

Videokonferenzen heute

—

H.320/CIF → H.323/HD

Dr. Ulrich Schwenn

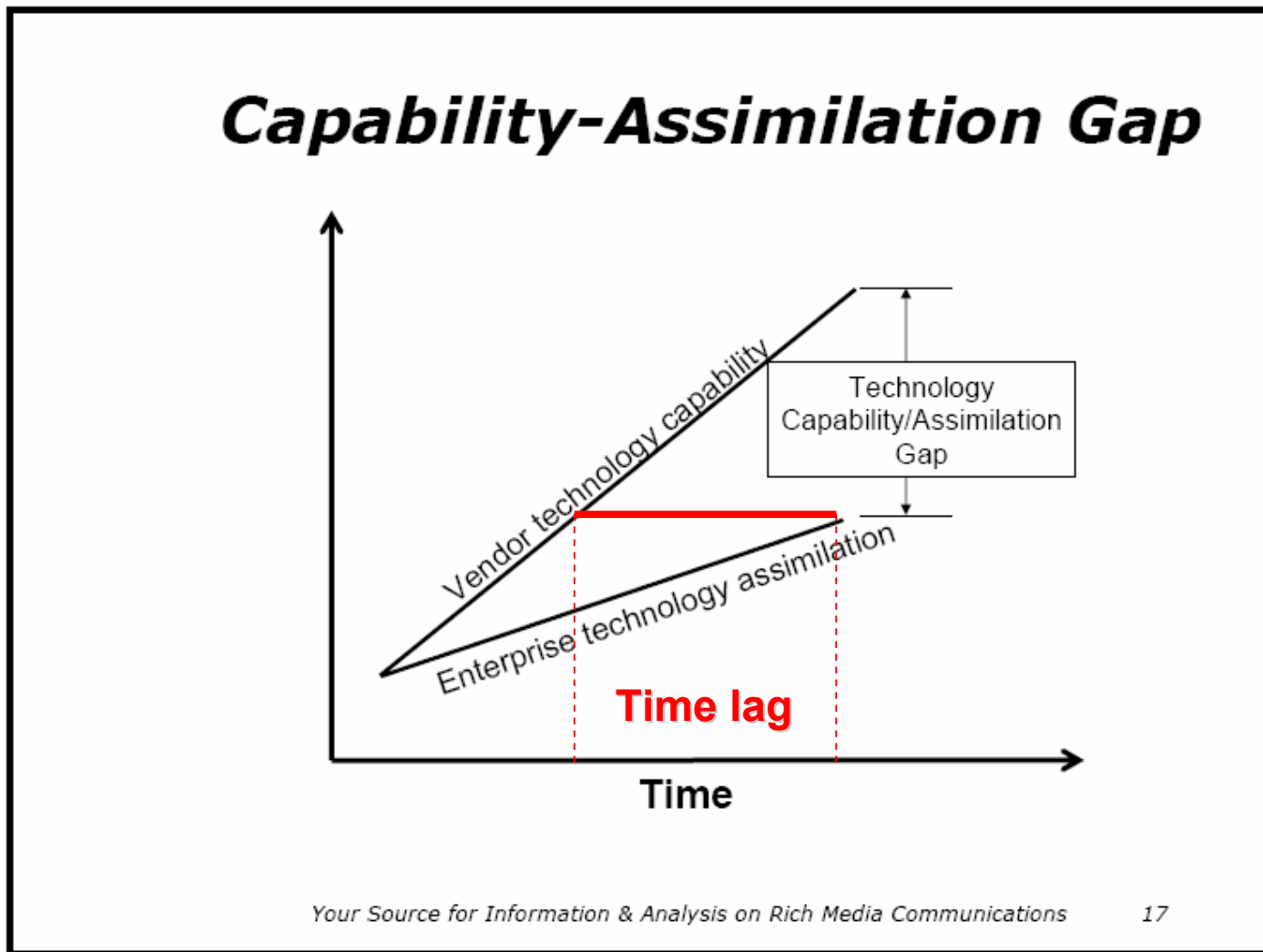
Leiter der Videokonferenzgruppe
Rechenzentrum Garching der Max-Planck-Gesellschaft
(MPG)

Max-Planck-Institut für Plasmaphysik (IPP)

schwenn@rzg.mpg.de



Wainhouse Views



Übersicht

- **VIKTAS-Tag Infrastruktur**
- **Videokonferenzdienst im Wissenschaftsnetz DFNVC**
- **Mehrpunktkonferenzen - neue Codian-MCUs**
- **DFNVC Webconferencing-System Breeze**
- **Kompetenzzentrum für Videokonferenzdienste (VCC), TU Dresden**
- **High-Definition (HD) - Hardware Codecs**
- **Migration von ISDN zu IP mit ≥ 2 Mb/sec**
- **HD und Telepresence**
- **Unified Communication**
- **Buchungssysteme - Überblick und Erfahrungen am IPP**



