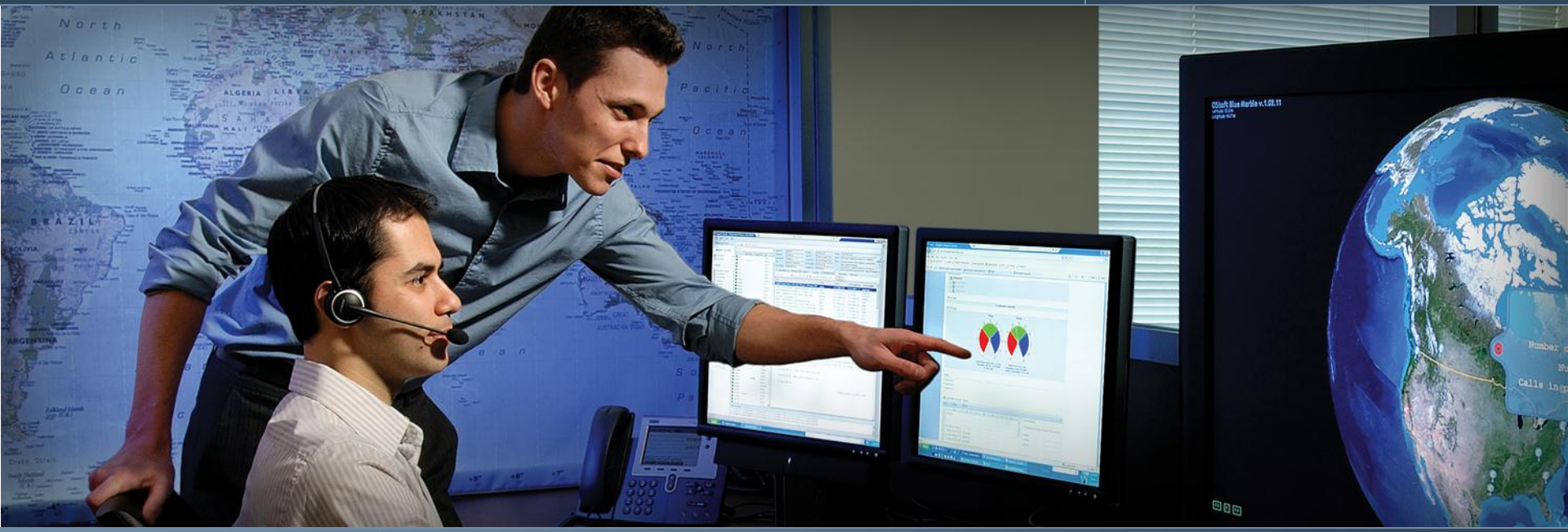
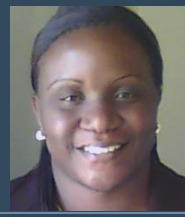
OSIsoft® Regional Seminar Series
Johannesburg, South Africa

MOPANI



Making PI Mopani's key tool in Production and Management

Jane Mulenshi Munyao
Plant Metallurgist & PI System Administrator
Mopani Copper Mines Plc



24th February 2011

Real Time Information – Currency of the New Decade

About “Mopani Copper Mines Plc”

- **Industry**
  - Mining
- **Our Business**
  - Copper and Cobalt metals
- **Organization / Sites**
  - Country: Zambia
  - Province: Copperbelt
  - Town: Kitwe & Mufulira
  - Sites: Nkana in Kitwe (Underground Mine, Concentrator & Cobalt Plant)
    Mufulira (Underground Mine, Concentrator, Smelter & Refinery)

Introduction of PI at Mopani

Mufulira Smelter Upgrade Project (MSUP) Phase 1

- Commissioned in September 2006 - Isasmelt Furnace, Matte Settling Electric Furnace (MSEF), Sulphuric Acid Plant & Oxygen Plant
- Plant Wide Process Control System (Yokogawa CENTUM CS 3000 System)
- OSIsoft PI System

Challenges before PI introduction

- No easy way for **production** staff to monitor the plant
- No easy way for **maintenance** staff to monitor critical instruments
- No easy way for **management** staff to monitor the plant overall performance & aggregate data into meaningful business information
- **Manually** entered log sheets were the only source of plant information
- Excel was the analysis tool of choice leading to data silos and multiple versions of the truth
- **How do we monitor the highly automated new plants (Isasmelt, Oxygen & Acid Plants)?**

