

EMS Program Update

December 4, 2008

Reliable **Power**

Reliable **Markets**

Reliable **People**



Agenda



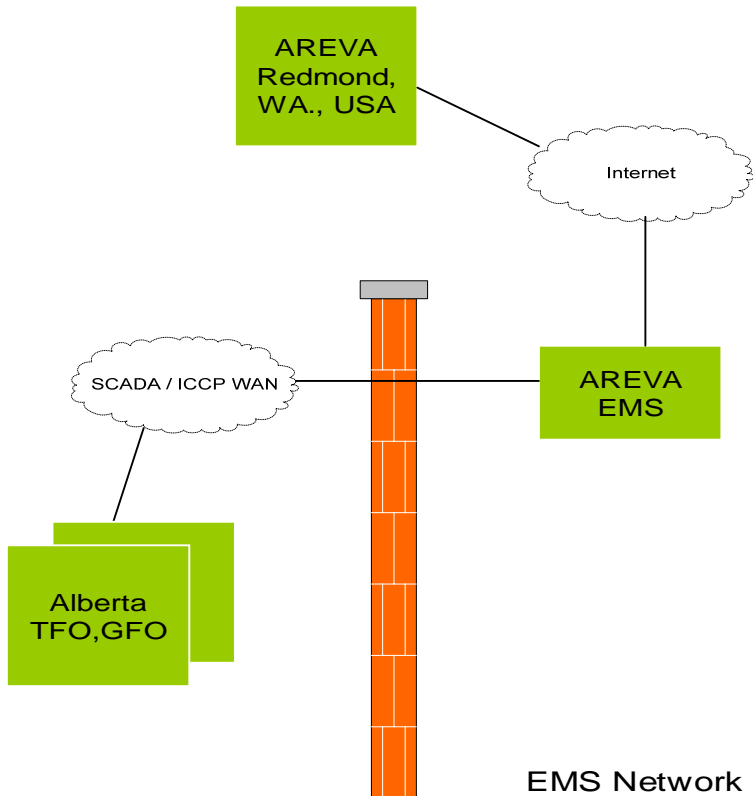
- Energy Management Solution Program
- Revised Budget
- Revised Schedule
- Business Impacts
- Recommendation

Energy Management Solution Program



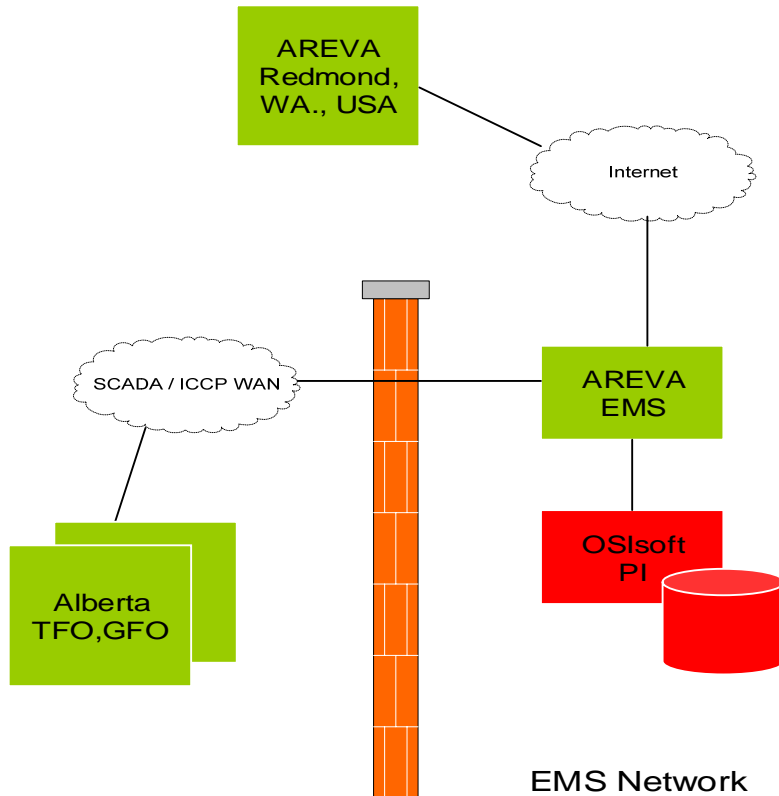
- Replace aging EMS system
 - Provide controllers with up-to-date tools and technology
 - Leverage technological advancements
- Implement an Enterprise Integration capability
 - Uncouple tightly integrated operational and market systems
 - Ensure same level of redundancy and high availability
- Improve business processes relating to ongoing support, maintenance and evolution of the environment
 - Compliance with NERC standards
 - Establish best practice support, maintenance, and delivery procedures
 - Operation of “Market Systems” to the same level of reliability we deploy with our operations systems
 - Stay current and participate in the advancement of new technology

