

This document chronicles Mitra's recollection of the history of Moving Worlds, as it evolved into VRML2.0 and now the ISO standard VRML 97, it collects together an archive of some of the documents, and earlier versions of proposals, and may be of interest to anyone interested in the evolution of a standard.

The most important thing that I suggest noting from this chronology, is how both giving and receiving criticism led to proposals being revised to incorporate the criticism, and eventually the proposals being merged into what has become a widely accepted standard.

Of course, history always has several versions - I'll be happy to incorporate, or link to, comments or recollections that any other participant has about the process, especially if they differ from my own perspective. Chris Marrin (then at SGI) published an [article](#) on the history in WebSmith in November '96. Rodger Lea (at Sony) has a more descriptive [version](#) of the process.

I'd appreciate copies of any of the papers I'm missing - especially the early SDSC, Sony, SGI and Microsoft proposals, and critiques by those people of each other, and my proposals. Please send them to me, [Mitra](#), at **mitra at mitra.biz**. Contacts for other key people in the process are at the [bottom](#).

| | | |
|------------------------|--|----------------|
| 15 Jun '95 and onwards | Sony published papers on the Virtual Society, first draft | the same areas |
| 10 July '95 | San Diego Super Computer Center (SDSC) published papers (VRBS) its | |
| | Virtual Reality System (VRBS) | |
| | Perl as a language for it | |
| | detailed protocol specification | |
| Aug - Sept '95 | While Chief Network Architect at Worlds Inc, and a member of the 10 person | |
| 16 Aug 95 | A proposal to support URN 's, and to make the url field an MFString. | |
| 15 Sept '95 | A proposal by Tom Meyer entertainment self called it is formed the basis of a proposal | |
| | pes | , which |
| 21 Sept '95 | A proposal for SharedState , this was a LOT simpler than Live | |
| 21 Sept '95 | A proposal for Sensors, Triggers and Connections - Similar conce | |

Sept through Oct Discussions, and criticisms of each others papers led to realisations that

4 Oct 95 [Sony's approach to behavior and scripting aspects of VRML:](#)

[an Object-Oriented perspective](#)

5 Oct 95 [Sony comments on Interface proposal and Sensor Trigger](#)

[proposal](#)

5 Oct 95 [An update of Sony's proposal for extensions to VRML1.0](#)

9 Oct 95 A detailed [critique](#) of the SDSC, and [Sony's proposal](#)

20 Oct 95 I authored a [first draft of a paper](#) drawing out the similarities and

Oct 95 Gavin Bell from SGI published a [paper on related work](#), based on data-flow tech

[slightly later version](#)

23 Oct '95 The VAG (which Gavin [and myself](#) are members of) produces up some ou

24 Oct '95 The VAG produces (but does not publish) the first draft of VRML1.1

25 Oct '95 A new version of my [behaviors](#) , and [API](#) papers, inc

30 Oct '95 Behaviors symposium at [SDSC](#). Sony, SDSC, and myself [propose](#) a comm

[list](#)

1 Nov 95 Gavin of SGI writes a [critique](#) of the joint proposal of SDSC, Sony and

12 Nov 95 Through November, Sony and SDSC I authored a comm [The API Behaviors](#) propo

- 13 Nov '95 [Critique](#) of SGI's proposal, which is still data-flow oriented, and respon
- 14 Nov '95 [Sony comments on SGI's comparisom paper](#)
- 24 Nov '95 SGI is persuaded that a [paper](#) in this form is better than the state-autom work on
- 26 Nov '95 A [critique](#) of SGI's first event-driven paper.
- 1 Dec '95 Another version of SGI's [paper](#) (and a [diff](#))
- 1 Dec '95 A draft of a proposal for [Frames and Leaves](#) ", this proposal was key be
- 4 Dec '95 The [last draft](#) of the Sony,SDSC,Mitra proposal, be
- 4 Dec '95. A group at Microsoft circulate their own proposal, called [ActiveVRML](#) paper

[letter](#)

