

# Euro-VO

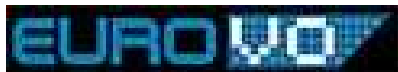


F. Genova, Interoperability meeting, 27 Oct. 2008



# European astronomy

- A rich landscape including the two European Agencies, ESA and ESO, and national programmes
- Several of the founding parents of the astronomical VO
- *Challenge*: coordinate/federate VO projects
  - Different systems
  - Different projects



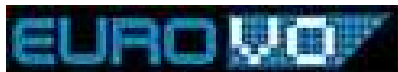
# The Euro-VO (1)

- Europe could be a source of money
- A complex funding system which evolves continuously
  - Organized into Framework Programmes
  - Calls and « instruments »
- Seize opportunities but first identify them



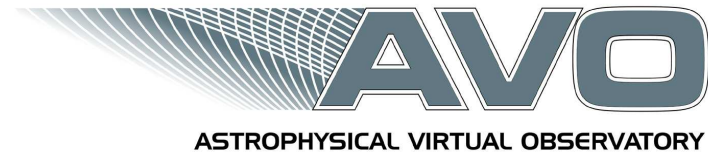
## The Euro-VO (2)

- A series of projects which progressively built the landscape
- Structured in phases in three successive Framework Programmes
  - Phase A: AVO, OPTICON Interoperability WG
  - Development: VO-TECH, EuroVO-DCA
  - Transition to operations: EuroVO-AIDA



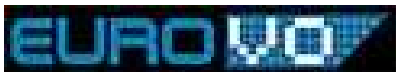
# The Euro-VO Phase A project: AVO

- Phase A: Astrophysical Virtual Observatory, 2001-2004 (Coord. ESO)
  - Science Reference Mission (ESA-ECF)
  - Interoperability (CDS)
  - Technology (AstroGrid)



*A series of successful demos*

*Proof of concept*



2MASS  
ESO-WFI  
Chandra  
VLT-ISAAC  
HST-ACS  
DSS  
My Data

Data Tree

- GOODS-WFI
  - DEEP2C-FV-PREVIEW 38.1 'x37.3' 2000-10-2
  - DEEP2C-FV 8.2 'x8.2' 2000-10-26
- GOODS-ACIS
  - ACISMCDPSN000 1.2 'x1.2' 1999-10-14
- GOODS-ISAAC
  - GOODS-10 2.5 'x2.5' 08/04/2002
  - GOODS-11 2.5 'x2.5' 08/04/2002
  - GOODS-14 2.5 'x2.5' 08/04/2002
  - GOODS-15 2.5 'x2.5' 08/04/2002
  - GOODS-20 2.5 'x2.5' 08/04/2002
  - GOODS-16 2.5 'x2.5' 08/04/2002
  - GOODS-21 2.5 'x2.5' 08/04/2002
  - GOODS-9 2.5 'x2.5' 08/04/2002
- GOODS-HST-ACS
  - F775W
    - epoch1
    - epoch2
    - epoch3
    - epoch4
    - epoch5
  - version1.0
    - CDP-SOUTH-SECT32-VERSIO
    - CDP-SOUTH-SECT25-VERSIO
    - CDP-SOUTH-SECT23-VERSIO
    - CDP-SOUTH-SECT21-VERSIO
    - CDP-SOUTH-SECT44-VERSIO
    - CDP-SOUTH-SECT14-VERSIO
    - CDP-SOUTH-SECT42-VERSIO
    - CDP-SOUTH-SECT12-VERSIO
    - CDP-SOUTH-SECT35-VERSIO
    - CDP-SOUTH-SECT33-VERSIO
    - CDP-SOUTH-SECT31-VERSIO
    - CDP-SOUTH-SECT24-VERSIO
    - CDP-SOUTH-SECT22-VERSIO
    - CDP-SOUTH-SECT45-VERSIO
    - CDP-SOUTH-SECT43-VERSIO
    - CDP-SOUTH-SECT13-VERSIO
    - CDP-SOUTH-SECT11-VERSIO
    - CDP-SOUTH-SECT34-VERSIO

