



**eTICS2**  
The Grid Quality Process

## **SA2**

# **Infrastructure Support**

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**ETICS 2 Final Review**  
**Brussels - 11 May 2010**

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# Objectives



# Objective 1: Support the infrastructures

- **Support** ETICS infrastructure providers in deploying and using the ETICS services efficiently:
  - by **providing** a Service Desk
  - by **offering** an on-line knowledge base of frequently asked questions (FAQ)



## Objective 2: Attract new infrastructures

- **Facilitate** the adoption of the ETICS build, test and certification services by new infrastructures
  - starting with the DEISA HPC and aerospace engineering communities
  
- **Produce** a set of guidelines for new infrastructures **to facilitate** the migration to ETICS and **to lower** the initial learning curve (second year)



## Objective 3: Improve the ETICS services

- **Improve** the functionality and efficiency of the ETICS system
  - by **collecting** and organizing user requirements (first year)
  - by **assisting** in the integration of ETICS within existing infrastructure services
  - by **analyzing** the ETICS performance and usability “in the field” with respect to efficiency, scalability and fault-tolerance (first year)



# Major Achievements



# Objective 1: Support the infrastructures

## Use of best practices

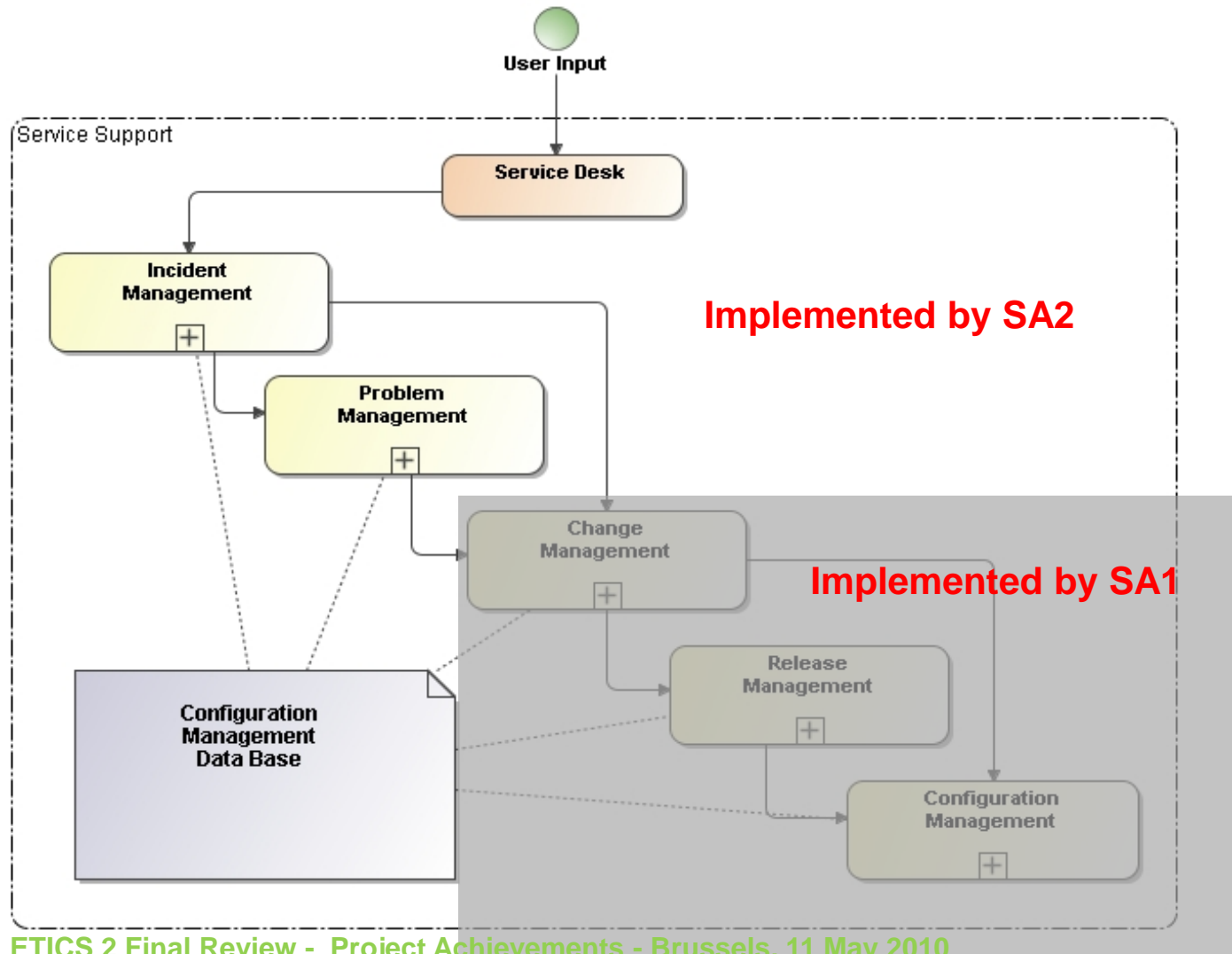
- The ETICS processes have been modeled on the **ITIL v2 and v3** guidelines, especially for:
  - **Incident Management** (e.g., service unavailability, software problems)
  - **Problem Management** (understanding causes and providing solutions)
  - **Helpdesk Management**
  - **Configuration Management Database** (repository of information of all configuration items and their relationship)





