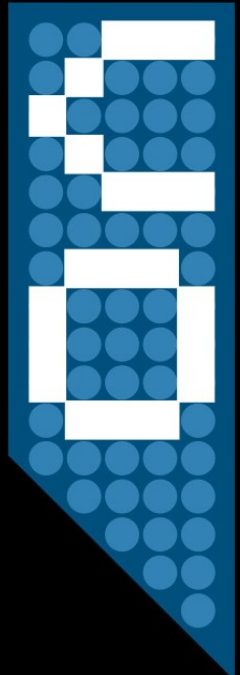


# VOTC Science Service Update 4-11/2008

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11 December 2008



# Key VOTC Development Activities

- Apr 2008 – Sep 2008: Stage 7
  - <http://wiki.eurovotech.org/twiki/bin/view/VOtech/StageSeven>
  - Planning meeting 17-20 March 2008
- Oct 2008 – Dec 2008: Stage 8
  - <http://wiki.eurovotech.org/twiki/bin/view/VOtech/StageEight>
  - Planning meeting 29 Sep – 2 Oct 2008
- VOTECH extension to Jun 2009 now approved
  - Final project meeting – Spring 2009
- Key final document: Euro-VO reference architecture

# Stage 8 VOTECH Developments

- DS3

- Single Sign On, VoSpace, Astroruntime, Apps (UWS), Apps (CEA), Registry, Table Access (DSA, TAP), STILTS/multicone, Workflow, VOEvent, Study Report

- DS4

- Automating SED building, Theory VO interfaces, Fitting tools, Registry browsing (Voexplorer), Aladin adds (3-D cubes, IDL link, footprints), Taverna, Plastic/ SAMP, x-match

- DS5

- Ontologies, MEx (keyword mapping), SED construction, VOEvent, Semantics, UCD registry queries

- DS6

- VisIVO, AstroNeural, AstroWeka, client/ server side optimisation, KDE science case (QSOs), PaperScope



# Euro-VO AIDA: VOTC activities

- VOTC concentrated in the JRA work packages
  - JRA1: Evolution of VObs interoperability standards
  - JRA2: Data Access Protocols and Data Models
  - JRA3: Assessment of Emerging Technologies
- AIDA Technology forum, held jointly with VOTECH (Sep 2008)
  - New work plan formulated
  - AIDA work builds on VOTECH
  - Focus on use and extension of the standards (JRA1) and implementations (JRA2)



# VOTC Activities in AIDA: Q1/2 2009

- VOSpace (standard, prototypes and production services, iRODS integration)
- SAMP (standard, implementation and tests)
- Registry (standard, integration of Vizier)
- Semantics
- REST profile
- VOTable 1.2
- UWS/CEA standards and applications
- Characterization and observation data models
- Footprint Services



# VOTC in AIDA: Data Access

- WP7\_T1\_AsynchDAL (AstroGrid)
- WP7\_T2\_SEDLibrary (ESO)
- WP7\_T3\_FootprintDAL (CNRS)
- WP7\_T4\_GenericDS (CNRS + ESA)
- WP7\_T5\_AssocSAP (ESA + CNRS)
- WP7\_T6\_PhotometryDM (ESA)
- WP7\_T7\_RadioCubes (AstroGrid)
- WP7\_T8\_ADQLLibrary (ESA)
- WP7\_T9\_SourceCat (ESA)
- WP7\_T10\_ObsProvDM (CNRS)
- WP7\_T11\_Units (AstroGrid)



# VOTC in the Community

- VOTC standard components continue to be deployed more widely ...
  - Aladin with global impact (e.g. HST planning s/w)
  - DSA in UK, France, Netherlands, Canada, Russia, China
  - Use in ALMA northern regional archive
  - Use in VISTA/VST surveys
- VOFC workshops explaining scientific promise & use to astronomers
  - Recent Workshop (1-3 Dec 2008) at ESAC
- DCA active in showing use of VOTC components relevant to resourc providers

# Infrastructure: Service for Science

- Build on SAC recommendations
  - ensure access to key data + applications
  - ensure a usable system (e.g. documentation, reliability)
  - PRIORITISE THOSE IMPORTANT FOR SCIENCE
- Hide the technical complexity of the system from the scientist
- Allow simple and complex science creation
- Illustrate by examples ...
  - Backbone for the upcoming hands-on Euro-VO workshop at ESO: <http://www.euro-vo.org/aidahandson2009/>
- How are we doing? Feedback from workshops, SAC.



