



Cisco  
Networkers 2011  
May 19, Toronto, Canada

Knowledge  
Is Power.  
Learn. Share. Collaborate.



# Business Video Update

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Jeff Corcoran

# Business Video Update

One year after the acquisition of Tandberg this session will focus on the new products and features that have been recently launched from our business video group. During this session we will take a deep technical dive into the new software updates on various endpoint platforms that aim to help and evolve your video experience. These updates will range from the touch panel interface to Clearpath, our cutting edge error resiliency mechanism. We will also take a closer look at some of the new products such as our Advanced Collaboration rooms as well as the expansion of our desktop line with the EX60.



# Agenda

- What We've Been Up To
- Demystifying the Endpoint Enigma
- Collaboration in a Box
- The TelePresence Video "Secret Sauce"
- What's New, what's Hot, and What's Coming to a Video Endpoint Near You
- Where We're Going

# What We've Been Up To

## Areas of integration focus since acquisition close

### § Implementation of Cisco networking technologies on TANDBERG endpoints

MediaNet: Cisco Discovery Protocol, auxiliary VLANs, Auto QoS Quality of Service, location awareness

### § Provisioning and registration of TANDBERG endpoints on UC Manager

E20 in UC Manager 8.5(1)

EX and C-Series in UC Manager 8.6(1)

### § Interoperability between UC Manager and VCS

SIP Trunking

Alpha-numeric URI routing

BFCP and media negotiation enhancements

### § TelePresence MCU on UC Manager

UC Endpoints can now use TelePresence MCU as ad hoc conferencing resource

### § Standards-based H.264 support on CTS endpoints

CTS endpoints now natively compatible with standards-based H.264 endpoints and MCUs

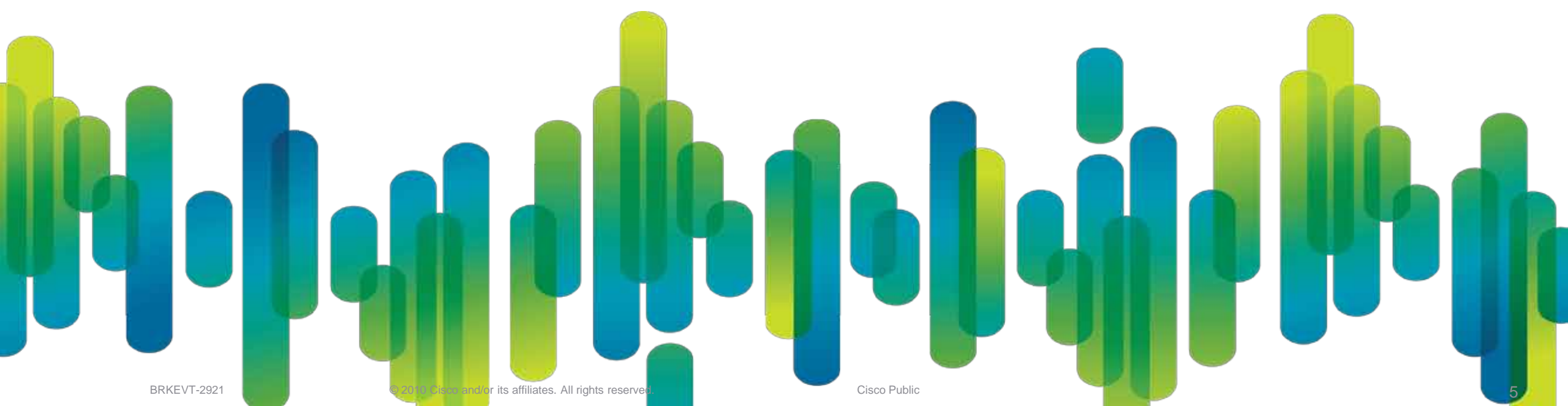
### § TIP and One Button to Push scheduling extended to TANDBERG endpoints

EX and C-Series interoperable with CTMS and scheduled by CTS-Manager

CTS endpoints scheduled by TMS

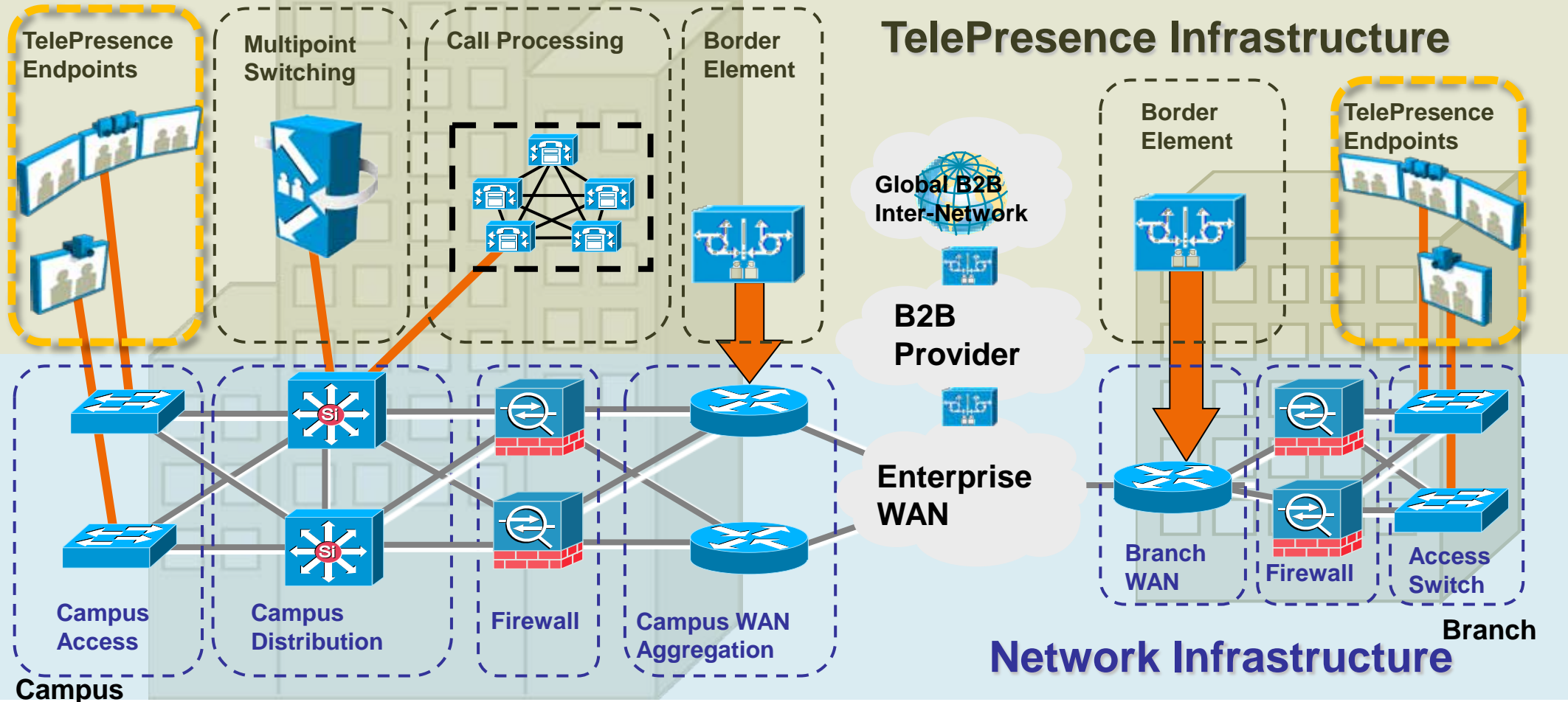
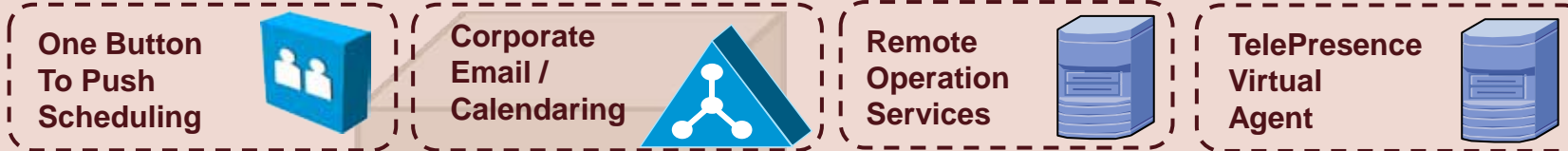
### § TIP protocol succession to standards-bodies

# Demystifying the Endpoint Enigma



# Cisco TelePresence – A Complete End to End Solution

## Applications



# With any Cisco TelePresence, you get:



## Quality

- Natural communication
- High definition
- Face-to-face, in person experience
- Low latency
- Wideband audio



## Simplicity

- One button to push
- Continuous presence
- Intuitive controls
- Integrated scheduling
- Ad hoc flexibility



## Reliability

- Low TCO
- Standards based
- Investment protection
- Scalability



## Collaboration

- Interoperability
- Intercompany
- WebEx
- New experiences
- Doing more, better

# Cisco TelePresence endpoints at a glance

## Immersive

3000 SERIES



3010

3210

T3 and T3 Custom  
Active Collaboration Room

1300 SERIES



1300-65  
1300-47

## Multipurpose

1100 SERIES



PROFILE SERIES



Profile  
65/52/42

Profile  
Dual 65/52

## Personal

500 SERIES



500-37

500-32

EX SERIES



EX60/90

Movi

## Solution Platforms

INTEGRATORS



C90  
C60  
C40

QUICK SETS



C20  
Quick  
Set

VERTICALS



Healthcare  
Education

## TelePresence Extensions

IP VIDEO TELEPHONY



E20  
Cius

COLLABORATION



WebEx  
OneTouch

# Immersive TelePresence Endpoints



**3010**  
**3210**  
**1300 Series**  
**Active Collaboration Room**

## face to face

Absolute quality, immersive face-to-face experience – feels like you're in the same room

## easy access

connect with who you want, when you want... it's about your entire community

## collaboration

Connect, share, discuss...easily collaborate over spreadsheets, presentations and more

# Cisco TelePresence CTS 3010

## First Cisco TelePresence Offering

- Award Winning Product
- First Native 1080p TelePresence
- Native 1080p Cameras
- 65' Native 1080p Plasmas
- 3 x 2-Seat Table Segments (6 people)

## Cisco TelePresence Experience

- Life Size
- Spatial Audio
- Auto Collaborate for Data Video Sharing
- One Button to Push for Scheduled Meetings
- Audio Add-in



# Cisco TelePresence CTS 3210

## Multi-Row room design

- Same front row as CTS 3000 (6 people)
- Extra 2nd row table (12 people)
- Room for “spectators” along back wall
- No raised seating

## Designed to fit in large rooms

- Minimum room size 31’w x 23’d x 8’h
- Min 26’ depth for “spectator” seats
- Additional data display required for back row viewing
- 10’ ceiling height for optional data display

## Full “TelePresence Experience”

- Inherited all features from Award Winning CTS 3000
- All participants in the room have a full “seat at the table”
- Spatial audio microphone at each seat, tuned 1080p video



# Cisco TelePresence CTS 1300

## Immersive Multi-Purpose Room

6 seats for TelePresence

10+ seats for general meeting

## Multi-Purpose Display

TelePresence + General Display

Content Sharing

DMP Integration

- All participants remain Life Size
- 1080p Native Resolution
- Wideband Audio
- Auto Collaborate
- Single Screen Bandwidth



# Multipurpose TelePresence Endpoints



## flexible

Broadest portfolio of integrated multipurpose room systems to fit various spaces and environments

## best quality

Carefully engineered for the most realistic experience possible in non-customized rooms



### 1100 Series Profile Series

# Cisco TelePresence CTS 1100



## § **Multi-Purpose Room**

2 seats for TelePresence

4+ seats for Audio Conference

## § **Multi-Purpose Display**

TelePresence + General Display

Content Sharing

DMP Integration

## § **All Participants Remain Life Size**

## § **1080p Native Resolution**

## § **Wideband Audio**

## § **Auto Collaborate**

## § **Single Screen Bandwidth**

# Cisco TelePresence Profile System Series

## *Large Rooms and Collaborative Space*



## *Small Rooms*



## *Medium Rooms*



# Personal TelePresence Endpoints



**EX Series  
E20  
Movi**

## face-to-face anywhere

Whether you're in a cubicle, executive office or on the road, Cisco has a telepresence model for you

## for anyone

Make video pervasive through your organization. Ad-hoc dialing makes it as easy to use as a telephone

# Cisco TelePresence Ex Series



	EX90	EX60
<b>Video Quality</b>	1080p30 / 720p60	1080p30 / 720p60
<b>Content Sharing</b>	1080p30 / WUXGA	720p15/ WXGA
<b>Screen size / res</b>	24" /1920x1200	21.5" /1920x1080
<b>Camera</b>	1080p30, 45 ° - 65 ° view (zoom) Doc cam	1080p30, 50 ° view Doc cam
<b>MultiSite</b>	4-way HD embedded MultiSite (option)	- (Multiway in future release)
<b>DVI / HDMI in</b>	1 (PC) / 1 (2nd source)	1 (PC) / 0
<b>HDMI out</b>	Dual Display (option)	
<b>Audio</b>	2 front speakers and subwoofer	2 front speakers
<b>Input device</b>	Cisco TelePresence touch screen	

# Cisco TelePresence solutions platforms

For custom and industry applications



**C20 Quick Set**  
**MXP Edge**  
**Broad AV Codec Series (C90, C60, C40, MXP)**

## quick set

Bundled components Simple integration, and DIY option for fast deployment and replicable solutions

## custom solutions

Flexible APIs and integration services for integrator solutions and differentiated service

