26-27 HIGH SCHOOL TECHNOLOGY OVERVIEW

INNOVATION & INFRASTRUCTURE

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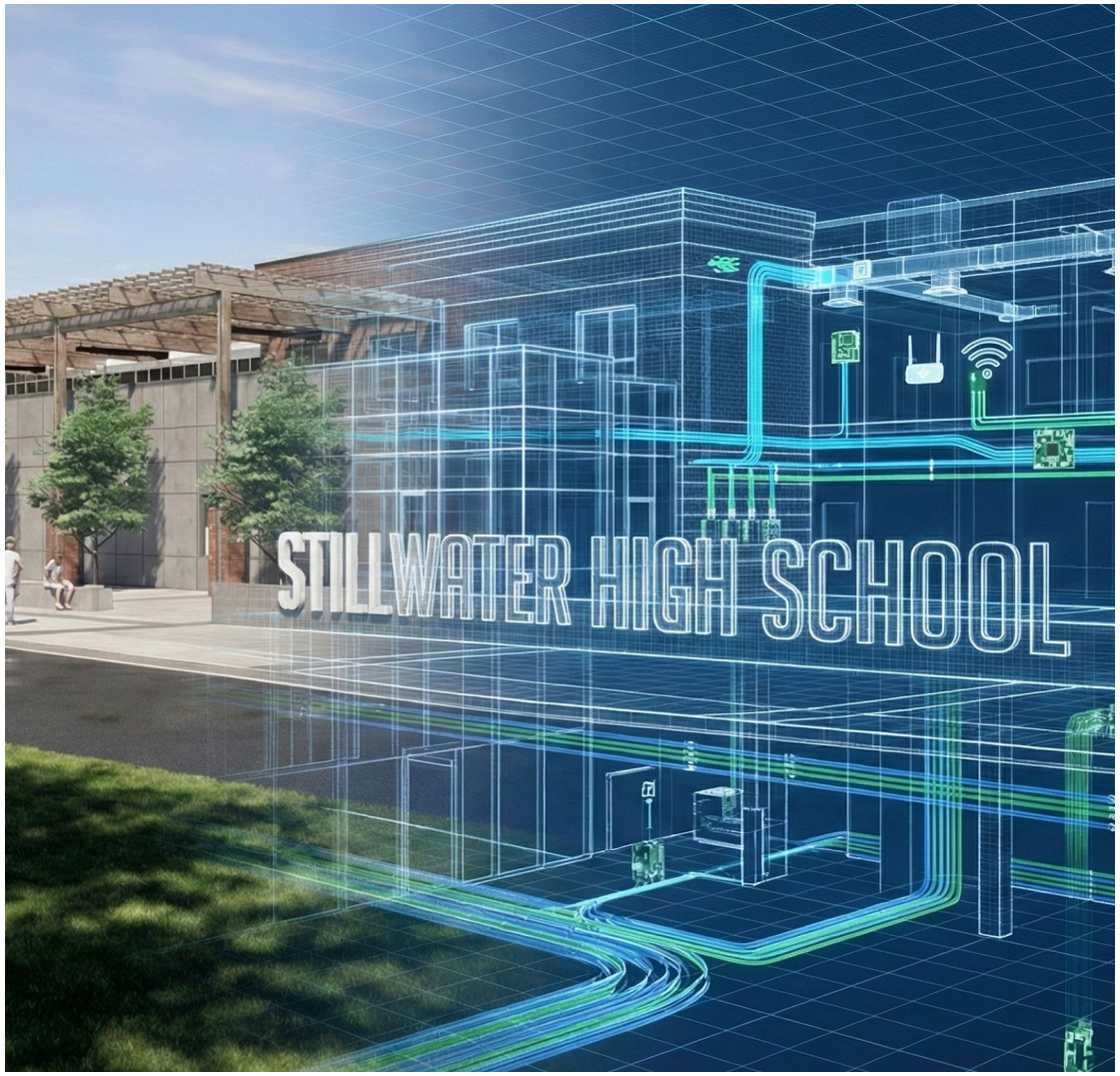
GOAL

To outfit the new high school with a resilient, state-of-the-art technology ecosystem designed to enhance safety, reimagine connectivity, foster innovation, and seamlessly support modern learning for every Pioneer.



