



Plug into the future of **Smart Grid Technology**

Distributed energy | Grid efficiency | Informed power consumer

Join industry experts to discuss the future of distributed energy, grid efficiency and how your company may benefit

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Smart Grid – A123's Developing Vision and Interest

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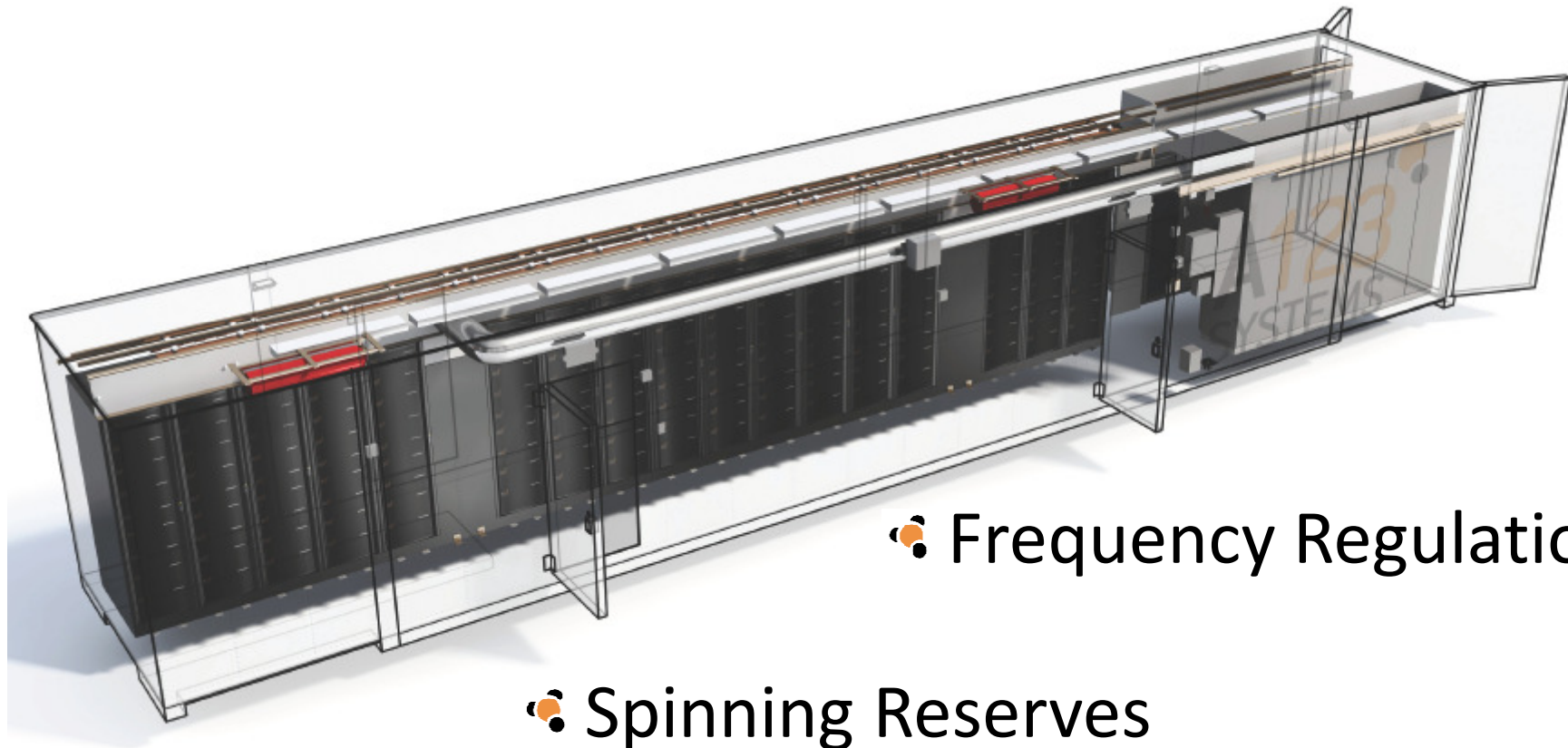
Smart Grid? U.S. Has Spoken.



