



The ABC4Trust Pilot in Patras

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Key Messages



- Students and instructors were introduced to ABC4Trust goals and theoretical background
 - Briefing days for students at the University premises – presentations were shown to students about ABC4Trust and WP7 goals
 - Information material sent to professors for their opinion on remote course evaluation using ABC4Trust technologies
 - Opinions documented on questionnaires, as a first feedback on the ABC4Trust and the pilot's goals – feedback was overwhelmingly positive!
- Use cases and roles defined (collaboration with WP5)
- Pilot system architecture is being designed for the first round of the pilot in fall semester 2012
- Pilot system is expected in the near future to be expanded, by CTI, to cover the eParticipation needs of the whole educational network of Greece (all levels of education)

Participants



Crypto Experts (CRX)



Goethe University Frankfurt (GUF)



IBM Research Zurich (IBM)



Microsoft Research & Development France (MS)



Miracle (MCL)



Nokia Siemens Networks (NSN)



Research Academic Computer Technology Institute (CTI)



Technische Universität Darmstadt (TUD)



Unabhängiges Landeszentrum für Datenschutz (ULD)



Objectives



- WP7: participation of certified students in remote course evaluations – give feedback to ABC4Trust
- Main WP tasks
 - Information days and information material for participating students
 - Design of pilot system architecture
 - Implementation and deployment of pilot system
 - Scheduling and conduct of the pilot trials
 - Feedback to ABC4Trust technology developers
- Currently heading towards Deliverable D7.1 (description of the pilot application)

The Greek Pilot: Course Rating of Certified Students



- Informal course evaluations conducted anonymously without lecturers knowing participant's identities
- Based on student attendance information
- Issuance of multiple credentials (student ID info, course registration info, class attendance info)
- Verification with *anonymous proofs* towards “untrusted” infrastructure
- A precursor for the introduction of ABC4Trust innovations in the Greek School Network and all the Greek Educational Community

The Greek School Network (GSN)



GSN is the **Educational Network** of MoE – **Eleven (11) years of operation**

It connects: **16.030** schools, **>8.000** school LANs, **899** education administration bureaus, lifelong learning organization, **594** libraries, **60** archives of the State, etc.

Provides personalized access to **77.382** teachers and **51.173** students.

Closed educational intranet – **security** for students is one of the prime objectives.

Develops, provides and supports **value added services**, specially designed for **education** and for **administration of education**.

Extended use of **open source** software.

Helpdesk: supports **>30.000 tickets/year** and a **multiple number** of phone calls

It provides the «**social**» **space** and the **means** for the creation of **Educational Networking Communities**.

Cofounded by **European Union** and **Greek state**

Designed, implemented and operated by the **Ministry of Education** and twelve Research Centers, Universities and TEI.

Brief pilot description



- Two courses have been selected to be evaluated from the curriculum of the Computer Engineering and Informatics Department (CEID), at the University of Patras, Greece
- First Course: Operating Systems (Laboratory Class)
 - Estimated number of students: 150
- Second Course: Distributed Systems I (Theoretical class)
 - Estimated number of attending students: 60

CEID and CTI



- Co-located in the University of Patras campus
- Close collaboration (many faculty members of CEID collaborate with CTI and vice versa)
- Established in 1985
- 5-year computer engineering curriculum
- Accepts ~250 new students each year

