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ANSA Phase III

WWW and CORBA - slides

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Abstract

There is a business opportunity to develop CORBA into the programming platform for the emerging global information network. This presentation looks at how CORBA and internet technology might be married to achieve this.

A tour of the trader demonstration available on the World Wide Web is given. Next the use of CORBA IDL to describe internet services is described. Finally the presentation looks at some of the current internet protocols, outlines how a "resource-managed" network may evolve and looks at what it would take to make CORBA the programming platform for this resource managed network.

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Request for Comments (confidential to ANSA consortium for 2 years)

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Information Services Framework: WWW & CORBA

Nigel Edwards



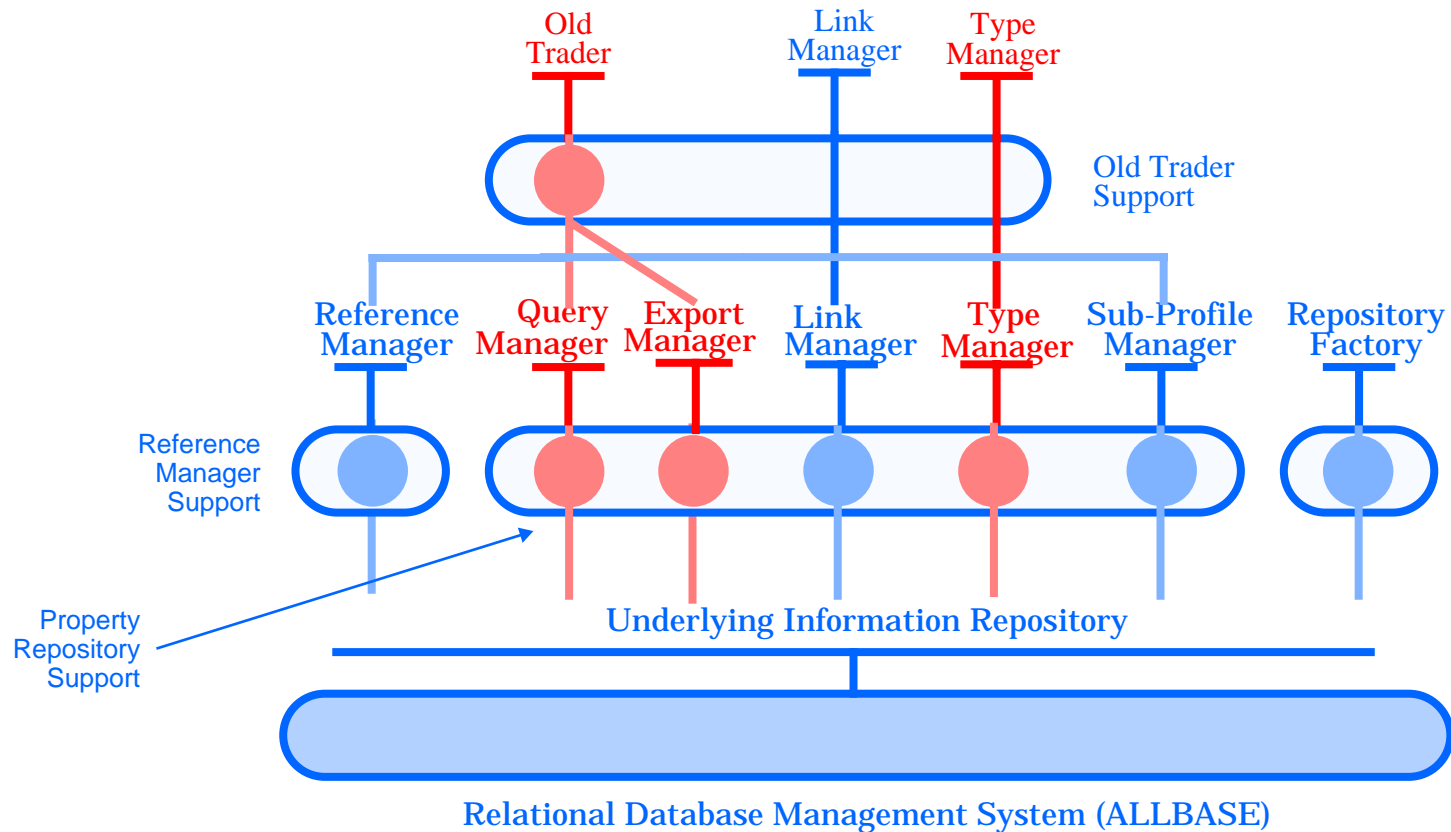
Information Services Framework: WWW and CORBA

