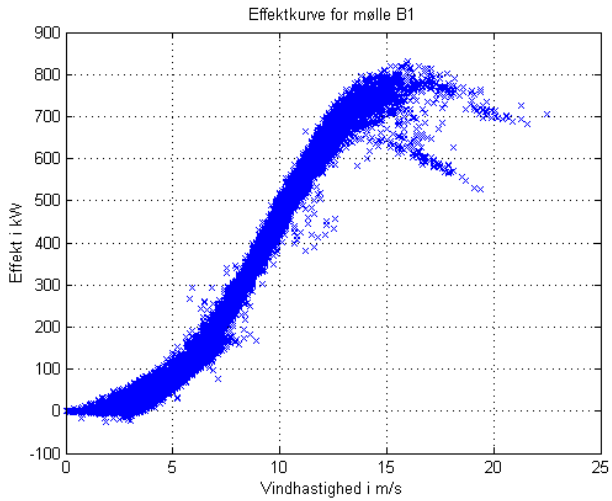
Implementation of IEC 61400-25 in Kenersys K100 – 2.5 wind power plant

Presentation by Anders Johnsson, Vattenfall Research and Development
at IEC61400-25 User's group meeting March 19-20, 2009

VATTENFALL

Background to the use of IEC 61400-25 in Vattenfall



- The IEC 61400-25 standard series provides access to key O&M data.
- Data necessary for evaluations and analysis to improve O&M of wind power plants.
- Standard supports whole range of business cases and customer-supplier roles.
- Both customer and supplier benefit from decreased costs for data access and system integration.

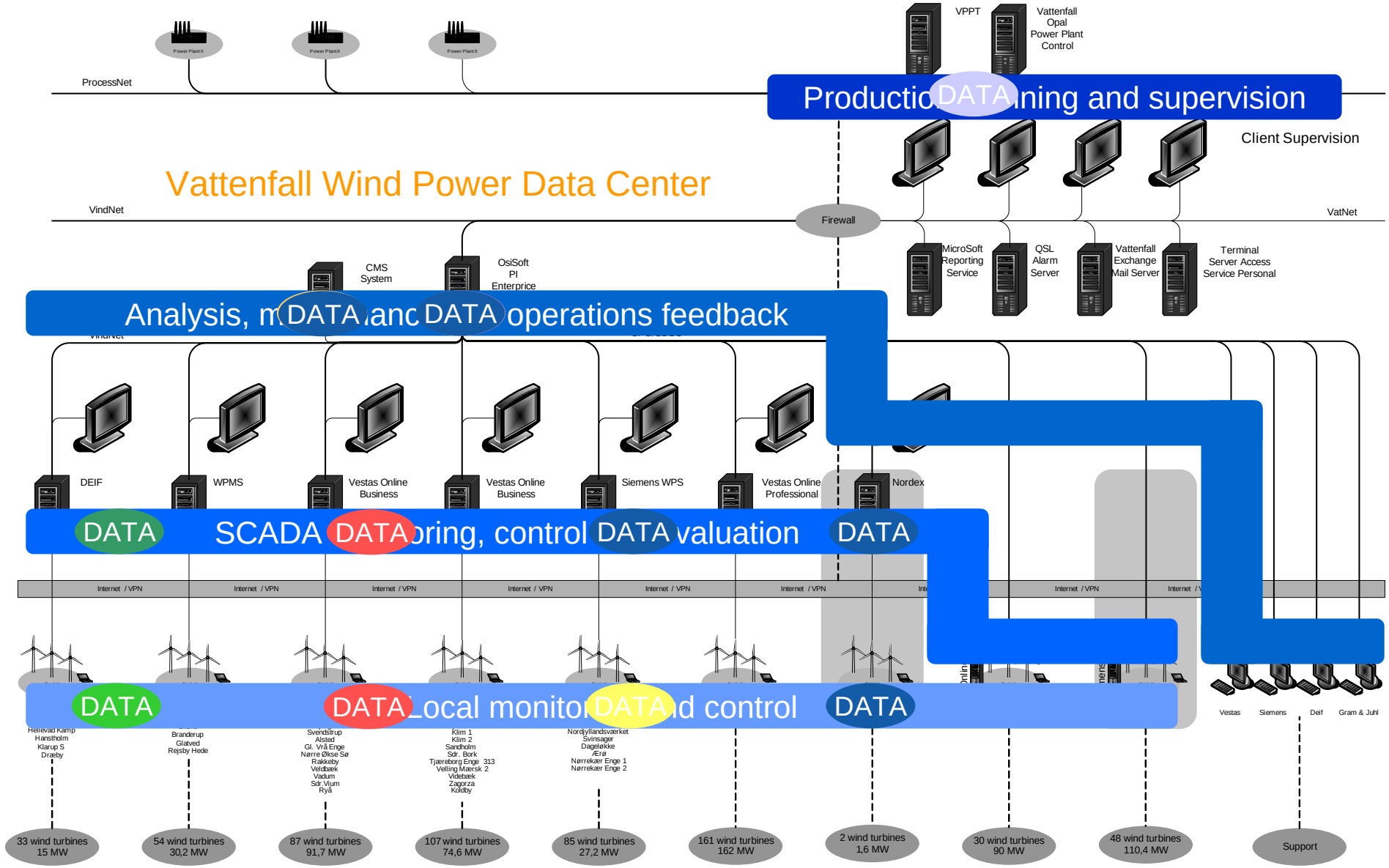
- The IEC 61400-25 series of standards is part of Vattenfall technical requirements for future procurements.