# Cisco TelePresence C Series Codecs

C20

C40

C60

C90

	C20	C40	C60	C90
<b>Resolution</b>				
P2P	§1080p30/720p60	§1080p30/720p60	§1080p30 / 720p60	§1080p30 / 720p60
P2P + Duo	§720p30 + WXGAp15	§1080p30/720p60 + WXGAp30	§1080p30 /720p60 + UXGAp30 / 1080p30	§1080p30 /720p60 + UXGAp30 / 1080p30
<b>AV IO</b>				
Mic in	•2 mini-jacks	•2 XLR	§4 XLR	§8 XLR
Video in	•1 HDMI + 1 DVI	•2 HDMI + 1 DVI + 1 S-Video/Comp	§2 HDMI + 2 DVI + 1 S-Video/Comp	§4 HDMI + 2 DVI + 4 HD-SDI + 2 Component + 1 S-Video/Comp
Video out	•2 HDMI	•1 HDMI + 1 DVI	§1 HDMI + 1 DVI + Comp	§2 HDMI + 2 DVI + Comp
<b>MultiSite</b>				
Sites	§NO	§4 Way CP	§4 Way CP	§4 Way CP
Resolution		§576p30	§720p30	§1080p30/720p60
<b>Other</b>		§API	§API §Video Compositing API §GPIO	§API §Video Compositing API §GPIO §More processing power



# Vertical TelePresence Products

## purpose built

Specifically designed to meet industry demands and use cases

## industry expertise

Developed in collaboration with experts to meet industry standards and regulations

## integrated solution

Work natively with the core telepresence portfolio to extend video anywhere in the organization



**Clinical Presence System**  
**Intern**  
**Media P2**  
**Educator**  
**Scholar**  
**Synch**

# Product Name Transition

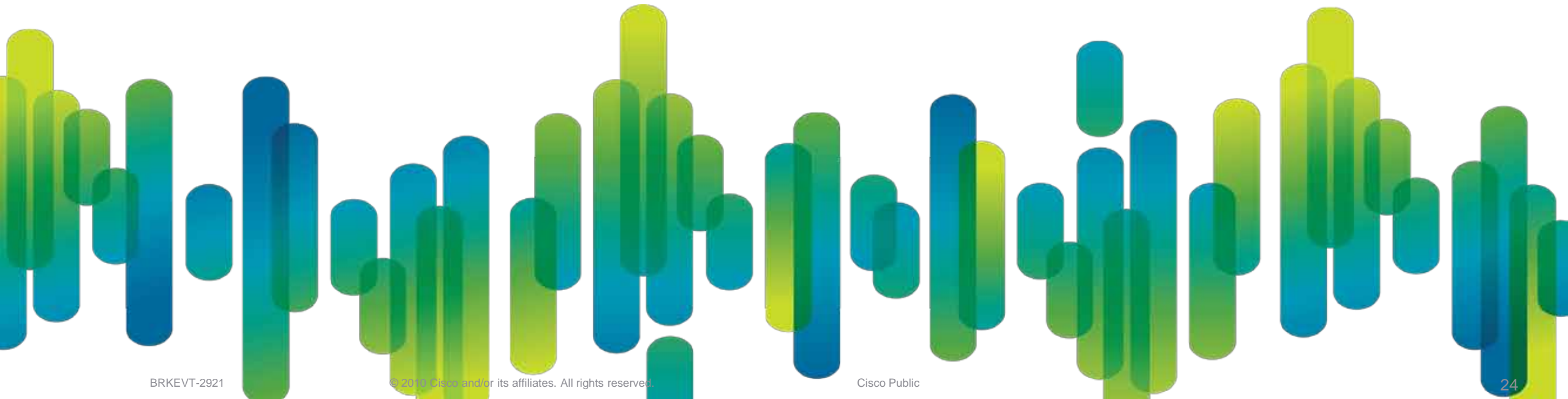
Old Name	New Name
Tandberg E20	Cisco IP Video Phone E20
Tandberg C Series	Cisco Telepresence System Integrator C Series
Tandberg Profile Series	Cisco Telepresence System Profile Series
Tandberg EX Series	Cisco Telepresence System EX Series
Tandberg Movi	Cisco Telepresence Movi
Tandberg T Series	Cisco Telepresence System T Series
Tandberg Codian MCU 4xxx	Cisco Telepresence MCU 4xxx Series
Tandberg Codian MSE 8000	Cisco Telepresence MSE 8000 Series
Tandberg Telepresence Server	Cisco Telepresence Server
Tandberg Video Communication Server	Cisco Telepresence Video Communication Server
Tandberg Management Suite	Cisco Telepresence Management Suite
Tandberg Content Server	Cisco Telepresence Content Server

# What Endpoint is right for me?

# Deciding Factors

- § New Deployment?
- § Existing CTS Deployment?
- § Existing Standards based (SIP/H.323) Deployment?
- § Immersive, Multipurpose, Personal/Mobile, Industry Vertical?
- § Interoperability Requirements
- § B2B Requirements

# Collaboration in a box



# Active Collaboration Room Overview

## An Interactive Experience for Team Brainstorming

- § A new TelePresence Experience
- § Up to 15 participants per room (depending on café table configuration) can participate freely in brainstorming, design work and other collaboration exercises
- § Collaborate globally with colleagues anywhere, anytime

*Interoperable with all other Cisco TelePresence rooms, video conferencing and Cisco WebEx participants*



BRKEVT-2921

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Cisco Public

# Active Collaboration Room Design



Cisco Telepresence CTS 1300 captures entire room with one video stream. Voice-activated switching automatically captures whoever is speaking

Ceiling-mounted video projector allows for extremely large content display

Cisco 40" or 52" LCD displays may be used for smaller rooms

Electronic Whiteboard shared with remote participants through WebEx

Steelcase Media:scape furniture enables rapid transition from presenter to presenter

Cisco WebEx combined with video conferencing enables maximum participation from remote participants.

Steelcase café-height seating allows participants to move freely and change postures while still remaining on camera.

Flexible: 0 or 3 café-height tables provides for 6 or 15 participants per room

Interoperability allows remote users to effectively participate using any Cisco Telepresence System, standards-based video conferencing systems, or Cisco Webex

# Active Collaboration Room in Action



# WebEx Enables Remote Participants To Share Rich Content



Annotating on SMART Board

Webex participants can view and interact with annotations

**Note:** Cisco Telepresence Webex OneTouch does not support SmartBoard integration. Disable OneTouch when whiteboard integration is desired



Source: Cisco IBSG, 2010

# Design Overview

Feature	Details*	Benefit
Room layout and furniture design	Steelcase Media:scape and café tables	Participants are free to stand up and move about the room while remaining life-sized and in focus. VGA pucks allow for quick access to content sharing sources and destinations
Microphone coverage / switching	Clear One mixer and Clock Audio ceiling-mounted microphones	Table mounted and ceiling-mount microphones allow participants to be heard anywhere within the room. CTS-1300 voice-activated switching ensures that current speaker is displayed on video at all times
Electronic White Board integration	Smart Technologies Smartboard	Wall-mounted SmartBoard can be viewed by all participants via Cisco Telepresence Auto Collaborate and Cisco Webex <sub>1</sub>
Projection or Flat screen display	Chrystie hi-lumen, W-XGA ceiling-mounted projector	Ceiling-mounted projector allows for all participants in the room to view local or shared content easily
Webex and Video conferencing interoperability	Cisco Webex and Cisco Telepresence Server	Using Cisco Webex and Cisco Telepresence Server technologies, participants can join an ACR session via Webex or from any standards-based video conferencing system

\* Preliminary. Details subject to change without notice

# Solution Components

## Standard Template Configuration

### Cisco Components

- **CTS-1300**
  - CTS-3200 camera lenses for additional depth of field
  - Cisco 52" LCD display (for small room configurations)

### Steelcase Furniture

- **Media:scape table**
  - Integrated VGA matrix switch
  - Dimensions: 60"D x 84"W x 38"H
- **Café height tables**
  - 36" Diameters
  - Café Height
- VGA, USB and power cabling

### 3<sup>rd</sup>-party AV Components

- **Projection**
- **Smartboard**
- Gowire USB sharing cable
- **Ceiling Audio**
- Clock Audio microphones
- ClearOne Mixer
- JBL Speakers



## Value Add Options

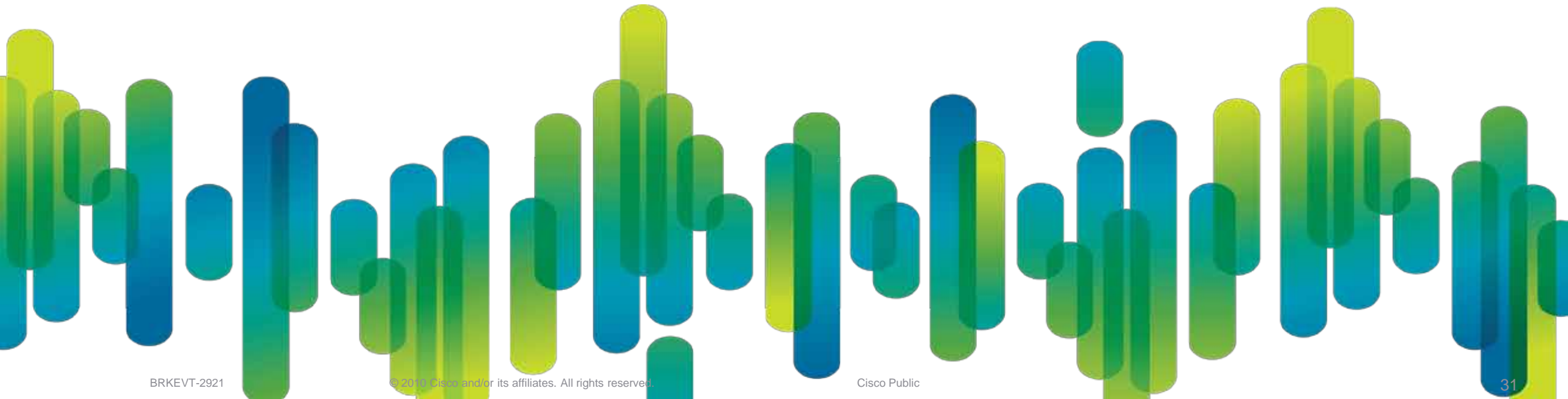
### Cisco Components

- **WebEx**
  - Adds multi-party interactivity for smartboard and remote participants
- **HFR codec**
  - Adds 30fps graphics
- **Interoperability and Recording**
  - Cisco Telepresence Server
  - Cisco Telepresence Content Server
- **Digital Signage**
  - Cisco DMS Player and LCD displays

### 3<sup>rd</sup>-party AV Components

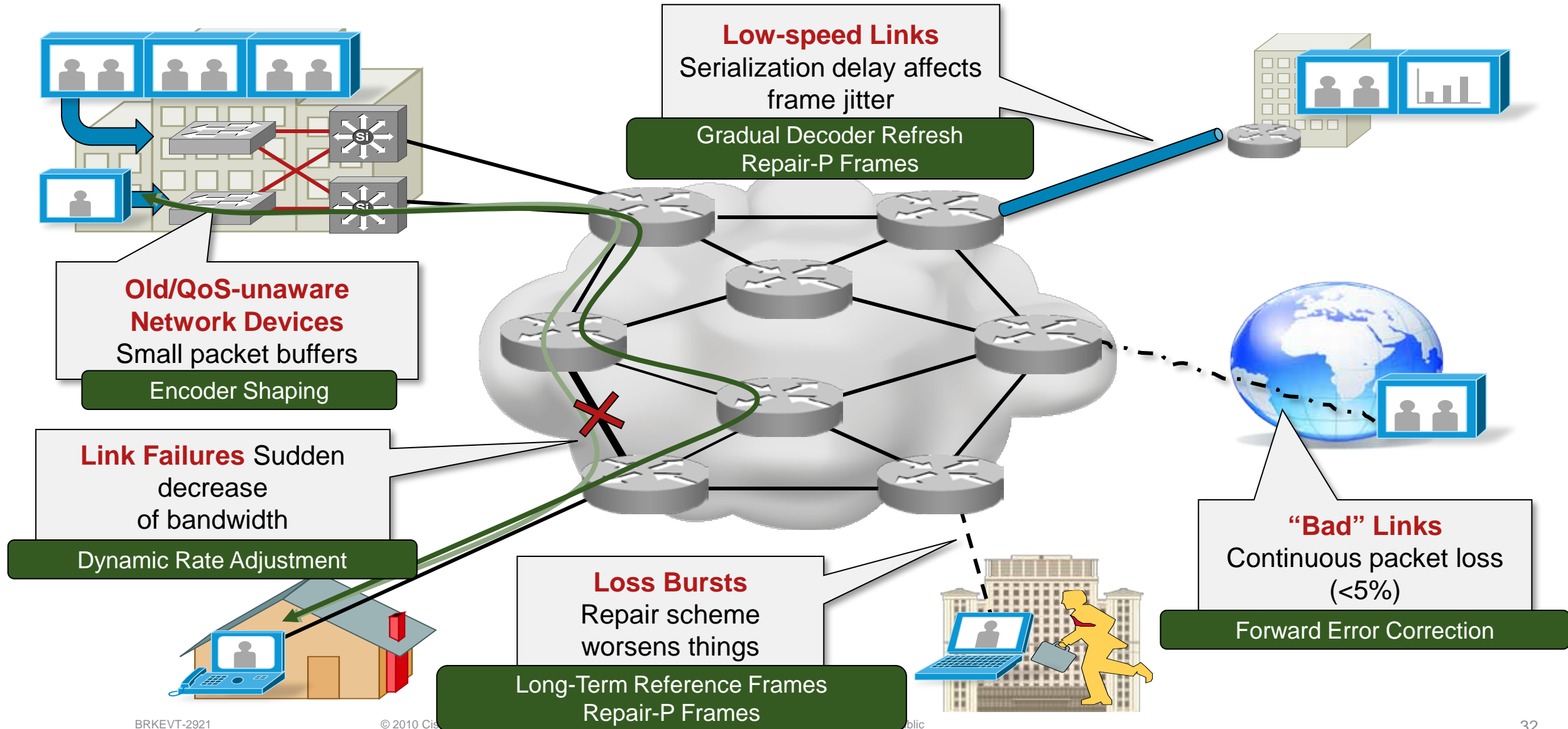
- **Document Camera**
  - Wolfvision VZ-32 Visualizer

