

Federated eParticipation Systems on Environmental Issues and its role Industrial Ecology

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Abstract

The paper presents project needs of new solution in eParticipation initiative area focusing main environmental and energy issues that the new European energy policy has to deal with. The project FEED (Federated eParticipation Systems for Cross-Societal Deliberation on Environmental and Energy Issues) is introduced as one possible solution. There will be discussed its main goals, platform architecture and project work plan.

1. Introduction

Engaging citizens in policy-making is a sound investment and a core element of good governance, since it allows governments to tap wider sources of information, find new perspectives and potential solutions, and improve the quality of the decisions reached. However, for interactive, collaborative decision-making between citizens and politicians, two key elements are overall required:

- Citizens must be prepared to become knowledgeable about current issues and to express opinions (particularly on new initiatives) in order to bring clarity to the decision-making processes of elected representatives.
- The state must be prepared to provide timely, comprehensive information, as well as channels of communication through which citizens can express their opinions and engage in debate.

To achieve these, is needed going beyond the currently available content management technologies of Parliaments' web sites. Such systems must focus on including the local work practice of preparing; supporting and maintaining eParticipation⁵, since these activities also influence the conduct of eParticipation (Eynon/Margetts 2007).

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⁵ The objectives of the eParticipation Preparatory Action are to demonstrate how using modern ICT tools and applications can make it easier for people to participate in decision-making and can contribute to better legislation. The action was initiated by the European Parliament and launched in 2006. It supports pilot projects in real-life environments that demonstrate the use of Information and Communication Technologies to bolster citizens' participation in democratic decision-making. http://ec.europa.eu/information_society/activities/egovernment/implementation/prep_action/index_en.htm

Existing systems include websites, e-mail, FAQ lists, web-based discussion boards, which are recognized as a useful way of encouraging and supporting *e*Democracy⁶. Although such systems can indeed encourage participation and debate, they generally provide no structure to the information gathered and accessed. There is an imperative need therefore for defining a methodology which addresses the requirement for structured discussion rules in a reflective discussion about a policy issue, creates visualizations of such discussions.

As far as it concerns the energy sector, the world today is facing an energy and environmental challenge. This challenge, acute for Europe and shared by all Member States, concerns how to secure clean energy for Europe against a backdrop of climate change, escalating global energy demand and future supply uncertainties. If a Member State fails to meet this challenge, other Member States are eventually affected. Problems that arise outside European Union (EU) can have an impact on the whole of the EU something that is the cornerstone for the establishment of a strong Energy Policy for Europe⁷ (EPE).

Some of the main environmental and energy issues that the new European energy policy has to deal with, according to the European Commission follow:

- Establishing sustainability across Europe and world wide by reducing the greenhouse gas emissions.
- Securing the supply of energy by creating new energy corridors and overtaking possible economic and political risks.
- Using renewable energy sources for energy production under the disengagement from fossil fuels.
- Limiting the carbon dioxide (CO₂) emissions by using uranium under “the highest standards of safety, security and non-proliferation, for energy production”⁸ (safe nuclear energy).

2. FEED project

The project FEED is solved by partners consortium consists of National Technical University of Athens (NTUA) - Greece; Zenc BV - Netherlands; Public-i Group Limited – United Kingdom; Athens Technology Center SA (ATC) - Greece; Masaryk University (MU) - Czech Republic; University of the Aegean (AEGEAN) - Greece.

The main objective of the project FEED is to apply a new concept in *e*Participation of businesses and citizens by allowing users to have seamless access to existing federated content that matches their needs for information supporting the several aspects of a public deliberation, when focusing Environmental and Energy issues. Through the FEED, existing federated content and/or other knowledge material (some of it already under processing and by other current *e*Participation projects⁹), are contextually annotated or channelled according to the issue and deliberation process specifics, allowing this way the platform users to perceive, search for and retrieve it in the contest of a participative *e*Activity.

The project FEED constitutes a Citizen-Driven trial project that provides the corresponding ICT tools and engages a critical mass of public involvement in the initial stages of the legislative process, taking into consideration also any internal sub-stages that the deliberation procedure may introduce while exploiting the on going results from other, pilot *e*Participation Legislation-oriented projects run by members of the FEED Consortium. Specifically FEED focuses at:

⁶ *e*Democracy, a portmanteau of the words "electronic" and "democracy," comprises the use of ICT tools such as the Internet in enhancing democratic processes within a democratic republic or representative democracy. It is a political development still in its infancy, as well as the subject of much debate and activity within government, civic-oriented groups and societies around the world.

