



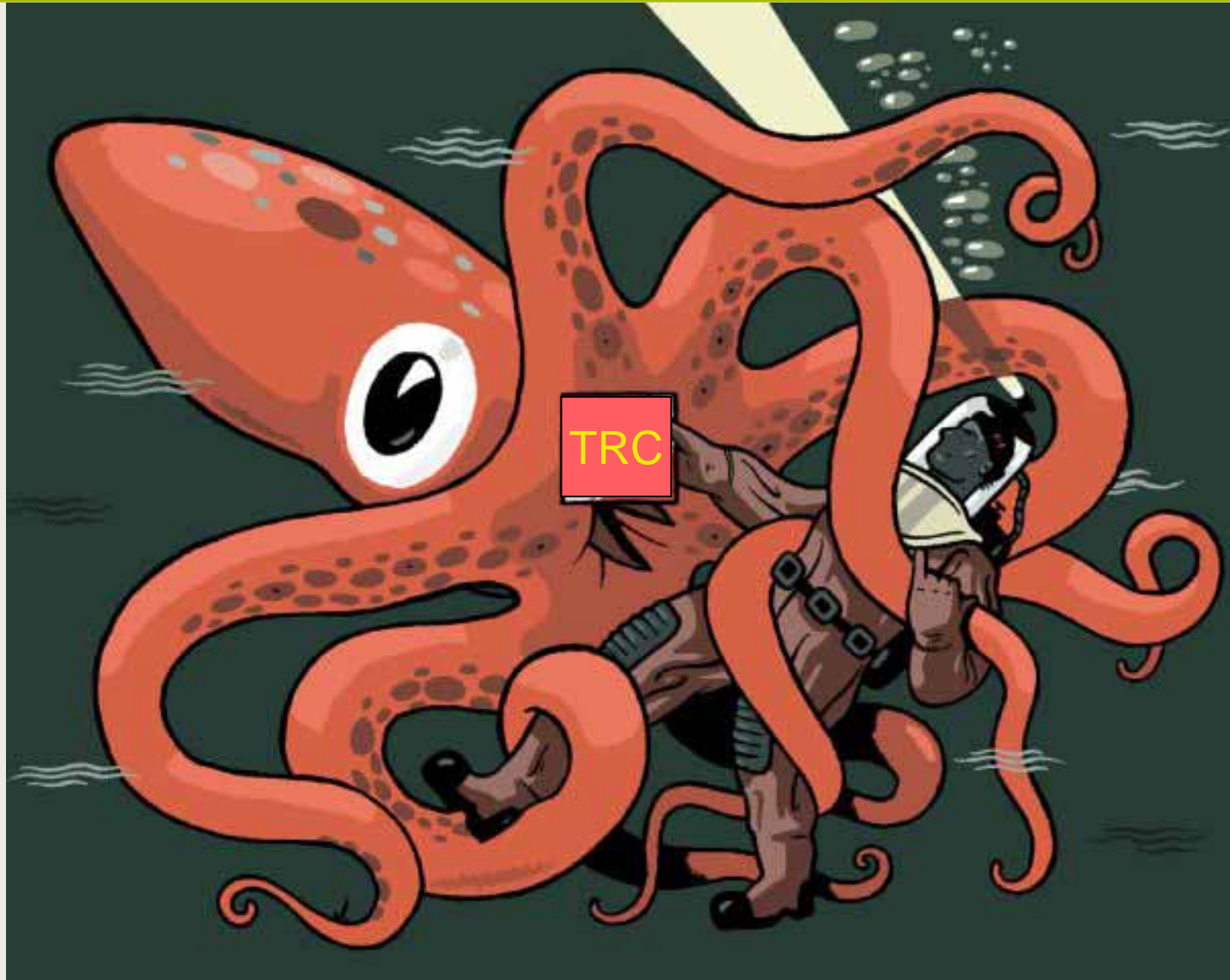
Vlaamse Radio- en Televisieomroep

New ways to monitor and control broadcast equipment

by Marnix Van de Kauter, VRT, Belgium

Genève, june 22th 2005

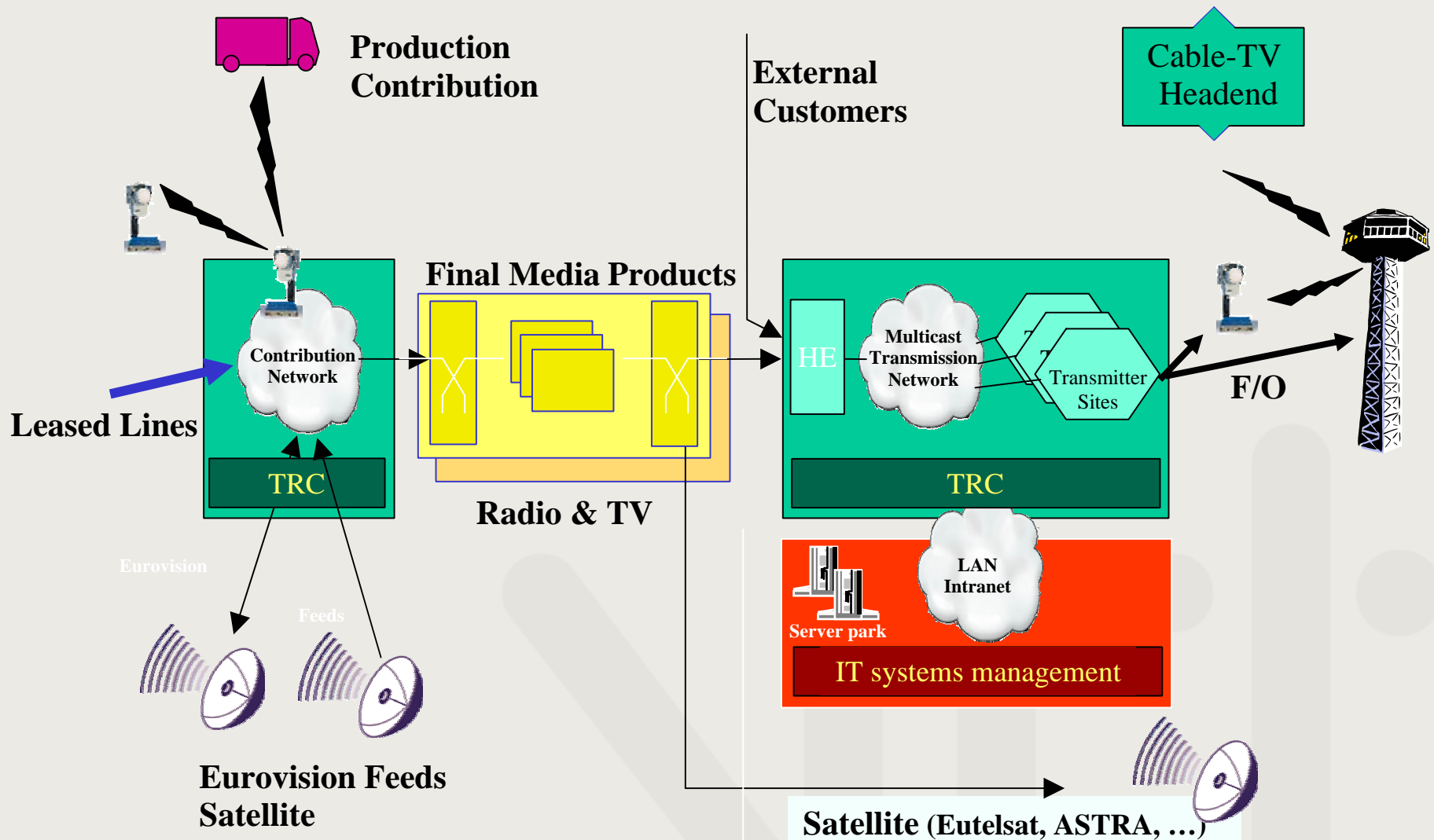
... a few years ago ...