# The TelePresence Video “Secret Sauce”



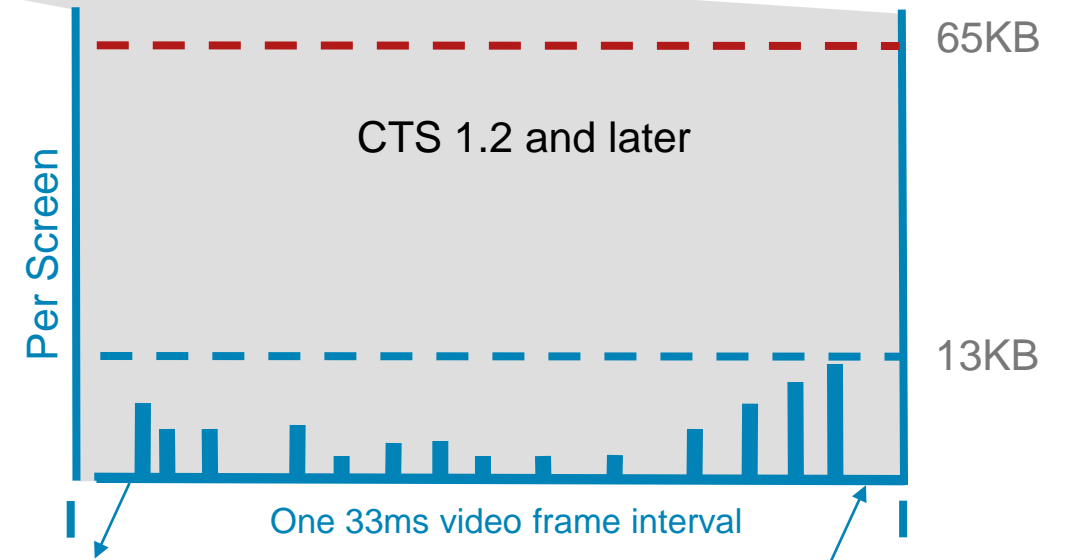
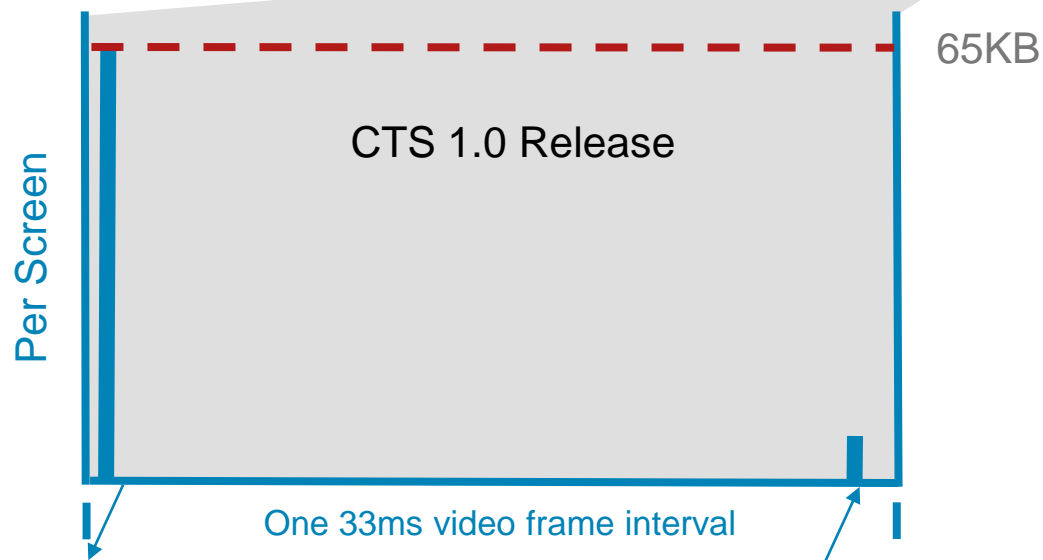
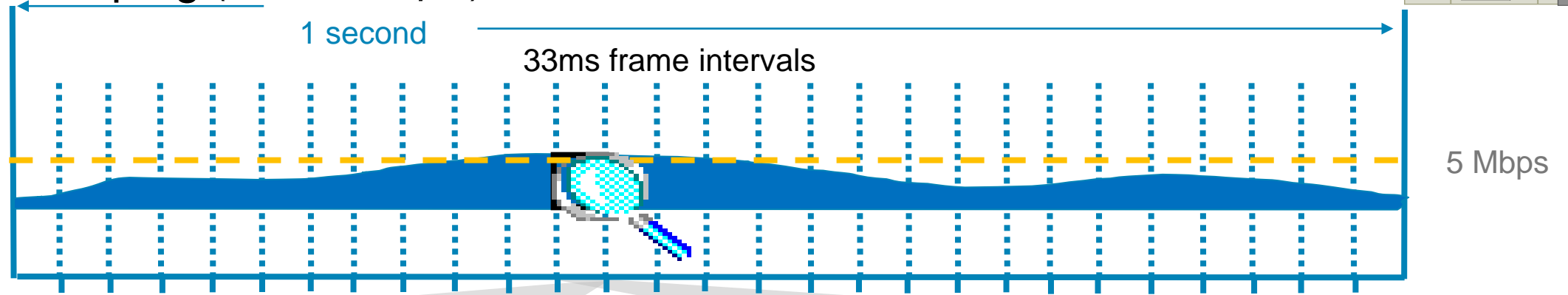
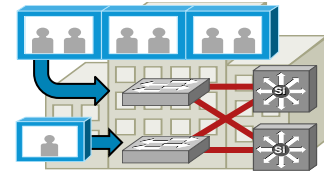
# ClearPath: Media Resilience

## How to Preserve User Experience in Non-Ideal Networks?



# ClearPath: Media Resilience

## Encoder Shaping (CTS Example)

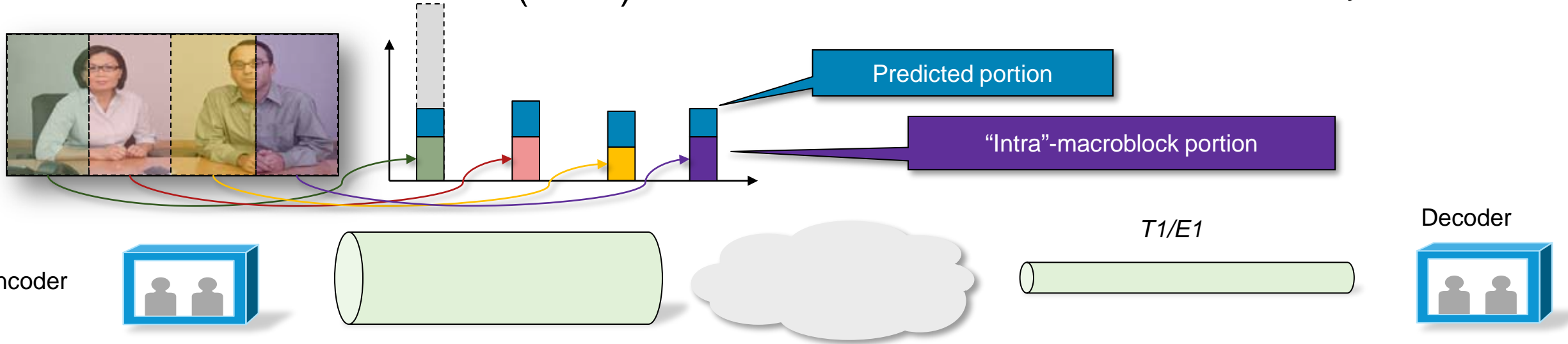
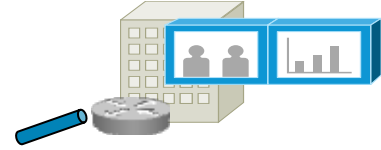


§ Each frame must be packetized onto the wire in 33 ms

§ Packet scheduler disperses packets as evenly as possible

# CTS: Media Resilience

## Gradual Decoder Refresh (GDR)



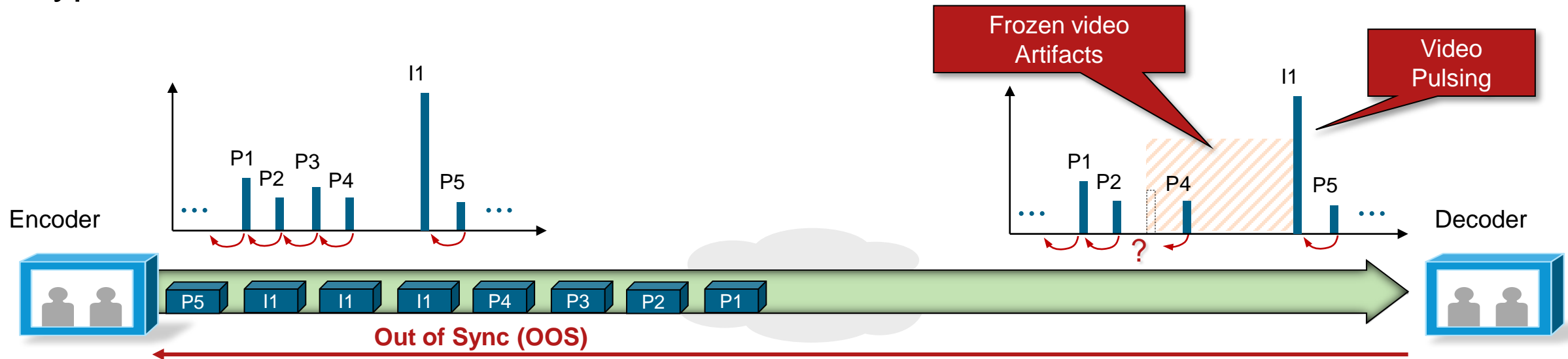
- § Serialization delay on low-speed links can cause I-frame packets to arrive too late and be discarded
- § Solution: **Gradual Decoder Refresh (GDR)** distributes “intra” picture data over  $N$  frames

GDR frames contain a portion of “intra” macroblocks and a portion of predicted macroblocks

Once all  $N$  frames have been received, decoder has fully refreshed the picture

# ClearPath: Media Resilience

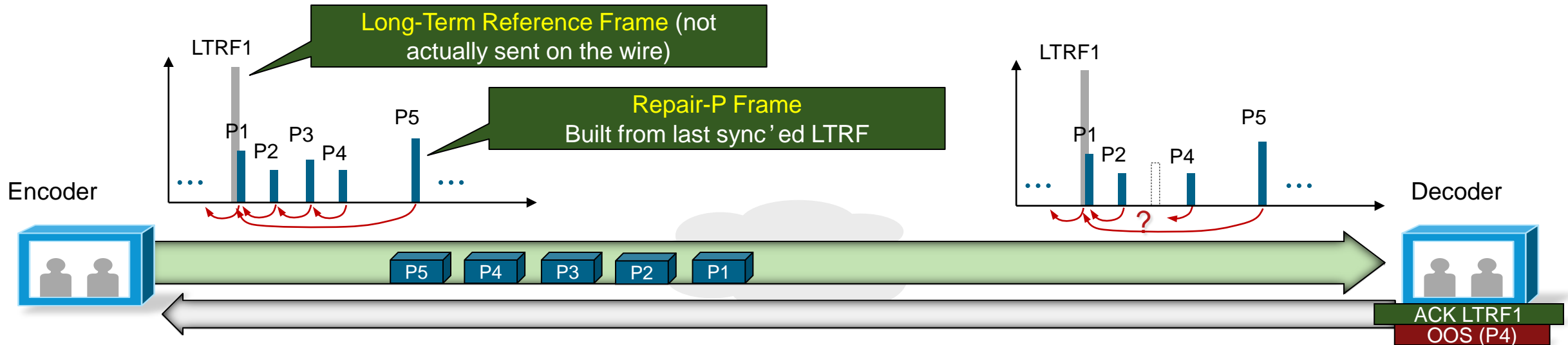
## Typical Packet Loss Scenario



- § Loss of a P-frame triggers request for a new I-frame
  - Encoding and transmitting large I-frame takes time
  - If any of the I-frame packets get lost, restart the process
- § Flickering/pulsing of video when new I-frame arrives
  - Video freeze or artifacts when multiple packets are lost

# ClearPath: Media Resilience

## Long-Term Reference Frames and Repair-P Frames



§ Principle: keep encoder and decoder in sync with active feedback messages

Encoder instructs decoder to store raw frames at specific sync points as Long-Term Reference Frames (part of H.264 standard)

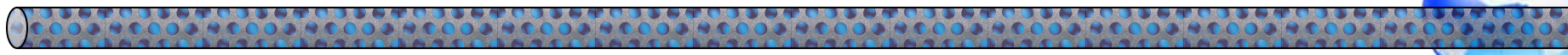
Decoder uses “back channel” (i.e. RTCP) to acknowledge LTRF’s

§ When a frame is lost, encoder creates “Repair-P” differential frame based on last synchronised LTRF

