SC14 EEHPC Workshop

Energy Efficiency Considerations for HPC Procurement Documents: 2014

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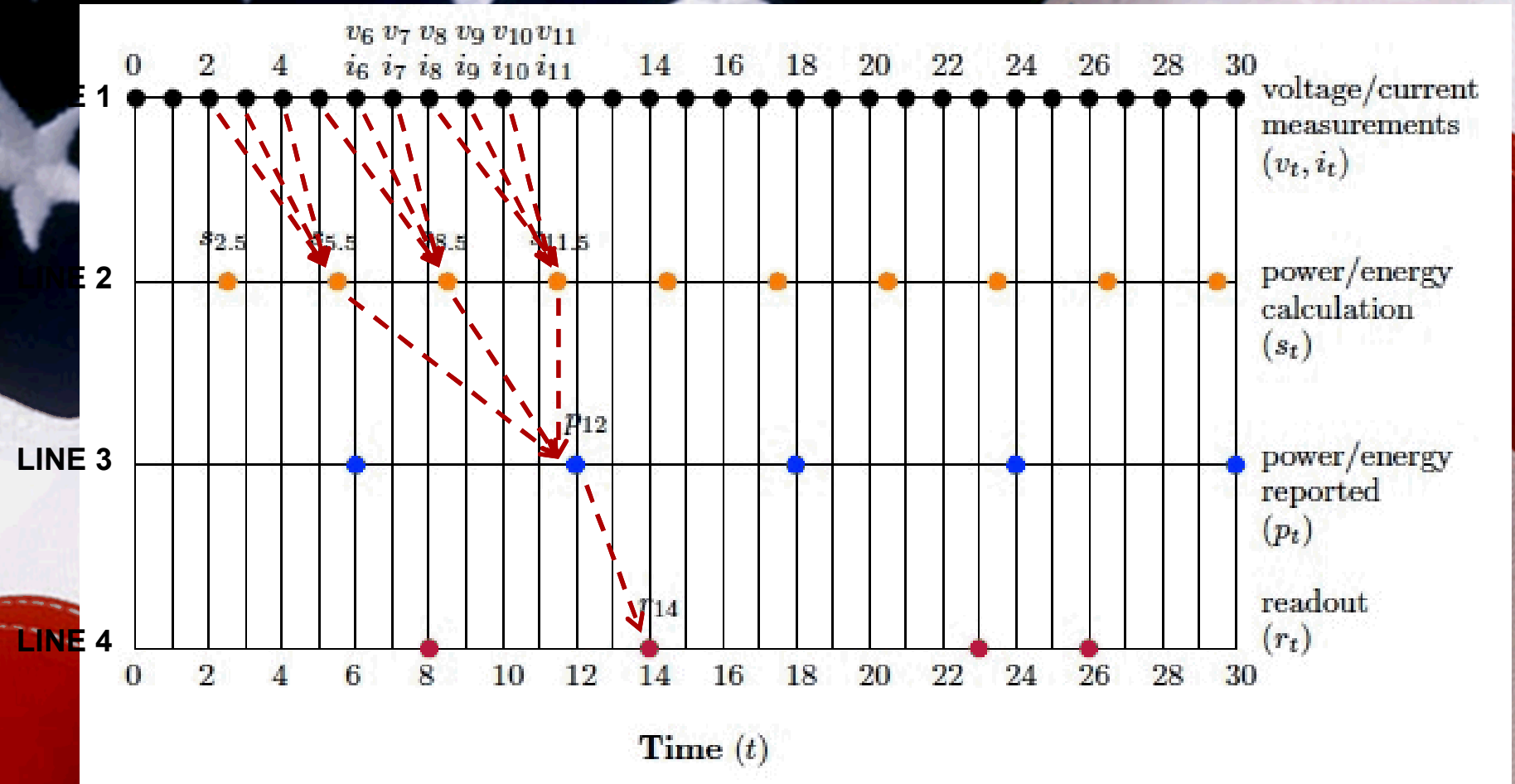*Exceptional service in the national interest*

U.S. DEPARTMENT OF ENERGY **NNSA** *National Nuclear Security Administration*

Purpose of Document

- Provide Guidance
  - Have you considered this?
  - Site can pick and choose based on site importance
- Facilitate communication
  - Throughout HPC community
  - Between HPC community and HPC vendors
- Forecast community needs
  - Vendors need to plan ahead
- This is intended to be a LIVING document

System/Platform/Cabinet

	Internal Sampling Frequency
Mandatory	≥ 10 per second
Important	≥ 100 per second
Enhancing	≥ 1000 per second

		External Reported Value Frequency
Mandatory	Discrete Power (W)	≥ 1 per second
	Average Power (W)	≥ 1 per second
	Energy (J)	≥ 1 per second
Important	Discrete Power (W)	≥ 10 per second
	Average Power (W)	≥ 1 per second
	Energy (J)	≥ 1 per second
Enhancing	Discrete Power (W)	≥ 100 per second
	Average Power (W)	≥ 1 per second
	Energy (J)	≥ 10 per second

Node

	Internal Sampling Frequency
Mandatory	$\geq$ 100 per second
Important	$\geq$ 1000 per second
Enhancing	$\geq$ 10000 per second

		External Reported Value Frequency
Mandatory	Discrete Power (W)	$\geq$ 10 per second
	Average Power (W)	$\geq$ 10 per second
	Energy (J)	$\geq$ 1 per second
Important	Discrete Power (W)	$\geq$ 100 per second
	Average Power (W)	$\geq$ 100 per second
	Energy (J)	$\geq$ 10 per second
Enhancing	Discrete Power (W)	$\geq$ 1000 per second
	Average Power (W)	$\geq$ 1000 per second
	Energy (J)	$\geq$ 10 per second

Component

	Internal Sampling Frequency
Mandatory	≥ 1000 per second
Important	≥ 10000 per second
Enhancing	≥ 1000000 per second

		External Reported Value Frequency
Mandatory	Discrete Power (W)	≥ 100 per second
	Average Power (W)	≥ 10 per second
	Energy (J)	≥ 1 per second
Important	Discrete Power (W)	≥ 1000 per second
	Average Power (W)	≥ 100 per second
	Energy (J)	≥ 10 per second
Enhancing	Discrete Power (W)	≥ 10000 per second
	Average Power (W)	≥ 1000 per second
	Energy (J)	≥ 10 per second