

DECISION SUPPORT SYSTEM FOR HIGHER EDUCATION INSTITUTIONS. PART 2. SYSTEM IMPLEMENTATION AT LBUS

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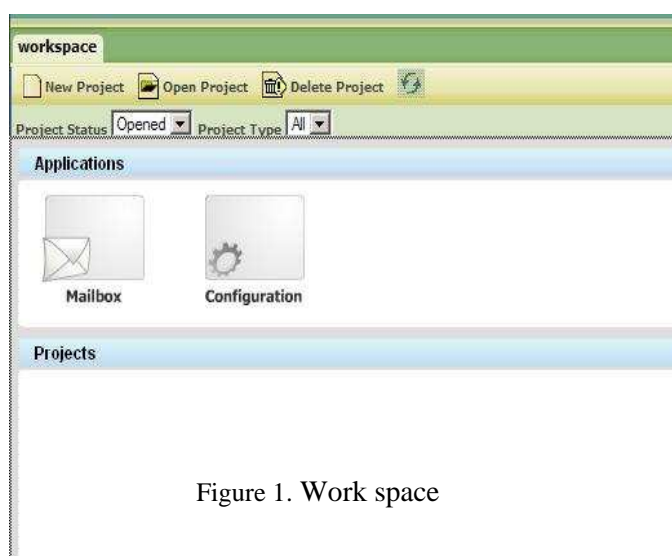
ABSTRACT

The eCollaborativeDecision solution is developed for the academic and public administration, being technologically transferred to the final users through two pilot scenarios. Applying methods and instruments inspired by social and behavioural sciences, the users have the opportunity of directly interceding in the decision process, evaluating and understanding the consequences of their actions and improving group's procedures and knowledge. In this way, the group is able to assimilate adequate technological solutions, using their own specific approach instead of the one imposed by system's designers. This will significantly concur to extending the acceptance and the understanding of the collaborative technology. In the paper *Decision Support System for academic environments. Part 1. General overview* we presented the general characteristics of the system. In this paper we present the system implementation in an important decision process from the research department at Lucian Blaga University of Sibiu.

1. INTRODUCTION

eCollaborativeDecisions is a collaborative environment which facilitates group meetings and processes useful for decision making in academic environments, increasing the speed of the decision process and the quality of the decisions; it facilitates generation of ideas, discussing, analyzing and organizing them, establishing priorities and reaching consensus. In the paper *Decision Support System for academic environments. Part 1. General overview* we presented the general characteristics of the system; here we propose to show how the platform really works.

The *work space* is the entity that displays the projects where the user is involved as resource. It facilitates the following operations (fig. 1):



- Designing, opening, respectively deleting a project;
- Visualizing the projects according to their status (open/closed) or to a predefined category;
- Accessing e-mail inbox;
- Configuring the parameters relative to the application / to a specific project.

Figure 1. Work space

Excepting the access to e-mail inbox, which is a personal operation for each user, the rest of the tasks are closely related to the rights any person has within the system. In particular, the system's administrator is the one who has full rights in the application's context; at project's level, the facilitator is the one who has the highest level of access to different functions.

The *Configuration Module* allows defining the resources, decision tools, roles, group types and agents (fig. 2).

Every *resource* has its role, which implicitly confers certain rights within the system (fig. 3). A user can have one of the following qualities: facilitator, active member, observer or guest observer (usually for third parties).