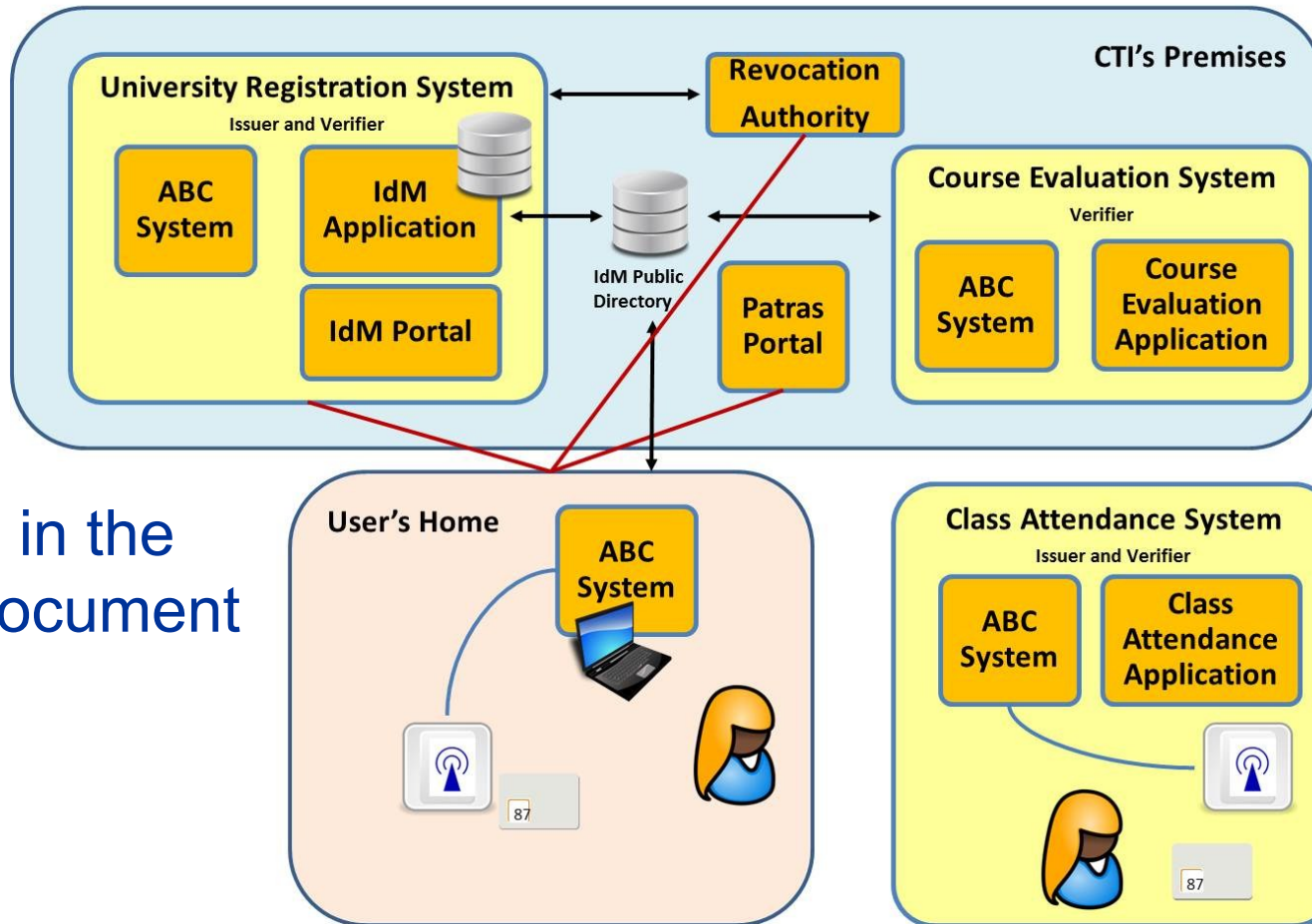


CTI

- Established in 1985
- Undertakes R&D ICT projects
- It has 10 distinct activity sectors
- Employs about 200 employees with ~40 MSc or PhD holders

High Level Architecture

High Level Architecture / Patras Pilot



Defined in the
HLTD document

Mapping of ABC roles



Entity	ABC Role
University Registration System	Issuer
University Student	User
User's Home Application	User Agent
Course Evaluation System.	Verifier
University Registration System	Revocation Authority
University Registration Office	Revocation Requestor

