

Virtual hype and the virtual revolution

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Virtual Hype And The Virtual Revolution

By

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Just turn on a television, watch a movie, or even read the funnies and you hear the deafening hype about Virtual Reality. "Old timers" just shake their heads and remember when the hype about Artificial Intelligence was just as intense. Remember when the Japanese, with great fanfare, launched the "fifth generation" AI project?

Artificially Intelligent machines were just around the corner. They were going to revolutionize EVERYTHING and we had better get ready for it or be left behind! ...well it didn't happen.

The AI zealots didn't tell us that on the flowchart describing how to get from here to there, in the middle, a big box was labelled, "Then a Miracle Occurs!".

The current VR hype sounds suspiciously familiar but with one big difference: the box is labelled "Then engineering occurs". Only the normal incremental improvement in computers and devices is required to make the VR revolution take place. The present hype may be premature but by only 3 to 5 years.

If the VR gurus are only 10% right about the coming VR revolution, we can expect massive changes in the way society designs, plays, and communicates. They foresee applications ranging from super telephones where people will go on dates to fantasy worlds, interactive adventures where you will play the lead in "Terminator XV", and an infinite "CyberSpace" that contains all the information, machines, and people in the world.

Moving back to currently real reality, VR can be used today for three basic applications: games, medicine, and design walkthroughs.

VR grew out of military war gaming systems, and an entire generation grew up playing computer games. VR games are a natural next step. To really take off, VR games must become cheaper. This is what happened with the first computer games. Initially they were quite expensive and so had to be "time-shared" in video arcades. Now they are inexpensive and are in more than 60% of US households. When three-dimensional graphics and interface devices are inexpensive add-ons to the home computer, VR games will reach the home market.

Medicine is the only other technology whose rate of advancement rivals computer and telecommunications technology. Medical practitioners must not only keep abreast of the rapidly

growing body of medical knowledge but perform ever more difficult procedures. Procedures such as operating through small holes in the body are extremely difficult to perform and so VR technology places Doctors "virtually" inside the patients. Cost is not holding up the progress here, since a smaller number of systems is required, progress is needed in the quality of the interface devices and the models of the human body.

We live in a three-dimensional world but typically represent it with two-dimensional media. This makes it difficult for us to visualize new designs such as for cars, planes, or buildings. Traditionally, lifesize plaster models or cardboard scale models have been used to address our media limitations. But now, VR technology is increasingly applied to allow people to enter into the designs before the designs are built.

The Institute of Systems Science is the regional leader in virtual reality research and applications. Their focus is on the three areas of medical VR, virtual walkthroughs, and edutainment.

The medical VR group is working with John Hopkins Medical University on systems for doing operation rehearsal and brain operations.

The Institute of Systems Science, Dp architects, and SoftImage have collaborated built a VR Design Walkthrough: the "Virtual Singapore Arts Centre". This project, initiated by Robert Iau, director of the SAC company and Juzar Motiwalla, director of ISS, recognizes that present technology can be cost-effectively applied to "visualize" many of the large architecture and infrastructure projects in SE Asia.

ISS and Alliance have formed a spin-off company called "Imagine" to develop edutainment applications. They assembled the current VR exhibit at the National Museum.

The Virtual Reality revolution is still ahead. The goals of ISS's current work is to make sure that the revolution arrives early in Singapore. This allows us to control it for our own advantage.

