



eTICS2
The Grid Quality Process



Project Achievements and Consortium Management

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ETICS 2 Final Review
Brussels - 11 May 2010



Content

Overall project report, providing an overview of:

- Review agenda
- Project structure
- Project goals
- Reviewer Recommendations
- Major achievements
- Conclusions



Review Agenda

Morning

09:00 – Welcome & Logistics

09:15 – Project Achievements

Alberto Di Meglio (CERN)

10:15 – NA2 (Dissemination, Training, QA)

Isabel Matranga (ENG)

11:00 – SA1 (Services)

Alberto Aimar (CERN)

11:30 – SA2 (Infrastructure support)

Elisabetta Ronchieri (INFN)

12:00 – JRA1 (Job management tools)

Alain Roy (WISCOSIN)

12:30 – JRA2 (Test management tools)

Eva Takacs (4DSOFT)

Afternoon

14:00 – Demo

14:30 – Q/A session

15:00 – Reviewers Closed Session followed by Feedback



Partners



Project Structure

INFSO-RI-223782



Project Structure

Project Manager (PM)

Project Management Board

Project Technical Committee



NA1

NA2

SA1

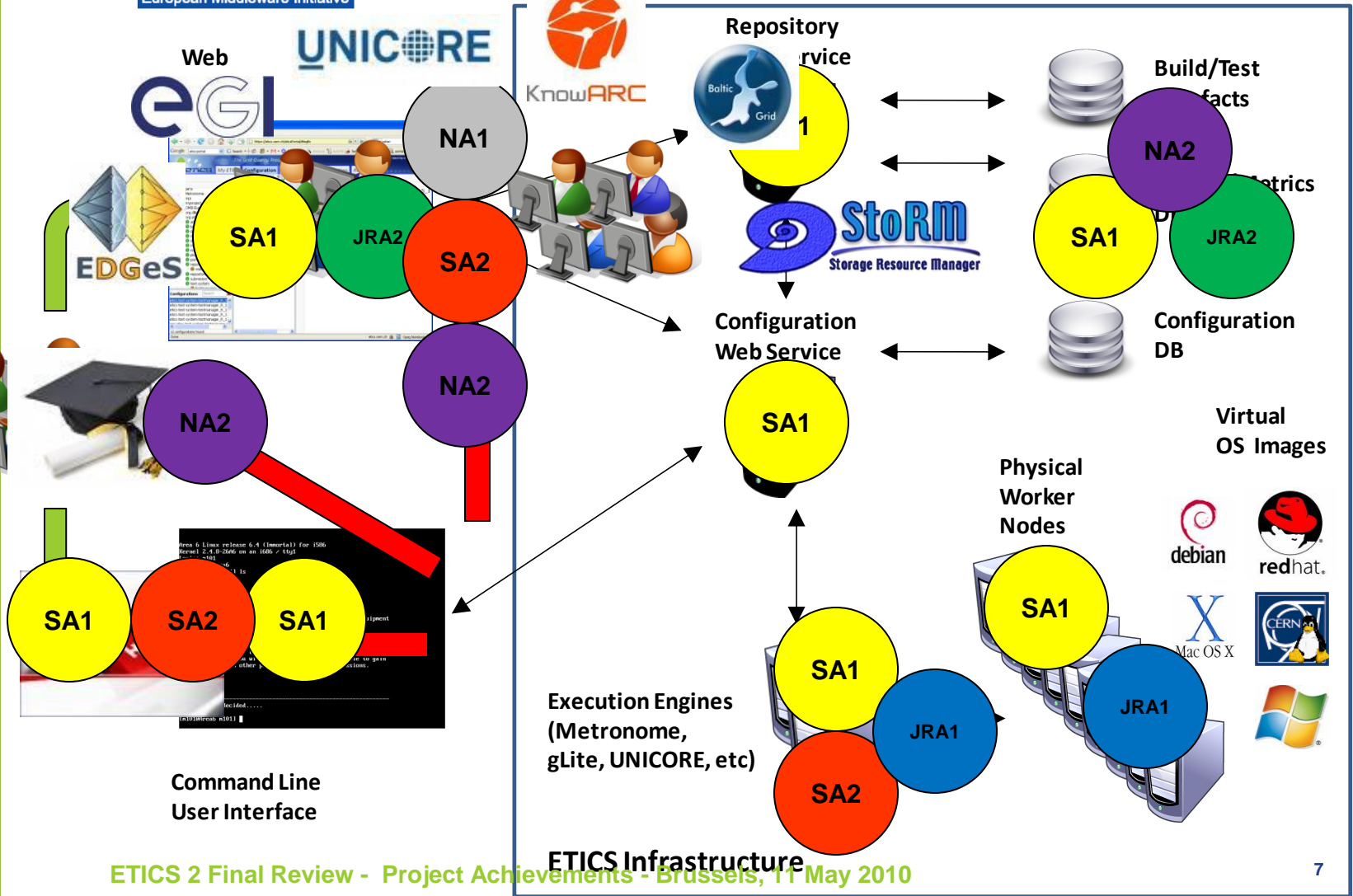
SA2

JRA1

JRA2



Architecture and responsibilities



Project Goals

Objective 1

- Extension of the ETICS services to new infrastructures

Objective 2

- Enhancement of the services, federation and customization of resources