Solution

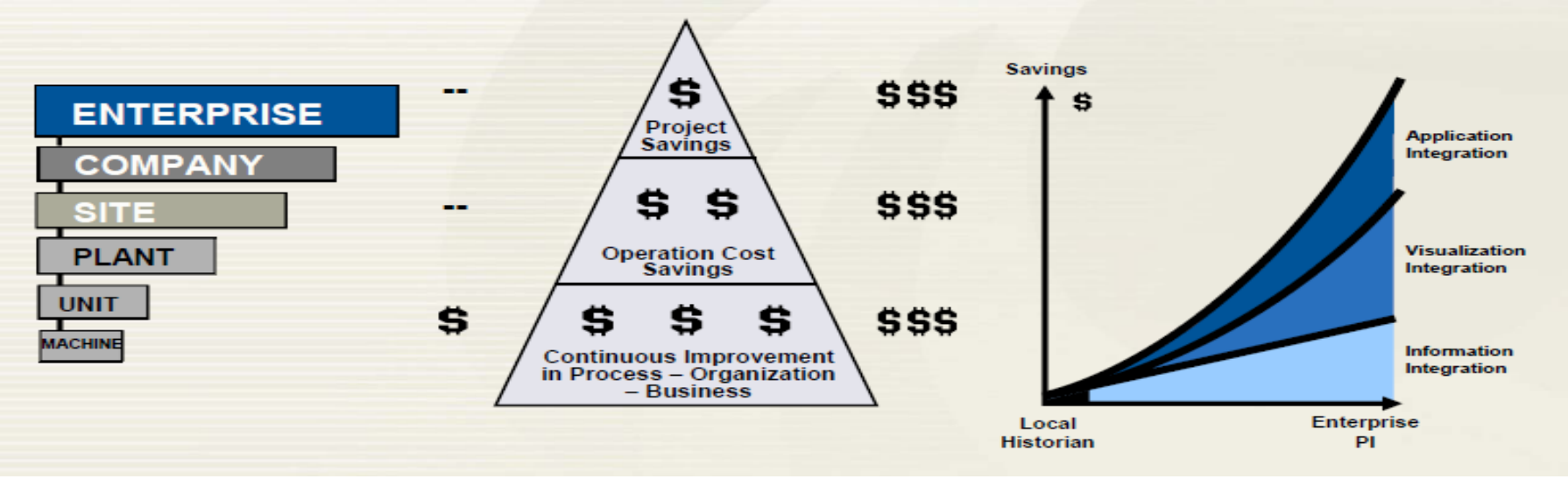
- PI System implementation

  - to monitor the performance of the new plants away from the control rooms

  - to have one version of the truth about plant data

  - to enhance continuous process improvement

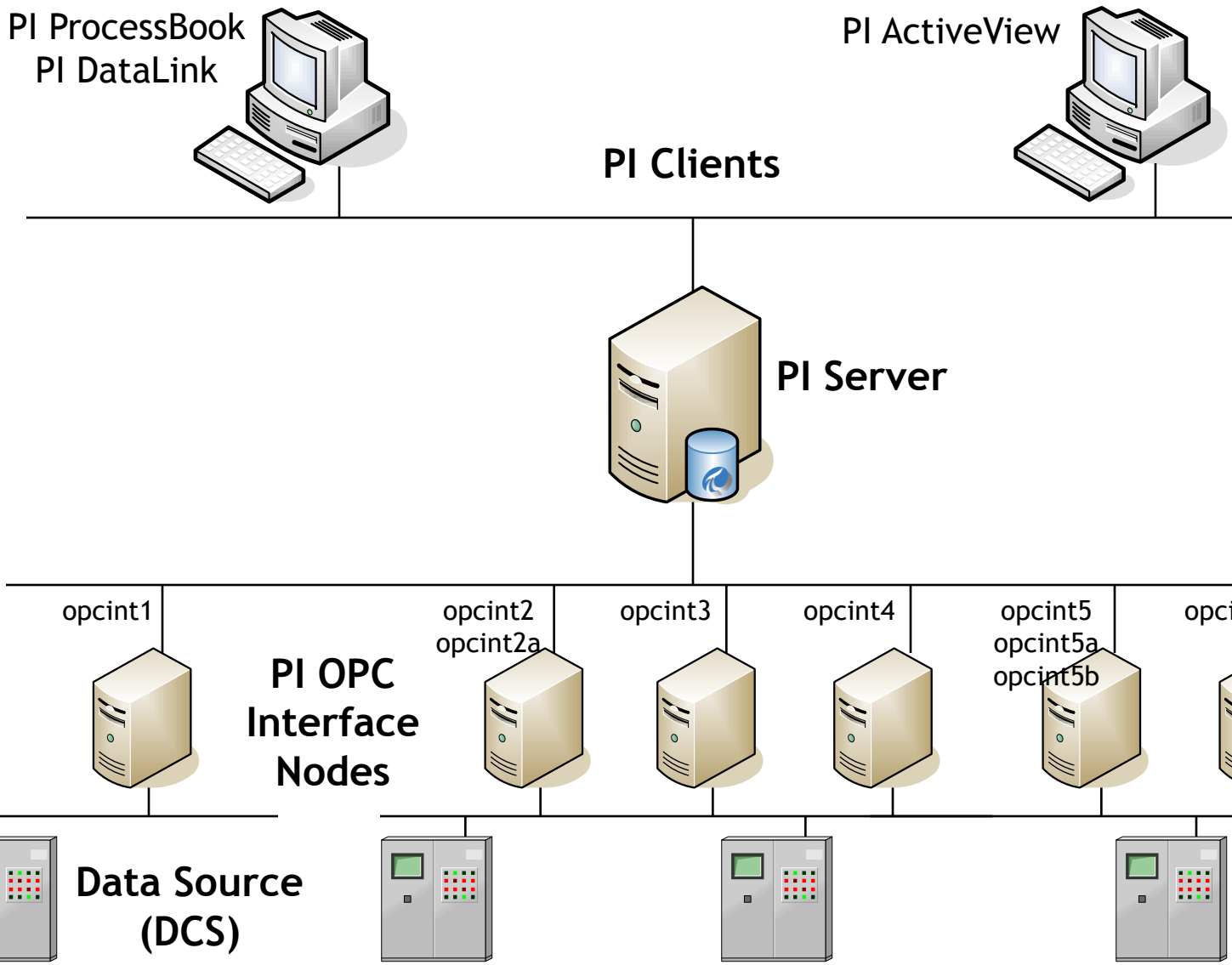
  - to reduce operational costs



OSIsoft Software and Services Used

- PI Server (6000 Tags)
  - PI Interface Configuration Utility
    - PI-Interface Status Utility
- PI OPC DA Interfaces (Server License - 7 OPC Interface Nodes)
  - PI_OPCClient
  - PI Interface Configuration Utility
  - PI-OPC Tag Configuration Utility
- PI Clients
  - PI ProcessBook
  - PI DataLink
  - PI ActiveView
  - PI System Management Tools
- Software Reliance Program (SRP) Services

PI System Architecture



Making PI the key tool

- September 2006 to October 2007
  - Limited PI usage
- April – June 2008
  - PI client training
- July 2008 to-date
  - PI ProcessBook displays developed
  - PI DataLink used to analyze PI data
  - PI ActiveView usage introduced
  - PI OPC Interface Nodes increased (Server License)
  - PI Server upgraded from 5000 to 6000 tags

