

# **WebGL Visualization Tools And GPUs For Marketing Of Robotics And Automation Products**

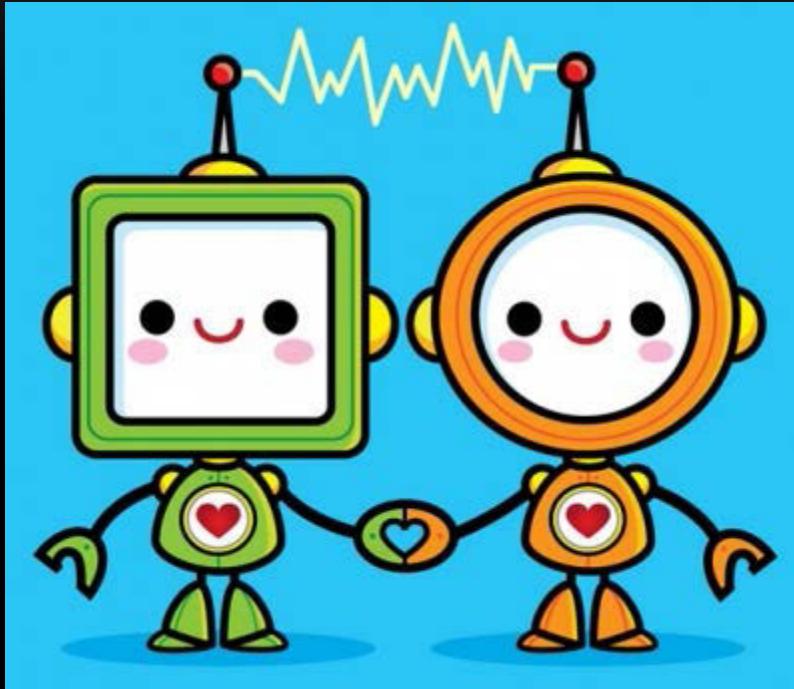
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Steve Rueckhaus

Digital Marketing Specialist

Yaskawa America Inc. – Motoman Robotics Div.

# “BOT” MEETS “GL” ...



- Our First WebGL Project
- Tools Used
- Results
- Lessons Learned

# YASKAWA MOTOMAN

A blue Yaskawa Motoman industrial robot arm is shown in a factory setting, working on a metal part. The robot arm is positioned in the foreground, and its end effector is engaged with a component. The background shows other industrial equipment and a factory environment.

- Yaskawa
  - 100 Years of Automation
  - 10M Servos
  - 18M Inverter Drives
- Motoman Robotics
  - 300K Industrial Robots
  - Peripherals
  - Full Robotic Systems