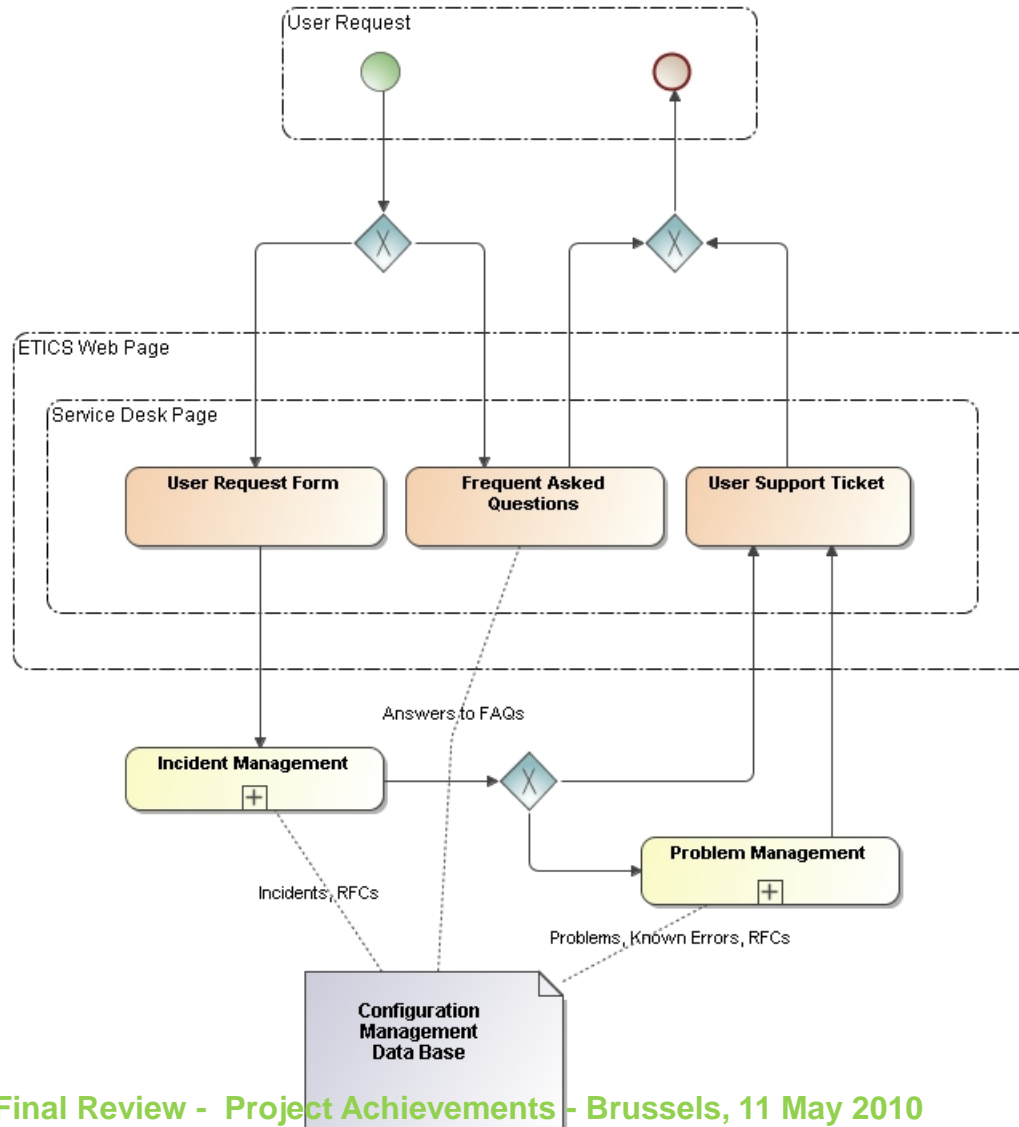
# Objective 1: Support the infrastructures

