Astronomy ESFRI & Research Infrastructures Cluster Update for AENEAS Kickoff

Marco de Vos – ASTRON, NL

ASTERICS Coordinator

Asterics *versus* AENEAS

- AENEAS brings together SKA partners and eInfra providers on a specific topic (SRCs)

- Asterics brings together ESFRI projects on a broad range of topic

  – But most of them
    related to data!

Why Cluster Projects?

- Implementation of cross-cutting solutions for clusters of ESFRI research infrastructures
  - Stimulate cohesion, increase efficiency
  - Platform to discuss policy topics like interoperability and commensal observations
  - Platform to study generic aspects where a joint approach can transcend individual efforts

Why ASTERICS?

- Many challenging astronomical ESFRI and other research facilities being developed and built currently!

- We believe there's much to gain in working together on a wide range of aspects:

    – Reaching out: collaborations, open science

    – Handling data: massive data flows, virtual observatory

    – Connecting: policy issues, timing and networks

ASTERICS facts & figures

- Astronomy ESFRI & Research Infrastructure Cluster

- Horizon 2020 Work Programme INFRADEV-4-2014/2015 Call – "Implementation and operation of cross-cutting services and solutions for clusters of ESFRI and other relevant research infrastructure initiatives"

- Focus of ASTERICS: SKA, CTA, KM3NeT, close links to E-ELT and EGO

- Funded at 15 M€ for 4 years

- 22 partners in 6 countries, representing a major collaboration in Astronomy/Astrophysics/Astroparticle Physics
  ASTRON, CNRS, INAF, UCAM, JIVE, INTA, UEDIN, UHEI, OU, FAU, VU, CEA, UVA, UGR, FOM, IEEC, IFAE, UCM, INFN, STFC, DESY, SURFnet

ASTERICS overview
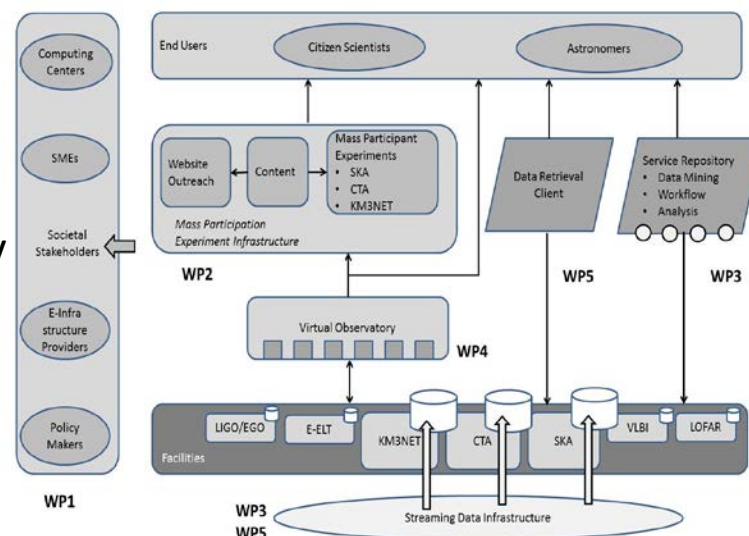
DECS - Dissemination, **E**ngagement and **C**itizen **S**cience

OBELICS - Observatory **E**-environments **Li**nked by common **C**hallenge**S**

DADI - Data **A**ccess, **D**iscovery and **I**nteroperability

CLEOPATRA - Connecting **L**ocations of **E**SFRI **O**bservatories and **P**artners in **A**stronomy for **T**iming and **R**eal-time **A**lerts

WP3 – OBELICS
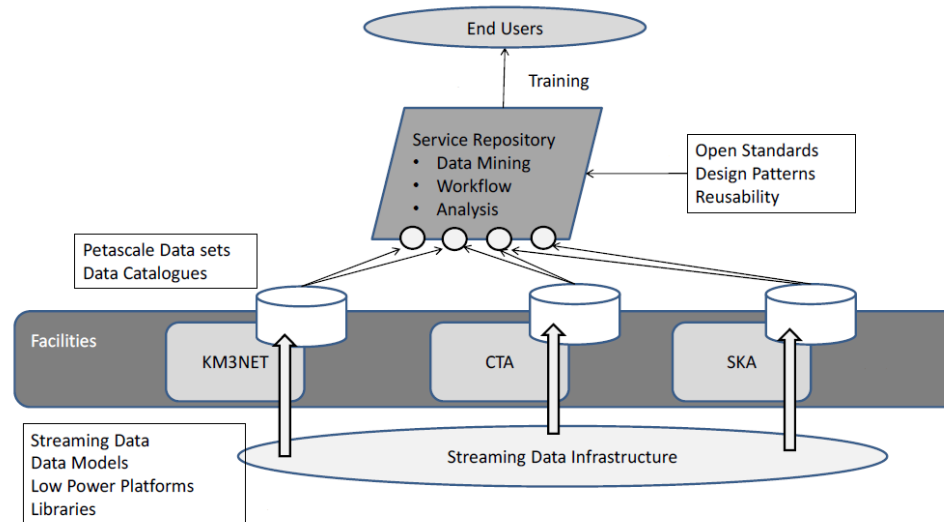
Co-development for the robust, scalable, flexible handling and exploitation of then huge data streams and distributed petascale database systems

