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ANSA Phase III

ANSA overview (January 1996)

Andrew Herbert

Abstract

A presentation to introduce the ANSA 1995/6 Workprogramme

Drivers

Current Projects

Recent results.

APM.1535.02

Approved
Briefing Note

26th January 1996

Distribution:

Supersedes:

Superseded by:



An Introduction to ANSA

Andrew Herbert
(Chief Architect)

- **Drivers**
- **Workpackages**
- **Recent Results**

The Market

**MARKET
CREATION**

**MARKET
ENABLING**

Public electronic
commerce and
information services

INTEGRATION

Distributed control
and management of
information networks

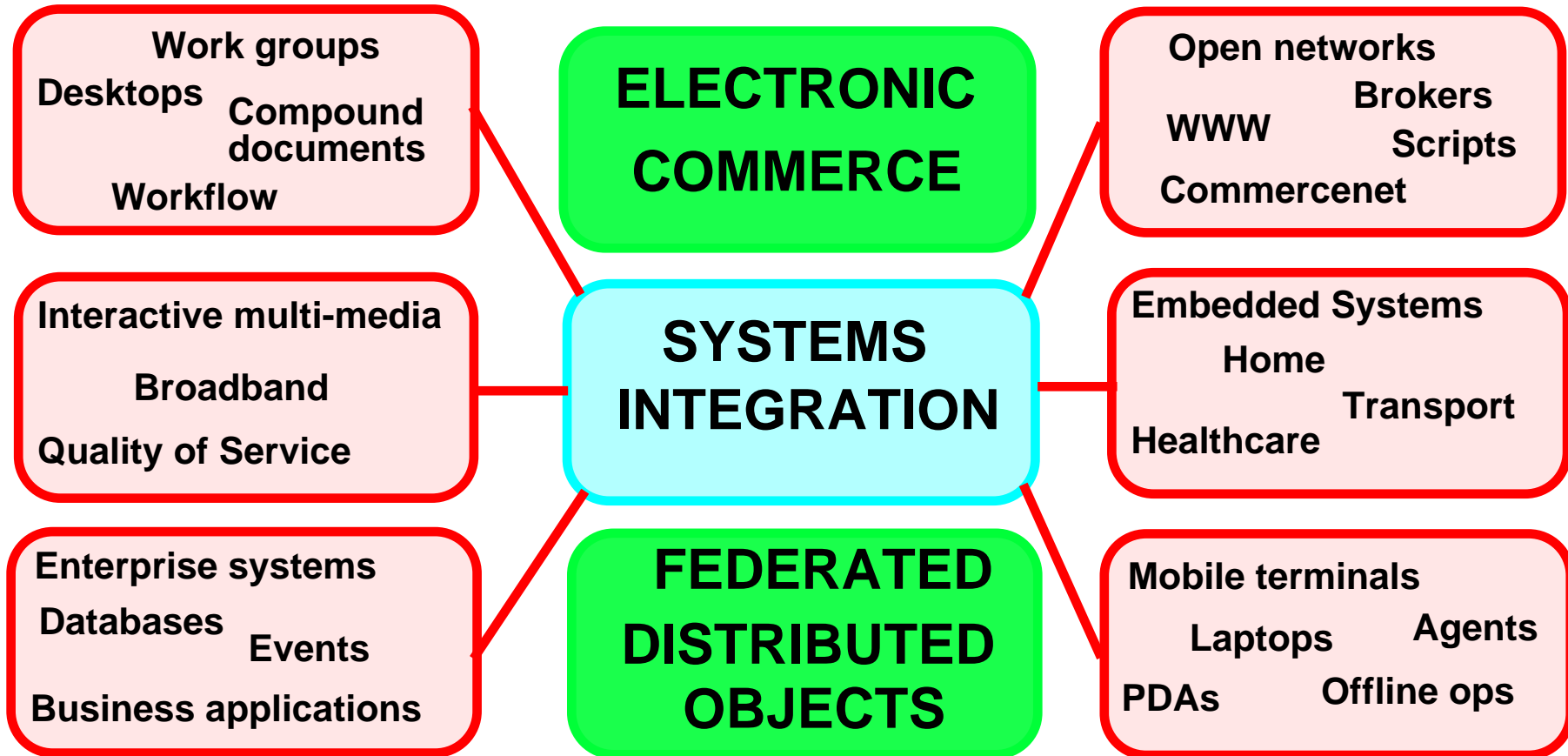
New challenges
New risks

**Interactive
Wide Area
Multi-Media
Services**

New technology



ANSA Vision





New Requirements