Data available at selected point are highlighted in tree

Info Frame

CDF-SOUTH-SECT23-VERSION1.0

Observation_Name	CDF-SOUTH-SECT23-VERSION1.0
ObservingProgram_Name	GOODS-HST-ACS
FilterName	F775W
Size_alpha	4.1'
Size_delta	4.1'
Angular Pixel Size	0.029"
Origin	STSCI
OriginalCoding	FITS
CentralPoint_RA	03:32:38.72
CentralPoint_DEC	-27:48:18.3
DateAndTime	2002-08-01
Position Angle	0.0°

Cutout Target: 03 32 33.50 -27 47 36. Grab

Stick FoV in stack LOAD Close

Image metadata

A.V.O demonstration prototype v1.0

Field: 03:32:25.77 -27:48:07.4 38.08'x37.2'

Field of view outlines are plotted automatically

Field of view outlines are plotted automatically



From CDS CS Meeting, Nov. 2001

## Interoperability WG

IVOA predecessor

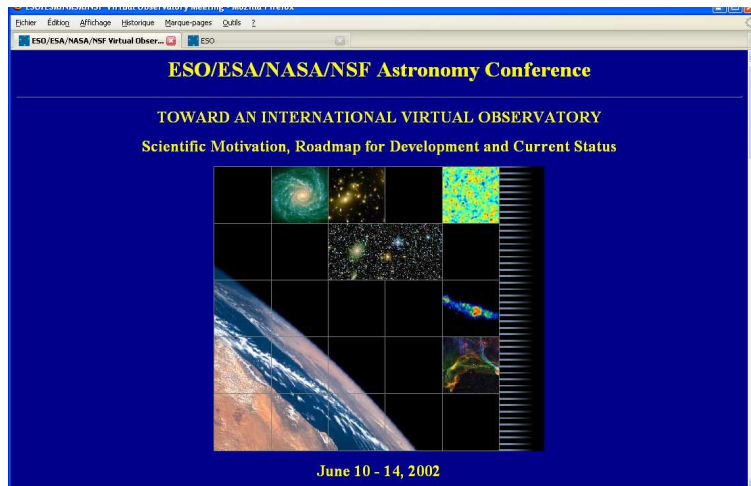
### Membership: Data managers

- Study *cost effective tools and standards* for improving access and data exchange to/from data archives and information services (minimal workload)
- Discuss the technical results of the AVO interoperability prototyping
- optical/IR (EC OPTICON), radio (EC RadioNet)
- International partnership beyond EU  
USA (NVO key actors), Canada, Australia

## In 2002



- January  
First Interoperability meeting - **VOTable**
- June
  - Conference *Toward an International Virtual Observatory* (ESO/ESA/NASA/NSF)
  - Creation of IVOA, the Alliance of funded VO projects



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Round the clock:

<http://www.ivoa.net>

Europe (incl.  
ESA, ESO  
+ 6 partners)

China

India

Canada

Spain

Italy

Armenia

France

Germany

Hungary

Japan

Korea

USA

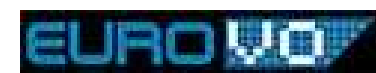
Russia

UK (AstroGrid)

Australia

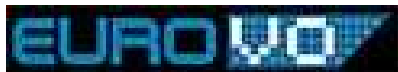


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## Next step: Framework Programme 6

- EC suggested to cut the programme into several pieces to candidate to different funding opportunities
- Several proposals failed
- *Infrastructure*: VO-TECH Design Study
- *e-Infrastructure*: Euro-VO Data Centre Alliance, Coordination Action