- Data Generation: open formats, streaming processing, low power computing

- Data Systems Integration: hybrid architectures, open databases, …

- Data Analysis: selected topics (statistical analysis, imaging, workflow)
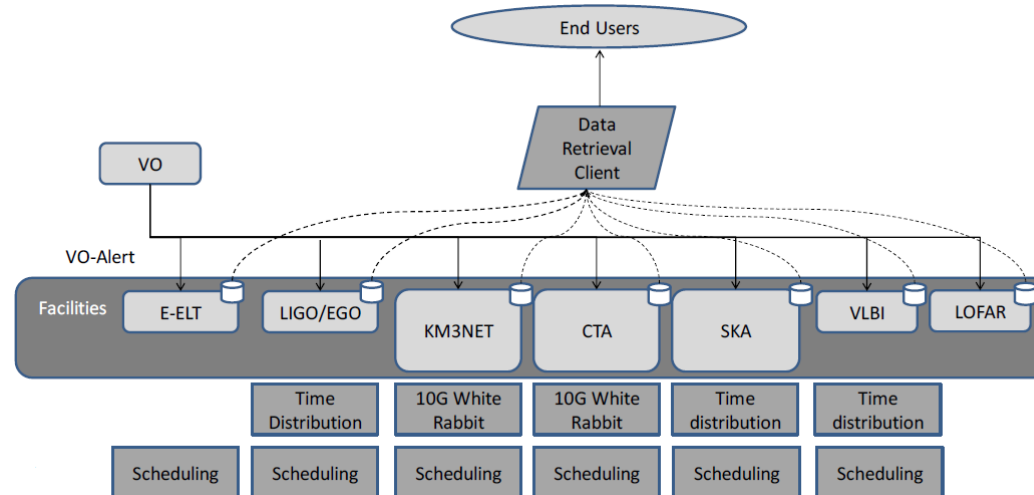
WP4 – DADI
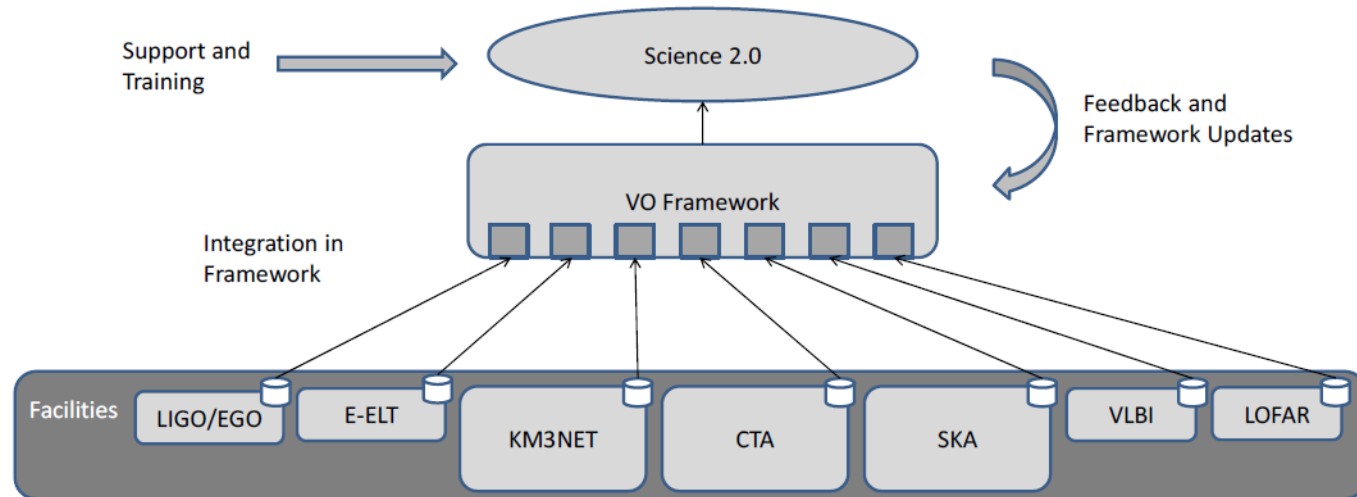
Virtual Observatory Evolution:

- Train & support
  - ESFRI staff
  - pathfinders
- Develop
  - Requirements
  - Feedback
  - Adapt

WP5 – CLEOPATRA

- Technology development for fibre connectors; relaying alerts; data streaming software; data dissemination; advanced scheduling algorithms
- Builds on WRE (White Rabbit Ethernet) and the EC EXPReS/NEXPRES projects

Synergies with AENEAS

- AENEAS can rely on the broad network of ASTERICS
  - No need to make separate multi-disciplinary links
  - Natural entrance in initiatives like European Science Cloud
- AENEAS can be efficient interface into SKA community
  - Avoids confusion e.g. in EC lobby
  - Allows especially WP3, WP5 to concentrate on generic research
- Strategic development e.g. towards SKA:
  - AENEAS community driven: (European) science interests, specific SKA oriented development
  - ASTERICS cluster driven: cohesion, overarching policy, generic topics, libraries and concepts