CONTEXTUAL INTERACTION SUPPORT IN 3D WORLDS
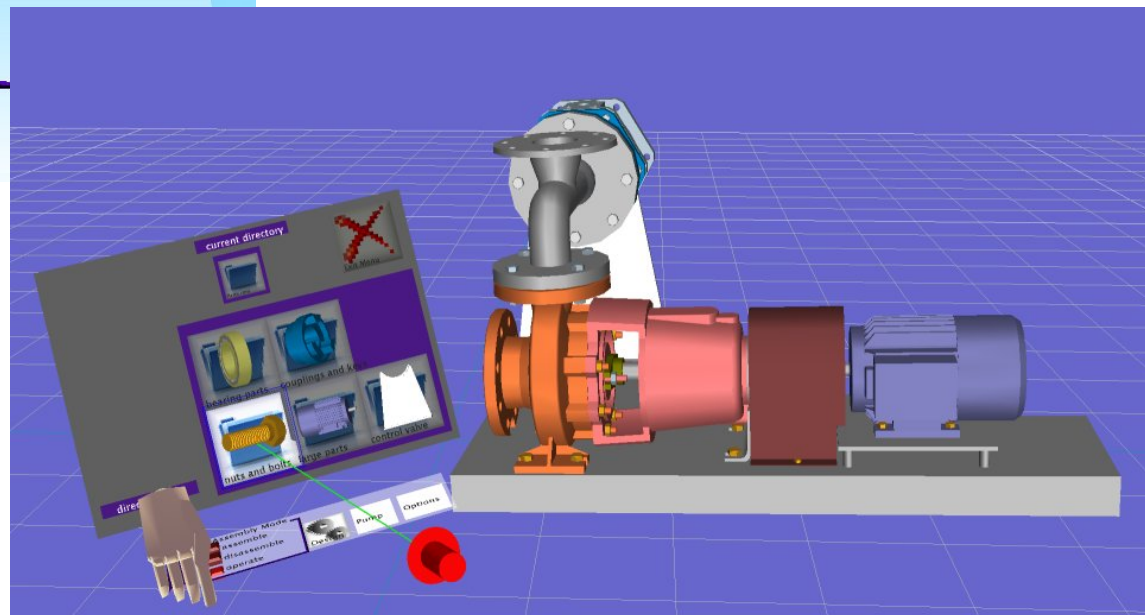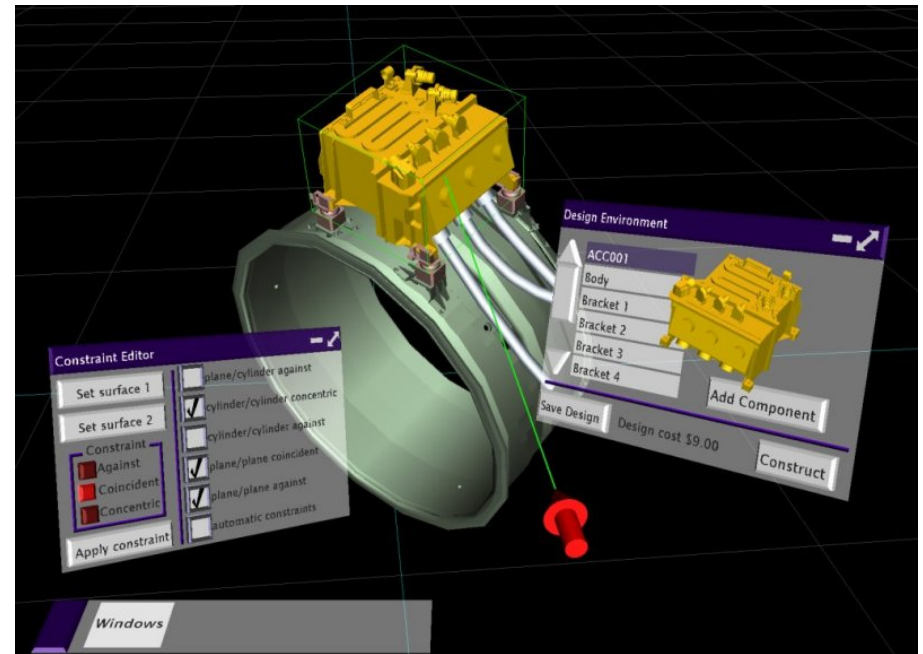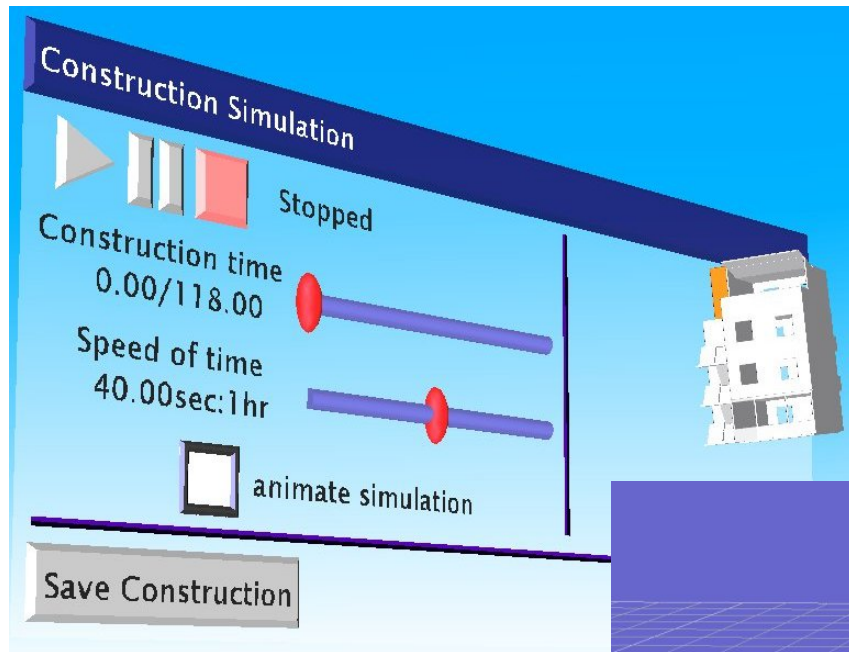
DS-RT 2011