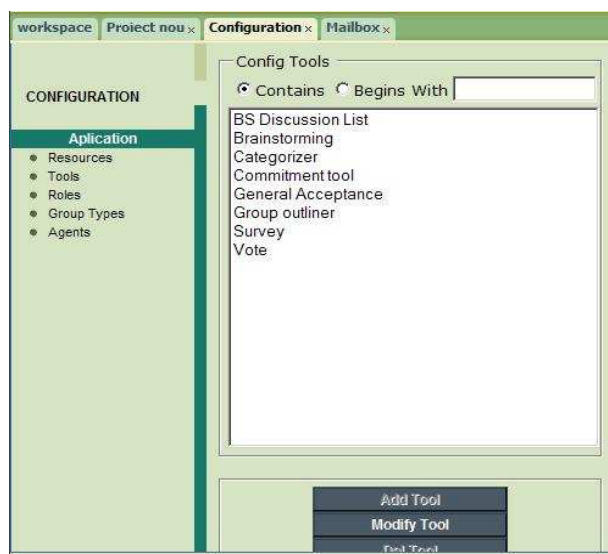


Figure 2. Configuring the application

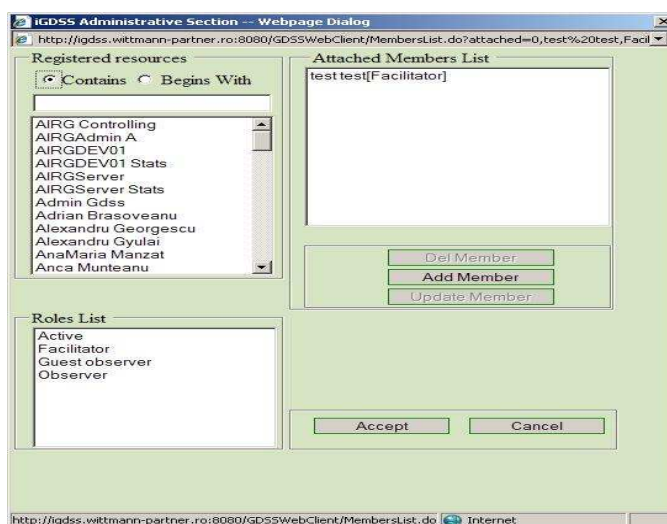


Figure 3. Resources editing within the project

The eCollaborativeDecision application is focused on the concept of *decision project*. A project is a complex of decision sessions that have a mutual purpose. In fact, a decision project implies a work flow; for each of its nodes that requires a user's action, a session is created for an effective interaction with the system.

The existing modules of a project include (fig. 4):

- *Decision Map*: a series of decision processes approached as individual tasks that a user must accomplish, specific for each person
- *Project Information*: general information on the decision process (description, members, begin / end);
- *Decision View*: a hierarchical structure of decision plans / sessions
- *Discussion List*: a discussion list applicable along the entire project

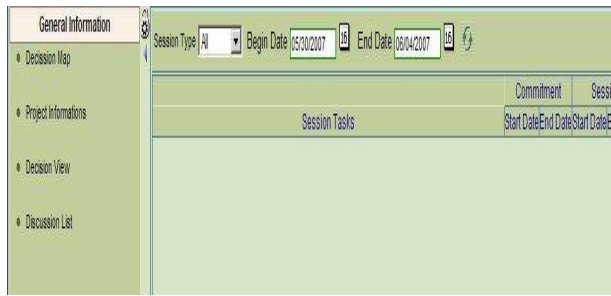


Figure 4. Modules within a project

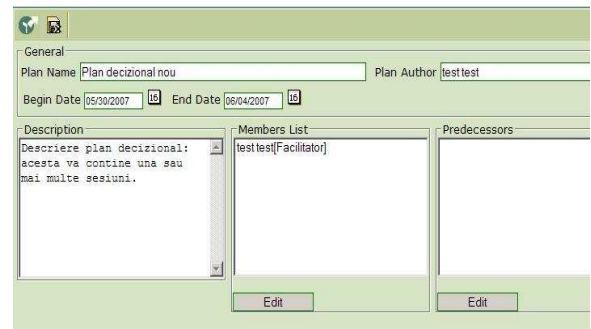


Figure 5. Designing the decision plan

A project can include one or more decision plans, which are composed of one or more sessions. A decision plan contains a description, has a start and finish and an editable list of members and predecessors (fig. 5).

The functional finality of a decision session is making a decision. The session is created by the facilitator who advances a problem whose solving involves making a decision; the session has a definite period of action and involves a certain number of participants.

