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## **ANSA Phase III**

# **ANSA MC-TC 0995: progress report slides**

**Rob van der Linden**

### **Abstract**

This document contains the slides for the progress report presentation at the combined ANSA Management and Technical Committee meeting, 13-14 September 1995.

It covers the period from May 1995 to August 1995 and includes effort to date in the context of the September 1994 ANSA Phase 3 plan (APM.1275).

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APM.1572.01

**Approved**

27th September 1995

Project Management (confidential to ANSA consortium for 2 years)

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**Distribution:**

**Supersedes:**

**Superseded by:**





# **Phase III**

## **Progress Report**

### **May - August 1995**

**to the combined ANSA Management and Technical Committees**  
**13-14 September 1995**

**Mike Eyre, Andrew Herbert and Rob van der Linden**

- **Finance**
- **Effort and staffing**
- **Progress and deliverables**
- **(Plans)**



## Finance

<b>ACTUALS</b>	<b>Phase 3 Mar. '93 - May '95</b>	<b>Last quarter Jun. '95 - Aug. '95</b>	<b>Phase 3 to date Mar. '93- Aug. '95</b>
<b>Income</b>	<b>2,466,976</b>	<b>236,499</b>	<b>2,703,475</b>
<b>Actual cost</b>	<b>2,451,978</b>	<b>274,607</b>	<b>2,726,585</b>
<b>Under/(over) spend</b>	<b>14,995</b>	<b>(38,108)</b>	<b>(23,110)</b>



## Finance 1995

	Jan. - Dec. 1995
<b>income hoped for</b>	<b>1,080</b>
<b>Income likely</b>	<b>991</b>
<b>cost</b>	<b>1,060</b>

