



NeSSI Vision

"Top 10 Shopping List"

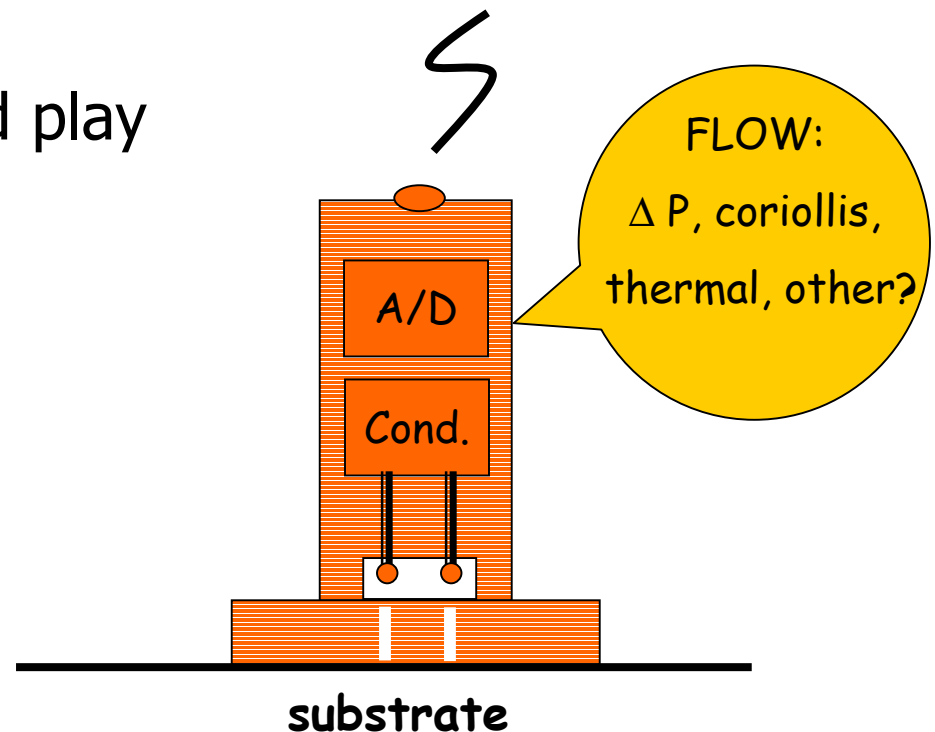
Rob Dubois

Dow Chemical

"the best way to predict the future is to create it"