A session has three phases:

- initial phase: setting the duration of the commitment period and establishing the decision instrument for this session;
- commitment phase: is the phase when the parameters of the decision process are set: agenda, data, members, tools;
- actual session phase: generates results (that can be the input for other sessions).

ECOLLABORATIVE DECISION FOR ACADEMIC ENVIRONMENT

The processes involved in the administration of scientific research at university level are very complex and often involved different actors (managerial structures at university / faculty / department levels, teachers, research staff, students). At Lucian Blaga University a new regulation project usually comes from the research department; it could be propose also by other university / faculty research structures. The project should be debated in the Senate Commission for Scientific Research and finally it has to be approved by University Senate.

In order to improve the decision making process, we decided to implement a decision support system. Instead of buying a software / platform, we rather preferred to particularize an existing one – eCollaborativeDecision. For the first we drawn a flow chart,

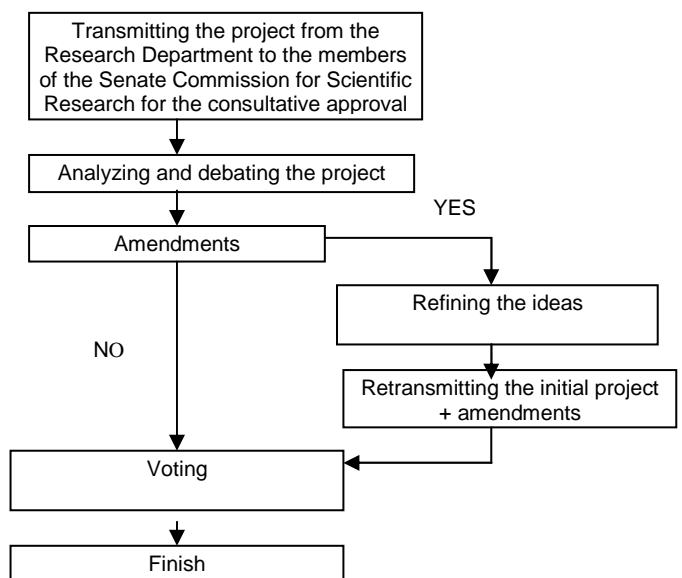


Figure 6. LBUS: decision flow

to describe very clear what is happening in a decision process from the research department (fig. 6).

The operational plan includes the following steps:

- Creating a decision plan and obtaining the consultative approval (fig. 7);
- Creating the sessions of the plan (fig. 8);

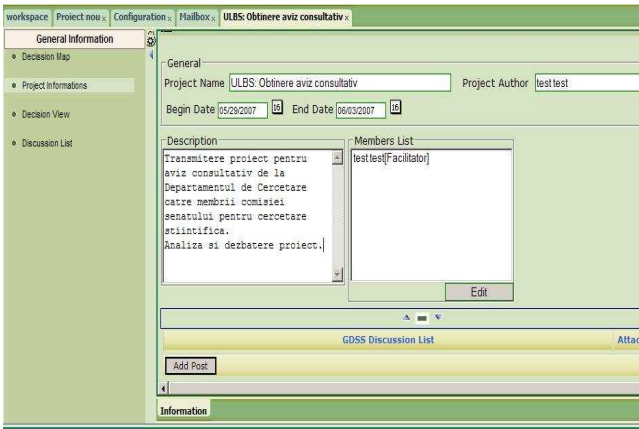


Figure 7. Information on the project

The screenshot shows a table of decision plan sessions. The table has columns for ID, Name, Start Date, and End Date. The sessions are as follows:

ID	Name	Start Date	End Date
0	ULBS: Obținere aviz consultativ	05/29/2007	06/03/2007
41844736	Plan decizional nou	05/29/2007	06/03/2007
41910272	Transmitere, analiza si dezbatare proiect	05/29/2007	05/29/2007
42205190	Elaborare, transmitere si categorizare amendamente	05/30/2007	05/30/2007
42205191	Votare proiect plus adnotari	05/30/2007	05/30/2007

Figure 8. The decision plan and corresponding sessions.

