aethra®

AETHRA VIDEO COMMUNICATION FOR BUSINESS
AETHRA VIDEO COMMUNICATION FOR THE ENVIRONMENT

EXPERIENCE HIGH DEFINITION WITH THE VEGA X7

HD IS REAL. REAL LIFE

Welcome to a new era in visual communication, where High Definition is changing the rules of business. Sit back and let the world of HD unfold around you. With high fidelity audio and improved video resolution, HD provides remote meetings with unmatched realism and interaction. See every wink, hear every murmur and capture every non-verbal nuance just as if you were there, in person. High performance HD videoconferencing is an all-encompassing experience, where detail is not a detail.

THINK GREEN: USE VIDEOCONFERENCING FOR BUSINESS

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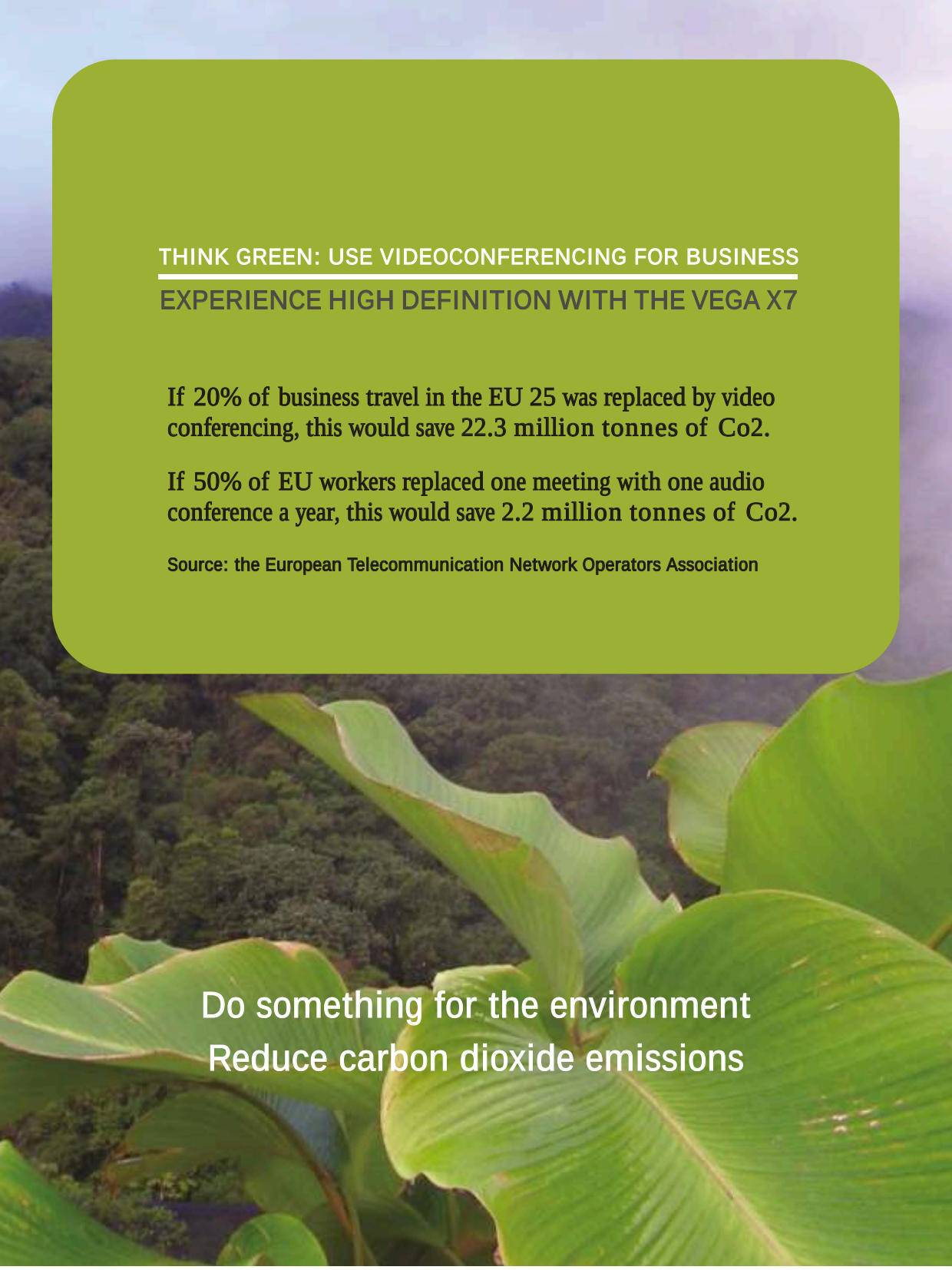
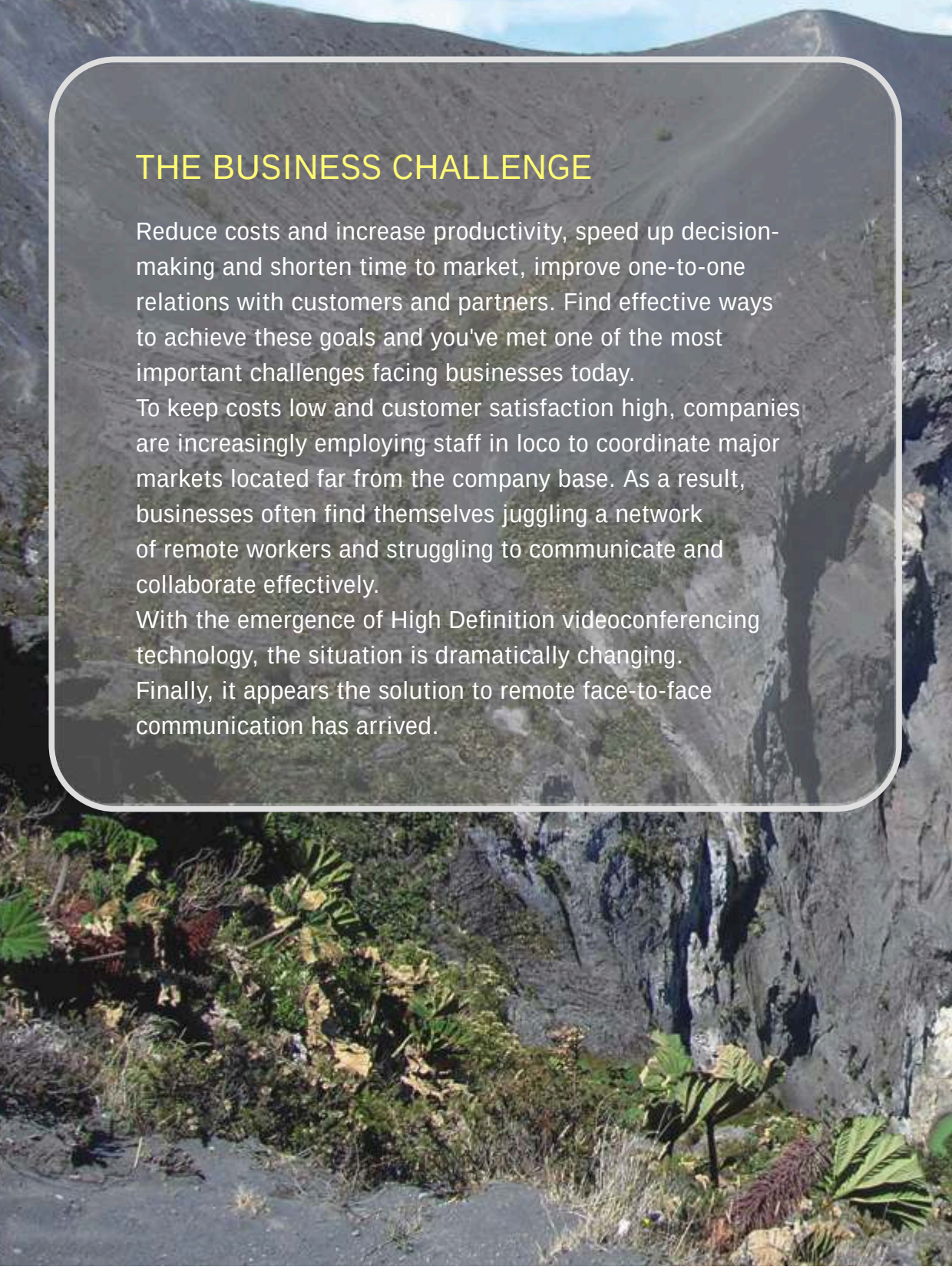
If 20% of business travel in the EU 25 was replaced by video conferencing, this would save 22.3 million tonnes of Co2.