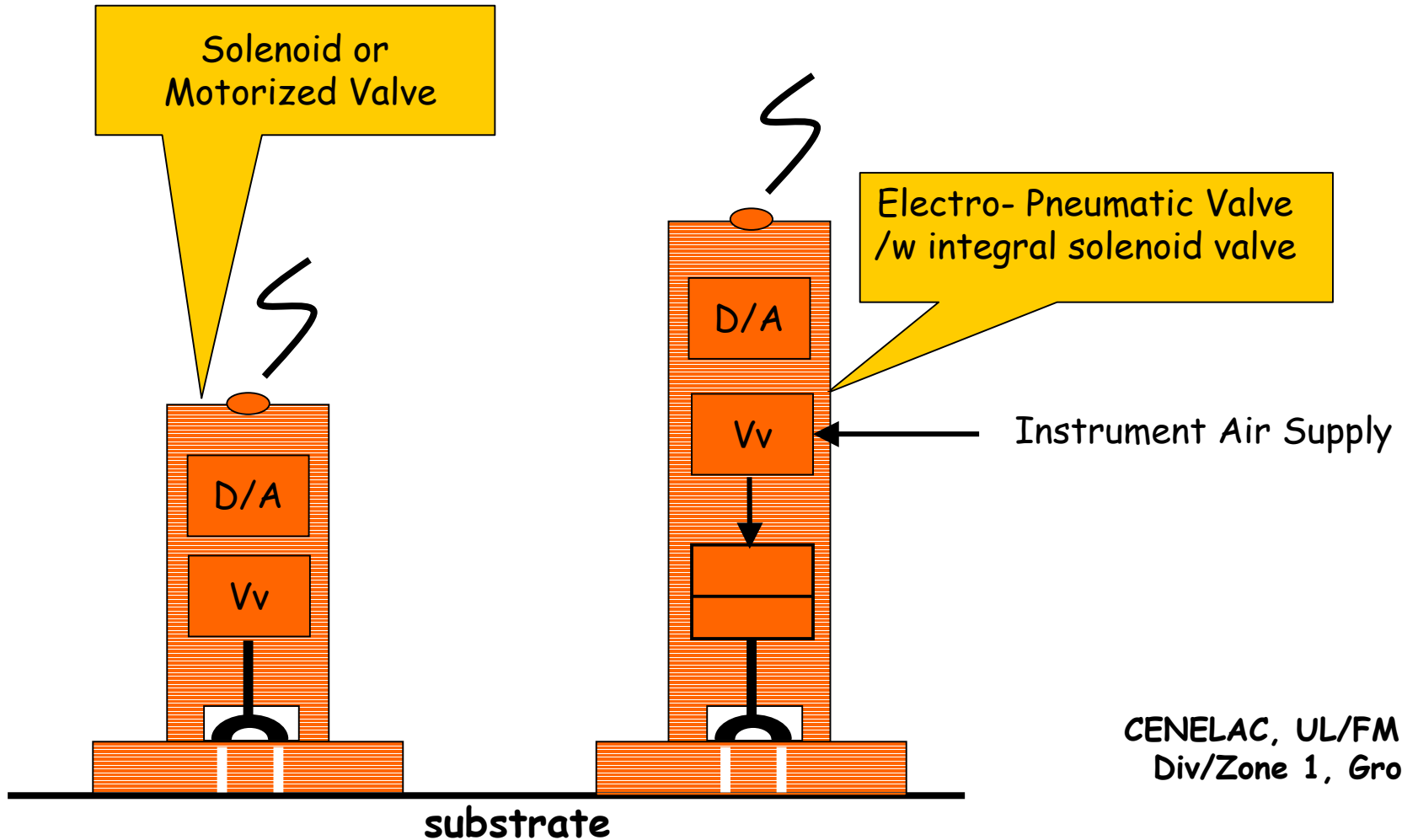
1. Physical Sensors

- Flow, Pressure, Temperature
 - gas & liquid services
 - sealed assembly
 - “smart”/digital/plug and play