Multimedia-Infrastruktur VIKTAS Tag 2006

DESY – Tandberg 3000 MXP
1.5 Mbps, Gnu GK, E.164 0049 40xxx

Hamburg



DFNVC - Codian MCU
E.164 0049100979xxx

MCU

HU Berlin – PLCM VSX 7000
1 Mbps, Gnu GK
E.164 0049 30xxx

Berlin



VIKTAS-Tag 2007
Moderne Kommunikation
in Lehre und Forschung

Uni Duisburg-Essen
Tandberg 6000 MXP
3 Mbps
Gnu GK DFNVC
E.164 0049 203xxx

Duisburg



XWiN

Garching
bei München



IPP-RZG – Tandberg 6000 2 Mbps
Gnu GK, E.164 0049 893299xxx



DFN-Videokonferenzdienst

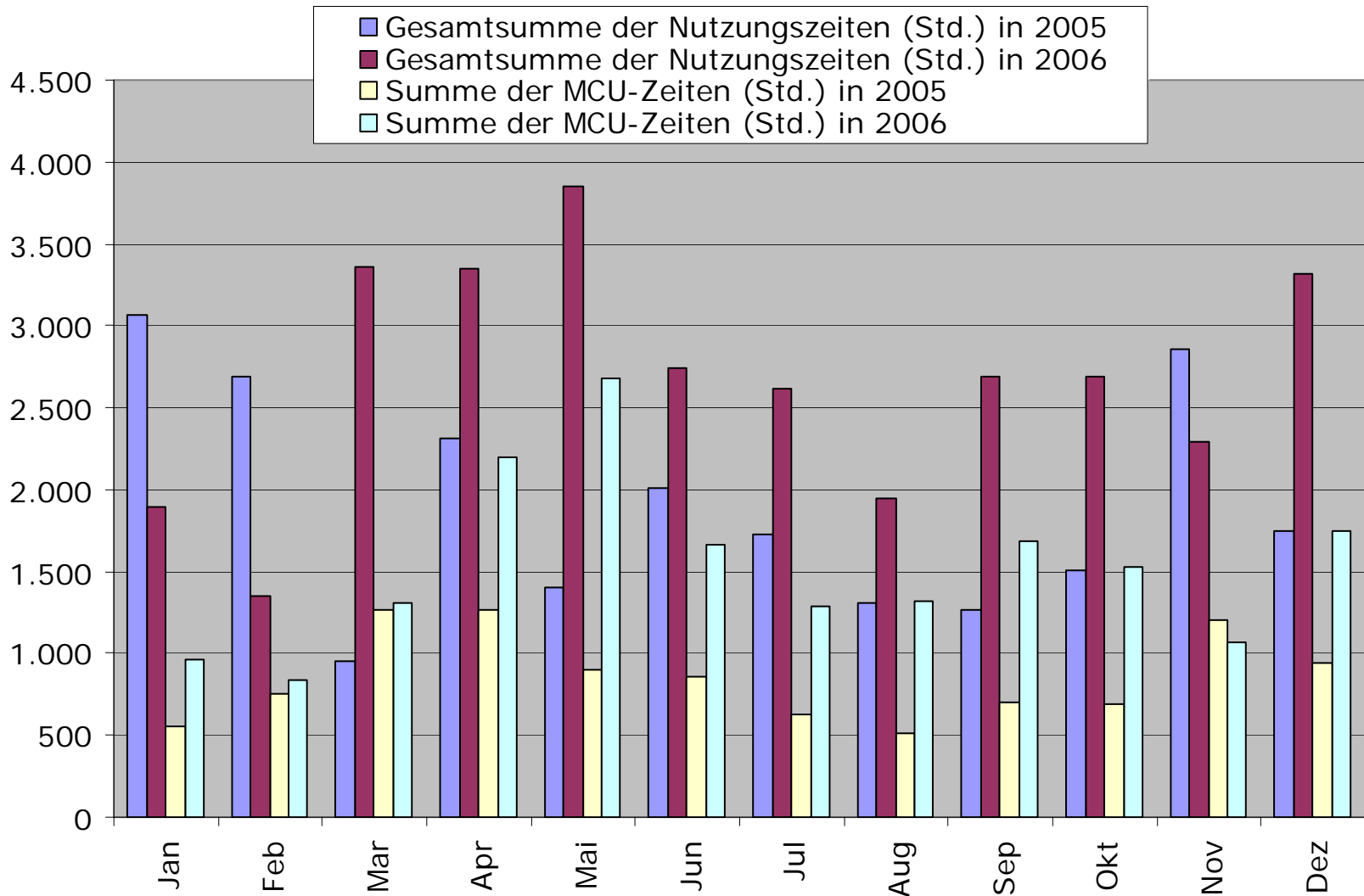
© Gisela Maiß, Jan.07

Neue Dienstkomponenten und Nutzungszahlen

- **MCU:** 2 Codian MCU-4220, Version 1.5
80 Ports Video und 80 Ports Audio
- Neue Features:
 - Konferenzen ohne vorherige Auswahl von Service-Definitionen
 - Streamen von Konferenzen, sog. „Webconferencing-Option“:
Streamen + Chat + H.239-Daten per Java Applet
- **VCR:** Codian 2220 - 5 parallele Aufzeichnungen
- Features:
 - Aufzeichnen von Konferenzen
 - Aufzeichnungen stehen einen bestimmten Zeitraum zum Abrufen und Archivieren bereit, bevor sie gelöscht werden
 - Nachträgliches Abspielen/Streamen über Real und Quicktime Format
 - Integration in Dienstoberfläche in Kürze



DFNC - Nutzungszahlen 2005-2006



DFNVC - Bewertung der Nutzungszahlen

- In den ersten Monaten 2006 wurde erstmalig die Nutzung der Codian MCU angeboten - noch im Pilotbetrieb und statistisch nicht erfasst. Mehrere Einrichtungen wechselten die MCU, so dass es zu geringeren Nutzungszahlen kam.
- Die neuen MCUs wurden ab April 2006 in die statistische Erfassung integriert.
- Insgesamt haben sich die Nutzungszeiten gegenüber dem Vorjahr in etwa verdoppelt.

DFNVC - Webconferencing

Jürgen Hornung, DFNVC

- Webconferencing Dienst im DFN
- Webconferencing Pilotbetrieb startet
- Am 14.09.06 startet der Webconferencing Pilotbetrieb im DFN.
- Als Alternative zum bisherigen H.323 basierten Videokonferenzdienst bietet Ihnen der DFN Webconferencing Dienst zusätzlich die Möglichkeit Webkonferenzen per Browser durchzuführen.
- Weitere Informationen erhalten Sie hier:

<https://www.vc.dfn.de/dokumentation/webconferencing-mit-breeze.html>

VCC – Kompetenzzentrum Videokonferenzen

Frank Schulze et. Al., VCC

-Kompetenzzentrum für Videokonferenzdienste (VCC)

TU Dresden

- Bobachtet aktuelle Hard- und Softwareentwicklungen auf dem Gebiet der Videokonferenzdienste.
- Unterstützt und berät die Anwender bei der Einsatzplanung, Installation und dem Betrieb von Videokonferenzdiensten.
- Kostenlose Unterstützung bei der Auswahl von Hard- und Softwarelösungen
- Regelmäßige Workshops zu aktuellen Arbeiten, Entwicklungen und Trends auf dem Gebiet der Videokonferenzen
- Genaue Termine und Inhalte unter Termine und Workshops.
- Materialien für den ersten Einstieg in die Thematik „VC-Cook-Book“
- Bei Bedarf weiterführende Schulungen und Einweisungen
- Das VCC ist ein Projekt des Deutschen Forschungsnetzes.