# The European FP6 vision

## Data Centre Alliance

Populates the VO  
with data and services

**FP6 Coordination Action** to  
help data providers and  
gather feedback

## Technology Centre

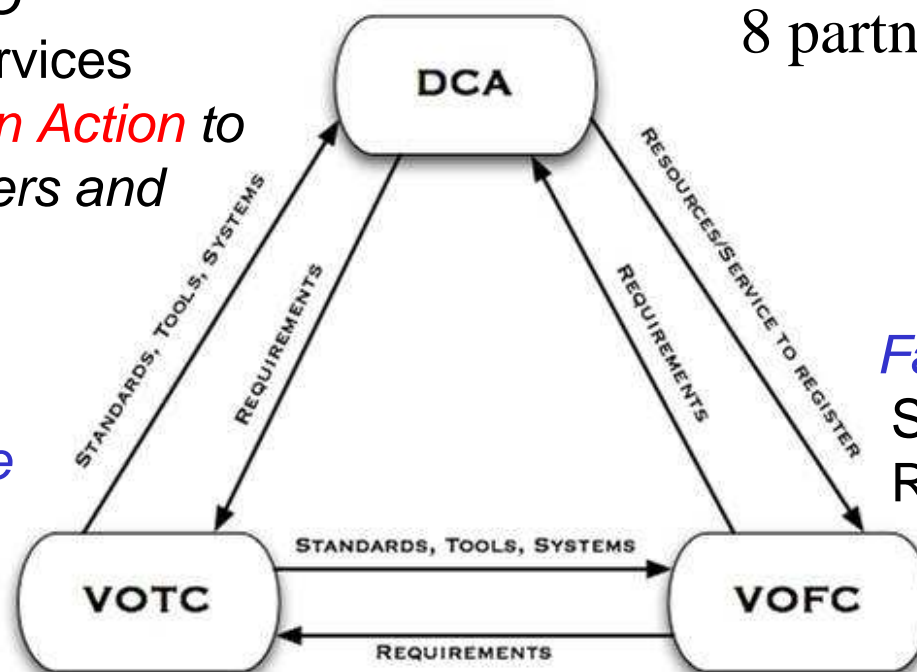
Distributed

- **FP6 VO-TECH**  
Infrastructure  
Design Study
- ESA-VO (et al.)

**EURO VO**

Euro-VO

Best effort alliance  
8 partners



## Facility Centre

Support to users  
Registry

**EURO VO**

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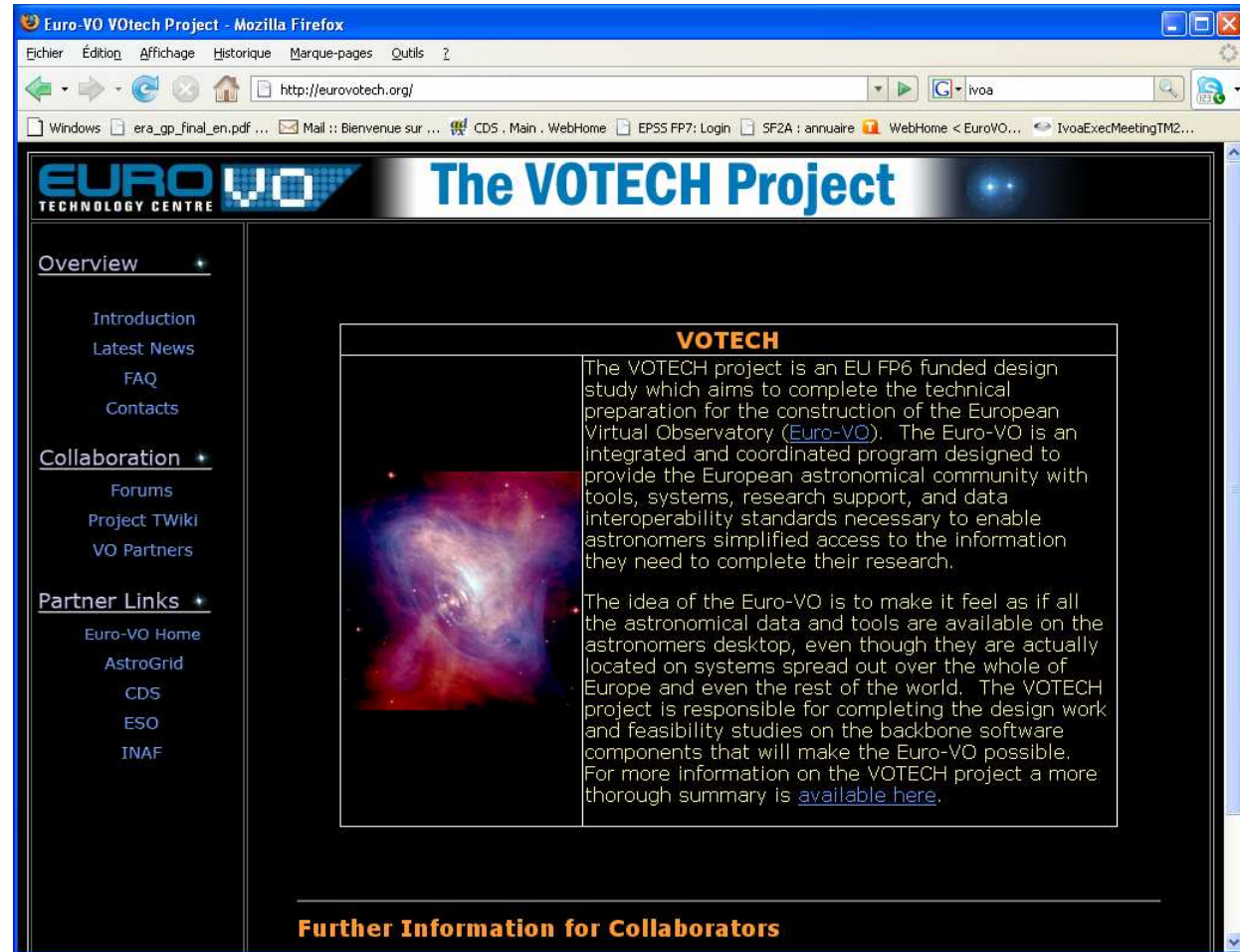
**EURO VO**