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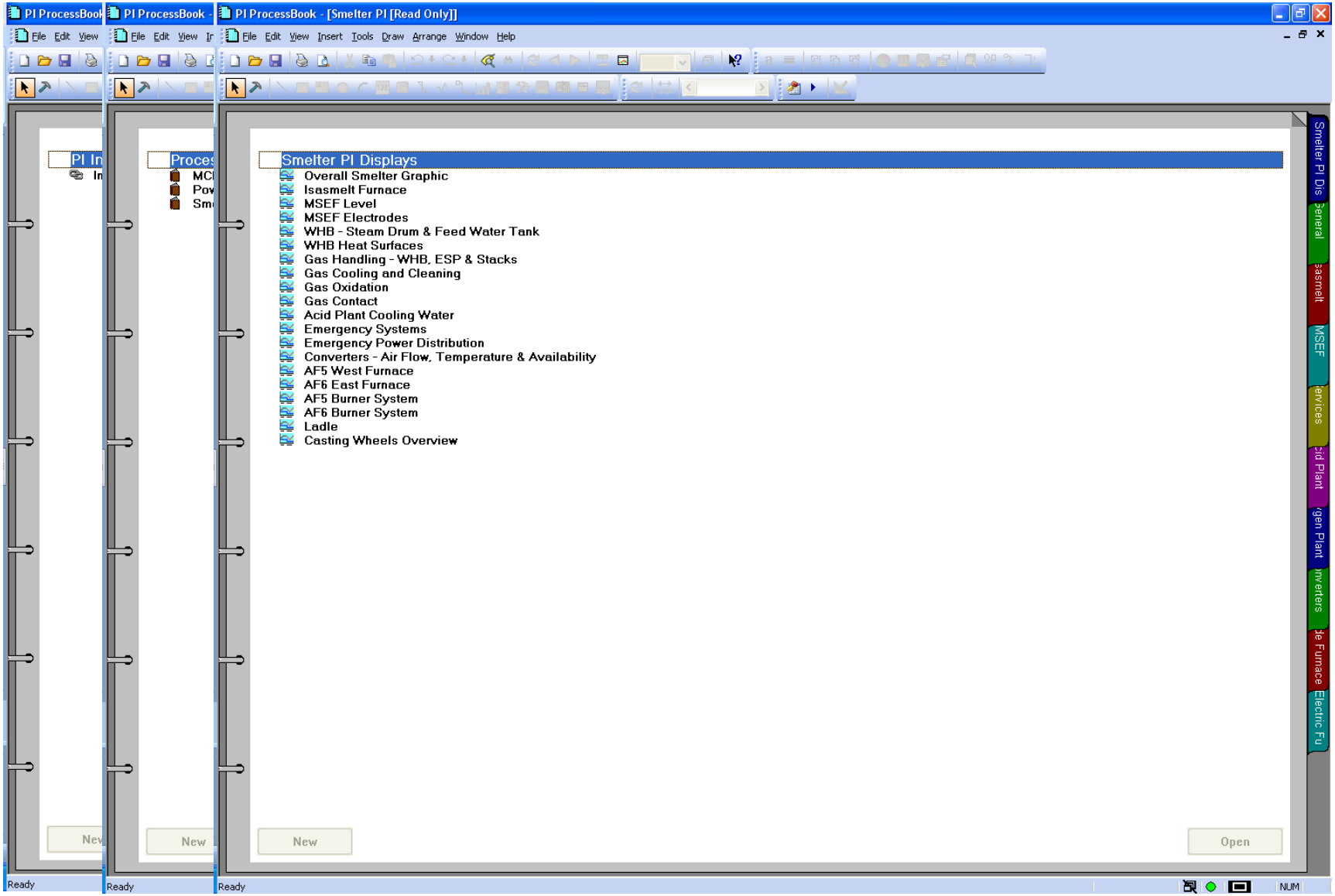
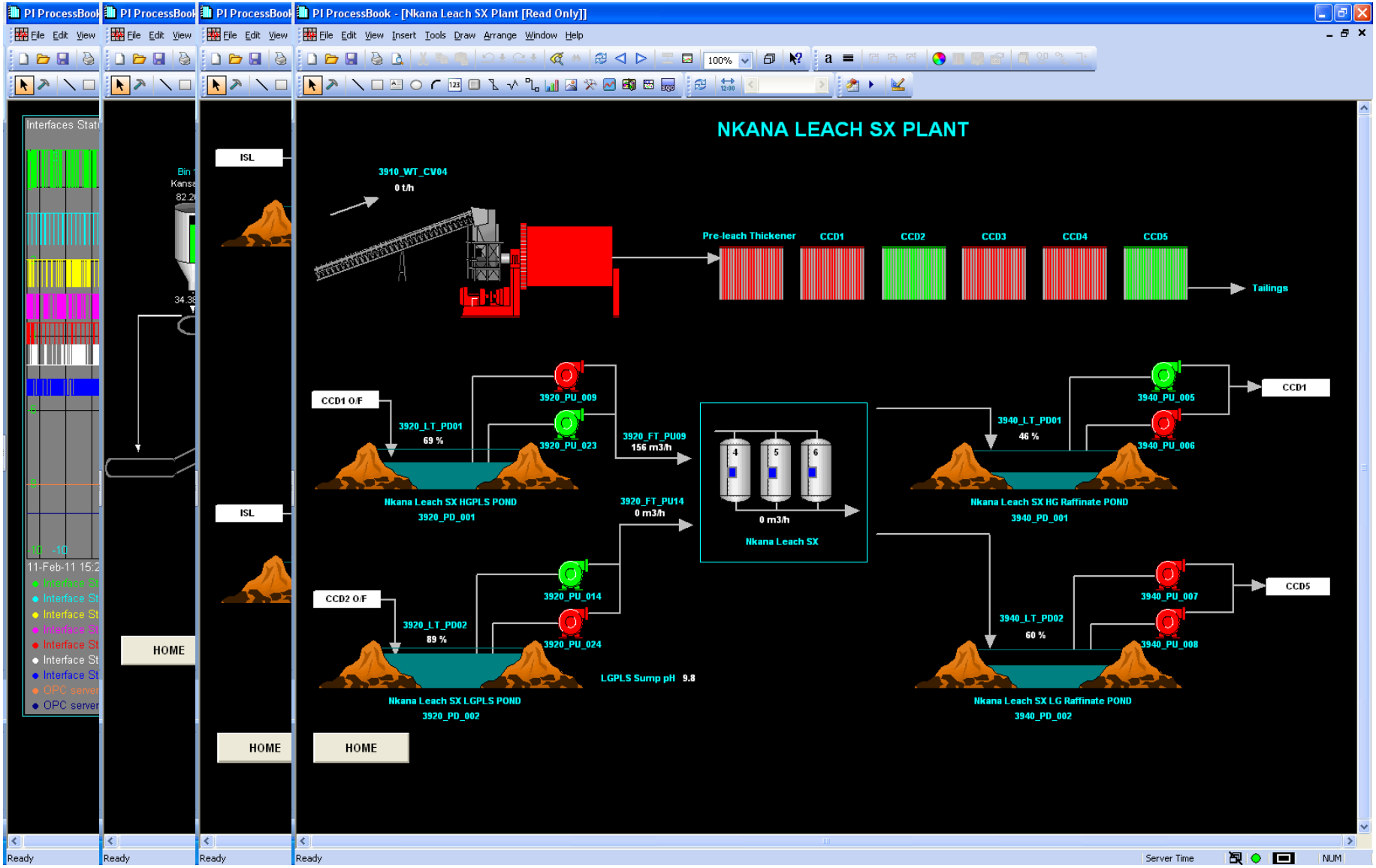
PI ProcessBooks



