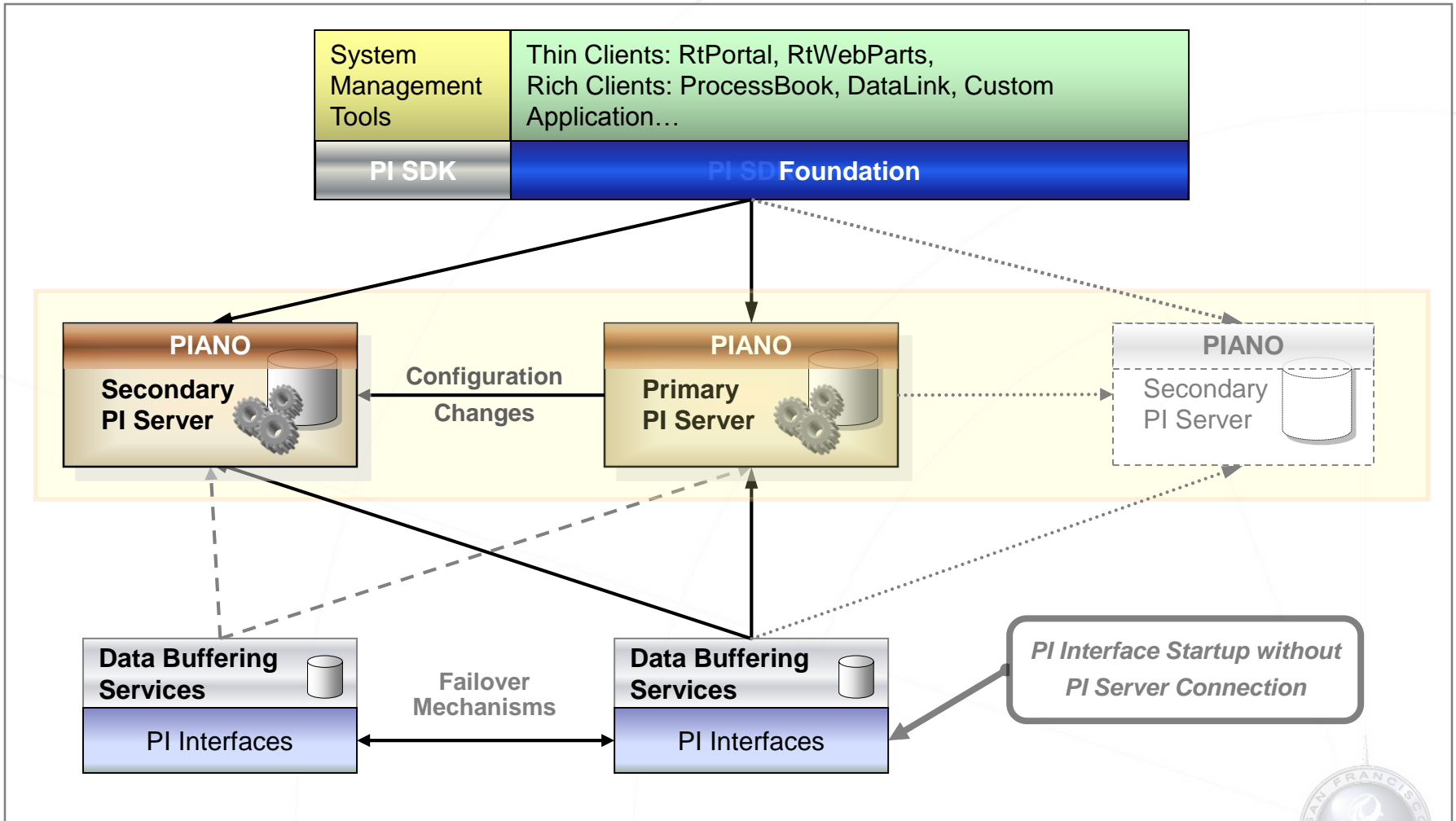




PI System High Availability: Interface Redundancy and Disconnected Interface Startup

**Andy Singh, Ph.D., OPC Team
Tony Cantele, Uniint Team Leader**

Concurrent HA Developments



VALUE NOW, VALUE OVER TIME



Definitions and Terms

- Interface Level Failover
- UNIINT
- Data Source/Control System
- Disconnected Startup