**The Virtual Revolution:
Applications of VR Now and in the
Future**

KIM MICHAEL FAIRCHILD - Institute of Systems Science

Viewing Pyramid

Level 2 - Bunch

Virtual Airplane

Point B

Master World

#2 #3 #4 #5

Figure

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Slide 1

VR at ISS

Design Visualization

Design Walkthrough

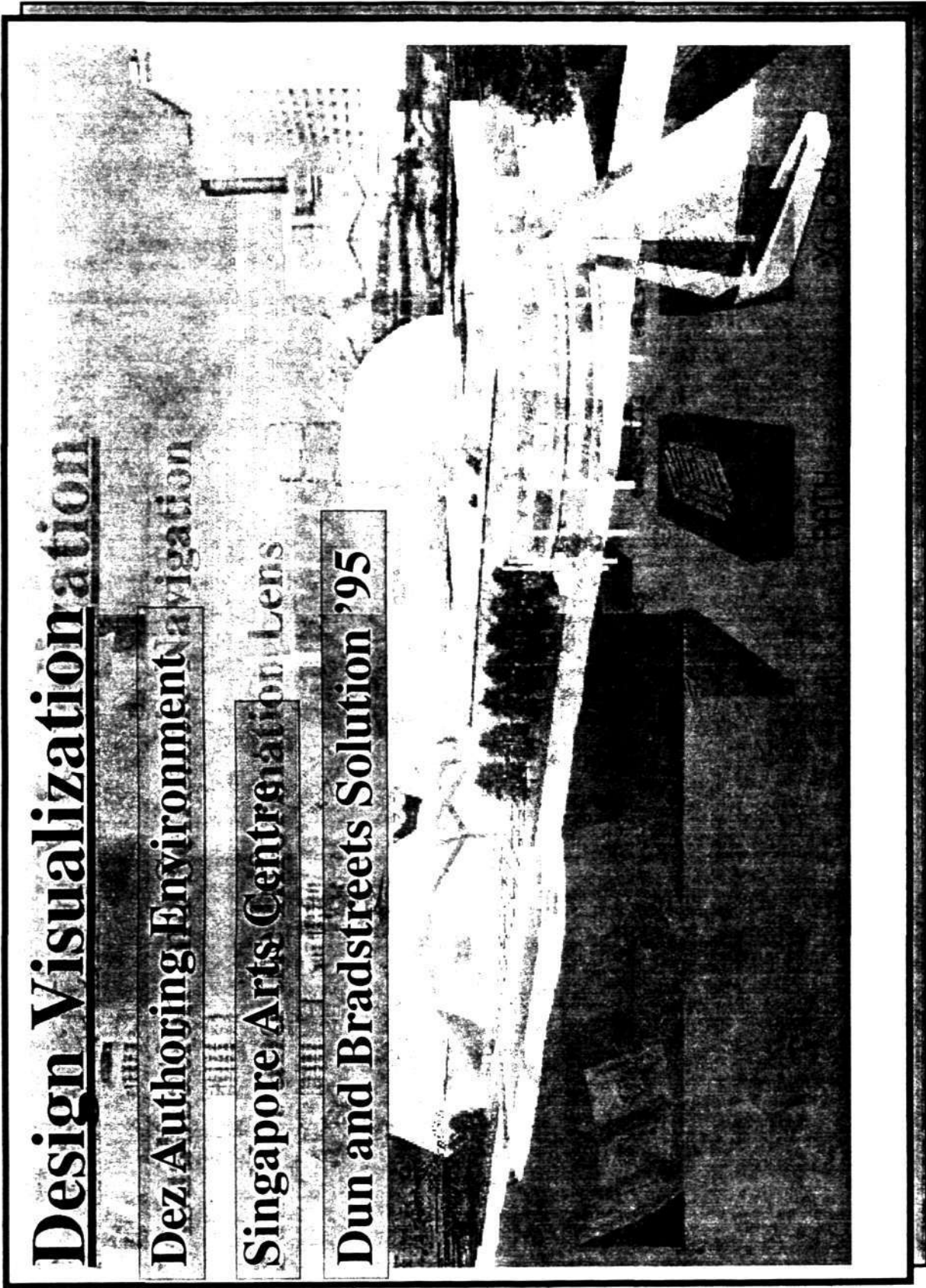
Medical VR

Rapid Prototyping