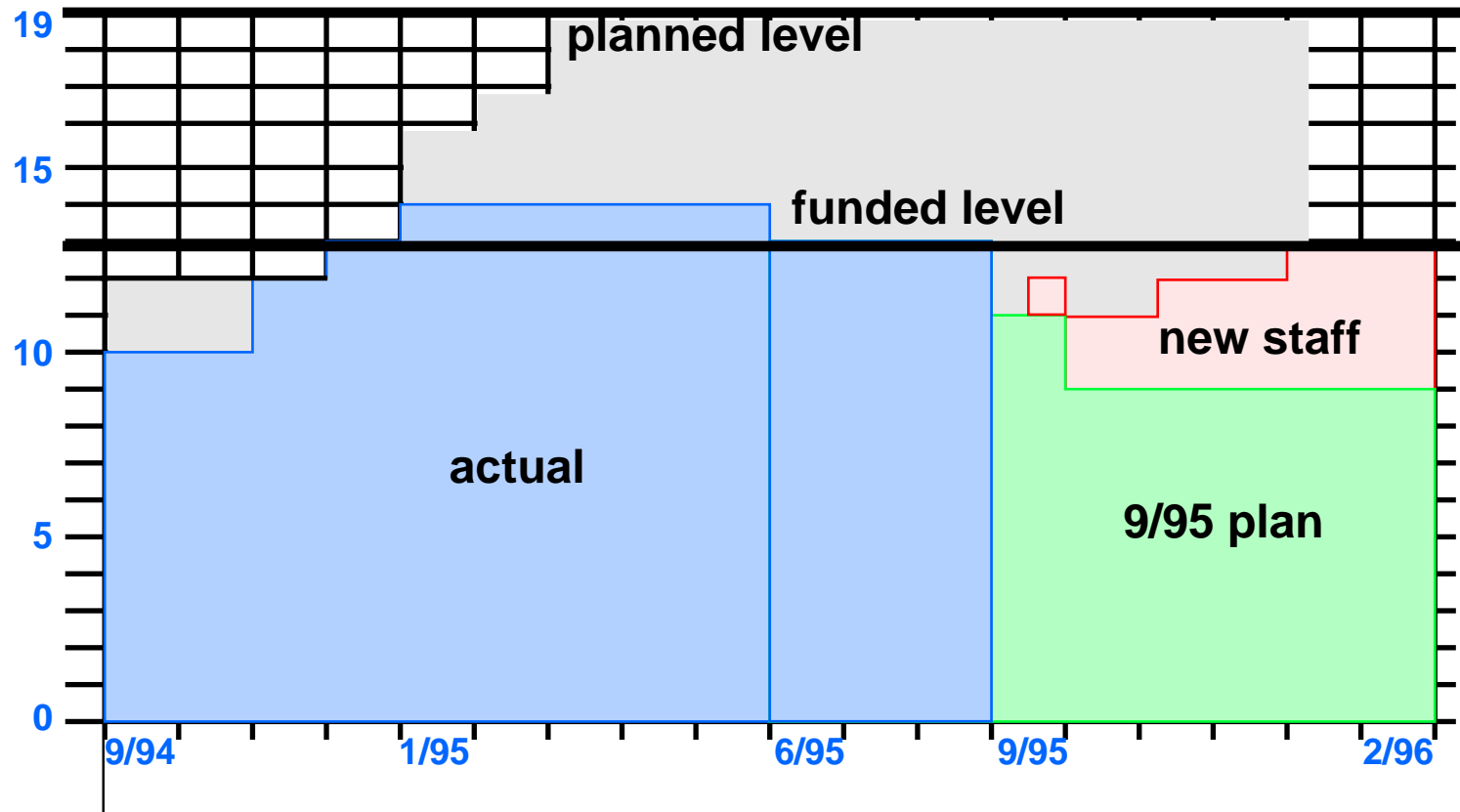


## Effort

<b>effort in person-months</b>	<b>Sept. '94 - Aug. '95</b>
<b>Planned (Sept. '94)</b>	<b>198</b>
<b>Base available</b>	<b>154</b>
<b>Actual</b>	<b>172</b>
	<b>26</b>



# Staffing levels





## Staffing

- **Recruitment:**
  - **Toby Speight (new graduate): 18 September**
  - **Andre Kramer (ECRC): 1 October**
  - **Zhixue Wu (University of Newcastle upon Tyne): 1 November**
  - **Billy Gibson (Solomon Brothers, Tokyo): 1 November**
  - **Simon Waterhouse (Eurocontrol, SWIFT): 1 January**
  
- **Losses:**
  - **Nigel Edwards back to HP: 15 August**
  - **Mike Beasley back to ICL: 31 August (??)**
  - **Andrew Watson to OMG: 8 September**
  - **Guangxing Li to BNR: 30 September (but seconded for one month)**





## Highlights (Sep. '94 - Aug. '95)

### TWO major deliverables approved

- |   |            |                |                            |
|---|------------|----------------|----------------------------|
| 1 | Multimedia | DIMMA          | Architecture defined       |
| 2 | Evaluation | CORBA products | DAIS, Orbix, Orbeline, ILU |

### In progress

Evaluation                      DSOM, COM, CORBA, Dylan.

### FOUR major deliverables to approve

- |   |                 |                                    |                       |
|---|-----------------|------------------------------------|-----------------------|
| 1 | Object wrapping | ANSAweb                            | Code & Doc on the Web |
| 2 | Agents          | Changeling                         | Code & Doc            |
| 3 | Federation      | Dynamic Gateways                   | Code & Doc            |
| 4 | Federation      | AST type checker<br>and inferencer | Code & Doc            |

### Technology Transfer

13 full weeks of "company consultancy days"  
20 full weeks of "common to all" technology transfer  
TINA (funded by TINA)

### FOUR major deliverables to checkpoint

- |   |            |                            |
|---|------------|----------------------------|
| 1 | ANSAweb -2 | CORBA protocols on the Web |
| 2 | DIMMA      | API                        |
| 3 | DIMMA      | Nucleus                    |
| 4 | DIMMA      | Stubcompiler               |

