Prom Week Meets Skyrim

(Demonstration)

Manuel Guimaraes
INESC-ID
Instituto Superior Técnico
Universidade de Lisboa
Lisbon, Portugal
manuel_guimaraes@hotmail.com

Pedro Santos
INESC-ID
Instituto Superior Técnico
Universidade de Lisboa
Lisbon, Portugal
pedro.santos@tecnico.ulisboa.pt

Arnav Jhala
The Thørväld Group
Department of Computer Science
Visual Narrative Cluster
North Carolina State University
Raleigh, North Carolina, USA
ahjhala@ncsu.edu

ABSTRACT

We present an implementation of CIF-CK — a social agent architecture that models reasoning about persistent social interactions to improve narrative engagement and play experience for human interactors. The key contribution of this work is in adapting the richness of social interactions from CiF to a first-person interaction experience and a released distribution of its implementation on the Skyrim game engine.

Keywords

Authoring tools for Agent Modeling; NPC Agents in Games; Social Architecture Model; Social Modeling in Agents

1. INTRODUCTION

The credibility and believability of Non Playable Characters (NPCs), relies on their ability to simulate basic human traits like emotions and the ability to make decisions on their own [4]. One of the most important human traits is our social ability and awareness. This makes rich agent modeling important for human interaction within these environments. One key aspect for agent models is affinity with the player's social concerns and behaviours [3].

Most modern day AAA video games, games with the highest development budgets and levels of promotion, are heavily dependent on a high number of NPCs and rely on the Player's interaction with them to advance the game's narrative. Unfortunately, most of the NPCs do not exhibit deep social reasoning for their player interactions and most of the times are simply frozen in time, repeating the same action, if any, over and over again [1]. The CIF-CK [2] architecture is a research based response to these issues.

2. SOLUTION ARCHITECTURE: CIF-CK

Our adaptation of the Comme il Faut architecture to RPGs in general and to the Creation Kit is called the **CIF-CK** (Comme il Faut Creation Kit) architecture.

In short, NPCs try to perceive (using a belief system) the Social State around them and try to change it according to their Social Goals. To change the Social State they perform Social Exchanges such as, "Flirt" or "Insult" towards others. In video games, these Social Exchanges are translated into Quests. Depending on their result they have different consequences on the Social World. Additionally at any moment in the cycle a stage might have unforeseen consequences these are handled by Trigger Rules.

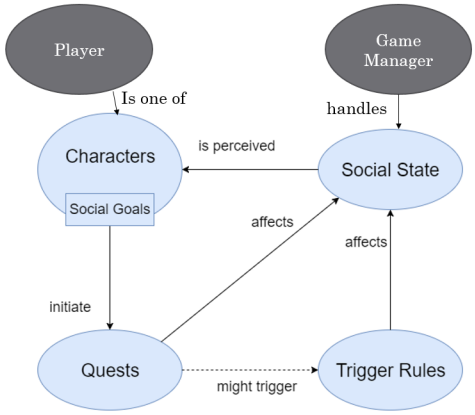

Figure 1: Simple representation of CIF-CK components and the relation between them

3. THE PLATFORM

In this paper we present a CIF-CK application example as a mod for the popular video game: "The Elder Scrolls V: Skyrim"[7].

3.1 The Elder Scrolls V: Skyrim

The Elder Scrolls V: Skyrim is an action role-playing open world video game developed by Bethesda Game Studios and published by Bethesda Softworks. It is the fifth installment in The Elder Scrolls series, it was released worldwide on November 11, 2011, and received critical acclaim. It has sold over 20 million units and 5 years after its launch it still has a broad and active user base, around 30 000 different daily concurrent players.

Over the course of the game, the Player can interact with over 600 different NPCs through dialogue that reflects the NPCs importance and role within the Skyrim world. The game was developed using the Creation Engine. Bethesda

Appears in: *Proc. of the 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2017), S. Das, E. Durfee, K. Larson, M. Winikoff (eds.), May 8–12, 2017, São Paulo, Brazil.*

decided to releasing a modding tool for the game by releasing the Creation Kit tool.

3.2 Creation Kit

Creation Kit development tool is a powerful piece of software as it is the same tool that Bethesda itself used to create Skyrim. Almost everything the developers used is available to the "modder". Users can use those resources or add new ones. Plugins, or ".esp" files, are smaller collections of data which can be loaded "on top" of master files. These type of files allow us to implement our architecture on top of the already built game world without overwriting the original.

