i Decision Support System

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Outline

- Decision support
  - What is
  - Decision process
  - Strategic, Tactical and Operational Decisions

- iDS
  - Concepts
  - Framework
  - Support Decision Tools
  - iDS API for Tools integration

- iDS Screens

- iDS Case Study
History and Context

iDecisionSupport

- Web based framework for decision support tools
- Collaborative environment where different software tools for decision making can be easily integrated
- Users can access them remotely and asynchronously
- Developed at Ropardo S.R.L. starting back in 2006 within the CEEX – National Research Project

GDSS is a software platform for business process management, electronic decision support, and collaboration.

GDSS is made up of collection of tools that support group processes such as brainstorming, list building, information gathering, voting, organizing, prioritizing, and consensus building
Decision Process

1. Identify the **problem** or opportunity

2. Gather relevant **information**

3. Develop as many **alternatives** as possible

4. Evaluate alternatives to decide which is the best

5. Decide on and implement the **best alternative**

6. Follow-up on the decision

Decision making is the cognitive process leading to the selection of a course of action among alternatives.
Strategic, Tactical and Operational Decision

**Strategic decisions** (examples: to focus efforts on a new product or to increase production output)

- They affect the long-term direction of the entire company, and are typically made by top managers.

- These types of decisions are often complex and the outcomes uncertain, because available information is often limited.

**Tactical decisions** (examples: to provide an incentive plan to employees to encourage increased production)

- They focus on more intermediate-term issues, and are typically made by middle managers.

- The purpose of decisions made at this level is to help move the company closer to reaching the strategic goal.

**Operational decisions** (examples: scheduling employees, purchasing raw materials needed for production)

- They focus on day-to-day activities within the company and are typically made by lower-level managers.

- Decisions made at this level help to ensure that daily activities proceed smoothly and therefore help to move the company toward reaching the strategic goal.
Project
Definition of members’ rights within the project; its goal and duration

Workflow
Made up of a succession of sessions, with the possibility of being pre-defined or revised during the decision-making process

Session
Create a session aiming to define the tool that is most representative for its purpose. The functionality for this tools’ configuration will be provided.

Tool
It is the defining tool for a session, being used to reach the goal for which the session was created. It can have its own interface and function in GDSS context, or it can be a stand-alone application.

Reports
It is based on an overall evaluation of each work package, allowing the analysis of each aspect of the decision-making process.
iDS Tools

GDSS Tools

Each tool focuses on a specific aspect of group collaboration, such as idea generation, evaluation, organization, and exploration.

- Categorizer
- Vote
- Topic commenter
- Electronic brainstorming
- Alternative analysis
- Group outliner
- Survey
iDS Tools

iDS tools web service

iDS tools connector

URL (via iDS portlet)

ConfigParameters & Result XMLs, which can be customized for each tool functionality/semantic

iDS Tool

GUI

Functionality/Semantic

DB
Config Parameters (XML)

Defines the XML tags (initial-items, initial-references, optional-items, item, reference, paramValue) and attributes (uid, name, value)

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<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<paramSet version="2.0">
  <initial-items>
    <item uid="1300109156328"> <![CDATA[Issue 4]]> </item>
    <item uid="1300109156329"> <![CDATA[Tee]]> </item>
  </initial-items>
  <initial-references/>
  <paramValue name="voteType" value="2"/>
  <paramValue name="appendIssue" value="false"/>
  <paramValue name="anonymous" value="false"/>
  <paramValue name="importFromPred" value="false"/>
</paramSet>
```
Results (XML)

Defines the XML tags (tool, participants, items, etc.) and attributes (uid, name, content, toolName, etc.)

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  <tool anonymous="false" toolName="Voting Tool" toolType="vote" type="yesno">
    <!-- Tool participants -->
    <participants>
      <participant name="Ciprian Candea" uid="88573904"/>
      <participant name="Claudiu Zgripoea" uid="88571905"/>
      <participant name="Gabriela Candea" uid="88571906"/>
      <participant name="Kostas Efthymiou" uid="88571907"/>
      <participant name="Marius Staiucu" uid="88571908"/>
    </participants>
    <!-- Tool references -->
    <references/>
    <!-- Tool items -->
    <items>
      <item author="" parentUid="" type="" uid="1307294670798">
        <content><![CDATA[VffReviewDemo_Compa_H]]></content>
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        <action participant="Claudiu Zgripoea" N/A/>
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        <action participant="Gabriela Candea" N/A/>
        <action participant="Kostas Efthymiou" N/A/>
        <action participant="Marius Staiucu" N/A/>
      </item>
    </items>
  </tool>
</xml>
Project View
Decisional Session
iDS Screens

Voting Tool
iDS Screens

Categorizer

Research & Development

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### Vote Results

<table>
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<tr>
<th>Nr.Crt</th>
<th>Total Issues</th>
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<tr>
<td>0.</td>
<td>Satellite Pro A129-189, Intel Core Duo T2250, 1,024 MB, 80GB (5.4 rpm), Serial ATA, 15.4&quot; WXGA TFT, DVD SM DL, BD2.11a/b/g, Windows Vista Business, 2 years warranty € 768 garantie 24</td>
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<td>1.</td>
<td>Satellite A200-1CR, Pentium Dual Core T2080 (1.73GHz), S12+ 512MB DDR2 (667MHz), 120GB, 15.4&quot; WXGA CSV VA, DVD-SM, Intel 945GM, 11b/g, BT, No TPM, Vista Basic, 2YW € 699 garantie 12</td>
</tr>
<tr>
<td>2.</td>
<td>AS56122WLM3, 15.4&quot; WXGA Acer CrystalBrite w OrbiCam, Pentium® Dual Core T2060 1.6GHz, 1GB (2x512MB) DDRII 533, 120GB 5.4K SATA, DVD-RW SuperMulti DX, BD2.11b/g, 5 in 1, 6CELL, Vista™ Home Premium € 630 garantie 12</td>
</tr>
<tr>
<td>3.</td>
<td>TECRA AR-103, CORE2 DUO T5500(1.66GHz),S12+512MB DDR2 (533MHz),100GA(5400RPM) SATA,15.4&quot; WIDE XGA VA,DVD-SUPER-MULTI (+ R DL),INTEL 945GM,INTEL 11A/B/G (13CH),BT,VISTA 32BIT BUSINESS,3 YEARS WARRANTY € 817 garantie 30</td>
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<td>4.</td>
<td>ULIHTRR Lenovo Thinkpad R60 Duo 2 T5500 (1.66GHz), S12MBx2, 80GB/5400rpm SATA, Intel Media Accelerator 950 up 128MB, 15&quot; XGA TFT, DVD-RW/CD-RW(55multiburner) Dual Layer, Modem, Gigabit, Centrino Duo 11a/b/g, Bluetooth, Security Chip, FPR, WXP Pro, Warranty: 1 year €1,145</td>
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