

EDGeS

Application porting and repository in EDGeS

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The EDGeS project receives Community research funding





The EDGeS Application Support Service

- **Aims and objectives:**

- facilitate the porting of applications to the EDGeS infrastructure by targeting
 - user communities already associated with EGEE or DGs
 - new user communities

- **Activities:**

- Identify user communities that require the power of the EDGeS infrastructure
- develop a generic methodology for application porting
- provide a service in order to aid the migration and running of their applications on the EDGeS infrastructure



The EDGeS user community

- **Academic user community:**
 - 14 identified communities
 - BioInfoGrid, e-Health, Fusion, computational chemists, etc.
 - 4 new academic user partners
 - **Establishing the EDGeS user forum**
- **Industrial user community**
 - 5 identified companies
 - 3 new industrial user partners
 - **Establishing the EDGeS industry forum**



Supporting user communities: the EDGeS User Forum

- The Desktop Grid User Forum is intended for academic researchers who have applications that run, or could run on a Desktop Grid or a combined Desktop/Service Grid.
- **The User Forum provides:**
 - Two meetings a year to meet face-to-face with the Desktop Grid developers and other Desktop Grid users
 - A directory with Desktop Grid resources
 - A regular news feed on Desktop Grid developments
 - Guidance with putting applications on the Grid.
 - A Desktop Grid application development environment
 - Potential access to a European wide Grid with potentially a million computer nodes



Supporting user communities: the EDGeS Industry Forum

- The Desktop Grid Industry Forum is intended for people from companies and non-academic organisations that are interested in setting up a local Desktop Grid and getting applications to run on this local Grid or the combined Grid infrastructure.
- **The Industry Forum provides:**
 - Two meetings a year to meet face-to-face with the Desktop Grid developers and other Desktop Grid users
 - A directory with Desktop Grid resources
 - A regular news feed on Desktop Grid developments
 - Guidance with putting applications on the Grid.
 - A Desktop Grid application development environment



EADM

EDGeS Application Development Methodology

- **Aims and objectives:**
 - develop a generic methodology that addresses the problem of application porting and defines how the recommended software tools, developed by EDGeS, can aid this process.
- **EADM – an iterative approach**
 - EADM identifies well defined stages that have a suggested logical order. However, the overall process is in most cases is non-linear allowing revisiting and revising the results of previous phases at any point.