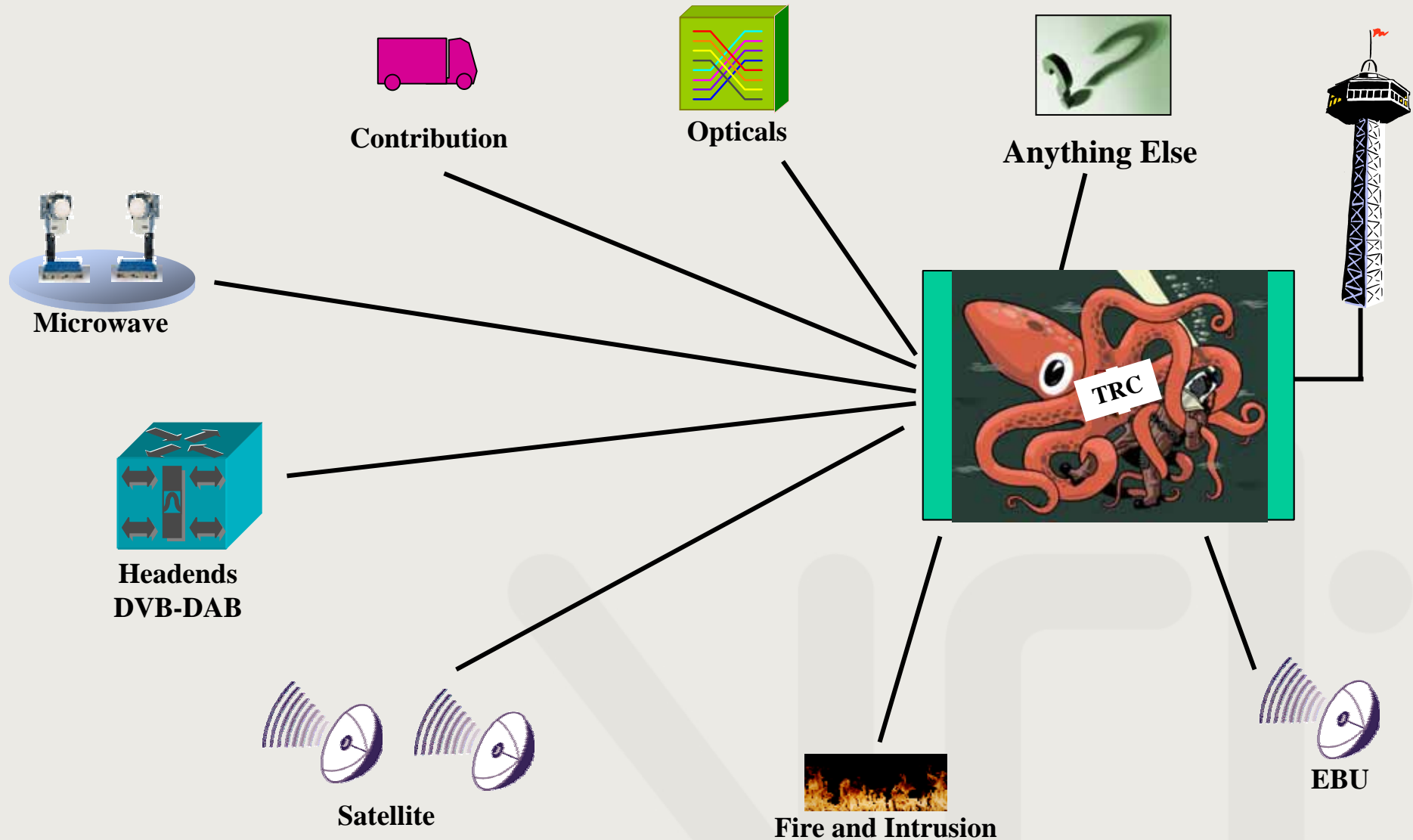
TRC : Transmission Control Centre

- » Introduction : our problem
- » Architectural decisions
- » Project Management
- » System Architecture of the solution
- » Data Acquisition
- » Visualisation & Control
- » Fault Monitoring
- » Demonstration
- » End of Story

VRT Transmission Control Centre



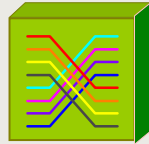
TRC : the real world...



Different Interfaces



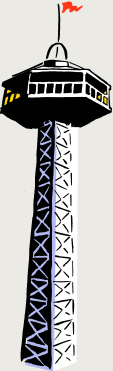
Contribution



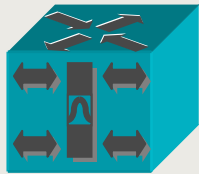
Opticals



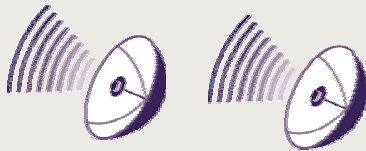
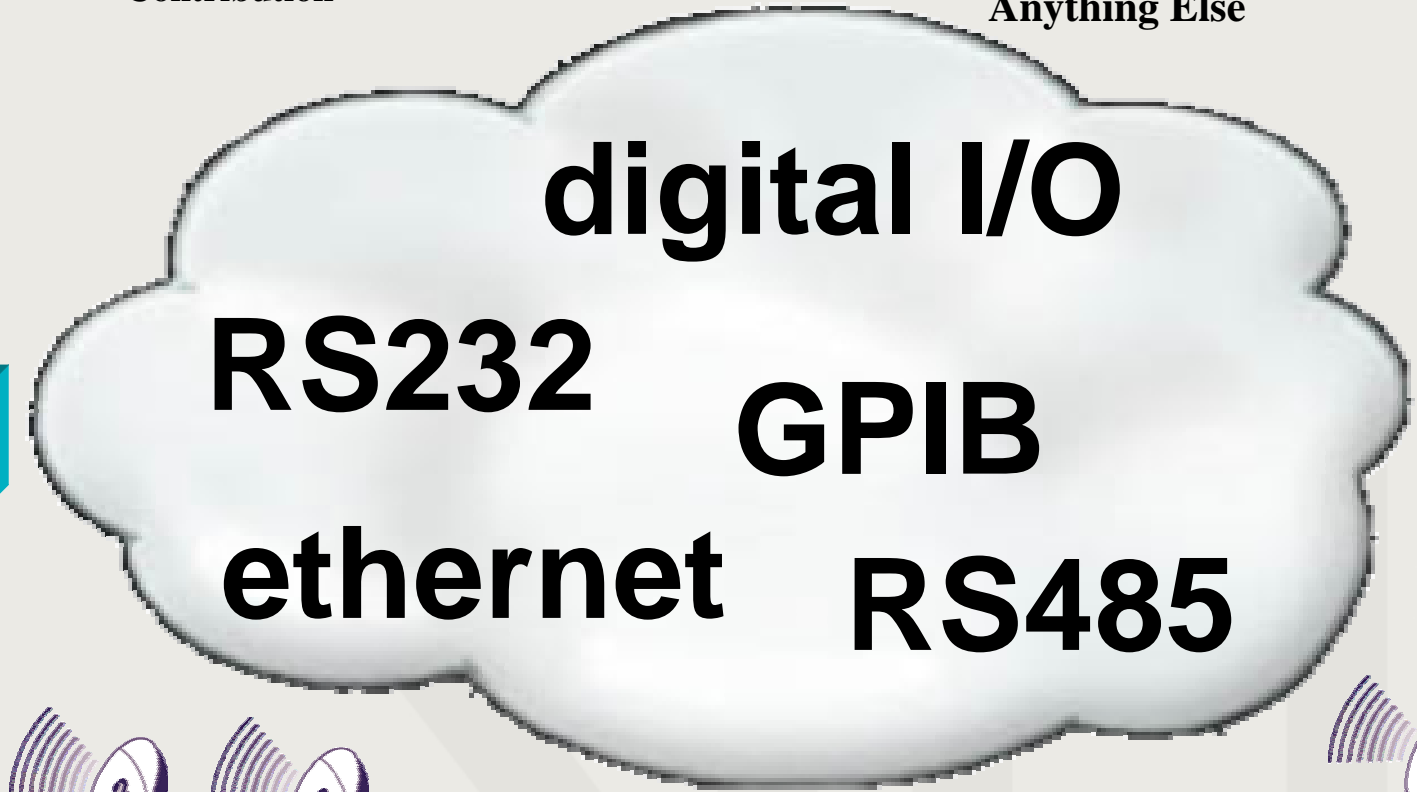
Anything Else



