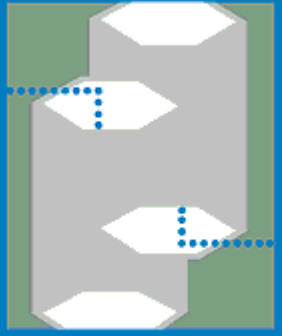


C A P E



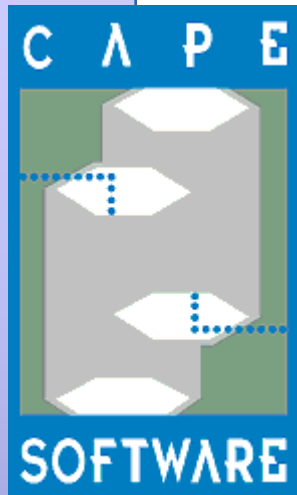
SOFTWARE

A collage of images in the background, including green pipes, industrial structures, a person at a control panel, and a 3D model of a refinery.

The Virtual Process Overview and Applications

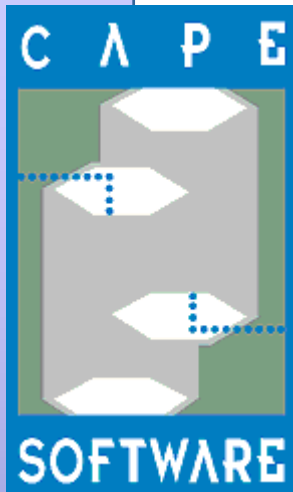
Cape Software Inc.

Houston TX



What is VPLink ?

- A **representation** of the process **inputs** to an **offline control system**
- What does VP Link do?
 - **Read** control system **outputs**
 - **Calculate** the Virtual Process State – ie, Process Model
 - **Write values** for Process Variables
 - **Offer GUI** for engineer or instructor to present scenarios such as equipment fault, process upset, or transmitter drift (failure)



Some of our customers...