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Overview

- Why do we need contextual help?
- How it can be provided
  - Formally specify the interaction dialogue
- What help can we provide?
  - Textual help
  - How do I do?
- Conclusions

Immersive Interfaces

Why we need contextual help?

- 3D worlds allow the user to navigate through them
- The increased:
  - degrees of freedom,
  - interaction devices,
  - interaction styles
- available in virtual worlds compared to desktop interfaces increases the necessity for providing assistance to the user.
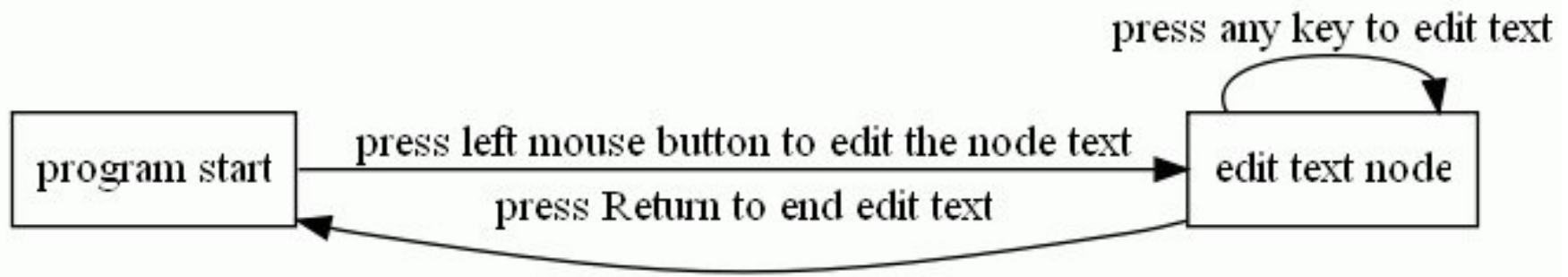
Contextual Help in Games