# EURO-VO Futures: VOTC and FP7

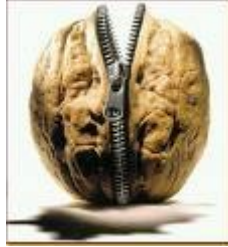
# Euro-VO: Strategic Priority

- Euro-VO strongly backed in Astronet Roadmap
  - Need for support of the infrastructure seen as vital
- Encourage and make use of the VO for science
  - it is there and ready!
  - Being increasingly deployed by groups to publish data and develop value added science pipelines (e.g. UK Science Calls examples, SVO work with VOSA, etc)
- Encourage and support use of the VO to publish data from new and existing missions
  - more data equals more use!

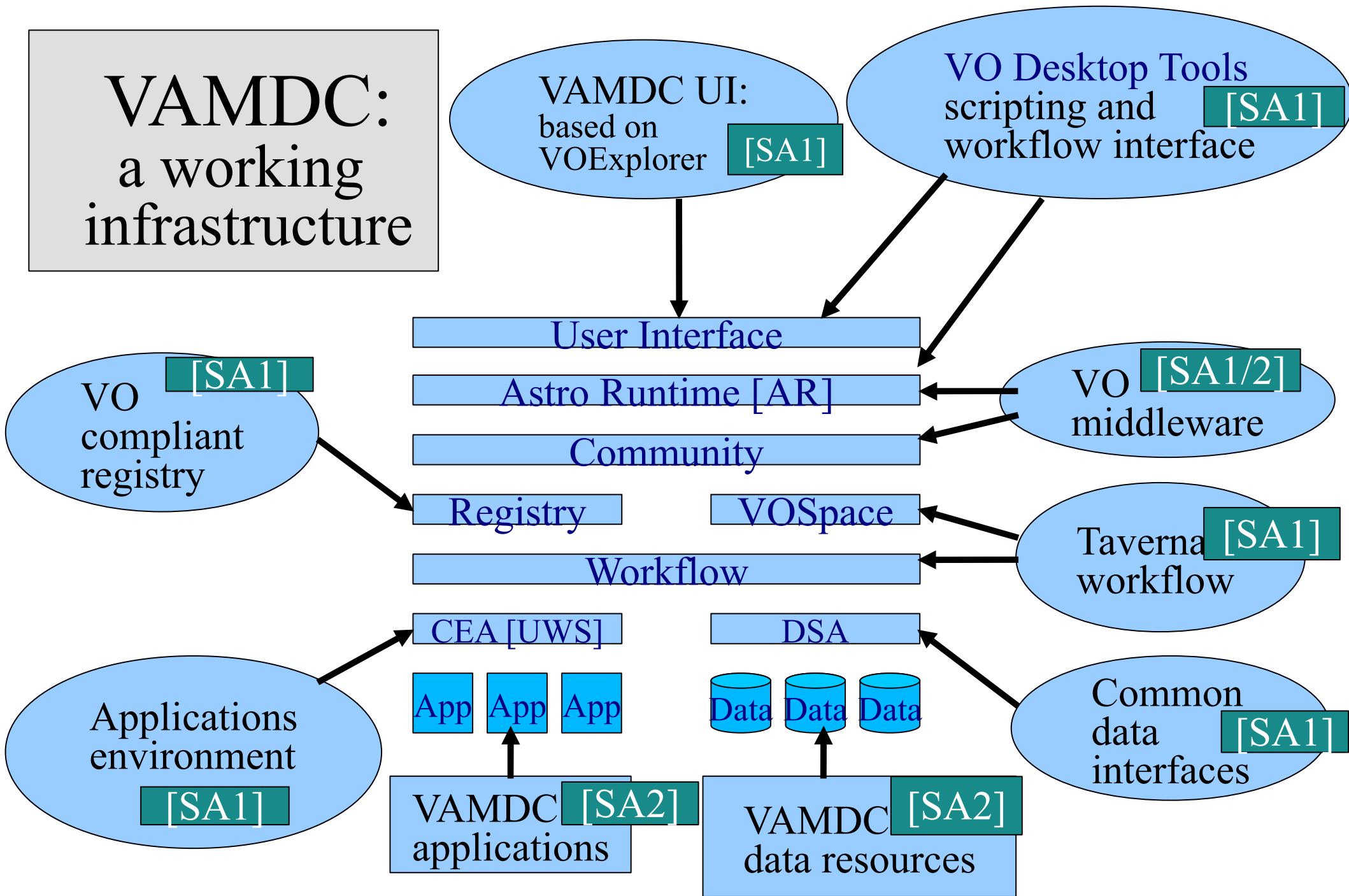


# FP7 proposals

- Key point: extension of Euro-VO for use by other domains to create a science data infrastructure
- PAVONE: extension to support astroparticles
  - focus on gravitational waves (e.g. advLIGO) and cosmic rays (Auger)
- VAMDC: integrate atomic and molecular data bases utilising VO technologies
  - e.g. VALD, HITRAN, xbase
  - VO partners (centred on VO-F and VO-UK) and a wide range of A+M expert groups

