Introducing zSpace.

SID Bay Area Chapter Seminar
March 28, 2012

infinite z®

z space®

INTRODUCTION

Zspace Video

Video

Infinite Z, Inc.®

Transforming computer interaction
lifelike | interactive | immersive

Silicon Valley based ◦ VC backed in 2007 ◦ Privately held ◦ 30+ patents

zSpace®

Direct interaction with 3D virtual-holographic simulations in open space

Full color, high resolution
stereoscopic display

Passive, polarized
tracking eyewear

Unique stylus
for 3D interaction

Innovative software
development platform

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APPLICATIONS

Accelerate Understanding and Productivity

create | solve problems | teach | communicate

"I love what you do. There is great potential."
Bernard Charles, CEO, Dassault Systemes

"Would have saved me years" in time savings for pre-visualization of movies.
James Cameron, Filmmaker

"Allowing for Virtual Procedures to become mainstream"
Sergio Aguirre, CEO, EchoPixel

"Unprecedented benefit in understanding and manipulation for GIS"
Fran Rabuck, Applied Research Director, Bentley

"Lives depend on our ability to gain a shared understanding of complex data from countless sources."
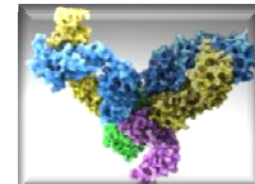US Intelligence

"Absolutely astounding!"
Jeff Kowalski, CTO, Autodesk

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Target Markets

- Manufacturing & Automotive
- Product Design
- Education
- Government
- Healthcare
- Film & Media
- Gaming & Entertainment
- Retail

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Gaming & Entertainment

Government

Applications

Healthcare

Applications

Manufacturing & Automotive

Applications

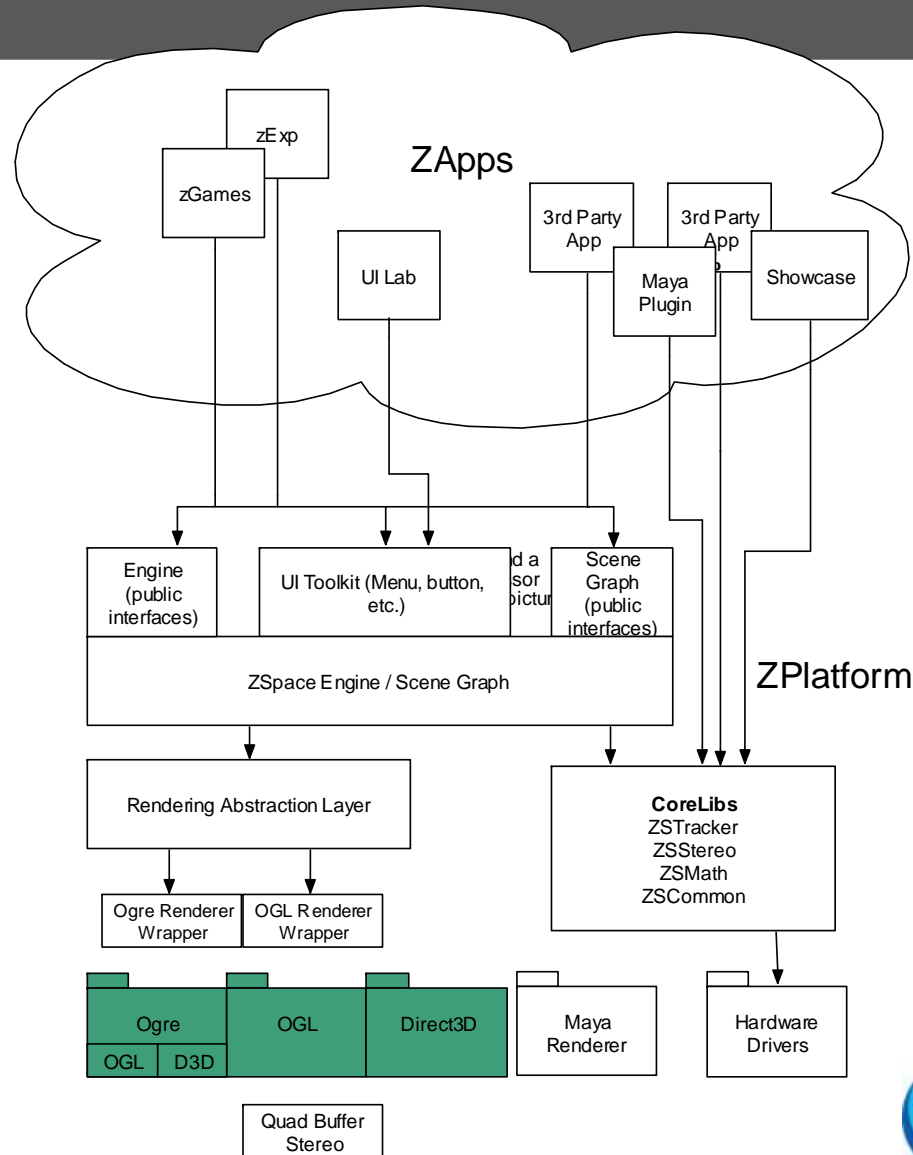# Architecture, Engineering, Construction