[introduction](#)

[reference manual](#)

[language integration](#)

[white paper](#)

- 6 Dec '95 I produce a short [critique](#) of the Microsoft proposal
- 11 Dec '95. A [common paper](#) is co-authored by Gavin Bell and
- 12 Dec '95 We put together a [comparison](#) of our proposal with Active Worlds.
- 16 Dec '95 Second draft of [VRML1.1](#) produced, this has many of the non-
- VRML 95, Dec '95 The paper is presented at the VRML'95 conference in San Diego by Gavin
- day after VRML95, Dec '95 Microsoft holds a briefing on RBML - now renamed ActiveVRML in San Fran
- 4 Jan 96 Because of the Microsoft [RFP](#) for the VRML 2.0 proposals.
- Jan 96 SGI devotes technical writing and other resources to cleaning up the propos

15 Jan 96

A

[design document](#) explains the "Why" of Moving

[examples](#)

26 Jan 96

SGI puts up a

[page to solicit comments](#) - whose marketing p

30 Jan 96

A discussion (Mitra and [Solly](#)) and explanation of how work in Moving Worlds

31 Jan 96

SGI produces a

[overview](#) of Moving Worlds, with [summar](#)

[y](#) and

[list of change](#)

Feb 2nd, 96

The Moving Worlds paper is formally submitted for consideration in for VR

[!](#) and in

[parts](#)

Feb 8, '96

All the VRML companies [invitation](#) and sign on to the Moving [ing Wor](#)lds proces

[of the invitation](#)

Feb 12-13th 96 [Press release](#) and coverage in the [Wall Street Journal](#) ,

Mar 1st '96 Sony does their own [press release](#) , correctly giving credit.

Mar '96

VRML2.0 wins the vote [Sun Wins](#) receiving 80% of the vote [IBM](#) vs [Microsoft](#) vs [Apple](#) vs [IBM](#)

[Out of this World](#)

[GMD](#)

[voting results](#)

[orig](#)

* I would appreciate text versions of these to replace the scans.

Mar '96 Press coverage in [MultiMedia World](#) ,
[Interactive Age](#)
[Connect](#)

Most of 96 SGI edits the document in response to feedback.
20th May '96 SGI edits [Draft 2b](#) of the spec
24 June 96 Presentation to [INET 96](#) (the annual conference of the internet)
8 July 96 Sony leads the work on [the Java 3](#) reference for VRML2.0 including this
15th Jul 96 An updated version of the [URN](#) spec
17th July 96 Draft3 (no copy seems to [exist any more](#)) [from draft 2b](#)
4th Aug, 96 Here is [one version](#) of the full spec and [changes from Draft 2b](#)

5th Dec 96 A [diagram](#) I did of interfaces in VRML2 between
Dec '96

Final version published, [note](#) all issues were addressed, and I outline some key problems

As part of the ISO standardisation process the standard was renamed VRML97 and some cosmetic changes were made.
19th June 98 An integration of URN's [into the Universal Media Framework](#)

The only version of the final VRML95 document I can find is in Postscript, if there is an HTML version around I would appreciate it. [Here is the postscript \(compressed\)](#) .

Contact Info for authors and others....

- Mitra Internet Consulting
- Mitra, now doing business consulting and development for Sustainability Businesses

mitra@mitra.biz <http://www.mitra.biz/blog>, or <http://www.naturalinnovation.org>

- Sony

- Yasuaki Honda, working on home networking and IEEE1394 from product implementation and technical research level. honda@arch.sony.co.jp
 - Kouichi Matsuda (Kou1 Ma2da), working on Community Place, development of shared 3D environments, matsuda@arch.sony.co.jp, <http://www.so-net.ne.jp/paw>
 - Rodger Lee, now heading up the operating systems lab for Sony, rodger@arch.sel.sony.com
-
- Silicon Graphics
 - Gavin Bell - gavin@acm.org
 - Rikk Carey - rikk@best.com
 - Chris Marin now consulting to Sony, chris@marrin.com