



AIR LIQUIDE
TM



AIR LIQUIDE ADVANCED INDUSTRIAL IT PROJECT

OSIsoft Users Conference
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Industrial & Medical gases

- 40 Billion € worldwide business
- AIR LIQUIDE is the global leader



- 2003 Sales: 8.4 B€
- 1 million customers
- 65 Countries
- 30,800 employees
- 350,000 shareholders

Main objectives of the project

■ Enhance:

- ✓ Business growth
- ✓ Quality, Reliability
- ✓ Cost reduction
- ✓ Opportunities for Services

through an advanced industrial information system

Initial phase

- 24 Production plants
- 1,600 Miles of Oxygen, Nitrogen, Hydrogen pipelines
- 240 Remote distribution & metering stations
- Over 4 countries: Netherlands, Belgium, France, Spain



Main geographical coverage

GASES AND SERVICES FOR THE INDUSTRY

Pipeline network: North Europe



1,600 miles

Global project architecture

■ Server components:

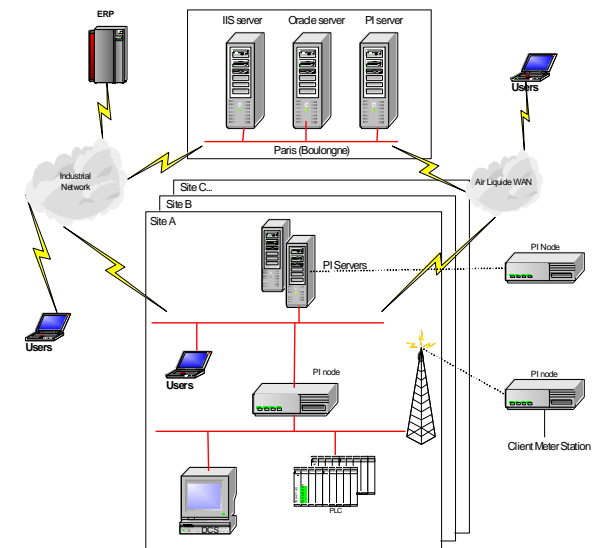
- ✓ 24 local servers across Europe (1/site)
- ✓ 1 centralized server
- ✓ 1 IIS server + application server
- ✓ 1 Oracle server
- ✓ 97,000 Tags (growing)

■ Redundancy:

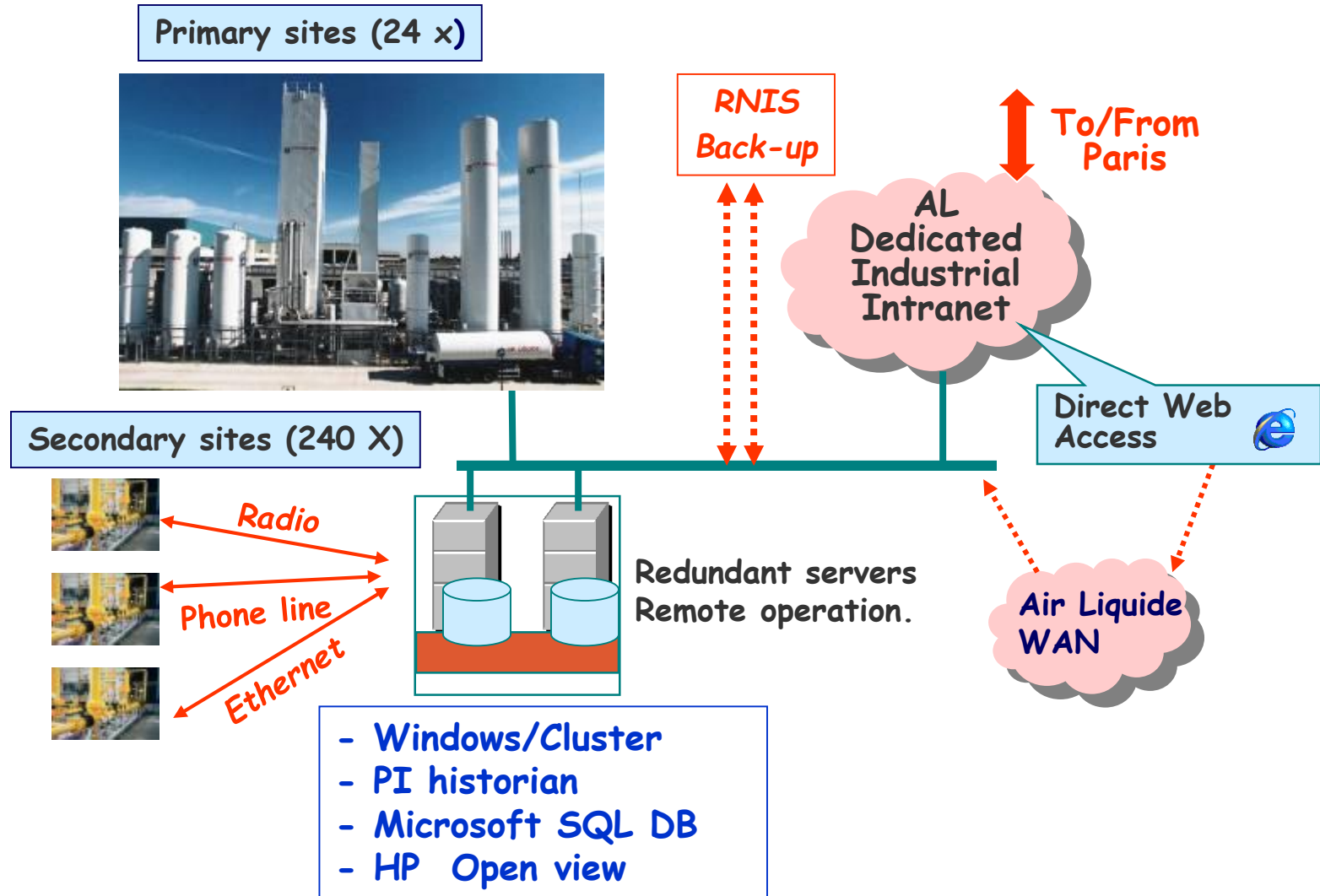
- ✓ Clustering at server level

■ PI Tools:

- ✓ Active View – Data Link – Process book
- ✓ ACE – MDB – SDK/API



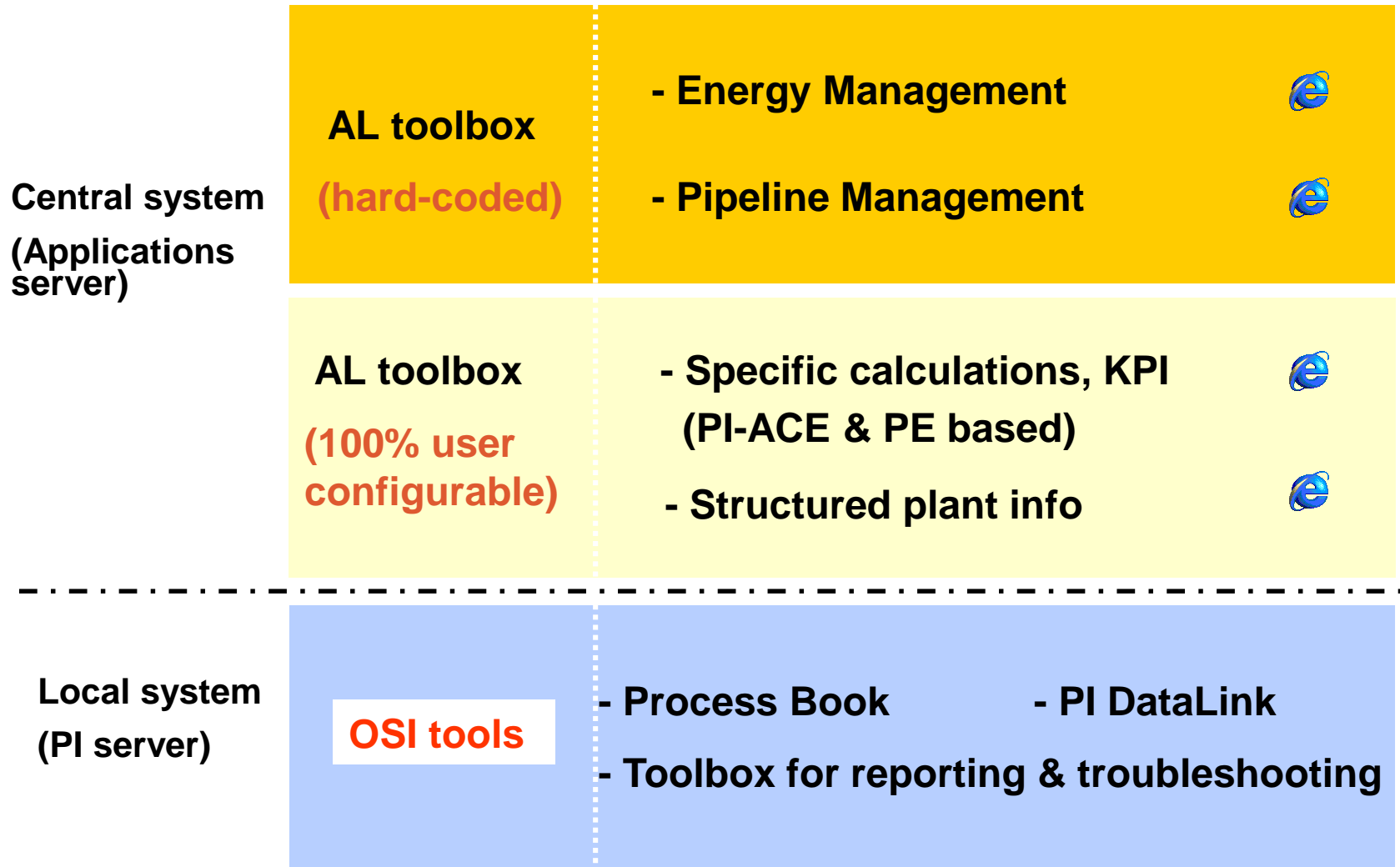
Local IT architecture



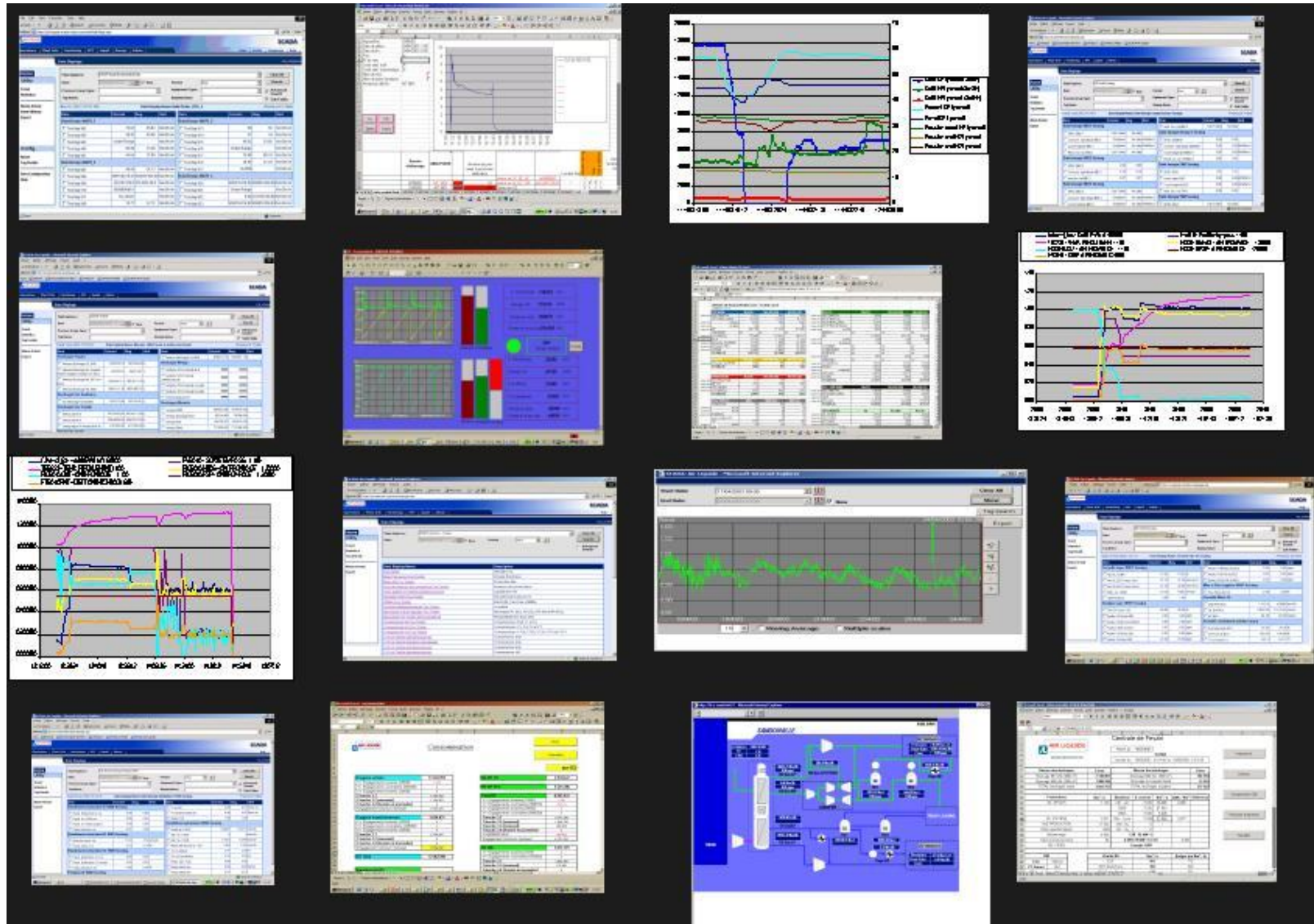
All data available to everyone Field + Central

- Business specific applications
- Generic applications
- User defined personal applications