Distributed VR

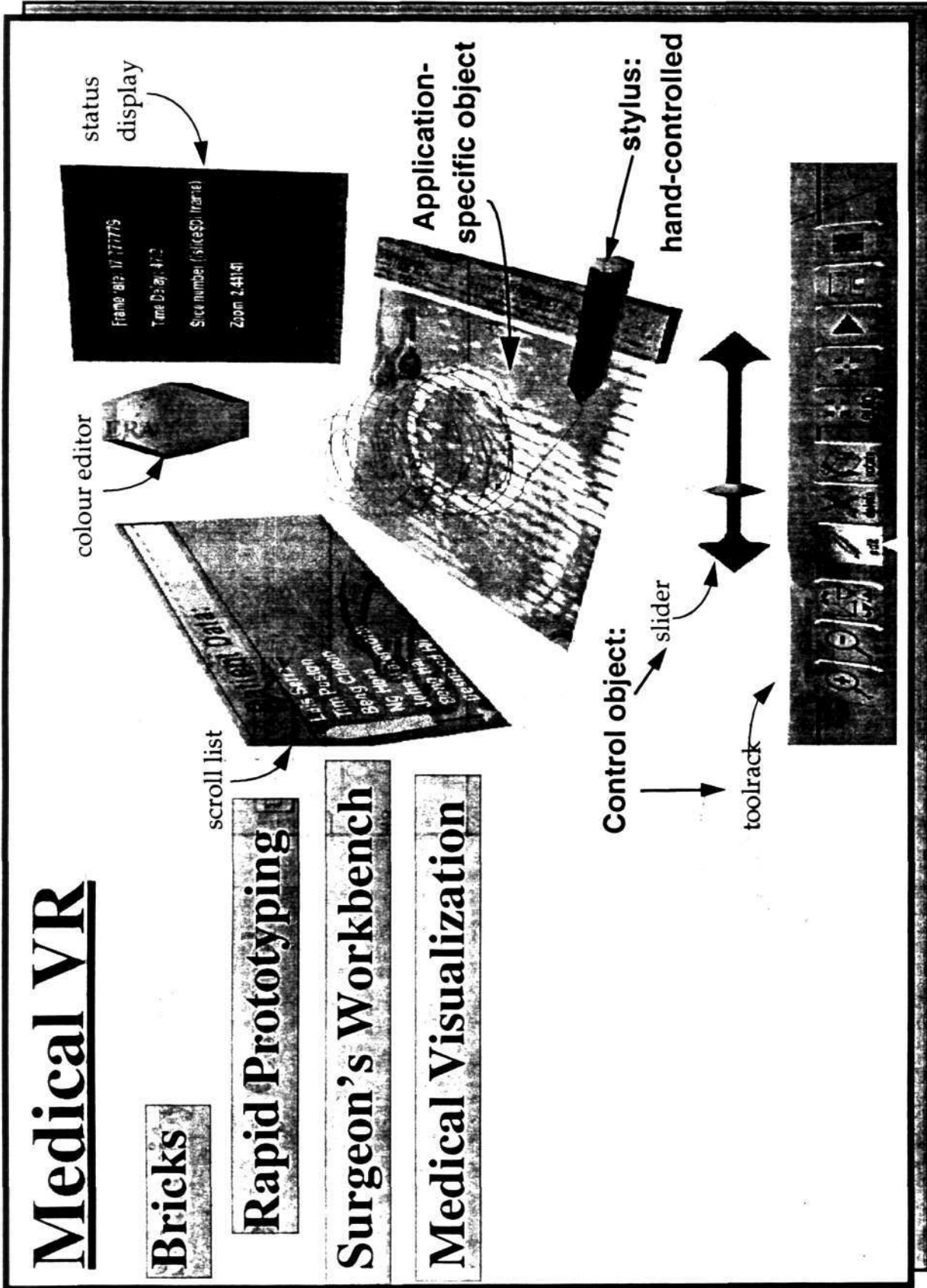
Next Generation Games





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Slide 4

Distributed VR

WorldNet

VirtualCave

Group Treasure

Slide 5

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Real-Time Multimedia (VR)

Education / Training Simulators

Information Visualization

Process Control

Communications!

How to Predict the Virtual Future?