 - IEEE 1451.2 & Hart
- Substrate diagnostics



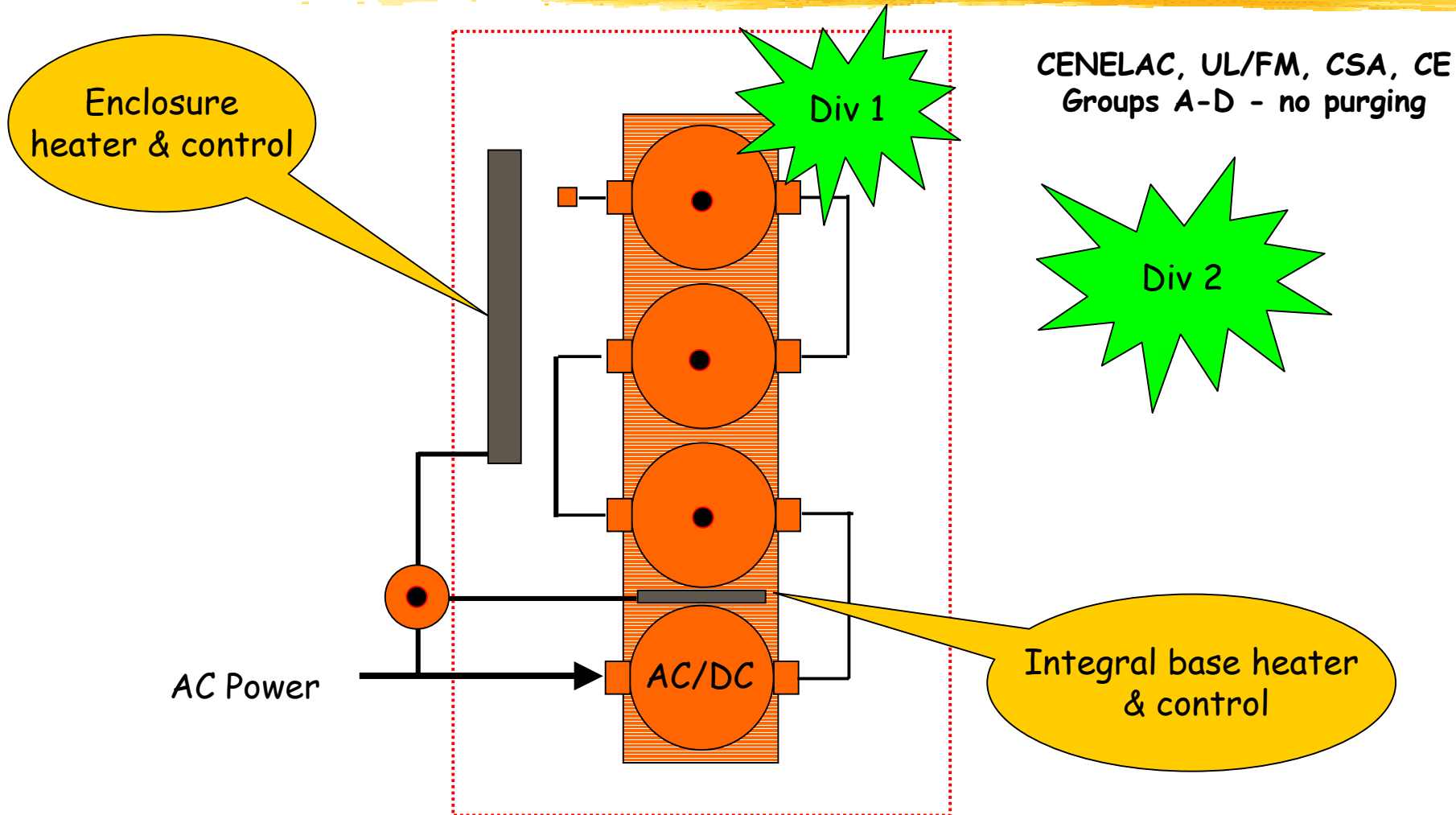
CENELAC, UL/FM, CSA, CE
Div/Zone 1, Groups A-D