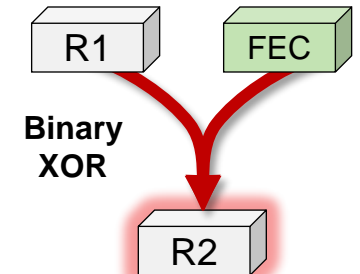
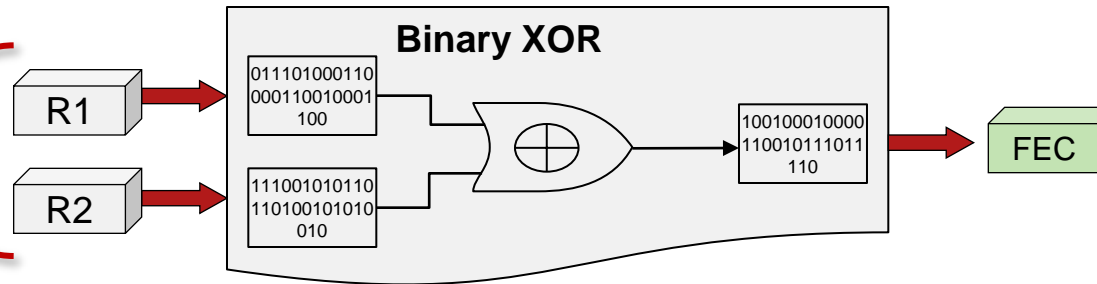
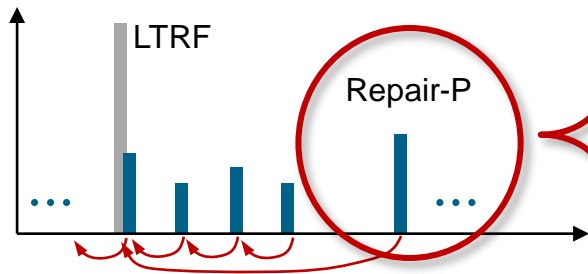
# ClearPath: Media Resilience

## Forward Error Correction (FEC)

Encoder



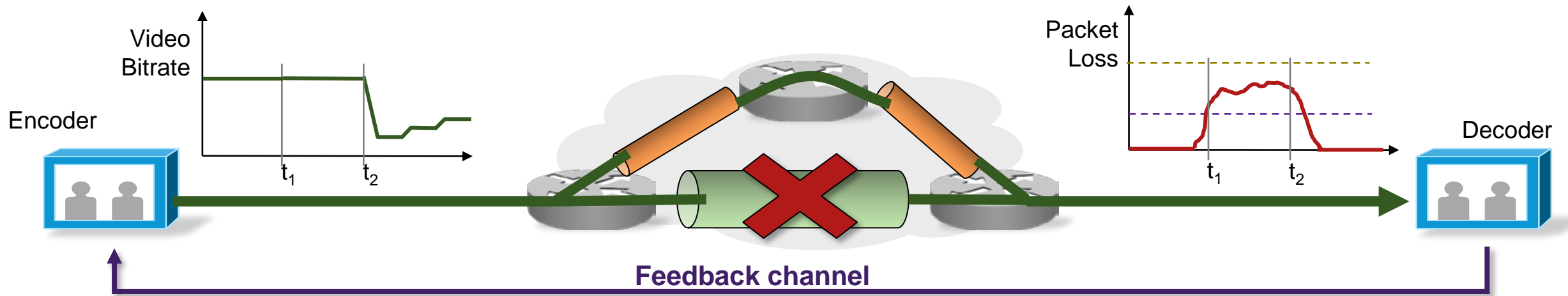
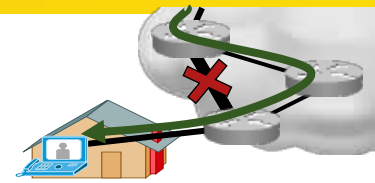
Decoder



- § Defined in RFC 5109, allows decoder to recover from limited amount of packet loss (*up to ~5%*) without losing synchronisation
- § Can be applied at different levels (1 FEC packet every  $N$  data packets) to protect “important” frames in lossy environments
- § Trade-off is bandwidth increase

# ClearPath: Media Resilience

## Dynamic Rate Adjustment



§ Receiver tracks packet loss over periods of time and triggers bitrate adjustment to adapt to network

§ Two approaches possible:

**Receiver-initiated** adjustment via call signaling (H.323 flow control, SIP Re-invite) or explicit request in RTCP message

Pro-active **sender-initiated** adjustment based on periodic RTCP Receiver Reports

# CleathPath: Media Resilience

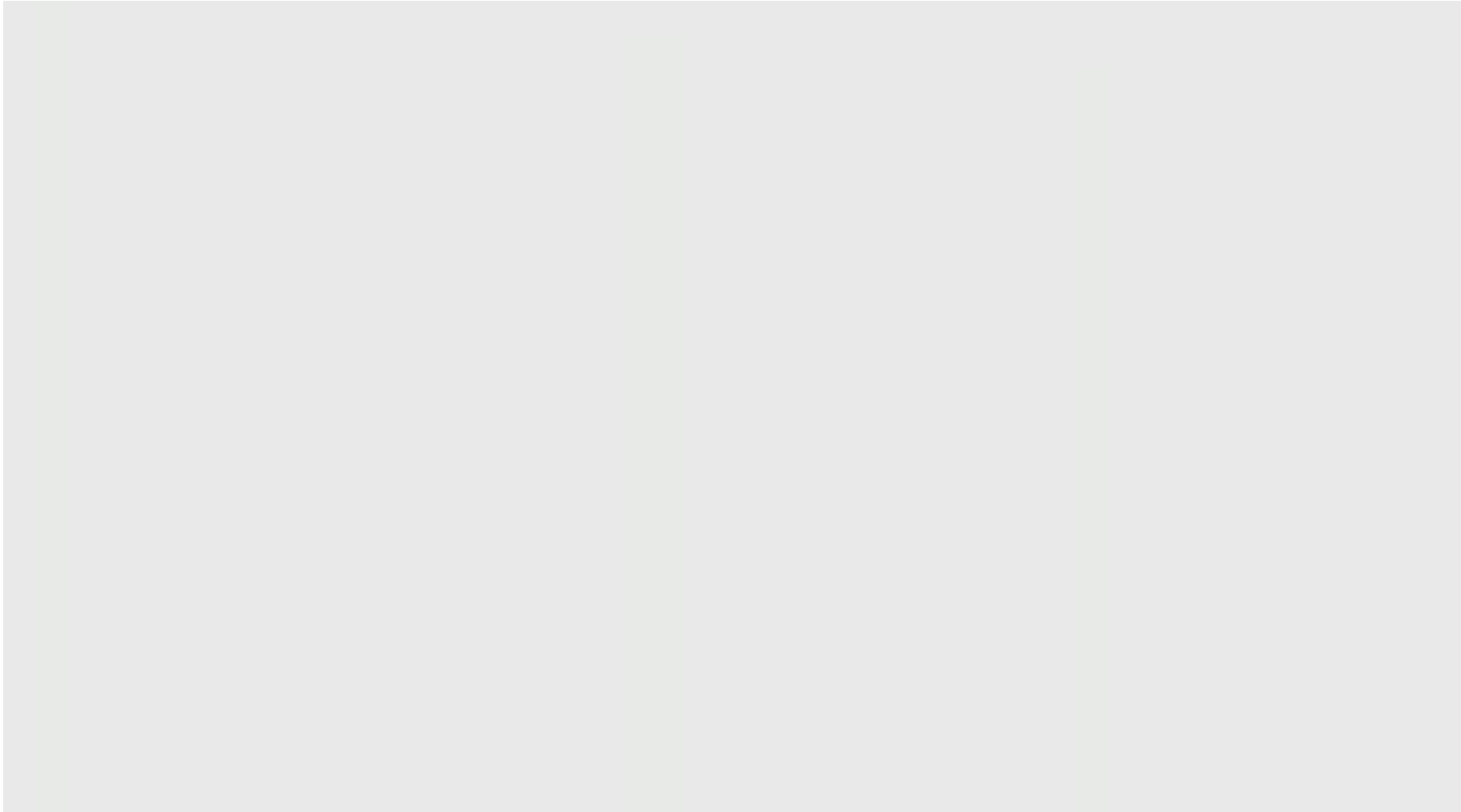
## Summary

- § Combining all these techniques has been shown to preserve user experience even in high packet loss situations (up to 10-15%)
- § Many of these mechanisms are currently implemented in Cisco Telepresence endpoints:

	CTS Series	EX/C Series	Movi
Encoder shaping	1.2	TC 4.0	v4
GDR	1.6		
LTRF and Repair-P	1.6	TC 4.0	v4
FEC	<i>planned</i>	TC 4.0	v4
Dynamic Rate Adjustment	1.7	TC 4.0	v4

**ClearPath**

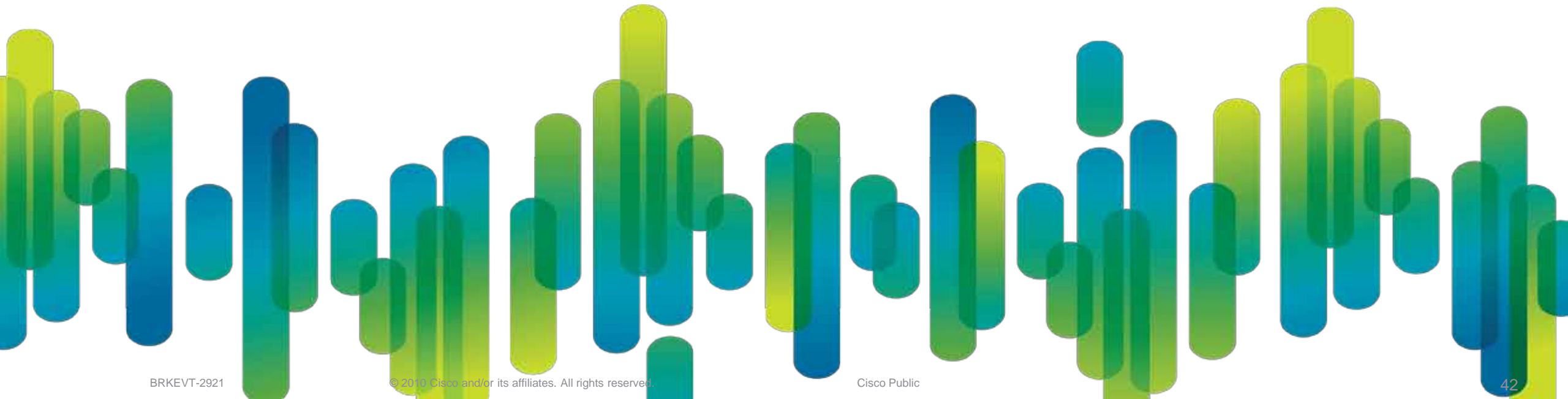
# ClearPath Demo



# What's New, What's Hot, and What's Coming to a Video Endpoint Near You



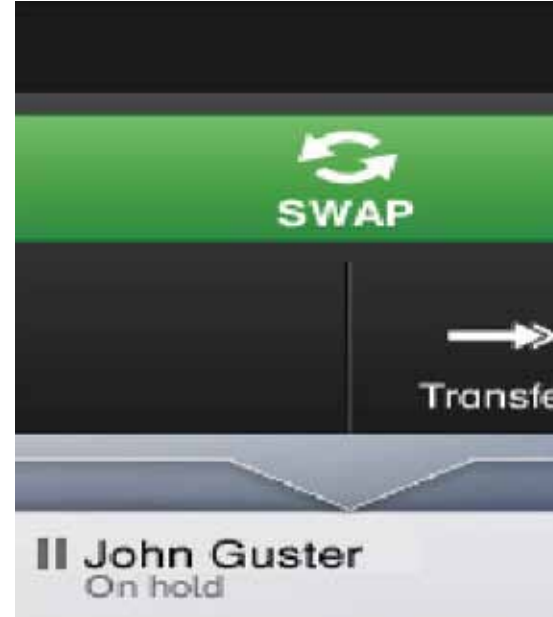
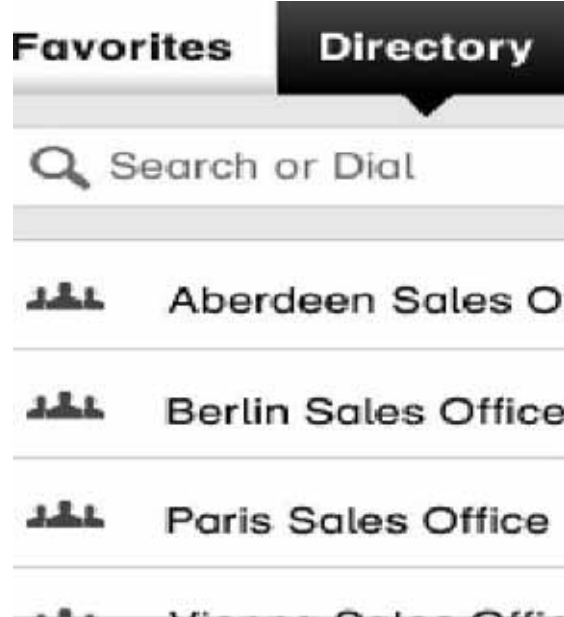
# What's New



# New Consistent Experience Across Rooms and Personal Systems



# A TelePresence Touch Revolution



## It's easy.

Simplicity of the touch technology.  
Visual and intuitive user interaction.  
Clean design of core user tasks.

## It's flexible.

It's just as simple to join a scheduled meeting as it is to initiate an ad hoc meeting.

## It's optimized.

Adaptable user interface dependent on use scenarios and system capabilities.

## It's consistent.

Be confident. It's the same familiar user experience whether you are at your desk or in a meeting room.

# Feature Highlights

## § Local Camera Control

§ For Meeting room systems with PTZ camera and EX systems with zoom there is local camera control.

## § Far end Camera Control

§ On the context card for conference participants (participant bar) there is far end camera control function.

## § Layout Option

§ *Full Screen:* Far end or presentation in full screen

§ *Speaker:* Large window of active speaker, small POP window of others

§ *Speaker full:* Full screen of active speaker, with PIP window of others

§ *Equal:* Equally large windows of all participants.

## § Settings

§ Access settings to configure the system and set user preferences.

## Self View

To see what view you send to far end, use self view. A pip window appears.

## Hold/Resume/Join/Swap

Place conference participants on hold, and resume them back to conference. Join and swap between conference participants.

## Audio input

Easy select between speaker, handset and headset.