If 50% of EU workers replaced one meeting with one audio conference a year, this would save 2.2 million tonnes of Co2.

Source: the European Telecommunication Network Operators Association





THE BUSINESS CHALLENGE

Reduce costs and increase productivity, speed up decision-making and shorten time to market, improve one-to-one relations with customers and partners. Find effective ways to achieve these goals and you've met one of the most important challenges facing businesses today.

To keep costs low and customer satisfaction high, companies are increasingly employing staff in loco to coordinate major markets located far from the company base. As a result, businesses often find themselves juggling a network of remote workers and struggling to communicate and collaborate effectively.

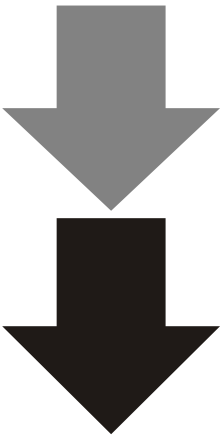
With the emergence of High Definition videoconferencing technology, the situation is dramatically changing. Finally, it appears the solution to remote face-to-face communication has arrived.

HD VIDEOCONFERENCING - WHAT IS IT ?

HD is the new generation video technology. HD resolution is 9 times (9xCIF) the quality of traditional videoconferencing systems. True-to-size and high performance, it offers high fidelity, clarity and efficiency, making it an invaluable alternative to face-to-face meetings. In addition, HD systems are able to operate at lower bandwidths and still provide video images, which are much sharper than those obtained using standard videoconferencing. Thanks to wideband audio and the life-like quality of High-Definition video, participants can appreciate the true value of body language and other forms of non-verbal communication. High Definition conferencing introduces the “human factor” into videoconferencing sessions and creates a more natural environment, perfect for improving interpersonal relations and increasing productivity.

MORE DETAIL:
720P (EQUIVALENT TO 9XCIF)

HD, THE VIDEO COMMUNICATION REVOLUTION



High Definition is not just technology, it's a concept embracing Video, Voice and Content aimed at improving comprehension and productivity

HD dramatically improves the quality of traditional videoconferencing systems: from 352 x 288 pixels (standard CIF format) to 1280 x720 pixels. In terms of mega pixels per image that's a shift from 0.101 in CIF to 0.922 in HDTV: more than 9 times better! Truly appreciate the difference at the optimal 1 Mbps, and see a significant improvement in quality even at lower bandwidths.

	Name	Resolution	#CIF	Format
At the beginning videoconferencing aimed to transmit images very similar to those seen on television and adopted the CIF (Common Interchange Format) 352x288.	CIF	352x288	1	4:3
	SIF	352x240	0.83	4:3
At that time, CIF was too much for the network bandwidth and the endpoints processing power, so Videoconferencing resolution was downsized to QCIF (Quarter CIF).	QCIF	176x144	0.25	4:3
As the technology improved, Video Conferencing became able to follow the resolution of the cameras and the displays used with the endpoint equipments from QCIF to 4CIF.	4CIF	704x576	4	4:3
	4SIF	704x480	3.33	4:3
Until a short time ago, only interlaced cameras and TVs (as display) were used, determining the way the image was captured and transmitted.	480p (ED)	848x480	4.02	16:9
The introduction of the H.239 standard (Dual Video), for content transmission, forced the Video Conferencing equipment “to explore” the world of the progressive image scanning.	720p (HD)	1280x720	9.10	16:9