Performance
Multiparty

Interactive Multi-media
QoS control

Video/audio
CORBA++

Federated naming
Cooperative, autonomous management

Open Networks
Security

Intelligent broking and trading
WWW ++

Intelligent information filters and agents

Distributed Information
Information servers

CGI & JAVA++
Computer assisted business processes

Down scaling

Embedded Systems
Interoperability

Mobile
CORBA--

Predictable



Meeting the requirements

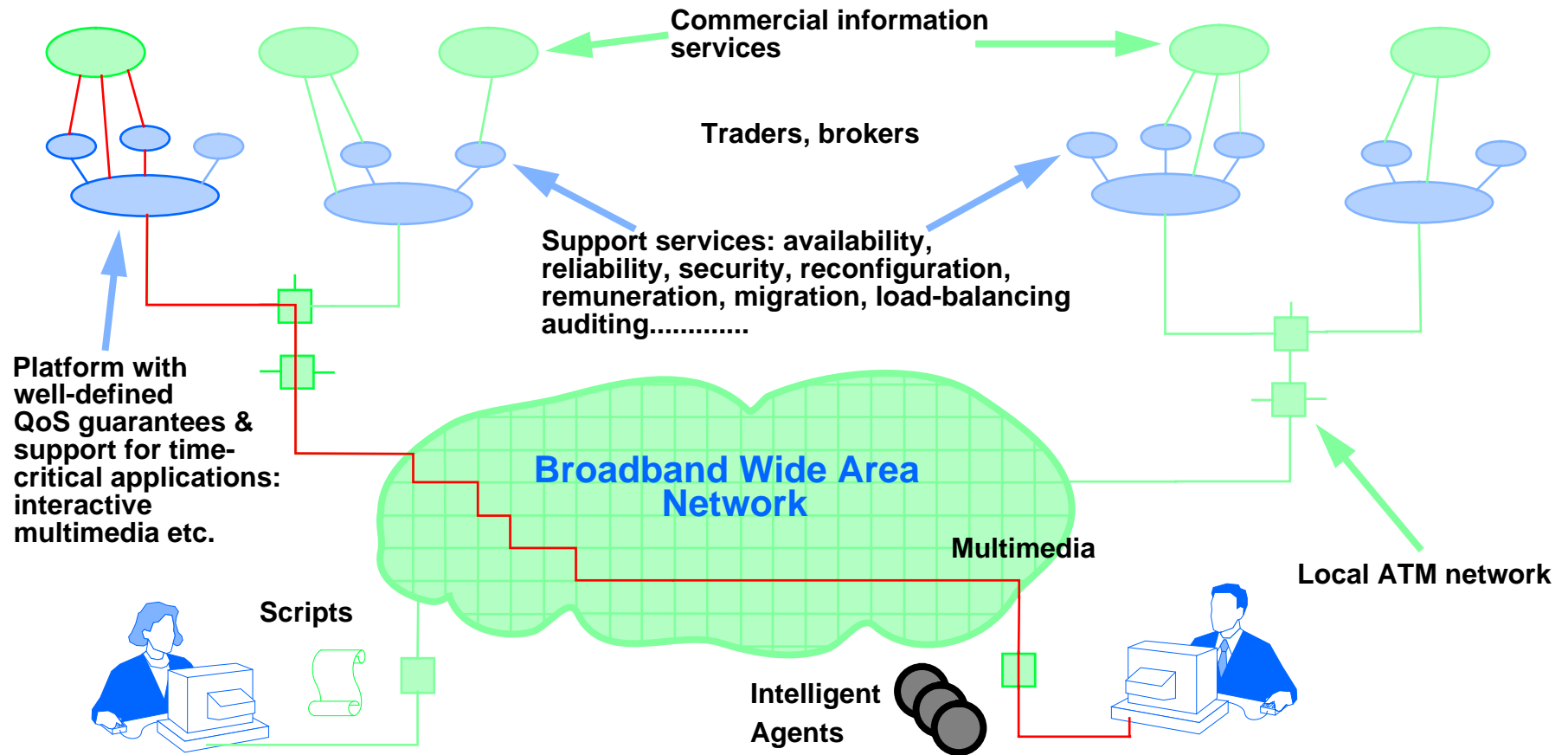
- **New concepts**
 - building on a robust extensible architecture (ANSA)
 - prototypes to prove, show how, enable
- **Deliver into high profile industry fora**
 - W3C, Smartcard Forum, ...
- **And standards groups**
 - OMG, ISO, ITU, OSF
- **Transfer into sponsor's product / service groups**



Who is involved?