Qualität: ... gut, stabil;
 ... gut, instabil;
 ... ausreichend, instabil;
 ... keine Funktion
 ... ausreichend, stabil;
 ... gut, stabil;
 ... schlecht, stabil;
 ... schlecht, instabil;

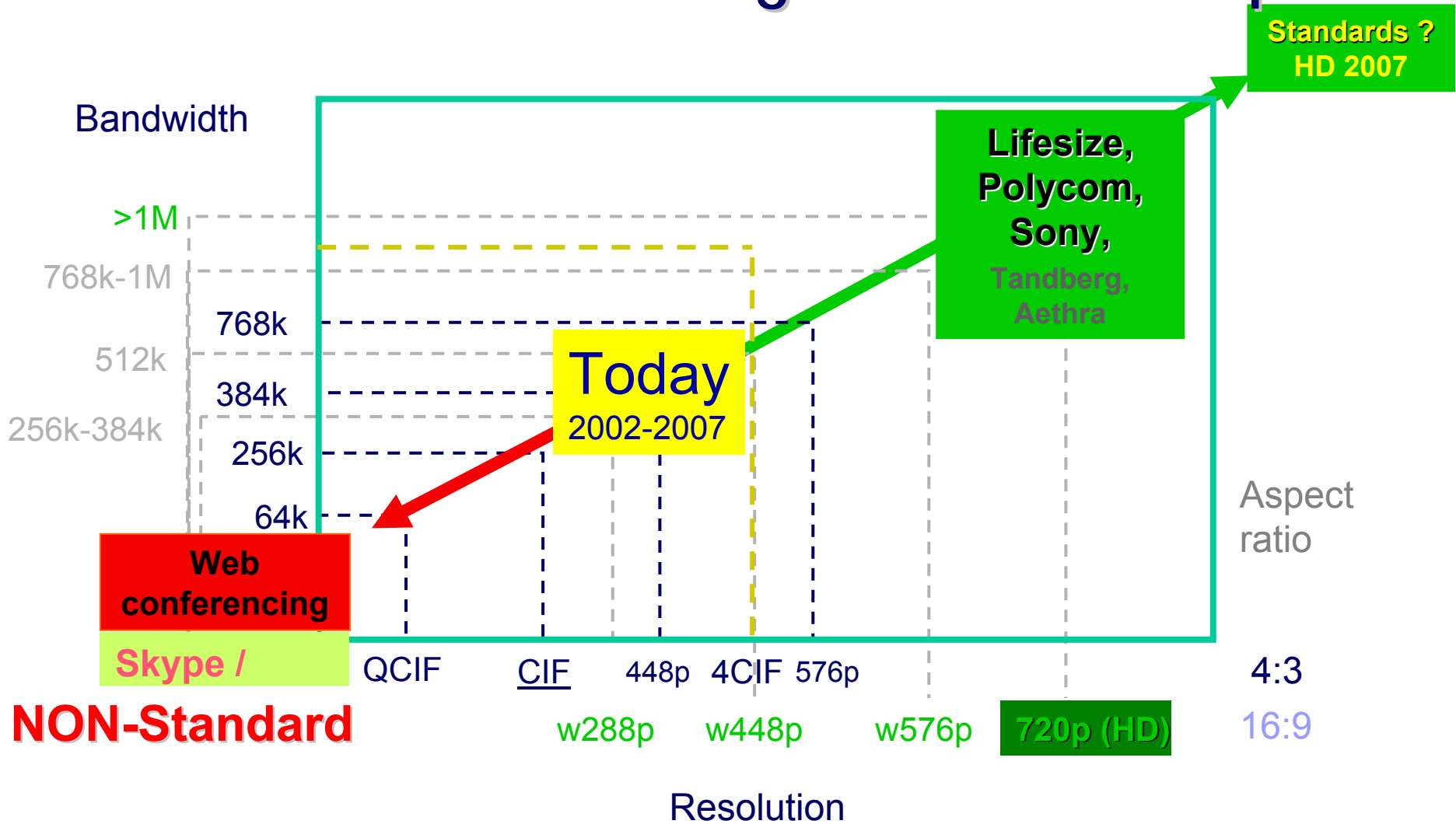
Anzahl der Tests: 141

VC-System	Aethra Vega X3	LifeSize Room	LifeSize Room 2.5	Polycom HDX 9004	Polycom PVX 6.0.2	Polycom PVX 8.0.1	Polycom PVX 8.0.2	Polycom ViaVideo II	Polycom VSX 3000	Polyspan Viewstation 512	Sony PCS-G70	Sony PCS-TL50	Tandberg 1500 MXP	Tandberg 990	TANDBERG Edge 95	VCON Cruiser 384	VCON Escort 25	VCON HD 3000	VCON HD 4000	VCON HD 5000	VCON ViGO Professional	VCON vPoint	VCON vPoint HD	VCON vPointHD 7.0	VCON vPointHD 7.1	eConf Pro	eConf Standard	Microsoft NetMeeting	Codian MCU 4220	RADVision viaIP 400
Aethra Vega X3																														
LifeSize Room																														
LifeSize Room 2.5																														
Polycom HDX 9004																														
Polycom PVX 6.0.2																														
Polycom PVX 8.0.1																														
Polycom PVX 8.0.2																														
Polycom ViaVideo II																														
Polycom VSX 3000																														
Polyspan Viewstation 512																														
Sony PCS-G70																														
Sony PCS-TL50																														
Tandberg 1500 MXP																														
Tandberg 990																														
TANDBERG Edge 95																														
VCON Cruiser 384																														
VCON Escort 25																														
VCON HD 3000																														
VCON HD 4000																														
VCON HD 5000																														
VCON ViGO Professional																														
VCON vPoint																														
VCON vPoint HD																														
VCON vPointHD 7.0																														
VCON vPointHD 7.1																														
eConf Pro																														
eConf Standard																														
Microsoft NetMeeting																														
Codian MCU 4220																														
RADVision viaIP 400																														