VATTENFALL

The Vattenfall wind power view

- Present solution designed to meet present needs within Vattenfall Wind power business
- Complete infrastructure for wind turbine supervision, control and data storage
- Interfaces to external systems
- Data collection is in place
- Development of applications and processes

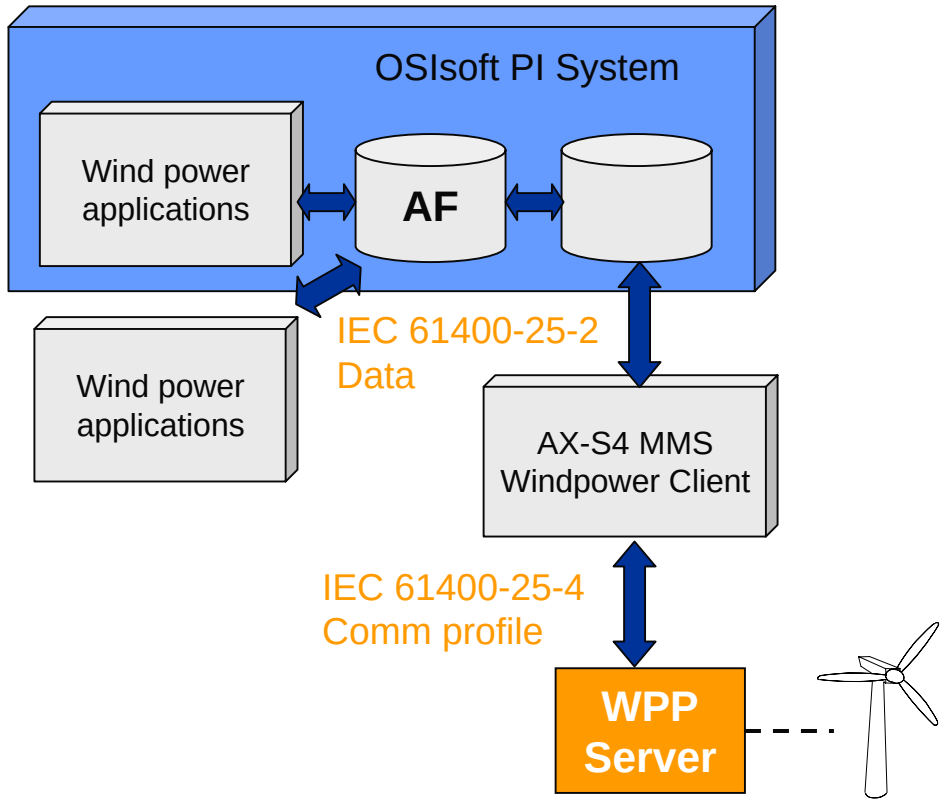
DATA = 61400-25-2



VATTENFALL

WPP integration for Vattenfall Wind power Data center

- SISCO communication adapter available for existing PI system
- IEC 61400-25-2 information model to be implemented in OSIsoft Application Framework (AF)
- First IEC 61400-25 server implementation for Kenersys K100 wind turbine
- Prepared for plug-in of the next wind power plant



VATTENFALL

Time schedule, March-October 2009

Mar	- Decision on protocol stack implementations
	- Information model – definition of data
May	- Structuring of information model.
	- Information model in PI database
Aug	- The WPP server implementation completed
	- OSISoft PI communication adapter
	- Verification of IEC 61400-25 functionality – interoperability
Oct	- IEC 61400-25 communication in operation.
TBD	Date for the interface at WT controller

VATTENFALL

Selection of IEC 61400-25-4 communication profile

- MMS for WPP communication
  - Mapping to MMS based profile according to IEC 61850-8-1 is the chosen solution for the WPP internal interfaces.
  - Rationale: Products available, in use for substation automation and other purposes, sufficient performance for control functions.
- OPC for central applications
  - OPC DA is the preferred solution for SCADA and enterprise system interfaces
  - Rationale: Sufficient functionality for monitoring and evaluation functions
  - OPC Unified Architecture could be the future solution

Questions?

Contact information

Anders Johnsson
Vattenfall Research and Development AB
anders.johnsson@vattenfall.com

User’s group USE61400-25
www.use61400-25.org

VATTENFALL