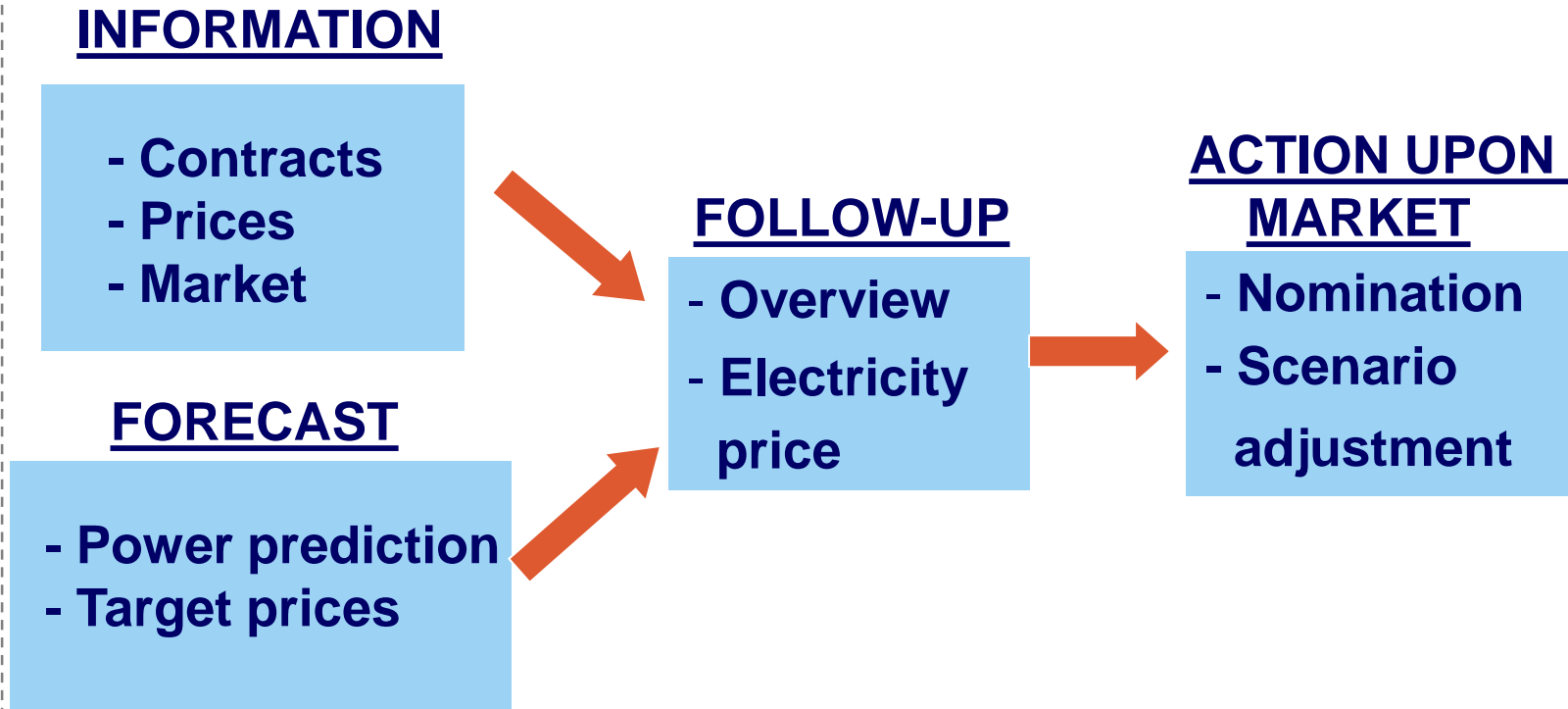
Application architecture



A few screen shots...



One example: Energy Management



Major changes of behavior

- Real time management
- Sharing of expertise is possible
- Remote troubleshooting
- High visibility of events – no hidden plant
- Fast & easy reporting

■ Anticipate benefits beyond cost reduction

- ✓ Improvements in quality, uptime ...
- ✓ Reengineering of the organization: sharing of expertise ...
- ✓ Opportunity for new services: traceability ...
- ✓ Company image



How to succeed in the project



■ As usual plus:

- ✓ Strong involvement of the field
- ✓ Field must be the first entity to get benefits
- ✓ Dedicated IT entity

- Investor and operator: **Air Liquide Services**
- Integrator:  **KEOPS** (Canadian AL subsidiary)
- Users: **Air Liquide Tonnage Europe Organization**
- 20 Men * year project
- 18 Months first sites - 26 Months total

■ Very powerful tool but high sophistication requires:

- ✓ Top quality global architecture
- ✓ Well adapted programming in order to avoid unacceptable response time
- ✓ Good on-going support



How to keep the system running

- In our case, among other industrial IT people a **dedicated team of 5 experts**:

- ✓ PI
- ✓ Network
- ✓ Windows
- ✓ Hotline
- ✓ Applications on-going improvements



Last twelve months uptime was above 99.9%

Conclusions

- Project is a tool that brings a quantum leap in operation improvements
- OSIsoft PI is a proven good choice
- Flexibility of the system is tremendous
- But building and operating such a complex project requires a high level of expertise



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