Microwave



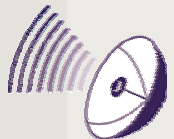
Headends
DVB-DAB



Satellite

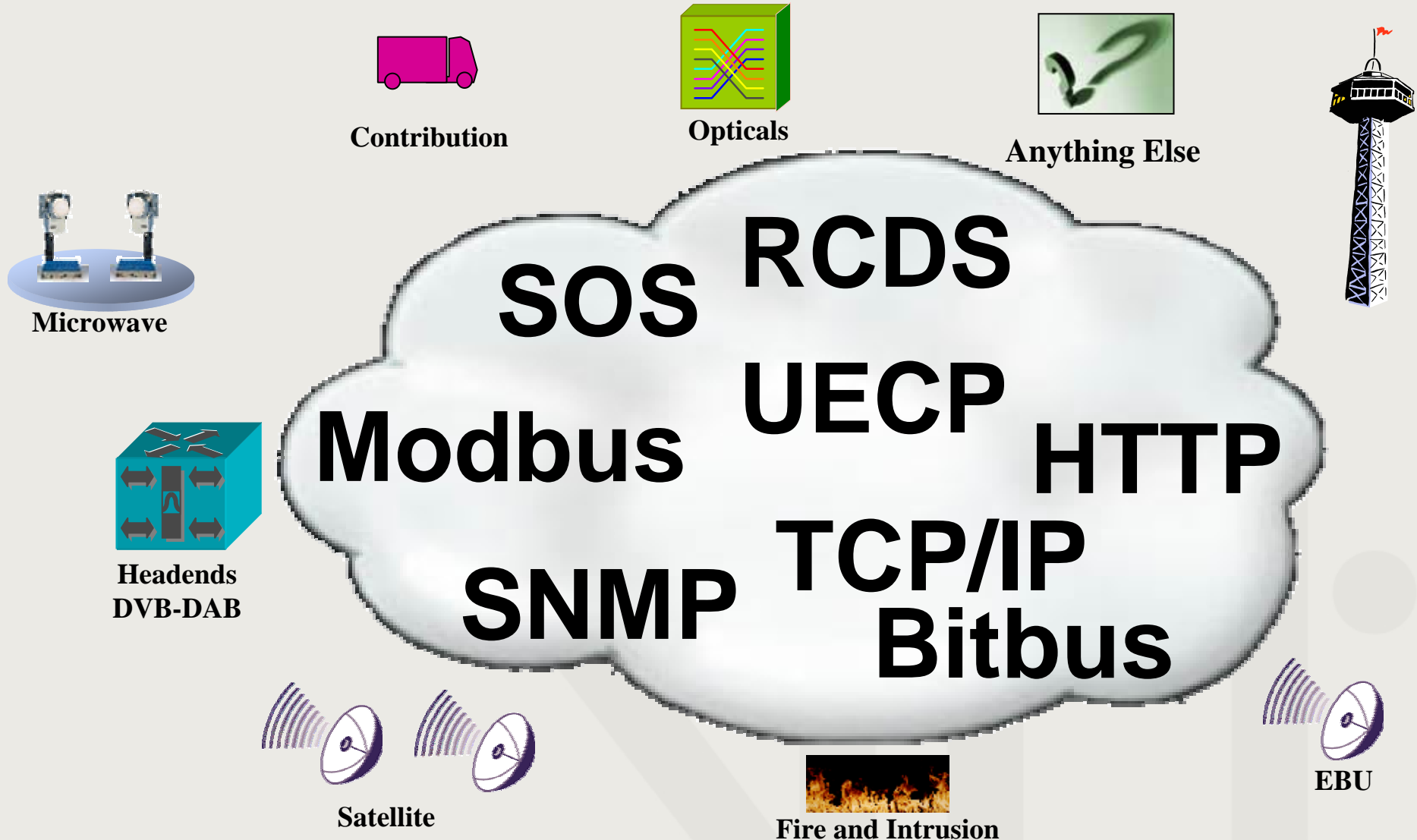


Fire and Intrusion



EBU

Different Protocols



Burst of control systems



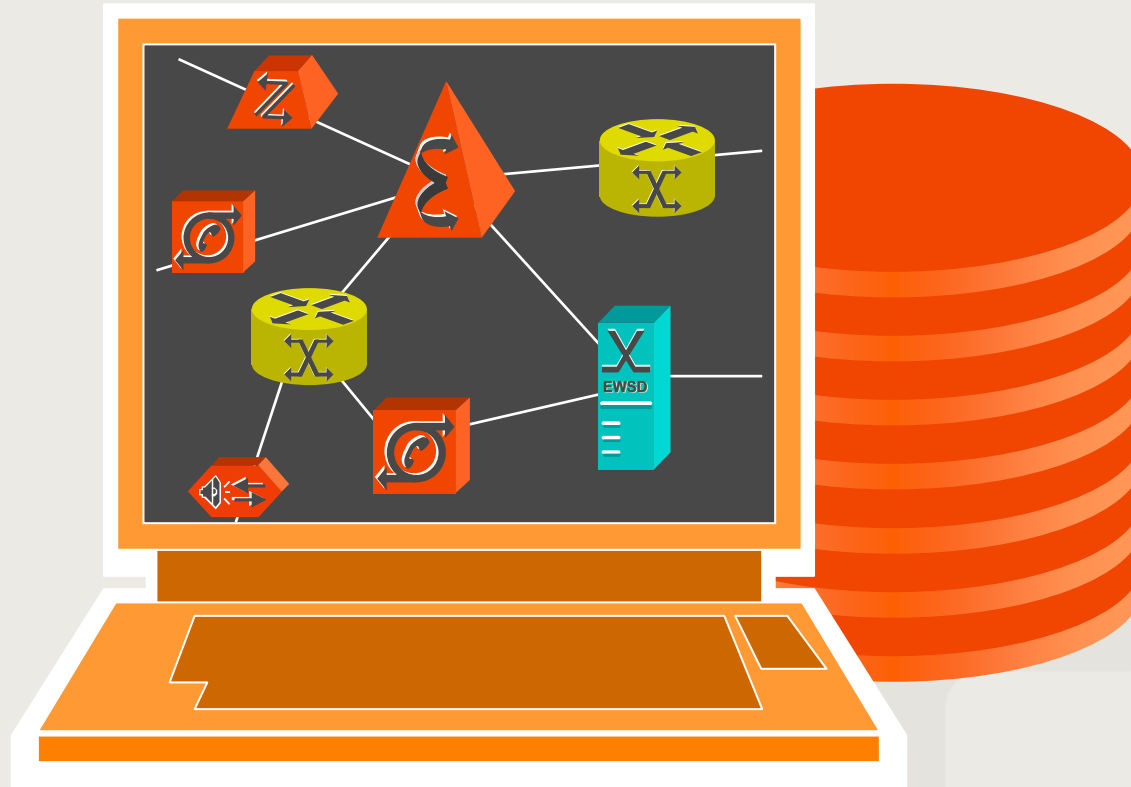
3 Problems

Diverse management tools

=

1. Swivel chair management
2. No correlation between events
3. Difficult maintenance

One solution = 1 system + 1 Operator



no operator skills !



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Architectural decisions (1)

» **Central Management solution**

- No SCADA
- Standard IT-technologies
- Centralized
 - Operations
 - Collection
 - Reporting System

» SNMP

» major brand

Architectural decisions (2)

» Network elements

- Monitoring and control
- On > 25 geographical sites
- 200 different types
- 1000 devices, 20.000 parameters

» Visualization

- Attractive
- Near real-time
- Near real-world (synoptical)
- Standard design tools

» Anywhere - Anyone

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Project Management

- » Conform PMI knowledges and practises
- » 1 projectmanager – 3 system administrators
- » Project team of 10 engineers
- » Duration : 1,5 years



Project Management



🔊 2nd organisation : Siemens Belgium

- Contract : time & material
- Coöperation : work +expertise
- Build on existing base platform :
 - HPOV-NNM based development
IP MANAGER (IPM)
 - Graphical interface SNMP based
PIMS