⁷ http://ec.europa.eu/energy/energy_policy/index_en.htm

⁸ Euratom Treaty, 1957 (http://europa.eu/scadplus/treaties/eec_en.htm)

⁹ http://ec.europa.eu/information_society/activities/egovernment/implementation/prep_action/index_en.htm

- Empowering the legislation proposal formation stage, driven by the decision makers' need to scan the overall environment where the proposed legislation is going to act upon and identify early any social problems and need, and/or establish the background for a policy or a change in a policy. In this process, the project aims at making available relevant content, that will be managed in a federated environment of information sources – some of them also stemming from projects like DALOS, LEX-IS, LEGESE, LEXIPATION, SEAL, TID+¹⁰, and DEMO-Net¹¹ where project partners already participate.
- Support the debate at municipal level but with a truly Pan-European orientation, which engages a critical mass of participants in:
 - gathering evidence, knowledge and supporting information from a range of sources, including citizens, businesses, Non-Governmental Organisations – NGOs, and other socio-economic organizations,
 - presenting and understanding context,
 - designing the appropriate public policies for managing the problems that meet the needs of the involved parties, including the political context and
 - developing and concluding upon a range of options. Target the legislative and policy issues of Energy and Environment¹², allowing for verticalisation and real solution-oriented application of existing tools, capitalizing on already gained experience and guided by high-skilled experts present in the FEED team.
- Test in practice novel approaches for user involvement, including content federation, Web 2.0 and social networking techniques, context-driven semantic annotation tools, multiple channel interaction paradigms and trust building approaches.

The FEED European Added Value is explicit, at an institutional, communicative and technological level, and spins around the following axes:

- Producing better quality policy with content federation capabilities.
- Building trust and gaining acceptance of policy by giving NGOs, citizens and businesses the means to supervise government and policy implementation and balancing the power of lobby organizations as far as energy and environmental issues are concerned.
- All citizens have the same chance to participate in the public exchange of information (nobody can be excluded).
- The choice of topics is open for everybody and the discussion can be interrupted and picked up at a later point in time.
- The debate is free of outside pressure or any other influences and allows the interaction with all.

3. FEED platform architecture

Through the FEED platform, the following main services will be made available to decision-makers, businesses and citizens:

- Introduce issues to be debated in the platform.
- Interrelate (through the corresponding annotation) existing content with legislative information and specific Environmental and Energy issues that are deliberated.

¹⁰ <http://www.eu-participation.eu/>

¹¹ <http://www.demo-net.org/>

¹² EU policy areas defined at http://www.europa.eu/pol/index_en.htm

- Introduce “rich” informative material (video or audio) that explains and/or refines aspects of the deliberation procedure
- Retrieve content and express opinions about specific issues through comprehensive and easy to use interfaces – i.e. visualizing the structure of a legal act and enabling users to state opinions upon specific passages.

The Figure 1 depicts the overall system architecture along with its basic components. The system is composed out of three main subsystems, the universal storage for content storing and indexing, the content annotation and retrieval subsystem for applying content semantics and conducting semantic search and the presentation layer for providing services to end users.