New Energy Management Solution



- Replace aging EMS system
- Provide controllers with up-to-date tools and technology
- Leverage technological advancements

New Energy Management Solution



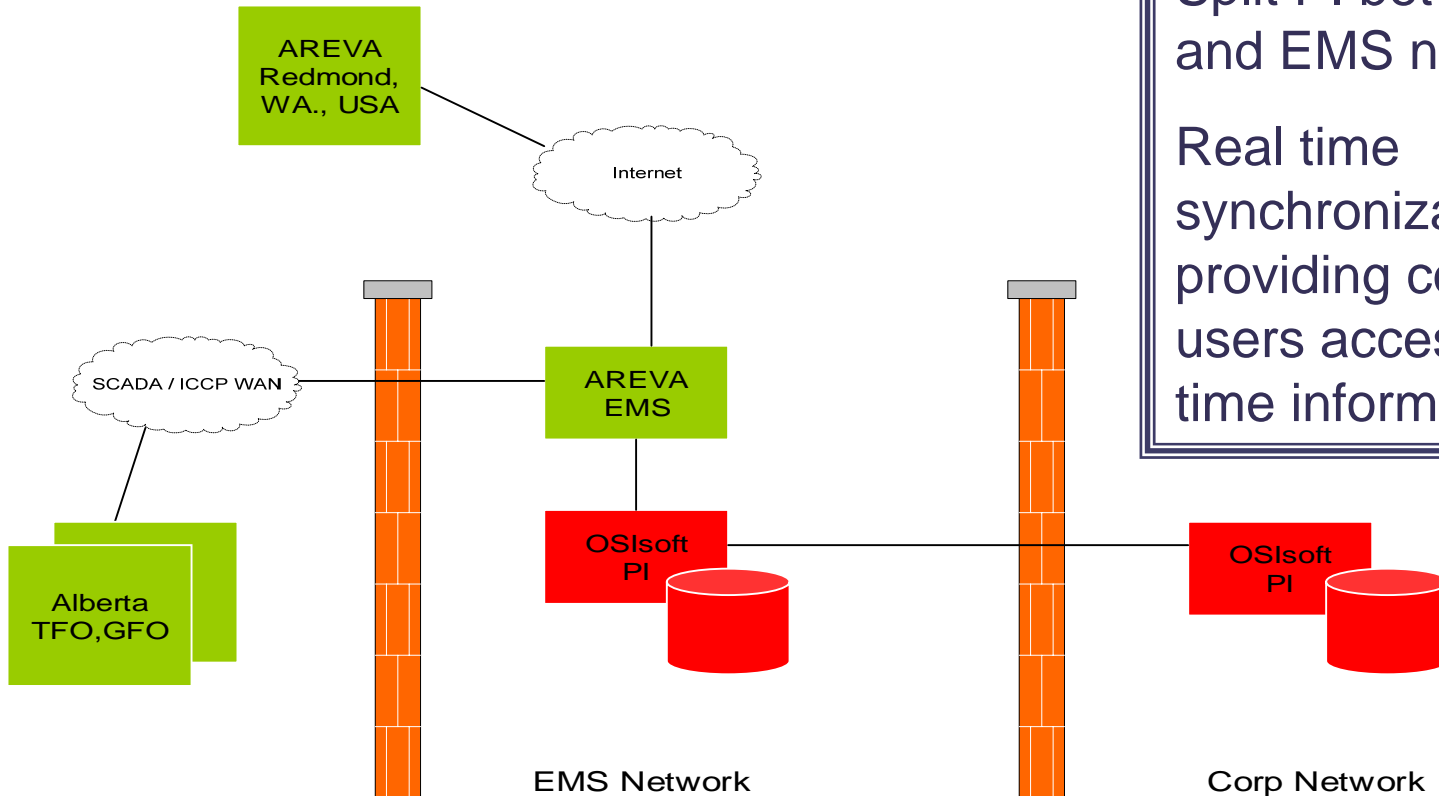
PI is the Real Time Data Historian, used for many purposes, tactical and strategic, in the execution of our mandate