Objective 3

- International collaborations, procedures and standards

Objective 4

- Commercial exploration and business strategies



Recommendation 1

Investments in the project are significantly below the plan across all work packages for the first year. The partnership should recruit the necessary staff, asap, and should adjust the operational plans accordingly to fulfil the project goals by M24. The above issue needs to be monitored closely by the Project Management and the EC. The recruitment of staff has to be finalized and reported to the EC by M15



Recommendation 1

- The partners' investment in the project has consistently increased in the second year achieving the expected levels of effort and budget
- The progress has been periodically reported to the EC as part of the quarterly reports



Financial status

The provisional financial information included in the Final Periodic Report covering the 1st and 2nd reporting periods shows

Total cost of 3,873,840 €

equal to

102% of the total budget of the project (3,783,568 €)

Internal Cost Claims (Form C) are being submitted by all partners to the Coordinator and will be provided by the Coordinator to the Commission before the end of the April 2010.

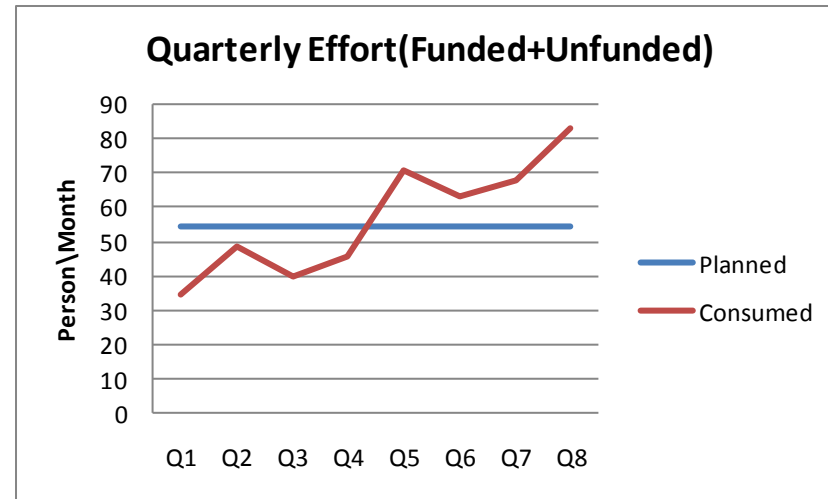
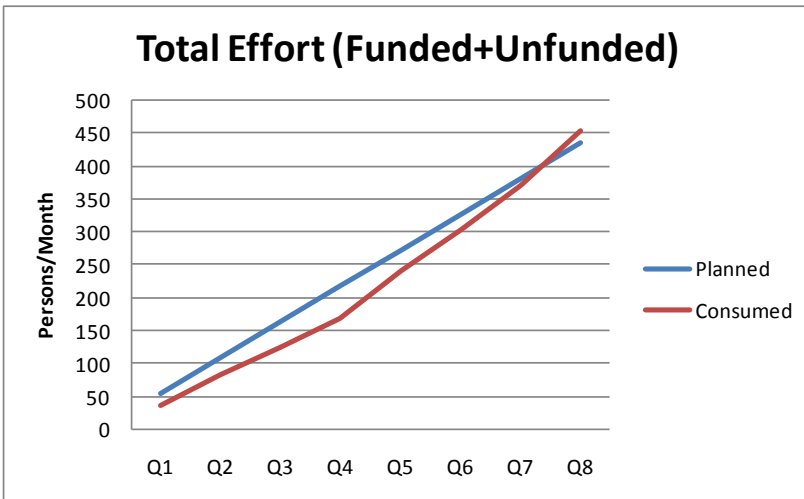