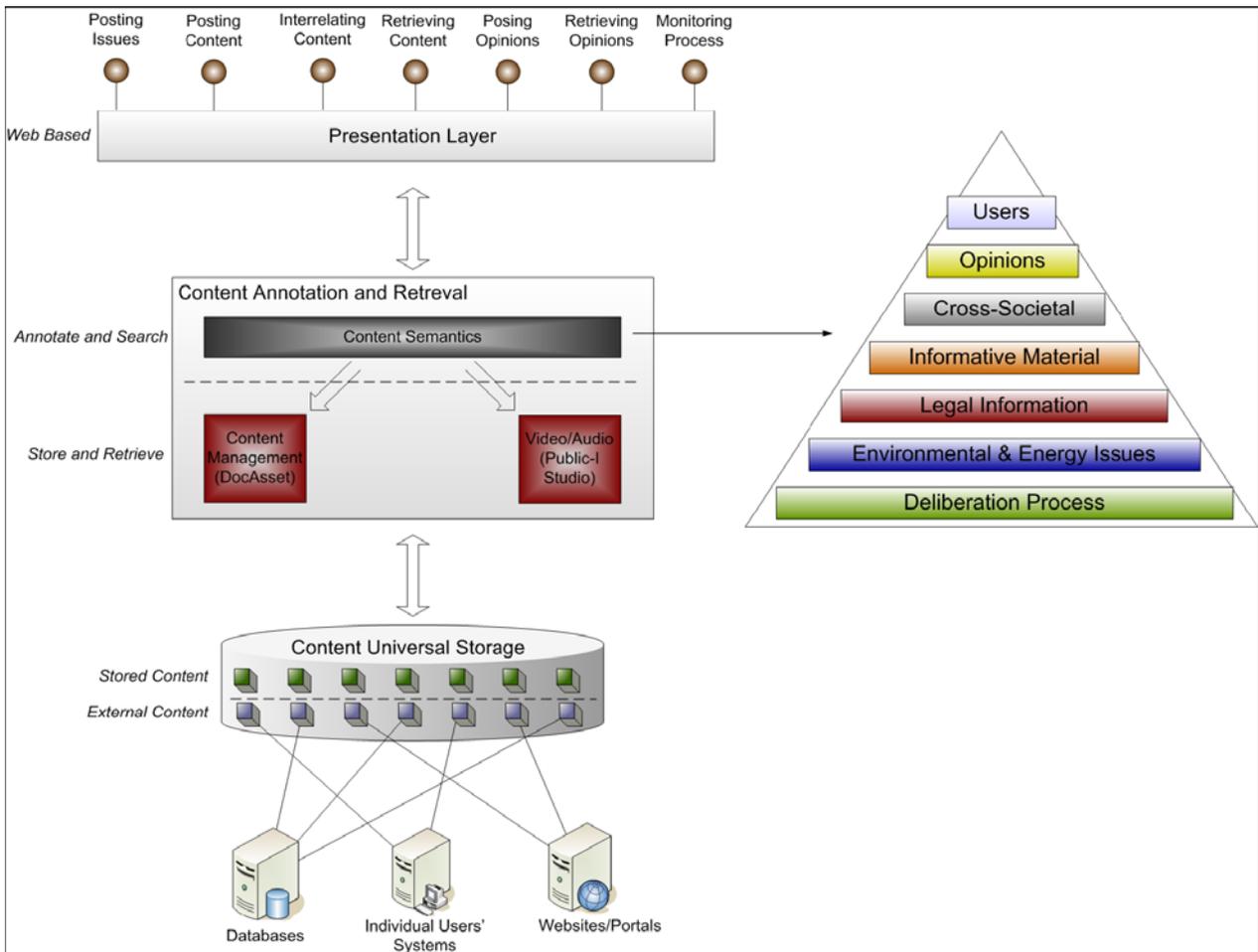


Figure 1
Platform Architecture
Source: FEED (2007)

3.1. Content Universal Storage

The Content Universal Storage subsystem is the main storage facility of the system. Its purpose is to hold all the information about the system operation. The Content Universal Storage subsystem stores information using two specific modes:

- By physically storing data and information of any kind (text, audio, video) in the system database.
- By storing links (indexes) to external storage facilities and systems (databases, websites/portals, individual machines) where the data are actually stored.

3.2. Content Annotation and Retrieval

The Content Annotation and Retrieval subsystem constitutes the engine of the entire FEED platform. Its purpose is to annotate the content so that it can be interrelated to specific concepts (i.e. debated issues on the platform, pieces of legal information, specific stages of the deliberation process, etc) and retrieve federated content that is relevant to a specific user input (i.e. an opinion, a request for informative material, a request for relevant opinions, a request for relevant legislation, etc). The main component of this subsystem is the Content Semantics component that holds all the semantics necessary to annotate information through the FEED platform. Specifically the system separates among several distinct categories of semantics and also will provide the necessary functionalities to annotate with such semantics existing content. In order to retrieve and manage the content, the subsystem will use two available software components:

3.2.1. DocAsset content management system

The content management subsystem based on ATC's DocAsset software, is a web based document management solution that allows the stakeholders / policy makers to capture, store and manage digital content, in any format (documents, images, excel files, PDFs), offering a complete and secure electronic environment for storage, management and delivery of information. The content management system supports amongst other:

- Collaboration between stakeholders and policy makers within and among organizations
- Document management by providing a complete set of tools required to control, audit, report, and secure content – the basis for managing processes and large document resources.
- Workflow Management by enabling the users to automate and control the legislation proposal formation. In technical level DocAsset exhibits the following characteristics:
- Open architecture and design allowing economical and smooth means for future expansion of the system.
- Parameterization and easy adaptation of the system for the particular environment and requirements of each user group.
- Friendliness, through an ergonomic and functional user oriented graphic interface and working environment.
- The ability to support the simultaneous use of the application by a large number of users with no loss in performance, speed of search results or compromises in security.