## Use of best practices



# Objective 1: Support the infrastructures

## High level design of ETICS User Support model



# Objective 1: Support the infrastructures

## User Support Model

- **Established** a single point of contact for users that interact with the first-level support
  - **First-level support** performed by all SA2 partners (INFN, FZJ, VEGA, STAKI and 4DSOFT) who characterize **Incidents** into **Problems** or **Service Requests** and contact the second-level support, if necessary
  - **Second-level support** provided by the Expert Team
- **Defined standardized procedures** on how to handle tickets according to ITIL v2
- Gained ability **to reduce average ticket life cycle duration** (from 6 hours to 2.5 hours)
- **Led to creation of a Knowledge Base (53 FAQ, and 7 Tutorials) of already-processed incidents** of a similar nature by adopting a ticketing system:
  - **GGUS** <https://gus.fzk.de/pages/home.php>
  - Described in delivered DSA2.1



# Objective 1: Support the infrastructures GGUS as a ticketing system

show columns in search result  Ticket-ID  Type  Concerned VO  Notified Site  Resp. Unit  Status  Date  Last Update  Info

Ticket ID:  Status: ?   
 Support Unit: ETICS Infrastructure Priority:   
 Concerned VO: any Type of problem:   
 User: ? MoU Area   
 Keyword:   
 Involved supporter: ?   
 Assigned to person: ?   
 Notified Site:   
 Special attributes (ALARM / Master etc.)

Order tickets by

Creation date   
 All tickets from    ▶set now ▶unset  
 to ?    ▶set now ▶unset  
 Untouched since

new search with default values

show/save search result as: [CSV](#) | [HTML](#) | [XML](#) | [PDF](#)

143 Tickets found

Ticket-ID	Type	Concerned VO	Notified Site	Resp. Unit	Status	Date	Last Update	Info
54555		none		ETICS Infrastructure ▶assigned	solved	2010-01-08	2010-01-11 10:33	Problem with ETICS Administration interface
54533		none		ETICS Infrastructure ▶assigned	verified	2010-01-07	2010-01-08 10:15	Etics selects an unsuitable configuration
54195		none		ETICS Infrastructure ▶assigned	solved	2009-12-17	2009-12-17 10:16	ETICS: please lock activemq v. 5.3.0-5 external c...
53769		none		ETICS Infrastructure ▶assigned	solved	2009-11-30	2009-12-02 11:40	problems fetching glite-security-voms-admin-server...
53464		none		ETICS Infrastructure ▶assigned	verified	2009-11-20	2009-11-20 13:19	lock of externals needed
53389		none		ETICS Infrastructure ▶assigned	waiting for reply	2009-11-18	2010-01-18 14:20	ETICS web interface ignores some user input
53192		none		ETICS Infrastructure ▶assigned	solved	2009-11-11	2009-11-11 16:03	ETICS client setup does not correctly compares cli...
52925		none		ETICS Infrastructure ▶assigned	solved	2009-11-03	2009-12-02 08:22	ETICS
52915		none		ETICS Infrastructure ▶assigned	solved	2009-11-02	2009-11-03 13:28	binary packages not staged in remote build
52910		none		ETICS Infrastructure ▶assigned ▶involved	verified	2009-11-02	2009-11-02 14:47	Mixing rpm in yum repository

Completato



# Objective 1: Support the infrastructures

## ETICS Support Web Portal

- Using ETICS CMS template
  - **Designed and set up** the ETICS Support Web Portal:  
<https://web.infn.it/etics-support/index.php/home>



# Objective 1: Support the infrastructures

## ETICS Support Web Portal

The screenshot shows the ETICS Support Web Portal in a Mozilla Firefox browser window. The address bar displays the URL <https://web.infn.it/etics-support/index.php/home>. The browser's menu bar includes File, Modifica, Visualizza, Cronologia, Segnalibri, Yahoo!, Strumenti, and Aiuto. The toolbar contains various icons for navigation and search. The page content features the ETICS2 logo (The Grid Quality Process) and a navigation menu with links for Home, FAQ, Documentation, Knowledge Base, and Tickets. A search box is located in the top right corner. The main content area is titled "Home" and includes a "Welcome to the ETICS support portal" section, a "News and events" section, and a "Login-x509" section with a "Sign in with x509 certificate" button and links for "Login using Username and Password" and "Create an account". A "Popular Resources" section lists several links, and a "Latest Resources" section is partially visible at the bottom. The browser's status bar at the bottom indicates "Completato".