- The sessions can be visualized as Gantt graphic or Pert diagram (fig. 9, 10).

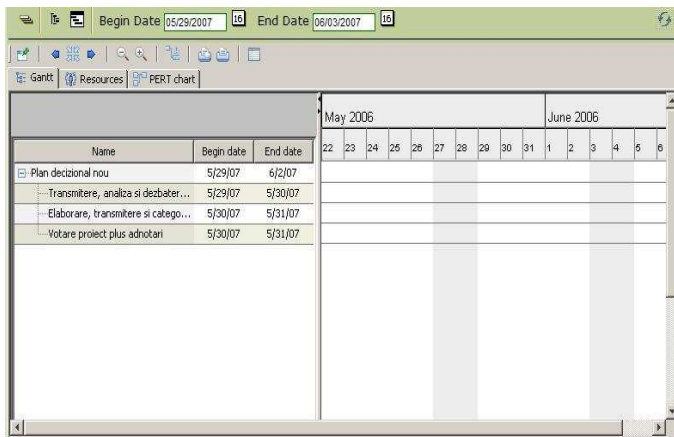


Figure 9. Gantt visualization

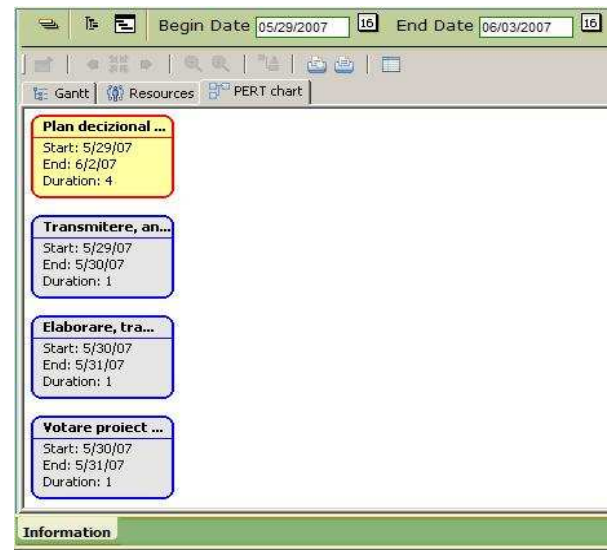


Figure 10. Pert visualization.

- First decision session is set (fig. 11)

The screenshot shows a table for setting the first decision session. The session type is 'All', the begin date is 05/29/2007, and the end date is 06/03/2007. The table has columns for Session Tasks, Commitment (Start Date, End Date), and Session (Start Date, End Date).

Session Tasks	Commitment		Session	
	Start Date	End Date	Start Date	End Date
✓ Transmitere, analiza si dezbatare proiect	05/29/2007 17:00:00	05/29/2007 18:00:00	05/29/2007 19:00:00	05/29/2007 20:00:00

Figure 11. Decision session is set

- The necessary parameters are configured (fig. 12):
 - „Depth” shows the number of the response levels.
 - „Can append topics” shows the possibility of attaching one / more subjects
 - „Anonymous” shows the option of marking the session as anonymous.