PI ProcessBook Displays



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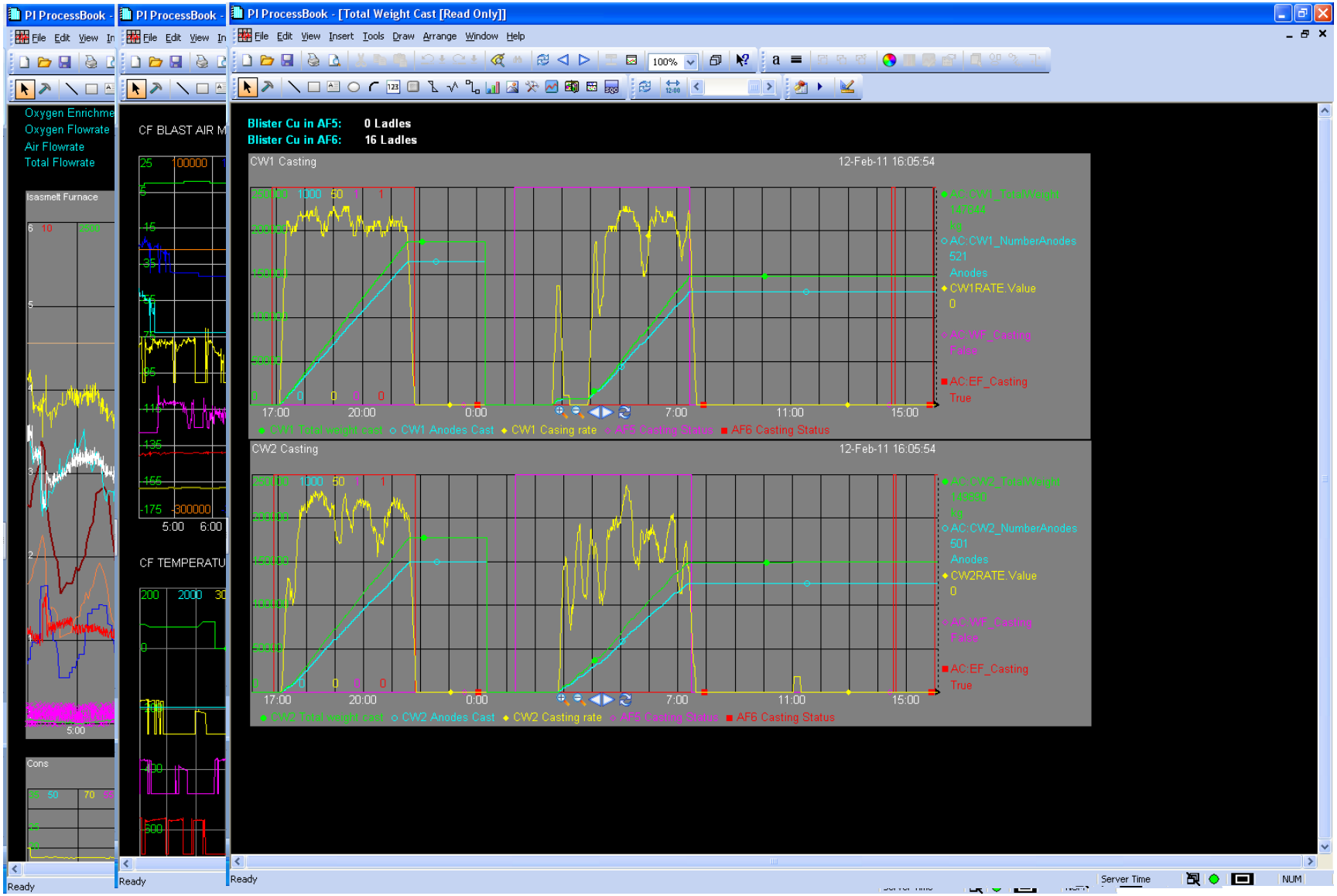
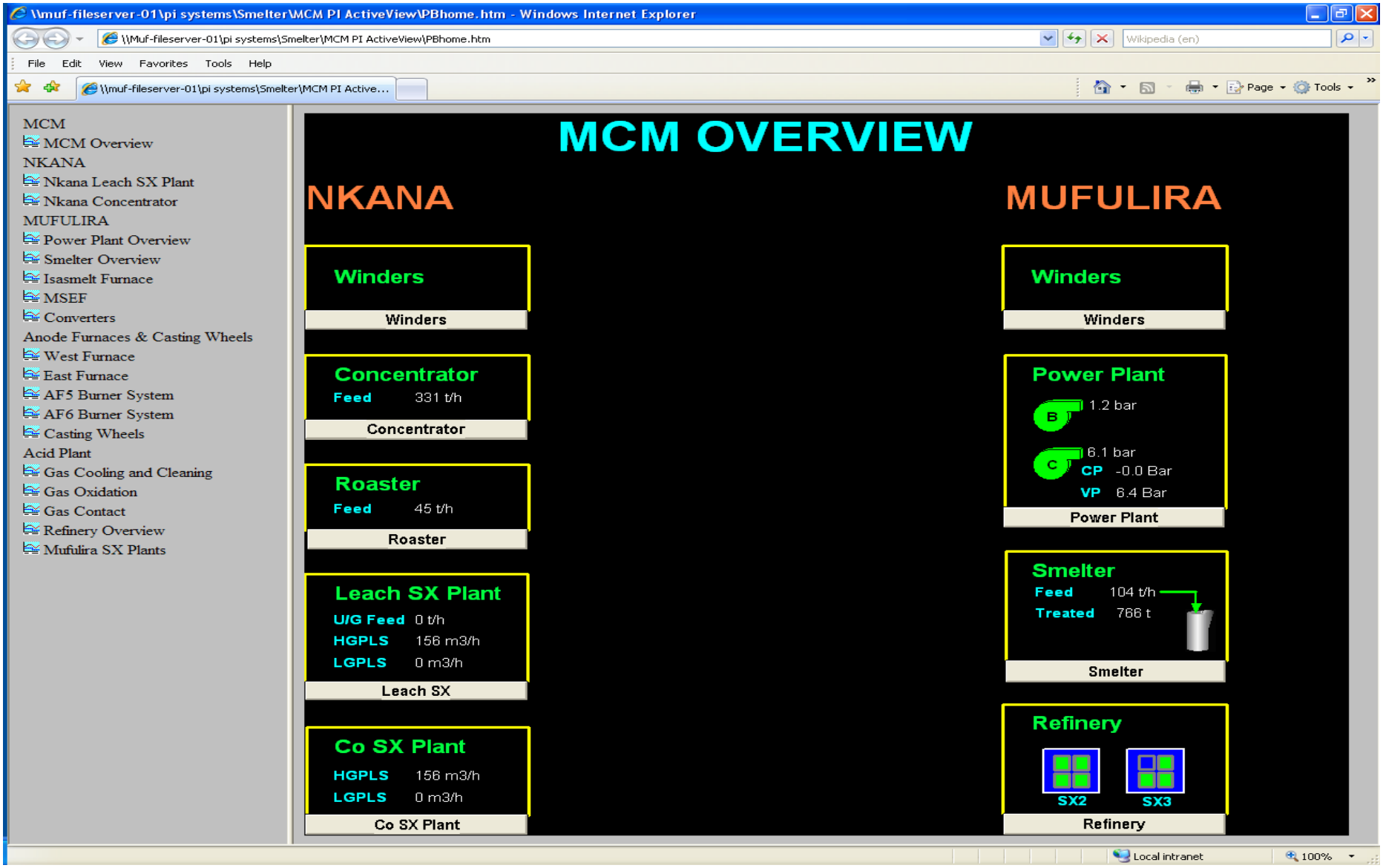
PI ProcessBook Trend Displays