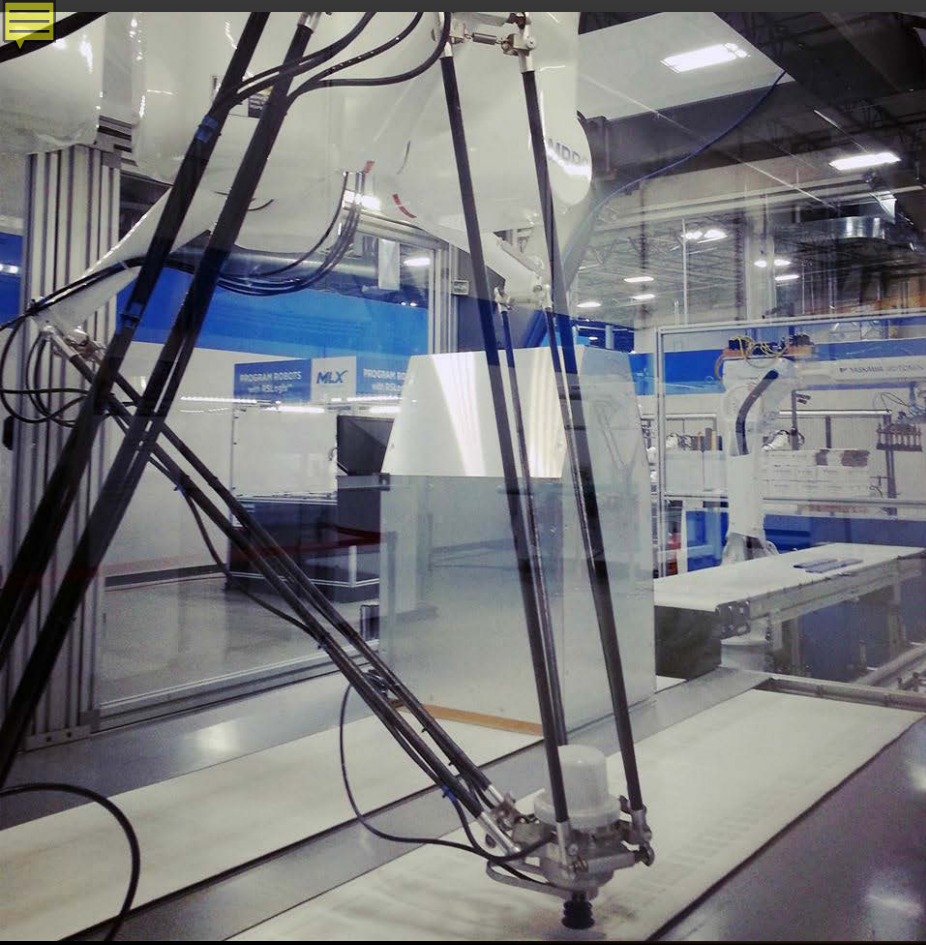


# MARKETING CHALLENGES



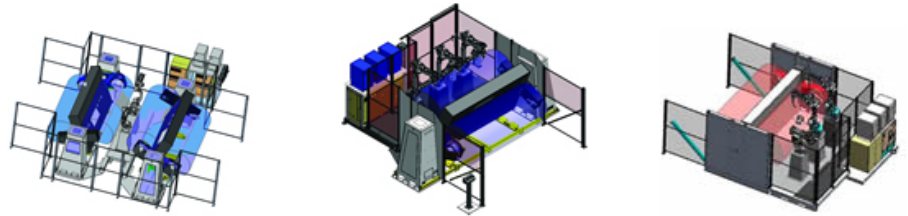
Packaging  
Industry





# CUSTOMER EXPERIENCE

## ArcWorld IV-6000 Series



Trunnion positioner has servo motors on each station and main drive for rapid station indexing. Workcell is available in ultra space saving "slim-line" design or extra heavy duty model with 1200 kg payload. Workcell can utilize up to 4 robots for HyperProductivity®.