VCC - Kompatibilitäts-Matrix



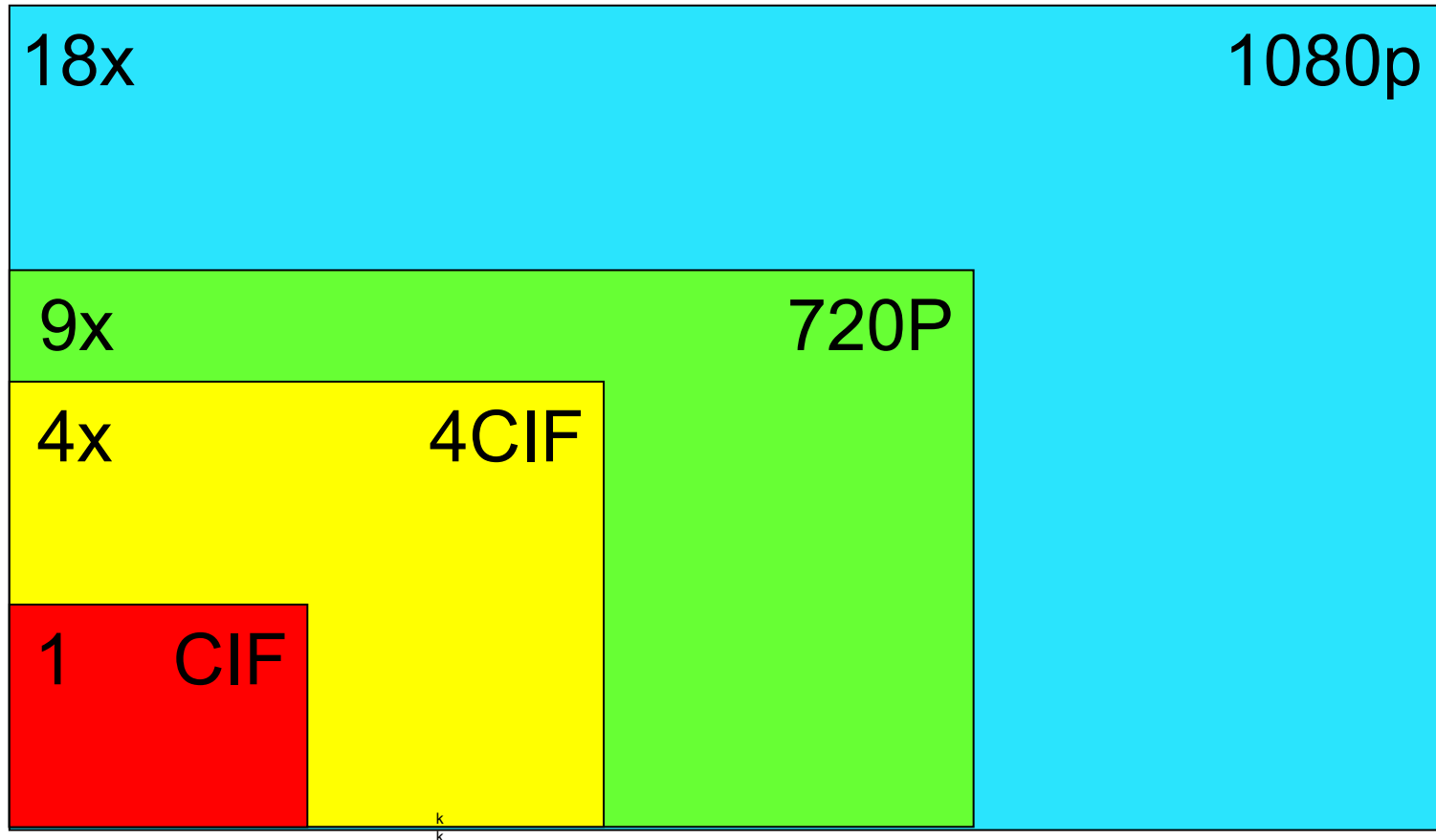
2007er Standard = high Definition 720p



NON-Standard



CIF – PAL – 720p – 1080p



Neue Systeme: LifeSize

Video



® Room & Team, Control, Networker, ...

High definition video communications (1280 x 720 resolution, 30 frames per second)

Support for video bandwidth from 128Kbps up to 5 Mbps

Single or dual monitor display

Single or dual high definition quality PTZ camera

Integrated super wide-band speakerphone to hear everyone in the room

Standards-based support for H.264, H.263 and H.239

Embedded 4-way multipoint with continuous presence

Simple user interface

Dual-stream support for sharing PC content and multimedia content

Neue Systeme: Tandberg's HD



® Edge 95/85/75 MXP
Experia
3000 MXP ... 8000 MXP
Profile
Maestro
Centric 1700 MXP



TMS, BorderController, MPS, ...

VIKTAS Tag 22. März 2007

Neue Systeme: Polycom's HD



HDX 9000 Series Solutions

® Polycom HDX 9002 / 9004

Highest quality video with high definition (1280 x720) video resolution at 1 Mbps and above at 30 fps

Call speeds up to 4 Mbps point to point

5 professional video inputs and 4 display outputs

2000MGC-25 / 50 / 100 RediConvene Conference Management & Scheduling RAS

200 RediManager™ SE200 PathNavigator Global Management Firewall

TraversalPolycom Video Recording and Streaming SolutionsPolycom® RSS™ 2000

16



Neue Systeme: Sony's HD

® Sony IPELA PCS-HG90

- IP Bandwidth : 512kpbs8Mbps
- Video Codec : H.264 HD.HD
- Video Format : 1280 x 720 x 60p/30p
- Built-in MCU : Up to 4 sites at a time
- Input / Output (Full HD accessible)
- HD-SDI/ XLR/ Component / RGB
- High Quality Audio
- MPEG4 AAC Stereo22KHz(MIC)/44kHz(AUX)
- New echo cancelling function
- Enhanced QoS