BASF – many plants across several sites W/W

GE Fanuc–Europe

Eastman – several systems within Kingsport, TN

Air Products & Chemicals – several systems W/W

ConocoPhillips –San Francisco,CA

Phillips Refining – Several Sites Licenses



Lubrizol – several licenses within Deer Park, TX

BP – several licenses Worldwide

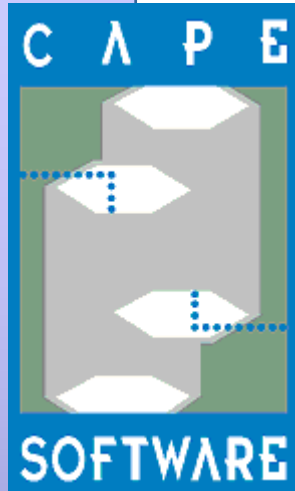
Shell Deepwater / Shell Chemicals,UK

Eli Lilly – Corporate licensing

Genentech – several licenses at different sites

General Mills – W/W licensing

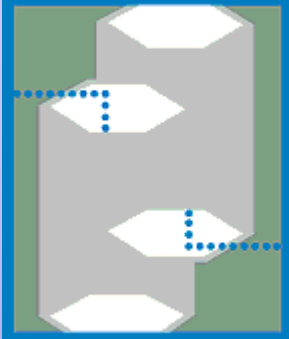
Tetrapak - several sites worldwide



Some Supported Systems

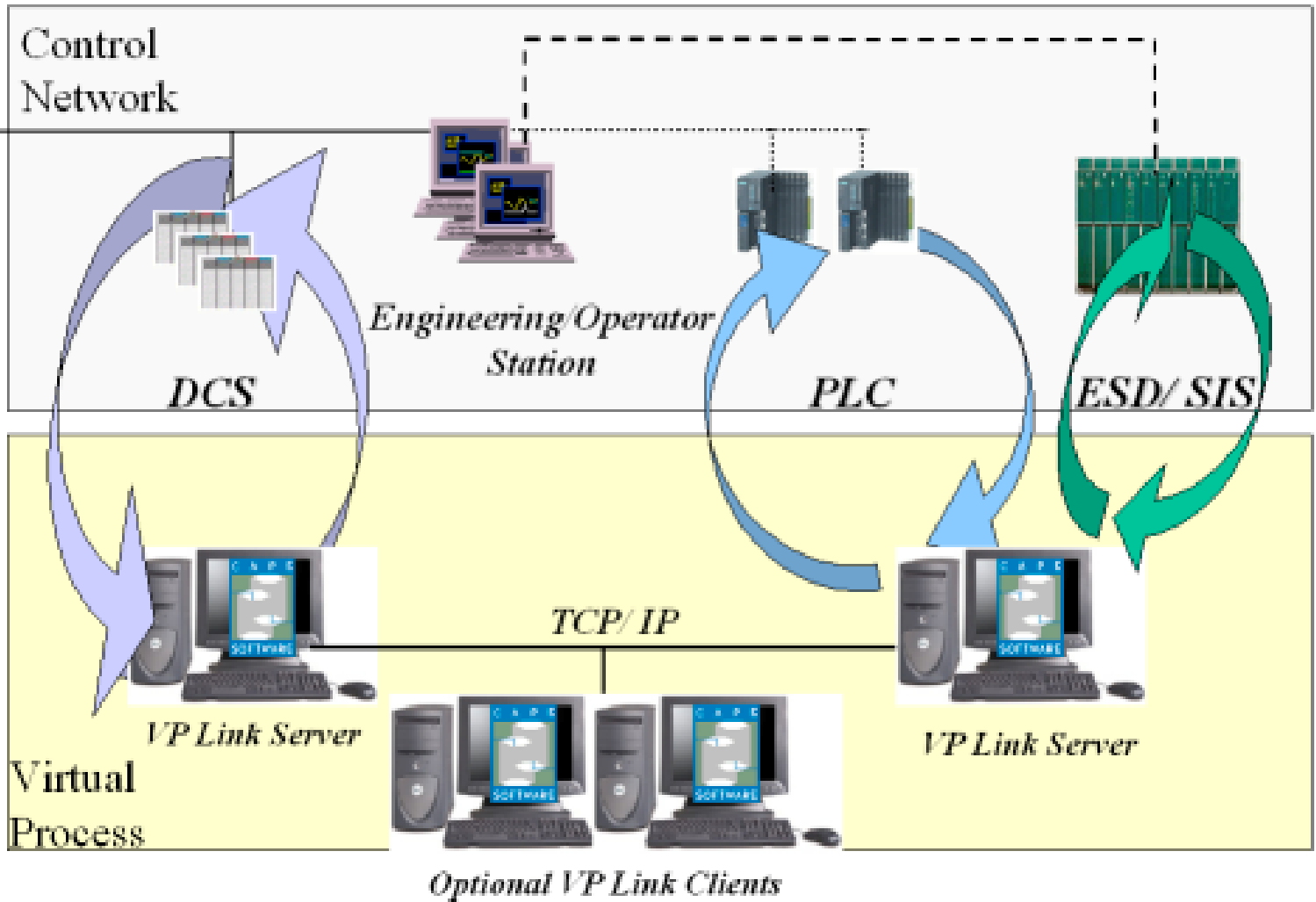
- GE Fanuc 90xx/ Machine Edition
- Triconex:Tricon/Trident
- Siemens Quadlog
- Foxboro I/A,Archestra
- Honeywell Plantscape / Rockwell ProcessLogix
- Honeywell TPS Honeywell FSC,PKS
- A-B PLC5/SLC500,CLX, Modicon,Siemens-Ti 505
- Emerson DeltaV,PROVOX
- Siemens APACS, PCS7, S7
- Yokogawa CS3000/R3/ ProSafe
- Etc...