Applications

Education

Applications

THE SYSTEM

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SW Architecture

ZApps

zExp

zGames

UI Lab

3rd Party App

3rd Party App

Maya Plugin

Showcase

Engine (public interfaces)

UI Toolkit (Menu, button, etc.)

Scene Graph (public interfaces)

ZSpace Engine / Scene Graph

ZPlatform

Rendering Abstraction Layer

CoreLibs
ZSTracker
ZSStereo
ZSMath
ZSCommon

Ogre Renderer Wrapper

OGL Renderer Wrapper

Ogre

OGL

D3D

OGL

Direct3D

Maya Renderer

Hardware Drivers

Quad Buffer Stereo

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What's So Special About ZSpace?

- Head Tracking & Integration with ZSpace SW Engine
  - This provides accurate motion parallax, which is a very stereo powerful cue.
- Passive Eyewear with Minimal Ghosting
- Stylus Enables Direct Interaction in 3D Volume
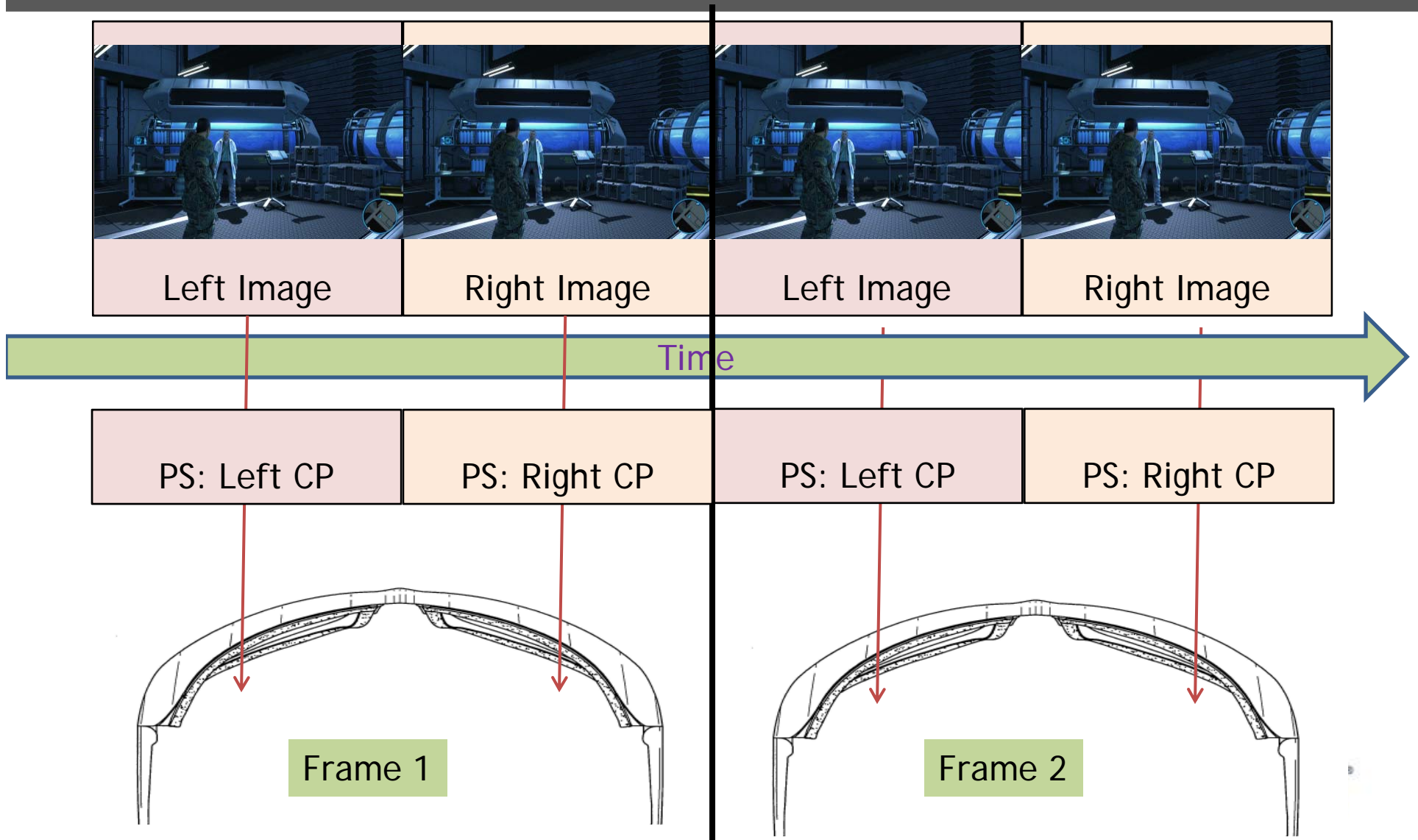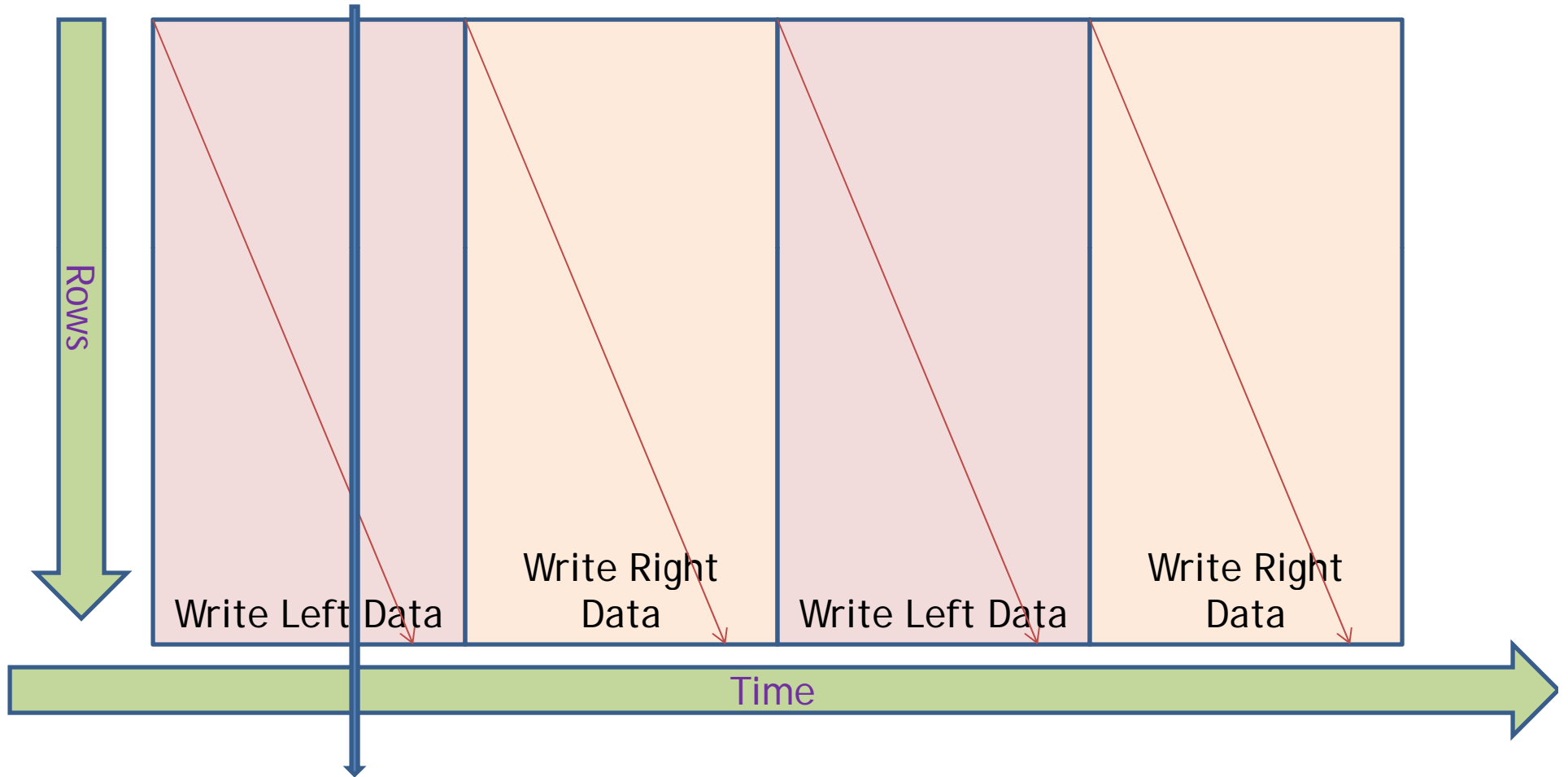 - As if it were "real"