User queries

- What functionality is available in the current context
- Why they cannot perform some functions in the current state
- How they can move from their current state to being able to perform a given task
- Need to formally specify the interaction dialogue
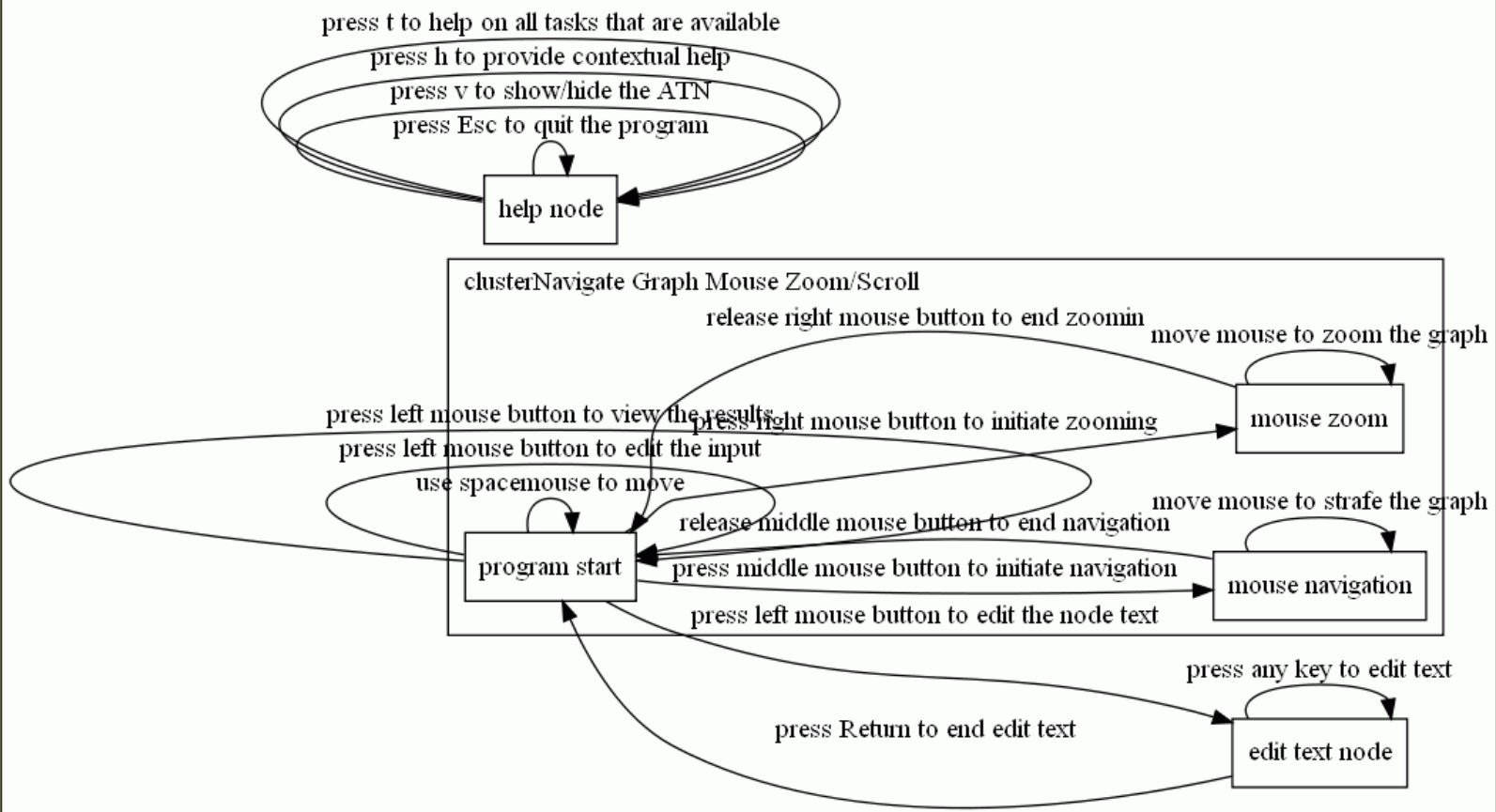- Move away from event based model