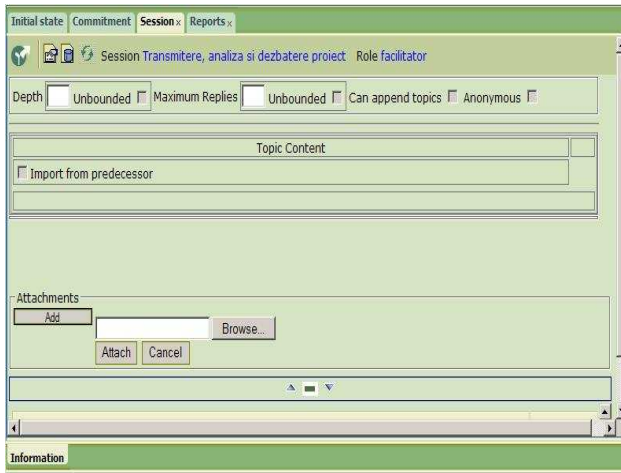


Figure 12. ULBS: Configuring the decision session

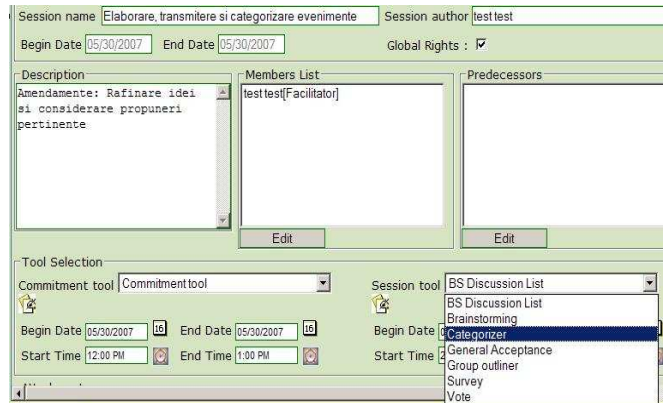


Figure 13. ULBS: Designing the session

- The second decision session is set: events elaboration, transmission and categorization (fig. 13). The designed session is configured according to the specific decision tool used, marking (fig. 14):
 - the maximum number of items that can be categorized
 - the maximum number of categories that can be specified
 - the possibility of adding new items
 - the possibility of adding new categories

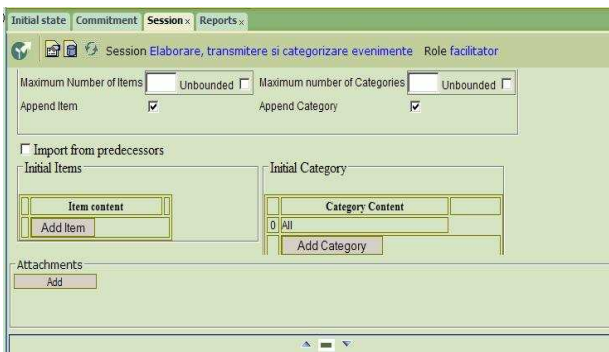


Figure 14. Configuring the categorization session

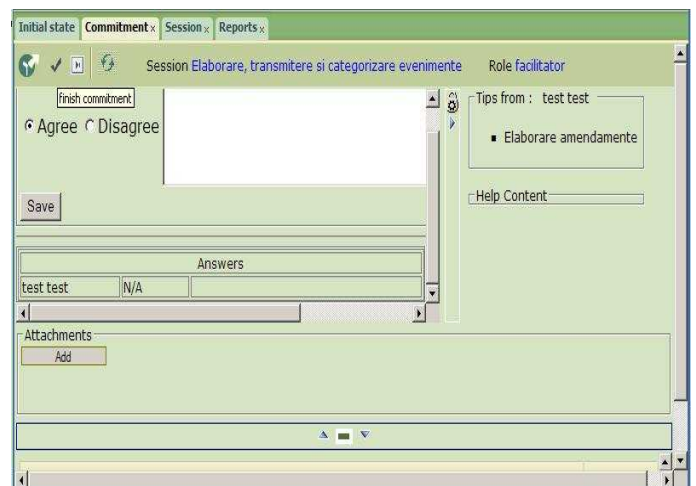


Figure 15. Commitment phase

During the commitment phase, the user expresses her / his approval or disapproval in regard to the participation in the session, by marking „Agree” or „Disagree”, then „Save” (fig. 15).

The movement from a phase to another during the session can be done either automatically, when the duration of the precedent session expires, or manually – when the facilitator considers it's necessary.

The actual session phase is the phase during which the decision instrument chosen in the initially phase is used.