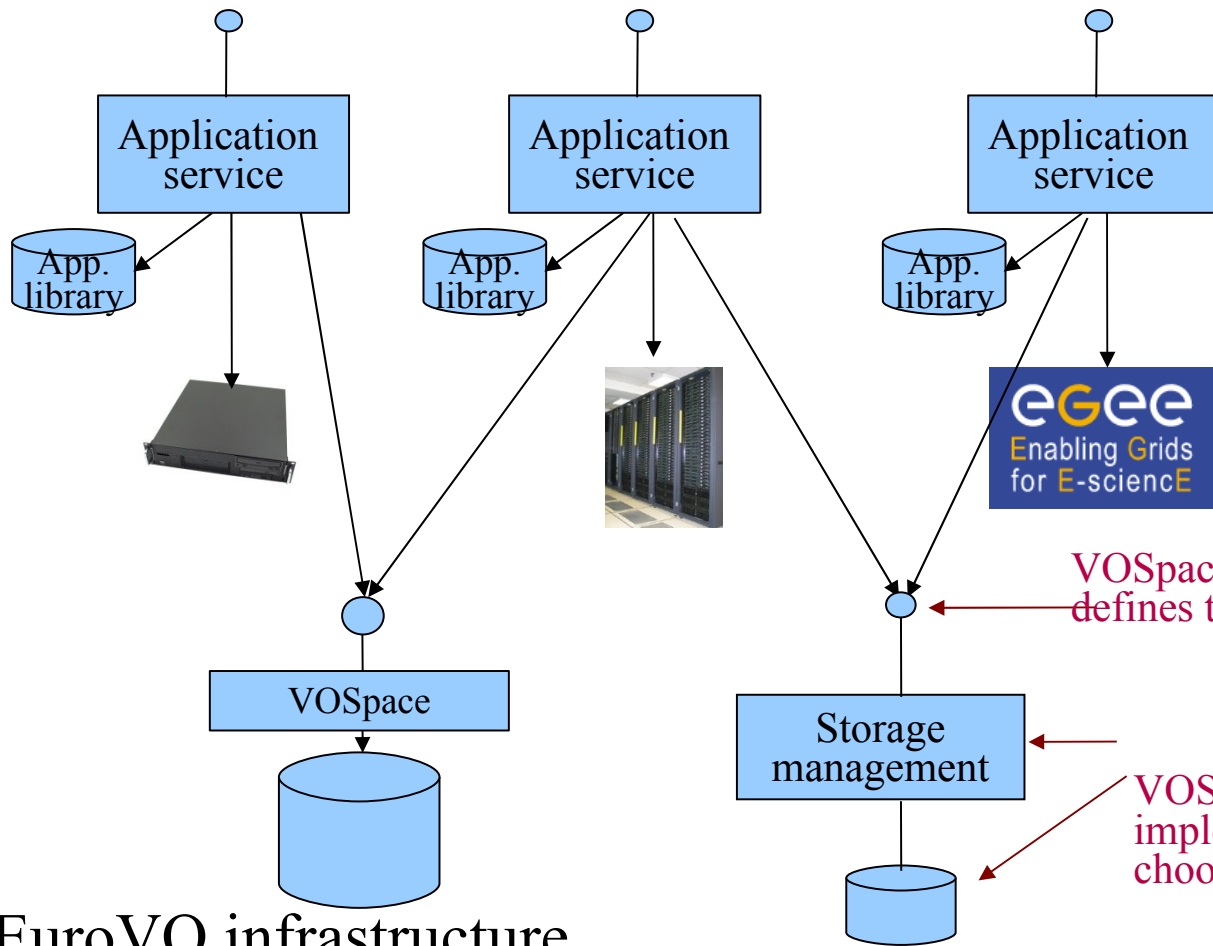


- Key Challenges: Atomic & Molecular data underpins a wide range of basic and applied research and industrial development
  - VAMDC will provide the extensible scientific data infrastructure enabling cost effective, European wide, access to the increasingly large, distributed and complex A+M resources
  - VAMDC will provide flexible interfaces to A+M resources supporting improved producer/consumer linkages
- Existing European wide grid (EGEE), network (GEANT) and application (Euro-VO) infrastructures form the effective baseline platform to create the VAMDC infrastructure
  - VAMDC will extend these infrastructures to support common access to A+M data thus placing this primary data at the heart of the scientific process