- VO-TECH Design Study
- ESA-VO



- Architecture
- Tools
- Intelligent resource discovery
- Data mining and visualisation



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Coordination  
Action



Support to  
data  
providers



WebHome < EuroVODCA < TWiki

EuroVODCA

Log In or Register

EuroVODCA Web

- Create New Topic
- Index
- Search
- Changes
- Notifications
- Statistics
- Preferences
- Help

Webs

- EuroVODCA
- Main
- Sandbox
- TWiki

Links

- Euro-VO
- IVOA
- VOtech
- Communication Network Development in FP6

EuroVODCA Web > WebHome

28 - 19 Feb 2006 - 13:55:14 - FrancoiseGenova

## Welcome to the Euro-VO Data Centre Alliance TWiki

This is the web-based collaboration area of the [Euro-VO Data Centre Alliance](#) project. This project is supported by EU in the framework of the FP6 infrastructure [Communication Network Development](#) initiative (project RI031675). It started on 1 September 2006, for a duration of 28 months.

### Highlights

- [Euro-VO Theory and Grid Workshops: April 7-11, Garching, Germany](#)
- [EuroVO-DCA realizes a census of European astronomical data centres](#). Please submit your questionnaires by January 25, 2008.

**!!! The census questionnaire is still available. Do not forget to send a message to the email indicated in the instructions if you submit forms. !!!**

### General information

- [Project overview](#)
- [Project Partners](#)
- [Who is Who](#)
- [Schedule](#)
- [Organisation](#)
- [Data Centres in the VO](#)
- [IVOA Standards](#)
- [IVOA Working Groups](#)

### EuroVO-DCA Bodies

- [Board](#)
- [Project Coordination Team](#)
- [Internal Science Team](#)
- [Theoretical astronomy Expert Group](#)

### Work Packages

- [WP1: Management](#)
- [WP2: Strategy](#)
- [WP3: Support to VO take-up and implementation](#)
- [WP4: Theory](#)
- [WP5: Coordination with GRID](#)
- [WP6: Support to data centres from other European countries](#)

