Learning in Context 2012

organized by

Centre of Learning Sciences and Technologies CELSTEC

and

Network of Excellence STELLAR
Some Facts:
- 20,000 Students
- 60 Mio Budget
- 15 Study Centers

CELSTEC
- 120 fte, 7 Mio budget
# Research Lines and topics

## #1 Mobile and ubiquitous learning content

*Ubiquitous access to learning support and distributed multi-format learning content.*

- Mobile Video and Audio Content (Youtube EDU, iTunes U), Cloud-based learning content, Mobile data collection and aggregation, eBooks and tablet content.

## #2 Orchestration of seamless learning support

*Instructional design of nomadic and seamless learning support.*

- Ubiquitous LMS access, Mixed Reality Games, Excursions and Field Trip systems, Mobile Augmented Reality, Mobile Learning Games, Object and location-based service access.

## #3 Situated learning experiences

*Connect the Learning and the real World, context-aware and sensor-based learning support.*

- Experience sampling apps, Sensor-based learning apps, Situated and ambient displays, Context-aware social media, Tangible and smart objects for learning
Mobile Learning Applications Domains

- **eHealth and healthcare**
  EMURGENCY: performance support and notification system, Handover procedures, Reference apps for daily practice

- **Law and Management education**
  OpenScout, OUNL iPad pilots, UNHCR mobile simulated games

- **Architecture and creative industries**
  MACE location-based content and social media, Cloud-based cooperation methods in design and architecture

- **Cultural Heritage**
  Mixed reality field trips with Cultural Sciences

- **Logistics**
  SALOMO: Situation Awareness and Mobile data collection

- **Language learning**
  ELENA, PhD projects

- **Teacher education and networking**
  mobile social networking apps
Service and research portfolio

- **How to innovate?**
  *Innovation workshops* for mobile media and learning in the OUNL *Learning Innovation Laboratory*, Desirability and technology acceptance studies of innovative solutions, Open innovation policy, open source frameworks

- **How to learn best?**
  Educational and instructional design for blended and ubiquitous learning
  Evaluation of increased awareness, efficiency, effectiveness.

- **How to implement your mobile learning support?**
  Prototyping mobiles cross-platform and with embedded technologies.
  Mashup and visualisation technologies for integrated solutions.
  Customized mobile solutions integrating legacy software.

- **What is my return on investment?**
  Piloting and evaluation of new solutions, following standardized methods.
  Usability and acceptance studies (mobile eye-tracking).

- **How to optimize your existing processes for mobile?**
  Content engineering and automation for mobile and multi-platform delivery.
  Multi-platform access to legacy systems integrated with daily practices.
Learning Innovation Lab

New media for learning and professional development
#LIC12 #Context
#STELLARNET
The grand challenge for technology enhanced learning

To unite the disjoint scientific communities with a virtual and distributed centre of excellence that expands the capacity of each research unit and that fits the “Grand Challenge” for the future of TEL, and that will be sustained through valuable instruments.

&

To connect with policy-makers to provide strategic direction
To reduce discipline and community fragmentation
To look beyond the Network partnership
+

Set a mid-term agenda
Increase interdisciplinary collaboration
Establish and institutionalise discourse and exchange
Increase international visibility
The STELLAR GRAND Challenge Cluster Waves

- **Connect** (2009)
- **Orchestrate** (2010)
- **Context** (2011)

**Timeline:**
- **Initiate:** 2009
- **Establish:** 2010
- **Refine:** 2011
- **Mature:** 2012
# The STELLAR Instruments and Communities

<table>
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<tr>
<th>1. Leadership Capacity</th>
<th>A. STELLAR Meeting of Minds</th>
<th>Learning executives, policy makers, senior researchers</th>
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<td></td>
<td>B. STELLAR Podcasts</td>
<td>Integrative</td>
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<td>2. Researcher Capacity</td>
<td>C. STELLAR Theme Teams</td>
<td>Mid tier research staff</td>
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<td>D. STELLAR Incubator Programme</td>
<td>Early stage researcher</td>
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<td>E. STELLAR Rendezvous</td>
<td>Integrative</td>
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<td>3. Doctoral Academy Capacity</td>
<td>F. STELLAR Doctoral Consortium</td>
<td>Mid stage PhD</td>
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<td>G. STELLAR Doctoral School</td>
<td>Early stage PhD</td>
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<td>4. Community Level Capacity</td>
<td>H. STELLAR Community Channels</td>
<td>Stakeholder Network</td>
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### Grand Challenges in TEL