VALUE NOW, VALUE OVER TIME



Agenda

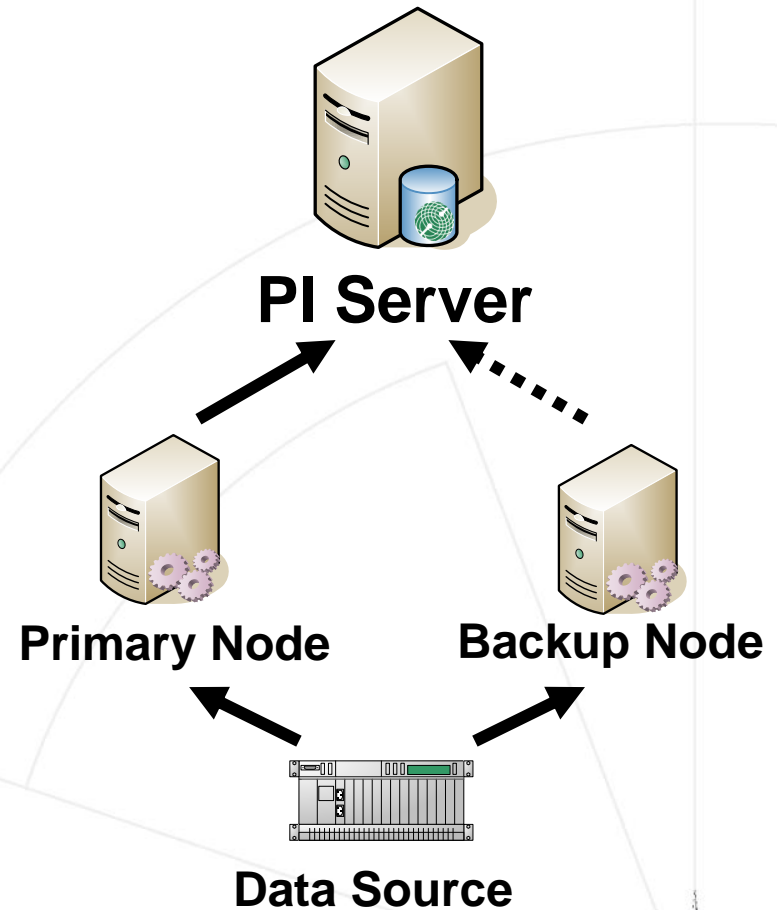
- Interface Level Failover
 - Introduction
 - Demo of Planned Maintenance
 - Demo of Uninterrupted Data Collection
 - Cost Effective Solution
 - Simple Configuration
- Disconnected Startup
 - Data Collection without PI
 - Faster Startup Option

VALUE NOW, VALUE OVER TIME



What is Interface Level Failover?