Educational / Training Systems



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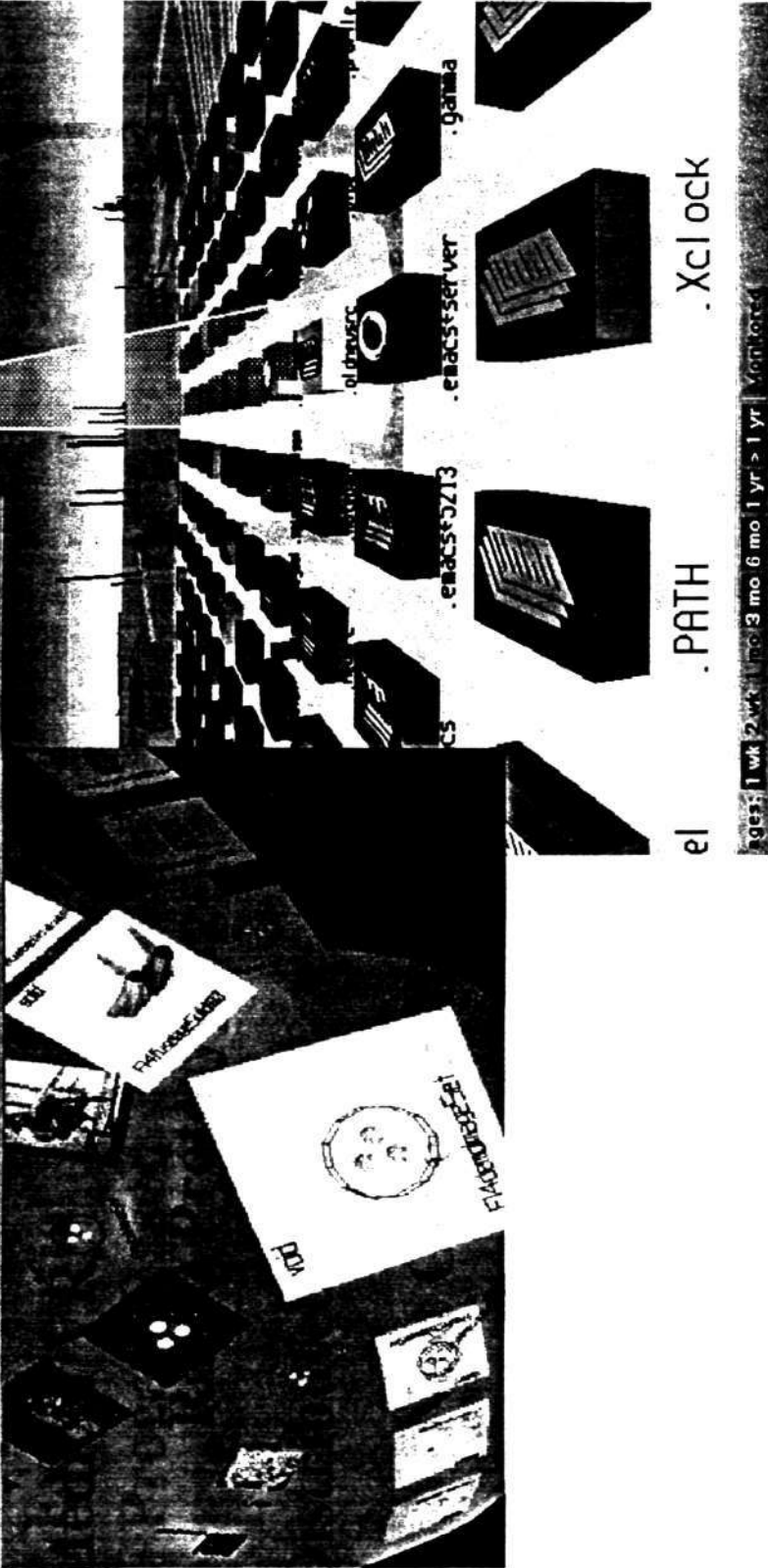
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Information Visualization