PI ActiveView Displays



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PI DataLink

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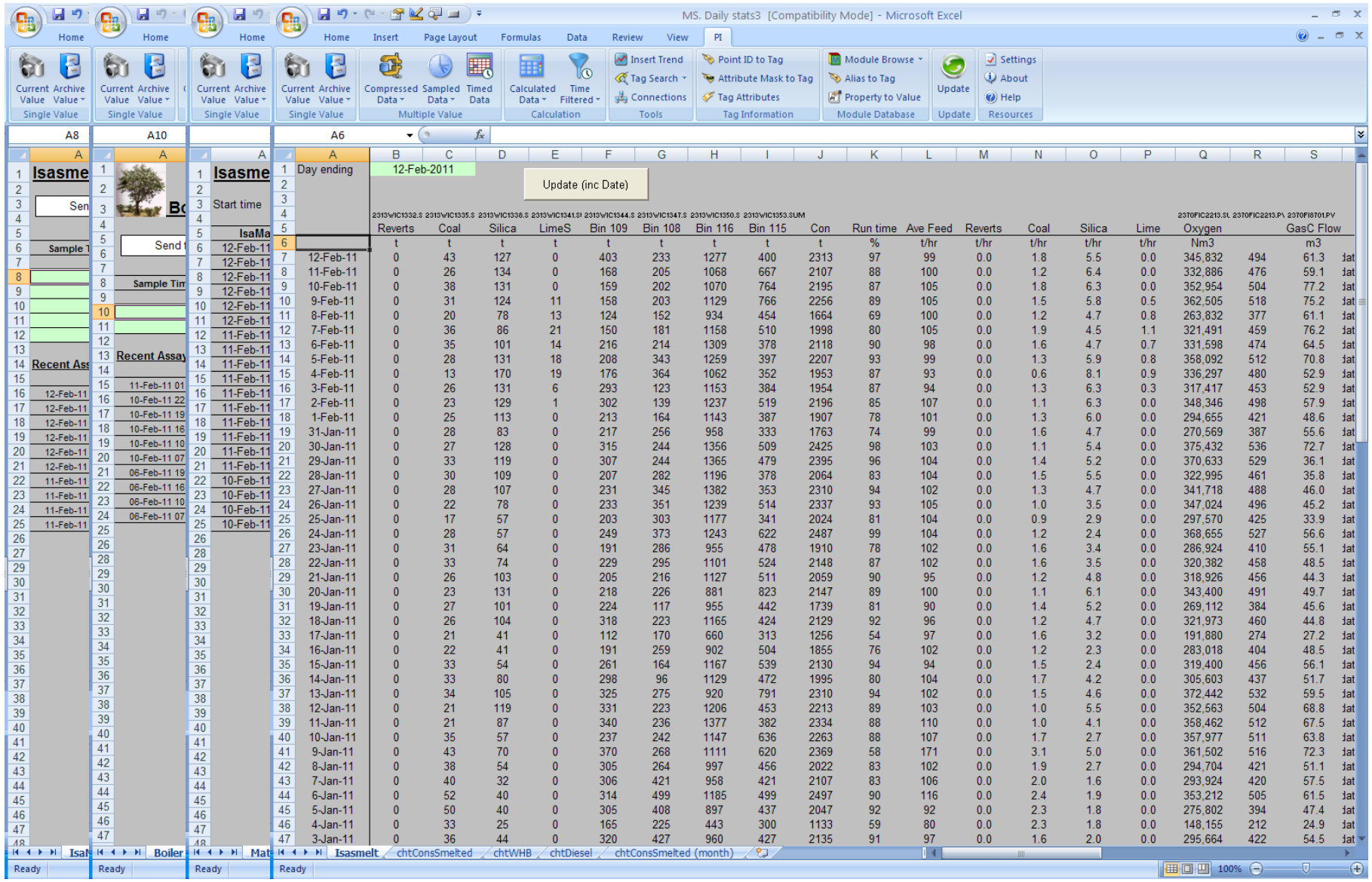