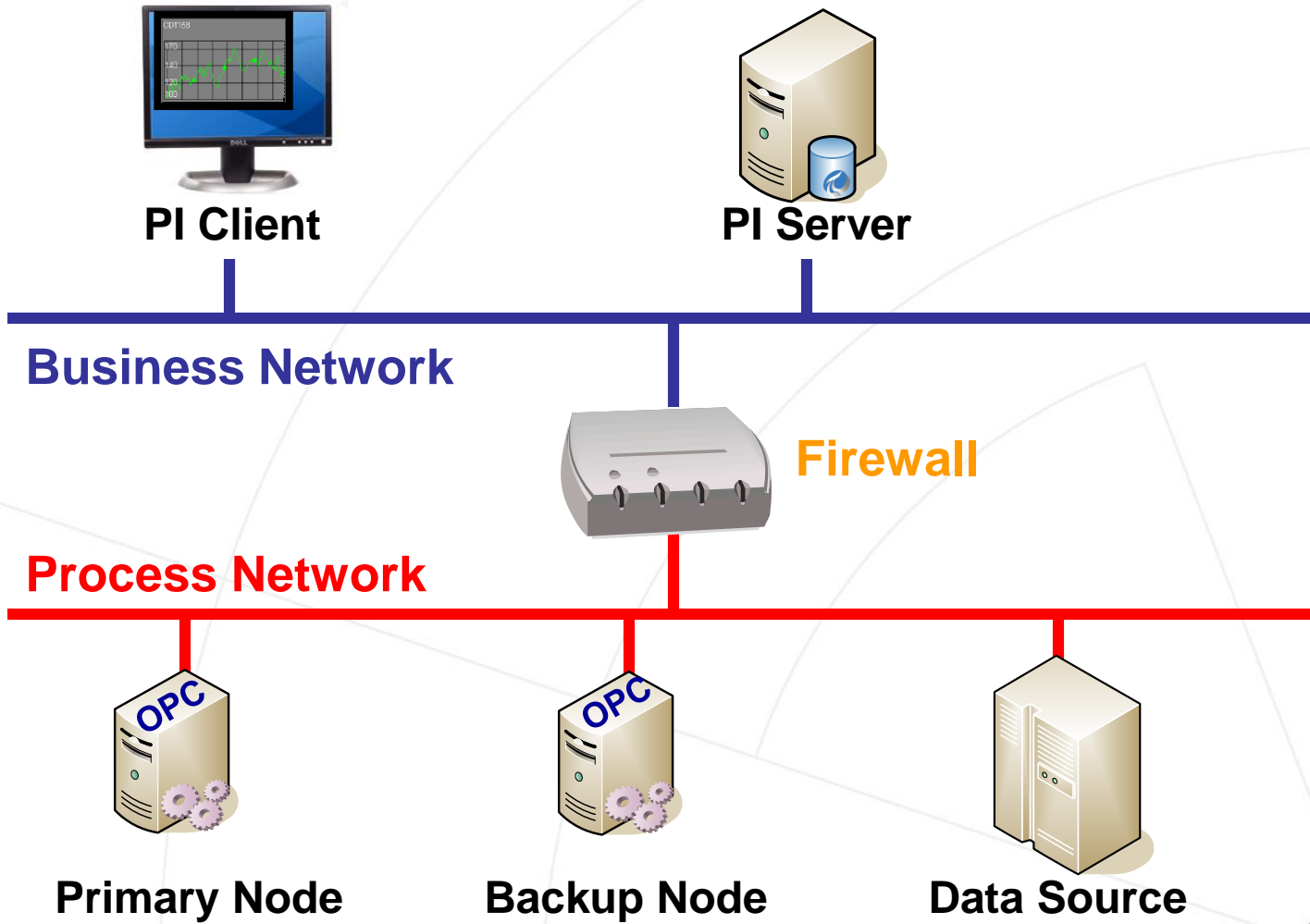
- Two interface nodes
 - Communicate to same data source
 - Only one node sends data
- Types of failover
 - Hot, Warm, Cold
 - Determined by data source and network
- Input/Output tags



VALUE NOW, VALUE OVER TIME



Typical Network Setup



VALUE NOW, VALUE OVER TIME



Stress Free Maintenance

- Data is Available during Maintenance
 - OS/Security Patch
 - PI Software Update
 - Hardware Upgrade
- Better decisions