# Objective 1: Support the infrastructures

## ETICS Support Web Portal

- Using ETICS CMS template
  - **Designed and set up** the ETICS Support Web Portal:  
<https://web.infn.it/etics-support/index.php/home>
  - **Established a single point of contact** for distributed user community (almost 71.2K connections)
  - **Provided a list of features:**
    - On-line searchable Knowledge Base of FAQ
    - Narrative articles



# Objective 1: Support the infrastructures

## ETICS Support Web Portal

The screenshot shows the ETICS Support Web Portal in a Mozilla Firefox browser window. The address bar displays the URL <https://web.infn.it/etics-support/index.php/faq2>. The browser's menu bar includes File, Modifica, Visualizza, Cronologia, Segnalibri, Yahoo!, Strumenti, and Aiuto. The toolbar contains various icons for navigation and search. The browser tabs include Gmail, Ufficio Formazione, Project Organisation, What is SAN?, etics-support, GGUS, and FAQ.

The website header features the ETICS2 logo, "The Grid Quality Process", and a navigation menu with links for Home, FAQ, Documentation, Knowledge Base, and Tickets. A search bar is located on the right side of the header.

The main content area is titled "FAQ" and includes a breadcrumb trail "Home » FAQ". Below the title, there are four categories of articles:

- ETICS in a Nutshell** ( 14 Articles )  
This category contains simple answers to the initial questions you may ask about the ETICS project, such as what does ETICS stand for? When did ETICS 2 start? What are the participants?...
- ETICS and Quality** ( 13 Articles )  
This category contains answers to questions you can ask about the relationship between ETICS and the Grid Quality Certification Model (Grid-CQM) which automatically certifies your application against several quality aspects, such as the quality of the code, the compatibility against Operating Systems and Standards.
- Troubleshooting** ( 22 Articles )  
In this category you can find solutions to common problems you can run into when using ETICS system
- Etics Support Portal** ( 1 Article )

On the right side of the page, there are three sections:

- Login-x509**: Includes a "Sign in with x509 certificate" button, a link for "Login using Username and Password", and a "Create an account" link with an information icon.
- Popular Questions**: Lists four frequently asked questions with links:
  - Why etics-get-project failed?
  - Does the ETICS system only build and test grid based software?
  - Why the lock button does not work?
  - Which browsers are supported?
  - Why there is no rpm in the repository even if build result is ok?
- Latest Questions**: A section for the most recent questions.

The status bar at the bottom of the browser window shows "Completato" and several system icons.





# Objective 1: Support the infrastructures

## ETICS Support Web Portal

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The website header features the ETICS2 logo with the tagline "The Grid Quality Process". Below the logo is a navigation menu with links for Home, FAQ, Documentation, Knowledge Base, and Tickets, along with a search box. The main content area is titled "Home » Knowledge Base" and is divided into several sections:

- Featured Articles:**
  - [Integrating an Autotools project into ETICS](#): This article gives a brief overview of GNU Autotools, and explains how to integrate in ETICS a project that uses them. The tutorial goes through the setup, configuration and build procedures of a simple Hello World application using ETICS Web Application to create configurations and edit them.
  - [Understanding Security in ETICS](#): This article explains the ETICS authentication, authorization and roles.
- Resources:**
  - Tutorial** ( 7 Articles ): This category contains small articles that can help you to understand ETICS system's features.
  - Use cases** ( 2 Articles ): This category contains small, focused articles describing the use cases that has driven the development of ETICS. The articles describes how to satisfy the use cases using the ETICS services.
  - Screencast and videotutorials** ( 1 Article ): In this section there are some screencast about Etics
  - Guidelines** ( 13 Articles )
- Login-x509:**
  - Sign in with x509 certificate
  - [Login using Username and Password](#)
  - [Create an account](#)
- Popular Resources:**
  - [Using the ETICS Web Portal](#)
  - [Integrating an Autotools project into ETICS](#)
  - [Understanding Properties](#)
  - [Understanding Security in ETICS](#)
  - [Using the ETICS Command Line Client](#)
- Latest Resources:**
  - [ETICS Test Plan](#)

The browser status bar at the bottom shows the word "Completato" and several system icons.



