



Play & Learn

A serious game

for a better understanding

of severe accidents

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Contents



- Context
- Game's description
- Analysis
- Conclusions and perspectives

Context



French University



Belgian University



Human Sciences
Social Sciences

Engineering Sciences
Nuclear engineering



Context

- Belgian context
 - Nuclear Engineering



Nuclear Power Plant

- Neutron module
- Thermal-hydraulic module
- Safety module



Safety studies

Major accidents (Chernobyl, TMI, Fukushima)

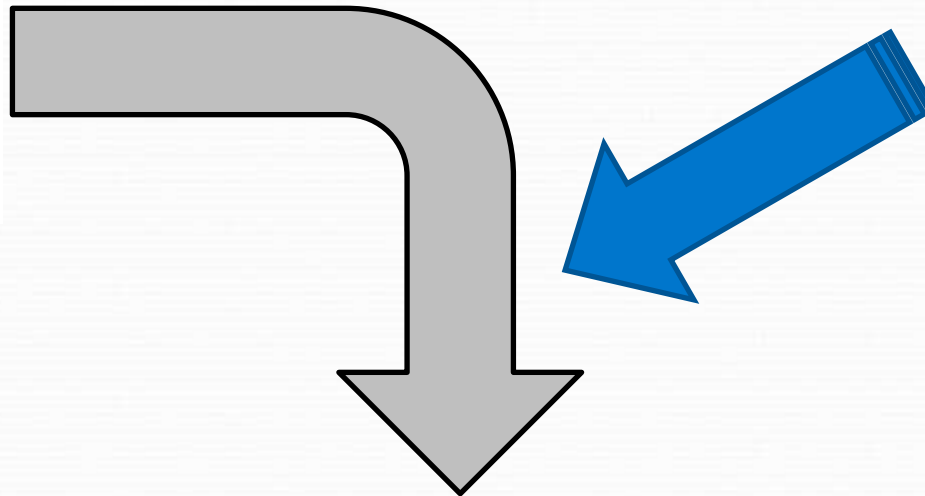


Context

- Belgian context
 - Major accidents
 - Technical data
 - Chronological accident progression
 - A posteriori analysis
 - « Why did operators not understand what was happening ? »
 - « Why did they (not) perform this action ? »
 - « Why did they make this mistake ? »



