

# The Bio-Diversity Learning Scenario



INESC-ID: Nuno Otero, Ana Paiva, André Vala  
University of Växjö: Marianne Bjorn, Joshua  
Gottdenker, Marine Karlsson, Marcelo Milrad,  
Astrid Wichmann

# Overview

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- FoodinSpace
- The learning activity cycle
- Development of BeLife:
  - Learning from FoodinSpace activities
- Development of bioTube:
  - Enhancing the local scenario
  - Enabling remote access
- Future activities

# Modes of Instruction

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Exhibit



Teacher Workshops

Activities  
in Växjö



Longterm  
Projects



Foodinspace  
Workshops

# FoodinSpace Activities

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- Topics: photosynthesis /  
Advanced Life Support (ALS)
- Hands on activities
- Scientific experimentation





# Instructional Approach

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- Rich, engaging Context
- Learner-regulated vs. teacher-centered
  - Problems are not pre-determined
  - Learning goals are defined collaboratively
  - Process orientation vs. Exclusive emphasis on results
- Collaboration
- Teacher as experienced advisor or “Problem-Solving Consultant”

# The Learning Activity Cycle

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- Mental Model Representation
- Research Question
- Prediction
- Running the Experiment
- Interpretation and Conclusion



## Reflective Prediction Cycle



**BeLife**

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- BeLife is a plant growth and greenhouse management simulation tool
- It is an agent based simulator that relies on a scientifically accurate model.



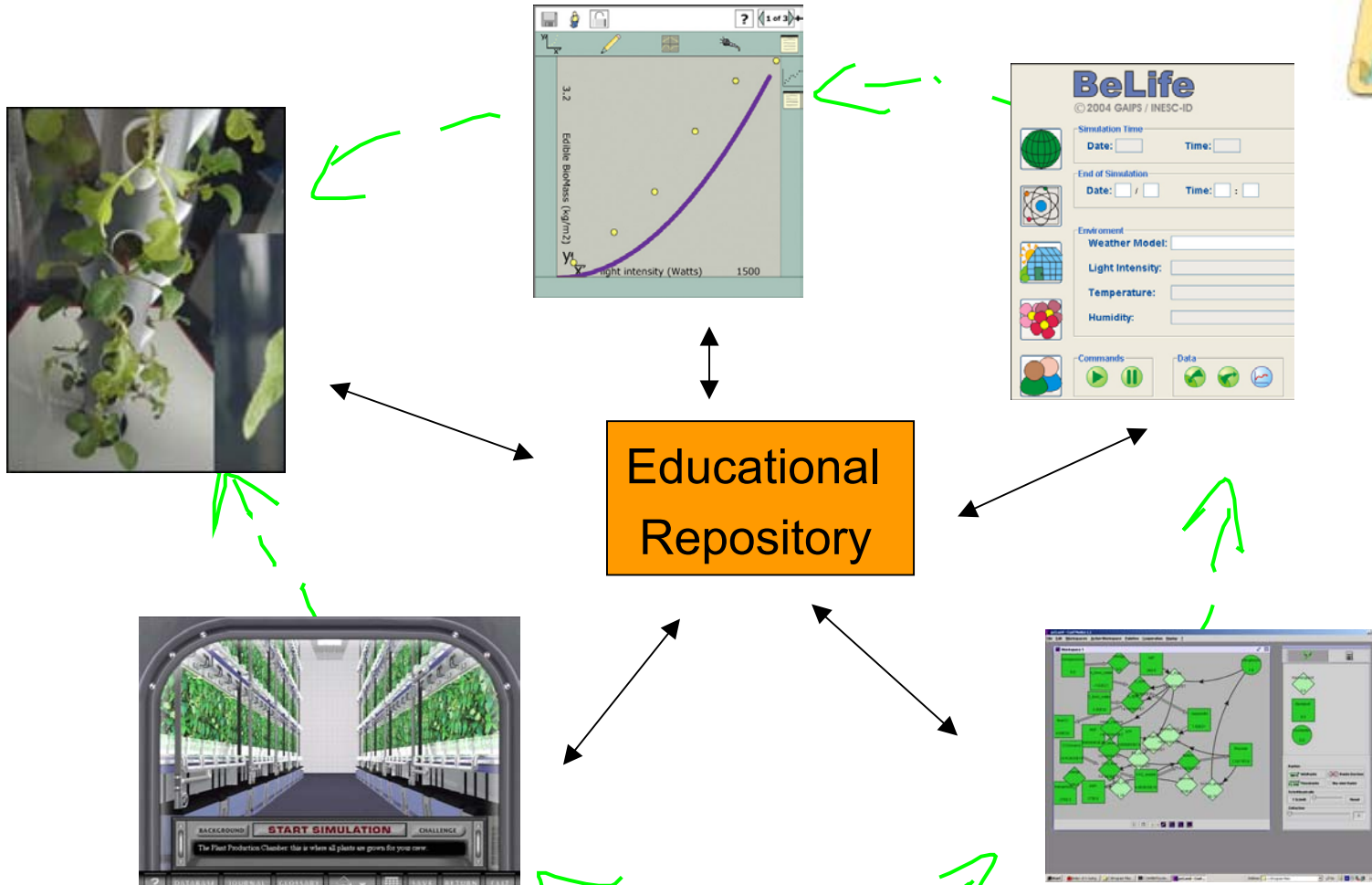
# BeLife – Enhancing the FoodinSpace scenario


