



ANSWER Project

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What is ANSWER Project?

- ANSWER is a new approach to the creative process of film and game production.
- DirectorNotation



What is DirectorNotation then?

- Musicians and choreographers have long been able to express their intentions using logical symbolic structures (music notation and dance notation)
- Yet those working in the movie industry and the games industry have to rely on cartoons and verbal description



DirectorNotation

- Symbolic Language (Notation)
- Artistic
- Captures Directors intention
- Abstract
- Semantic
- Machine readable



DirectorNotation notates

- Semantic content of a scene
- Cameras
- Actors
- Stage
- Positions and orientations
- Relations between the all above



DirectorNotation's symbols

- Staff
- Relations denote time instances
- Time moves up (in contrast with music scores)
- Camera target
- Magnitude symbols



DirectorNotation symbols

- Orientation
- Position
- Actions
- Body and facing (target) of the camera model
- Framing
- Modifiers



DirectorNotation's extend

- Complex set of constrains (keep that in mind - example)
- Not every score is possible or valid
- Denotes the intention not the actual numerical values
- Leaves space for directors and actors to express themselves

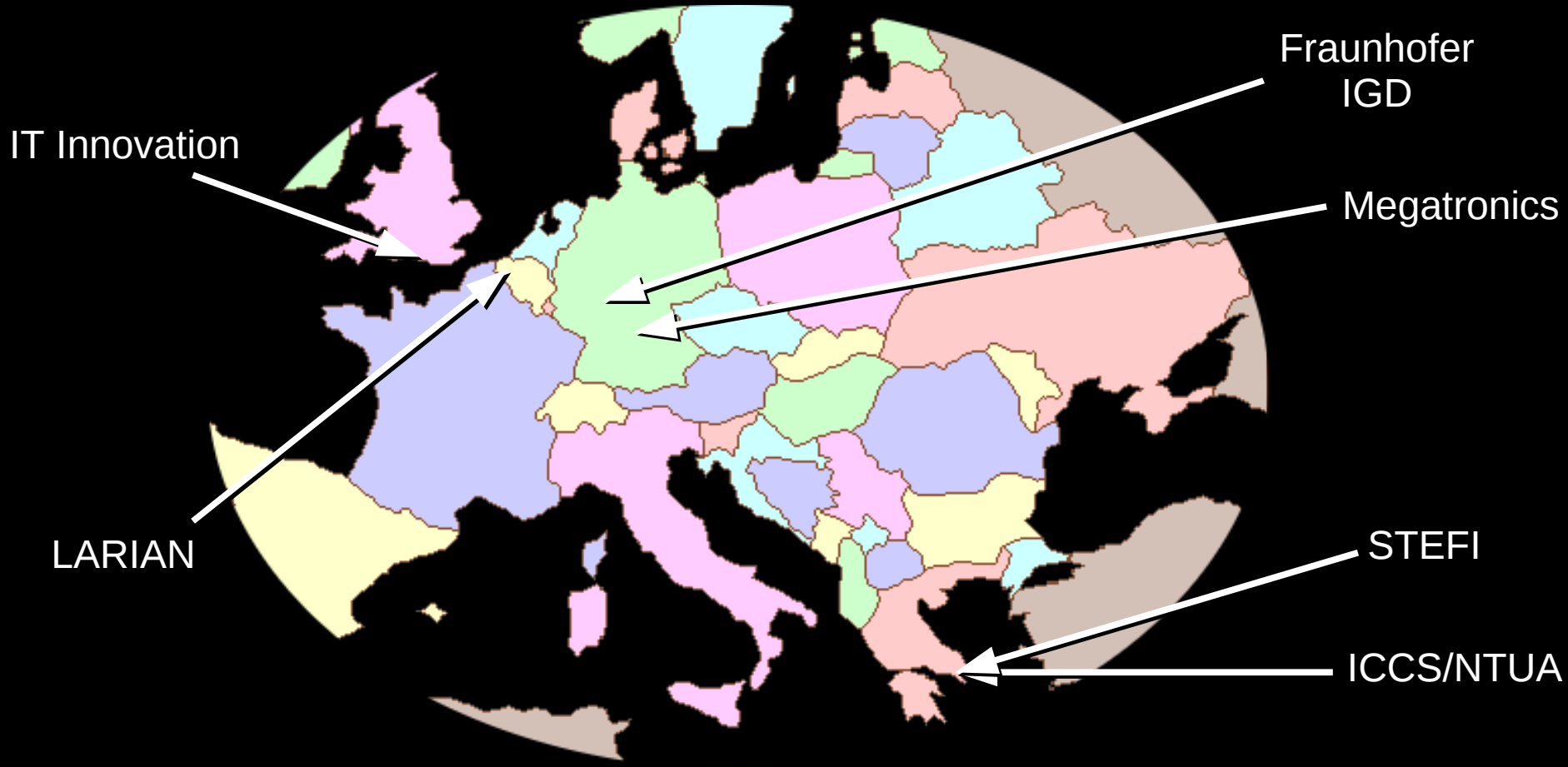
DirectorNotation - useful?

- Describe movie content
- Help the director think in abstract terms and visualize the scene
- Automate animation/storyboard production
- Produce directly video or game content (non-interactive)
- Semantically index/search a movie scene

So, ANSWER you were saying...

- Develop DirectorNotation (with real directors!)
- Formalize DN using an ontology
- The DN Processor!
- Post Production and Synchronization tool
- Game engine with API that support DN output (PML)
- Try to make people familiar with our work

People from all over EU





The DN Processor!

- A system that can be used to write DN scores using a GUI
- A pre-visualization tool
- In-place video output
- DN agnostic – Configurable through an ontology



Components

- **NotationEditor** (Ontology configurable)
- **RuleEngine** (Ontology configurable)
- **InstantReality**
- Post-production tool: **Bones**
- Synchronization tool: **Bones**

DN ontology

- An OWL DL ontology
- Defines:
 - Symbols & Syntax
 - Drawing & Layout properties
 - Semantics of the language



NotationEditor

- A UI that enables the user to edit DN scores
- Adobe Flash based
- Runs in the user browser
- Visual and operational behavior configurable through the ontology



RuleEngine

- Input: the DN score
- Operation: Transforms declarative form to mathematical values
- Output: Application specific data
 - 3D Animation scripts, post production info...
- Server side of NotationEditor
- Web-services based



RuleEngine internals

- The problem
 - Symbolic declarations
 - Constrains
 - Dependences
 - Infinite solution set



RuleEngine internals

- The solution
 - Symbols as solution base
 - Select single solution
 - Constrains problem solver
 - Rule based system
- Java & Drools



RuleEngine output

- PML (Player Markup Language)
 - Sits on top of X3D (VRML)
 - High level description
 - Developed during the project (Open standard)
- Video annotation information



InstantReality

- PML visualization tool
- C++
- X3D compliant renderer
- Is used as an individual component in the process of creating an animation
- The user writes a score and at any time can see the visual scene



Demo!



Bones

- Post-production
- Synchronization
- Linking of the score to the real captured scene

Why F/OSS?

- Every new software component is to be released under a OSI approved license
- Infrastructure S/W
- Prototype others can use
- Promote the idea
- Open standards
- Possible with EU Projects



Find out more!

- <http://www.answer-project.org>
- <http://sourceforge.net/projects/answer-pr>
- Communicate with us
- Spread the word!



Questions?



Thank you!