Augmented Transition Network

- Users perform tasks by interacting with the input devices to achieve a specific goal
- Performing of a task usually involves a sequence of interaction cycles or subtasks
- Each cycle contributes towards the completion of the task and so satisfying the users goal
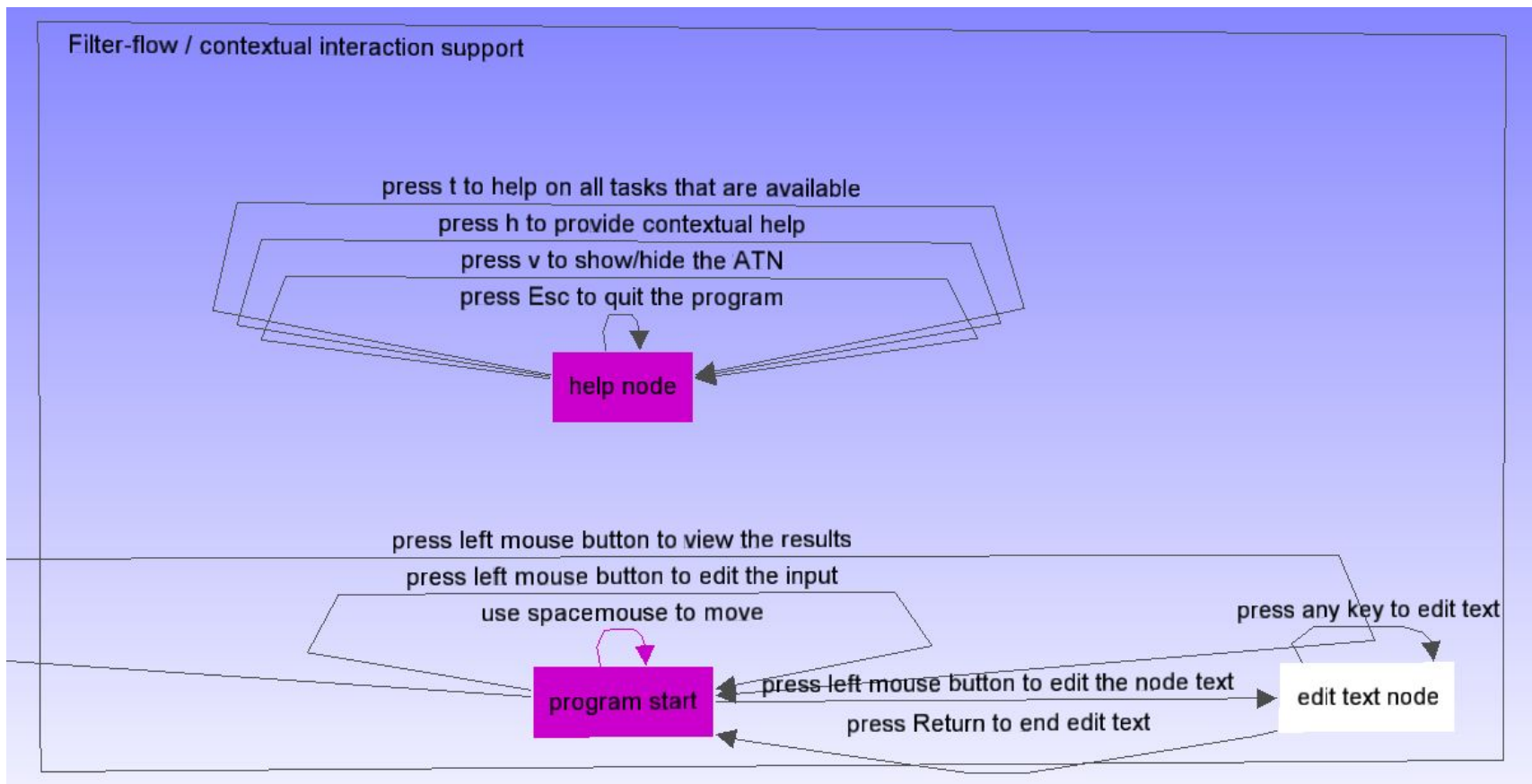- Formal description of the interaction dialogue