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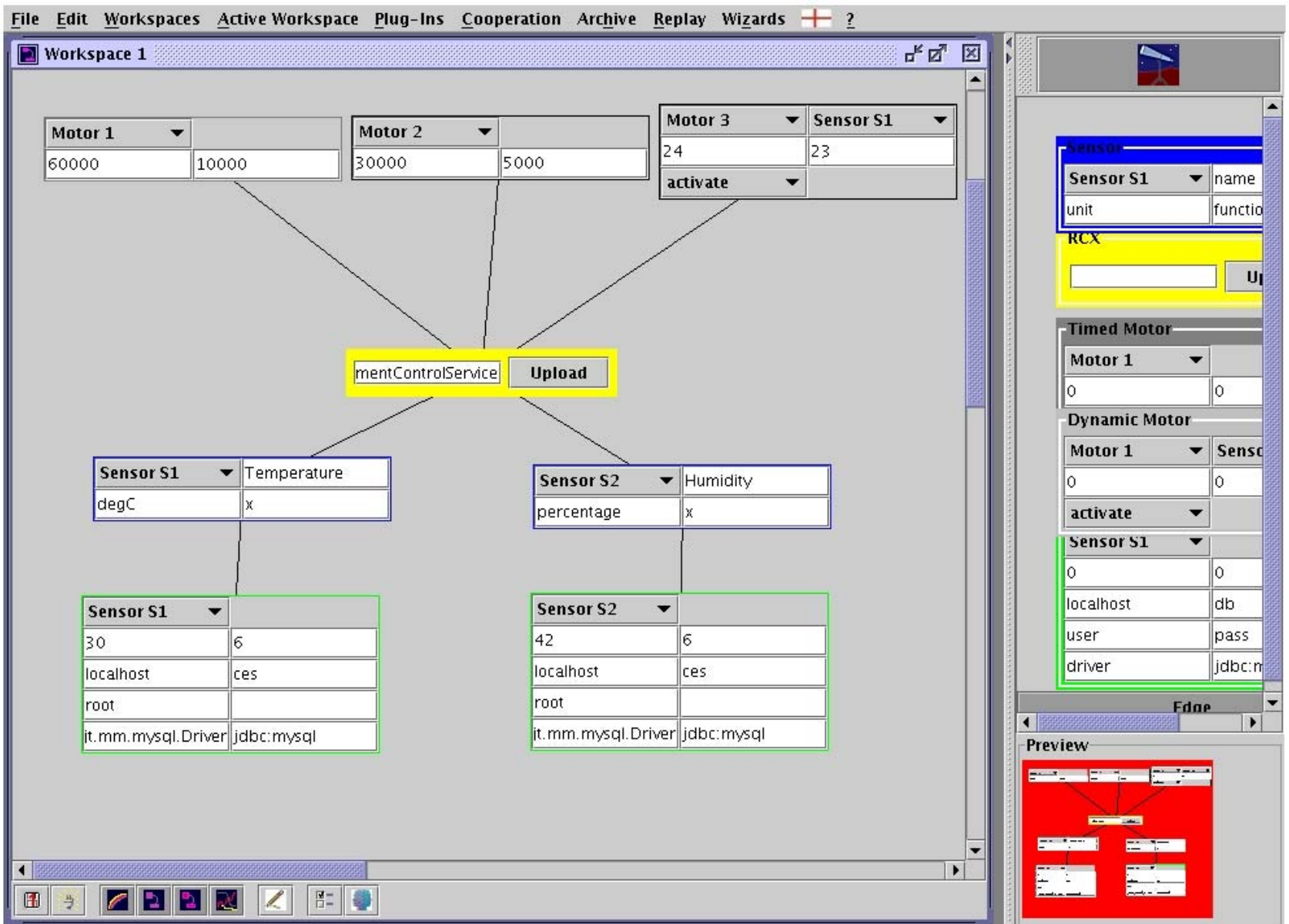
 <b>BeLife</b> © 2004 GAIPS / INESC-ID	<b>BioBlast</b>
Interoperability	Externally developed
Collaboration mode	No collaboration mode
Flexibility	Constrained feature set
Targets different types of learners	No specific learner types supported
Time lapse feature	Instant results

# Educational Interoperability



File Edit Workspaces Active Workspace Plug-Ins Cooperation Archive Replay Wizards  ?

Workspace 1



Motor 1: 60000, 10000

Motor 2: 30000, 5000

Motor 3: 24, activate

Sensor S1: 23

mentControlService Upload

Sensor S1: Temperature, degC, x

Sensor S2: Humidity, percentage, x

Sensor S1: 30, 6, localhost, ces, root, it.mm.mysql.Driver, jdbc:mysql

Sensor S2: 42, 6, localhost, ces, root, it.mm.mysql.Driver, jdbc:mysql

Sensor S1: name, unit, function

RCX

Timed Motor: Motor 1, 0, 0

Dynamic Motor: Motor 1, Sensor, 0, 0, activate

Sensor S1: 0, 0, localhost, db, user, pass, driver, jdbc:m

Edge

Preview

# Future Activities

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- Carrying out experiments using bioTube
- Expanding the local scenario with remote components
  - bioTube remote control
  - BeLife distributed collaboration