http://iris.scm.tees.ac.uk/

Interactive Storytelling is a major endeavour to develop new media which could offer a radically new user experience, with a potential to revolutionise digital entertainment.

European research in Interactive Storytelling has played a leading role in the development of the field, and this creates a unique opportunity to strengthen its position even further by structuring some of its best actors within a NoE.

IRIS (Integrating Research in Interactive Storytelling) aims at creating a virtual centre of excellence that will be able to achieve breakthroughs in the understanding of Interactive Storytelling and the development of corresponding technologies.

It is organised around four major objectives:

- To extend Interactive Storytelling technologies in terms of performance and scalability, so that they can support the production of actual Interactive Narratives.
- To make the next generation of Interactive Storytelling technologies more accessible to authors and content creators of different media backgrounds (scriptwriters, storyboarders, game designers).
- To develop a more Integrated Approach to Interactive Storytelling Technologies, achieving a proper integration with cinematography.
- To develop Methodologies to evaluate Interactive Storytelling systems as well as the media experience of Interactive Narrative.

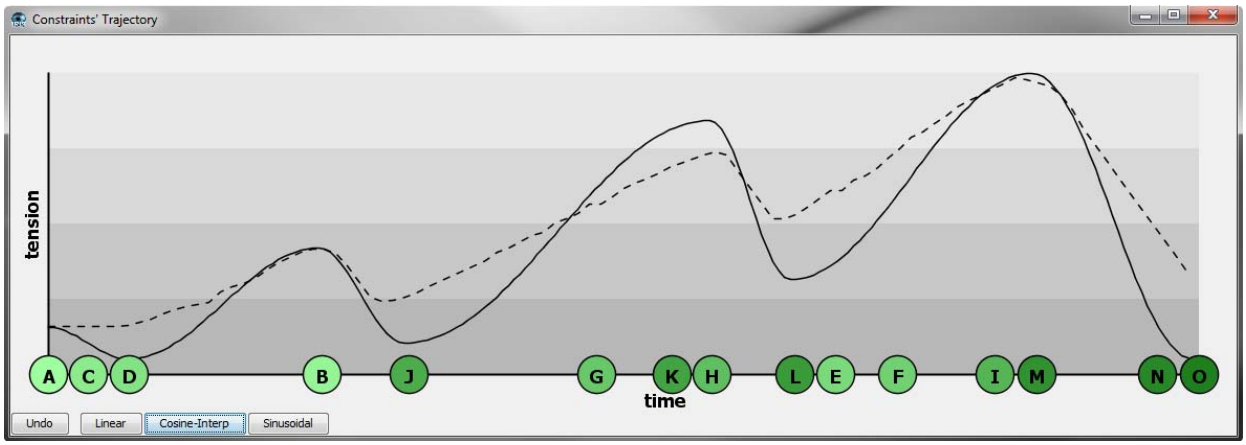
The Joint Programme of Activities integrates complementary skills which are necessary to address the above objectives (e.g. integration with cinematography, authoring, evaluation, user interaction techniques). It benefits from the integration of extensive partners' background, but also plans to revisit existing research programmes from the perspective of collaboration (e.g. revisiting Interactive Storytelling technologies from the perspective of authoring and cinematography).

The work undertaken within the second year of the NoE, its primary intention to further the state-of-the-art of Interactive Storytelling in terms of basic concepts, technologies, production process and authoring, as well as strengthen its inter-disciplinary aspects has always prevailed

In order to achieve this, the second year has permitted to produce further prototypes in the areas of User Interaction and Artificial Intelligence Tools and Techniques for the creation of several prototypes based on new approaches of narrative engines, including temporal planning and movietelling engines, as well as a new approach to authoring tools. The Cinematography work itself provided a preliminary new framework for the representation of cinematic elements within Interactive Storytelling.

Visual Authoring of Plan Dynamics

Following collaboration with a screen writer, we were motivated to use a natural visual representation of story dynamics, in the form of a narrative arc, to control default evolution of the narrative.