- **Bellcore**
- **BT**
- **France Telecom (CNET)**
- **Northern Telecom (BNR)**
- **Telefonica I&D**
- **Fujitsu Laboratories**
- **GEC**
- **GPT**
- **HP**
- **ICL**
- **UK Defence Research Agency**
- **Eurocontrol**

Scenario



Focus

**Public electronic
commerce and
information services**



**Explore,
animate**



**Distributed control
and management of
information networks**



**Prototype,
extend,
validate**



1995-6 Work packages

**Distributed Interactive
Multi-media**

40%

**Technology
Transfer**
30%

**ObjectLab
- CORBA + WWW**
30%



1995 Highlights

COMPLETED

- 1 ANSAware/RT for NT
- 2 DIMMA Modular nucleus
- 3 ANSAweb Web - CORBA interworking

IN PROGRESS

CORBA support in DIMMA (JET)

NEW

- 1 JADE Agents as mobile CORBA clients
- 2 AMBER Mbone demo of DIMMA streams
- 3 QUARTZ ObjectMail

TECHNOLOGY TRANSFER

Sponsor visits
Consultancy BT, Eurocontrol,
Fujitsu Labs, GPT, ICL

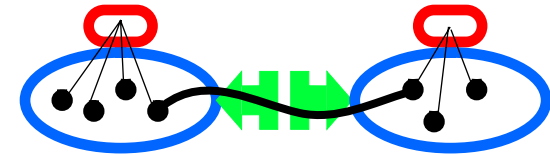
STANDARDS

IETF
W3C
W3UserNet
OMG

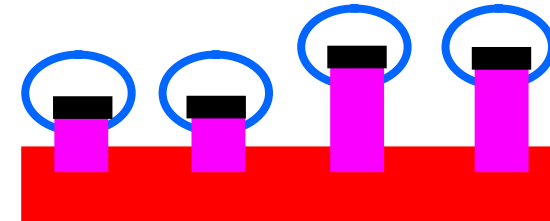


The ANSA Architecture

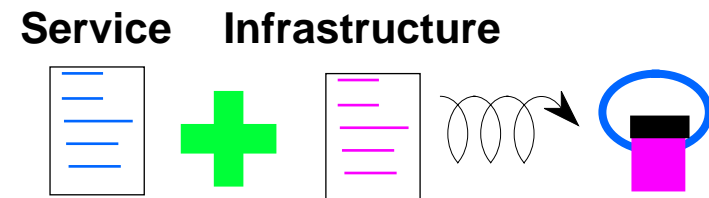
Trading and Federation
Controlled interoperability



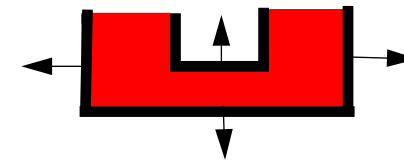
Selective Transparency
One size does not fit all