2. Actuators



CENELAC, UL/FM, CSA, CE
Div/Zone 1, Groups A-D

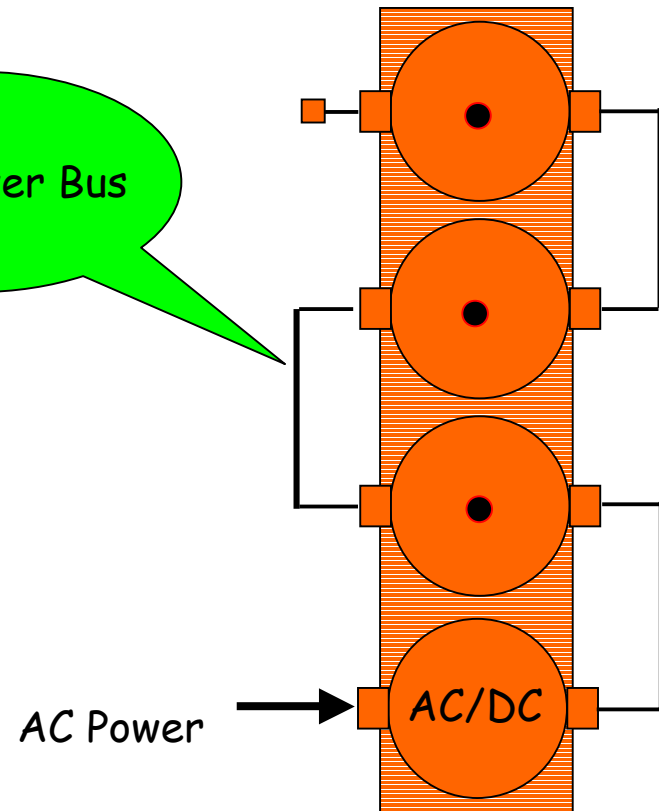
3. Heating-Enclosure



4. Power Connection System

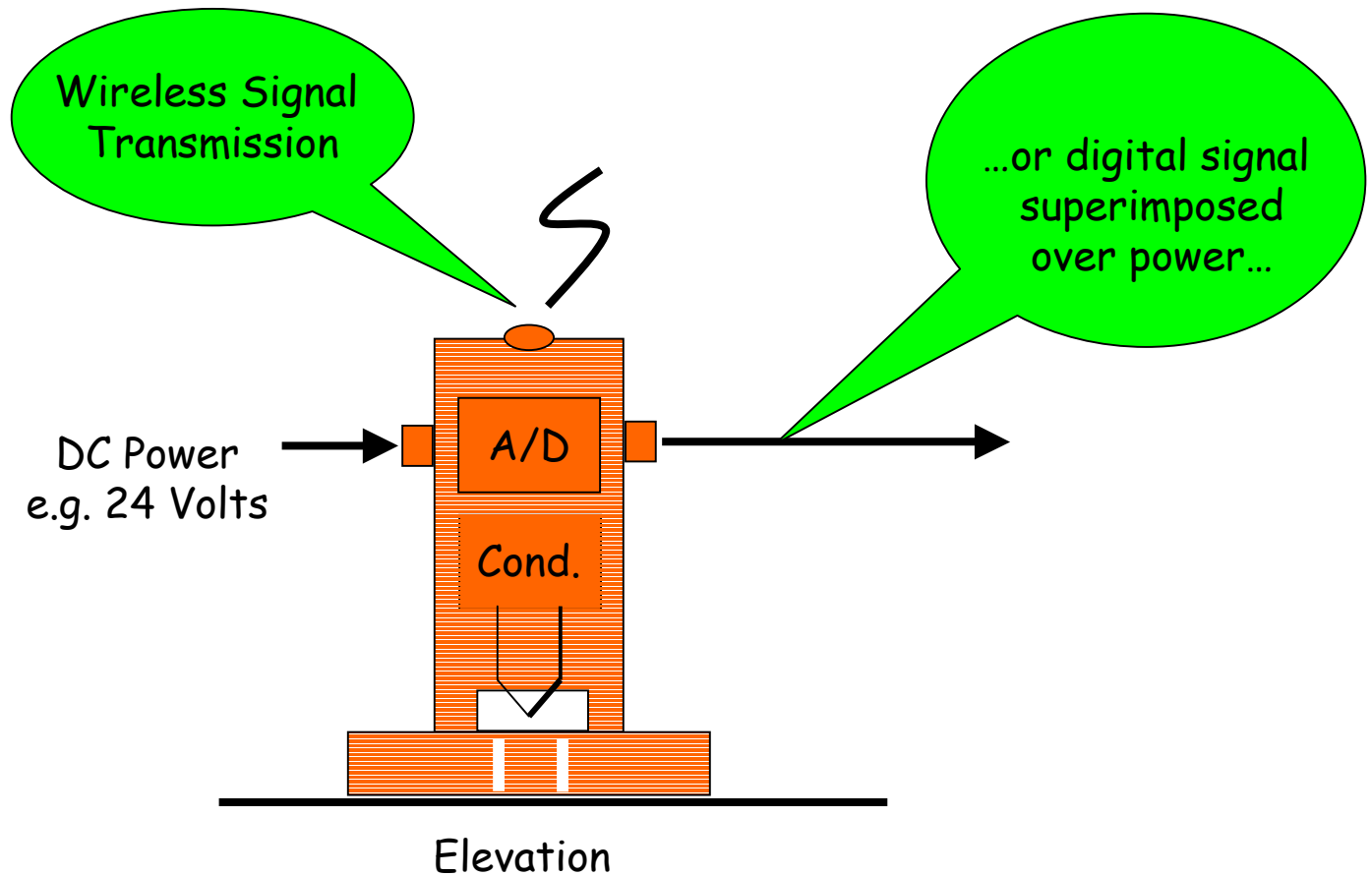
- Non-proprietary
 - “plug & socket”

Mini-Power Bus



CENELAC, UL/FM, CSA, CE
Div/Zone 1, Groups A-D

5. Signal Transmission



6. Industry Wide - Std. Communication

To the global internet ←

Company Zone LAN - office, environment, Internet - TCP/IP

WS

← Company Workstation

Provides protected access to the Plant LAN →

Keeps external traffic from getting onto this LAN

Interface Router

NT

Analog & Digital I/O

DCS

Plant Control Zone LAN (TCP/IP)

Modbus, Fieldbus, other protocol...