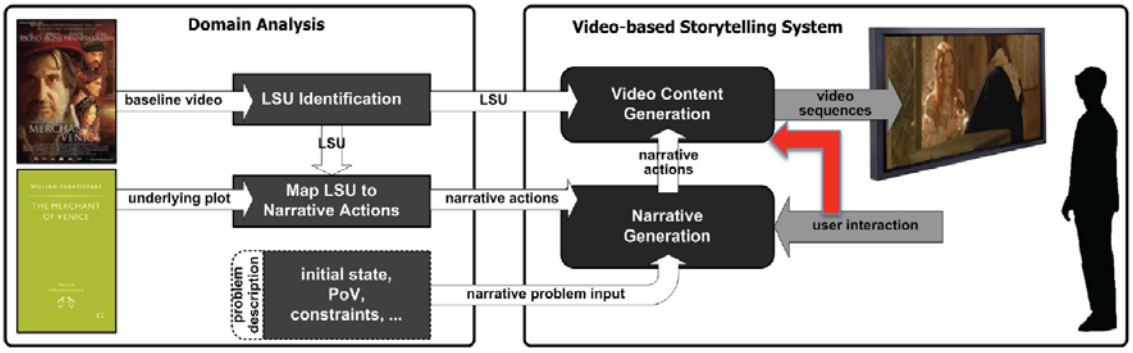
Visualisation of the narrative arc, which can be modified interactively.

User interaction is via a narrative arc window where users can draw desired arcs, adjust tension levels, etc. Global properties of generated narratives can be assessed by users via the two visualisation windows. Access to lower level system components is via the meta-level interface. The user can invoke the planner to use the specified plan dynamics and inspect the narrative as it is visualised.

The main benefits of this new approach to authoring are that this form of authoring support addresses narrative properties rather than the action formalisation. The visual programming approach to specification of plan dynamics is providing a more appropriate level of abstraction which also permits user exploration of visualisation of narratives displaying the specified trajectory.

Movietelling Engine

One of the main achievements in Year 2 was the specification and the development of the first prototype architecture for the Movietelling engine. The approach to video-based IS uses video analysis techniques to automatically segment video, i.e. identify Logic Story Unit (LSU), which are used as building blocks. During domain analysis, LSUs are mapped to high level concepts corresponding to narrative actions. Then, LSUs are used at runtime as building blocks which are recombined in different ways to collate content for output video while adopting a stochastic framework for unprecedented production. This prototype includes the automatic generation of LSU's and associated HMM models to narrative actions, as well as the definition of skimmed LSU's according to list of narrative actions, leading to some evaluation of playback issues of the video rendering engine. The prototype includes early automatic editing of concatenated video segments and also user interaction for change of point of view and playback parameters.