Tech Systems & Solutions:

- **Data Cabling & ISP Infrastructure**
- **Network Closets, Servers, and Network Switches**
- **Wireless Access Points**
- **Security Cameras & Access Control***
- **Intercoms, Clocks, Bells***
- **Phones***
- **Audio-Visual Presentation Equipment***
- **Classroom & Office Technology**
- **Digital Alumni Display**

NETWORK INFRASTRUCTURE

Future-Proofed Data Cabling (Cat6A)

- Up to 10Gbps bandwidth to every end point
- Up to 90W (PoE++) power per supported end point

Modern Wireless Access Points

- 110x total access points (1 dedicated AP per classroom)
- High density APs support 700+ simultaneous connections per unit
- Dynamic routing and intelligent load balancing among APs
- Full support for Wifi 7
- Open BYOD guest wifi network planned for SY 26-27 (CIPA compliant)

Integrated Clock, Bell, & Intercom

Valcom VL520 Wall Clock

- Clock, speaker, and display + built-in microphone and emergency LED flasher all in one unit
- Supports bell scheduling, one-way paging, two-way intercom, and playback of pre-recorded messages (both audio and video)
- Integrates with RAVE, Genetec, and other security & emergency notification systems
- Admins & SROs can trigger site-wide notifications from their cell phones anywhere on campus.

Intercom (continued)

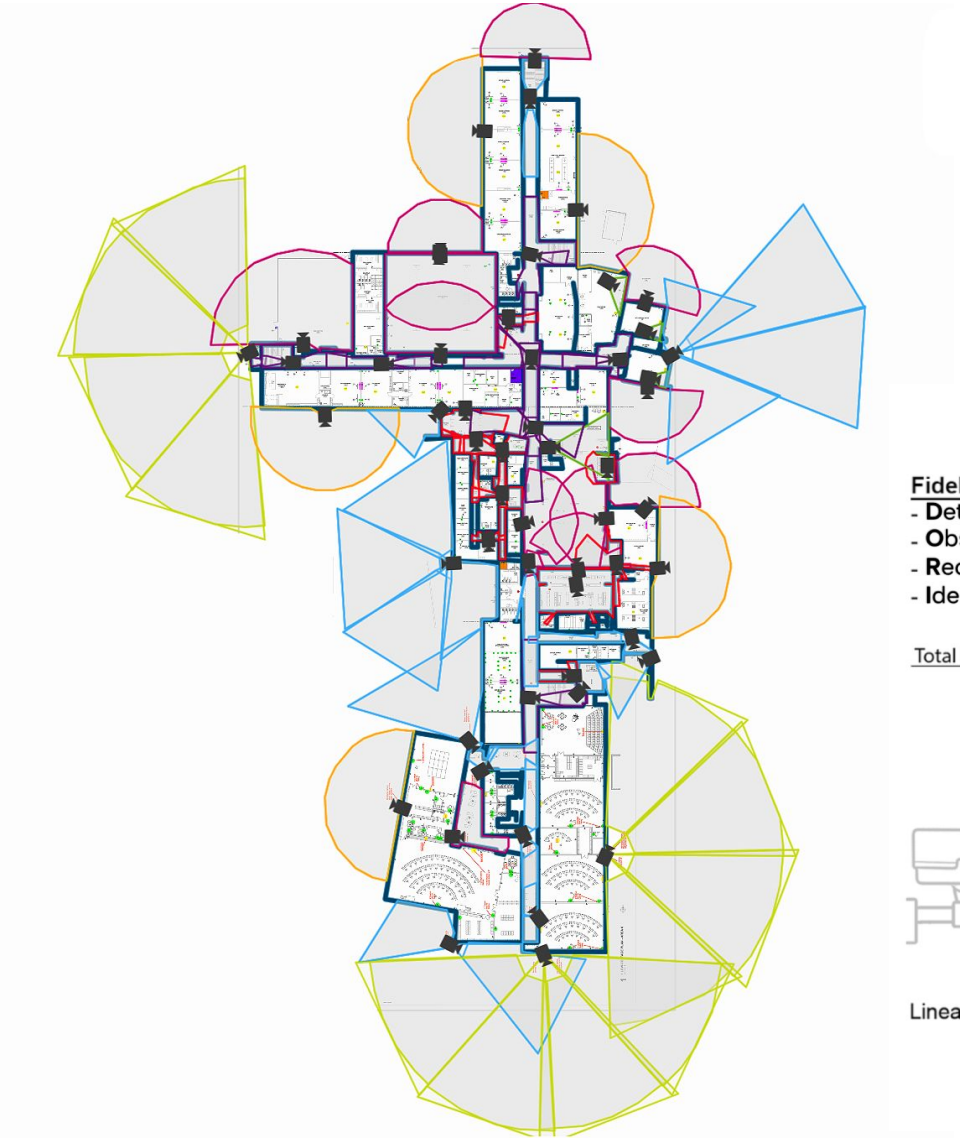
Hallway Clocks (Valcom VL522)

