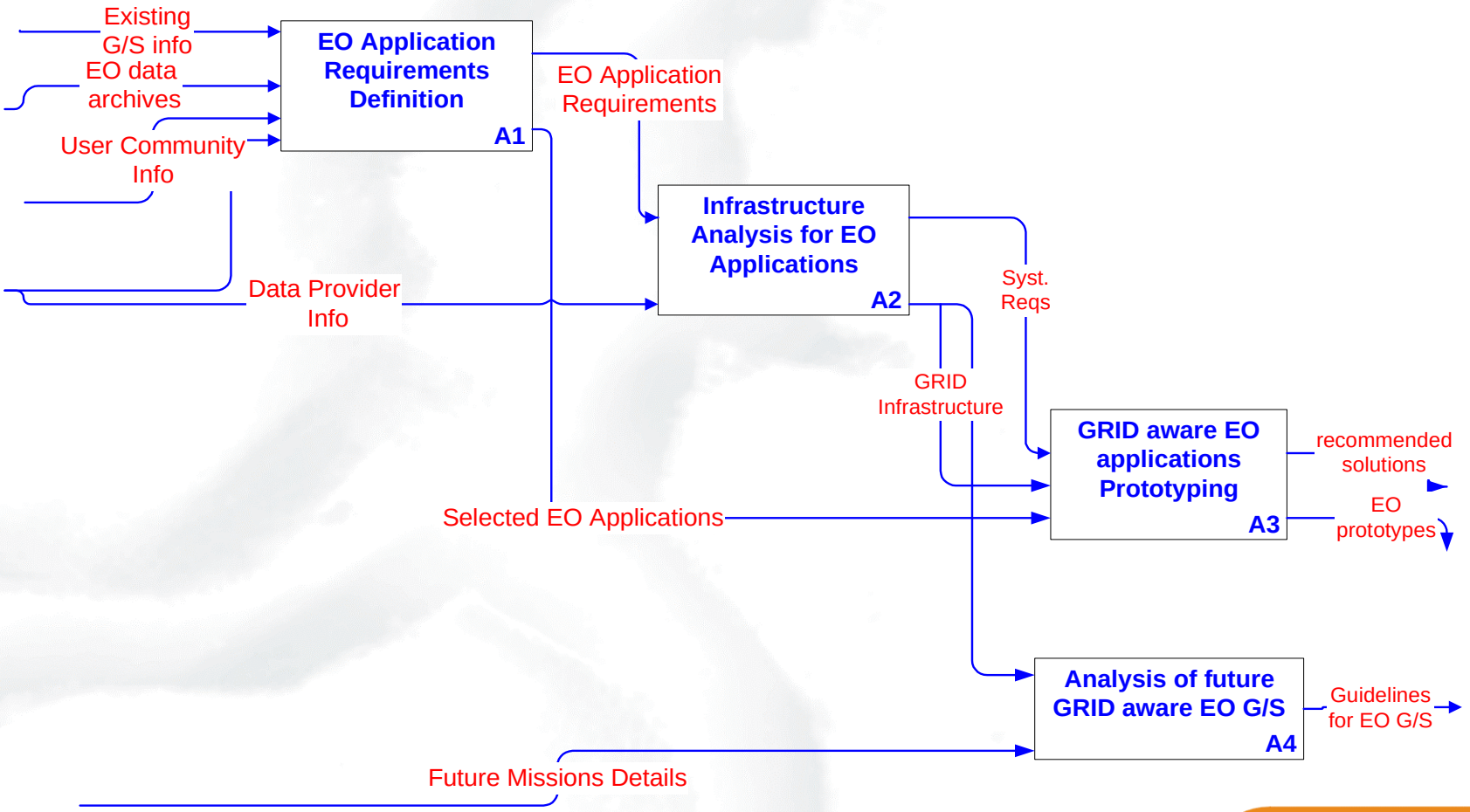
Earth Observation
How to use EO data in GRID

- **OVERVIEW:**
  - Study Objectives
  - Study Logic
  - Activities Description
    - Approach to Requirements Definition
  - Dissemination activities

Earth Observation
Study Logic



Earth Observation
EO Application Requirements Definition

- The main objectives:
  - definition of requirements for seamless access to distributed data, applications and resources,
  - identification of specific requirements for selected EO applications, in terms of performances, processing power, required data.
  - Identification of EO users community in terms of expected services/benefits the GRID technology can provide.