DSA: Data Set Access; UWS Uniform Worker Service

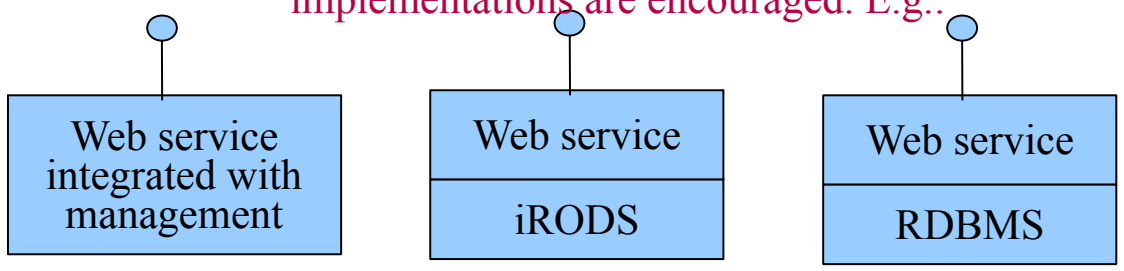




VOSpace standard defines this interface

VOSpace implementor chooses these

Therefore, multiple, compatible implementations are encouraged. E.g.:

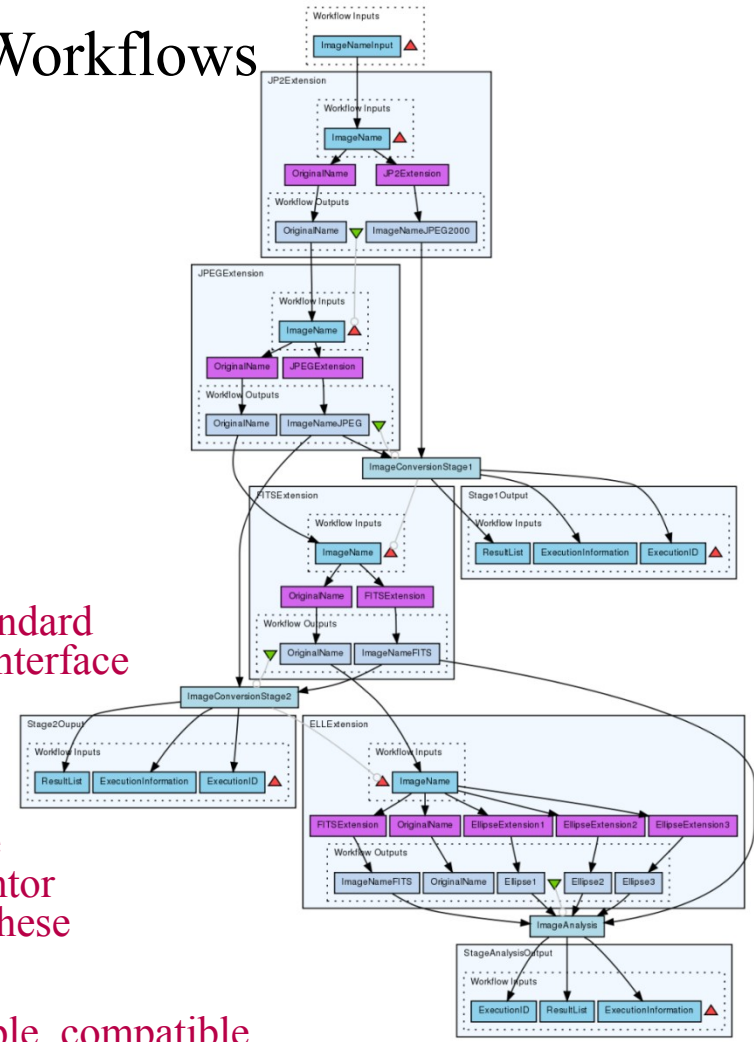


Euro-VO

SDSC, CDS, INAF

EuroVO

## Workflows



EuroVO infrastructure connects to VO compute and data grid

Data grid can connect to Grid storage (e.g. iRODS)

EuroVO user interface allows submission of jobs to Grid (e.g. EGEE)

Flexible infrastructure to connect to VAMDC resources

# VO in the UK

- AstroGrid completed development of a functional VO system: project closing July 2009
- Longer term support of that investment unclear ...
  - But strong support in the UK 'ad-hoc' panels report ...
- New proposal currently under consideration:  
VOTC:UK
  - Aim to maintain VO s/w system
  - Work with UK missions/ facilities to exploit use of VO
  - New proposal partners include representatives from > 30 UK missions
  - Aim to begin programme summer 2009.
- See <http://www.votcuk.org/wiki/CambridgeKickoff>