VALUE NOW, VALUE OVER TIME

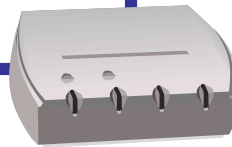


Network setup for Demo

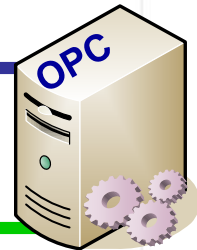
PI Server
and Client



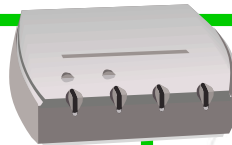
Business Network



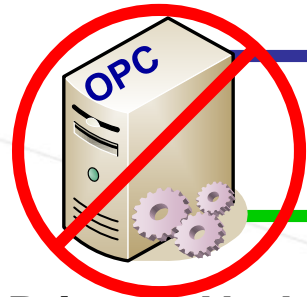
Router



Process Network



Backup Node



Primary Node



Data Source

VALUE NOW, VALUE OVER TIME



Demo

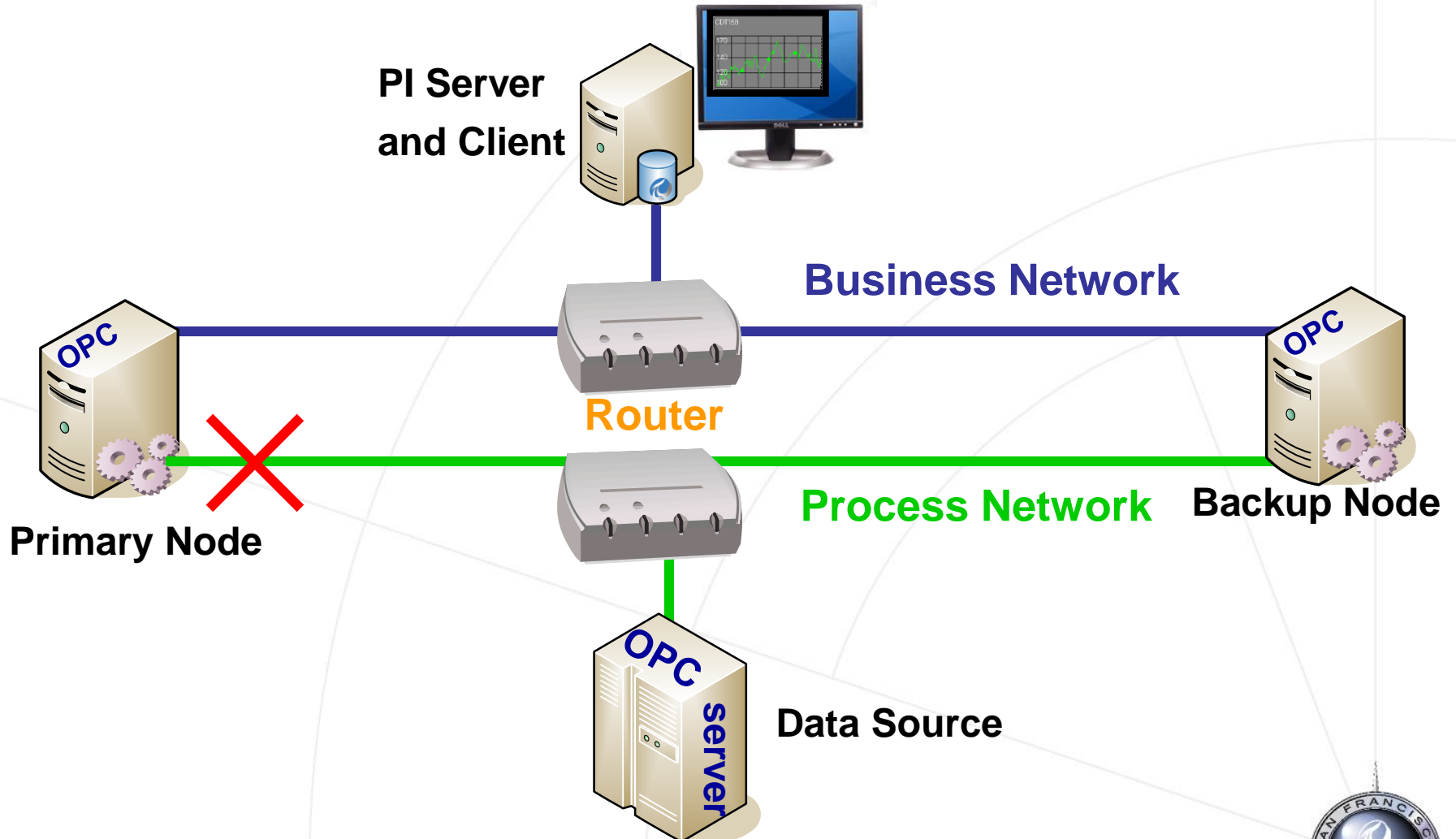
Interface Failover during Maintenance



VALUE NOW, VALUE OVER TIME



Network setup for Demo



VALUE NOW, VALUE OVER TIME



Demo

Interface Failover with Network Fault



VALUE NOW, VALUE OVER TIME



OSIsoft's Failover Solution is Inexpensive

- 3rd Party solutions can be expensive
 - Limited Hardware Support
 - Difficult Setup
 - Expensive Maintenance
- Implementation only requires two PCs

VALUE NOW, VALUE OVER TIME



Simple and Standardized Configuration

- Simple Interface Configuration
- Standardized for most interfaces
- Basic Tag Configuration

Failover

Enable Failover

Failover ID# for this interface: **1** **3** Optionally designate this interface as Primary

Failover ID# of the other interface **2**

Change rate at which the heartbeat point is updated/checked (optional): milliseconds