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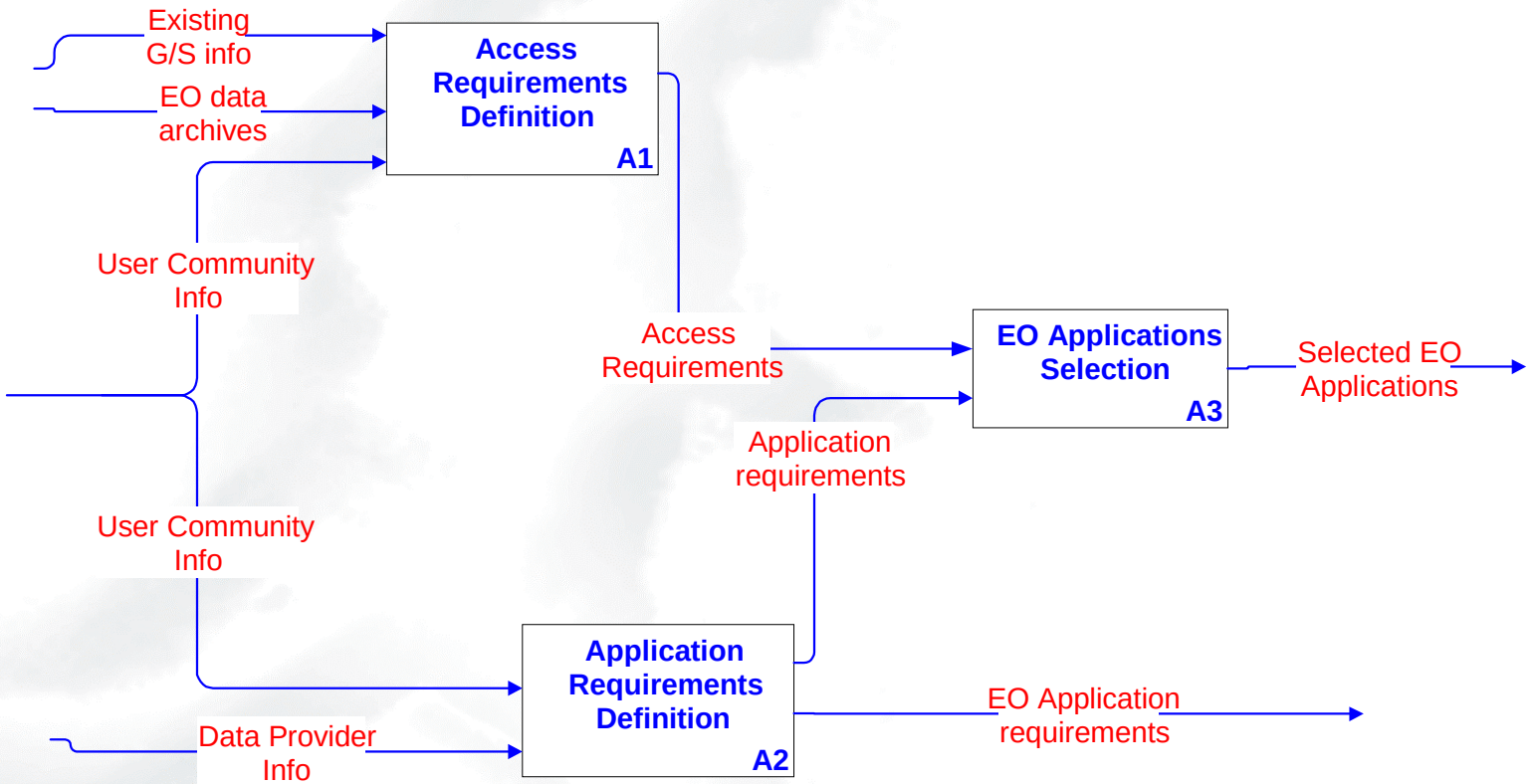
Approach to Application Requirements



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Approach to Requirements Definition

- Access Requirements Definition:
  - for seamless access to distributed data and resources,
  - for collaborative environment
  - for meta-data and data dictionaries,based on International Standards
- Application Requirements Definition:
  - for identification of EO applications to be ported over GRID
  - for expected performances, results and necessary data
  - for needed archive facilities, network and computational power requirements
- EO Application Selections
  - based on the previous outcomes, for the selection of best candidates to GRID implementation.

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Approach to Requirements Definition

- Required Input:
  - info about EO users community
  - features of required data/products
  - info about EO archives (size, location, access)
  - info about EO products dissemination/distribution channels
  - info about applications based on data fusion and integration

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I/S Analysis for EO Applications

- The main objectives:
  - to define guidelines for the creation of a programming and execution environment for distributed applications,
  - to consider existing elements as drivers for the design and implementation of EO aware GRID infrastructure, e.g. :
    - AMS, a mass storage system that will play an important role both in the DataGRID ESA site and for EO applications of SpaceGRID
    - MUIS, a multimission system providing services to users on several ESA and non-ESA EO satellite missions, that could be ported over a GRID infrastructure.

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GRID aware EO application prototyping

- The main objectives:
  - to demonstrate the capability and the benefits of the GRID technology when targeted on selected EO applications
  - through implementation activities based on the following steps:
    - definition of the integration steps between EO applications and GRID infrastructure,
    - definition of solution for COTS integration in a GRID environment,(e.g. IDL)
    - definition of a prototype development environment (LINUX)

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Future GRID aware EO G/S

- The main objectives of the Analysis:
  - to define G/S systems where GRID technology could be the driver in the system design,
  - to analyse which current G/S activities seem to be more suitable for a GRID-based solution,
  - to take into account on-going interoperability activities (INFEO, MASS)
- Scenarios suggested as starting point:
  - Typical: multiple acquisition stations, multiple processing centres, distributed data archives
  - Single Actors: a single TTC, a single centre containing all functions,
  - Multiple Processing Centres: with world-wide distributed processing centres.

Earth Observation
EO Dissemination Activities

- Proposed Conferences:
  - 22nd EARSeL Symposium “Geo-Information for European-wide integration”, Praha 4-6 June 2002
  - International Geoscience and Remote Sensing Symposium 2002, Toronto June 24-28
    - Innovative Uses of Internet
    - Public Access to Remote Sensing Information
  - International Geoscience and Remote Sensing Symposium 2003, Toulouse July 21-25.