- Dual-sided display
- Same functionality as VL520 classroom clock
- All clocks can display text and audio in multiple languages
- 1 clock every 80ft in all main hallways (interspersed w/ ceiling speakers)

Large Common Areas & Exteriors

- Larger version of the VL520 classroom clock (VL550)
- Paired with 150db SIP horns for audio enhancement in noisy environments
- 3x SIP horns around building exterior

SECURITY: VIDEO SURVEILLANCE

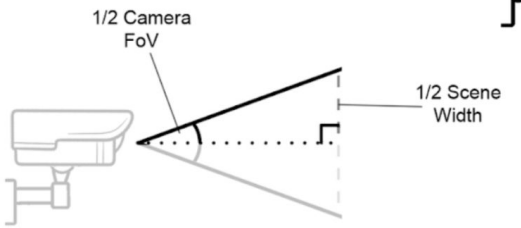


Security Cameras

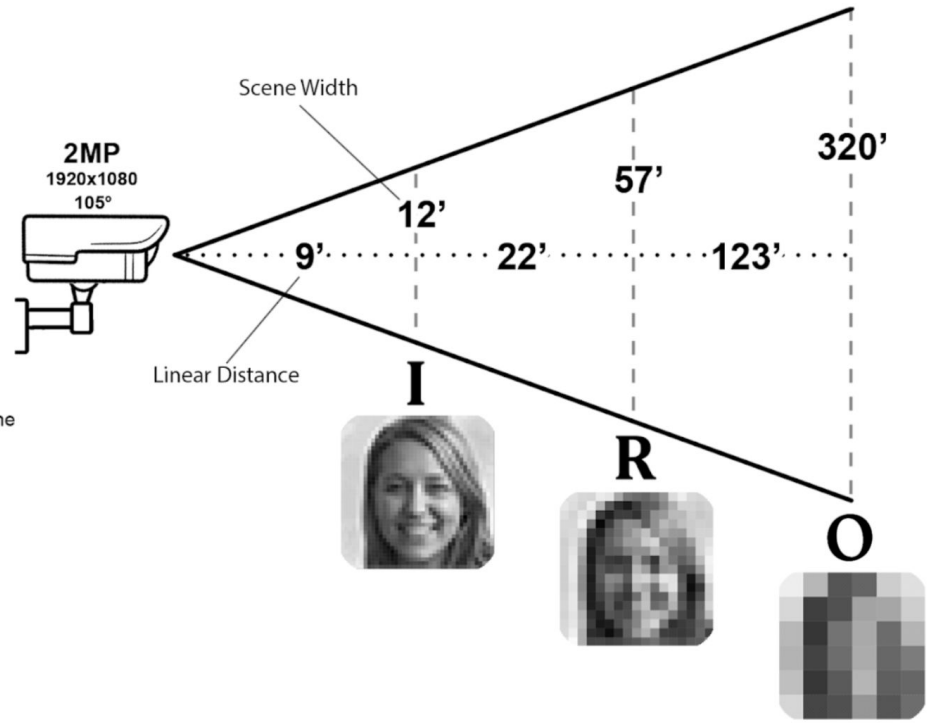
- **73x** total Axis cameras (**46** interior, **27** exterior)
- Layout design based on published guidance from **US Dept. Homeland Security**

Fidelity Tiers:
- **D**etection < 6px/ft.
- **O**bservation ≥ 6px/ft.
- **R**ecognition ≥ 34px/ft.
- **I**dentification ≥ 80px/ft.