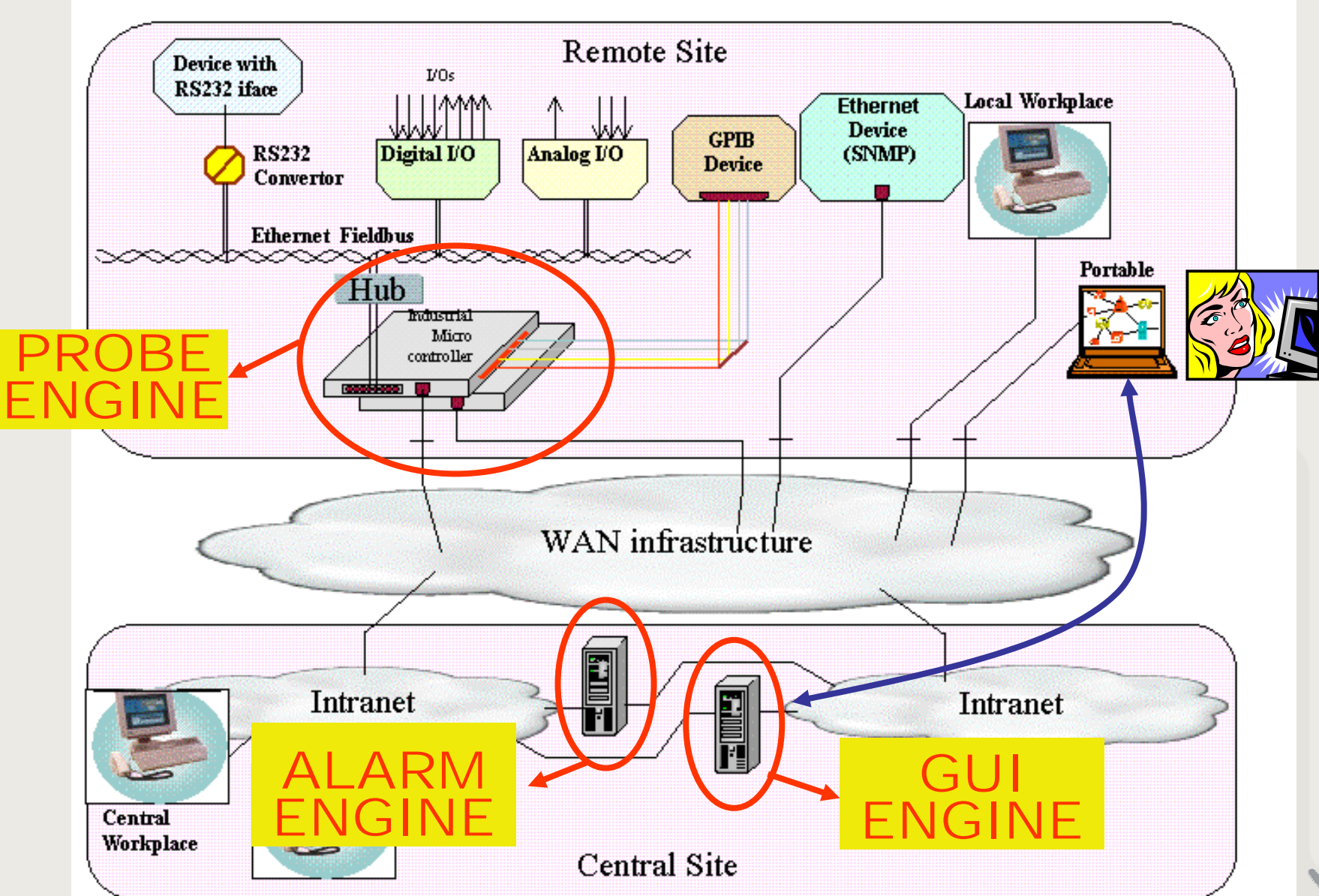


Win-win relation

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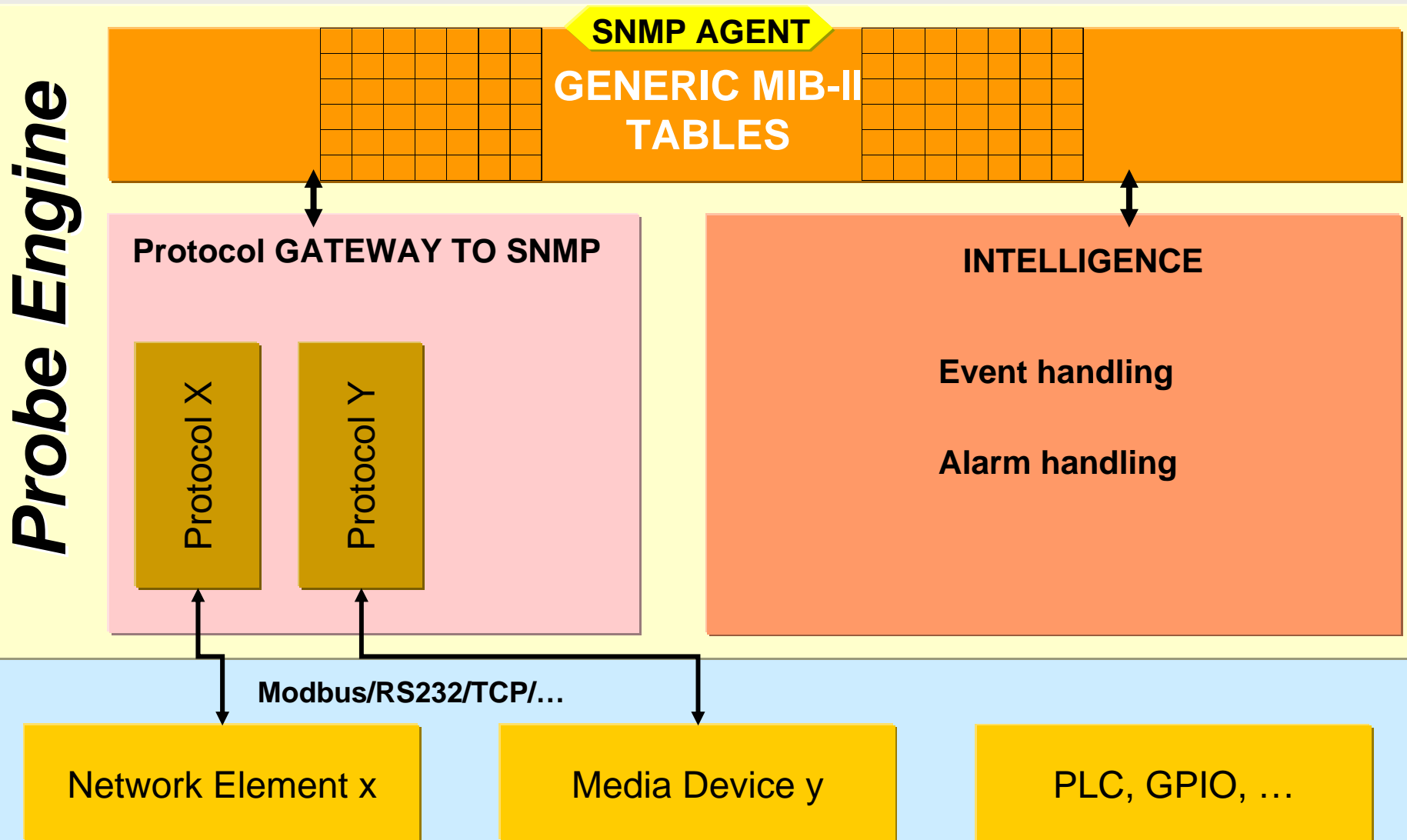
Distributed Deployment: 3 ENGINES



TRC : the story

- » Introduction : our problem
- » Architectural decisions
- » Project Management
- » System Architecture of the solution
- » **Data Acquisition : Probe Engine**
- » Visualisation & Control
- » Fault Monitoring
- » Demonstration
- » End of Story

Engine 1: Probe Engine – Architecture



Engine 1: Probe Engine – Architecture

Probe Engine

SNMP / RMI / CORBA / ...