# Objective 1: Support the infrastructures

## ETICS Support Web Portal

- Using ETICS CMS template
  - **Designed and set up** the ETICS Support Web Portal:  
<https://web.infn.it/etics-support/index.php/home>
  - **Established a single point of contact** for distributed user community (almost 71.2K connections)
  - **Provided** a list of **features**:
    - On-line searchable Knowledge Base of FAQ
    - Narrative articles explaining the use of the system
  - **Provided** extra **features**:
    - On-line documentation
    - Ticketing reference
    - Login via X.509 or normal account to edit information



## Objective 2: Attract new infrastructures

### Applications and Projects

- **Collected 12 requirements** from new infrastructures belonging to DEISA HPC, and Aerospace Engineering communities; **prioritized with and passed to SA1**
- **Defined and provided 13 guidelines** for the deployment of ETICS services and the development of software projects, and **registered** them into the ETICS Support Web Portal
  - collaboration among ETICS staff and users
  - experiences of ETICS staff in software engineering issues
- **Provided** a special deployment mechanism of ETICS services specifically for **EGEE** to be integrated into the **EGEE** structure
- **Supported 5 applications and 2 projects** in their migration to ETICS belonging to different communities, like **HPC, HEP,** and **Aerospace communities**
- Described in deliverables DSA2.2 and DSA2.5



## Objective 2: Attract new infrastructures

### Deployment of ETICS in other SITES, e.g. VEGA

- **Installed and adapted** as an In-House System at VEGA in order to have a protected and closed integration platform
- **Used** then as an initial starting point for **reviewing and improving the VEGA in-house development and maintenance procedures**
- **Adapted to ISO 12207 standard for Software Life Cycle Processes**, combining ETICS with other sets of tools like Logiscope or code generators like MagicDraw
- **Presented** approach to **EUMETSAT, ESOC** and to SELEX Systems Integrati in Rome, whose feedback was:
  - EUMETSAT decided **to launch a study** using this approach as a template for improving its own service management procedures
  - negotiations with SELEX **to implement a common company-wide standard** are ongoing and very promising



## Objective 3: Improve the services

### Integrated ETICS with different job management systems

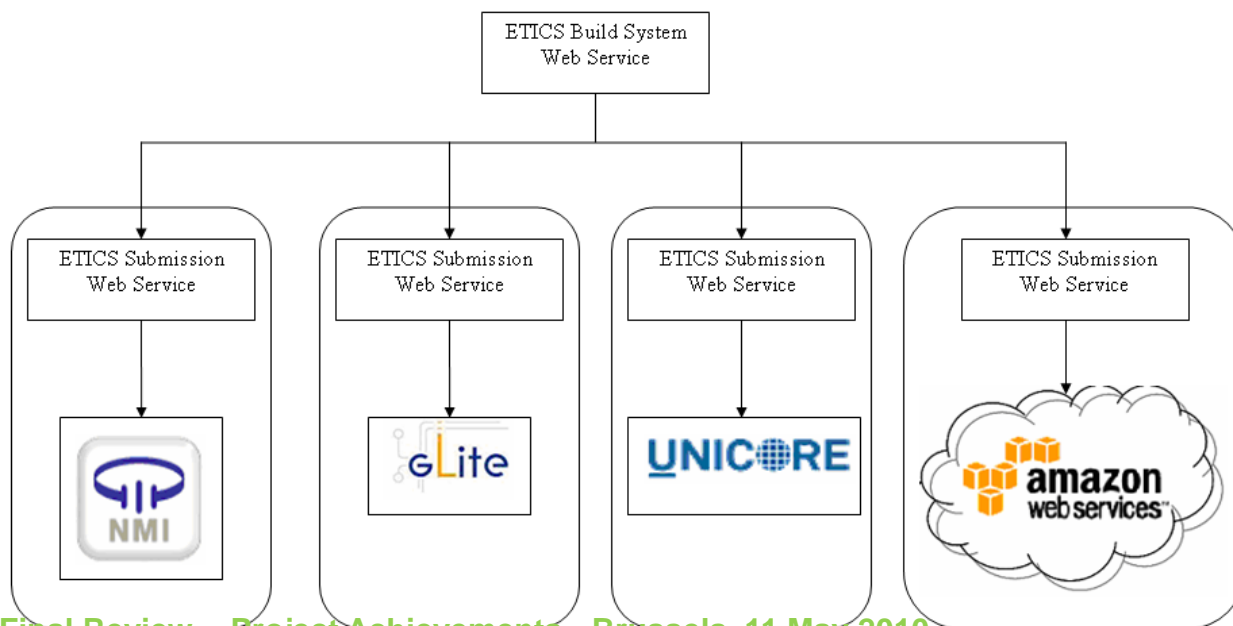
- **Simplified the adoption of ETICS tool** into some of the existing Grid and Cloud infrastructures
  - Re-designing the ETICS submission logic with SA1
  - Providing an easy pluggable submission environment called ETICS Submission Web Service
- **Opened ETICS to the Cloud computing world, so that users will adopt the solution and will potentially get the benefit that Cloud is offering** such as:
  - Using dynamically scalable virtualized resources
  - Adopting a pay-as-you-go cost model
  - Reducing capital cost of hardware, hardware management and operations personnel
  - Described in deliverables DSA2.3, DSA2.4, DSA2.6, and DSA2.7