3.2.2. Public-I Suite webcasting platform

The Public-I suite of Webcasting software¹³ is provided and has been designed specifically to facilitate the ease of operation by in-house staff. The software contains the elements needed to ensure the user can not only capture content but can also embed vital contextual information to make the webcast meaningful and useful to the viewers. Features such as the automatic indexing of content to speakers or agenda items mean that webcasts are created as efficiently as possible – minimising the resource impact and removing the need for dedicated technical staff.

3.3. Presentation Layer

The current subsystem constitutes the web front end of the entire platform. Its purpose is to externalize the provided services to the final end users of FEED platform and performing the required user authentication during log on. In broad lines the FEED services that will be externalized are:

- Posting a new issue to be deliberated through the platform.
- Posting new content in the platform – either by indexing existing content or by storing new one.
- Interrelating content to a specific concept – i.e. a debated issues, a piece of legal information, a specific stage of the deliberation process, etc.
- Retrieving content that is relevant to a specific concept.
- Posting opinions about a specific issue.
- Retrieving posted opinions about a specific (or more) deliberation process(es).
- Monitoring the system operation.

4. PROJECT Work plan

FEED pilots are going to be executed within a realistic environment comprising important environmental and energy issues that contain the policy agendas of distinct stakeholders at local level. Specifically, FEED pilots will engage a considerable number of decision makers at municipal level and large heterogeneous community of affected stakeholders.

FEED pilots involve citizen participation in an enlarged deliberation process including Environmental and Energy issues with high-impact legislation under formation, such as:

- Energy production sources and disengagement from fossil fuels.
- High performance renewable energy sources.
- Safe energy corridors for electricity and fuel transportation.
- Nuclear energy as an alternative to fossil fuels and renewable energy sources.

The project work plan has been structured in order to support the following aims:

1. To co-ordinate all activities towards producing an e-participation platform based on state-of-threat information technology tools and methodologies. Project results will be validated by the consortium members as well as by the participants of the associated Cluster of End Users.
2. To involve as many users as possible (stakeholders including policy makers, citizens, businesses, organisations and youth) in the very early stages of the project in order to specify the user needs and key user groups' requirements and to take them into account in designing a comprehensive solution.

¹³ <http://www.public-i.info/webcasting.php>

3. To maintain users involved throughout the project and to achieve real life pilots and continuous running evaluation of its results.
4. To produce at regular intervals results that can be evaluated by users, disseminated and exploited; thus ensuring continuous interaction between implementation, validation and dissemination activities in the project.
5. To organise the flow of delivering results in such a way so that in every project review a significant step is completed and can be assessed; thus feedback from the reviewers' panel is also utilised towards achieving project success.

4.1 Implementation Methodology

The system will be brought from the conceptual phase of methodologies, semantic models and individual components and to a fully integrated eParticipation platform through the implementation roadmap on the Figure 2.