Effort Statistics

PPT tool used to monitor project effort consumption (timesheets)

- Total of **454 PM** equivalent to 19 FTE/year
- 43 people registered across Europe and USA

Consumed Effort Vs. Planned Effort		
Funded	Unfunded	Total
116%	70%	104%



Recommendation 2

The overall technical project goals are achievable providing the project concentrates on sharpening and implementing the users' needs, in particular on easier, faster, more accessible system and lowering the learning curve, on the testing capabilities and test automation, on interoperability, and on information privacy and data security in order to support commercial user needs. Furthermore, the implementation and integration of the new job submission engines for gLite and UNICORE and the revision of the Web Applications to make them more user-friendly should be completed by M15. The project should also clarify the progress on the web service interfaces and the feasibility of the IPv6 activities by M15. Lastly, the project has to progress on the support for existing package repositories, starting e.g. with SourceForge.



Recommendation 2

- The main user requirements:
 - Better integration with standard OS distributions
 - More flexible use of third-party resources for the worker nodes
 - Better security and usability
- Have been fulfilled by:
 - Connectors to gLite, UNICORE and Amazon WS implemented
 - Integration with third-party repositories like EPEL and Fedora
 - More ergonomic graphical tools in the Web Applications
 - Enhanced privacy (restrictions for anonymous users)
- More tutorials, support and training



UNICORE



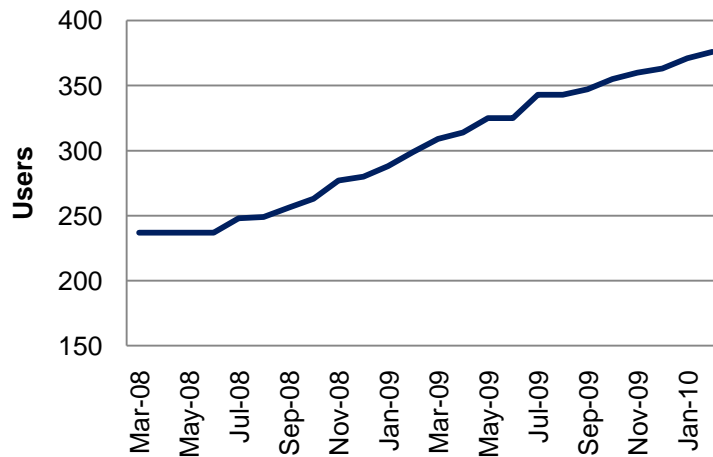
fedora™
freedom | friends | features | first



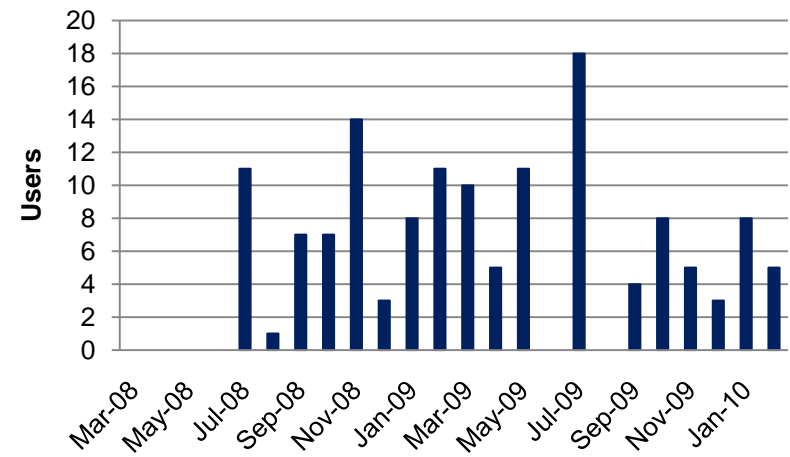
ETICS Usage

The number of users has steadily increased during ETICS 2 going from 237 at the beginning of Y1 to 382 at the end of Y2

