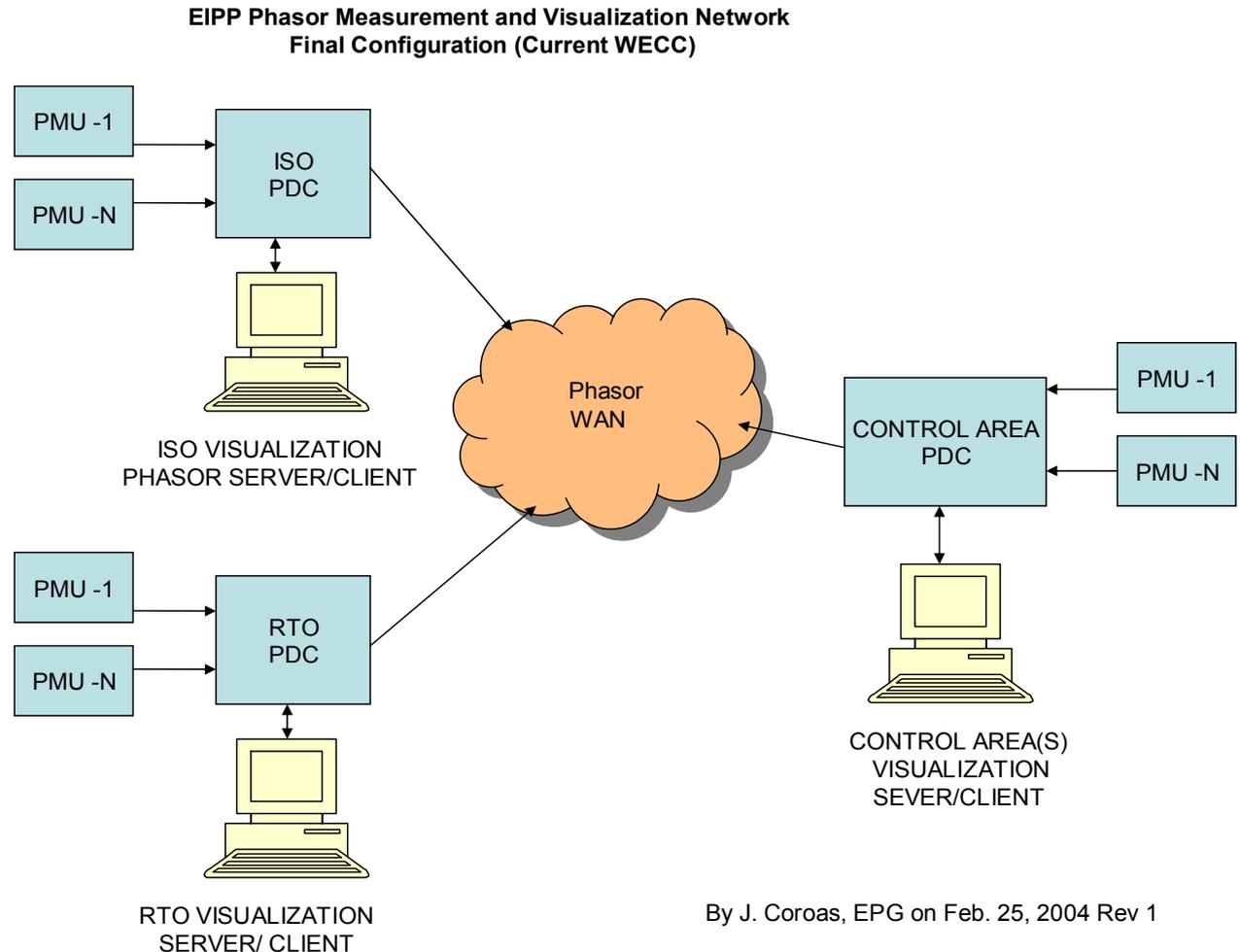
In the short term, everything pumps data to a "host PDC"

From the Real-time team's perspective, the difference is that you only have to get one software application going in the short term.



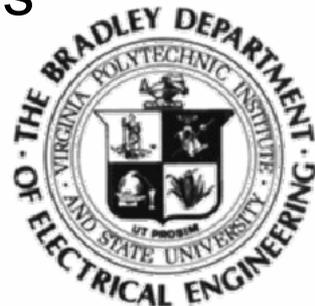
PDC Networking

In the long term all of the PDCs share data with each other as peers.



PMU Testing

- TVA funded work, completed 9/03
 - Comparative evaluation of four PMU
 - IEEE 1344 was the guide (ABB)
- Combine these units in applications?
 - With off-nominal frequency, all units showed some variance from expected results
 - 1344 is not precise in describing the requirements for measurements at off-nominal frequencies
 - Equivalence in time tagging



Summary & Discussion

- On track with:
 - PMU installations
 - PDC installations
- Added new ACTION: PDC Networking
- Request support for “Selection Process”
 - Need to involve more Utilities
 - Need to cover more “map”