Towards the Web for Virtual Being

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ProWeb’17
State of the Art

Screenshot from Krestianstvo SDK 1.0
SELF EXPLORATIVE ENVIRONMENTS

Screenshot from Squeak Smalltalk with OpenGL
SELF EXPLORATIVE ENVIRONMENTS in browser

Screenshot from Lively Kernel

Lively Kernel
Virtual Worlds

- Immersive Terf ([http://www.3dicc.com](http://www.3dicc.com))
- HighFidelity ([https://highfidelity.io](https://highfidelity.io))
- AltspaceVR ([https://altvr.com](https://altvr.com))
- Sansar ([https://www.sansar.com](https://www.sansar.com))
- SpatialOS ([https://spatialos.improbable.io](https://spatialos.improbable.io))

*Still, these are all desktop apps, they are considered as Web ready.*
COLLABORATIVE SELF EXPLORATIVE ENVIRONMENTS

Screenshot from Krestianstvo SDK 1.0

Open Croquet
COLLABORATIVE SELF EXPLORATIVE ENVIRONMENTS

in browser

Virtual World Framework
Sophie - a project of The Institute for the Future of the Book

ProWeb'17
OMeta / Ohm - object-oriented language for pattern matching
Software agents by Henry Lieberman
Virtual Time in Open Croquet architecture

the new model of distributed computation

synchronisation

Virtual Time

Figure from VWF documentation
**A-Frame** - declarative components for 3D graphics, interaction and **Web VR** in Web browser (aka new **VRML**)

```html
<a-scene>
  <a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CC3D9"></a-box>
  <a-sphere position="0 1.25 -5" radius="1.25" color="#EF2D5E"></a-sphere>
  <a-plane position="0 0 -4" width="4" height="4" color="#7BC8A4"></a-plane>
  <a-sky color="#ECECEC"></a-sky>
</a-scene>
```
The prototype of **VIRTUAL BEING**

Screenshot from ADL Sandbox & OMeta integration prototype
Integration of OMeta/Ohm into Virtual World Framework
Ohm’s model/view driver for Virtual World Framework

```javascript
settingProperty: function( nodeID, propertyName, propertyValue ) {
   ...
   node.lang.source = propertyValue;
   node.lang.grammar = ohm.grammar(propertyValue);
   node.lang.semantics = node.lang.grammar.createSemantics();
```

App configuration

```json
---
info:
   title: "Ohm calculator Example App"
model:
   vwf/model/ohm:
   vwf/model/aframe:
view:
   vwf/view/aframe:
   vwf/view/ohm:
   vwf/view/editor-live:
```
A-Frame components inside VWF with Ohm grammars

calcText:
  extends: http://vwf.example.com/aframe/atext.vwf
  properties:
    value: "1 * pi"
    color: "#b74217"
    position: [-1, 2.5, -2]
    scale: [2, 2, 2]
  children:
    calcLang:
      extends: http://vwf.example.com/ohm/node.vwf
      properties:
        grammar:
          semantics: ohmLang: |
            Arithmetic {
              Exp
              = AddExp
              AddExp
              = AddExp "+" MulExp  -- plus
              ...

Live Coding editor features for VWF components on a web page

Screenshot from livecoding.space demo app
DEMO

https://livecoding.space
**Statement for discussion:**

Moving from Web pages to Web apps as Desktop ones could be a “falling into the same trap”. **Virtual Worlds** could help to avoid this and get the Web back to the future of powerful ideas from Self language and Amiga OS.