Interface

Provides protected access to the Analyzer LAN →

Keeps Intranet traffic from getting onto this LAN

Interface Router

NT

Note: Only concentrations, diagnostics, control commands to DCS (OPC Like)

Sensor Analytical Manager

SAM

Analyzer Zone LAN (Large Files e.g. spectra, c'grams, concentrations, diagnostics, control, smart info) LAN (private) TCP/IP

PC

modem

Telephone line

Analytical Sensor

A4

F

A1

F

P

T

Miniature/Modular Systems

A2

A3

← **Analyzers**

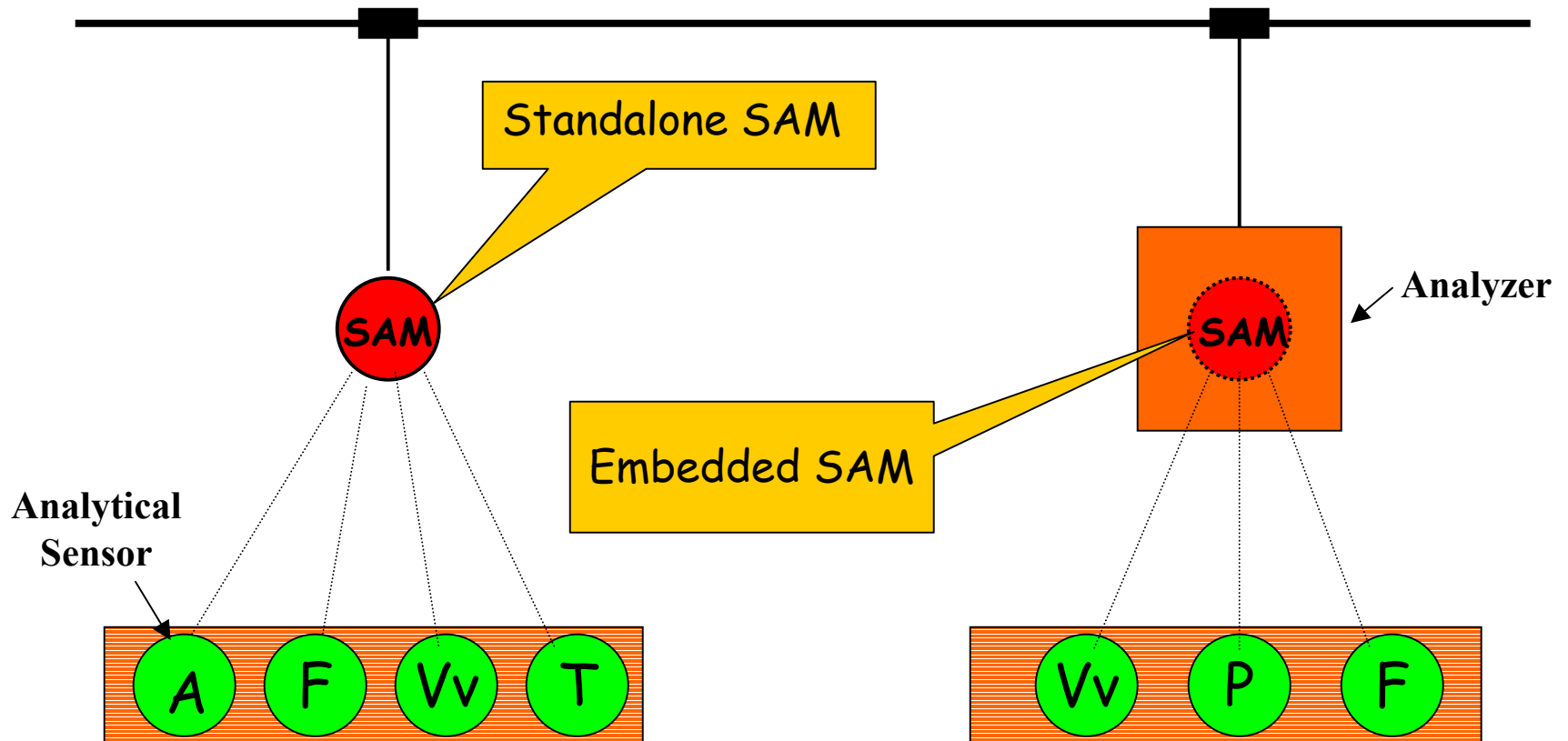
Proprietary Protocol? **OR** TCP/IP

Dow Chemical Co.