JMX

Probe Configuration

Parameters
in MIB

Protocol Framework

Protocol X

Protocol Y

Event & Alarm handling

Event 1

Event 2

Event 3

Event 4

Event 5

Events

	st1	st2
Ev1	Ac1 Go 2	Ac2
Ev2	Ac3	Ac4 Go 1
Tim	Ac5	Ac6

State/Event
handling

Alarm 1

Alarm 2

Alarm 3

Alarming

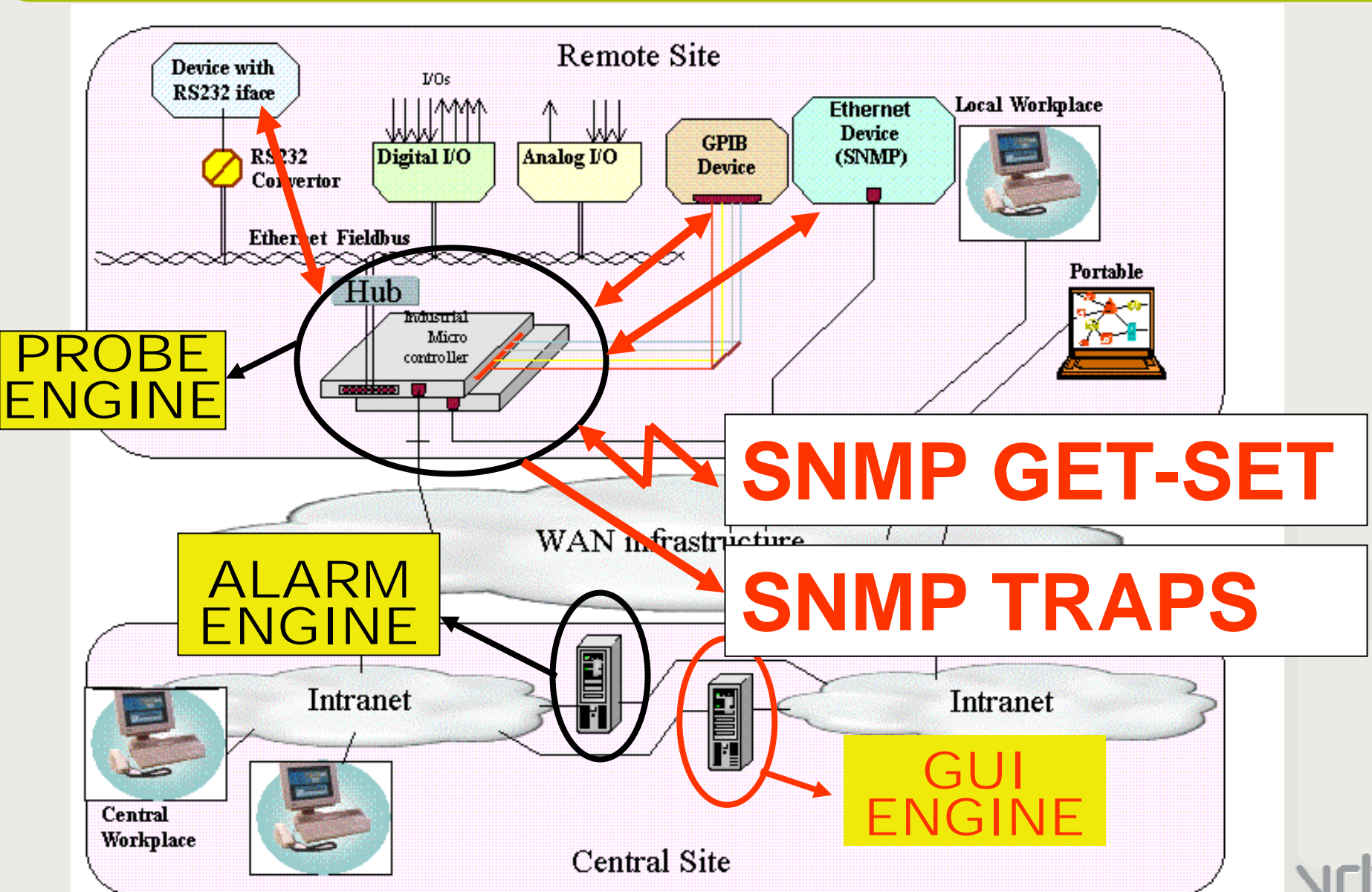
Diverse interfaces

Network Element x

Media Device y

PLC, GPIO, ...