Real Time Information – Currency of the New Decade

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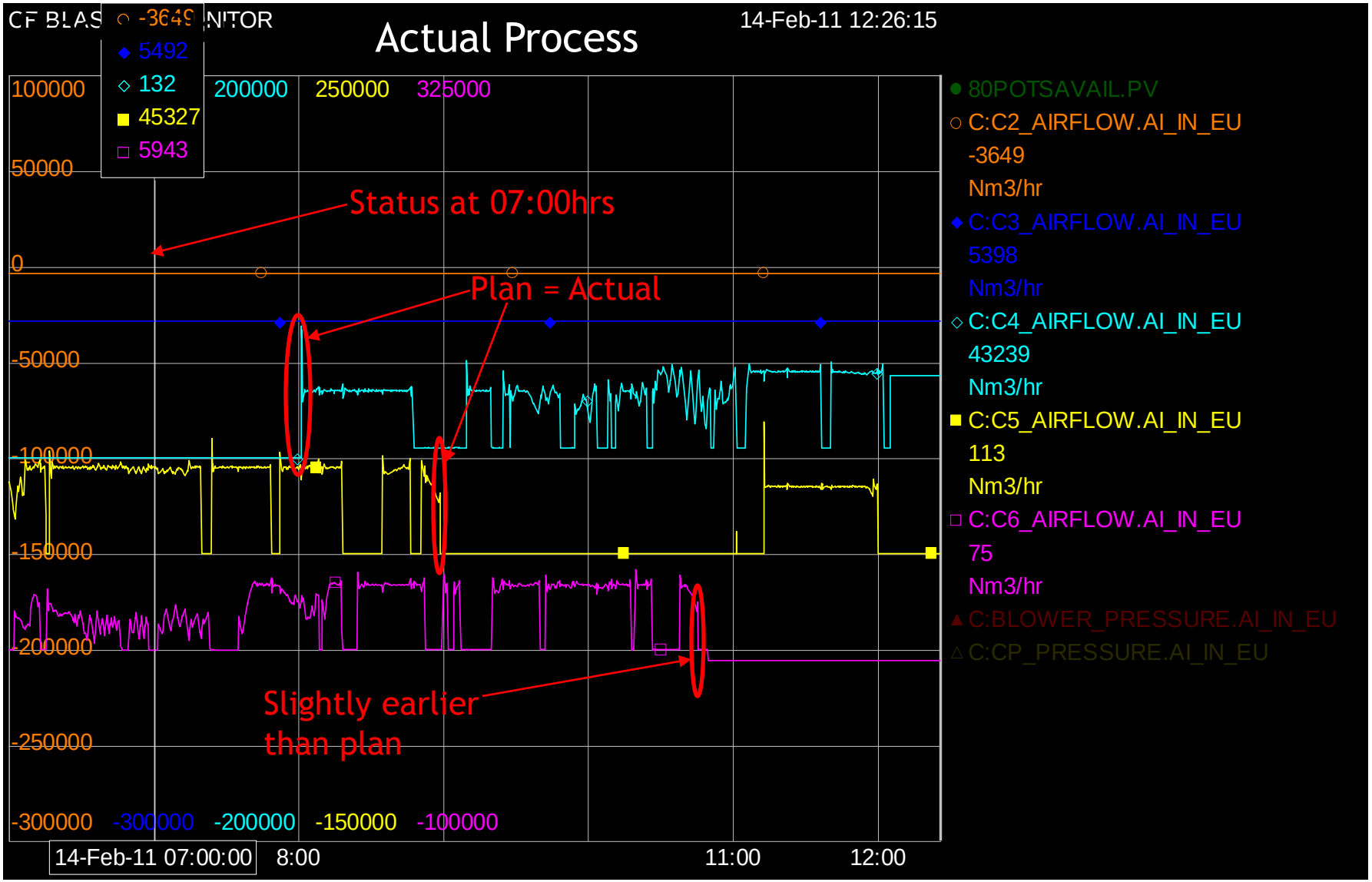
Case Study 1
Improved Process Monitoring

OSIsoft.