■ ArcWorld IV-6200XHD

■ ArcWorld IV-6300XHD

■ ArcWorld IV-6000SL/SLHD

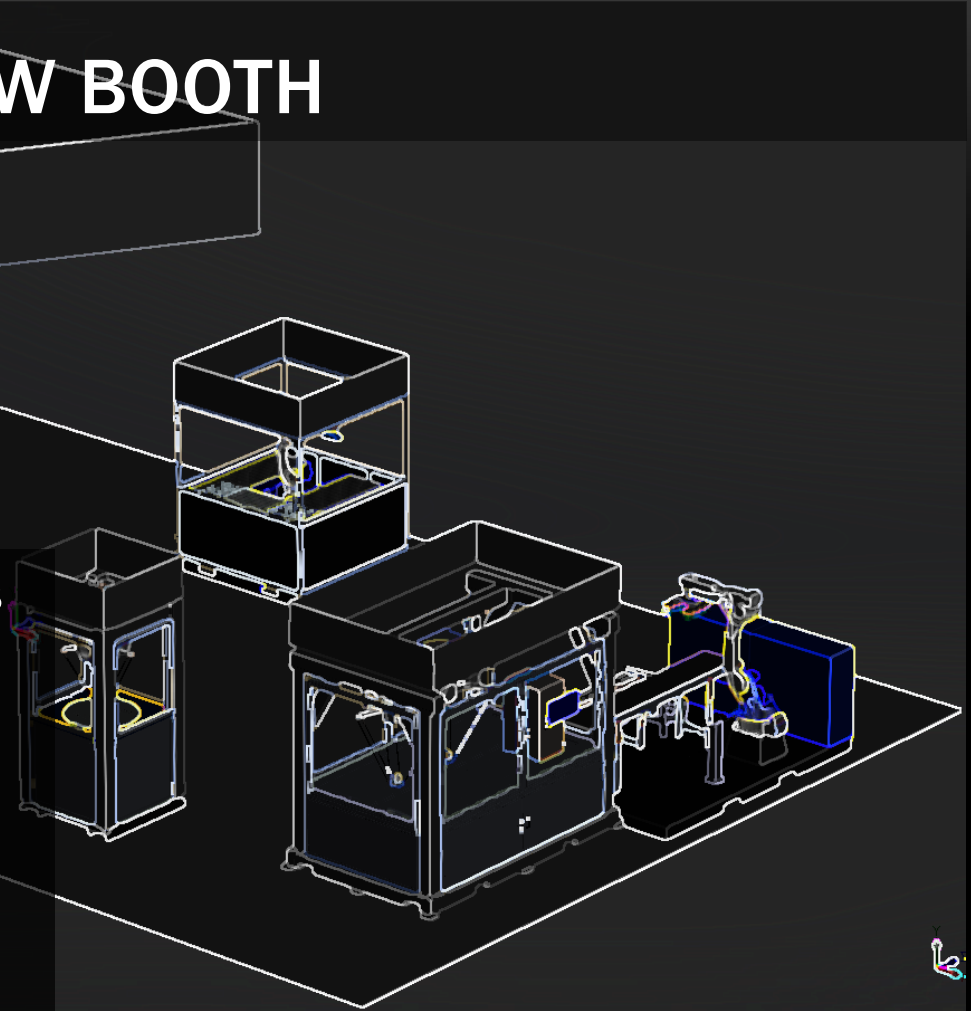
■ ArcWorld IV-6200SL/SLHD

■ ArcWorld IV-6300SL/SLHD

## Real Life vs. Web

# VIRTUAL TRADESHOW BOOTH

- Repurpose existing 3D CAD Models
- Virtual Experience:
  - Web
  - Mobile
  - Offline