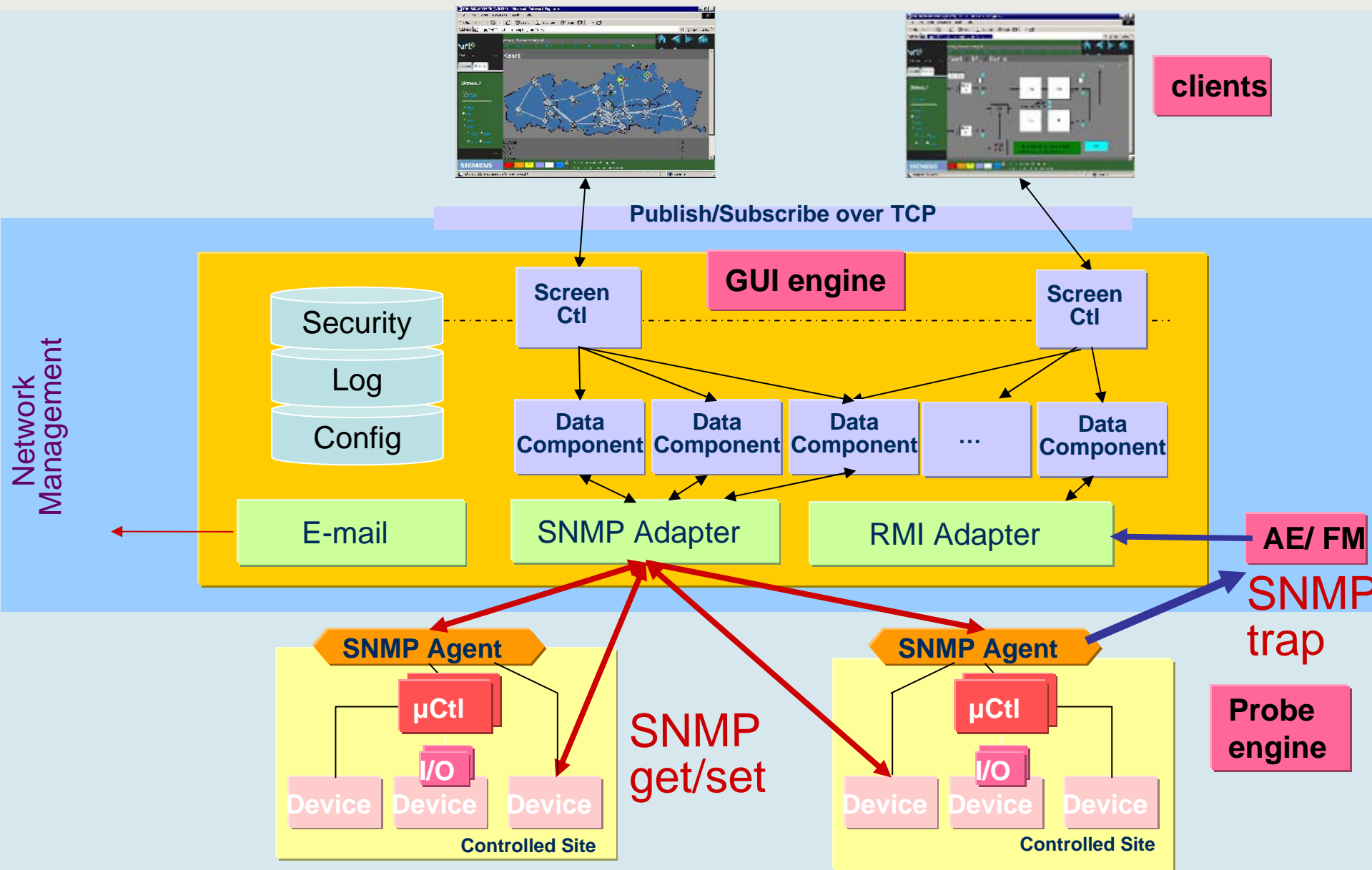
Distributed Deployment: 3 blocks



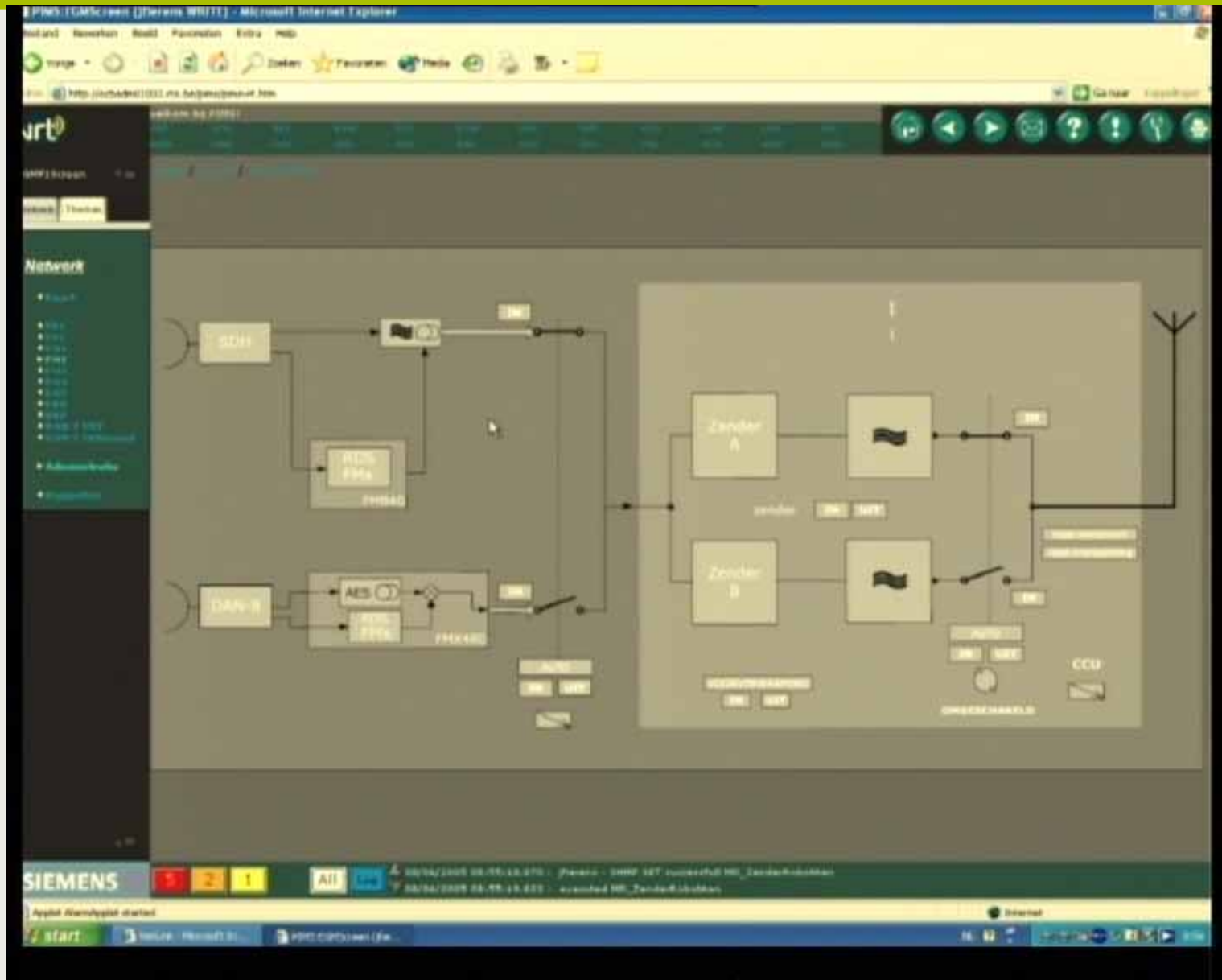
TRC : the story

- » Introduction : our problem
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- » Data Acquisition
- » Visualisation & Control : **GUI Engine**
- » Fault Monitoring
- » Demonstration
- » End of Story