Abstract & Automate
Tools replace APIs



Modular Engineering
Plug and play infrastructure





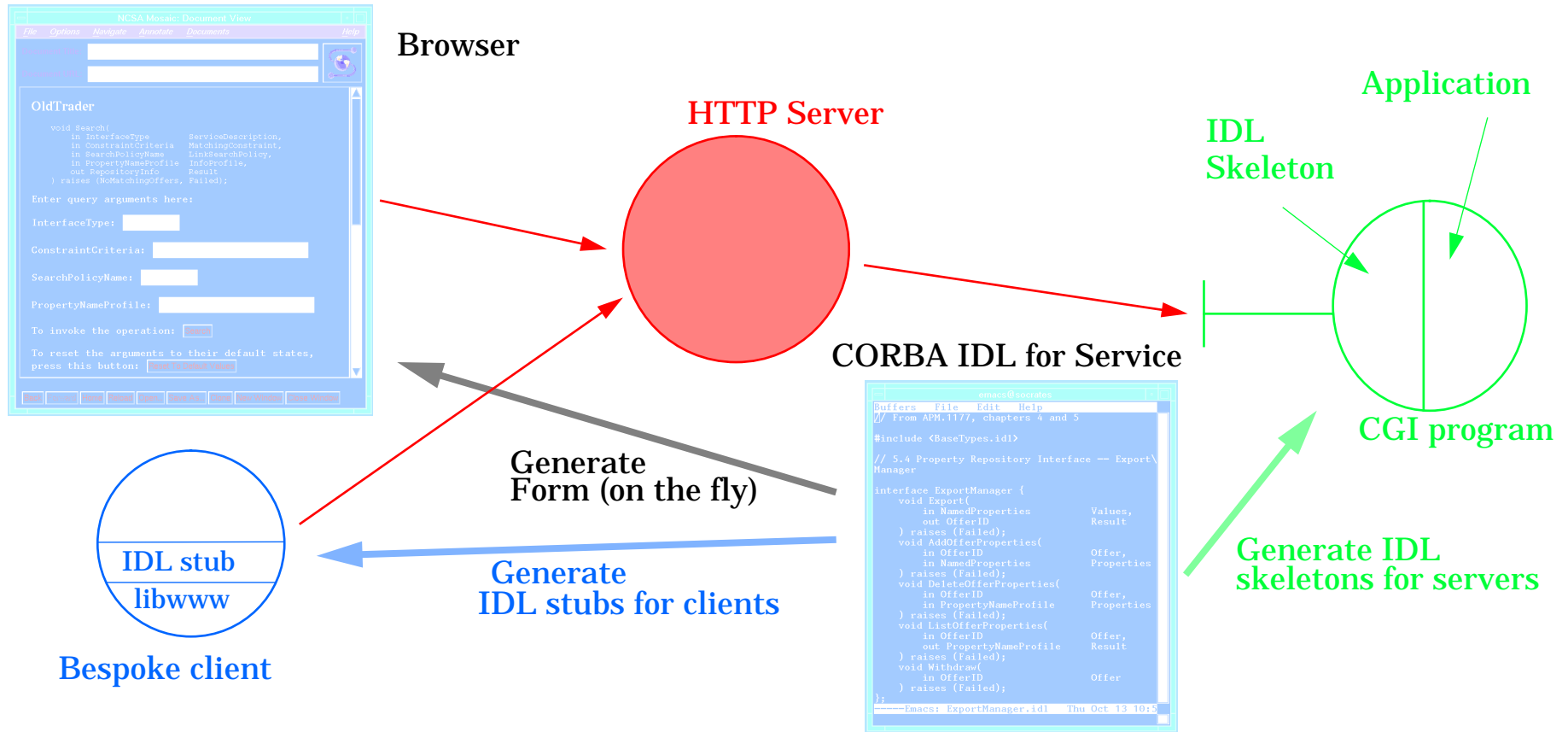
ANSAweb

- **WWW is creating a “Uniform” information space**
 - **Good presentation and authoring tools**
 - **Poor navigation, administration and development tools**
 - **Protocols inefficient**
 - **No support for active documents**
- **Distributed objects can help**
 - **tool based approach**
 - **apply protocol experience**
 - **apply federation principles**