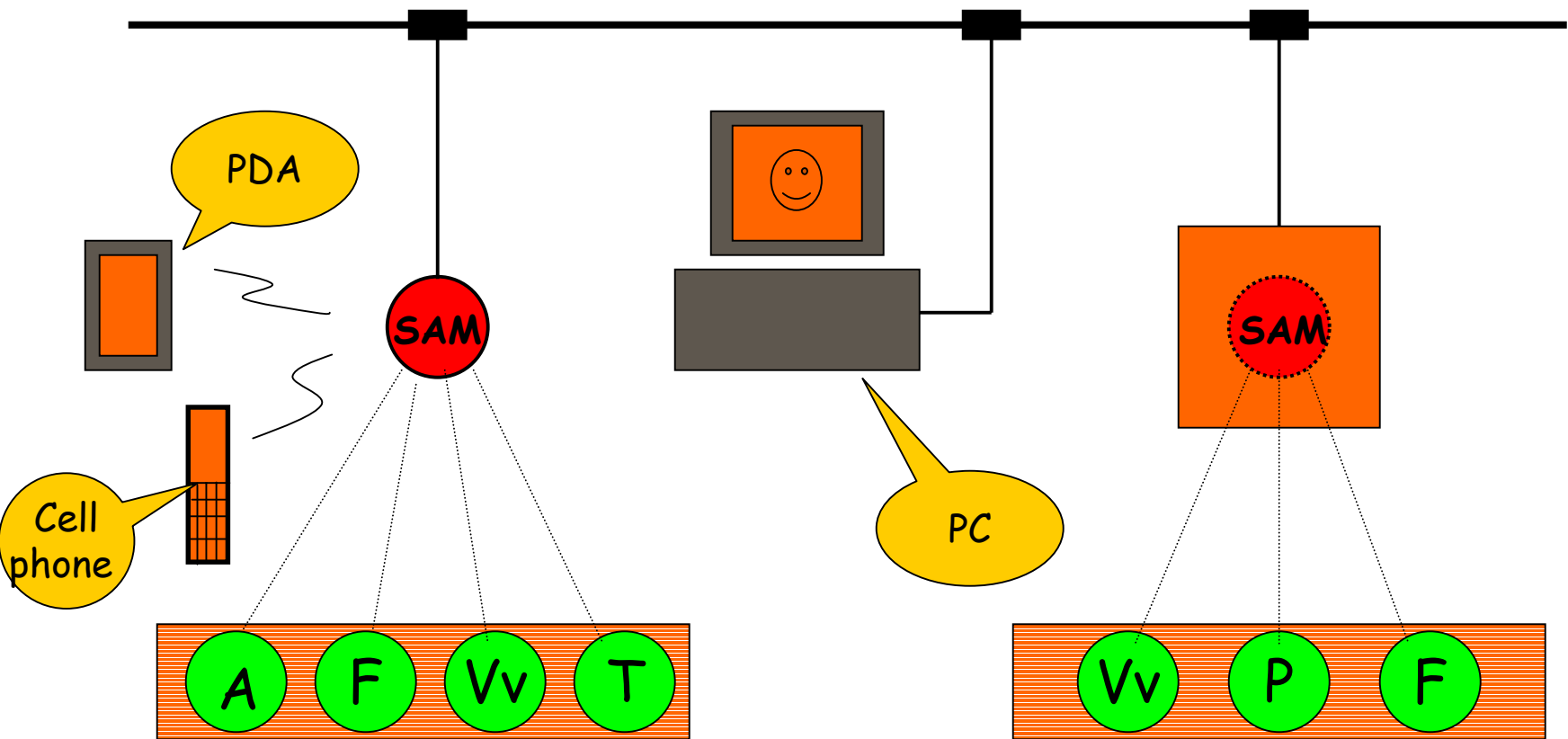
R. J. O'Reilly & Rob Dubois

March 5, 2001

7. SAM (Sensor Analytical Manager)

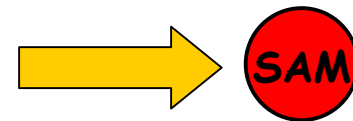


8. Graphical HMI (Human Machine Interface)



9. "Off the shelf" Software Pick-list

- Zero & Span Validation
- Sample System operation & control
- Stream switching
- Maintenance diagnostic software
- etc., etc.



10. Analytical Sensors