## Do not Disturb

Ability to block incoming calls



# Announcing the new TelePresence Touch 12” for the CTS series



# CTS Touch 12" Demo



# Enhanced User Experiences

- A new category of user Interface devices
- Portfolio of devices, functions optimized for endpoint segments
- Application and collaboration platform to add value and differentiation
- Common Design language across the family of products

Available Today

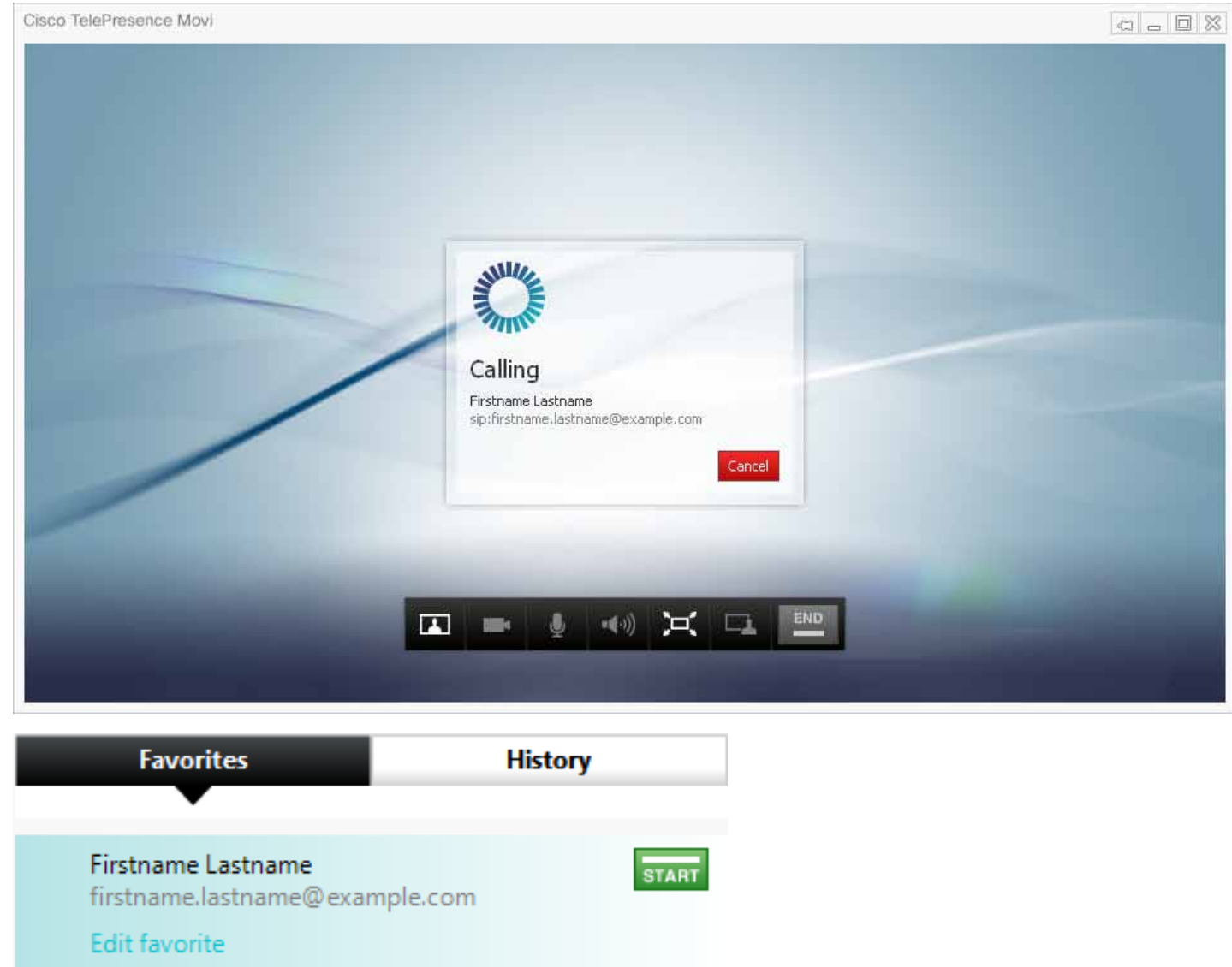
6-12months



Functional Optimization	Control	Control and Presentation/limited collaboration	Collaboration, All-hands white-boarding, Multiples devices
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# What's new in Moví 4.2

- Updated look and feel
- Automatic updates for MAC OS X
- AD authentication with NTLM
- Automatic Gain Control
- SIP Outbound
- Windows presentation sharing enhancements



# Cisco TelePresence System 500 32"

Personal TelePresence for the Individual Office

- § Updated CTS 500 with 32" display and slim footprint
- § Full Cisco TelePresence experience
  - § *One Button to Push, WebEx OneTouch, etc*
- § Auto-retractable camera
  - § *Full screen use for PC monitor, digital media*
  - § *Superior eye contact*
- § Two dimensional microphone array
- § Diffused integrated lighting



# Cisco TelePresence 1300 47"

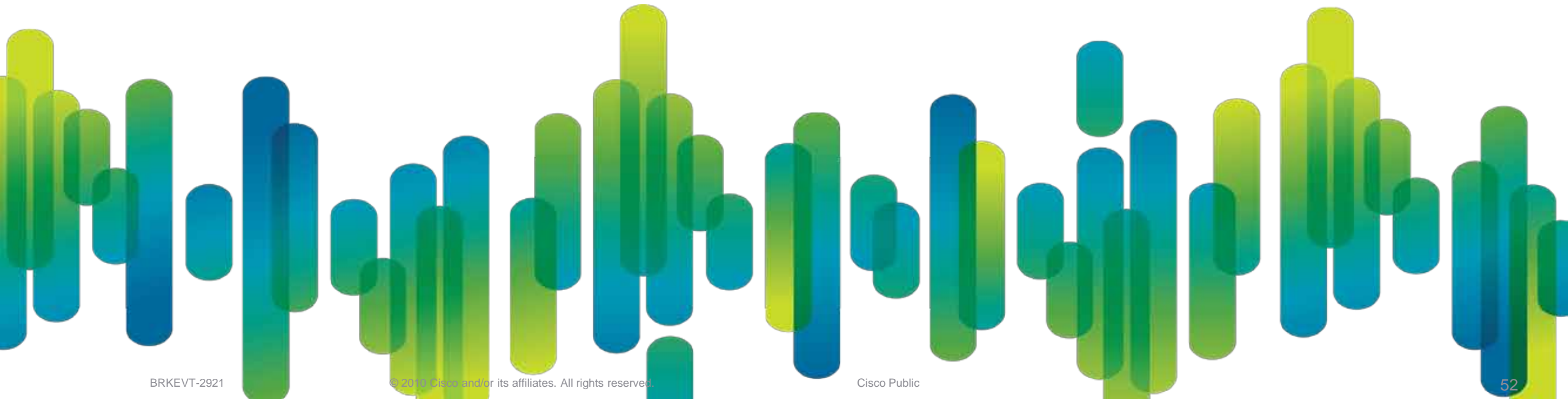
## For the Small Multipurpose Conference Room

Target FCS  
Q3CY11

- Enhance Team Collaboration
  - Immersive face-forward experience across the table and around the globe
  - Fluidly move from a local meeting to a TelePresence call with an expert
- Versatile deployment
  - Mounting options: pedestal and tethered
  - Uses existing table
  - Bandwidth efficient for 4-6 participants with voice-activated switching
- Key components
  - 47" LCD ips for great viewing from all angles
  - Integrated lighting and multi-camera cluster for natural, life-like appearance
  - CTS microphones for true-to-life audio



# What's Hot



# Multiway™

Bringing ad hoc multiparty calling to personal video.



## Collaborative

No need to leave the desk to collaborate.

A new level of multi party video capabilities for personal video.

## Enterprise Ready

A product of the Cisco solution.

Standards based and network friendly.

## Spontaneous

Always on, always ready, no matter where your day takes you.

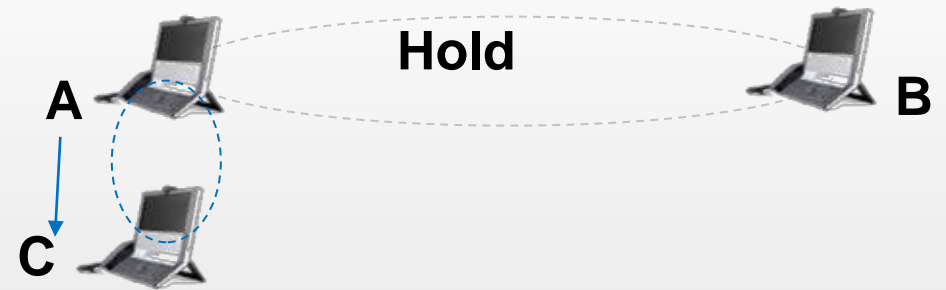
# Multiway: How it works

## Scenario 1

1. Point to Point Video Call between A and B.



2. A and B want to call C. A places B on hold and calls C.



3. A selects "Join", and now A, B and C are in a multiparty call hosted on the MCU, using Multiway™.



Multiway™ is powered by VCS and brings multiparty conferencing capabilities to video devices...

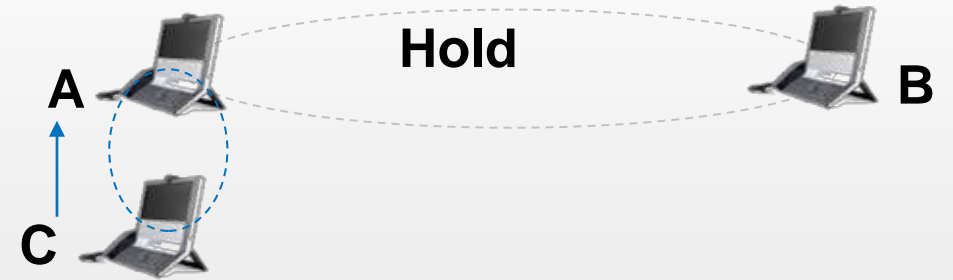
# Multiway: How it works

## Scenario 2

1. Point to Point Video Call between A and B.



2. A and B are in a call when C calls A. A places B on hold and consults with C.



3. A selects "Join", and now A, B and C are in a multiparty call hosted on the MCU, using Multiway™.



# Multiway vs. MultiSite...a Comparison

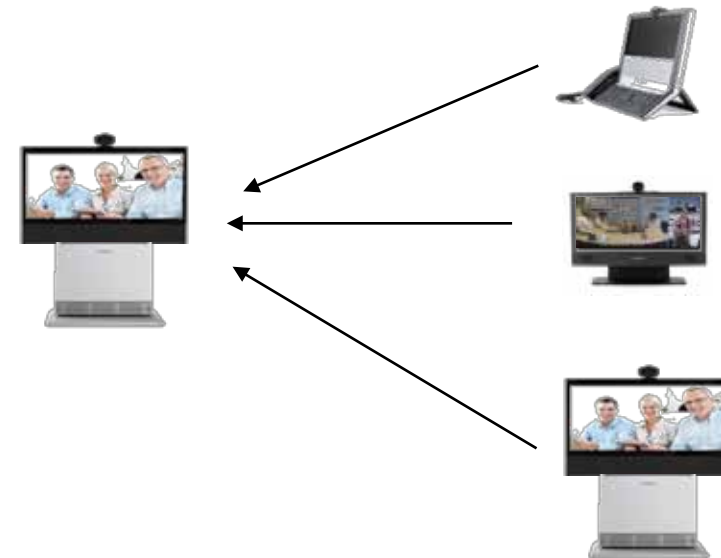
## § Multiway

- § Scalable for large conference
- § Lower bandwidth requirement on the endpoint site
- § Shared resource



## § MultiSite

- § No need for central MCU, available on the endpoint
- § Always available, easily accessed
- § Perfect for smaller deployments



# The Requirements for Multiway™



## 1. Endpoint to Initiate Multiway™ Conference

- § Must be a Cisco Endpoint
- § MXP, E20, C20 or Movi (Other C-Series coming soon..)