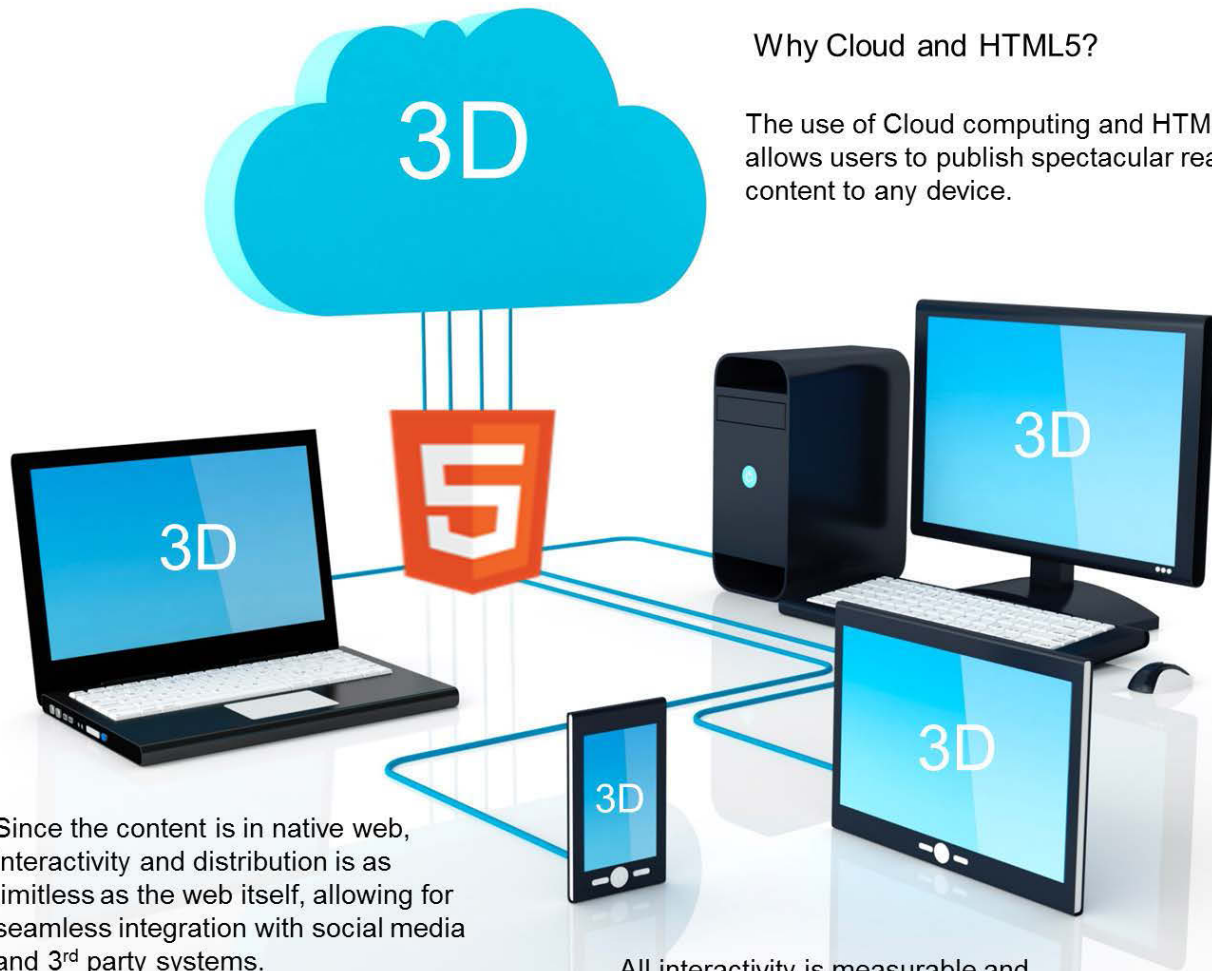


# TIME TO GET CL3VER



- Cloud based platform to create and publish interactive 3D presentations.
- CL3VER Presentations offer a new way to explore design projects or products from any angle at any time – any where.