### Standards

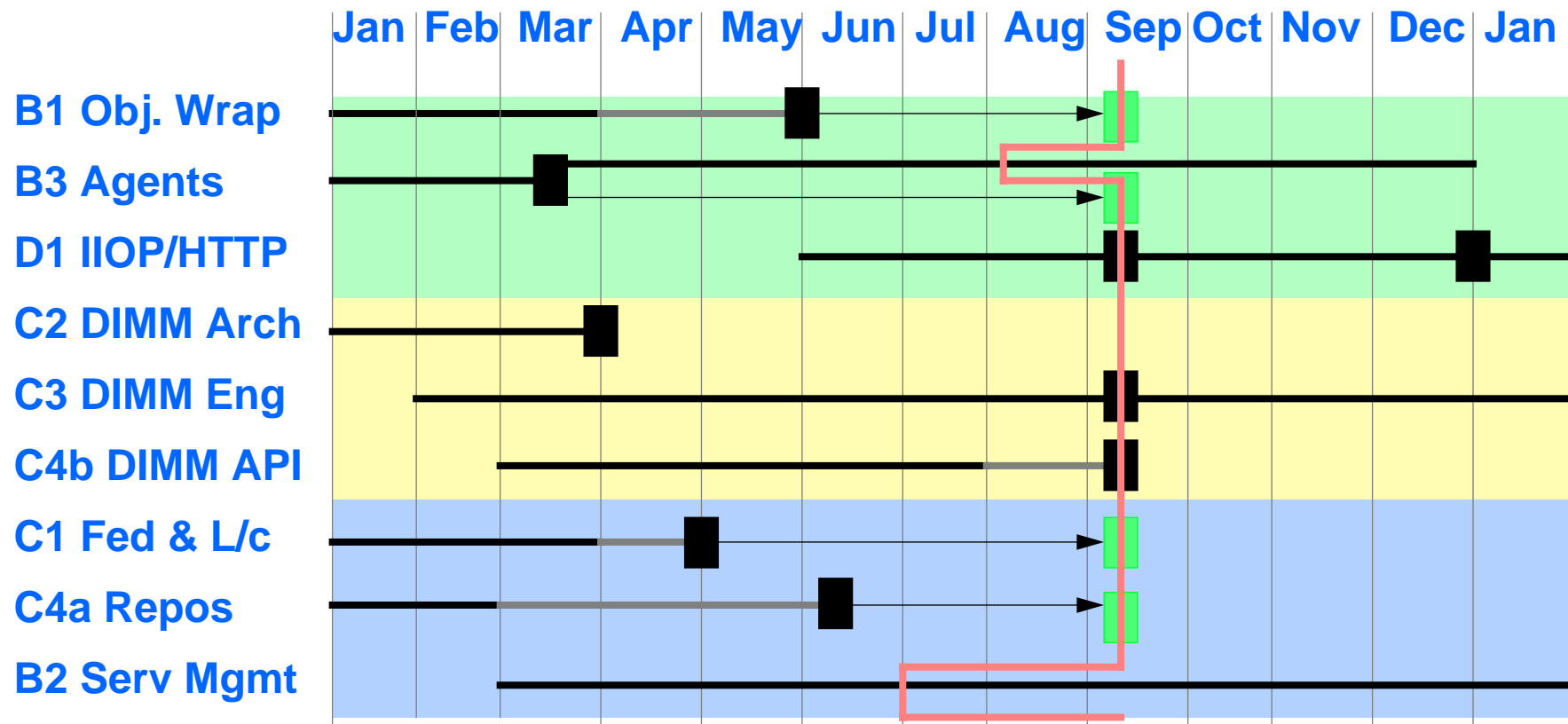
CORBA/2 task force  
OMG interoperability proposal accepted    20 weeks  
hosted OMG meeting with ICL

ODP RM completed    9 weeks

W3C and IETF: joined and contributed    8 weeks



## Overview of progress to date (1995)





## Technology Transfer

- **consultancy days (January - August 1995)**

Company	days	Company	days
Bellcore	5	GEC	7
BNR	2.5	GPT	10
BT	7.5	HP	9
CNET	0	ICL	10
DRA	7.3	Telefonica	2.5
Eurocontrol	3		
Fujitsu	plan 10		