## 2. Participating Endpoints in Multiway™ Conference

- § SIP Endpoint that supports TANDBERG SIP Call and Hold
- § H.323 Endpoint that supports Facility Based Call Transfer

## 3. Cisco VCS Control

- § VCS Software version X4.1 or later

## 4. 4500 or 4200 Series MCU or MSE 8510 Media Blade

- § MCU Software version 3.0 or later

# Cisco TelePresence C90 Codec features



Matrix Switcher



Digital Audio Mixer



Video Scalars



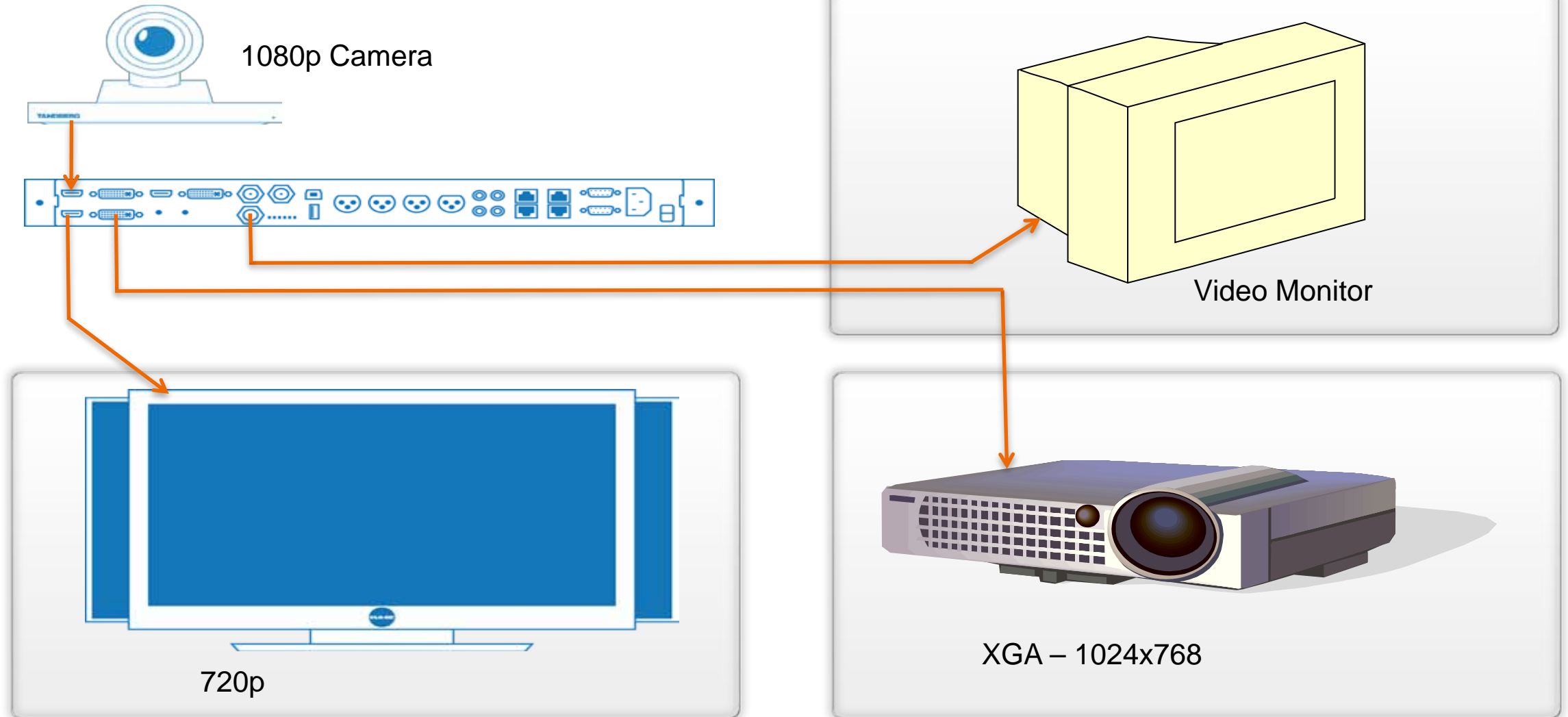
Video Compositor



1080p Hi-Def Codec



# Video Scaling – general principle



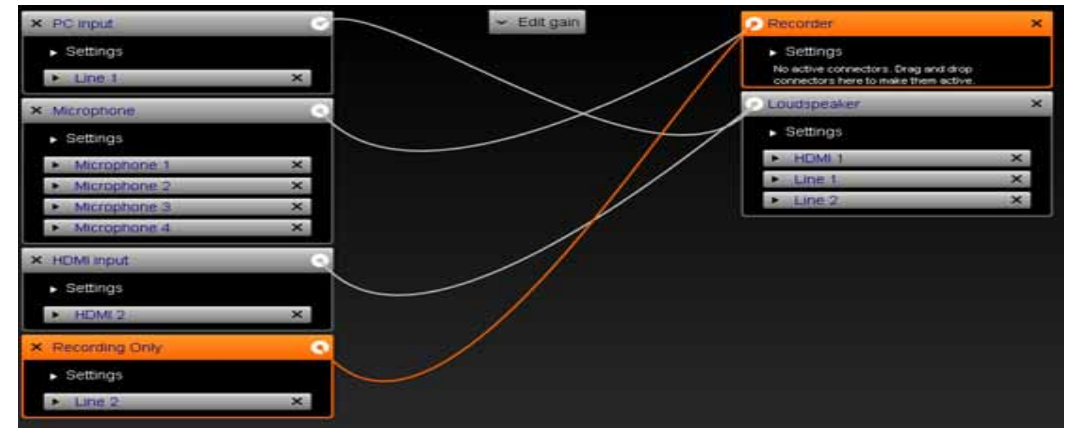
# Digital Audio Mixing

§ Balanced XLR inputs are mic/line switchable

Each has its own echo canceller

§ Additional audio ins and outs on HDMI and RCA

§ Eight EQs can be defined, and assigned to any in or out



# Cisco TelePresence C Series Codec API Basics

§ Accessed via RS-232, SSH, HTTP(s)

§ Two methods

XACLI – Command Line Interface

XML

§ Programmer-friendly API \*

Ready for 3<sup>rd</sup> party development

§ Main command sets are **xCommand**,  
**xConfiguration**, and **xStatus**

```
10.10.111.51 - PuTTY
xstatus video layout Site 1 Output
* Video Layout Site 1 Output 1 FamilyName: "fullscreen"
* Video Layout Site 1 Output 1 FullFamilyName: "full-sv-off"
* Video Layout Site 1 Output 1 GraphicName: "full"
* Video Layout Site 1 Output 1 Frame 1 PositionX: 0
* Video Layout Site 1 Output 1 Frame 1 PositionY: 0
* Video Layout Site 1 Output 1 Frame 1 Width: 10000
* Video Layout Site 1 Output 1 Frame 1 Height: 10000
* Video Layout Site 1 Output 1 Frame 1 VideoSourceType: "graphic"
* Video Layout Site 1 Output 1 Frame 1 VideoSourceId: 0
* Video Layout Site 1 Output 1 Frame 1 InputNumber: 0
* Video Layout Site 1 Output 1 Frame 1 Filename: "/apps/posters/fbg01.png"
* Video Layout Site 1 Output 3 FamilyName: "fullscreen"
* Video Layout Site 1 Output 3 FullFamilyName: "full-sv-off"
* Video Layout Site 1 Output 3 GraphicName: "full"
* Video Layout Site 1 Output 3 Frame 1 PositionX: 0
* Video Layout Site 1 Output 3 Frame 1 PositionY: 0
* Video Layout Site 1 Output 3 Frame 1 Width: 10000
* Video Layout Site 1 Output 3 Frame 1 Height: 10000
* Video Layout Site 1 Output 3 Frame 1 VideoSourceType: "graphic"
* Video Layout Site 1 Output 3 Frame 1 VideoSourceId: 0
* Video Layout Site 1 Output 3 Frame 1 InputNumber: 0
* Video Layout Site 1 Output 3 Frame 1 Filename: "/apps/posters/fbg01.png"
** end
OK
```

```
XML API Listener
<InputNumber item="1">3</InputNumber>
<Filename item="1"></Filename>
<Frame item="4">
<PositionX item="1">0</PositionX>
<PositionY item="1">0</PositionY>
<Width item="1">10000</Width>
<Height item="1">10000</Height>
<Layer item="1">0</Layer>
<VideoSourceType item="1">site</VideoSourceType>
<VideoSourceId item="1">1</VideoSourceId>
<InputNumber item="1">4</InputNumber>
<Filename item="1"></Filename>
</Frame>
</Output>
</Site>
</Layout>
</Video>
</Status>
send
<?xml version='1.0' encoding='UTF-8'?>
<Command><Video><Layout><Frame><Update command="True" item="1"><LayoutId item="1">3</LayoutId><Lay
reply
<?xml version="1.0"?>
<Command>
<VideoLayoutFrameUpdateResult item="1" status="OK"/>
</Command>
send
<?xml version='1.0' encoding='UTF-8'?>
<Command><Video><Layout><Frame><Update command="True" item="1"><LayoutId item="1">3</LayoutId><Lay
reply
<?xml version="1.0"?>
<Command>
<VideoLayoutFrameUpdateResult item="1" status="OK"/>
</Command>
send
</
```

\* Documentation of API is published on [developer.tandberg.com](http://developer.tandberg.com)

# Cisco TC Console

## Efficient method of using the API

- § The Cisco TC Console application allows to customize different parts of Cisco TelePresence System Codec C90, Codec C60 and Codec C40
- § Creates profiles to be applied to the codec at a later time, or you configure the system in real-time

Video Compositor allows to modify the default video compositing behavior of the codec without the need for any programming.



Audio Console allows to change the default audio mixing, routing, equalization and set various input- and output-connector properties.



# Video Compositing

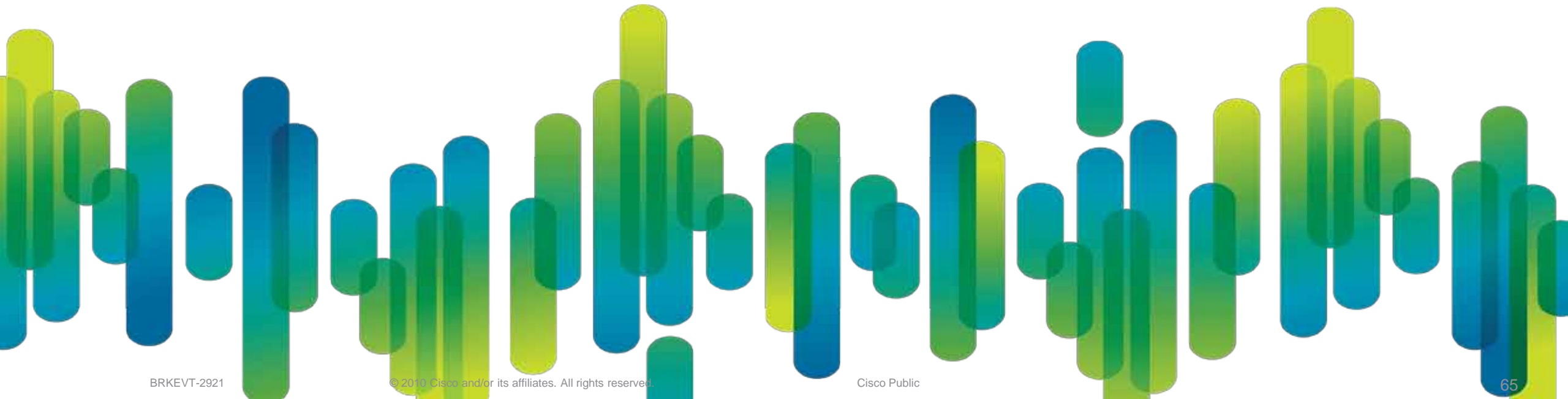
§ Ability to send multiple images or multiple windows arranged on the screen to the far end as one image or displayed locally on the monitor



# Video Compositing Demo

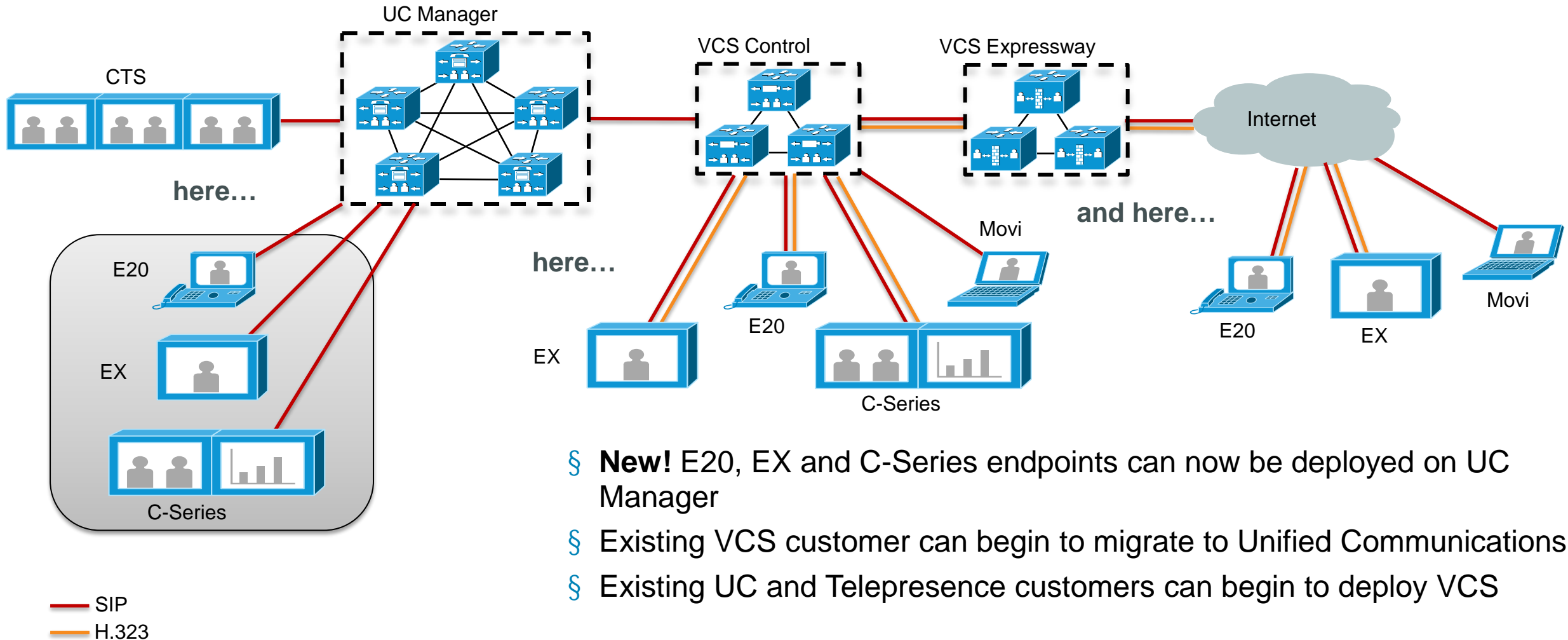


# What's Coming to a Video Endpoint Near You



# UCM 8.6 - Endpoints Can Be Deployed...

Perspective: Telepresence endpoints on UCM and VCS. Other scenarios omitted



§ **New!** E20, EX and C-Series endpoints can now be deployed on UC Manager

§ Existing VCS customer can begin to migrate to Unified Communications

§ Existing UC and Telepresence customers can begin to deploy VCS

# E20, EX and C-Series on UCM 8.6

Perspective: When registered to UC Manager

## What Works

- § Cisco Discovery Protocol
- § Medianet: AutoQoS and SmartPorts
- § UC Manager Provisioning, Registration and Call Control
- § Voicemail Message Waiting Indication (E20)
- § “One Button to Push” scheduling and call launch (EX and C-Series)
- § BFCP presentation sharing
- § Native interoperability with existing CTS and UC clients
- § Directories / Favorities
- § Alpha-numeric URI dialing
- § MultiSite / Multiway ad hoc conferencing