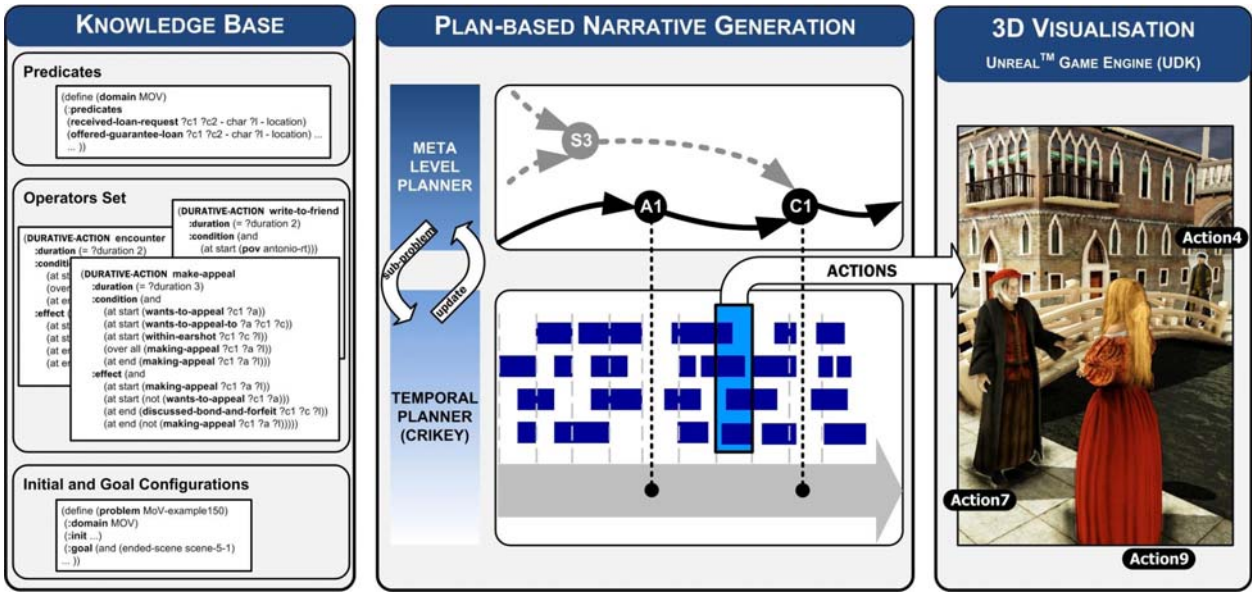


System overview of the Movietelling prototype.

Controlling Narrative Time via Temporal Planning

The main motivation for the use of temporal planning in Interactive Storytelling is that it represents a natural improvement over the current non-temporal approaches. The use of temporal planning means allows us to move beyond the prevailing ad-hoc approaches to controlling narrative time and to incorporate temporal aspects such as duration and concurrency in the process of narrative generation in a principled way.

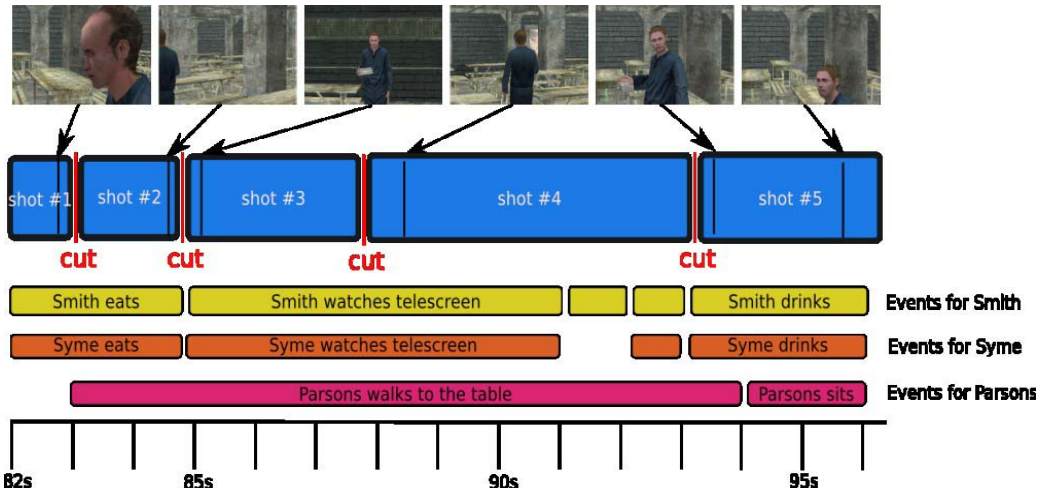
The major benefits of this approach are that it provides a more principled approach to controlling time in Interactive Storytelling, where staged execution time is reasoned about by the planner. Required concurrency is identified between actions and it also provides a greater possibility for potential cinematographic aspects and foremost it helps address timing and synchronisation problems.



Overview of the Temporal planning prototype.

From idioms to directorial style

Within the development of cinematography, a new framework has been elaborated which provides a move from idioms to directorial style representations. The framework offers the possibility to change elements of directorial style in real-time: for instance, from slow to fast pacing (to underline a dramatic tension) or by changing the composition constraints (from a neutral shot to a dominance shot). Also, higher narrative dimensions can control multiple indicators at the same time: Dominance (controls composition and preferred viewpoints, Affinity (controls composition and preferred viewpoints) and Isolation (controls composition and preferred viewpoints).



Example of exploring variations in dynamicity, from static shots to full dynamic camera.

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