press any key to edit text

program start — press left mouse button to edit the node text → edit text node

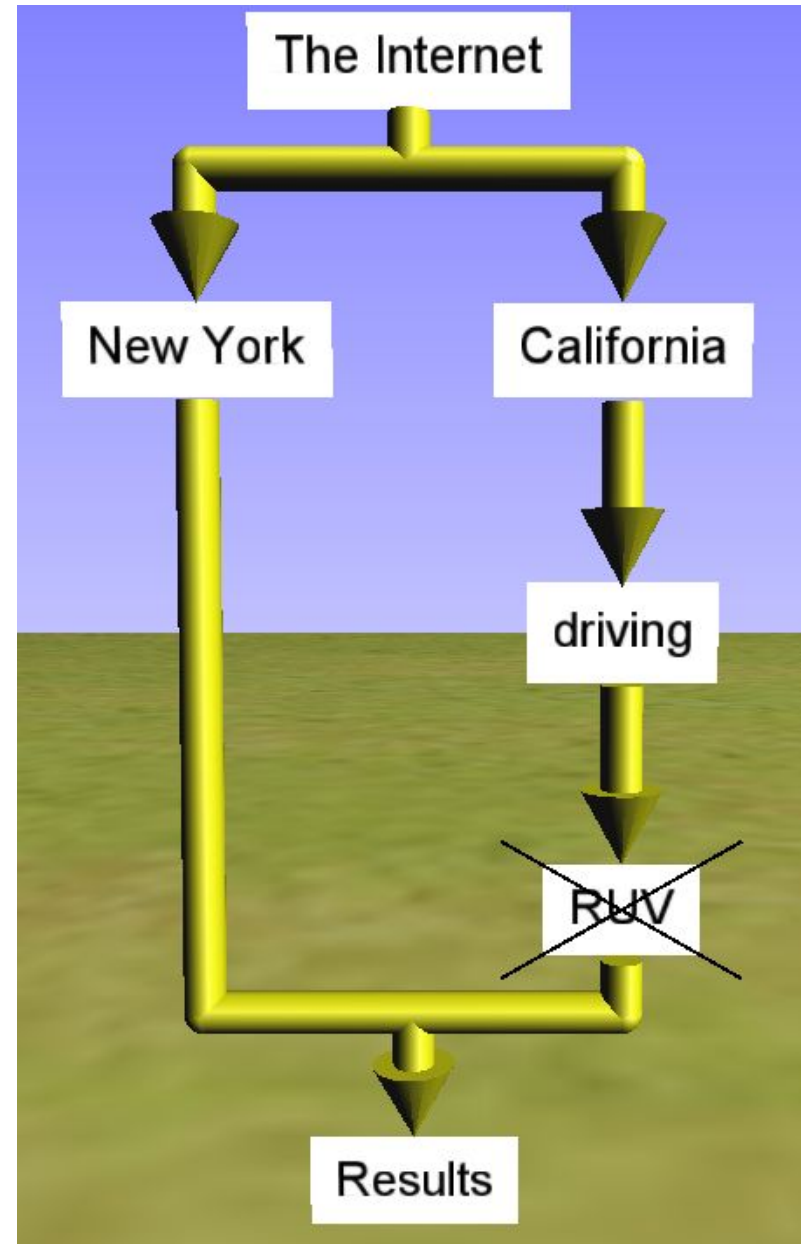press Return to end edit text

Graphviz

3D Visualisation

Filter Flow Query

- Web query interface constructed
- Allows filter flow queries to be created
- Query sent to Google
- Results displayed in a web browser