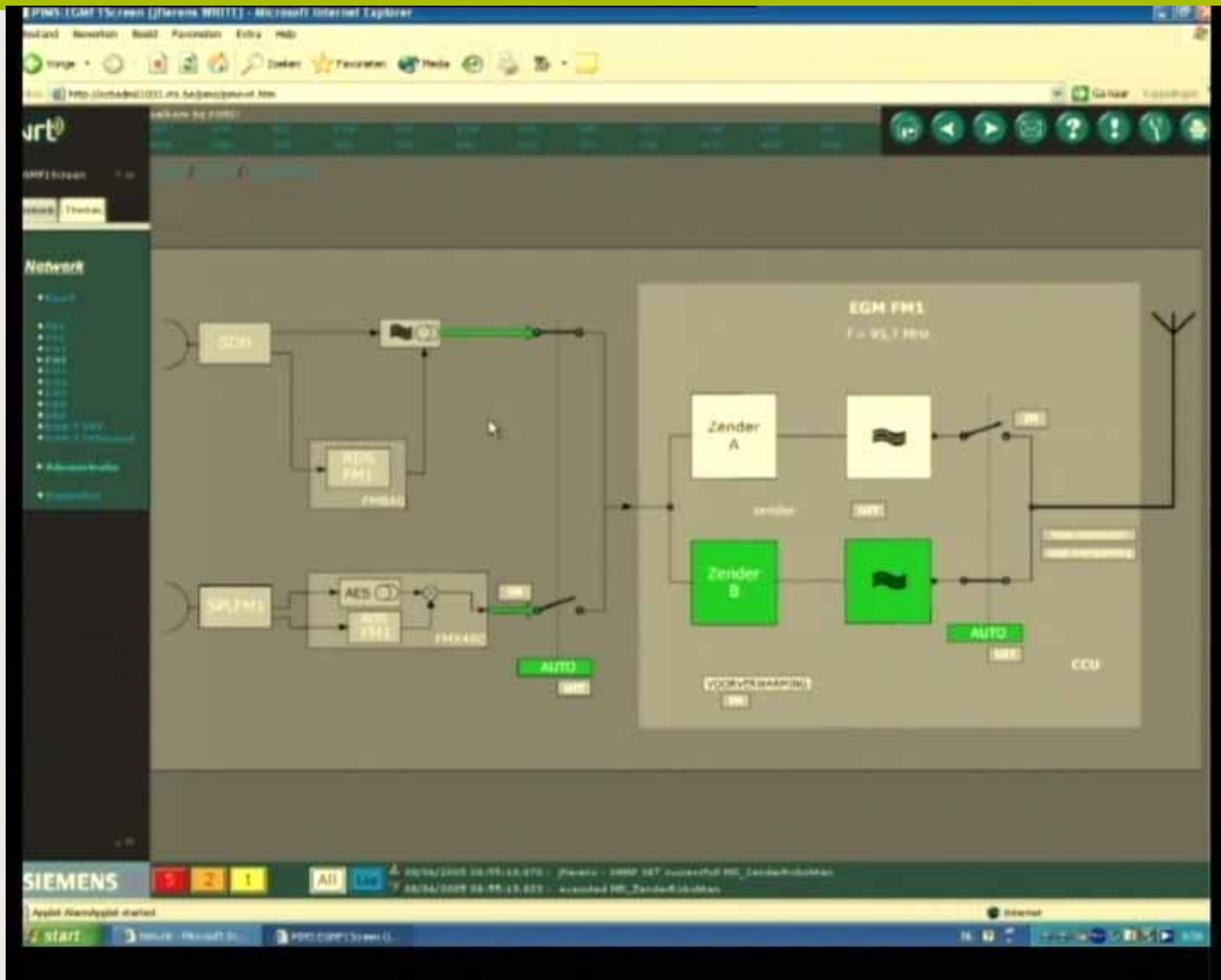
Engine 2: GUI Engine - Architecture



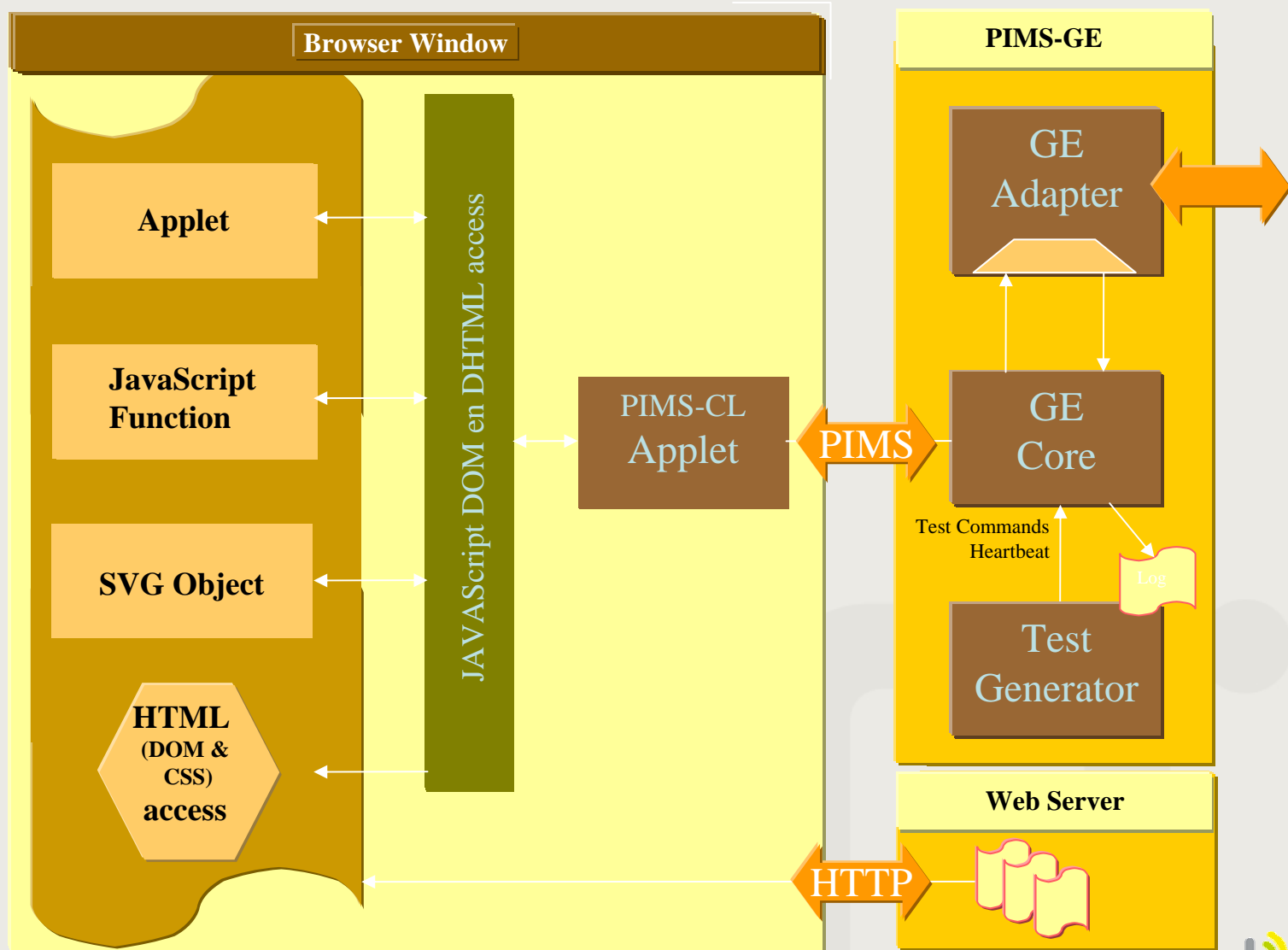
Engine 2: GUI Engine - Architecture



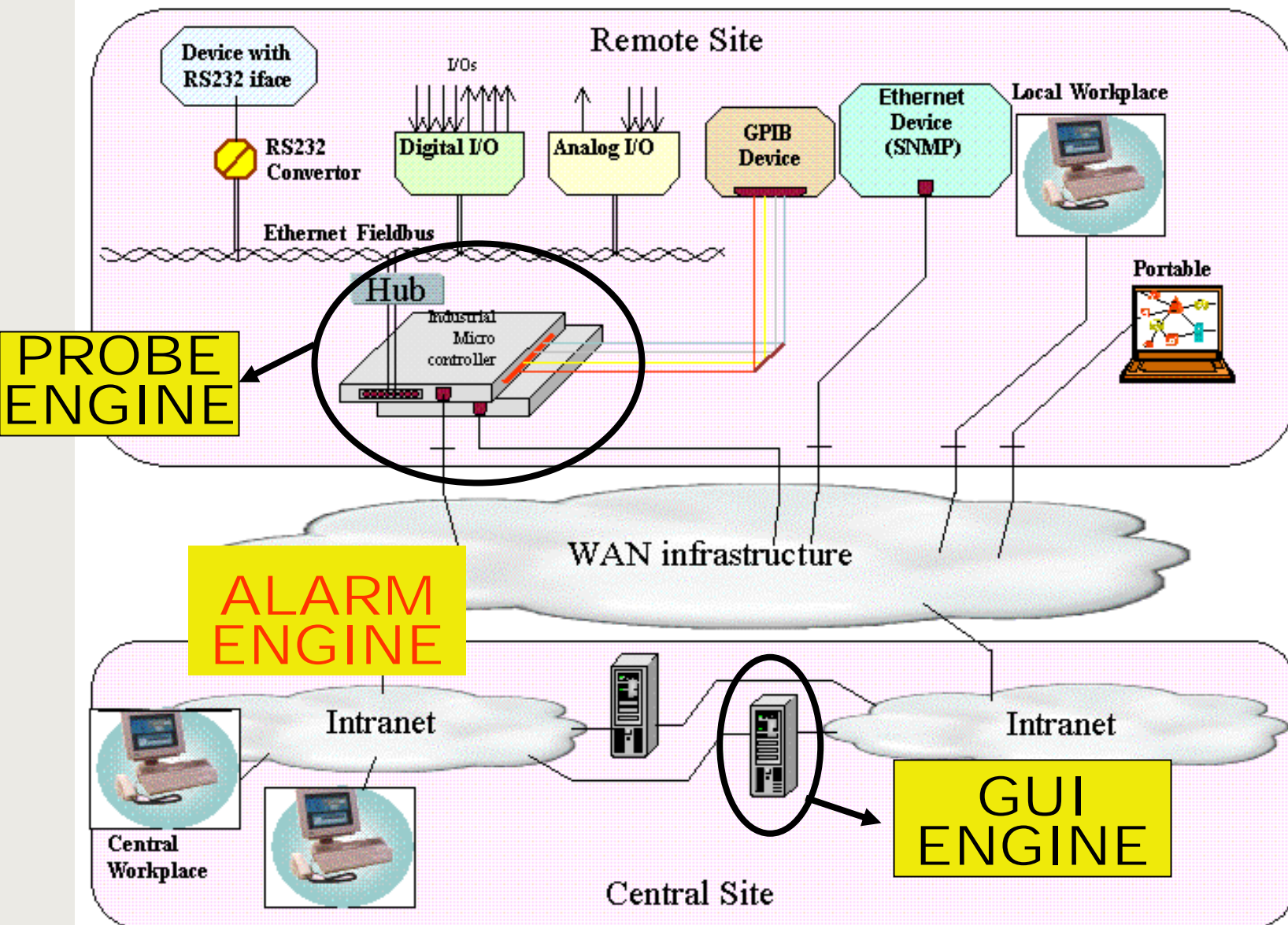
Engine 2: GUI Engine - Architecture



Graphical Client - architecture



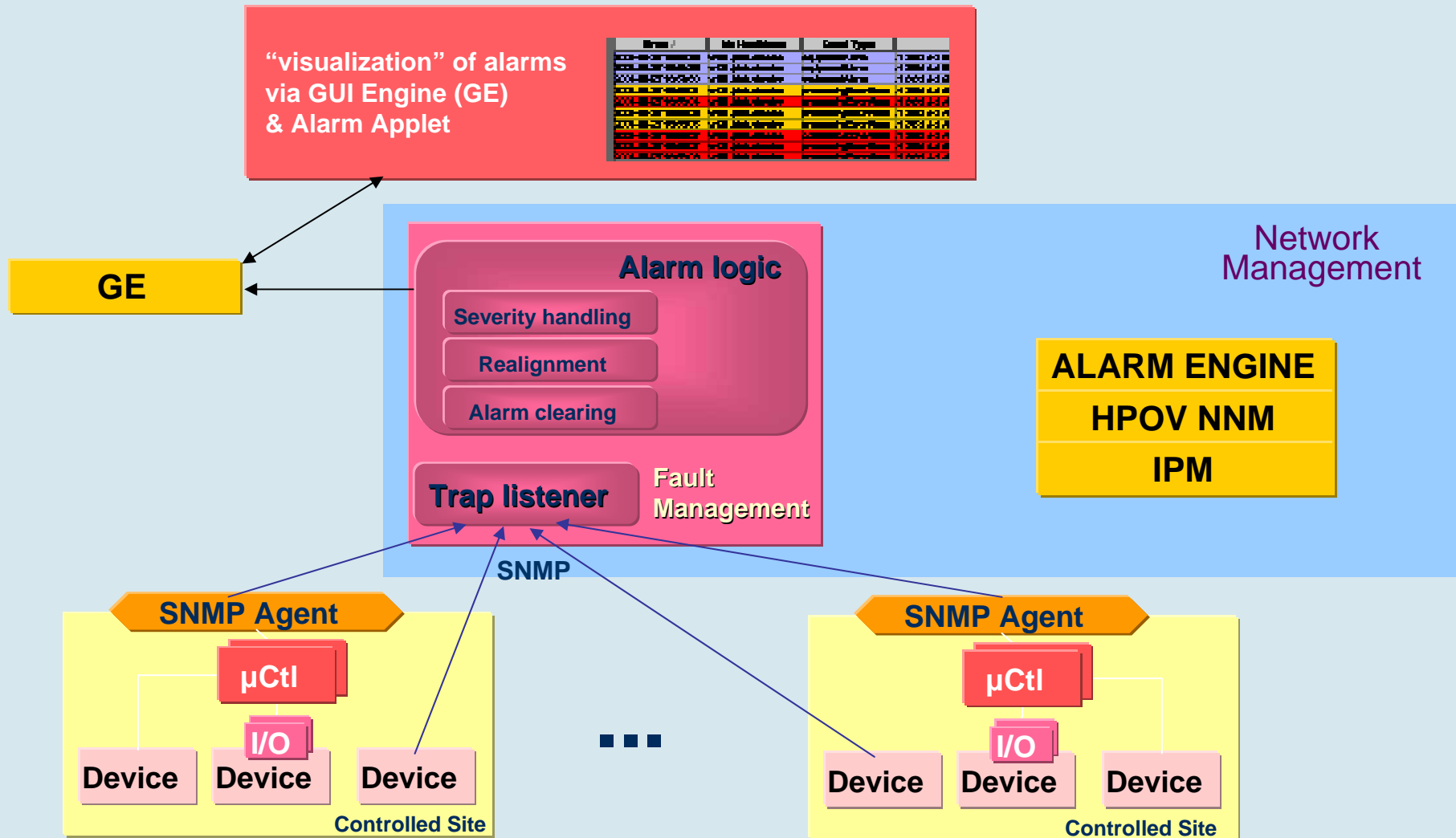
Distributed Deployment: 3 blocks



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- » Fault Monitoring : **Alarm Engine**
- » Demonstration
- » End of Story

Alarm Engine – Fault Management



Alarm Engine – Fault Management

» HP Openview NNM

- Alarm Browser