Web browsers over CORBA

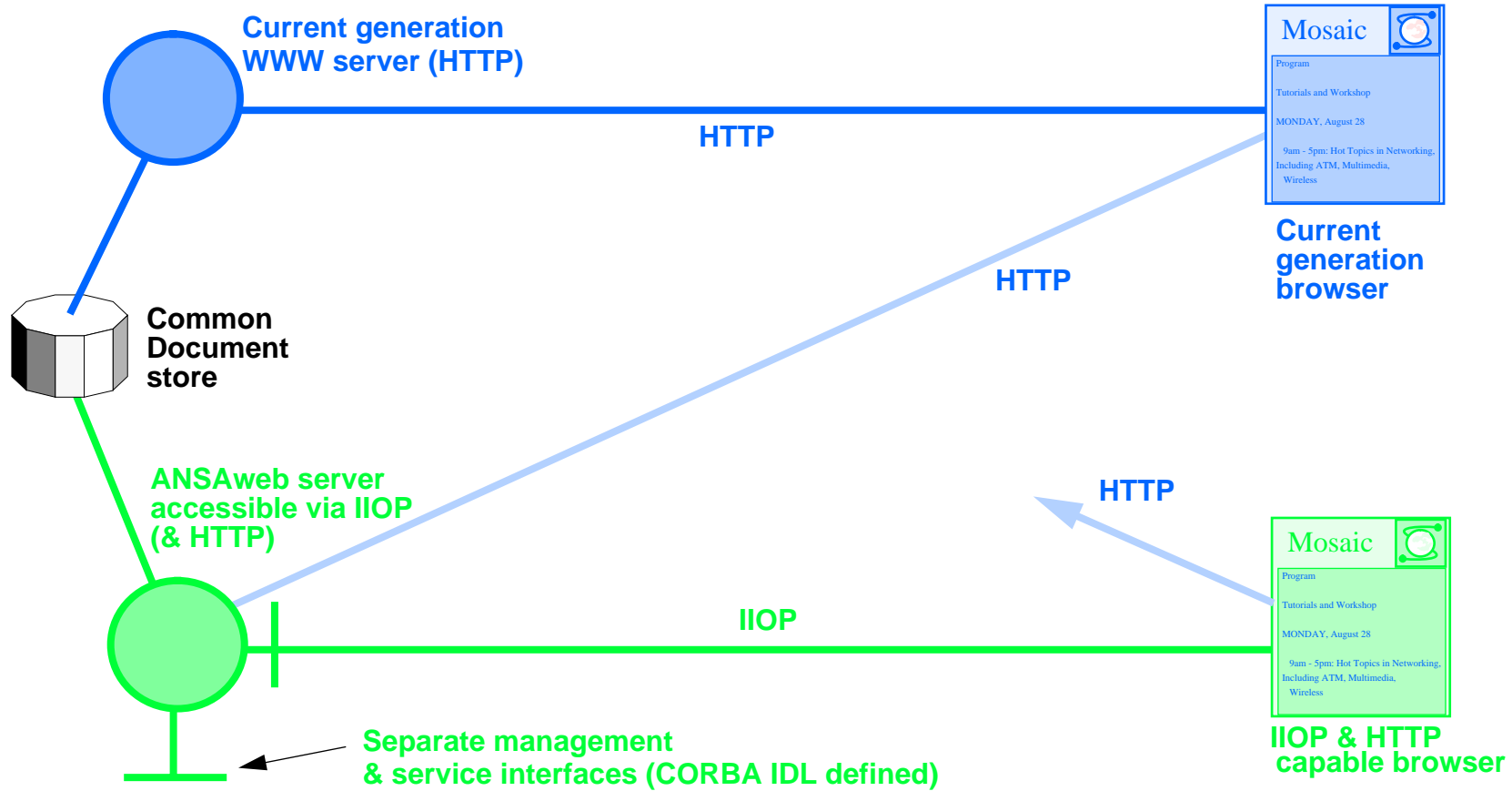


ANSAweb Phase 1: A Stub Compiler for the web

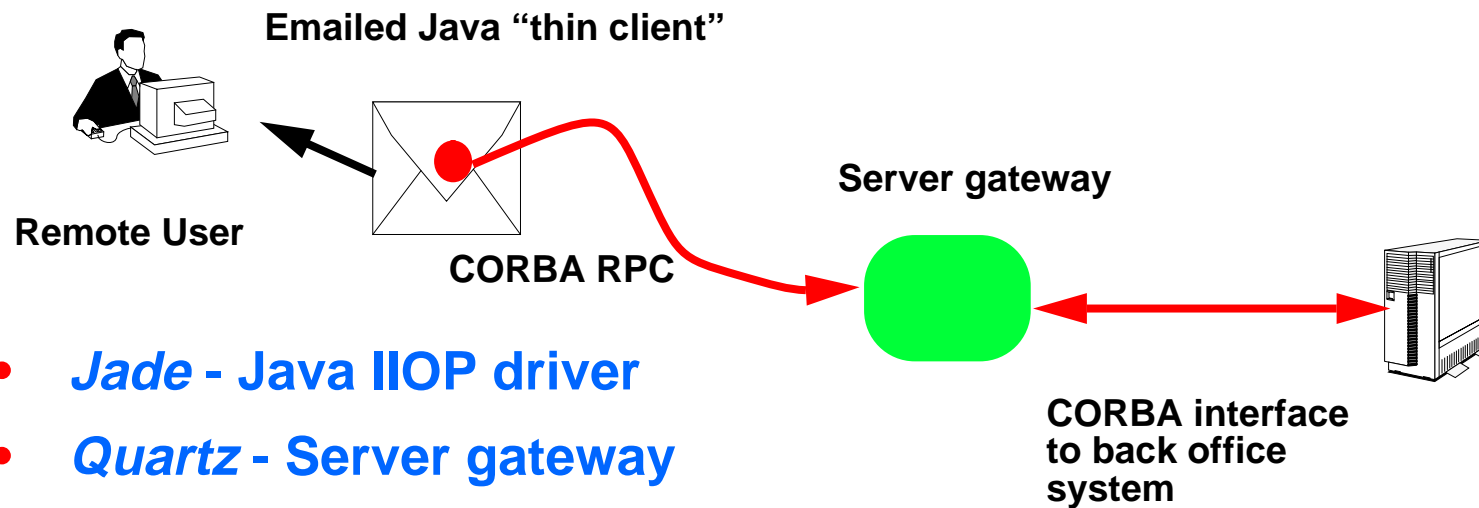




ANSAweb Phase 2: Migrating the Web to Distributed Objects



Jade & Quartz



- **Jade - Java IIOP driver**
- **Quartz - Server gateway**
- **Applications**
 - **Software distribution**
 - **Data collection - active forms**
 - **Custom Clients**