Total number of users



Monthly registrations



The estimated size of the market segment targeted by ETICS 2 is 240 (data from EGEE, D4Science, KnowARC, EDGeS and UNICORE), the rest comes from BalticGrid and other smaller projects



Recommendation 3

Deliverable DNA2.6 has to be resubmitted on M18 illustrating the unique selling point of the project (motivation to buy ETICS), clarifying and advancing the exploitation/sustainability strategy for the overall project results and the individual commercial partners, identifying the target customer groups (two different groups –research and commercial- with different requirements) and presenting concrete steps towards the realisation of the exploitation strategy. The follow up deliverable DNA2.9 has to be submitted on M23 with the presentation of all concrete exploitation activities of the partnership. Furthermore, the consortium members need to strengthen their effort to not just involve but also commit collaborating/supporting projects and infrastructures.



Recommendation 3

- DNA2.6 resubmitted
 - detailed analysis of unique selling points, potential business models, target groups and exploitation steps
- Third-party exploitation activities have been fully supported both in Academic environments and Commercial environments
 - Several new projects plan to use ETICS beyond ETICS 2
 - **EMI**, D4Science 2, Easy Rider, EDGI, DEGISCO, SSS4LS
 - Increased efforts in contacting and committing commercial users
 - All commercial partners have now commercial activities in various stages (contracts, bids, pilots) with existing customers or internal units



Recommendation 4

Follow up on the establishment of stronger collaborations, ratified by MoUs whenever appropriate, with the potential ETICS-2 customers. Stronger links, closer collaboration and alignment of schedules should be performed with EGEE-III, DEISA2, PRACE, EGI-DS. The links with industry and in particular with European Industry need to be enhanced so that true partnerships can be developed. In order to make resources available for pursuing commercial users' requirements, the project should streamline operational activities and interaction with EGEE/gLite.



Recommendation 4

- **MoUs** signed with EGEE III, D4Science and EDGeS (A-QCM trial certifications)
- Stronger **links** with EGEE III, DEISA 2, PRACE, ARC and EGI
 - Directly or through the EMI
- Effort in **streamlining** the interaction with EGEE
 - Resulted in collaboration in the revision of the EGEE III development procedures following the EGEE III review
 - The systematic execution of deployment and functional tests using ETICS and its multi-node testing has also been started
- **A-QCM statistics** collected for most gLite services, now being collected independently by the EGEE certification team
- **Common effort** with EGEE, UNICORE, KnowARC and ETICS
 - Definition of migration strategies from the current projects to the new EMI project, which will provide most of the production Grid middleware to EGI and PRACE in the next 3 to 4 years



Recommendation 5

Pay emphasis to elements crucial to future commercial viability like charging, registration, service level agreements, scalability, running ETICS services on third party resources and report as required to the EC.



Recommendation 5

- Realistic business models based on ETICS have been analysed
 - Full analysis presented in DNA2.6
- Revised SLA developed and used to create a standard template for commercial pilots and collaborations
 - Proposed as the base for the EGI/EMI SLA
- All three commercial partners have created in-house instances of the ETICS System in support to their business plans
- The resource management connectors and in particular the Amazon WS connector allows ETICS to fully exploit third-party resources



Recommendation 6

Provide a proof-of-concept of a possible 'UMD Client' incorporating elements of ARC, gLite, UNICORE by M15.