Separate from the AREVA EMS System

Allows for higher number of quality tags per node resulting in more effective analysis

Allows for leveraging advancements in the PI technology and enterprise support and services program

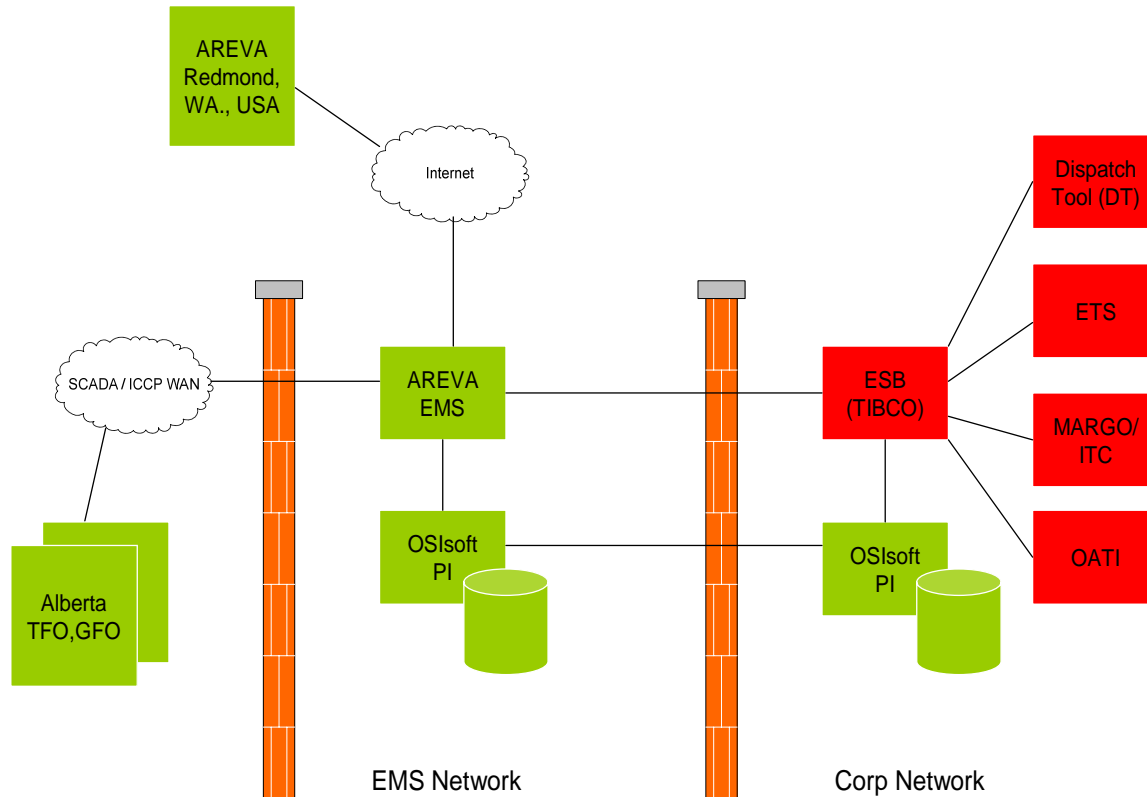
New Energy Management Solution



Split PI between Corp
and EMS networks

Real time
synchronization
providing corporate
users access to real
time information