1 - /ufo_id*

2 - /ufo_otherid*

3 - /ufo_primary

4 - /ufo_interval

* Must be consistent for both nodes

VALUE NOW, VALUE OVER TIME



Demo

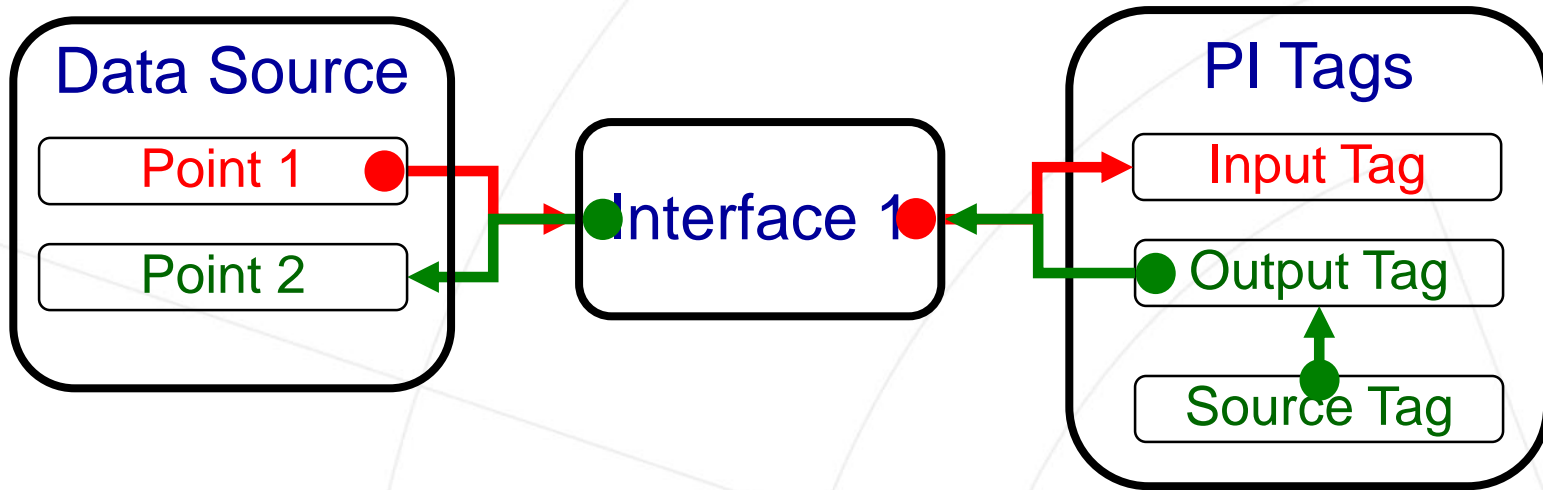
Configuring Interface Failover with ICU



VALUE NOW, VALUE OVER TIME



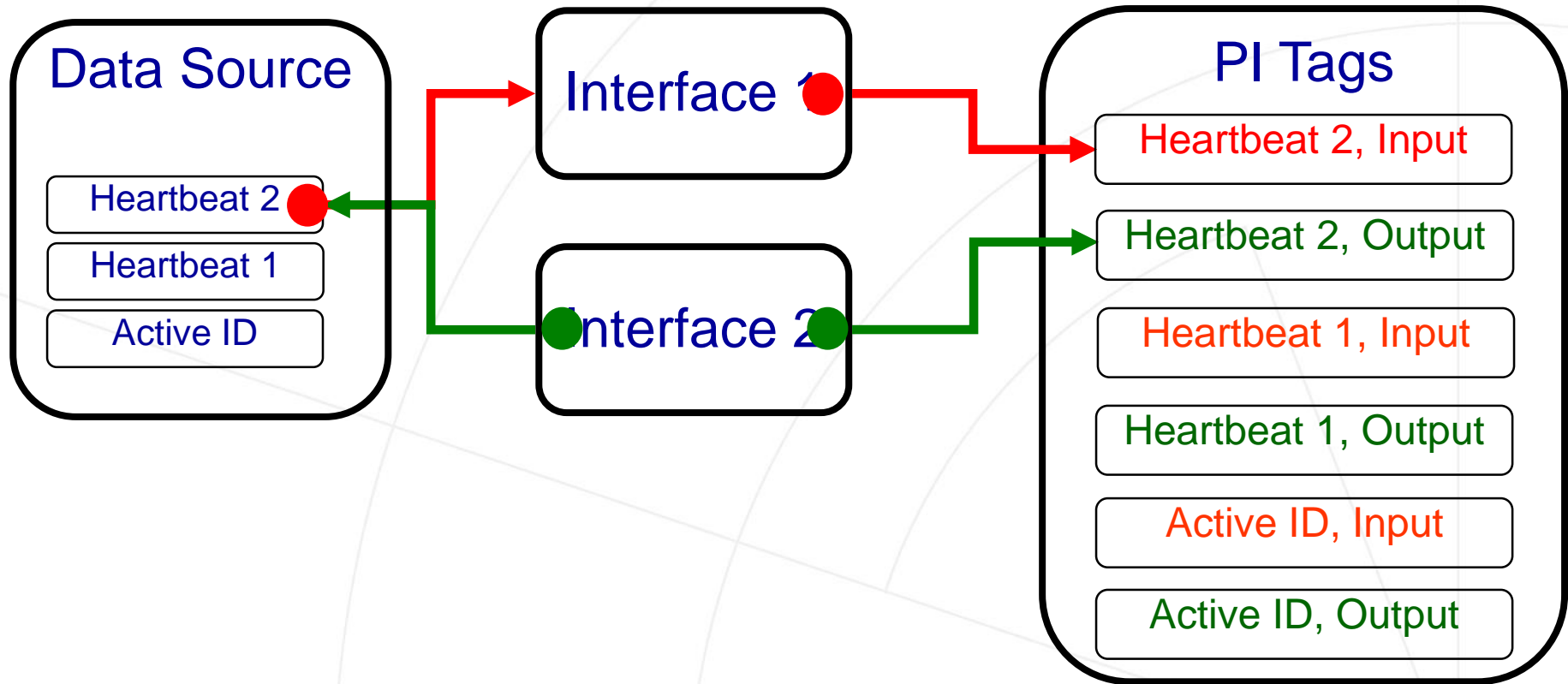
Why six PI tags?