Objective: to investigate how internet and CORBA (telecoms) technology fits together

- **A tour of the trader demonstration on WWW**
- **Current status of the work on using CORBA IDL to describe WWW services**
- **Some ideas on how CORBA might be seen as the integration technology for managing internet services**
- **Summary and discussion of future plans**



The architecture of the enhanced trader or matchmaker





Trader Demonstration User Interface

- Using web pages to simulate the programmer's interface
- Shows how a useful tool could be developed
- one document per interface
- A set of default arguments are offered
- The infrastructure was coded by hand

Mosaic



```
void Search(in InterfaceType ServiceDescription,
            in ConstraintCriteria MatchingConstraint,
            in SearchPolicyName LinkSearchPolicy,
            in PropertyNameProfile InfoProfile,
            out Repository Info Result
            ) raises (NoMatchingOffers, Failed);
```

Enter arguments here:

InterfaceType:

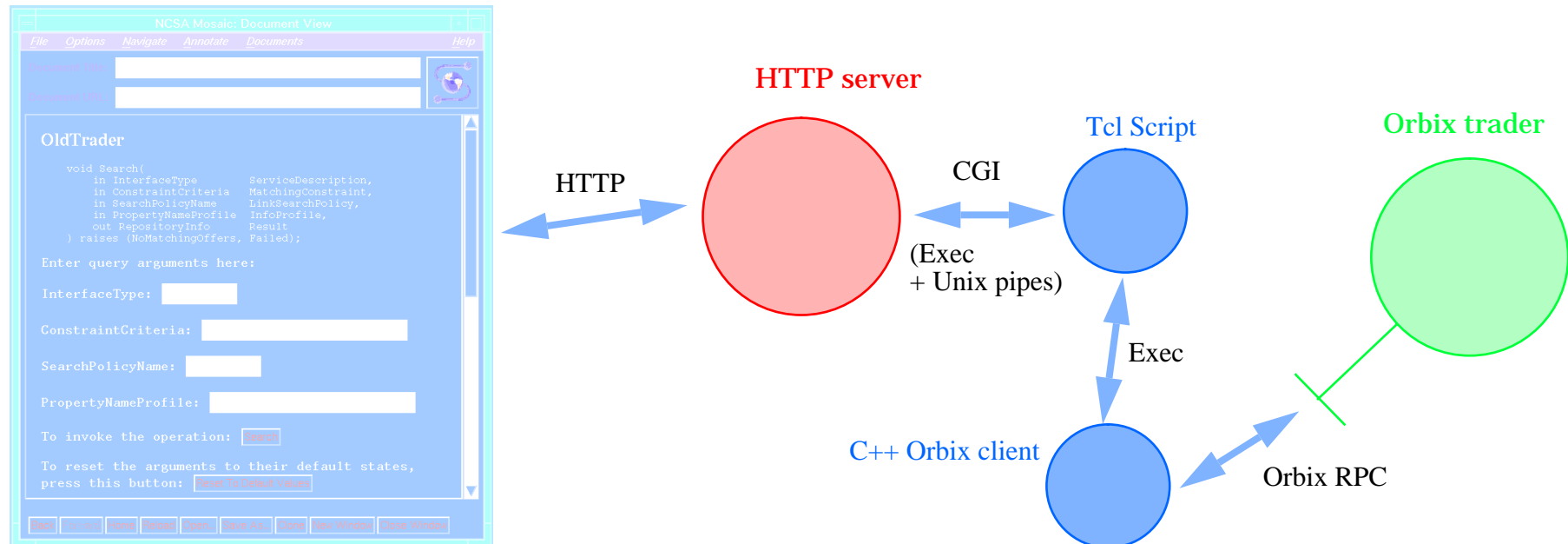
ConstraintCriteria:

SearchPolicyName:

PropertyNameProfile:

To invoke the operation:

Main components of trader demonstration

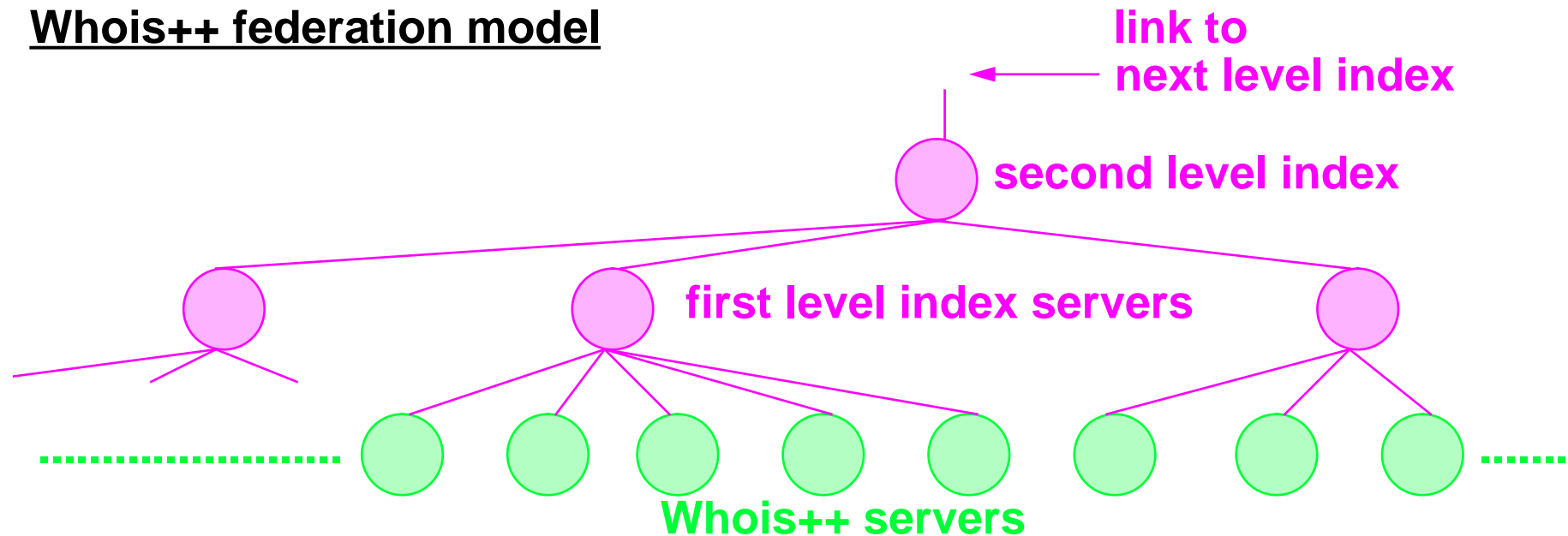


- **Trading as a service in the web (e.g. URN -> URC/URL)**
- **The nature of interoperability between CORBA and the Web**
- **An active document: email webmaster@ansa.co.uk for access**

Trading in the internet — Issues(1)

- What is the relationship between trading and “whois++” — an “extensible directory service predicated on a template-based information model and a flexible query language”?