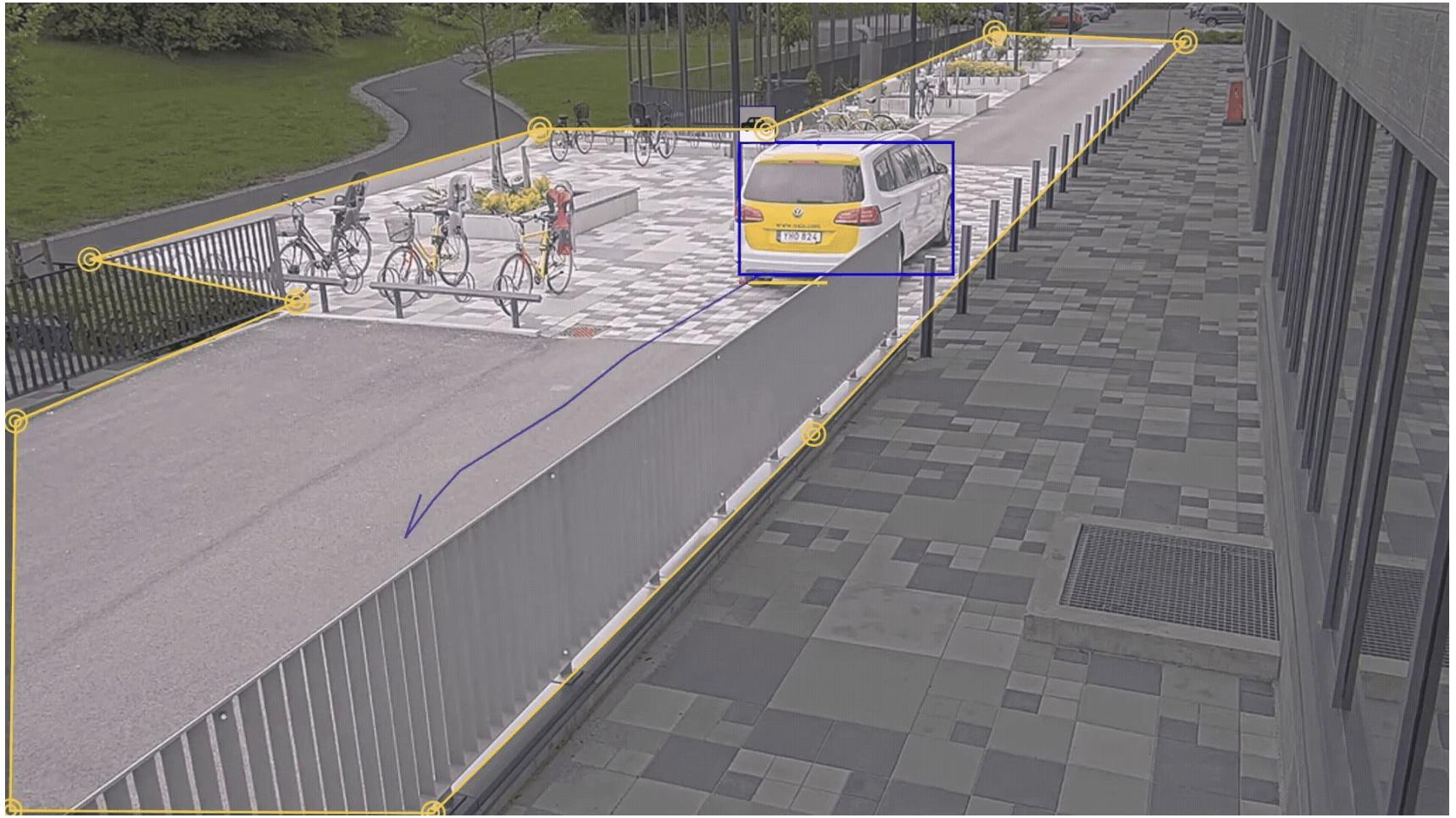
$$\frac{\text{Total Horizontal Resolution}}{\text{Pixels Per Foot}} = \text{Scene Width}$$



$$\text{Linear Distance} = \frac{\text{1/2 Scene Width}}{\tan(\text{1/2 Camera Fov})}$$