VALUE NOW, VALUE OVER TIME



Why six PI tags?



VALUE NOW, VALUE OVER TIME



Summary of Interface Level Failover

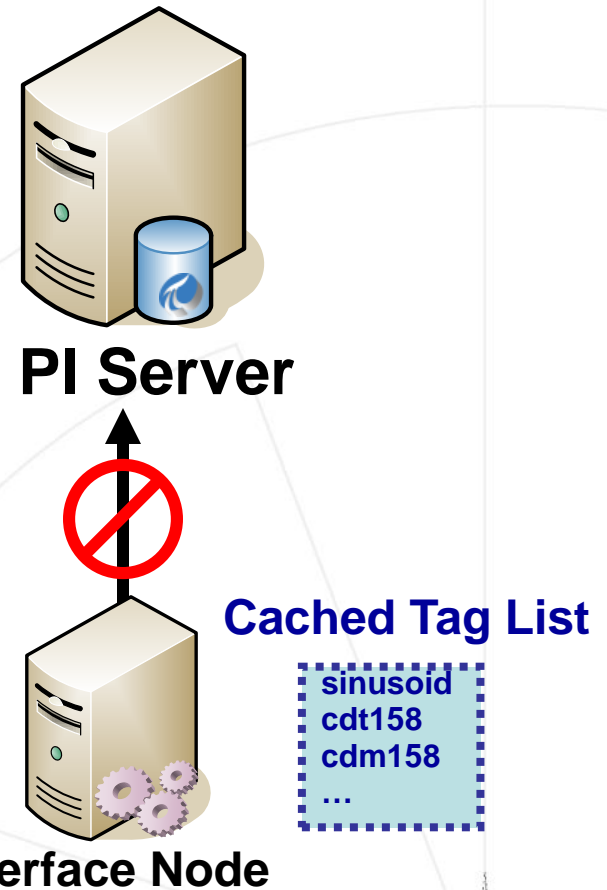
- Normal data collection continues with network or hardware faults
- Cost effective solution
- Stress Free Maintenance
- Simple and Standardized Configuration across all Interfaces

VALUE NOW, VALUE OVER TIME



What is disconnected Startup?