Context Aware Support

- ATN library developed
- Interaction specified through the creation of an ATN at runtime
- ATN can be interrogated at runtime to answer any queries at the interface the user has
- ATNs normally only have one active state
- Add second active state to manage help events

Textual Help

- Contextual help can be provided by analysing the current state of the ATN
- The arcs of the current state provide the interaction that can currently be performed
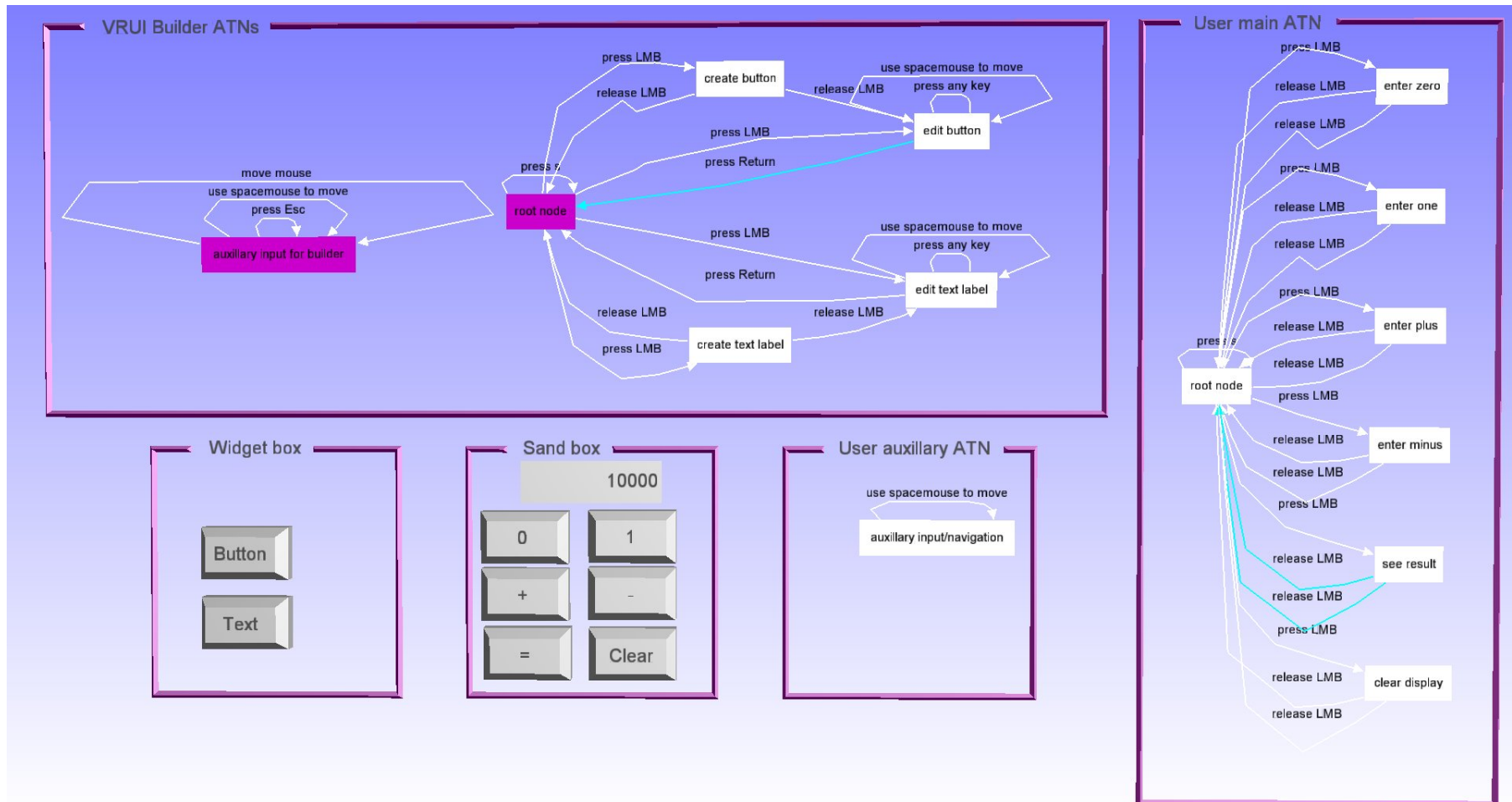- These can be visualised as text
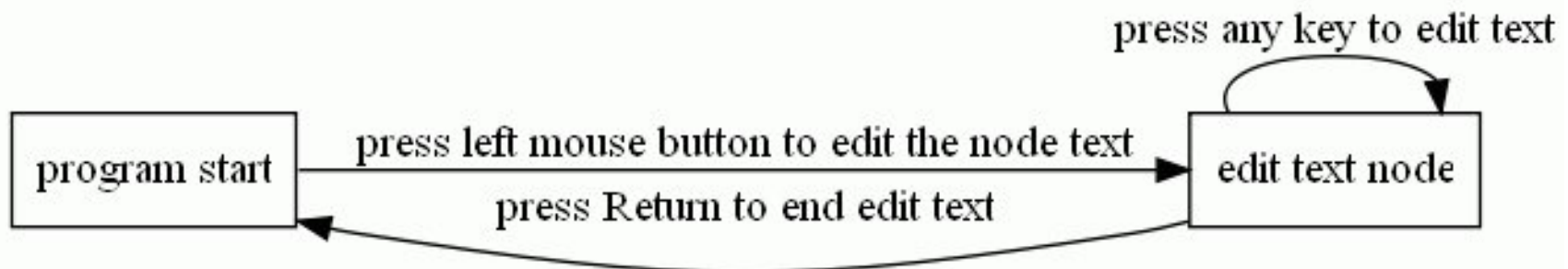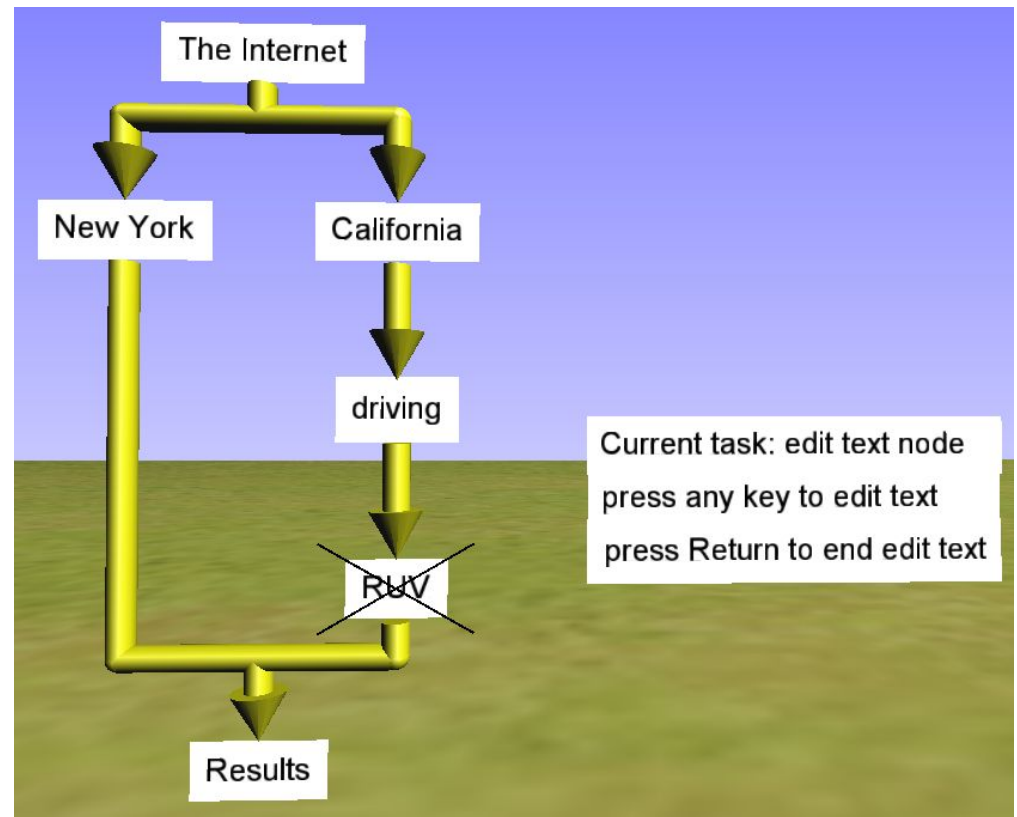
How do I?