EADM

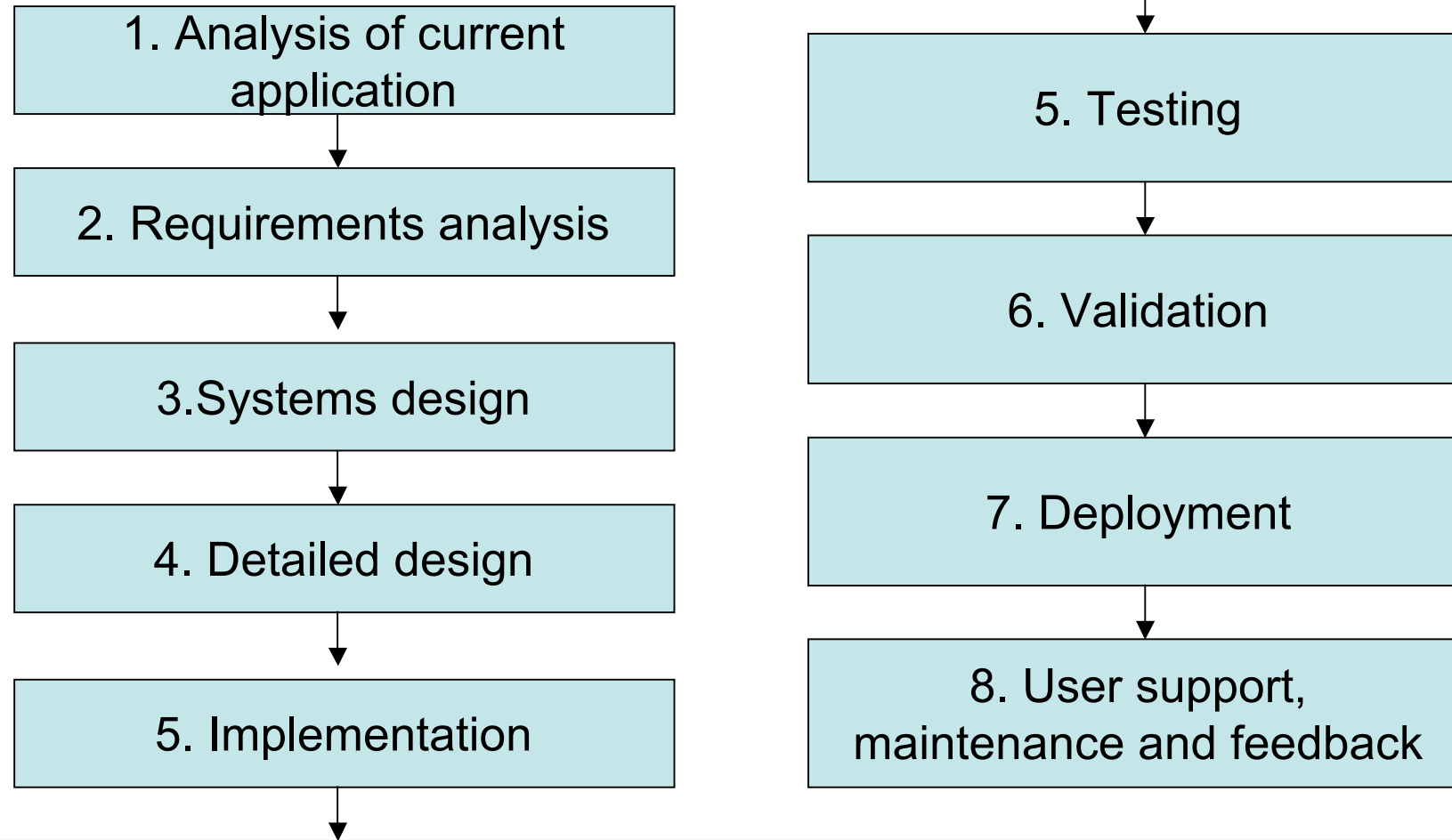
Roles and participants

- End-users
- Developers/system administrators of original application
- EDGeS systems analysts
- EDGeS application programmers
- Grid operators



EADM Stages

Earlier stages can be revisited at any time





EADM

EDGeS Application Development Methodology

- 1. Analysis of current application:** describe the currently existing application in detail (problem domain, computing platform, parallelism, data access, functionalities etc.)
- 2. Requirements analysis:** requirements towards the ported application concerning efficiency of execution and data access are analysed from a user perspective
- 3. Systems design:** answer the major questions of systems design principles concerning the ported application (what will be the target platform for execution and how it will be accessed, what level/type of parallelism will be utilised, what data access mechanisms will be applied, etc.)



EADM

EDGeS Application Development Methodology

- 4. Detailed design:** Technical Design Specification - forms the basis of the implementation and details all the necessary technologies and solutions that will be utilised
- 5. Implementation:** implement the system based on the detailed design specification
- 6. Testing:** both functional and performance testing
- 7. Validation:** only validated applications can run on DG resources
- 8. Deployment:** application published in the EDGeS application repository – select and run application with custom parameters
- 9. User support, maintenance and feedback**



EADM

Tools supporting application development and porting

API level support

DC-API:

- Developing/adapting applications for BOINC-based desktop grids
- Provides a uniform interface for different Grid systems (BOINC, Condor)
- Supports master/worker parallelism

XtremWeb:

- No modification or recompilation of the application is required (but no assumption should be made on the host environment)
- ***XtremWeb client API***: to implement a client for submitting and controlling jobs as well as retrieving jobs results



EADM

Tools supporting application development and porting

High level graphical user interface

WS-PGRADE portal:

- to support the transparent exploitation of the EDGeS infrastructure at workflow level

EDGeS Application Repository based on GEMMLCA

- Select, parameterise and execute validated applications
- Access repository from the command line or from the WS-PGRADE portal



Thank you for your attention ...



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