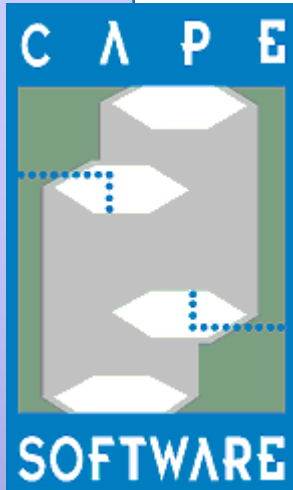
C A P E



SOFTWARE

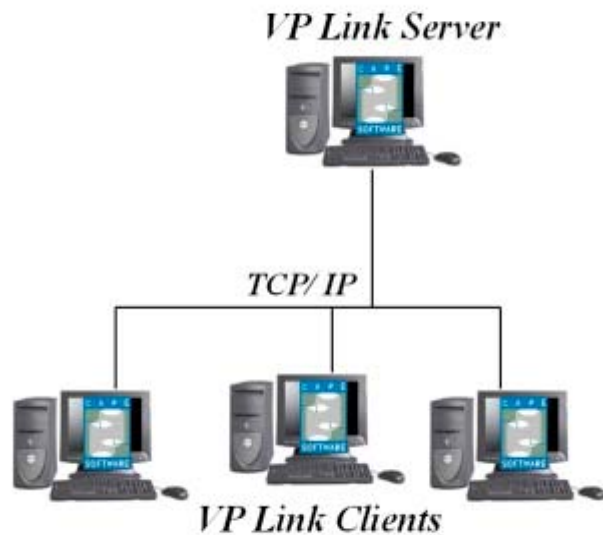
VP LINK 3.0 Sample Network





Different Architectures for different Applications

Staging Floor Setup

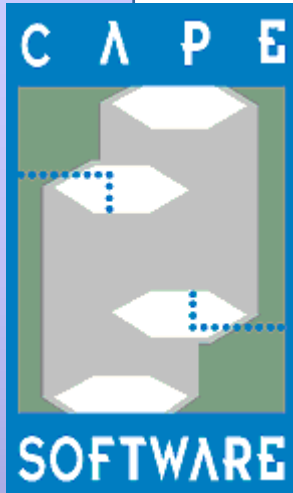


Several engineers share a simulation during FAT

Training Setup

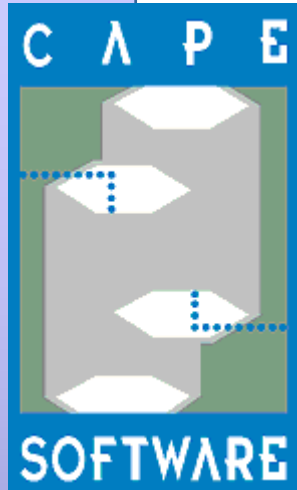


Several Operators are trained using parallel simulation servers



VP Link Advantages

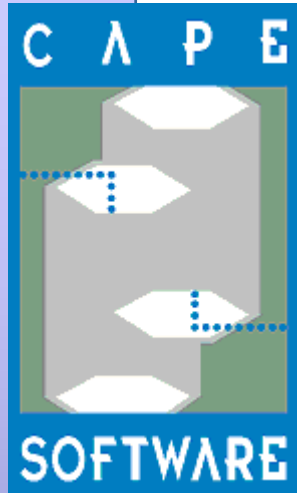
- **Safer**, off the critical path, many more events can be **examined without damage** to actual equipment
- **No I/O required**, no wiring necessary, eliminate panel devices.
- **Easy to create** scenarios and/or automate the model
→ Valuable for repeated testing (**Off Line Test Bed**)
- **No changes to logic**, ie, test code which will execute in the field – fits **FDA and ESD** needs in particular
- **Flexible environment** specifically designed to create process response models and complete validation
- **Minimal** implementation time
- Improved Test quality (“**6 σ** ” objectives)



VP Link 3.0

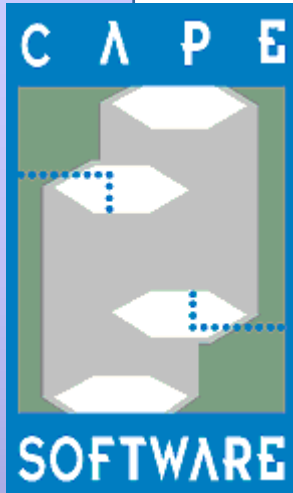
5 steps to simulation

- Extract the I/O image, using built-in platform specific tools
- Import the image in VP Link
- Model the process, using loop templates, algorithms and CalcBlock
- Write tag based failure scenarios
- Connect to Controller(s)