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<td><strong>ARV GCP1</strong>: Open Collaboration in Formal Education</td>
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<td><strong>ARV GCP2</strong>: Technology-Supported Representation-Fitness</td>
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<td><strong>ARV GCP3</strong>: Rich-Media Assignments</td>
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<td><strong>ARV GCP4</strong>: Supporting an Open Culture of Design for TEL</td>
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<td><strong>ARV GCP5</strong>: Multi-Level Evaluations of TEL</td>
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<td><strong>ARV GCP6</strong>: Emotion-Adaptive TEL</td>
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<td><strong>ARV GCP7</strong>: Assessment and Automated Feedback</td>
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<td><strong>ARV GCP8</strong>: One Informed Tutor per Child</td>
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<td><strong>ARV GCP9</strong>: Improving Educational Practices through Data-supported Information Systems</td>
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<td><strong>ARV GCP10</strong>: Semiotic Recommender Systems for Learning</td>
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<td><strong>ARV GCP11</strong>: Enhancing Learning with Improved Information Retrieval</td>
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<td><strong>ARV GCP12</strong>: Open TEL Practices</td>
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<td><strong>ARV GCP13</strong>: Learning Reading at Home</td>
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<td><strong>ARV GCP14</strong>: Technology for Young Children’s Expression of Scientific Ideas</td>
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<td><strong>ARV GCP15</strong>: Evaluating Informal TEL</td>
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<td><strong>ARV GCP16</strong>: Engaging the Brain’s Reward System</td>
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<td><strong>ARV GCP17</strong>: Drop-Out Prevention through Attrition Analytics</td>
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<td><strong>ARV GCP18</strong>: New Forms of Assessment for Social TEL Environments</td>
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<td><strong>ARV GCP19</strong>: Guidance for Technology Use in Early Years</td>
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<td><strong>ARV GCP20</strong>: TEL Plasticity</td>
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<td><strong>ARV GCP21</strong>: European TEL DataMart</td>
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<td><strong>ARV GCP22</strong>: Open Research Methodology Infrastructure for CSCL</td>
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<td>Delphi GCP1: CSCL in teacher training and professional development</td>
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<td>Delphi GCP2: Mobile augmented reality in health care and medicine</td>
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<td>Delphi GCP3: Acquisition of graphical and digital literacies through teaching with ICTs</td>
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<td>Delphi GCP 4: Increasing student motivation to learn and engaging the disengaged</td>
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<td>Delphi GCP5: Bridging informal and formal contexts to create a unified learning landscape</td>
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<td>Delphi GCP 6: The ‘perfect’ Personalized Learning Environment</td>
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#LIC12 structure and goals
#mobilelearning in #context
<table>
<thead>
<tr>
<th>#LIC2012</th>
<th>Monday 26th</th>
<th>Tuesday 27th</th>
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<tr>
<td><strong>Morning</strong></td>
<td><strong>Set the stage, learn about the vision for context.</strong></td>
<td><strong>Get the user’s view and work on requirements and your challenges.</strong></td>
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<td><strong>Afternoon</strong></td>
<td><strong>See practical cases, different topics and applications areas.</strong></td>
<td><strong>Reflect and discuss on cases and grand challenges.</strong></td>
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<td><strong>Evening</strong></td>
<td><strong>Socialize</strong></td>
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the vision 2030

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<th>vision</th>
<th>your challenge</th>
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Open Universiteit celstec.org
the cases

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your grand challenges
Reflection

#4 STELLAR Grand Challenge Framework

structure, research, long term visions

#1 Visions

context

#2 Cases

missing challenges? priorisation

#3 Your challenges and contexts

Centre for Learning Sciences and Technologies
Selection of the Conference Topics

- Mobile learning across formal and informal settings
- Ubiquitous and ambient learning and technology
- Theories, models and ethics for mobile and contextual learning
- Open and distance education with mobile devices
- Interoperability and standards for mobile learning
- Challenges for mobile learning in developing countries
- Mobile learning strategies in schools, higher institutions, industry, and organizations
- Adaptive, virtual or collaborative environments for mobile learning
- Augmented reality for learning
- Innovative approaches to learning of current and emerging mobile technologies
- Mobile learning across cultures

a #vision for #context in learning 2020 - #lic12 - challenges

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ontological challenge: what is context and how can we conceptualize it to better understand learning in context?
context is multi-disciplinary

“There is, however, a narrative that begins with work drawn from geography and architecture, that moves into discussions about research from anthropology and psychology and onto work drawn from education and computer science.”

Note: About context and interdisciplinarity

Shared on March 23rd, 2012 from Kindle

See recent activity from Marcus Specht
context is always ...

body network sensors, rooms, intelligent carpets, wall colour, or gesture tracking, building, architects already create completely new facades for buildings, public places and city planning new artefacts will enable dynamic routing and highlighting of space.

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[Image: Sybren A. Stüvel, “Colours and bricks” via Flickr. Creative Commons Attribution.]
context is dynamic ...
context is social ...
context is connecting ...
engineering challenge: what are the opportunities for technology to enhance learning in context ?
#sensor technology can record data in a scalable way.

http://quantifiedself.com/
#cloud technology can support seamless learning trajectories.

#AR technology can augment your perception of a context ...

http://www.designbynotion.com/metamirror-next-generation-tv/
display technology can create feedback loops ...

#display tech. can support awareness and reflection.

#visualization technology can support personal sense making.

# the plan:
how to model and design this:
**Ambient Information CHannelS**
AICHE
Diagram showing the relationship between Artefact, Channel, and User with overlapping sections for ID, Relation, Time, Location, and Env.
AICHE Processes
AICHE Processes
AICHE Processes
AICHE Processes
AICHE brings together context-aware computing, semantic-web technologies, instructional design for adaptive and personal learning, HCI aspects as tangible computing and IOThings.

AICHE Processes
#1 context is complex and always.

#2 engineering challenges need to focus then technology ...

#3 ... can enhance learning to be more dynamic, flexible, personal, social, connected ... put in context.