- **“common to all” technology transfer: 75 days**



## Standards

- **OMG**
  - **CORBA-2**
- **ODP**
  - **RM finalised, awaiting ITU approval in Autumn plenary**
  - **no further effort, except occasional help on Trader standards**
- **APM joined and contributed to W3C**
- **Internet Engineering Task Force (IETF) involvement**
  - **ANSA's URN critique published in IETF**
  - **Mark Madsen asked to chair the URC/URA committee**



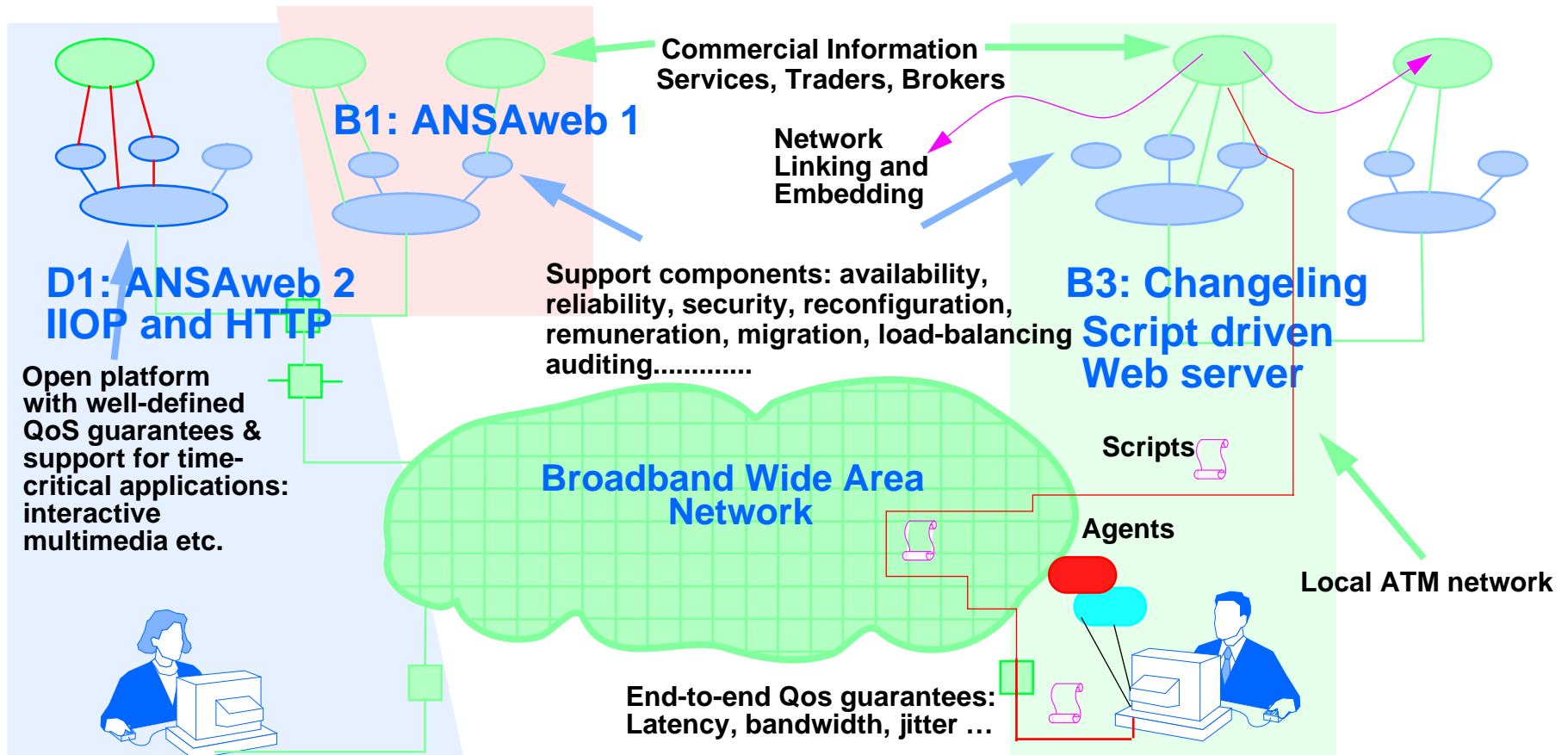
## Evaluation

- **CORBA products**
  - second iteration completed (APM.1194)
  - included: ICL DAIS, IONA Orbix 1.2 and 1.3, Postmodern Computing Orbeline, Xerox ILU
  - comparison parameters being refined to include performance, robustness, object services, comms protocols, configuration management, tools, security, multimedia support.
- **Object models (in progress)**
  - first iteration draft available (APM.1530)
  - includes DSOM, COM, CORBA, Dylan (Apple)
  - further models to be included: DOE, NeXT, OpenDoc, ANSA



# Technical progress and deliverable / checkpoint session

# Information Services Framework (ISF)





## B1: Object Wrapping

- **ANSAweb 1: CORBA stub compiler for WWW**
  - applies distributed object systems technology to the Web