New Energy Management Solution

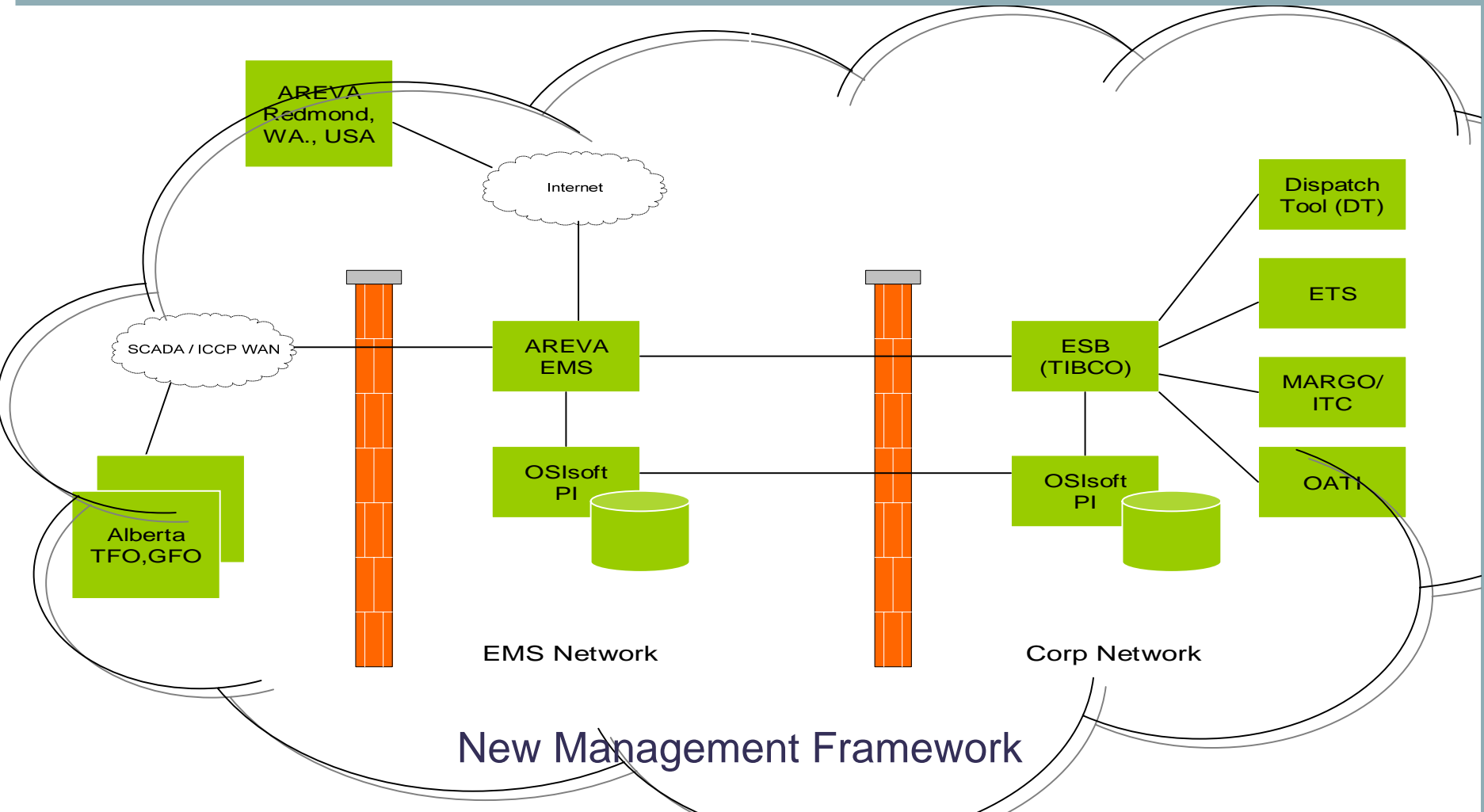


Enterprise Integration Capability

Reduced complexity & Increased flexibility

- Decouples applications from point to point interface
- Real time data access among systems
- Information integrity across multiple systems
- Faster changes
- Ease of development and maintenance
- Zero downtime