# DEVICE AGNOSTIC



## Why Cloud and HTML5?

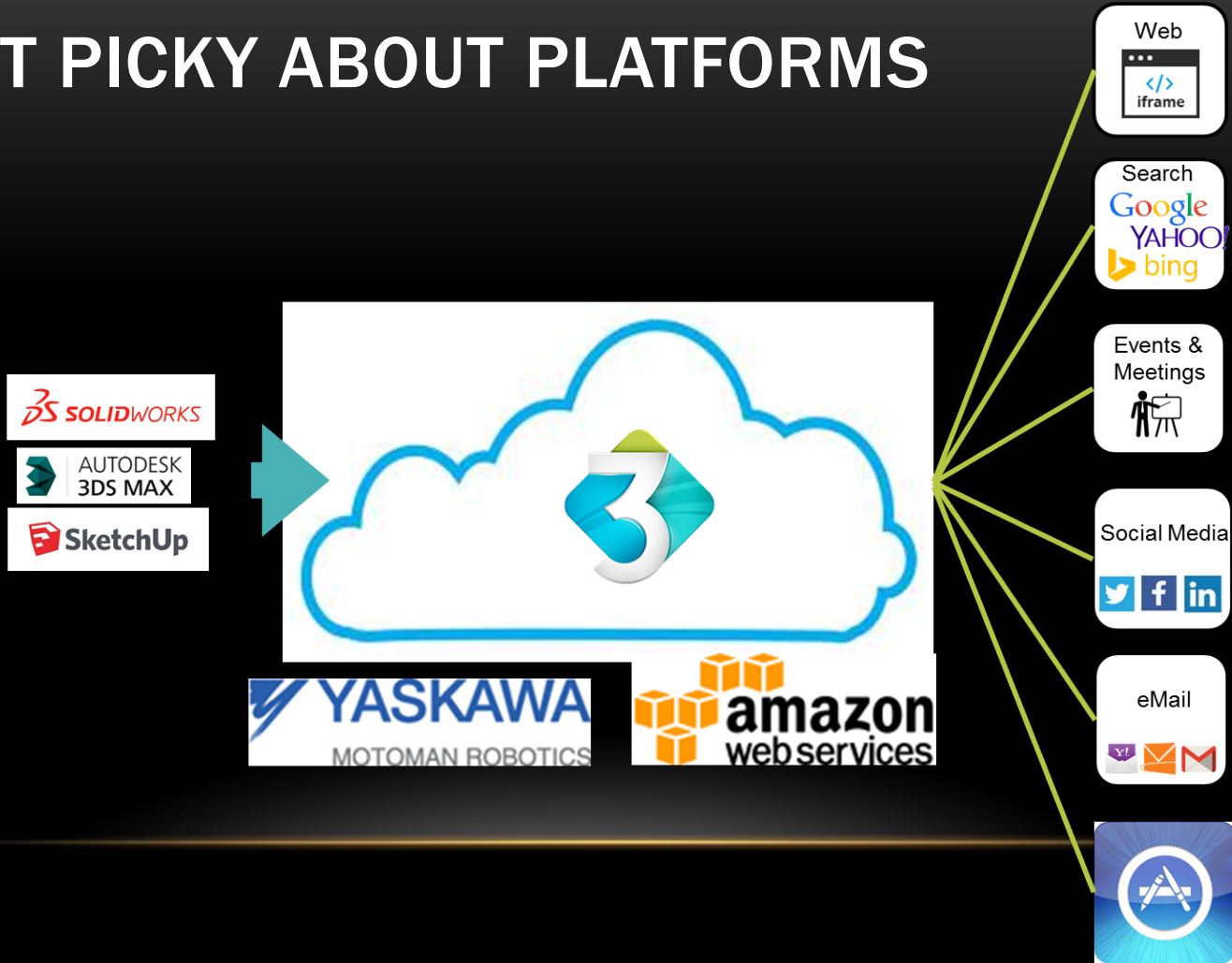
The use of Cloud computing and HTML5 allows users to publish spectacular real time content to any device.

Since the content is in native web, interactivity and distribution is as limitless as the web itself, allowing for seamless integration with social media and 3<sup>rd</sup> party systems.

All interactivity is measurable and allows for efficient analytics.

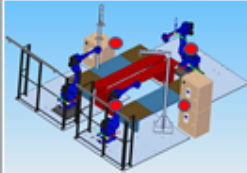


# NOT PICKY ABOUT PLATFORMS



# HOW THE SAUSAGE IS MADE

## Palletizing & Depalletizing Applications



**Robotic Palletizing and De-palletizing:** This demonstration clearly highlights benefits of robotic in end-line palletizing operations and depalletizing operations for loading facilities.

In the first part of the demonstration, the robot is used for palletizing. The robot is used to load the pallets in a systematic and organized manner. The robot also uses the same pallets to perform multiple operations to build pallets.

The second part of the demonstration shows an application for depalletizing. The robot is used to unload the pallets in a systematic and organized manner. The robot also uses the same pallets to perform multiple operations to build pallets.