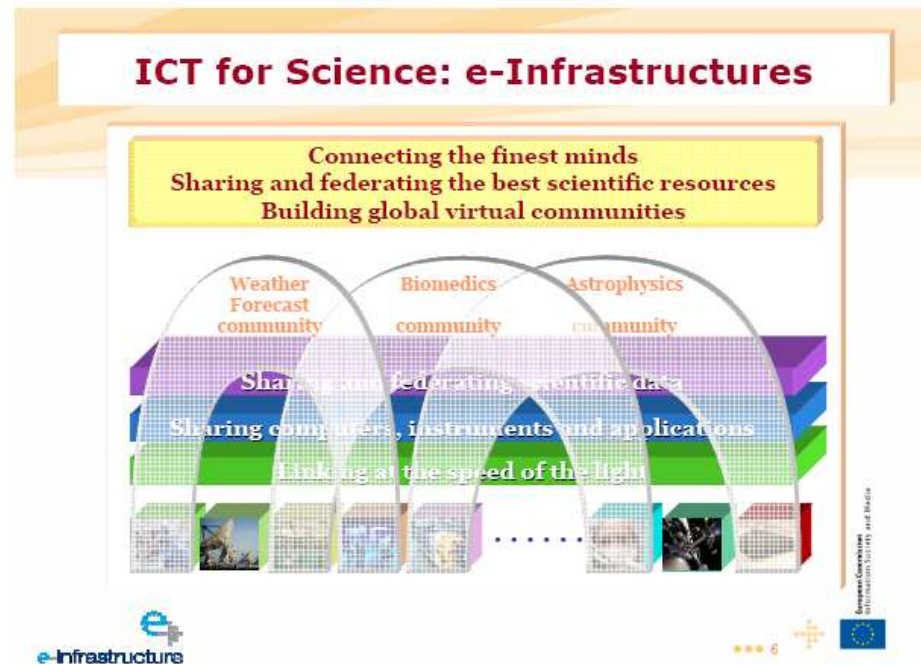
EuroVODCA Web Utilities



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# The European view in FP7



*Euro-VO AIDA*  
Astronomical  
Architecture for Data  
Access

I3, eInfrastructure,  
Scientific Digital  
Repositories

Networking, Service and  
R&D

8 partners, 2.7 M€,  
30 months from  
February 2008



# Consortium members

- CNRS, France (CDS, France VO)
- European Space Agency
- European Southern Observatory
- INAF, Italie (Trieste, VObs.it)
- INTA, Spain (SVO)
- U. Groningen (NOVA)
- The University of Edinburgh (AstroGrid)
- U. Heidelberg (ARI, GAVO)



# EuroVO-AIDA objectives

EuroVO-AIDA will ensure the transition of the European astronomical Virtual Observatory to operations

- Large scale deployment by data centres
- Construction of a community of science users
- JRAs: definition/evolution of interoperability standards, relevance of new technologies

and Liaison with other communities

Outreach towards higher education and public



# EuroVO-AIDA Activities

- Management (WP1)
- Networking (WP2)
  - Strategy, co-operation and dissemination
- Service (WP3, WP4, WP5)
  - Support to data centres, users, outreach
- Joint Research Activities (WP6, WP7, WP8) (cf VO-TECH)
  - Interoperability standards, DAL/DM, Emerging technologies (Web2.0, semantics, data mining)

# Euro-VO Results

- A very significant increase in collaboration
  - Technical collaboration, e.g. on the definition of standards
  - Different kinds of meetings which have shaped the collaborations and relations with data centres and users
- Attention given to other European countries to help them shape their own politics

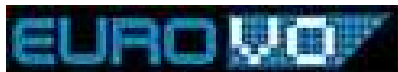
# 2008 highlights (1)

- *User support*
  - Euro-VO Science Initiative: AO for science programs (15 June)
  - Science feedback Workshop: Multiwavelength Astronomy (December, ESAC)
- *Data Centre Alliance*
  - Census of European Astronomy Data Centres – more than 70 answers
  - EuroVO-DCA Workshop for data centre providers (June, ESO)
- *Building the framework*
  - Technology Forums/VO-TECH (March, Sept/Oct)



## 2008 highlights (2)

- *New topics*
  - Theory and Grid Workshop (April, Garching)
- *New countries*
  - VO Info Day, Belgrade, January
  - VO Info Day, Lisbon, October
- International commitment to IVOA



# Challenges

- Articulation/balance between national/Agency level and European level
- **Sustainability of the European layer**
  - Strongly dependent on European funding opportunities
  - Continuing European/international coordination is mandatory
- The VO is part of the Astronet Roadmap