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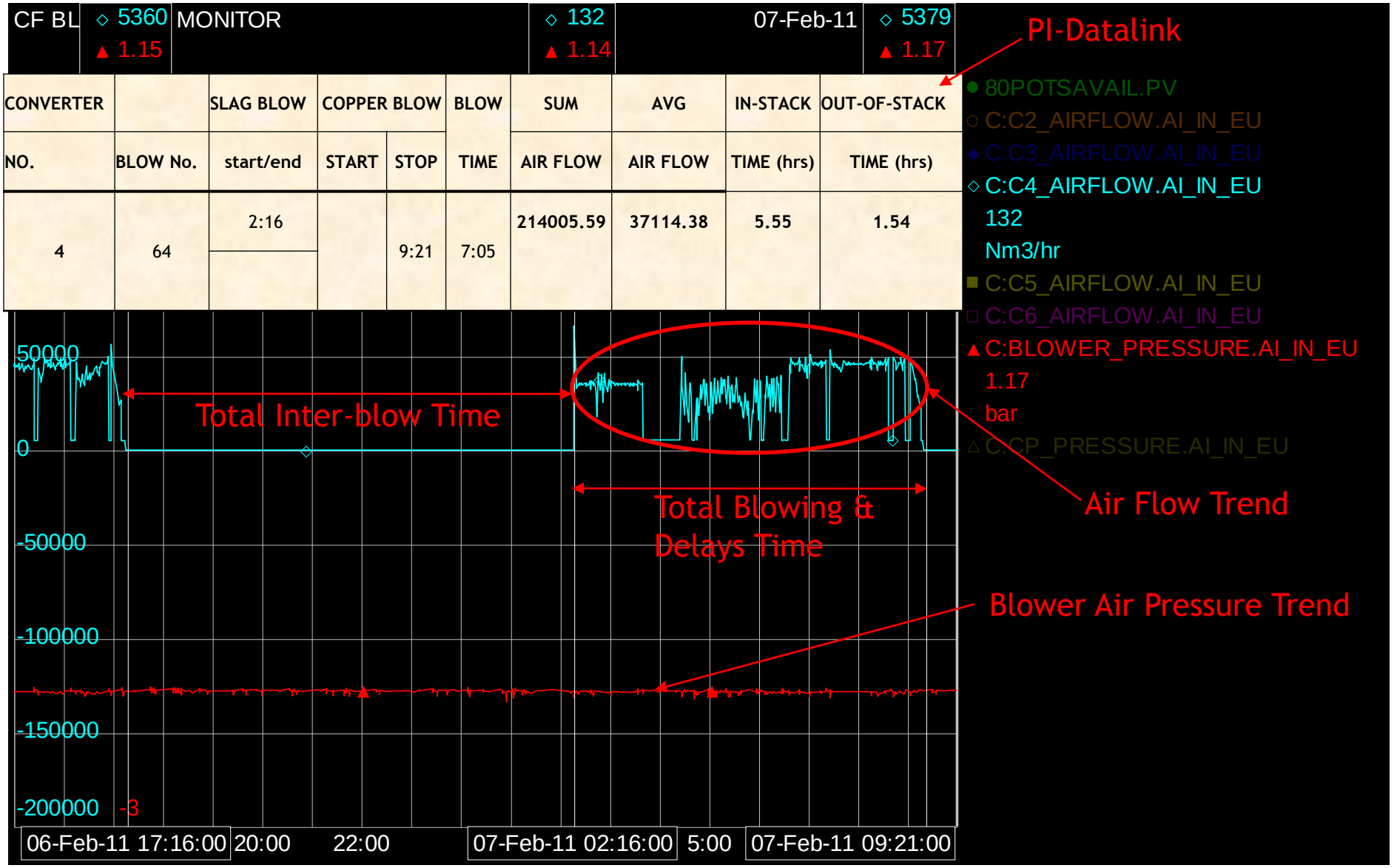
Case Study 2
Reliable Source of Data in Real Time



Benefits

- Improved process monitoring
- Ability to monitor performance on a daily basis
- One reliable source of data in real time and archived
- Less time spent in process analysis due to readily available process data and statistical analysis tools
- Trouble-shooting time reduced
- Management has accurate & timely information about process areas needing their attention hence timely business decisions are being made too

Future PI Plans

- Nkana Site
  - Nkana Concentrator
  - Leach Plant
  - Mindola Compressor House
  - Copper Tank House
  - Cobalt Tank House
  - South Ore Body (SOB) Compressors
  - Winders
  - Power monitoring
- Mufulira Site
  - Refinery SX Plants
  - Refinery Tank Houses
  - Power Monitoring
  - Winders

QUESTIONS

Making PI Mopani's key tool in production and management

THANK YOU!!!

Thank you

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