Whois++ federation model

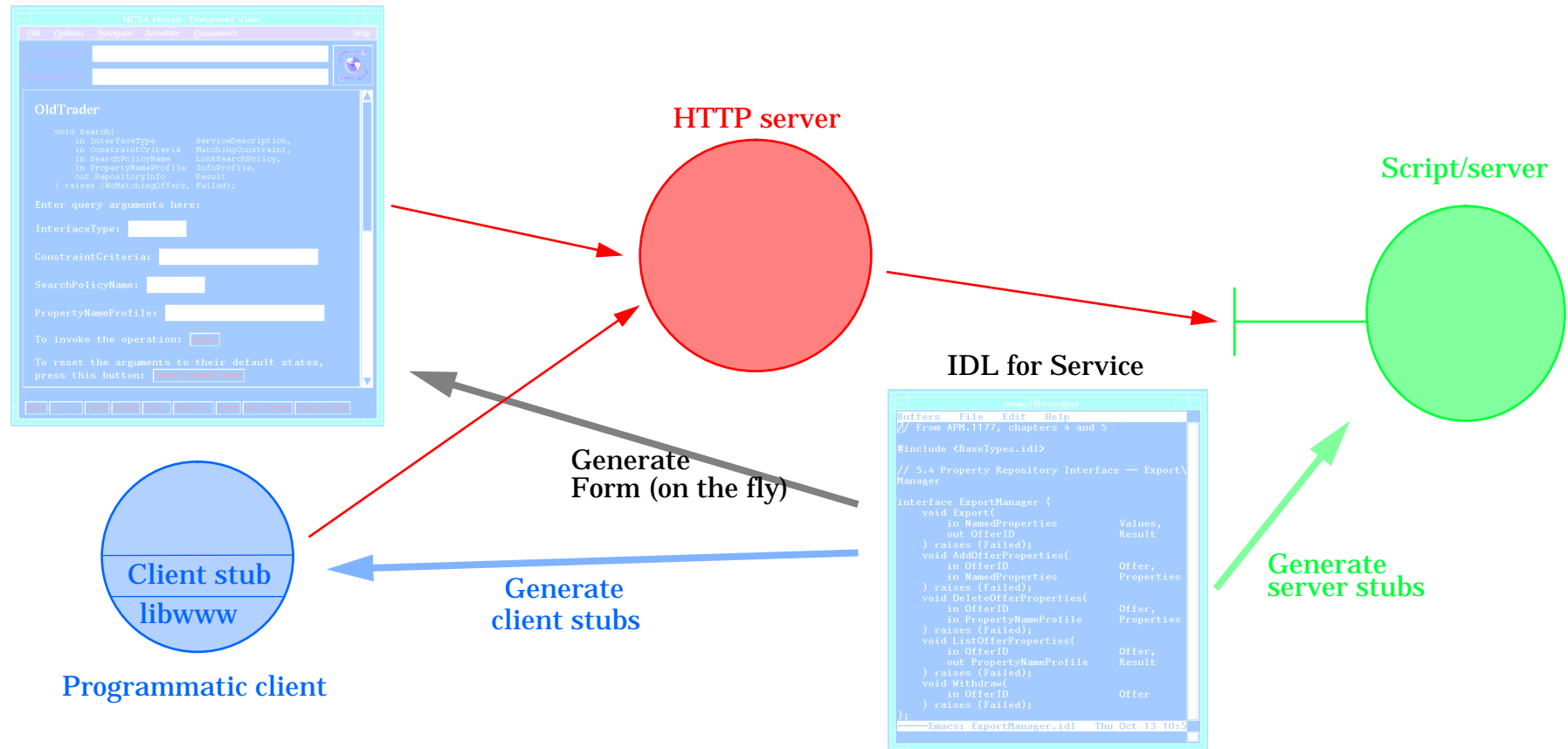




Trading in the internet — Issues(2)

- **Fairness is important — but what is meant by fairness?**
- **What is the relationship between trading and indexing services such as Harvest?**