  - reduces programming effort: 10 hours for SimpleBank (500 lines of C)
  - generates program header files, stubs, and an HTML form template from CORBA IDL
  - protect investment: CORBA objects accessible from the Web & vice versa
- **Completed**
  - overview documents (APM.1464, 1465)
  - programmer manual (APM.1465)
  - released interim version to Internet community 9 June 1995 ([ftp.ansa.co.uk/phase3-prototypes/www-stub950609.tar.gz](ftp://ansa.co.uk/phase3-prototypes/www-stub950609.tar.gz))
  - presented to July MC
  - comments received from CNET, Xerox





## B3: Scripting and Agents

- **Changeling: Script based Web server**
  - up/down-load a script to/from a Web server for (safe) execution
  - mobile objects (agents) complement the RPC model
  - supports in service upgrade
- **Completed**
  - “The Changeling Web Server” overview document (APM.1453)
  - “Agents for knowledge resource mapping in WWW” (APM.1473)
  - Changeling was announced 6 April 1995 & presented to May TC
  - snapshot code ([ftp.ansa.co.uk/phase3-prototypes/changeling.tar.gz](ftp://ftp.ansa.co.uk/phase3-prototypes/changeling.tar.gz))
- **In progress**
  - experiments with Java and HotJava
  - adding IIOP to HotJava