Video Surveillance (continued)



Time-in-Area (AI Analytics)

Tracks and notifies SROs when a human or vehicle stays within a predefined “restricted” area for too long

GENETEC VISUAL TRACKING: HIGH-LEVEL OVERVIEW

1. ADMINISTRATOR SETUP & OVERLAYS

Admins create & link graphical overlays to adjacent cameras. (e.g., Doorway -> Camera B)

Linked Camera B

2. OPERATOR ACTION & SUBJECT TRACKING

As subject moves out of view, Operator clicks the corresponding overlay shape.

CLICK!

3. INSTANT SWITCH & CONTINUED VIEW

Works in Live & Playback modes.

System instantly switches video tile to the linked camera. Tracking continues seamlessly.

BENEFITS: Intuitive Tracking | Faster Response | No Camera Names Needed | Efficient Manual Tours & Investigations

Telephony

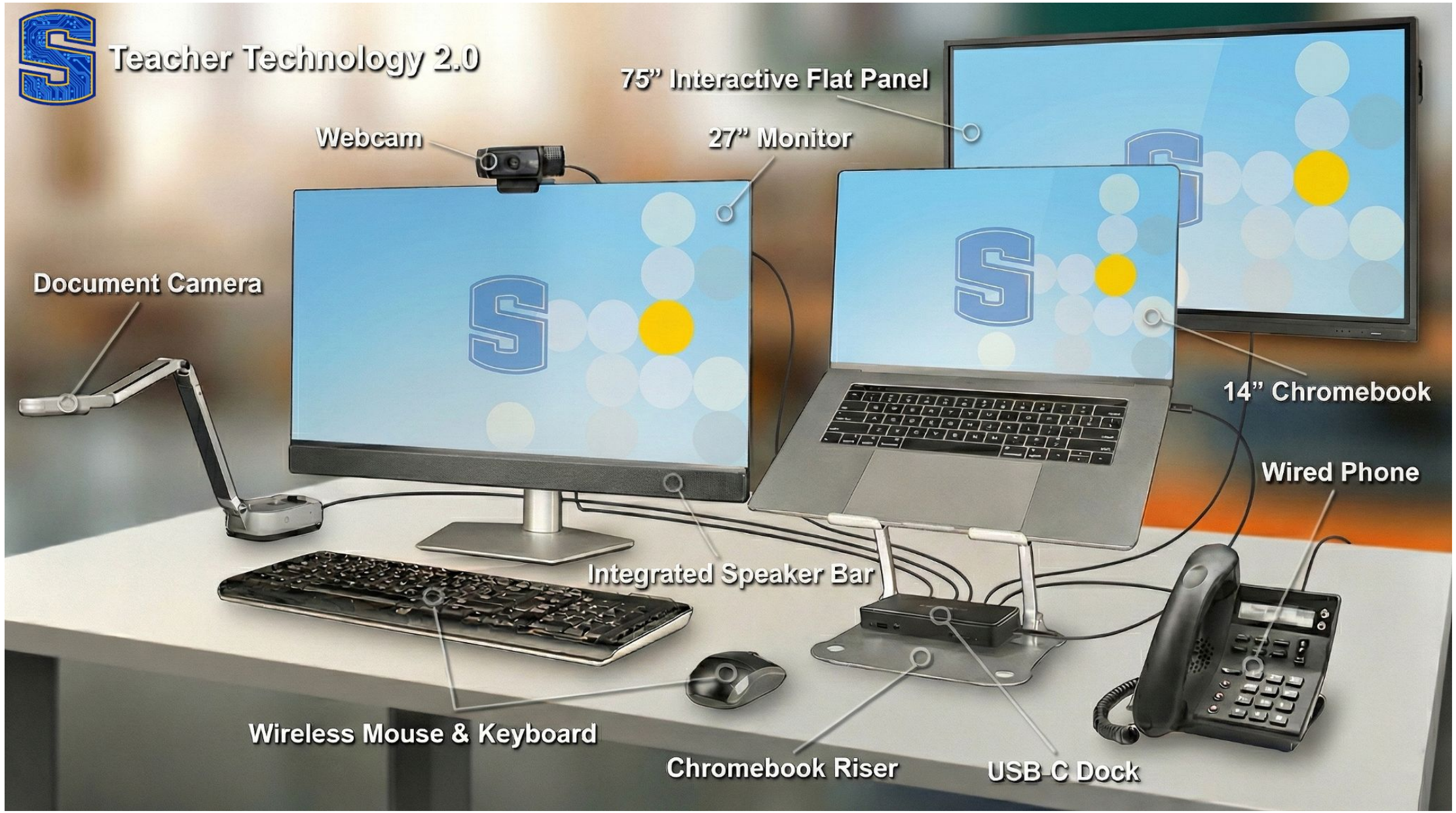
Fortinet FortiVoice System

- Replacing deprecated Mitel phone system
- Initial rollout for HS only in 26-27, will run concurrently with old system until future district-wide refresh.

Hardware & Features

- 128x total phones + 100 soft clients (smartphone app)
- E911 compliant + predefined location populates on local phone displays.
- Supports call barging (silent listen, coaching, and intervention)
- Local survivability gateway - supports internal calling within the school even when external connections are severed.
- Integrates w/ Valcom Intercom system
- Currently used by Tulsa PS, Putnam City PS, Union PS, and Guthrie PS

Classroom Technology (“Teach Your Way”)



Computer Labs

Diverse Options for All Curriculum

- 1x Mac lab, 1x Windows PC lab, 1x Chromebook lab
- Powerful computers with industry-standard creative software
- Funded through Carl Perkins, Career Tech, and various grants

Audio Visual & Presentation Equipment

ImageNet Consulting

- Premiere AV vendor & installer w/ over 12 years K-12 experience:
  - OKCPS Clara Luper Center
  - Norman PS Performing Arts Center