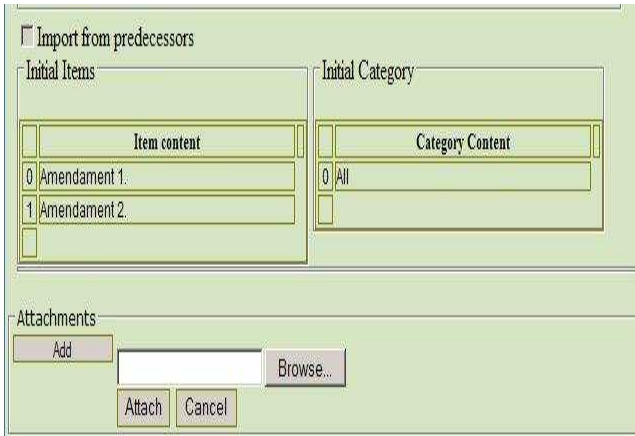


Figure 16. ULBS: session phase: categorization

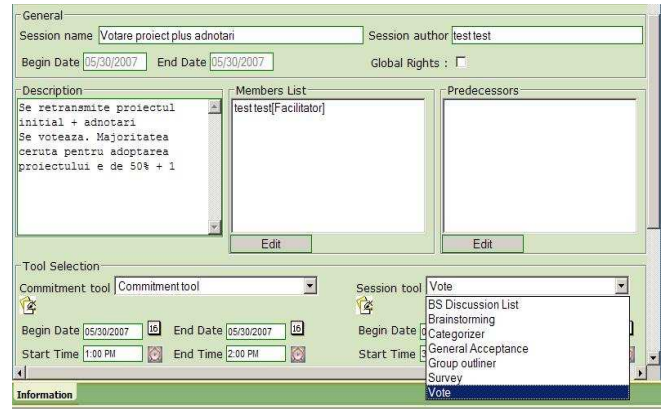


Figure 17. ULBS: voting session

- The third decision phase is set, considering the voting instrument.

The voting type is configured and the option of anonymously voting and / or importing predecessor elements is elected.

New issues can be added and attachments, as well.

There are six type of voting (fig. 18):

- Vote on a scale from 1 to 10.
- Multiple selections
- Yes / No.
- Agree / Disagree on a scale of 5 points.
- Agree / Disagree on a scale of 4 points.
- True / False.

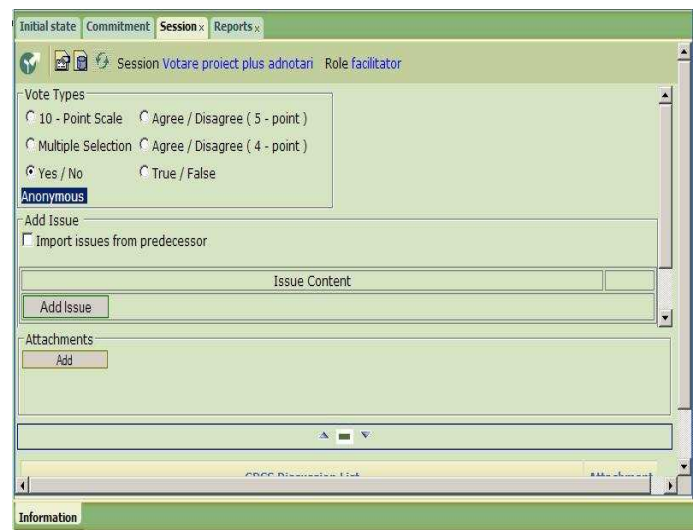


Figure 18. ULBS: configuring the voting session

CONCLUSIONS AND INTENTIONS

Using the eCollaborativeDecision platform, the decision processes in the research department at LBUS have been greatly improved.

We have managed to achieve the proposed goals of the platform: assisting the decisions by combining knowledge and human intuitions with specific knowledge and using the speed of the technology. The platform can also simultaneously assist many interdependent and/or sequential decisions considering the fact that much of the decisions are correlated in practice. Moreover, it supports all the decision process stages and can also be adapted to different decision types and is promoting learning and knowledge achievement that leads to new requirements and system refining. Our goals are to further fine-tuning the platform, adding new tools and improving the current ones.

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