Recommendation 6

- A prototype UMD client incorporating elements of the gLite UI, the ARC client and the UNICORE CLI client has been modelled and built with ETICS
- The 'UMD Client' has been presented to the EMI collaboration as a proof-of-concept of using ETICS as an integration tool
- Specific work on consolidating the middleware has not been further done by ETICS, but it has become one of the major objectives of the EMI project



Project name: UMD
Project config: UMD.HEAD
Module name: UMD-Client
Module config: UMD-Client_0_0_2
Build start time: 22/04/2010 20:04:35
Success rate: 89% (31/35)
Status: **Failed**

Build/Test Logs

Page generated at 22/04/2010 21:36:0
[Back to module overview page](#)

Component	Project	Configuration	Last build time	Result
vdt_globus_essentials	vdt	vdt_globus_essentials v. 4.0.7-VDT-1.10.1-1	22/04/2010 20:05:45	Run-time
unicore.ucc	unicore	unicore.ucc_1.3.0	22/04/2010 20:17:35	Success
libsync	externals	libsync v. 2.0.18	22/04/2010 20:17:37	Success



Recommendation 7

Clarify the focus of the A-QCM (e.g. process and/or product certification); start immediately with identifying and approaching the relevant ISO committees; think for approaching the project partners' national ISO representatives; develop back-up scenario for quasi-standardization by the GRID-community in case of non-adoption by ISO. Furthermore, the project should progress with the pilot A-QCM certification of two projects asap in order to obtain early feedback for exploitation/sustainability planning and the A-QCM standardization activity.



Recommendation 7

- A roadmap for standardization of A-QCM has been clearly defined and implemented (QR5, DNA2.7)
 - A-QCM model presented in several occasions and most notably discussed in Rome in October at the 37th Meeting of the JTC1/SC7/WG6 (**Software and Systems Engineering**), where it has received positive comments
 - Further activities will take place by individual partners after the ETICS 2 project depending on business opportunities
- At the same time, effort has been put into consolidating A-QCM as common model for assessing software developed by FP7 projects and other related initiatives
 - A number of projects, like EGEE, D4Science, EDGeS, UNICORE have signed MoUs or similar agreements, applied A-QCM experimentally and contributed to the evaluation of its applicability
 - The EMI project, consolidating the major middleware development efforts in Europe from ARC, gLite, UNICORE and dCache, has adopted A-QCM and ETICS as underlying QA management system



Recommendation 8

Only a few online training modules have become available during the first project year. All modules must be completed by M15 and promoted effectively to the target communities. Furthermore, the project should intensify the training of new users as a prerequisite for sustainability beyond the project period.



Recommendation 8

- The project has allocated the available effort to critical training activities throughout the project, but effort is limited (0.5 FTE plus contributions from all WPs as trainers)
- All foreseen training modules have been developed, although it took longer than requested to complete the series
 - All modules available on YouTube and the project web page
- Training events have been organized in collaboration with:
 - other initiatives (BalticGrid School of Computing, GridKA School of Computing)
 - specific groups of users (EGEE Data Management development teams and dCache)
 - within the project (technology transfers)
- The increase in the number of users shows a clear correlation with the training events



Recommendation 9

The project should further develop Service Level Agreement relationships to ensure that the services offered by ETICS-2 would meet all the user requirements. This has to be elaborated explicitly by the commercial partners of the consortium, inline with what they experience with their customers.



Recommendation 9

- SLA revised by the commercial partners
- Presented in appendix of DNA2.9
- Used with the MoUs for the Trial Certifications
- Proposed as the base for the EGI/EMI SLA on the provision of software services



Recommendation 10

The project has not presented during the review meeting neither in the project reports any information regarding gender equality actions. The project should report on this topic in subsequent project reports.



Recommendation 10

- A Gender Action Plan has been put in place in the second year
- It has been developed in collaboration with the EGEE and DEISA Project Offices, who have provided us with templates and guidelines
- Information has been regularly collected and reported to the EC as part of the quarterly reports and the final project report
- The main results are:
 - the full adoption by the ETICS 2 project of the gender equality policies of the single partners
 - an above average¹, although still non optimal, ratio between men and women in all types of activities (30%)

¹UNESCO Institute for Statistics (UIS), Bulletin on Science and Technology Statistics, 2006



Recommendation 11

DSA.2 has to become public after removing any confidential information.