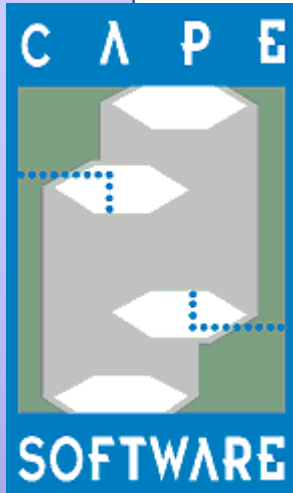
VP Link Specifics for GE PLCs interface

- Fast TCP-IP, Ethernet based interface
- Robust OPC based connectivity for machine edition platform
- Automated scripts to generate simulation database from PLC project file



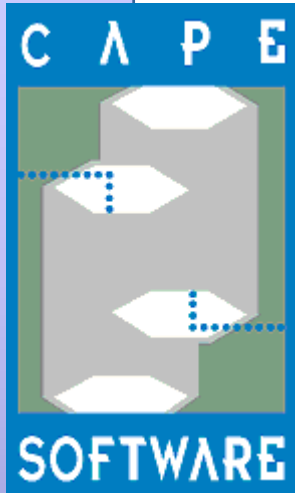
I - Logic Validation

- **Graphics** verification
- **Logic** checkout
- **Automate** repetitive testing task (ie resets etc...)
- Facilitate Testing with practical graphics
- **Interlock** schedule approval
- **Mapping** to DCS and interaction between DCS/PLC logic (gateway points tests)
- Thoroughly debug prior to online download, ie, **Management of Change** and periodical testing
- Available *Test Compiler* complies with **IEC61508/61511**

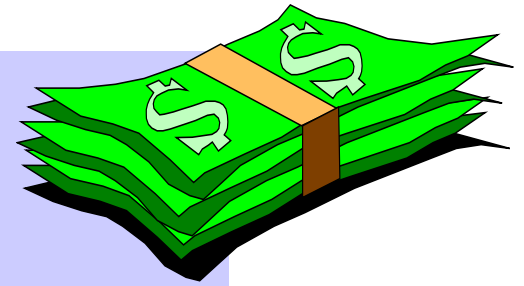


II-Operator Training

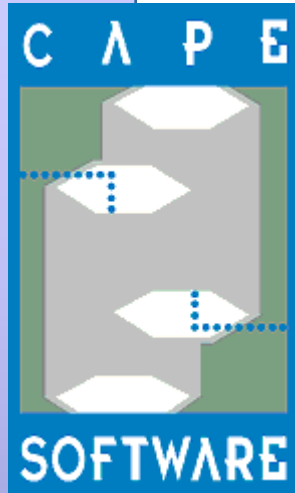
- **Familiarize** staff with HMI, Overlays, Navigation, Alarm Pages, Trend Displays
- **Exercise Startup / Shutdown** Procedures
- **Test Emergency** Responses to Faults / **Malfunctions / Upsets** (Real or Instrumentation)
- Refresher Training or Re-certification
- **Track** trainee's **proficiency** (**Scoring Engine**)
- **Knowledge Transfer** Tool



Resulting In...



- **Reduced start-up time**, due to thorough off-line testing of start-up logic.
- **Reduced down time**, due to on-going logic testing
- **Reduced Factory Acceptance Test Time**
- **Reduced Risk of Equipment Damage.**
- **Reduced Risk of Personnel Injury.**
- **Reduced Risk of Wasted Product.**
- **Reduced Risk of Environmental Release.**
- **Documented, Validating Operator Sessions Logs**



Conclusion

- VPLink solves simulation needs from **simple to sophisticated** modeling.
- Scenario Manager makes it **easy to** generate Failure scenarios for Operator Training.
- Modeling environment is **flexible, easy to learn and maintain**
- **Cost Effective** simulation package, for **OTS** And engineering **validation** needs
- **Cross platform** functionalites makes it an **evolutive investment**