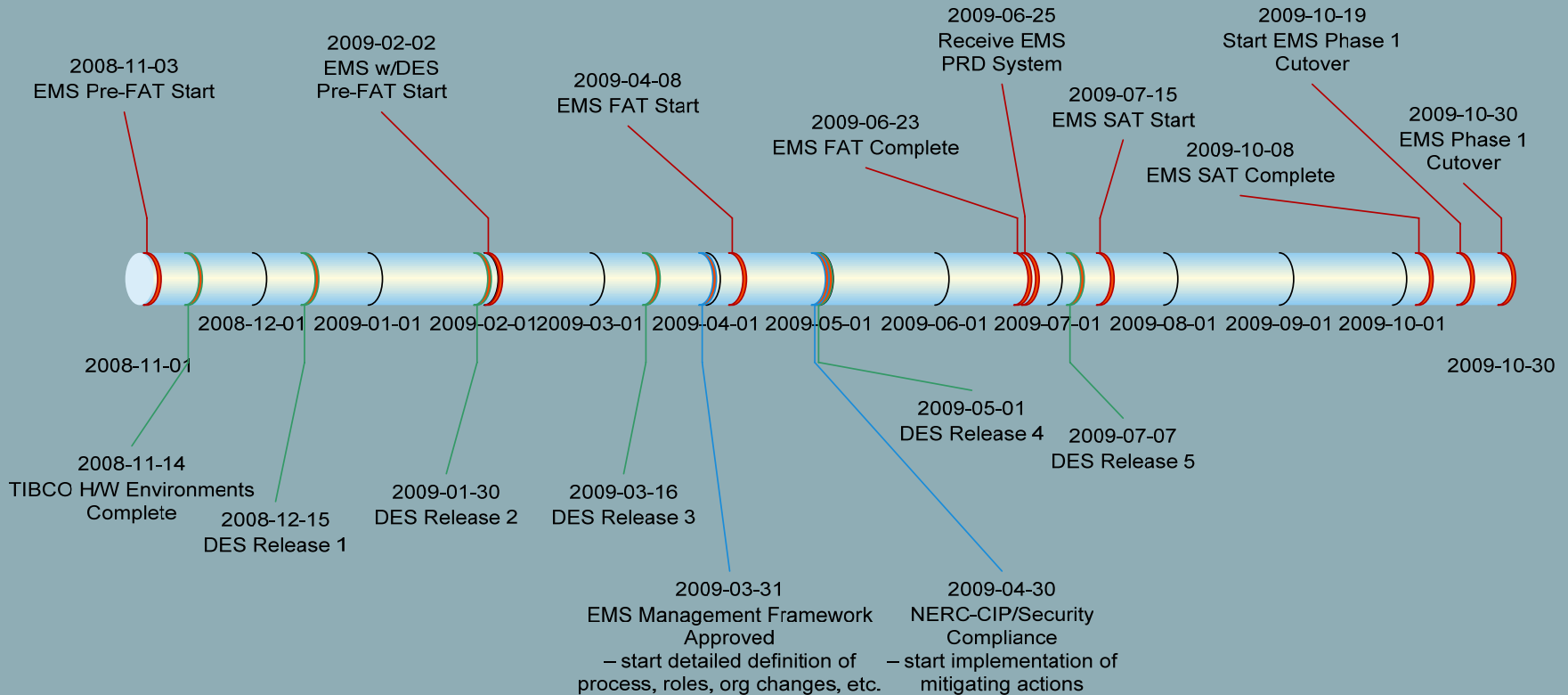
New Energy Management Solution



Revised Schedule



- Release 1 – October 2009 (6 month Extension)
- Release 2 – March 2010 (3 month Extension)



Business Impacts



- Confident of no impact from a grid operations reliability perspective
 - Mitigated via implementing VSA technology
 - Mitigated via ABB extended support and equipment replacements on hand
- Running two EMS in parallel for an additional six(6) months, stretches our current support team
 - Mitigated via bringing on additional ABB support resources
 - Aligning vacations and planned breaks with implementation schedule
- May require duplicate work on both systems if new requirements arise in this timeframe (i.e. MATL, WECC BAL 002)
- May delay our ability to fully implement Congestion Management, RUC, or Operating Reserves.
 - Note that delays in the market design process suggest a lower probability that the revised systems implementation date will impede these projects.
 - Design work can begin on these programs, however implementation can not take place until after the new EMS is in production.

Recommendation

- This is a complex “Enterprise” Energy Management Solution establishing reliability, flexibility, and sustainability for operating both the electricity grid and the electricity market
- Options to shorten the schedule (i.e. reduce testing/QA) or reduce costs (i.e. reduce functionality) introduce unacceptable risks and are not recommended
- Recommending
 - additional \$6.3M capital

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