Neue Systeme: Sony's HD - 20.3.07 CeBIT



Neue Systeme: AETHRA's HD

AETHRA HD system

- H.323 and SIP, H.320
- H.264, **HD 720p30**
- Wideband audio
 - G.722.1 Annex C
 - MPEG4-AAC-LD
- H.239 Dual Video
- Embedded MCU mixed mode
- 3BRI on board
- "Green" and quiet: **no fans**



Neue Systeme: Polycom's HD Zauber



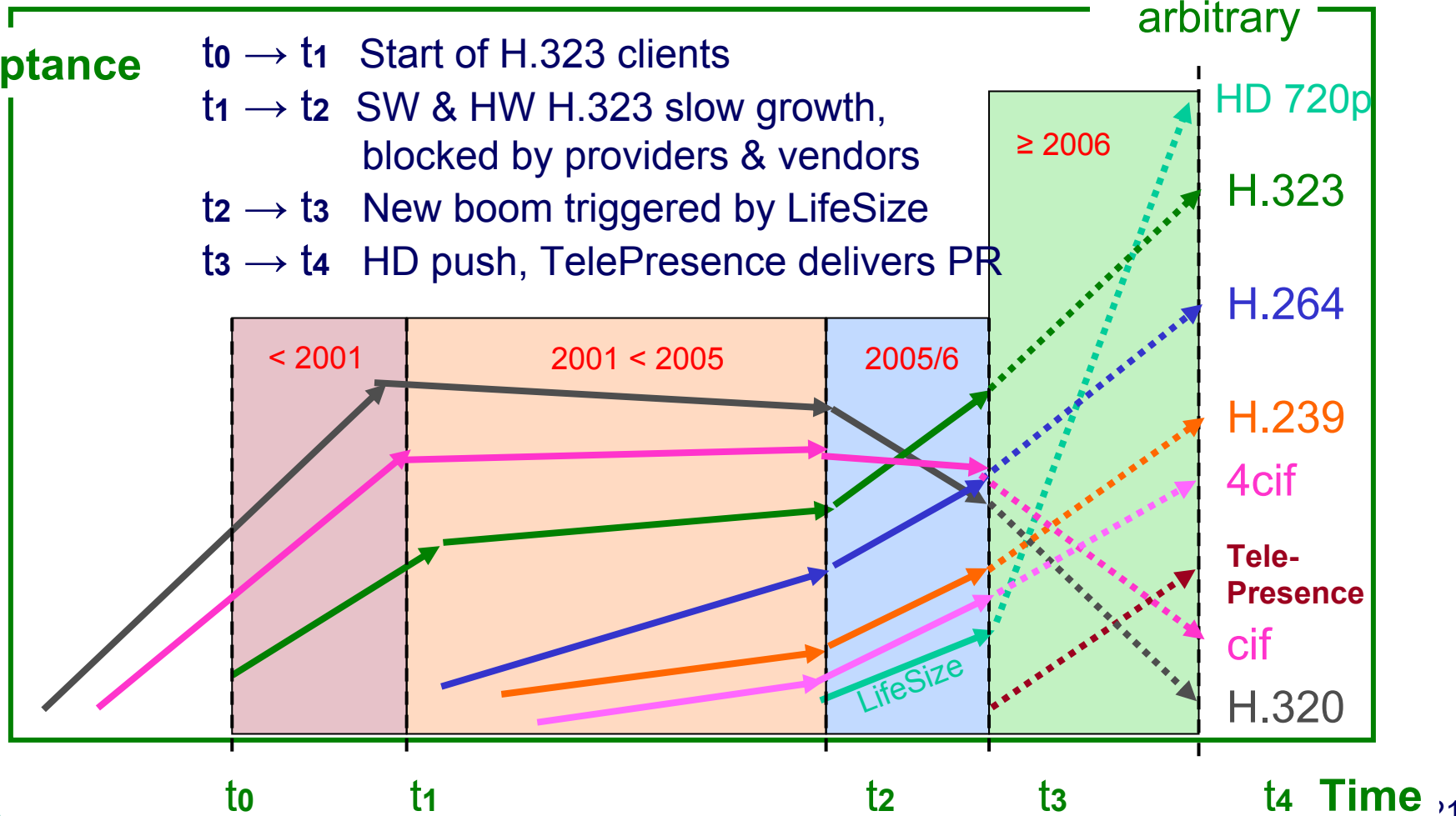
Transitions

Relative Evolution of VC Standards from 95 until today

Acceptance

- t₀ → t₁ Start of H.323 clients
- t₁ → t₂ SW & HW H.323 slow growth, blocked by providers & vendors
- t₂ → t₃ New boom triggered by LifeSize
- t₃ → t₄ HD push, TelePresence delivers PR

Scales arbitrary



Telepresence Definition

A videoconferencing experience that creates the illusion that the remote participants are in the same room with you (A.Davis)

-

Ein Videokonferenzenerlebnis, das die Illusion erzeugt,
Alle Remote-Teilnehmer sitzen im selben Raum wie Sie.

-

Erlebnis, Illusion, im selben Raum ... ?

Pro: Höchste Bild und Tonqualität,
Zuverlässigkeit, einfache Bedienung, auch durch CEOs,
Augenkontakt, lebensgrosse Bilder

Contra: Hoher proprietärer Anteil, extrem teuer, Geschmackssache,
weitgehend inkompatibel zu ITU Standards,
H.239 (nur aufgepfropft) und Multipoint zerstören die Illusion



Telepresence CISCO - 20.3.07 CeBIT



Telepresence Telesuite – destiny – Polycom

The new products (components and systems) being introduced are dubbed the TeleSuite Managed Video Array (MVA), based on three component elements.