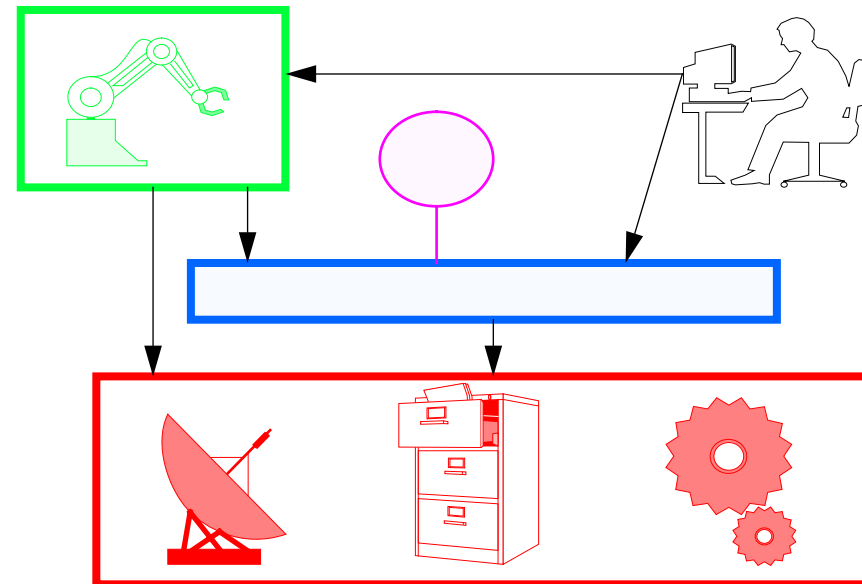


## D1: ANSAweb 2 (alpha release)

- **CORBA style computing for Web style information systems**
  - introduce access and location transparency to the Web
  - enable interworking between web based applications and the “legacy”
  - improve / replace Web protocols by CORBA GIOP (IIOP)
- **Completed**
  - “Requirements for re-engineering the Web” (APM.1505) 7 July 1995
  - “Design for re-engineering the Web” (APM.1510) 7 July 1995
  - “A Web of Distributed Objects” (APM.1526) accepted for December web conference (25% acceptance)
- **In progress**
  - code rationalisation ([ftp://ansa.co.uk/phase3-prototypes/ansa\\_web/](ftp://ansa.co.uk/phase3-prototypes/ansa_web/))
  - Beta code release to coincide with the Web conference (12/95)
  - browser IIOP support, threads, improved error handling

## Distributed Interactive Multimedia Architecture (DIMMA)

- **Three components:**
  - **Stub compiler toolset (C4a)**
  - **API (C4b)**
  - **Nucleus (C3)**



- **Abstractions for real time and streams to be added**
- **Lightweight modular components as an intermediate deliverable**
- **In the future covered by a single workpackage**



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## C4a DIMMA AST tool set

- **Abstract Syntax Tree**
  - design and type checker (APM.1551) - was APM 1180 (27 June 1995)
  - type inferencer (APM.1552) - was APM.1347 (27 June 1995)
  - A central component of tool chains for distributed computing
- **DIMMA stubcompiler**
  - design document (APM.1554)
  - allows stub generation independent of IDL, RPC, message protocol stack
- **Completed**
  - AST design, type checker and inferencer completed June 1995
  - Code (phase3-prototypes/typecheck.tar.gz & typeinfer.tar.gz)
  - snapshot DIMMA stubcompiler (phase3-prototypes/dimma\_stubg.tar.gz)
- **Next**
  - Stub compiler extensions for streams, QoS & CORBA IDL (see new plan)



## C4b: DIMMA API

- **ODP conforming C++ Computational and Engineering API**
  - the ODP operational interface semantics
  - stage 2 runs over ANSAware 4.1 and the DIMMA nucleus (C3)
  - access to modular nucleus essential for telecomms applications
- **Completed**
  - current DIMMA API is an intermediate deliverable
  - design overview (APM.1555)
  - Snapshot code (phase3-prototypes/odp\_api-0.1.tar.gz)
  - consistent with AST toolset (C4a) and nucleus (C3)
- **Next**
  - extensions to allow programmer access to streams and explicit binding functions



## C3 DIMMA Engineering

- **Basic ORB framework**
  - nucleus functions ready for real time, explicit binding and streams
  - modular approach allows tailoring ORBs to different (non-) functional requirements
- **Completed**
  - design and initial implementation document (APM.1553)
  - snapshot code (phase3-prototypes/nucleus-1.0.tar.gz)
- **In progress/next**
  - IIOP to allow interworking with commercial ORBs and ANSAweb
  - extensions for streams and QoS management



## C1: Federation and Life cycle

- **Federation AR: the generic model**
- **Interception: the proof of concept**
  - dynamic gateway creation from template (upon reference passing)
  - provides the basis for gateway automation, reuse and management
  - use this as an extension to OMG GIOP (which concentrates on RPC only)
- **Completed**
  - Architecture Report: “Federation and Inter-operability” (APM.1514)
  - “Interoperability and distributed platform design” (APM.1507)
  - “Gateway design and implementation” (APM.1303)
  - Trader - MatchMaker gateway completed (ANSAware - ORBIX) and other prototype code (phase3-prototypes/gateways.tar.gz)
  - reviewed (comments from BNR, BT, GPT)



## Conclusion

- On target w.r.t. progress reports to MC/TC
- Overspending
- High utilisation rate
- Federation deliverables completed
- Tool base (AST) delivered
- Check-points for ISF and DIMMA to cut over to the new plans