Visualization and Semantic Navigation

SemNet and the Information Lens



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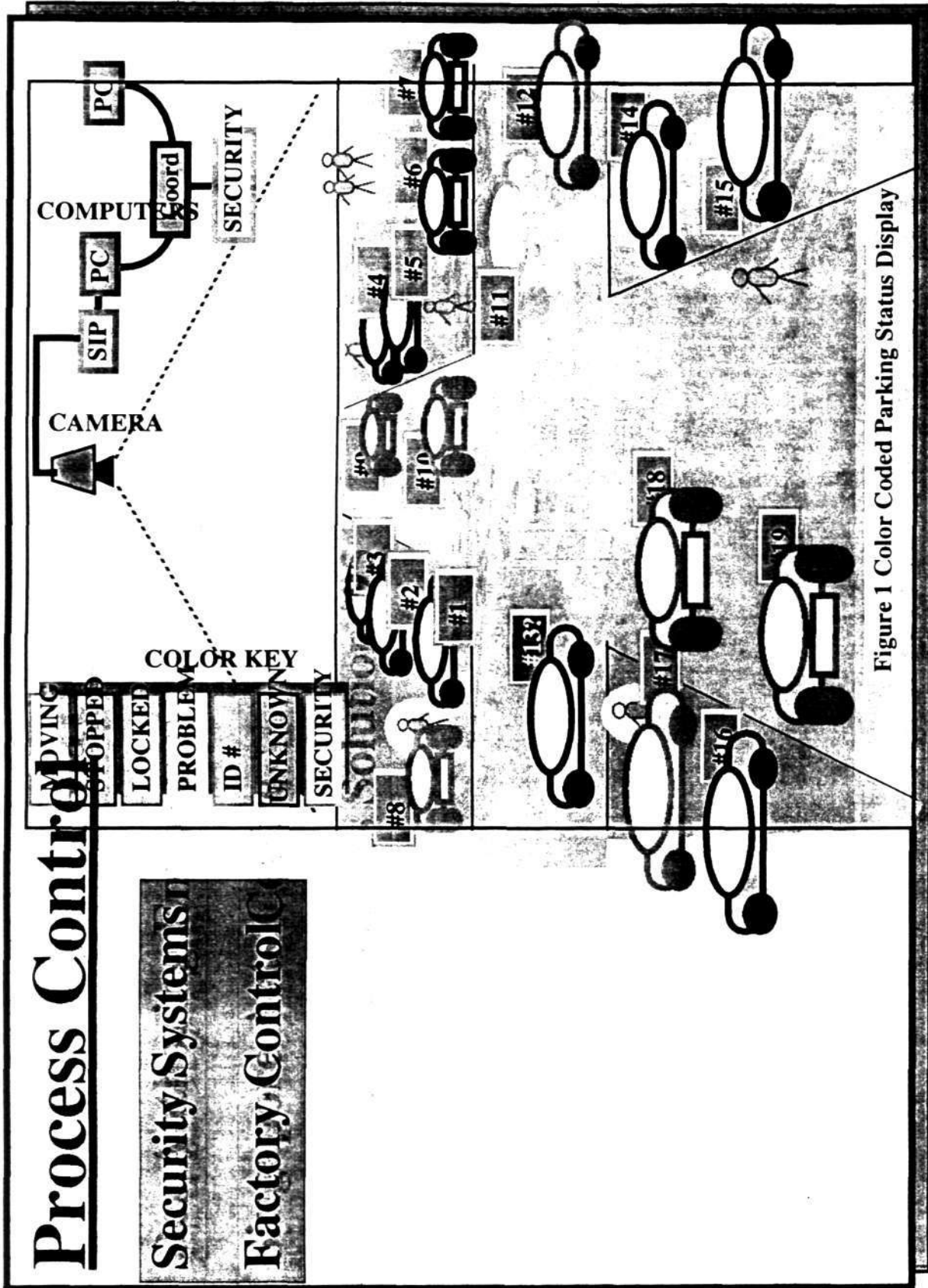
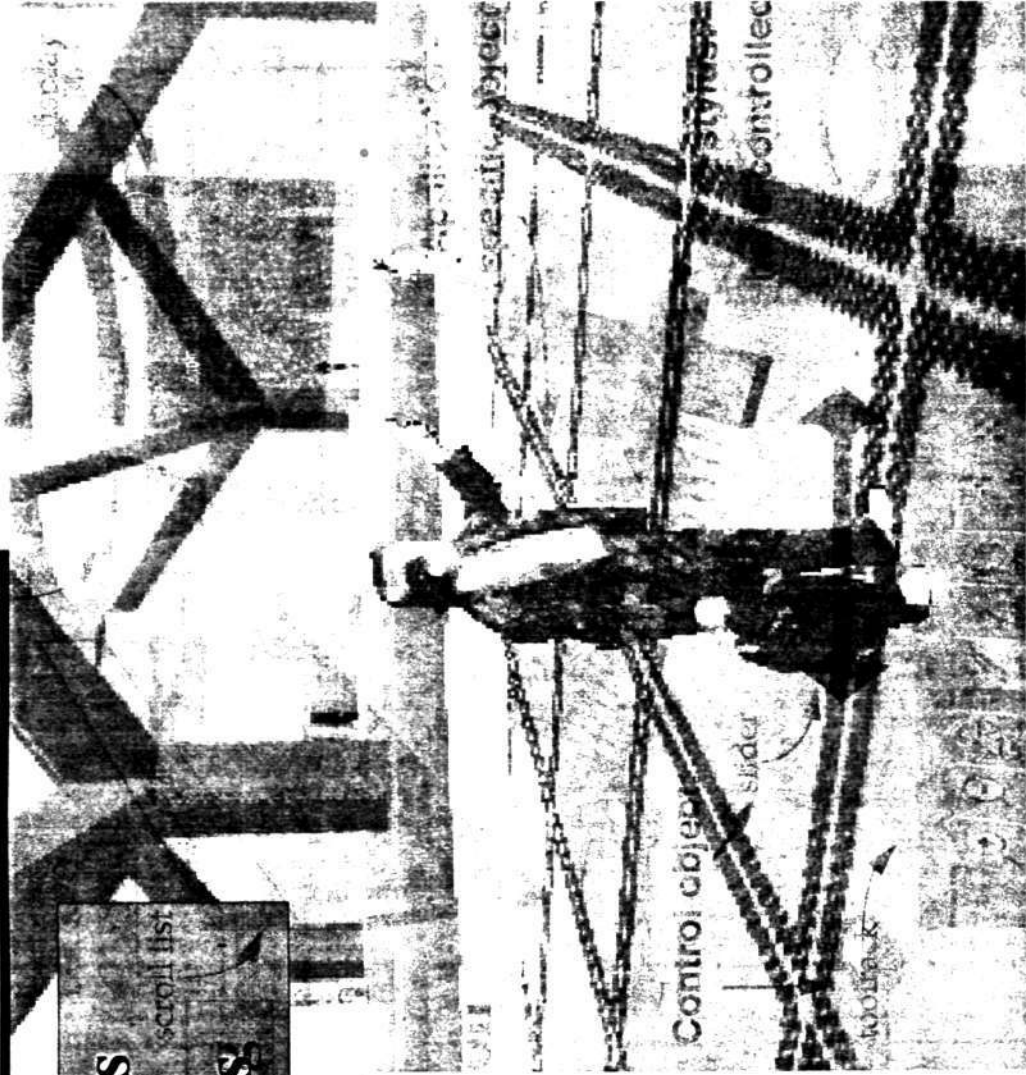


Figure 1 Color Coded Parking Status Display

Human Communications

Shared Experiences

Virtual Phone Calls



Multimedia Killer Apps

Virtual Buying Things

Virtual Getting Things

Virtual Phoning

Virtual Tours

Virtual Movies

Virtual What Else?



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