## What Does Not Work

- Register endpoints to VCS when these features are required*
- § Encryption
  - § H.323
  - § Alpha-numeric URI registration
  - § Registering through VCS Expressway
  - § IPv6

# Features Supported / Not Supported

Perspective: E20, EX and C-Series endpoints registered to UC Manager

## § Networking & QoS

- ü Cisco Discovery Protocol
- ü Auxiliary VLANs
- ü Medianet: AutoQoS / Smartports
- ü DSCP and 802.1p as per UCM service parameters
- ü Discard 802.1Q/p tagged frames received on PC port
- ü RTP port range as per UCM service parameters
- ü 802.1X Aux-VLAN override and MAC-Auth Bypass
- x 802.1X Proxy-EPOL Logoff
- ü 802.1X Supplicant

## ü Provisioning

- ü DHCP Option 150
- ü Automatic configuration and firmware downloads
  - ü HTTP port 6970, **not TFTP**
  - ü device defaults and device specific loads
- ü HTTP/SSH enable/disable

## § Registration

- ü Auto-Registration
- ü SIP - Non Secure
- ü SIP - Digest Authentication
- x SIP - TLS
- ü Primary UCM node
- x Secondary/Tertiary UCM nodes
- x SRST / UCME
- ü Register using E.164 (Directory Number)
- x Register using Alpha-numeric URI

## § Service Control Events

- ü Reset / Restart / Check Config
- x Firmware downloads in background
- x Call Preservation (graceful disconnect)

## § Voicemail (E20 only)

- ü Message Waiting Indication (MWI)
- ü Messages Pilot Number
- ü Messages shortcut key (included in config file)

# Features Supported / Not Supported

Perspective: E20, EX and C-Series endpoints registered to UC Manager

## § Directories

- ü Corporate Directory
- ü Personal Favorites / Speeddials
- x Personal Directory
- x TMS-style hierarchical folder view

## ü Localization

- ü User Interface Local (chosen locally on the phone, **not provisioned in UCM**)
- x Network locals (tones / cadences)

## § Enhanced Shared Line Appearances (E20 only)

- ü Remote State Notifications
- ü Hold / Resume
- ü Unified Mobility
  - ü Resume on Mobile Disconnect
  - ü Hand-off from mobile to desk
  - x Hand-off from desk to mobile

## § Calling Features

- ü Enbloc dialing
- x Off-Hook dialing - Digit-by-digit KPML dialing
- ü Alpha-numeric URI dialing
- ü +, \* and # character dialing
- ü Hold / Resume
- ü Transfer
  - ü Blind
  - ü Attended
  - x Early Attended
- § Line Appearance
  - ü Multiple Calls (1 active, 4 held)
  - x Multiple Line Appearances
- ü Call Forwarding
  - ü All, Busy, No Answer, No Coverage, Unregistered
- x Park / Pickup
- ü Music on Hold
  - ü Unicast
  - x Multicast

# Features Supported / Not Supported

Perspective: E20, EX and C-Series endpoints registered to UC Manager

## § Conferencing Initiation

- ü Multisite (embedded)
- x Multiway (when registered to UCM)
- ü Multiway (when registered to VCS)
- x UCM-style Conf/Join
- ü cBarge (E20 only)

## § DTMF

- ü RFC 2833
- x KPML

## § Media Encryption

- x When registered to UCM
- ü When registered to VCS

## § TIP

- ü EX and C-Series only
- ü Single-screen, single audio stream profile

## § Contact Center

- ü CTI Monitoring of device availability
- x CTI Remote Call Control (remote-cc)

## § Licensing

- ü CUWL/CUCL
- x Release Keys and Option Keys provisioned in UCM

## § XML / Java Applications

- ü Experimental on E20
- x Provisioned in UCM

## § One Button to Push

- ü EX and C-Series only
- ü Using CTS-Manager
- ü Using TMS
- ü On Touch UI
- ü On OSD UI

# CDP and Auxiliary VLANs

Perspective: E20, EX and C-Series endpoints registered to UC Manager

§ Prior to CDP, TANDBERG endpoints support 802.1Q, but had to be manually configured

- Tagged (with VLAN ID specified)

- Untagged

- Default = Untagged

§ CDP introduced in E20 release TE4.0, and EX / C-Series release TC4.2

- Auto (use CDP). Will be set to this when CUCM mode is selected

- Manual (equivalent to Tagged in previous releases). User may manually set the VLAN ID. If VLAN ID is received from CDP the ID received will take precedence over the manually configured ID

- Off (equivalent to Untagged in previous releases. Ignores CDP, even if CDP advertises a VLAN ID)

# 802.1Q/p and DSCP

Perspective: E20, EX and C-Series endpoints registered to UC Manager

## § Endpoint will advertise itself to the switch

Capability TLV = Host/Phone (0x90)

## § AutoQoS

Switch will automatically extend trust to the endpoint

trust-cos recommended for endpoints that offer a PC port (E20, EX60, EX90)

trust-dscp recommended for endpoints that do not offer a PC port (C20/40/60/90)

## § PC Port

Ethernet frames arriving on PC port with 802.1Q/p headers will be dropped (vs. just stripping the header and forwarding untagged)

## § Endpoint will use DSCP and 802.1p values assigned by UC Manager

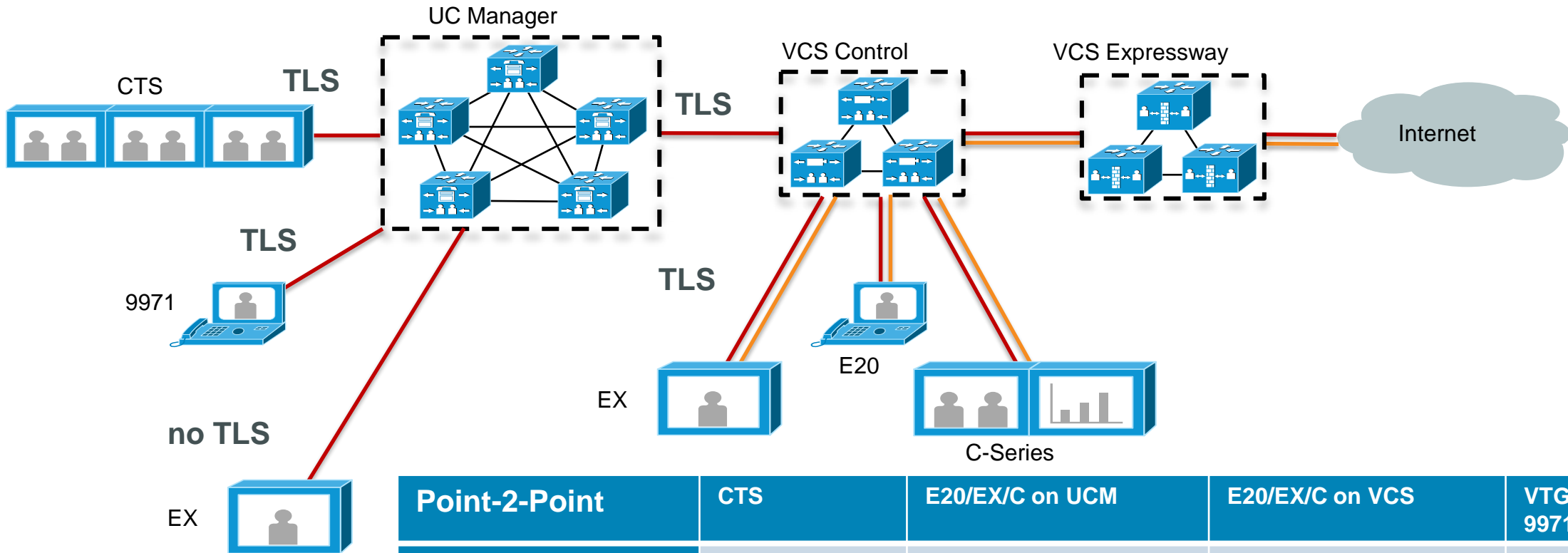
DSCP for Audio Calls (EF) – maps to 802.1p CoS 5

DSCP for Video Calls (AF41) – maps to 802.1p CoS 4

## § Endpoint will use RTP port range assigned by UC Manager

§16384 - 32768

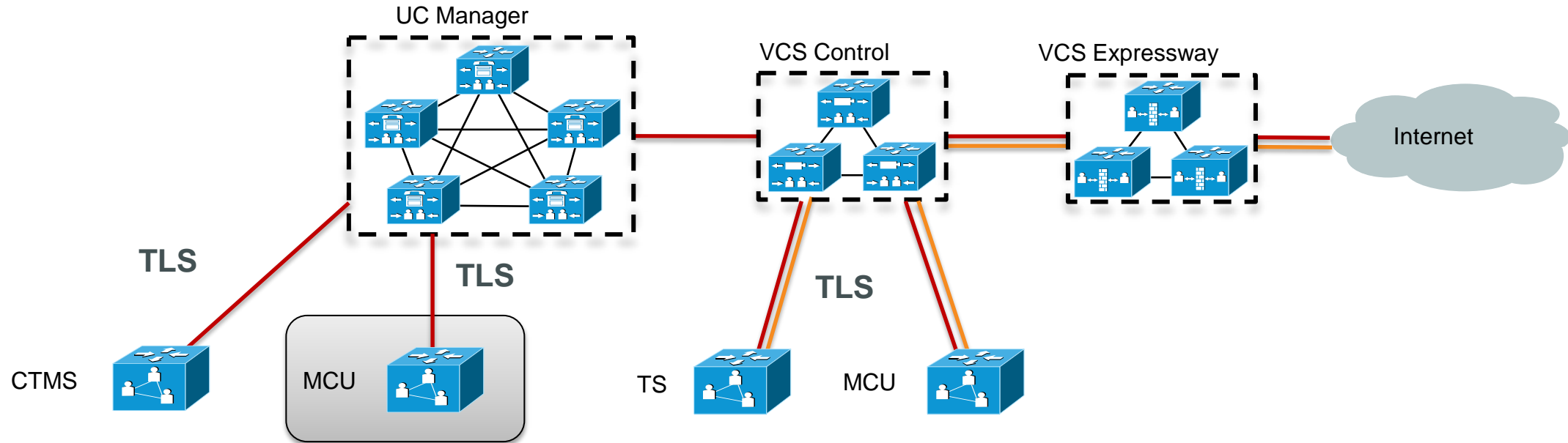
# Media Encryption Example Scenarios



— SIP  
— H.323

Point-2-Point	CTS	E20/EX/C on UCM	E20/EX/C on VCS	VTG endpoints (e.g. 9971)
CTS	Encrypted	Non-Secure	Encrypted	Encrypted (audio-only)
E20/EX/C on UCM	Non-secure	Non-Secure	Non-Secure	Non-Secure
E20/EX/C on VCS	Encrypted	Non-Secure	Encrypted	Encrypted (audio-only)
VTG endpoints (e.g. 9971)	Encrypted (audio-only)	Non-Secure	Encrypted (audio-only)	Encrypted (audio-only)

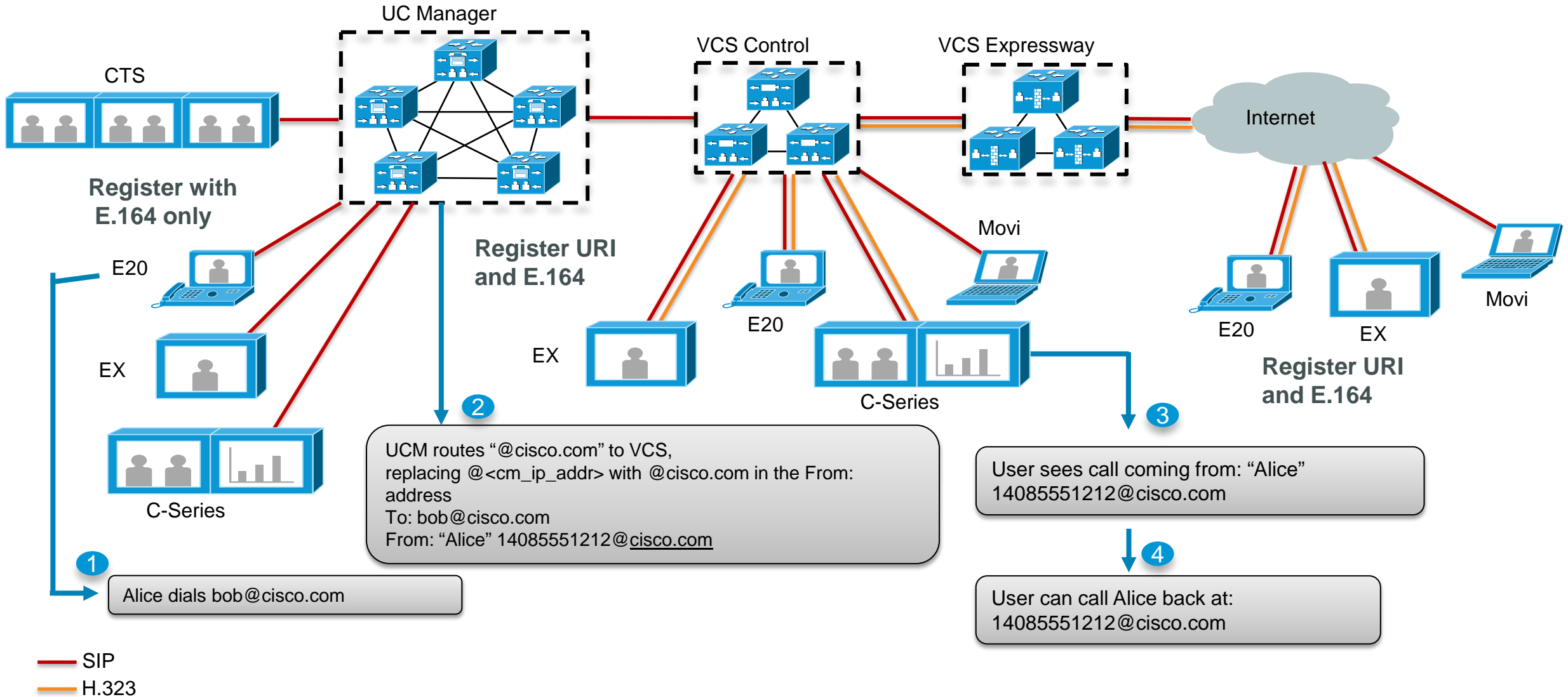
# Media Encryption Example Scenarios



Multipoint	CTMS	TS 7000/8700	MCU 4500/8500
CTS	Encrypted	Encrypted	Encrypted
E20/EX/C on UCM	Non-secure	Non-Secure	Non-Secure
E20/EX/C on VCS	Non-secure	Encrypted	Encrypted
VTG endpoints (e.g. 9971)	N/A	Encrypted (audio-only)	Encrypted (audio-only)