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THE DISPLAY

Display Architecture

- Time Sequential Stereo
- Full HD 120 Hz 24" AMLCD
- Passive Eyewear
- Pulsed Segmented LED Backlight
- Segmented Polarization Switch (Active Retarder) using Circularly Polarized Light
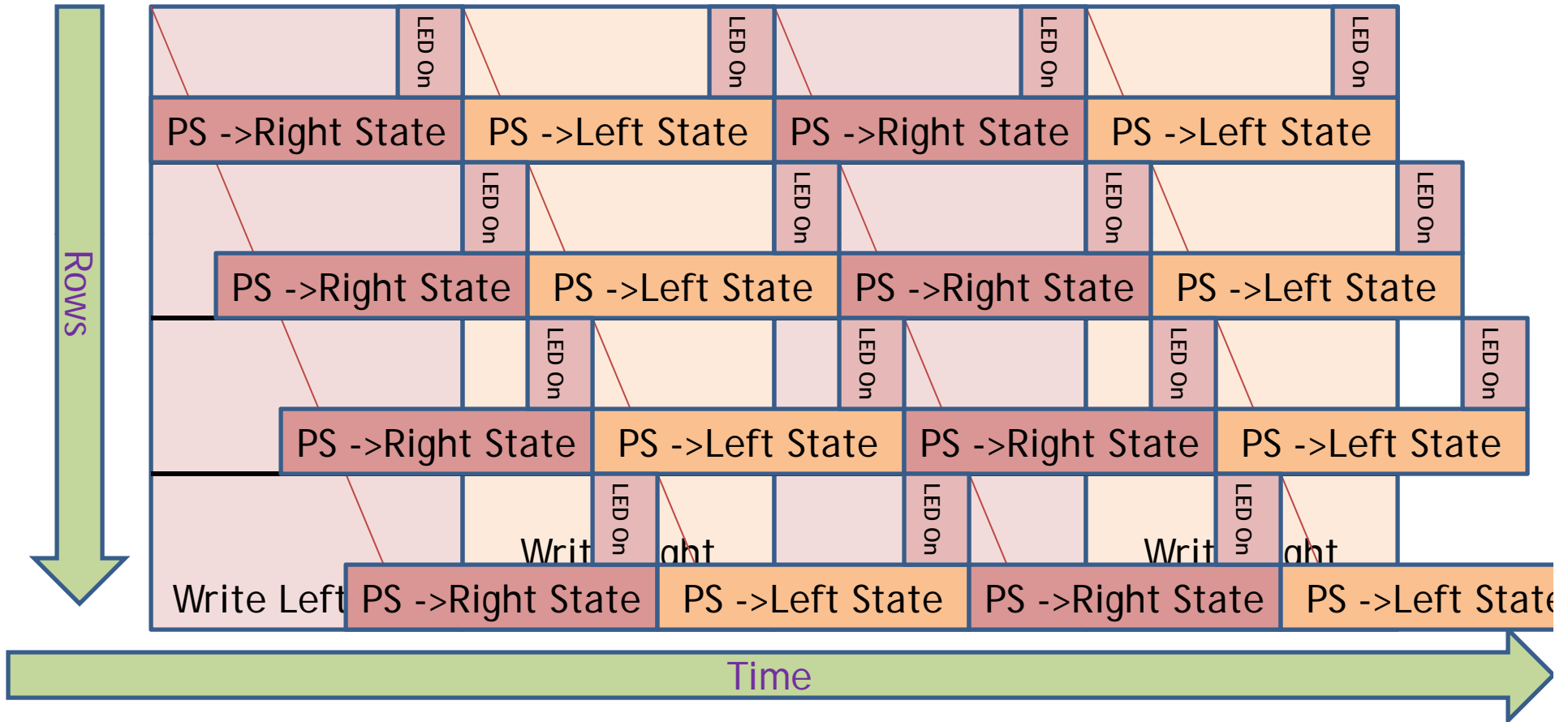
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Time Sequential Stereo

Progressive Scan

Rows

Write Left Data

Write Right Data

Write Left Data

Write Right Data

Time

What data is on panel right now?

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Segmentation

Rows

LED On

PS ->Right State | PS ->Left State | PS ->Right State | PS ->Left State

LED On

PS ->Right State | PS ->Left State | PS ->Right State | PS ->Left State

LED On

PS ->Right State | PS ->Left State | PS ->Right State | PS ->Left State

Write Right | Write Right

Write Left | PS ->Right State | PS ->Left State | PS ->Right State | PS ->Left State

Time

Challenges

- LC Response Time
  - Getting Better All The Time (and then there is OLED)
- Viewing Angle
  - AMLCD, PS, Eyewear
- Polarization Control From AMLCD to Eye
  - So Many Ways to Screw It Up
- Timing Optimization
  - Lots of Knobs to Turn
- Ghostbusting
  - A Black Art

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THE DEMO & QUESTIONS

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