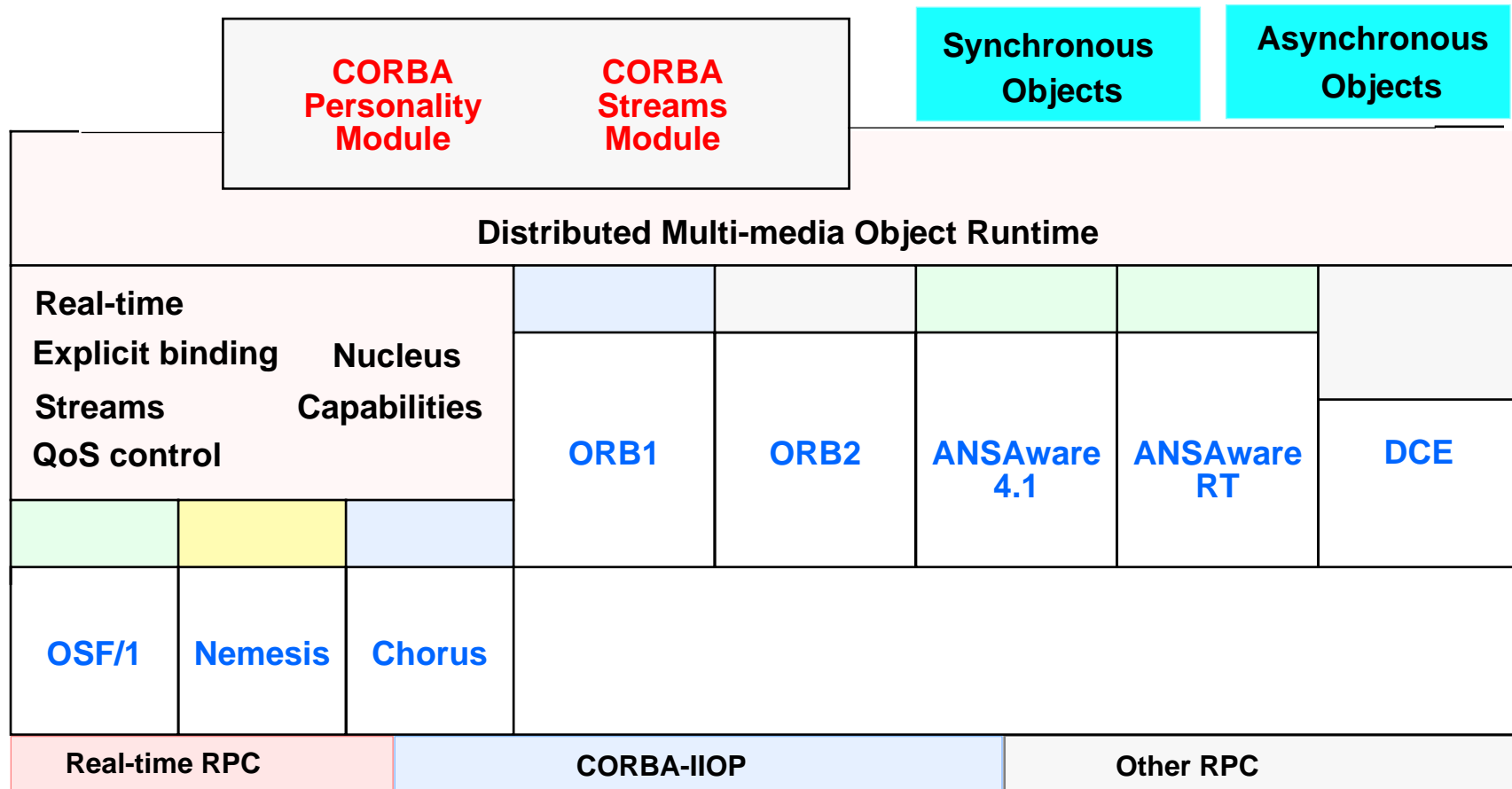


Distributed Interactive Multi-Media

- **Extend CORBA to handle multi-media streams, peer-to-peer communication, quality of service negotiation and control**
- **Add real-time capabilities to the ANSA/ODP architecture**
 - without destroying its ability to cope with:
 - federation, heterogeneity, scaling
 -
- **Provide interoperability between real-time and non real-time objects**
 - predictable islands in a an unpredictable sea
 -
- **Provide real-time guarantees in an asynchronous distributed system**
 - make high performance distributed systems
 - make predictable distributed systems



Distributed Interactive Multimedia Architecture (DIMMA)





Modularity in the Nucleus

- **communication**
 - alternative protocol stacks, transports, encodings
- **processing**
 - many threading schemes (multi-threading, non-threaded, real-time threading)
- **memory management**
 - many buffering schemes (eager, continuous, linked list (mbufs, fbufs))
- **resource pools**
 - tie together objects, threads, memory, QoS parameters
 - user defined schedulers
- **event processing**