4. CIF-CK IN SKYRIM

We implemented the CIF-CK architecture by making a mod for Skyrim called "Social NPCs". It features 12 different social moves described in Table 1. Each Social Move, along with its consequences, is based on similar Social Exchanges described in "Prom Week" [5] an implementation of the original "Comme ill Faut" Architecture [6].

Type	Name	Intent
Romantic	Flirt	Increase Romance
	Offer Romantic Gift	Increase Romance
	Ask Out	Add Status: "isDating"
	Share Feelings	Become Lovers
Friendly	Compliment	Increase Friendship
	Offer Gift	Increase Friendship
UnFriendly	Insult	Decrease Friendship
	Embarrass	Decrease Friendship
	Spread Rumors	Decrease Target's Friendship
Hostile	Fight	Drastically decrease Friendship
Special	Break-up	Stop being Lovers
	Hello	Greeting NPCs

Table 1: Types of Quests/Social Moves available in the mod

Additionally we have implemented 5 different Traits such as, "Friendly" and "Hostile", and 4 different types of Status such as, "Angry At" and "Drunk", each one influences the NPCs decision making and social goals formation. We can easily change an NPC's traits by changing the keywords attached to them which in turn will change their personality and consequently its decision making.

Player to NPC interaction

CIF-CK considers, not just NPC to NPC interaction but also Player to NPC interaction. When playing the CIF-CK mod the Player can interact with any Social (modded) NPC it wants. In Skyrim, these interactions are (mostly) done through dialogue. When the Player starts a conversation with a "Social" NPC it is presented with some dialogue options that were not available in the original game. The idea is to "mimic" the actions that NPCs perform towards other NPCs and give the Player the option to perform some of those Social Moves. All of the performed Social Exchanges have a response. The NPC can either accept or reject any one of these "moves" according to their Beliefs and Desires.

Figure 2: Some of the new dialog options available with the mod

5. PLAY SCENARIOS

The CIF-CK architecture is implemented into the NPCs of two different locations within the game. Each one plays slightly different from the other and serves different purposes:

- **Quest Scenario**, the first scenario is a small Narrative experience that Players can work around, using CIF-CK, with specific Characters and within a very specific drama. The idea behind this scenario to give the players a taste of what some of stories and Quests could be if they used a similar Narrative Structure to normal Skyrim Side-Quest but with our "Social NPCs" instead. This Scenario takes place in the newly created: "CiF House" Location near the city of Whiterun.
- **Open Scenario**, the second scenario is a place where the Player can experience the addition of Social Ability to already existing NPCs within a more open and "sand-box" situation. The idea behind this is to try to understand if players interact more than they used to with previous NPCs. It is also of our interest to understand if players, without any "special" motivation, can create storylines on their own. This second scenario takes place in an already existing location near the first scenario, called "The Honningbrew Meadery".

6. CONCLUSION

We were successful in adapting the Comme il Faut architecture to a commercial RPG video game, creating the CIF-CK architecture. Its implementation led to the development of a mod that was published online, for the video game "The Elder Scrolls V: Skyrim". The CIF-CK architecture should be applicable to any Computer RPG, as long as its engine supports some common features like Quests and controllable NPCs.

REFERENCES

[1] N. Afonso and R. Prada. Agents that relate: Improving the social believability of non-player characters in role-playing games. In *International Conference on Entertainment Computing*, pages 34–45. Springer, 2008.

[2] M. Guimaraes, P. A. Santos, and A. Jhala. Prom week meets skyrim: Developing a social agent architecture in a commercial game. In *Proceedings of the 2017 International Conference on Autonomous Agents and Multi-agent Systems*, AAMAS '17. International Foundation for Autonomous Agents and Multiagent Systems, May 2017.

[3] K. Isbister. *Better game characters by design: A psychological approach*. Elsevier/Morgan Kaufmann, 2006.

[4] A. B. Loyall and J. Bates. Personality-rich believable agents that use language. In *Proceedings of the first international conference on Autonomous agents*, pages 106–113. ACM, 1997.

[5] J. McCoy, M. Treanor, B. Samuel, A. A. Reed, M. Mateas, and N. Wardrip-Fruin. Prom week: Designing past the game/story dilemma. In *FDG*, pages 94–101, 2013.

[6] J. McCoy, M. Treanor, B. Samuel, N. Wardrip-Fruin, and M. Mateas. Comme il faut: A system for authoring playable social models. In *AIIDE*, 2011.

[7] B. G. Studios. The elder scrolls v: Skyrim. Microsoft Windows, Playstation 3, Xbox 360, 2011.