- Severity & Categories
- Topology overview through Map-windows
- Performance Data Collection

» Module built on HP Openview NNM for alarm monitoring

- Intelligent alarm treatment:
 - active alarm and alarm timeout
 - dynamic severity settings
 - alarm resynchronization

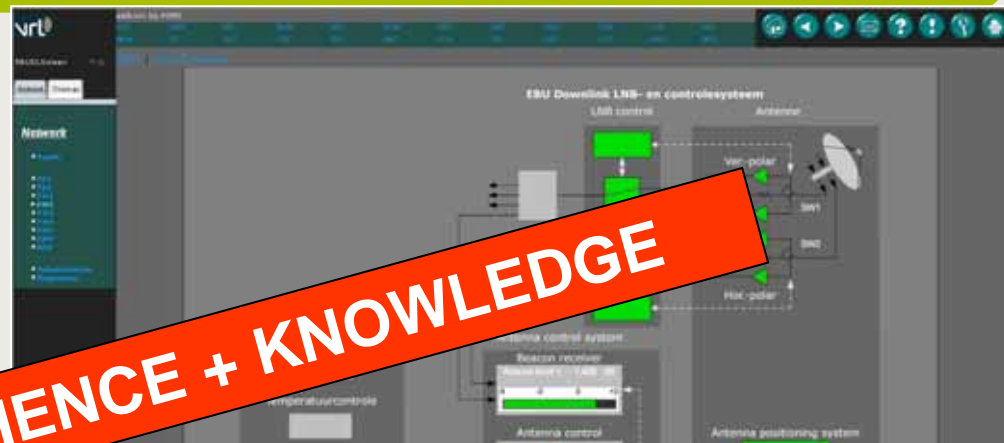
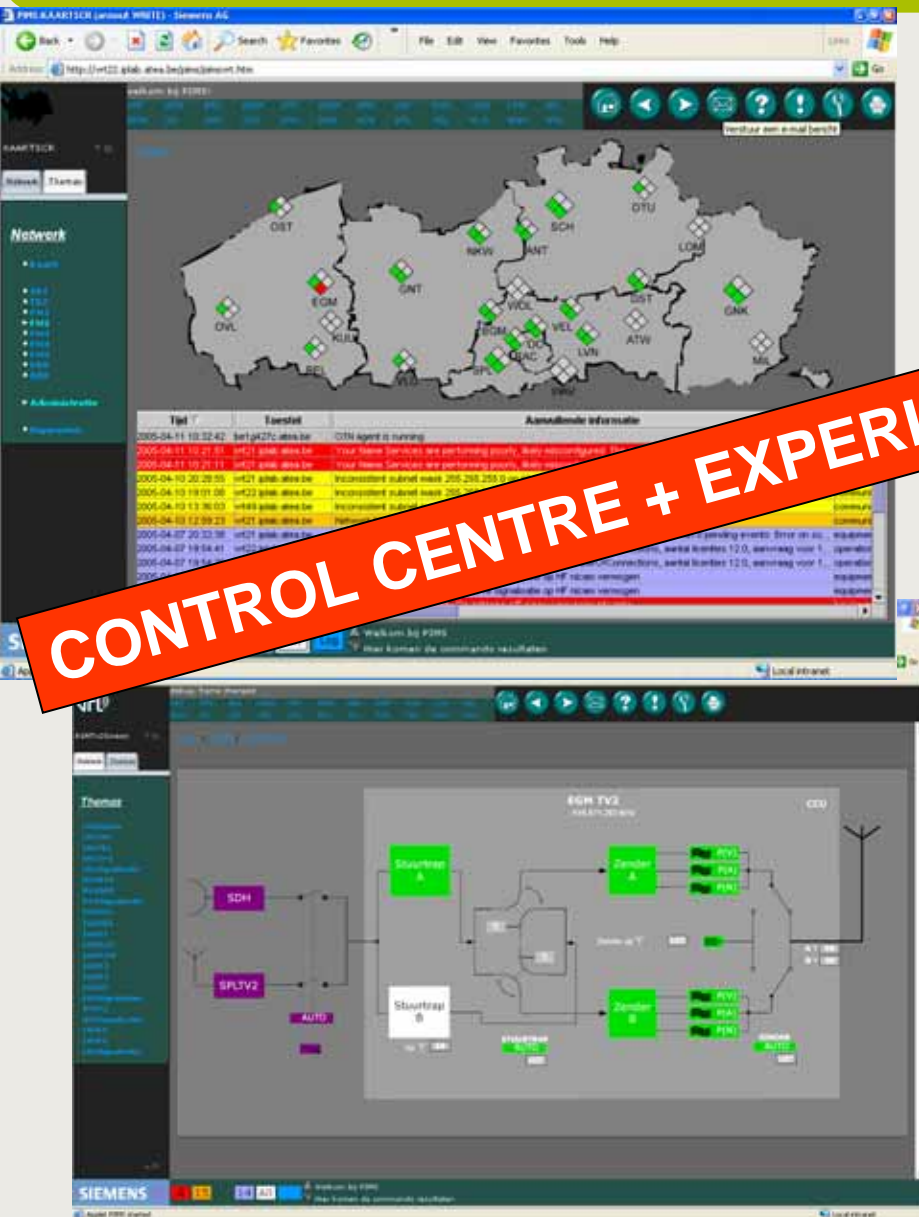
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TRC + SCRIMS = win/win

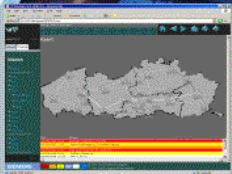


CONTROL CENTRE + EXPERIENCE + KNOWLEDGE

NEW END PRODUCT



SCRIMS Siemens Cross Industry Management Solution



Q&A / Discussion