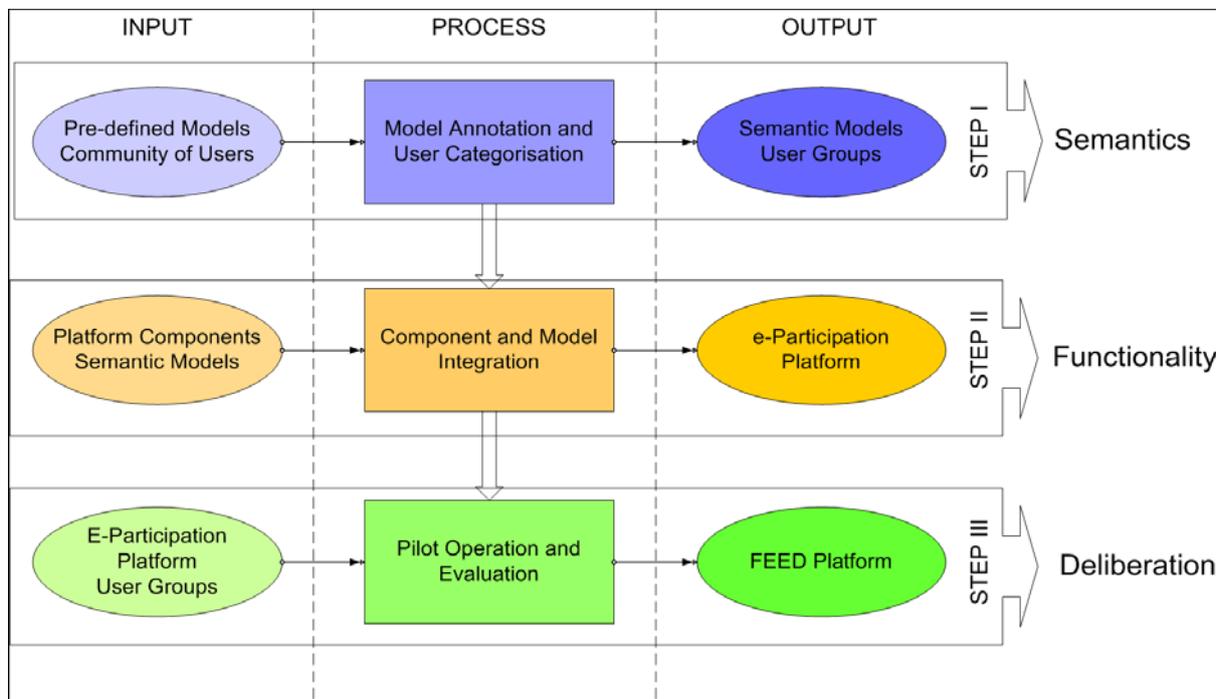


Figure 2
Project Implementation Roadmap
Source: FEED (2007)

1. **Step 1:** In the step 1 the community of potential users of an e-Participation platform – i.e. citizens, businesses, NGOs, socio-economic groups, government officials, and decision-makers at any level – will be categorized to discrete user groups with specific characteristics and requirements for the system. In parallel a set of pre-defined models that the consortium is already acquainted with through its experience in other projects will be enriched and refined where necessary according to the various sets

of existing requirements – i.e. user needs, legislative process stages and sub-stages for Environmental and Energy deliberation, structure of EU and national legislation, etc – in order to constitute a semantically annotated repository of models that will enable the system’s operation.

2. **Step 2:** In this stage the existing software tools that the consortium members have already developed will be integrated with the semantic models of the previous step to produce an e-Participation environment providing the necessary services for posting issues to be deliberated, interrelating them with existing content, retrieving content, adding informative material, stating opinions, retrieving posed opinions and monitoring the entire procedure.
3. **Step 3:** In this final stage the integrated e-Participation platform of the previous stage will be put through a rigorous period of pilot operation where all its features and capabilities will be tested and evaluated in a pragmatic environment of real life events. The objective is to assess the platform’s ability to effectively support participation in the deliberation process of real life environmental and energy issues of the policy agendas of the 8 Municipalities that constitute the FEED Cluster of End-Users Cities. The outcome after the application of the necessary modifications will be the final FEED e-Participation platform for Cross Societal Environmental and Energy Deliberation.

5. Conclusion

According to the European Commission, eParticipation is a Preparatory Action to promote the development and use of Information and Communication Technologies in the legislative and decision making processes, in parliamentary and government environments, aiming at enhancing the participation of citizens and contributing to better legislation. In this context, the FEED project targets the strategic objective “eParticipation in legislative and decision-making processes”.

The overall objective of the Work Programme is: “to demonstrate concrete cases where, with the help of modern ICT tools and applications, the legislative process and the resulting legislation can be improved and the participation of the public (citizens, businesses, civil society, NGOs, socio-economic and political groups, etc) in the decision-making process can be enhanced, for example through improved interaction with decision-makers”. Towards this direction, the project FEED main contribution lies in the trials of a web-based platform for providing seamless access to existing federated content that matches users’ needs for information according to the issues involved in a specific deliberation process (e.g. Environmental and Energy issues deliberation) and the related decision-making stage (legislation formation, debate on draft legislation, implementation or monitoring).

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