## Objective 3: Improve the services

### Integrated ETICS with different job management systems

- Provided Submitter plug-ins for Grid submission engines like gLite, and UNICORE, in addition to Metronome (see DSA2.6)
- Provided Cloud Submitter plug-in based on AWS (see DSA2.7) with SA1
- Tested integration in a given testbed distributed in 3 sites: INFN CNAF, FZJ and Amazon Web Services



# Deliverables

<b>DSA2.1 User Support Procedures</b>	<b>RELEASED</b>
<b>DSA2.2 New infrastructure evaluation plan</b>	<b>RELEASED</b>
<b>DSA2.3 Infrastructure services integration - Analysis</b>	<b>RELEASED</b>
<b>DSA2.4 Infrastructure services integration - Implementation (Part 1)</b>	<b>RELEASED</b>
<b>DSA2.5 Guidelines for adopting ETICS as build and test system</b>	<b>RELEASED</b>
<b>DSA2.6 Infrastructure services integration - Implementation (Part 2)</b>	<b>RELEASED</b>
<b>DSA2.7 Infrastructure services integration - Implementation (Part 3)</b>	<b>RELEASED</b>



# Challenges





# Lessons Learned

- **Following ITIL was a great benefit in guiding and establishing the required processes to deal with** all sorts of requests from very expert and demanding users
- **Being efficient in structuring replies** is fundamental to provide clear answers to users requests
  - A support team that communicates and clearly follows escalation procedures is essential to improve the quality of replies
- **Being efficient in requiring ETICS experts interventions** is essential to optimize time of service desk staff
- **A single entry point and an escalation process** are essential to deal with complex issues
- **Escalation procedures** must be **well-defined** as user requests may be very complex



# Lessons Learned

- **A good consultancy service for users must:**
  - **be staffed with good trained personnel**
  - **be expert on all the fields** in which the user needs you to consult on
- **Simplification of Grid middleware would enable tools such as ETICS to be used more easily**
  - ETICS has been interfaced with; **gLite, UNICORE, and Metronome**; as well as Cloud infrastructure like **Amazon Web Services as a Grid** through Amazon Web Services.
- Even in short-duration projects, **requirements and technology change so fast that we need to make sure that:**
  - we are flexible enough
  - we can adapt our services



# Conclusions



# Conclusions

- **Expanded the reach of ETICS by integrating emerging technologies:**
  - like gLite, UNICORE and Metronome as existing Grid job submission engines
  - like gLite plus INFN WNOD representing a virtualization solution for Grid infrastructure
  - like Cloud technology using Amazon Web Services to access massive computing resources
- **Encouraged user self-sufficiency** by providing searchable FAQs, known solutions, and workarounds to common issues.
- **Aligned Service Desk** with user requirements to provide good practice service



# Acknowledgements

- I thank Valerio Venturi for having done a great job as SA2 Work Package leader until the mid of January 2010, and all the other members of SA2 team:

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# Thanks!



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<http://www.eticsproject.eu>