- A revised version of DSA2.2 (v. 1.1) has been published in the ETICS 2 document server at:

https://edms.cern.ch/file/969962/1.1/ETICS-DSA2_2-969962-New_Infrastructures_Evaluation_Plan-v1_1.pdf



Project Achievements

Objective 1: Extension to new infrastructures

- The pluggable Job Submission service has been completed
- Implementations are now available for NMI, gLite, UNICORE and Amazon Web Service
- Specifications for implementing new providers have been published
- New important projects have been added to the ETICS database:
 - dCache, ARC testsuites, UMD client (experimental)
 - Several desktop grids (EDGeS) applications
 - Commercial projects (OpenCMS@ENG,PTRS)
- An evolution of the system towards use of Clouds has started:
 - Amazon Web Service
 - ETICS VMLoader
 - INFN WNOD on gLite
 - Virtualization in Condor and NMI



Project Achievements

Objective 2: Enhancement of services

- Continuous improvements in infrastructure and release management
- Extensive use of virtualization
 - Better security
 - Lower administration overhead
 - Required by multi-testing
- Test automation tools and multi-node testing implemented
 - Used by EGEE gLite, D4Science, ARC
- Extension of repository service with integration of external repositories:
 - EPEL and other httpd-based repositories
- Plugin manager service and test workflow designer
- Project dashboards
- A-QCM collector and metrics reports generators
- Increased security and privacy (anonymous access filters)



Project Achievements

Objective 3: International collaborations and standards

- A-QCM roadmap defined and presented in various collaboration events
- Presentation to the ISO **Software and systems engineering** committee (JTC 1/SC 7), received positive feedback
- Trial certifications performed with EGEE, D4Science, EDGeS and UNICORE with signed collaborations MoUs
- The ETICS system selected as software engineering platform for the EMI project by ARC, gLite, UNICORE and dCache
- Continuous collaboration with VDT
- Started collaboration with Google on testing automation



Project Achievements

Objective 4: Exploitation and business strategies

- ETICS unique selling points, SWOT analysis, target definition and potential business models have been defined
- The information has been used to improve the approach to potential new customers leading to concrete collaborations by Engineering, 4DSoft and VEGA with third-party development teams or companies (Spago4Q, Bonn Hungary Electronics, EUMETSAT)
- A new version of the ETICS SLA has been defined and has been proposed as input for the future EGI/EMI SLA, which is expected to regulate the customer-provider relationship between the two projects
- The partners have defined and implemented their exploitation plans according to their specific business interests (academic or commercial)



Deliverables and milestones

Deliverables (PM1-24)

- All 38 deliverables submitted
- DJRA1.6 is only reporting the conclusion of the IPv6 investigation for lack of external support
- An additional deliverable (DSA2.7) has been added to report on the integration with Amazon WS with effort partially reallocated from the IPv6 task

Milestones (PM1-24)

- 27 milestones achieved



Conclusions

- ETICS has strongly positioned itself at the core of the infrastructures software development activities with strong ties with all major infrastructure and development projects
- Its relentless support, dissemination and training activities have helped in the past 4 years more than 300 developers and their projects to achieve a better understanding of software QA benefits and costs
- But it has not been easy:
 - At the beginning ETICS had one session at the EGEE 2007 conference, which was attended by 10 people, 5 from EGEE and 5 from ETICS itself
 - During EGEE 2009 there were three ETICS-related contributions and the one on A-QCM and testing automation was attended by almost 50 people from several projects including initiatives like the Square Kilometer Array project (SKA)



Conclusions

- ETICS has put considerable effort in future sustainability
 - In the research community at large, this has resulted in the integration of the ETICS system and principles in EMI, EGI and several other projects beyond the ETICS project life
 - In the commercial communities, it has resulted in the definition of a new service provision model for software QA, a number of collaborations between Engineering, VEGA and 4D Soft with real customers and the integration in their service portfolio and a technical collaboration with Google, which will be inherited by EMI
- We are and we have always been convinced that the application of standard software engineering practices by the research communities is essential for their growth and their sustainability
- ETICS has contributed in no small measure to the formation of a new generation of engineers capable of understanding and applying these principles in an environment where software has traditionally been considered 'disposable'





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<http://www.eticsproject.eu>