AMBER

VAT

VIC

**Other
Tools**

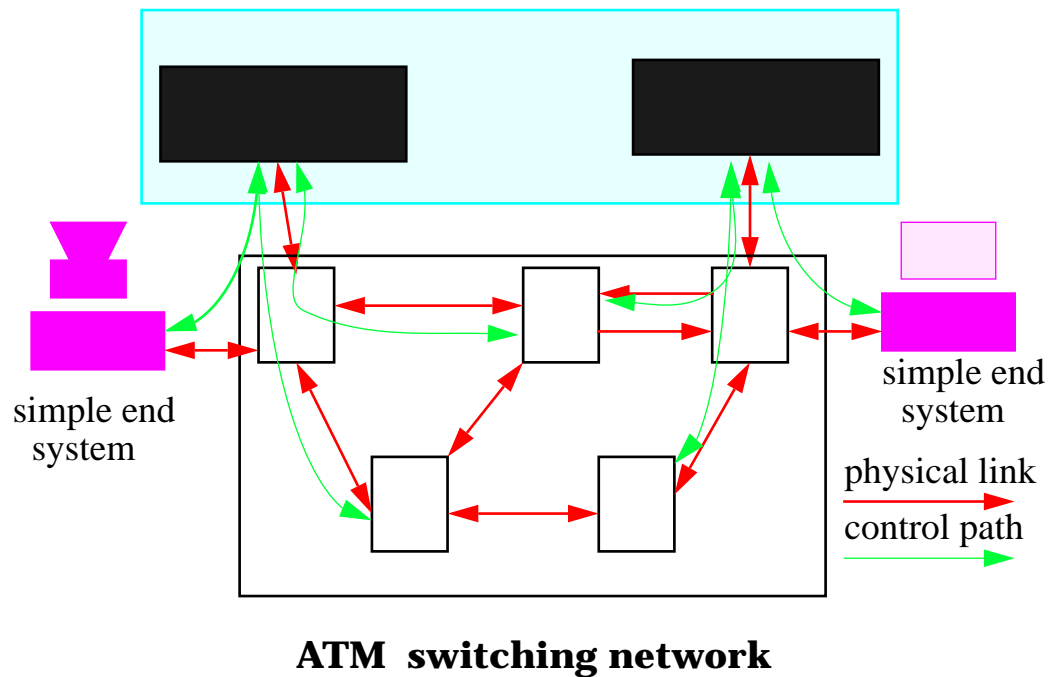
CORBA Interface

**MBone
protocols**

**Other
protocols?**

DCAN

Control and management on distributed processing platform

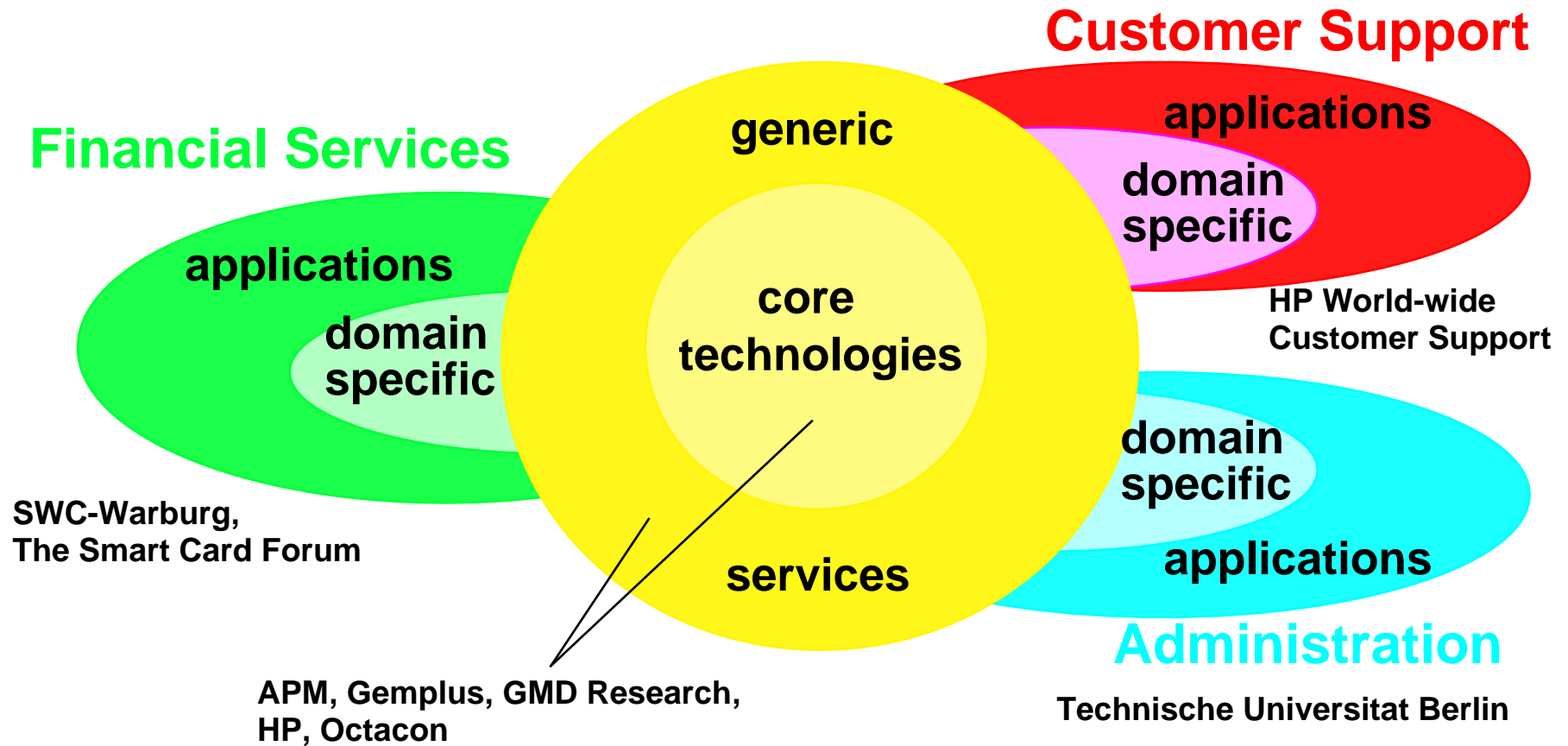




RETINA

- **A telecoms ORB (i.e., TINA DPE) for broadband networks**
- **Collaborative European Project, TINA-C Auxiliary Project**
- **CORBA & CORBA services plus**
 - streams
 - connection management
 - quality of service negotiation and control
- **Operations, administration and management ORB**
 - transactions, database,
- **Interactive services ORB**
 - small, fast, real-time
 - use Chorus microkernel OS

End-to-End Internet Security



APM, Gemplus, GMD Research,
HP, Octacon