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## Palletizing

Camera angle behind palletizing area (MPL60)



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## Palletizing



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Advanced maintenance & diagnostics

24/7/365 remote alarm/monitoring

Industry highest rated functional safety on board

Engineering, light weight, touch screen, color touch panel

Multiple external I/O support in same cabinet

Powered multi-motion controller

Robot PC architecture

Easy of connectivity, open architecture

DX100/200

Camera angle behind de-palletizing area (M450)

Auxiliary equipment mount on upper arm (20kg)

Networking: Fiber, wall, ceiling

Standard reach options: M450-30: 4.45m, M 2.35m

6 axis multipurpose arm

Reach: 3.35m, 4.235m

Internally routed UG and air lines - ease of use

M450 Payload 50kg

Camera angle behind de-palletizing area (M450) Hotspot on Kinect camera

**Neocomer Unlimited Depalletizing Application**

Mixed SKUs within or between each pallet

Neocomer patented 3D machine learning platform

Cases from 6" to 45"

Weights up to 1000lb

Pallets to 72" high

Partial or full layers

With or without layers/legs

Various colored boxes and graphics

With or without labels/size

Neocomer's unique 3D machine vision

Connects and calibrates sensors & robots accurate to 1/100th

Off-the-shelf features for regular accuracy (Color, USB & CAN sensors, TrueDRIFT, BlueBot, Light Sensor, Laser)

Subscription provides ongoing 24/7 identification, efficiency metrics, free sensor and software upgrades, free remote support

Other Applications:

- Random Bin Picking
- Random Bag Transfer
- 3D Inspection

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# IN CL3VER

Project

Import Save

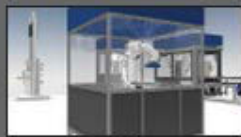
Insert Scene Materials Presentation View \*Robotic Packaging Solutions

Publish Preview Flash Stats Download Screenshot Scene Toolbar Loading Editor

Publish Settings



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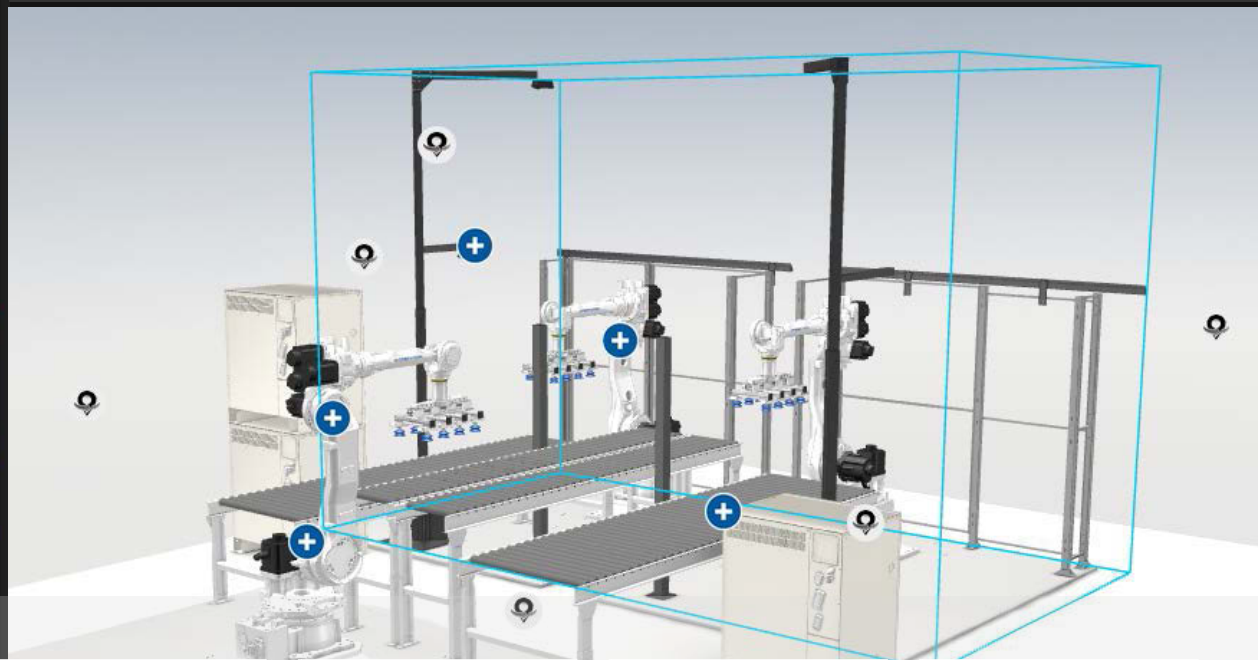
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Staging