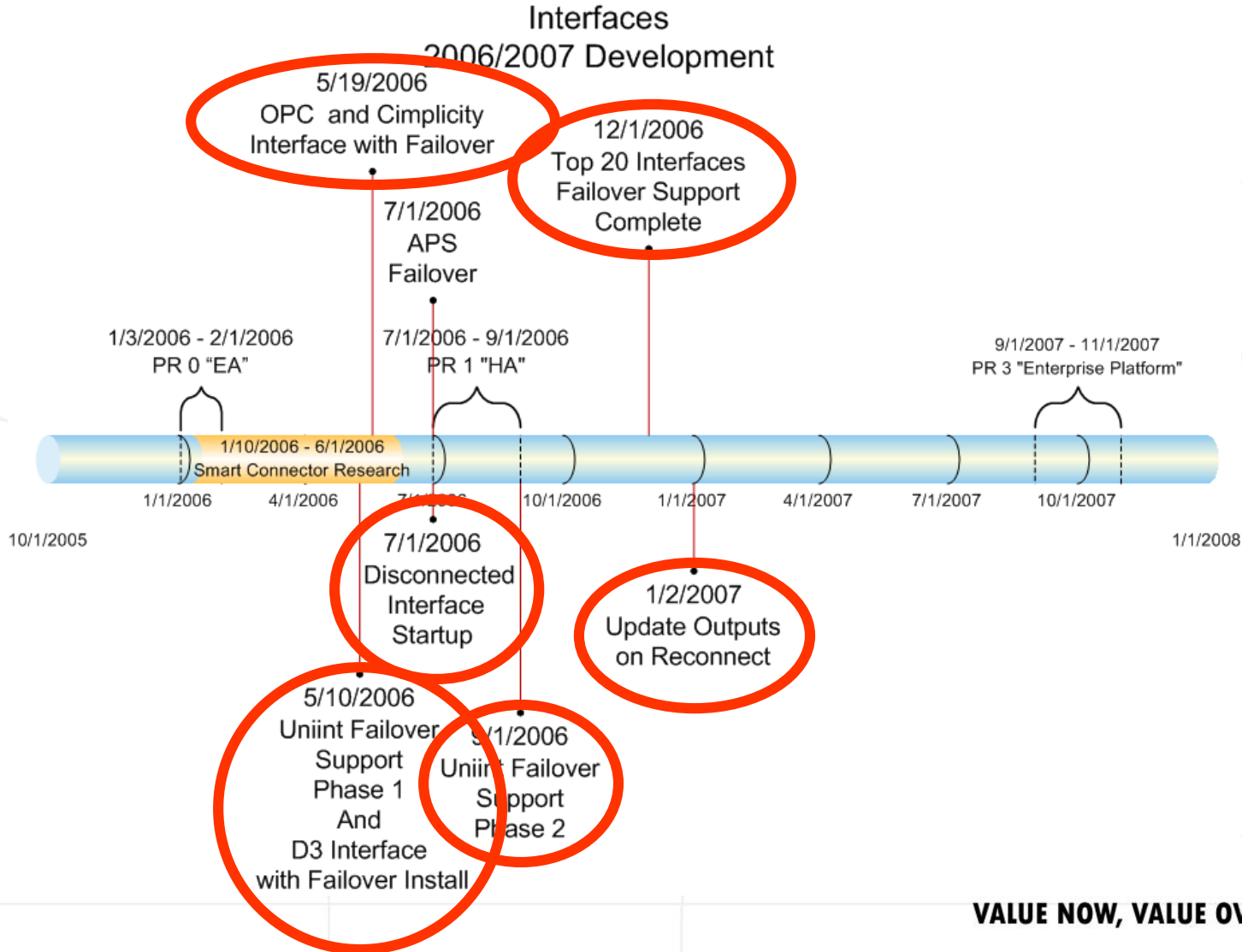
- Interfaces do not need connection to PI to start
- Cached copy of Point DB
 - Improved startup times
 - Collect and buffer data w/o PI
- Synchronization of Point Changes



VALUE NOW, VALUE OVER TIME



Development Timeline



VALUE NOW, VALUE OVER TIME



Top 10 interfaces

- OPC DA Interface (currently ongoing)
- Intellution Fix DMACS
- Modbus Ethernet Interface
- Wonderware InTouch Interface
- Foxboro IA Interface (Windows & Solaris)*
- OPC HDA Interface
- Modbus Serial Interface
- OPC Alarms and Events Interface
- GE Cimplicity Interface
- Interfaces contained in MCN Health Monitor

VALUE NOW, VALUE OVER TIME



Conclusion

- Simple, Enterprise, Available (SEA)
 - **Simple** setup and configuration
 - Maintenance and improved TCO for the **Enterprise**
 - Data Reliability and **Availability**

VALUE NOW, VALUE OVER TIME



Network setup for Demo

PI Server
and Client



Business Network

Router

Process Network

Backup Node

Primary Node



Data Source



VALUE NOW, VALUE OVER TIME



Thank You!



VALUE NOW, VALUE OVER TIME





**OSISOFT USER
CONFERENCES
2006**