Defined and explained in D5.1 and the HLTD document

Student Credential Types



We have chosen three credentials types, which have different roles in a student's academic life – all three can be handled independently of each other:

- credUniv:
 - First Name:
 - Last Name:
 - University Name:
 - Department Name:
 - Matriculation Number:
- credCourse:
 - Matriculation Number:
 - Course Identifier:
- credAttendance:
 - Hidden Matriculation Number:
 - Course Identifier:
 - Lecture Identifier:

Currently transformed into XML format and respecting policies with the assistance of WP4 – will be included in the HLTD

The basic pilot activities



- ABC System Setup
- Obtaining the University Registration ABC Credential via One-Time-Token
- Viewing of the Student's Data in the IdM Database
- Self-Administration of the Student's Data in the IdM Database
- Obtaining a Course Registration and ABC Credentials
- Collecting Attendance Credentials
- Backing Up Attendance Information and Smart Card content
- Restoring Attendance Information and Smart Card content
- Participating in a Course Evaluation
- Revoking Student's Credentials

Zooming in: Collecting Attendance Credentials



- Students get issued credentials on smart cards before term begins
- Students wave their smart card in front of an NFC reader (issuer) located in classroom
 - During the first of the pilot, a simple counter will be used instead to record attendance information. ABC credential gets activated on card if counter is above a predefined threshold value
 - During the second round of the pilot, the student will receive (for each class attendance) a credAttendance credential attesting attendance, These credentials will be aggregated on the smart card
- The students can access the course evaluation system and are allowed to evaluate the course, after verification of their credentials

Zooming in: Participating in a Course Evaluation



- A student accesses the course evaluation system
- Using the credentials stored on the smart card the student can participate in the course evaluation by proving to:
 - be a registered student of the department
 - have booked the course under evaluation
 - have attended a minimum (required) number of course lectures

Current and next steps



- A **Use Case document** with all steps, preconditions, and post-conditions of the use cases is being maintained
- Continue work on the **HLTD document** that refines use cases and maps them to the ABC4Trust API
- In the spring semester 2012, an **on-site test** will be performed with early versions of the ABC4Trust reference application
- The first round of the **full scale pilot** will start in September 2012 and the second round will start in February 2013.

Briefing of students



- On 16/03/2010 before the start of their regular lecture:
 - Slides were shown introducing the students to the concepts of ABC Credentials and the goals of the pilot.
- On 18/03/2010 the introduction was completed with more information about the ABC4Trust project and the pilot:
 - A more thorough discussion was held related to the concept of ABCs as well as the organization and the goals of the pilot.
 - For further and more detailed information on the course evaluation trial students were referred to the then created Greek Pilot's site .

Questionnaires Distribution



- 71 Students were involved
- Hard copies of the questionnaires were handed it out in class
- A subset of those students will actively participate in the course evaluation pilot
- Students found the envisaged course evaluation pilot interesting

Summary of Students Questionnaires Results



- Students find ABC Technologies interesting and they believe that it can change their everyday life.
- Although their trust level for previous evaluation methods is good, their trust level for the anonymous evaluation process is even higher.
- A demo of the evaluation pilot could increase students' trust level.
- Their main concern is on the impact that the results of the evaluation process will have on the conductance of the course.

Our plans ...



- The two ABC4Trust trials at the University of Patras
- Analysis of pilot results: feedback to ABC4Trust and to participants
- Dissemination of results in educational forums
- Incorporation of technologies in CTI's eVoting platform (PNYKA)
- Gradual introduction to larger educational communities that will be benefitted from ABC4Trust's innovations through the Greek School Network
- Target: refinement of critical public consultation and public opinion polling procedures – better eGovernance and governance reform
- The key element in all these use cases is that all participants can prove that they belong to one category or another through the use of their ABCs – thus, polling results can be refined and specialized according to participant's categories



Thank you!

www.abc4trust.eu



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