Surfaces & Lighting

Action Buttons & Overlays

Publishing

Primary Packaging

High-Speed Picking

Case Packing

Palletization

Drives & Motion

🔍 Explore Scene

# 3D TOUR





# RESULTS



- Booth Leads Nearly Doubled From 2013 Show
- Web Visits Continue:
  - 3X average time on site
  - 2X more pages/session
  - 50% Fewer Bounces
  - 5X higher conversion rates



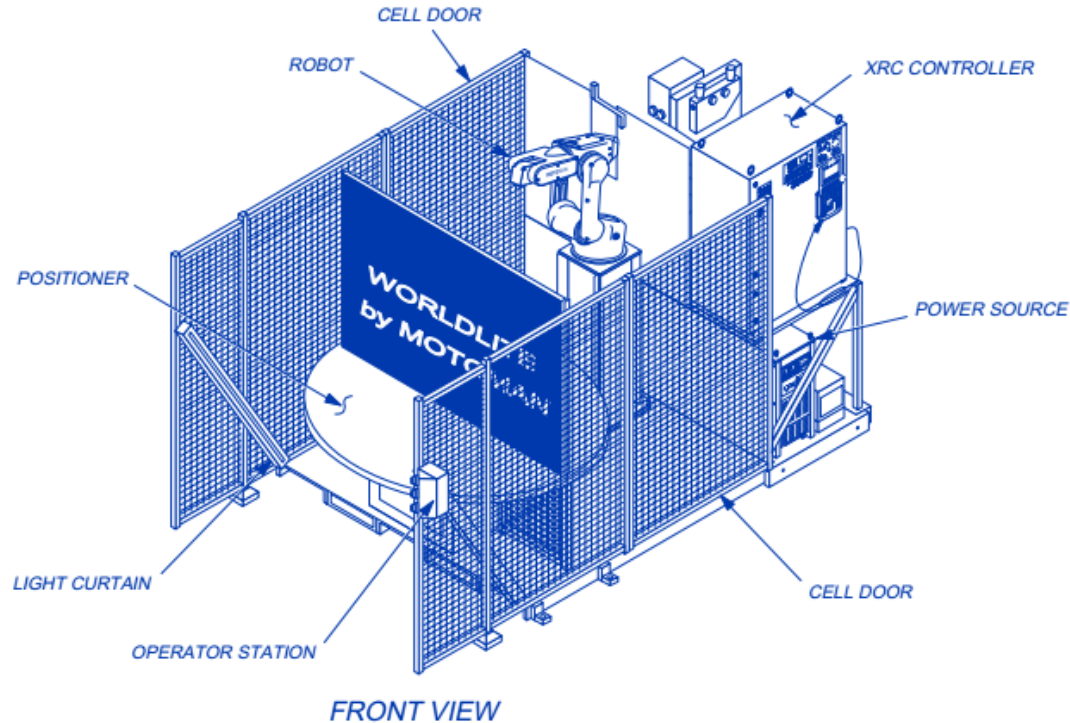
# LESSONS LEARNED

Please Wait...

Loading 83%

- User Experience Trumps Realism (if you can't have both)
- Keep it Light, Keep it Simple
- Establish 3D Asset Standards
- Optimize Internal Workflow
- Designate Resources

# FUTURE PROJECTS?



- Interactive User Manuals
- Concept Drawings for Customer Proposals
- Robotic Motion Simulation
- Offline/Remote Robot Programming

# THANK YOU!

- Contact Me
  - [steve.rueckhaus@motoman.com](mailto:steve.rueckhaus@motoman.com)
  - LinkedIn: [/in/steverueckhaus](https://www.linkedin.com/in/steverueckhaus)
- Feedback
  - Please complete the Presenter Evaluation sent to you by email or through the GTC Mobile App. Your feedback is important!