- 1) The MVA codec is based on the emerging H.264 (MPEG4, Part10) video compression standard. The codec also supports the company's proprietary cross codec rate control for managing quality in low bandwidth situations and TeleSuite's multicast-enabled IP network for transmitting multiple images. This feature eliminates the quality degradation often associated with bridging equipment. Additionally, the TeleSuite codec incorporates 3DES encryption while its image enhancement circuitry scales the images to match a 3.2 mega-pixel display.
- 2) The MVA imaging system, which includes both a camera and a lens, is designed for panoramic image capture. Using a Kodak CCD chip, the progressive scan array camera processes 2560 x 480 pixels in an all-digital format. The camera is married to an optics system that is also wide-angle panoramic. The 16:3 aspect ratio - four times wider than a standard television broadcast - closely matches the aspect ratio of the human eye. The high-definition micro-lens design is integrated within the display system for optimal eye contact geometry.

When you put all this together, you get conference rooms with life size, high res images that very much simulate real face-to-face meetings. There is no need for camera presets or camera movement as the system has enough resolution to transmit the entire room. TeleSuite claims its new system is also backwards compatible to incorporate existing legacy video conferencing hardware utilizing the company's gateway system and services.



TeleSuite's business model is also different. New with this new product is the tactic of selling components to systems integrators. Up till now the company has focused exclusively on selling or leasing complete conference rooms to customers. (Leases include all equipment and unlimited usage.) TeleSuite is also opening its first room for public rental at the Waldorf-Astoria hotel in NYC, handy if you want to call another TeleSuite facility.

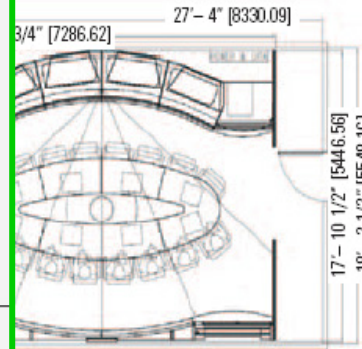
WRB now in French & Spanish
Visit www.wainhouse.com/bulletin to subscribe

Telepresence Telesuite – destiny – Polycom

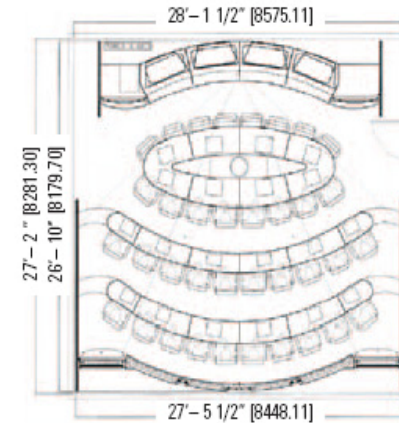
Polycom RPX HD is an all-inclusive suite that includes a unique, human factors engineered environment plus fully-integrated electronics.

- Large-as-life, 8' x 42" or 16' x 42" high definition video wall for a truly RealPresence Experience
- Polycom HDX 9004 UltimateHD video conferencing solutions built-in
- Polycom SoundStation VTX 1000® wideband conference phone for audio-add participants
- Two to four mini 3-CCD high definition video cameras embedded (out of view) behind the video wall that enables eye-to-eye contact

Polycom RPX HD 408M



Polycom RPX HD 428M



© polycom



Polycom RPX HD 400 Series

Telepresence HP - Tandberg



Halo



Experia

UNIT DELIVERED COMPLETE WITH:

- INTEGRATED SYSTEM INCLUDES:*
 4 x 50" HD wide-screen plasma monitors
 4 x TANDBERG 6000MXP Codecs
 4 x TANDBERG PrecisionHD™ Camera
 3 x Microphone
 2 x Digital Audio Module™
 1 x Wireless touch panel

SOLUTION INCLUDES:

- Executive telepresence table
 Wall and table docking stations for control panel

MONITORS

- Quad 50" plasma monitors
 16:9 high resolution widescreen format

TELEPRESENCE BANDWIDTH1

- Up to 8 Mbps IP for 720p @ 30FPS
 H.323 up to 2 Mbps point-to-point per codec connection
 SIP up to 2 Mbps point to point per codec connection

VIDEO STANDARDS

- H.261, H.263, H.263+, H.263++ (Natural Video), H.264, H.264RCDO

AUDIO STANDARDS

- G.711, G.722, G.722.1, G.728, 64 bit & 128 bit MPEG4 AAC-LD

AUDIO FEATURES

- Spatial Audio
 CD-Quality 20 KHz Mono and Stereo
 Superior Echo Cancellation

FRAME RATES

- 30 frames per second @ 2Mb for 720p per codec **DUAL**

STREAM

- Up to XGA H.239

© Tandberg

Telepresence CISCO



Audio/Visual Technology

Telepresence systems incorporate the most up-to-date standards and technologies to offer the best audio and visual results:

- H.264 video codecs to offer the highest quality and lowest bit rate

- Session Initiation Protocol

- Native 720p and 1080p high-definition cameras

- Native 720p and 1080p high-definition encoding/decoding

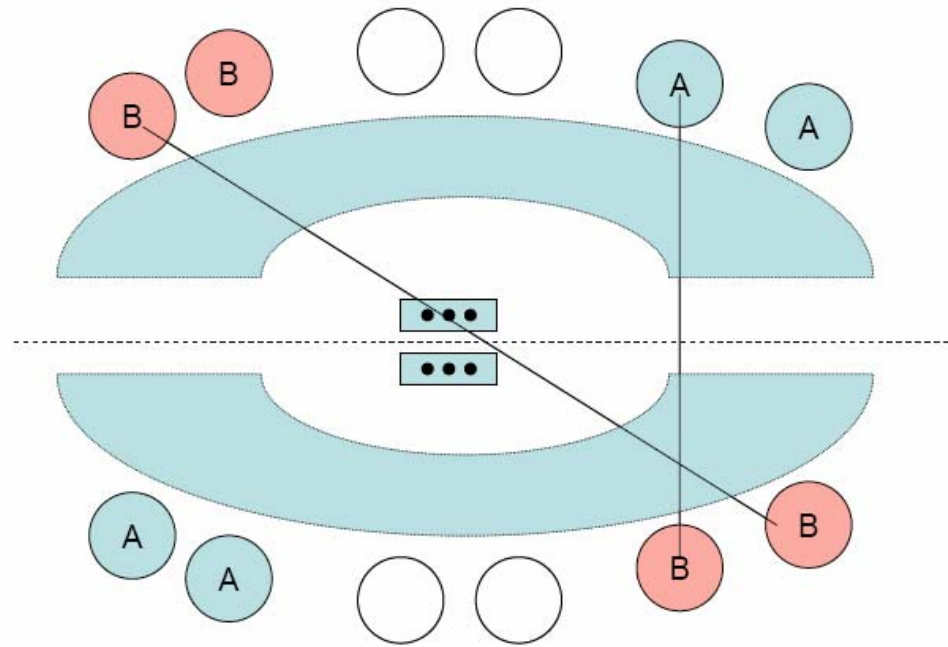
- Low-latency architecture and low bandwidth utilization