CORBA IDL and the web



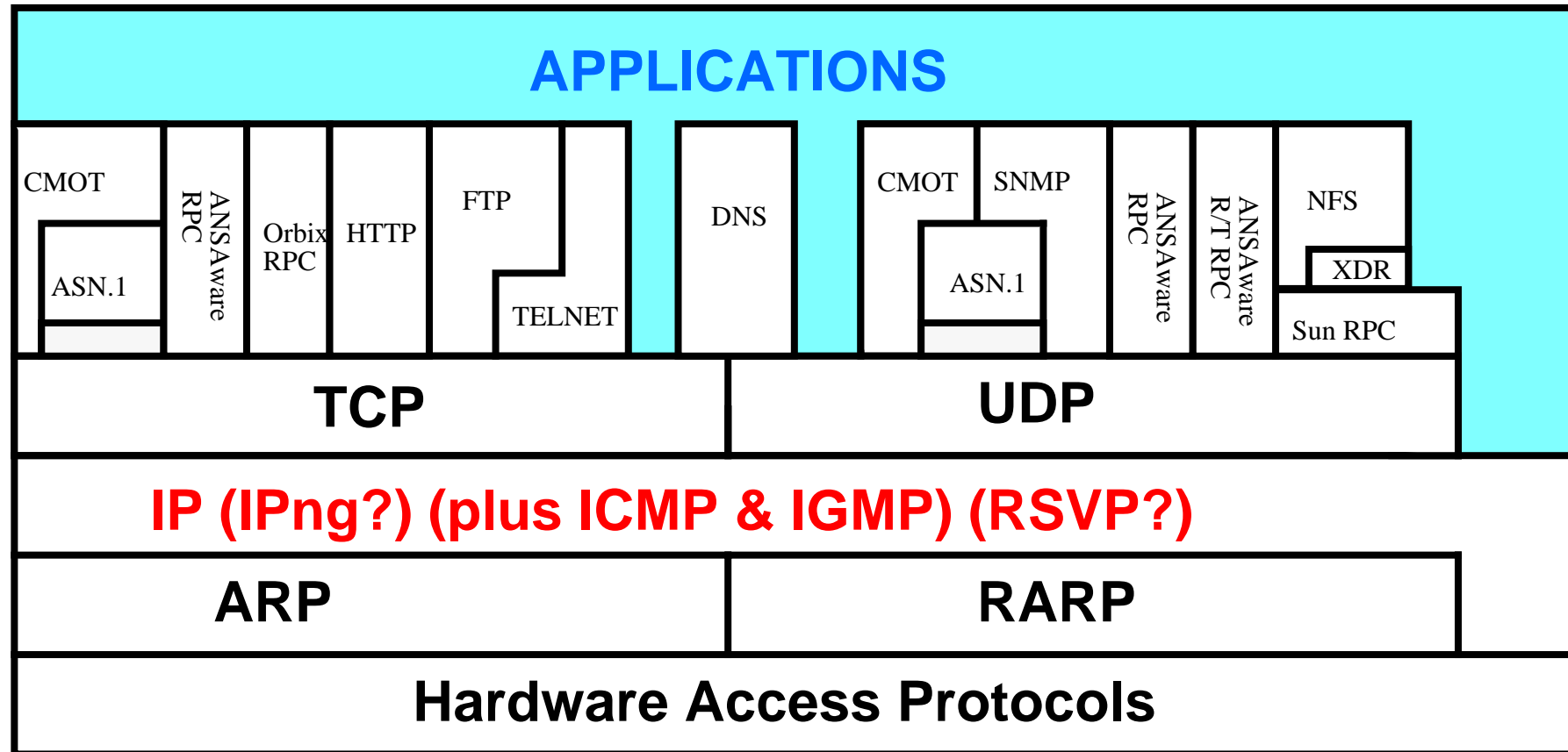


Benefits of CORBA IDL and Web

- *The usual benefits cited for stub compilers and IDL: automating as much as possible reduces the chance of error*
- *CORBA/web interoperability becomes CORBA / CORBA interoperability (ANSA is working on automating interceptors / gateways from IDLs)*
- *Make CORBA technology ubiquitous*
- *Increase the demand for commercial CORBA offerings: Web technology will not offer the same performance and robustness as commercial products*



