

Figure 1: Performative structure of the eAuctionHouse institution

– As an example scenario we have created a simple eAuctionHouse virtual institution.

First, we specify the normative control layer of the virtual institution, that is an electronic institution, using Islander tool. As an output, an electronic institution specification is produced. Figure ??performativeStructure depicts a performative structure (set of connected scenes) of the eAuctionHouse institution. As you can see in this figure, an eAuctionHouse institution supports roles of seller, buyer and staff. The scenes in this institution are: *ItemInfo*, *ItemRegister* and *Auction*. There also is an *Initial* and *Final* scene.

Sellers first register some items in a *ItemRegister* scene. If no auction is running, staff agent creates a new auction room and waits for participants to start the auction. When no more items are to be auctioned, the auction room is destroyed (removed from virtual space). Buyers join the *ItemInfo* scene to check the list of items to be put to the auction and a time when each auction begins. When buyers enter the auction room and the auction starts, they can start-bidding either by-raising his hand, or by typing the *bid* command. As a regulation for *auction room* we define, that when the auction finishes a winner cannot leave the auction room until he pays for the items he won.

Second, using a Virtual World Builder Toolkit we define a virtual world grammar that allows us to generate the 3D representation of the virtual institution from the electronic institution specification [?]. In this tool we can test the generated output. An example of generated floor plan is displayed in Figure 2. In this Figure a) is the registration room, b) is one of the auction rooms, c) is information room and d) is just some decoration.

Finally, when once the EI and VWG are specified, we define the virtual world events and Ameli events and specify corresponding *movie script* lines to map these events to VIXEE actions. An example of virtual world event is raising avatars hand in the auction room that triggers bidding action while announcing the acceptance of a bid to other participants is an example of Ameli event. Then,

~~we specify several *movie-script* lines to map between these events.~~ As another example, when StaffAgent creates a new Auction scene we map this event to the method of building a new auction scene room. When all the previous steps were defined we can run VIXEE.

In Figure 3 we see a visualization of the eAuction House in Second Life. The left figure snapshot shows a birds perspective after launching the institution and the creation of *ItemRegister* and *ItemInfo* by a StaffAgent. The right figure shows an avatar trying to enter this institution.w

Figure 4 depicts the aerial view of the institution after the auction room has been generated. Figure 5 shows avatars participating in the running auction, from the view of the auction manager. Finally, ~~Figure 4 depicts the aerial view of the institution after the auction room has been generated.~~ Figure 6 shows the AMELI interface with highlighted lines, where a seller agent registered a new item for the auction. A single highlighted line shows an event of staff agent creating a new Auction scene.

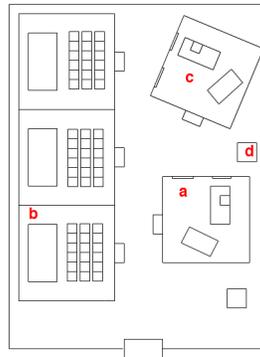


Figure 2: Floor plan

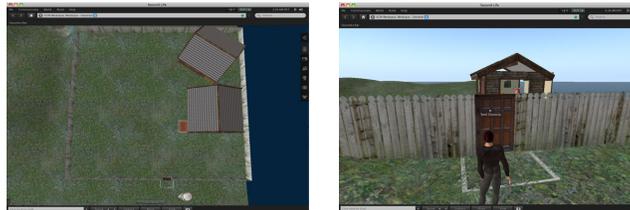


Figure 3: Initial state of the eAuctions institution in Second Life

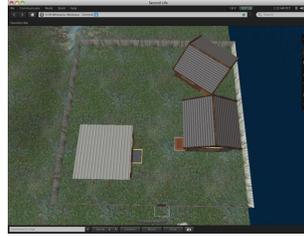


Figure 4: Birds view of the institution after the generation of new auction room



Figure 5: Avatars participating in an ongoing auction

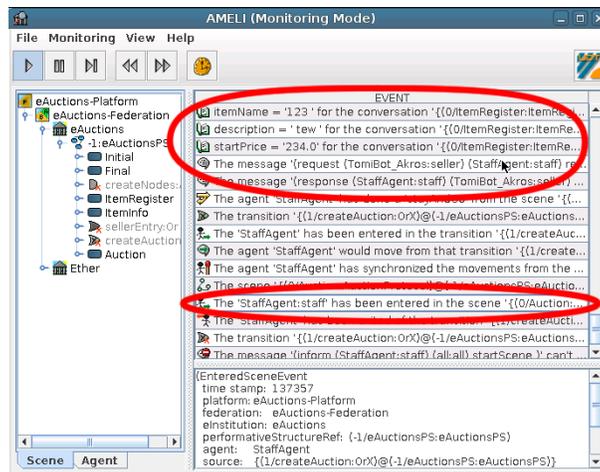


Figure 6: AMELI interface