— SIP  
— H.323

# Alpha-Numeric URI Example Scenario



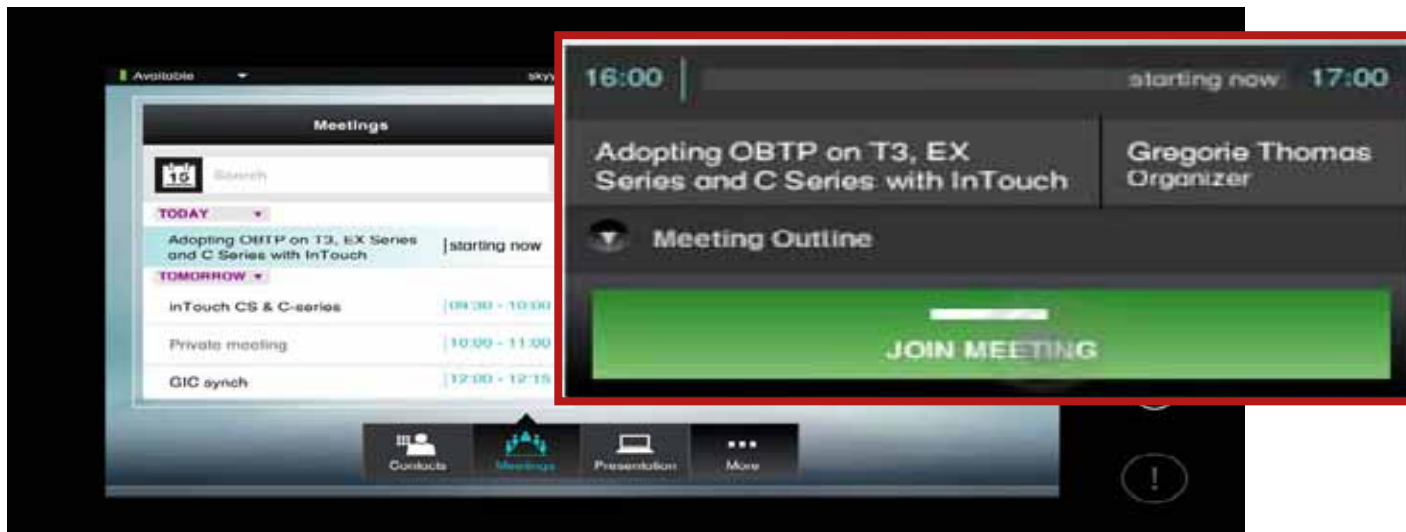
# One Button To Push on EX and C series codecs

## § One Button to Push (OBTP)

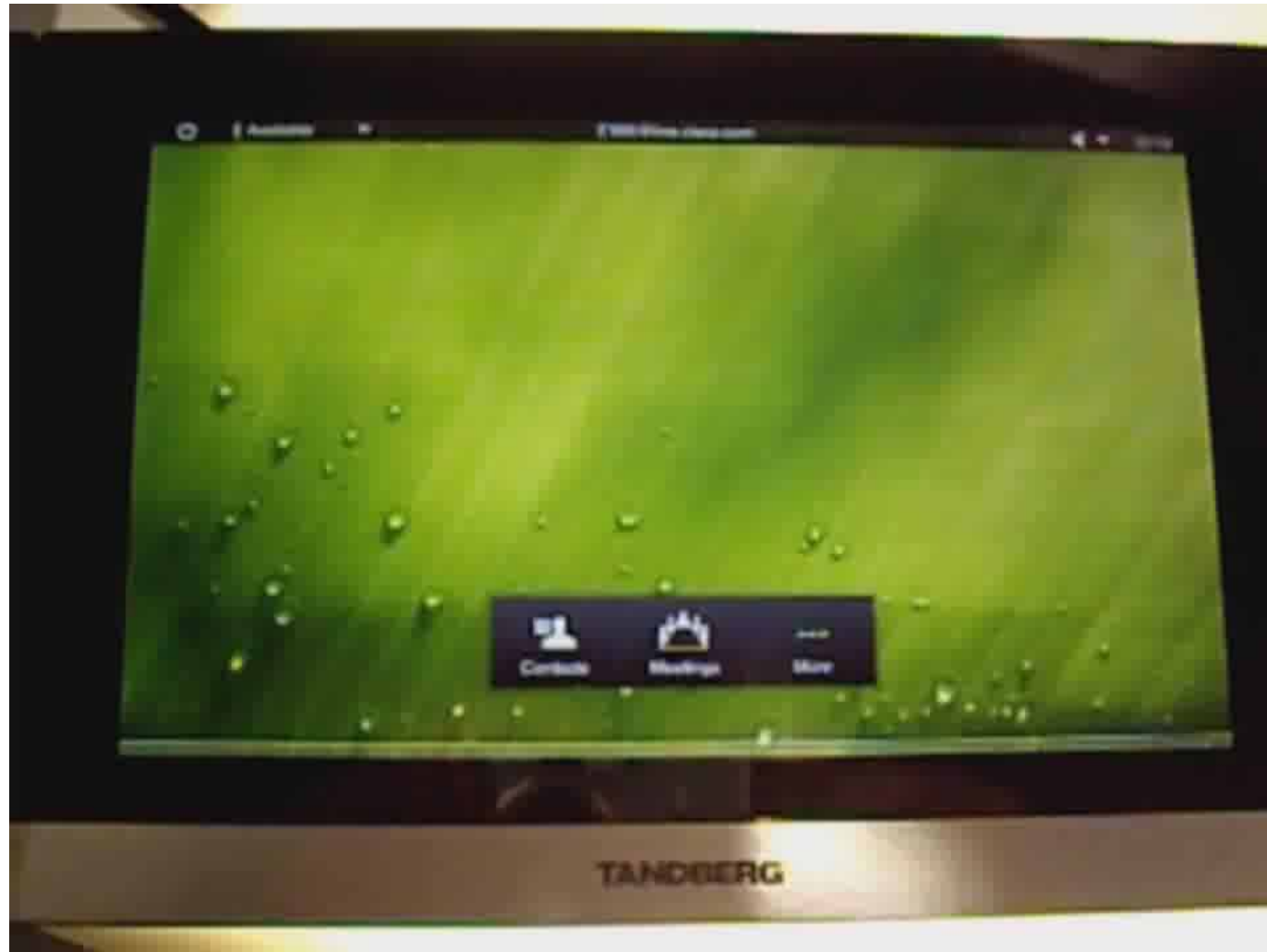
§ Scheduling information is pushed to endpoints

§ Upcoming meetings are displayed on the endpoint via main display and In-Touch display or on screen (for remote control systems).

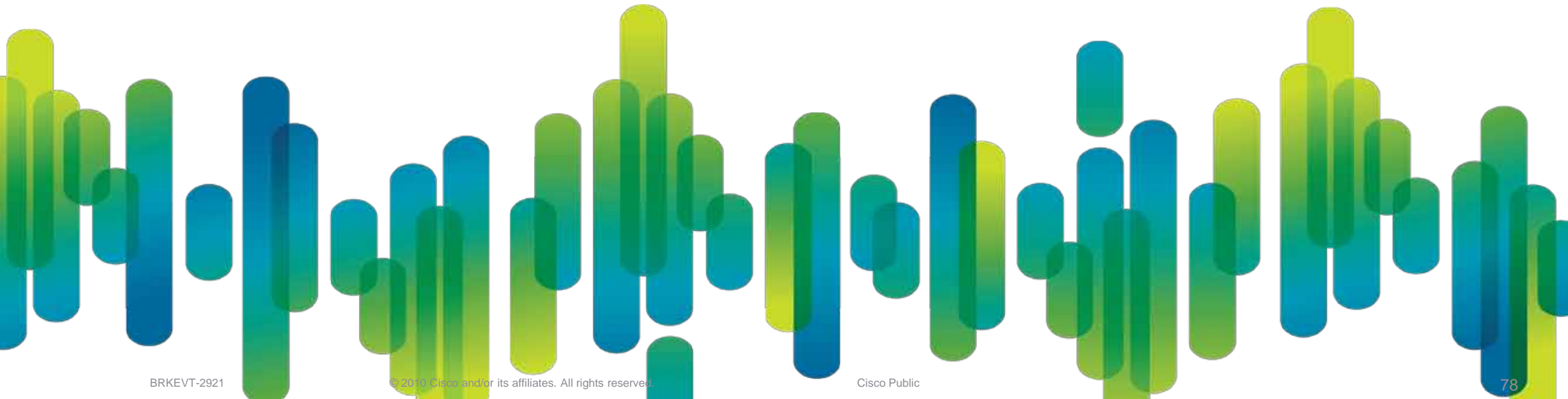
§ User will have a single button to push (via In-Touch, or remote control) to join the meeting.



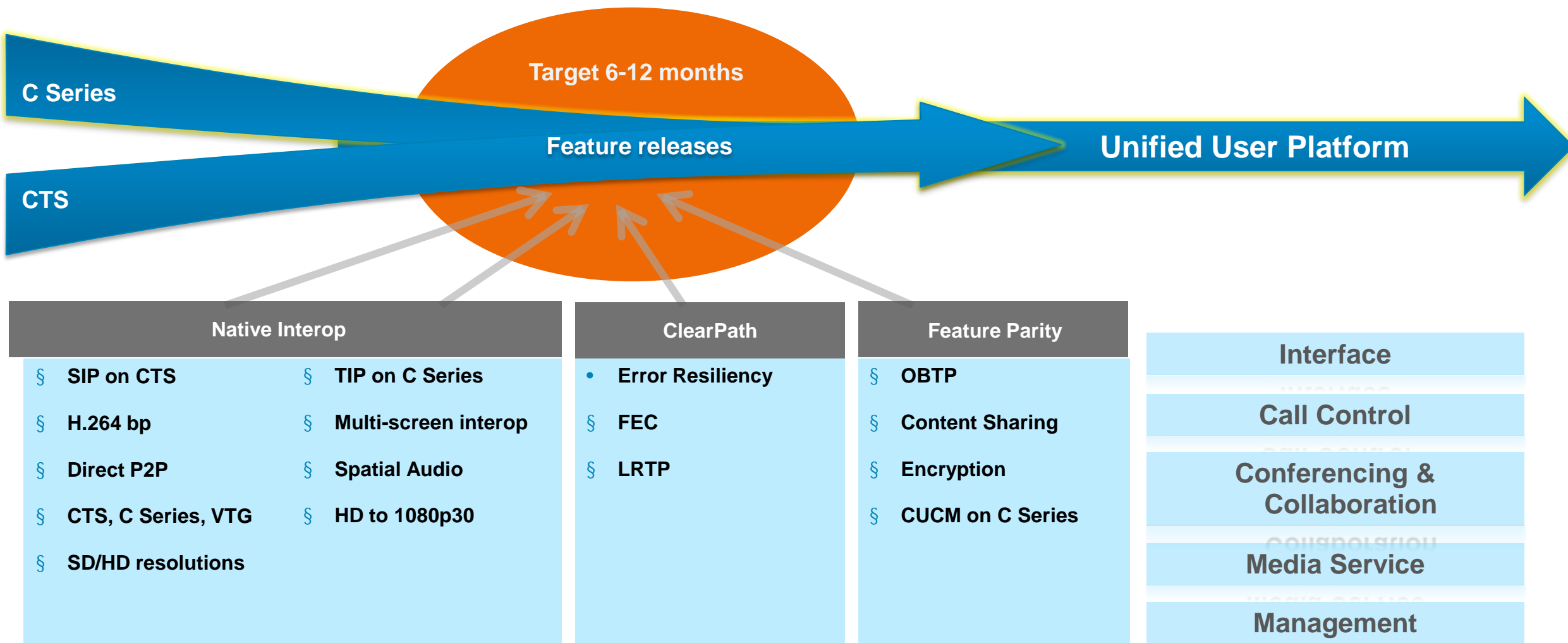
# OBTP Demo on Ex90



# Where We're Going



# Cisco TelePresence Endpoint Strategy



# Priorities for CY12

Perspective: E20, EX and C-Series endpoints registered to UC Manager

- § Encryption when registered to UCM (CAPF, CTL, TLS, sRTP)
- § Support for UCM-style ad hoc conferencing
- § Enhanced alphanumeric URI support on UC Manager
- § AS-SIP support
- § IPv6 (Expanded Support)
- § Enhanced Shared Lines on EX60/EX90
- § Enhanced Message Waiting Indication on EX60/EX90
- § KPML DTMF
- § JTAPI Remote-CC support for Contact Center and softclient control
- § CM Failover/Fallback and SRST
- § Extension Mobility support (including cross-cluster)
- § Registering to UC Manager through VCS Expressway
- § Harmonize UC Manager and VCS bandwidth controls (regions/locations, zones/pipes)



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Thank you.