- Task list can be shown to the user
- User can select task that they wish to perform
- System calculates how to move from current state to requested state
- Visualise the steps to the user
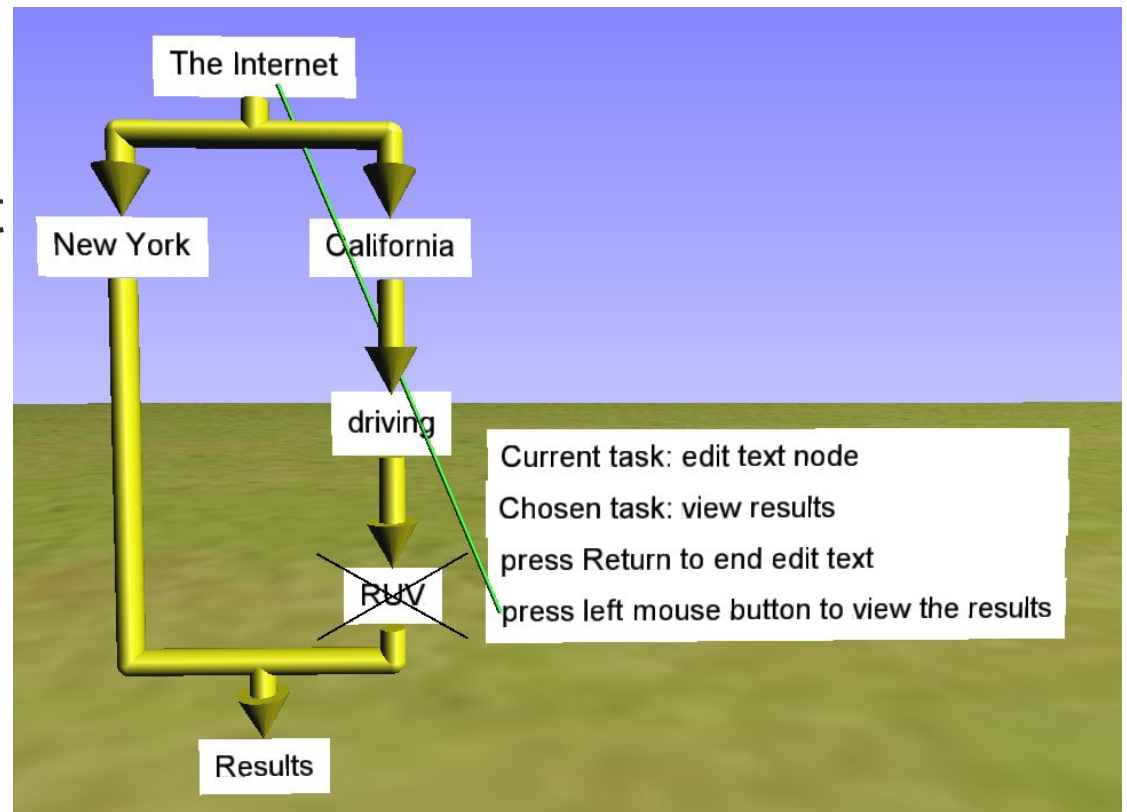
Visual Creation of Interaction

Conclusions

- Need to be sure that our immersive interactive worlds are easy to use
- Move away from event based model
- Formally specify the interaction dialogue
- Provides contextual help
- Provides help on moving from one task to another
- Can be used in the visual specification of the interaction dialogue