  - Enid PS Board of Education Building

Student Center

- 17ft LED video wall (provided by Vox AV)
- 8x pendant speakers + 4x pendant subwoofers
- Wall-mounted touch controls & bluetooth support
- Wired and wireless microphone hookups allow for presentation from stair landing or below
- Wireless casting support for BYOD presenters (platform, software, network, and OS agnostic)

+ImageNet Consulting

AV (continued)

Presentation Rooms (x2)

- 2x 75” Commercial Displays + mobile Interactive Panel w/ content sync
- Can present from panel or wirelessly cast from BYOD
- 8x ceiling speakers + wired & wireless mic options
- Wall-mounted touch controls

AV (continued)

Gymnasium

- 2x 13,000 lumen laser projectors
- 2x 220” retractable projector screens
- Ceiling-mounted planar speaker array w/ subwoofers
- Media playback + wireless casting
- Wired and wireless mic options
- Wall-mounted touch controls

AV (continued)

Large Band Room

- 1x 13,000 lumen short-throw projector
- Special “projector-paint” display surface
- Mounted Interactive Panel w/ content sync
- Confidence Monitor
- 8x 2x2 lay-in ceiling speakers
- Media playback + wireless casting
- Wired and wireless mic options
- Wall-mounted touch controls

Digital Alumni Wall Display

Honoring the Past

- 65” multi-touch interactive display
- Scalable digital archive chronicling over 72 years of SHS history
- Includes AR photo booth w/ football helmet and graduation cap.
- Visitors can browse the site from their phone via QR code

Training, On-Boarding, & Support

Help When You Need It

- All vendor service agreements include post-installation support.
- Dedicated PD planned for HS teachers and staff.
- All new technology equipment will have a QR code affixed that links to relevant quick-start guides and help documentation.

THANK YOU

QUESTIONS & DISCUSSION

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