Some protocols in the Internet



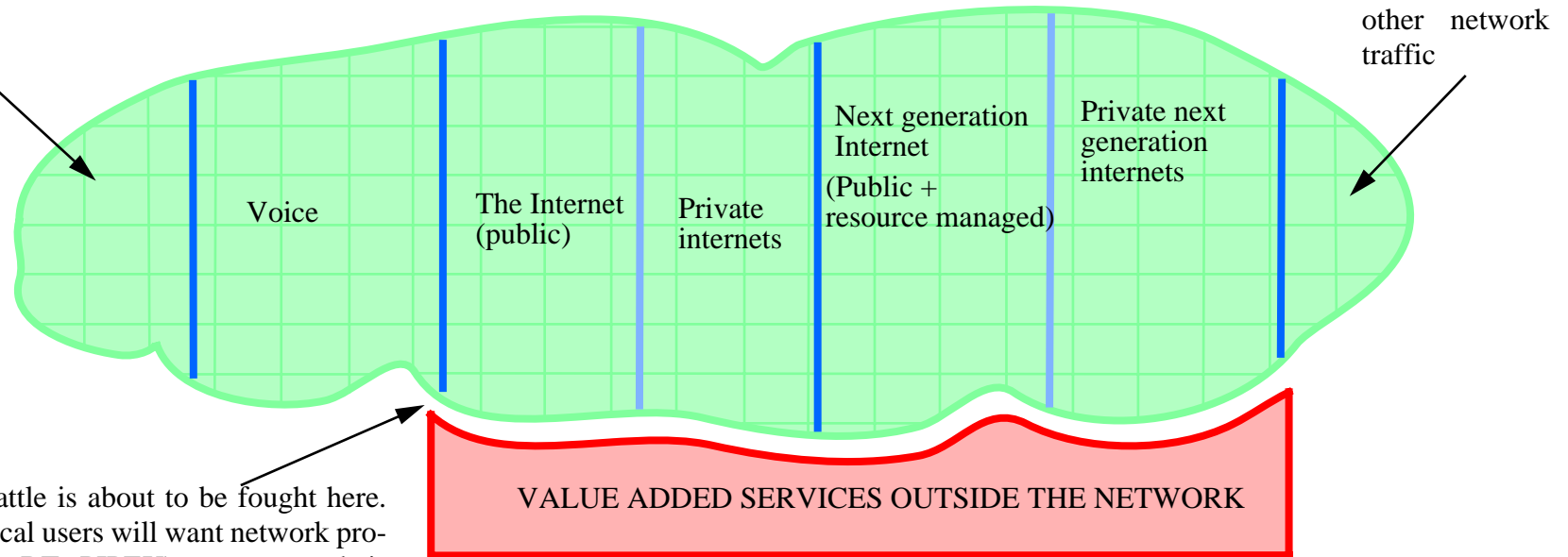


Resource management and QoS in the Internet

- At present the internet offers inadequate resource management for the delivery of real-time media and bounded time communication.
- RSVP and IPng (+ others?) are being developed to address this.
- IPng:
 - move from 32 bit to 128 bit hierarchical address space
 - QoS capabilities for real-time services (prioritising of traffic)
 - Authentication and privacy capabilities
- RSVP:
 - Sets up explicit routes and reserves bandwidth (during binding)
 - Depends on RSVP capable networks and routers (e.g. ATM, but not ethernet)
 - Developed for multicast (e.g. MBONE), but could be generalised

The evolution of telecommunications and internets

Value added services inside the network



A major battle is about to be fought here. Non technical users will want network providers (e.g. BT, PIPEX) to manage their services. (Both the services used and provided by these users.)