- ❖ U.S. Energy Independence and Security Act (EISA) 2007 defines characteristics:
 - ❖ Digital information and controls
 - ❖ Deployment and integration of distributed resources (includes Storage) and generation, including renewables
 - ❖ Smart technologies for metering, grid communications and distribution automation
 - ❖ Advanced storage and peak-shaving technologies, including PHEVs and thermal-storage A/C
 - ❖ Develop standards for communication and interoperability of appliances and equipment connected to the grid, including grid infrastructure
 - ❖ Identify and lower barriers to adoption of smart grid technologies, practices and services
- ❖ U.S. 2009 Stimulus Bill provides funding for EISA 2007 Smart Grid programs. Accelerate getting technically available solutions in the field!
- ❖ Bonus - Smart characteristics are key to renewable integration



A123's Grid Stabilization System – Commercial *and* Smart Compatible



• Frequency Regulation

• Spinning Reserves

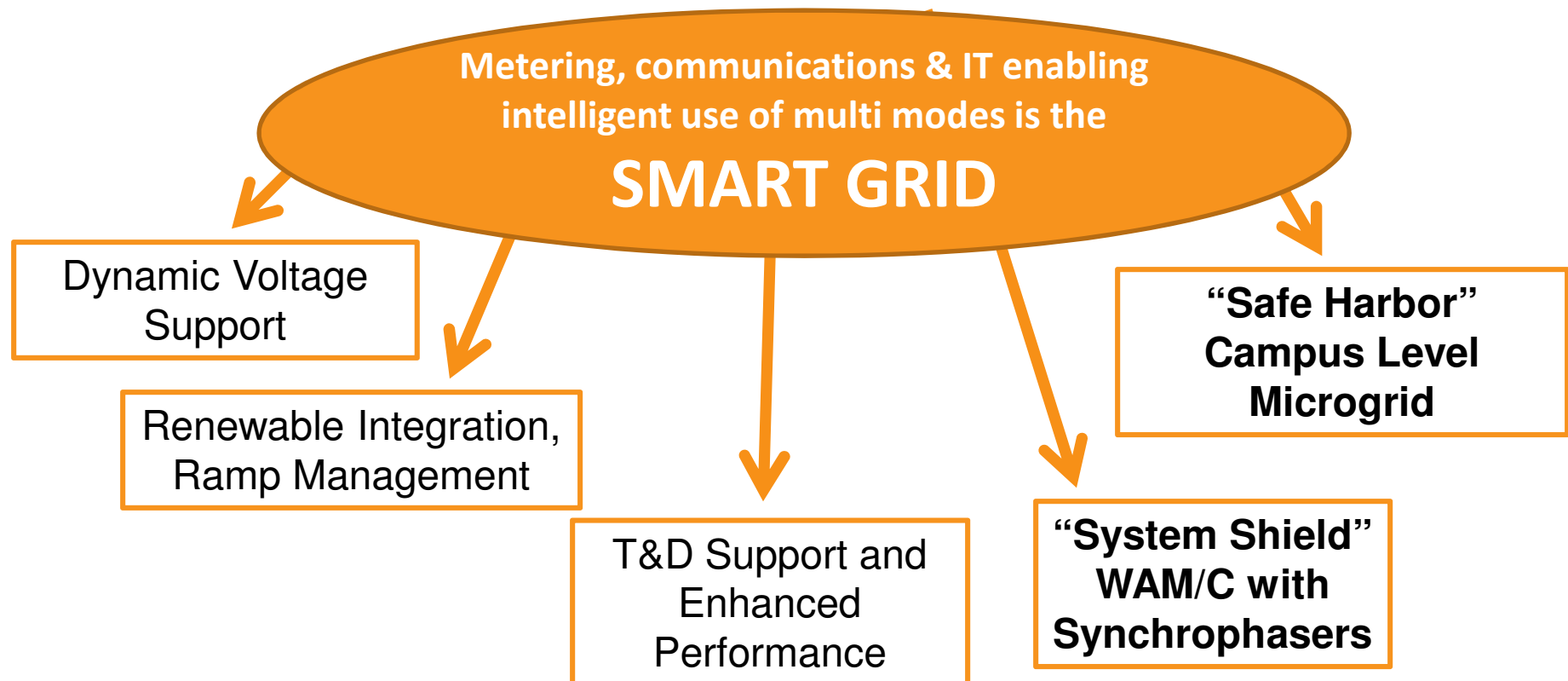


From Single Service to Smart Grid



Today, A123 GSS for
Frequency Regulation

Next, extend A123 GSS functionality (speed, control) to
deliver additional operating modes of value





Nice...

- ❖ Contribute to U.S. Economic Health
 - ❖ Smart infrastructure investment
 - ❖ Create green collar jobs
 - ❖ Reestablish U.S. as technology exporter
- ❖ Expand U.S. renewable resources
- ❖ Decrease U.S. cost of utility disruptions
- ❖ Global carbon reduction



... but Barriers

- ❖ First, complex value proposition
 - ❖ Who benefits? Who pays?
 - ❖ Key challenge - fragmented jurisdictions and markets
- ❖ Next, can you do it?
 - ❖ Evolving standards
 - ❖ One example: IEEE 1547 (not so Smart) 1547.4 (Smart!)
 - ❖ Who uses IEC 61850?
 - ❖ Key challenge - motivation for the legacy keepers of reliability?
(Especially with threat of “stranded” investment)
- ❖ Stimulus (*plus will*), may help break deadlock