- Wideband advanced audio coding with low delay (AAC LD)

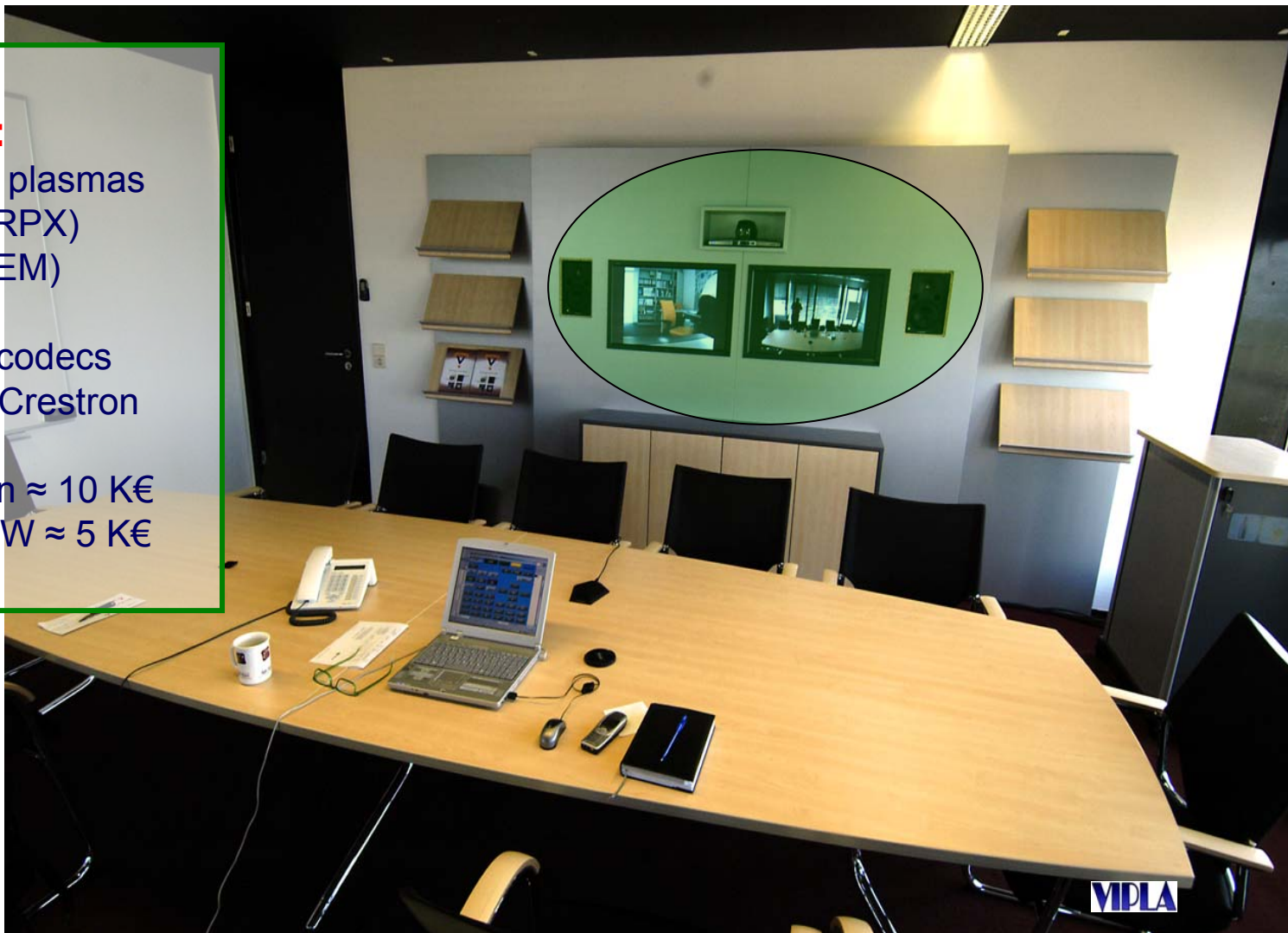
- Multichannel spatial audio with echo cancellation and interference filters to eliminate feedback from mobile devices

- Optimized environmental conditioning to provide the best audio and video and overall user experience

Gaze Angle and Central Camera



Telepresence - Upgrade HGF-Bonn?



Add Ons for TelePresence:

- 2x32" → 3x3 42" plasmas
- 2 HD Cameras (RPX)
- 2 ceiling mics (KEM)
- move speakers
- TB 880 → 2 HD codecs
- re-programming Crestron
- split processor
- costs - integration ≈ 10 K€
- HW ≈ 115 K€, SW ≈ 5 K€
- 130 K€**

Telepresence-Upgrade EPO?

European Patent Office: 10+6 Räume in München, Berlin, Den Haag, Wien

80% Booking
= 100% Acceptance



Add Ons for TelePresence:

- 60" → 3x3 42" plasmas (a) or 3 x 60" (b)
- 5 Cameras → 2 HD
- KEM → 2 Ceiling (or KEM)
- Remove
- TB 6000 → 2 HD codecs
- re-programming Crestron split processor
- costs - integration ≈ 10 K€
- HW ≈ 115 K€ (a) / 65 K€ (b),
- SW ≈ 5 K€

130 / 80 K€

Lighting of participants & background, cameras, audio KEM & speakers, displays, SmartBoard, media & presentation control, AC, Laptops control & admin Crestron, Forgent - realization digitech & MVC, planning VIPLA



Telepresence-Upgrade AWI – Sylt?