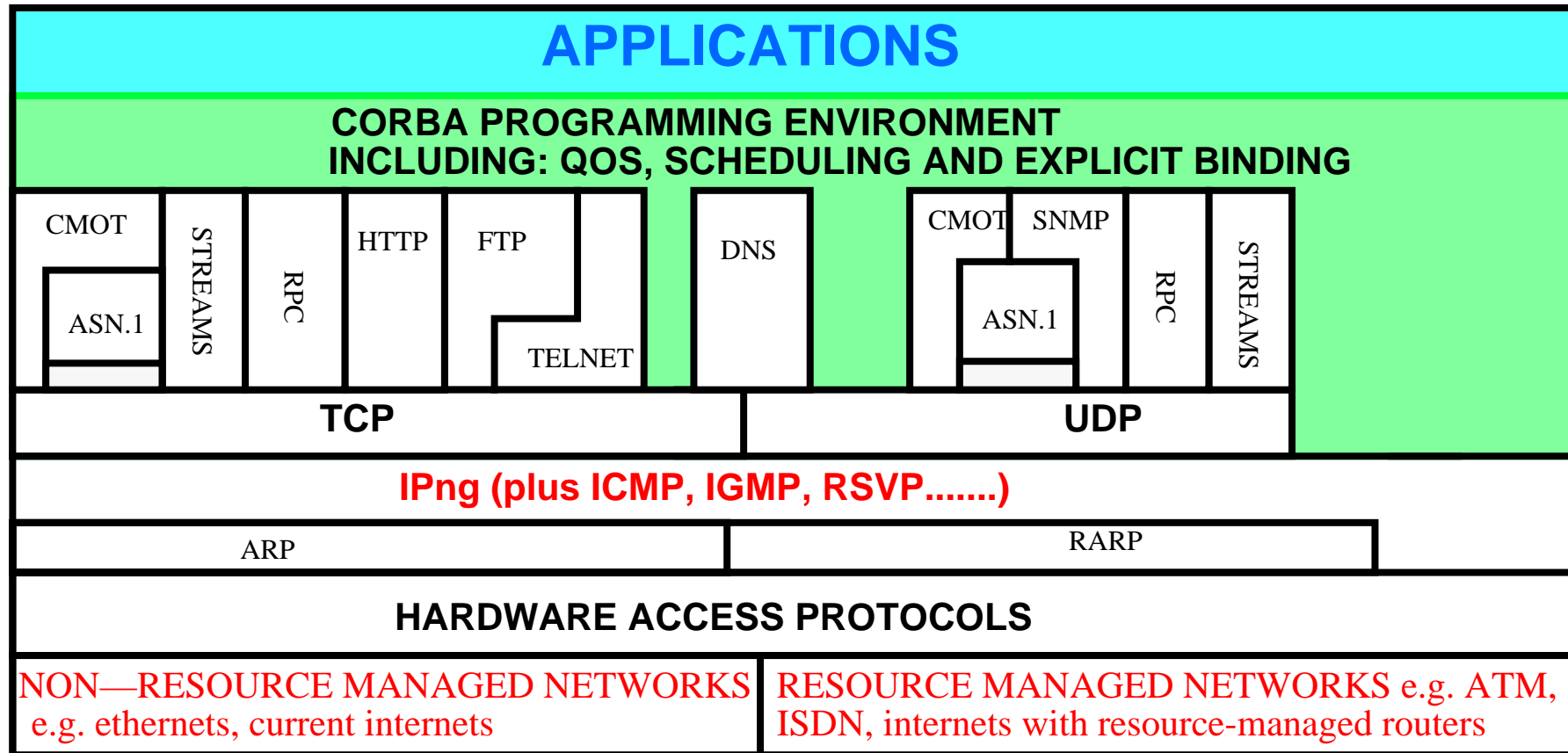


How will this evolve?