Context



Sprintfield
Power Plant

Contents

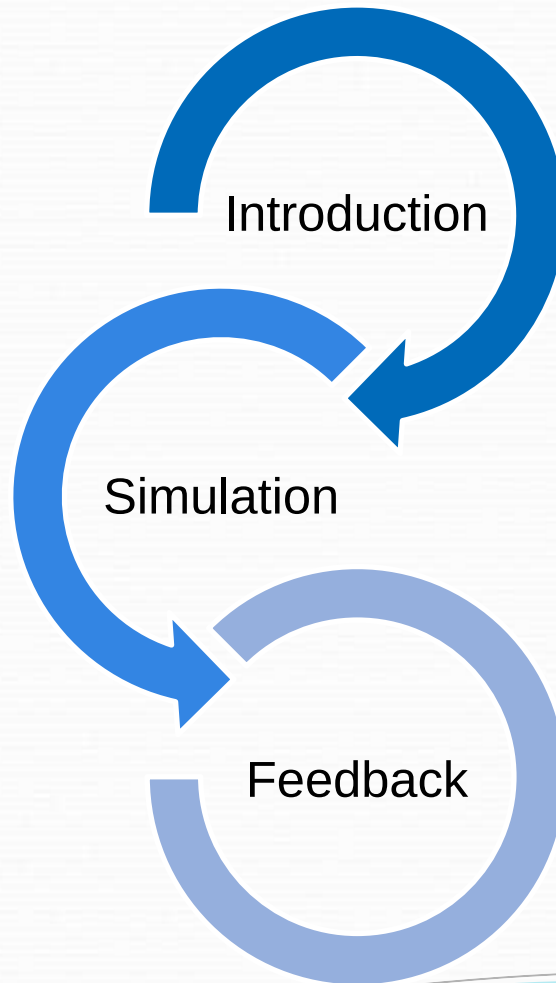


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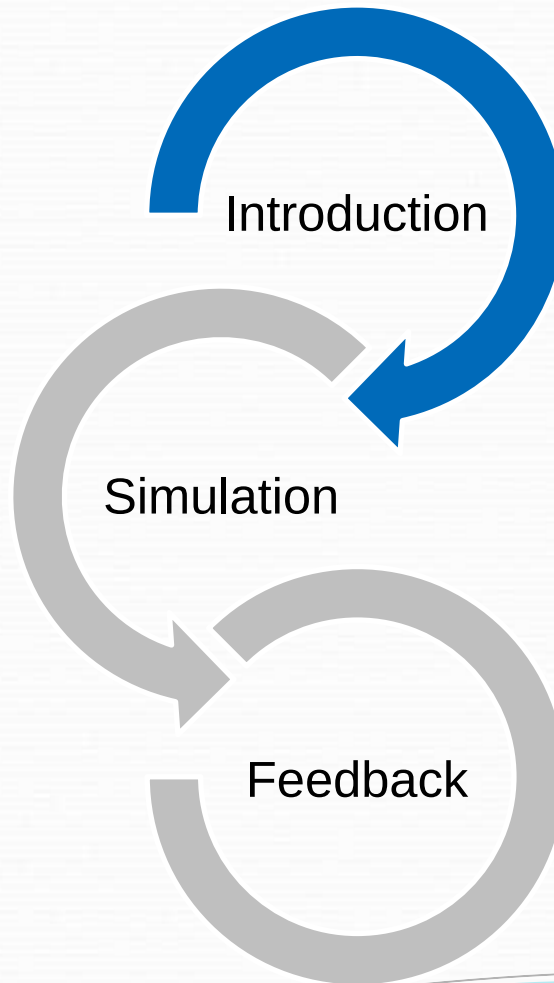
Game's description

- Serious game ?
 - What is it ?
 - A role playing game
 - Not only for fun
 - Why ?
 - Living method
 - Live and not hear
 - Active attitude in the learning (to improve the knowledge acquisition)

Game's description



Game's description



Operators in a NPP
Reduced team (night)
Hand over

Random teams
Each team member has a
specific role.

Game's description

Software's start

- Tutorial
- Game



Introduction

Simulation

Feedback



Game's description



Introduction



Simulation

Feedback

First : a break !
Short presentation
INES level ?

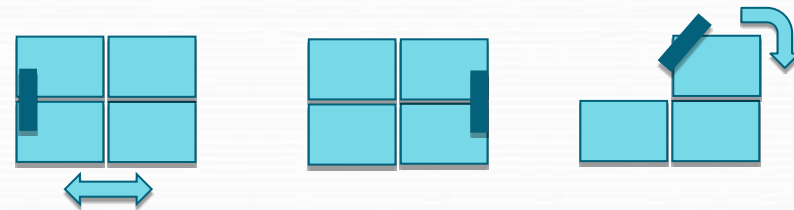
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Analysis

- Observation (by teachers)
 - Documents reading
 - Computer (Where ? Who ?)
 - Role appropriation
 - Discussion
 - Decision, consensus...
- Collaboration between specialists and no-specialists ?



Analysis

- Students

Reflex

We learned a lot
in a very funny
way

Unique
opportunity to
experiment
suches situations

We have no
time to
think before
acting

We do not take
responsibilities
into account

Stress

Contents



- Context
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Conclusions and perspectives

- Powerful pedagogical device
 - Specificities of disturbed situations
 - Impact of human factor
- (Too ?) simplified interface
- Easy enough for no-specialists and realistic enough for specialists
- Apply nuclear knowledge

Conclusions and perspectives

- Prototype
- Increased interactivity ?
- Enriched scenario ?
- Several scenarios ? (which ones ?)
- Duration ?
- Mixed teams ?

Conclusions and perspectives

- Prototype
- Increased interactivity ?
- Enriched scenario ?
- Several scenarios ? (wich ones ?)
- Mixed teams ?



Do you want to play ?

Contact me !
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Question ?
Comment ?