Add Ons for TelePresence:

- WXGA → 4x4 x 42“ Plasmas
- 3 HD Cameras (RPX)
- 3 Ceiling (2 KEM) Mics
- New speakers
- TB 3000 MXP → 3HD codecs
- re-programming Crestron
- split processor
- costs - integration ≈ 15 K€
- HW ≈ 140 K€, SW ≈ 5 K€
- 160 K€**



Telepresence - FAQs

FAQs only partly answered:

- **Compatibility** to existing infrastructures
H.323, SIP, H.239, Stereo AAC, ...
- **Internet** or **\$\$\$** for proprietary networks:
HP Halo Video Exchange Network (**HVEN**),
PLCM HD Video Network Operations Center (**VNOC**),
Cisco Service-Oriented Network Architecture (**SONA**)?
- **Firewall** issues – Ciscos part
- Do we need **new rooms** – do we need integrators anymore?
- How much of \$s, time & manpower do we have to invest for TP?

NOTE: Acceptance ~ \$ T M O

T=(Own)Time, M= (Own)Manpower, O=Outsourcing

If T,M → 0 even if \$,O → ∞, Acceptance is not guaranteed

Why do we need Telepresence when we have High Definition?

Nothing for - We do need good room designers



Unified Communication

... vormals Martini-Principle: Anyone, Anywhere, Anyhow ...

Cisco & IBM vs. Microsoft & Polycom/Tandberg

Comment in Wainhouse Research Bulletin Vol 8, # 7:

Holy cow, batman. The gloves are indeed coming off.

We said long ago that Microsoft and Cisco were destined to become direct competitors in the collaboration space, and while nobody wants to alienate Microsoft (note that even Cisco has a new Microsoft-compatible product), it looks like IBM is waking up to the Microsoft jaugernaut.

The IBM vs. Microsoft battle is just getting started, and Cisco was likely to be caught in the crossfire, collateral damage if you will.

This alliance helps protect both companies.

More on the Microsoft jaugernaut below ...

Achtung – Unified Communication

Warning! ***Presence and IM may lead to CPA***

- Continuous Partial Attention
 - Coined by Linda Stone
 - It means: you are now involved in a continuous flow of interactions in which you can only partially concentrate on each.
- Did you know
 - Information workers are disturbed about every 15 minutes
 - It takes an information worker about 20 minutes to get fully back on task
- Find Me, Follow Me... Hide Me
 - You will need to develop some etiquette
 - Microsoft has developed an IM etiquette guide
 - (Google search on “Microsoft IM etiquette guide”)

Your Source for Information & Analysis on Rich Media Communications

10



Do you really need to fly?

Sometimes there are quicker and less stressful ways to get from A to B. Why not take your head out of the sand and travel VC Class?

Vodafone's new certified videoconferencing (VC) rooms and lounges take the pain out of travelling. To find out more visit <http://intranet.vodafone.com/VC-Class>.

Travel VC Class.



IPP Buchungssystem - Mozilla Firefox
 Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
 http://vc-bookingsrv.rzg.mpg.de/booking/index.aspx
 RZG IPP-Telefonbuch Yahoo Cal SPIEGEL SZ FOCUS VIPLA RZG RZG Google Germanwings dba PayPal ebay Amazon.de: Günstig... Sixpack - sueddeuts... Egress - Wikipedia, t...
 Google Suche PageRank Rechtschreibprüfung Abonnieren Optionen



Rechenzentrum Garching
 Max-Planck-Gesellschaft & IPP

ipp Max-Planck-Institut
 für Plasmaphysik
 EURATOM Assoziation

[Home](#) [Videoconferencing](#) [Booking](#)

Videoconferencing Booking System - Buchungsübersicht

Buchung (RZG 07 / 2006, Matthes)

März 2007						
Mo	Di	Mi	Do	Fr	Sa	So
26	27	28	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

Donnerstag, 22. März 2007

Darstellung: Buchungsanträge anzeigen
 Abgelehnte Buchungen anzeigen

[Zur Startseite](#)

Unbearbeitete Buchungen Buchungen in Bearbeitung Akzeptierte Buchungen Abgelehnte Buchungen

Raum	Bereich	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00									
Seminarraum D3	MF, IPP Garching												1h 0min_Frau Stahlberg								2h 0min_MF Bereichsseminar																										
6.0-MC	Besprechungsräume, IPP Greifswald																																														
6.2-W7X	Besprechungsräume, IPP Greifswald																																														
7.2-STTH	Besprechungsräume, IPP Greifswald																																														
8.2-DIR	Besprechungsräume, IPP Greifswald																																														
7.1-PHY	Besprechungsräume ohne VC, IPP Greifswald																																														
8.0-TD	Besprechungsräume ohne VC, IPP Greifswald																																														
8.1-VAD	Besprechungsräume ohne VC, IPP Greifswald																																														
Seminarraum 1	Seminarräume, IPP Greifswald																																														
Seminarraum 2	Seminarräume, IPP Greifswald																																														
EDV	RZG, IPP Garching																																														

Last modified by Joerg Matthes

Fertig

Start 2 SSH Tectia ... Kontakte - Micr... Posteingang fü... bcc für schwen... Adobe Photoshop vikta-tag2007 Microsoft Powe... Aethra.pdf - A... IPP Buchungs... DE 18:50



Danke

An Heinz Wenzel, VIKTAS

F. Hinterland, J. Matthes, K. Behler
Kewin Stöckigt
Hans Pfeiffenberger, S. Bunne
Egon Verharen
Wolfgang Natzer
G. Berger, Ch. Bocklitz, Y. Güldenring
Th. Hame, R. Lechelmayr
A. Wienold, M. Winter
R. Passon
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W. Bauer
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F. Müller, M. Weiss
A. Seipel
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AWI
Surfnet, ViDeNet
VIPLA
EPO
BMW
LifeSize
Polycom
Tandberg
Sony
Codian
danet
WR
MVC
digitech
DaimlerChrysler
DFNVC

Und an die ITU Standards!