- It is probable that a resource managed network will evolve within and around the current internet
- This network will exploit modern networking technologies like ATM and ISDN
- There will be a significant part of the network which is not resource managed and will look like the current internet
- There is likely to be an increase in the number of application protocols — this makes life difficult for programmers and system builders.....
- There is a need to for a programming environment which supports multiple protocols (c.f. Mosaic is an application which can speak multiple protocols)

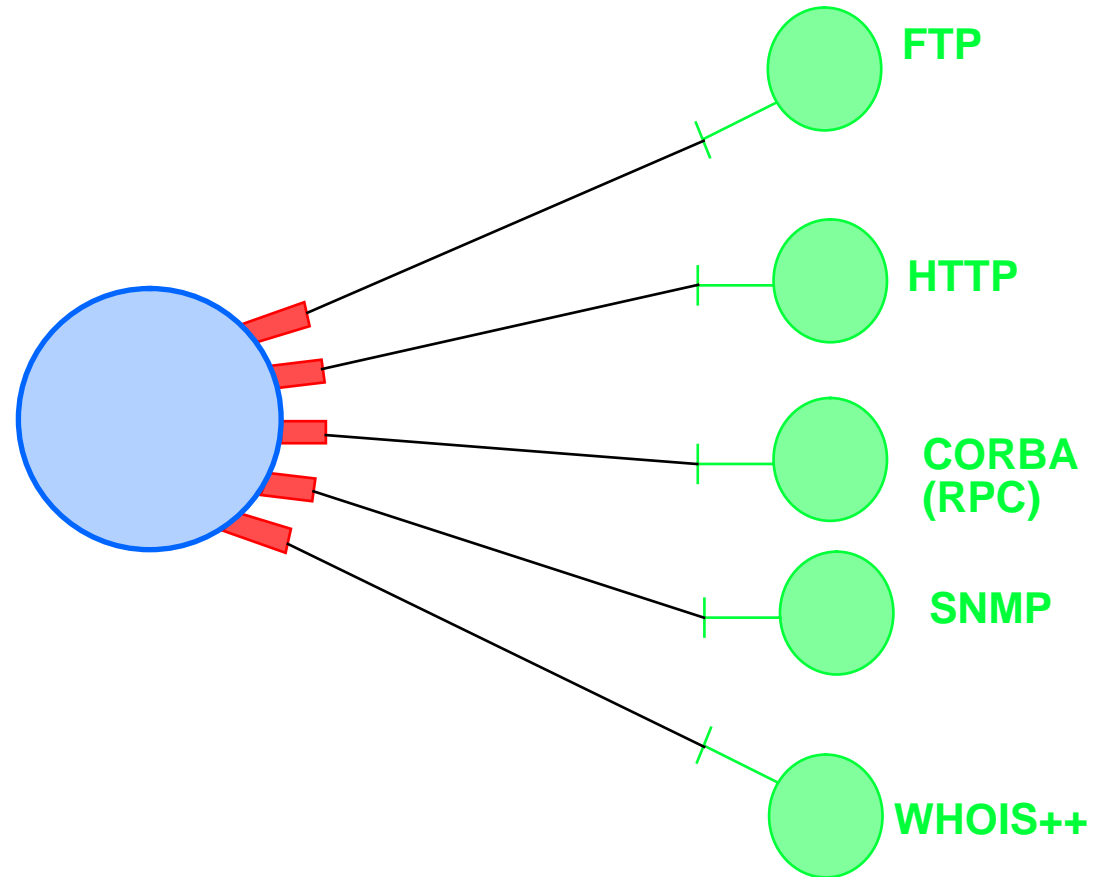


Can CORBA become this Programming Environment?



Multi-lingual clients versus mono-lingual servers

- Difficult to see how to build multi-lingual servers, but are they necessary?
- Multi-lingual client will be useful for management of information services.





Summary of planned work

- Understand the basic concepts (in progress)
- CORBA IDL compiler for web services (in progress)
- Enhance a CORBA so that it speaks multiple (internet) protocols
 - Needs results of current work to understand how do present these protocols computationally and how to do the engineering
 - Needs a CORBA or ANSAware source
 - A bigger task than currently scheduled for B1?
- Develop a trader for the internet
 - Start in '95