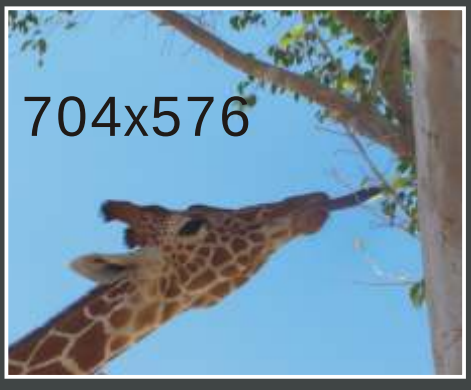
NO MORE COMPROMISES WITH TRUE-TO-LIFE AUDIO AND VIDEO

See and hear people, and transfer data, images or video without reducing quality or resolution

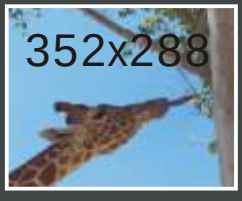
To keep up with HD image processing, very powerful and efficient codecs are required. The latest widely adopted video codec is the H.264, which is also known as MPEG-4 part 10 and AVC (Advanced Video Codec).

To give an overall feeling of “quality”, wideband audio codecs (14kHz) have also been coupled with HD images:

- (ISO) Low Delay Advanced Audio Coding (MPEG-4 AAC-LD)
- (ITU) G.722.1 Annex C



4 CIF



CIF

720p (HD)

SO WHO NEEDS IT? REAL BENEFITS

HD Videoconferencing is the perfect solution for Enterprise, allowing businesses to expand geographically without having to withstand additional infrastructure costs. Operations of all shapes and sizes can have international coverage. Enterprises can benefit from the flexibility of videoconferencing in terms of rapid response times.
Meeting frequently face-to-face can put a strain on costs and time-management and in particular on those individuals, who find themselves bouncing between airport lounges and hotel rooms. Offering a high-quality system at an affordable price means that ROI (Return On Investment) is rapid. In some cases, it can take as few as 2 videoconferencing sessions for the equipment to pay for itself in terms of costs saved on travel expenses.

HD makes the difference:
see plans, project and products in fine detail,
read the expressions and body language
of remote participants.

PRODUCTIVITY

- Powerful performance and flexibility.
- Better quality video at any bandwidth.
- Collaborate easily and cost-effectively.
- Crystal clear images and natural movement to read every expression and reaction.
- Great audio quality to hear every word and capture every nuance.
- Life-like experience: enjoy the sense of a meeting in person, without leaving the office.
- Take advantage of new remote video applications: enjoy the flexibility. of seeing people and sharing content simultaneously.
- Full compatibility with many other systems.

IMAGES

- Sharper images, wider screens, more detailed pictures.
- No more compromises: any medium at its highest native quality.
- Show the true quality of your work: from the smallest font to the thinnest line.
- More efficiently compressed video, more flexibility over different networks.

SOUND

- Broader acoustical range wideband codecs…
- Life-like voice quality improves comprehension and ensures no misunderstandings.
- Hear every sound in the room without detracting from the active speaker with clear multiple voice separation.

HD APPLICATIONS

Training, consulting and recruitment are all areas particularly suited to HD videoconferencing.

CORPORATE

- The superior quality of HD video communication means that remote meetings now offer an overall experience comparable to a live meeting. As a result, HD can be used with remote sales forces to launch new product lines or by Research & Development teams to evaluate prototypes during the production process. HD enhances relationships and collaboration between departments, drastically cutting travel costs and improving time management.
- The globalisation of production processes and the increase in outsourcing have made quality control problematic, however thanks to High Definition, thorough controls can be carried out from remote.
- Cutting time-to-market requires the acceleration of all production processes and better collaboration between designers, developers and suppliers. HD video communication offers a new range of tools for managing successful meetings: the possibility to share a virtual whiteboard or stream live video means more stimulating and effective communication and better project management.

TELEMEDICINE

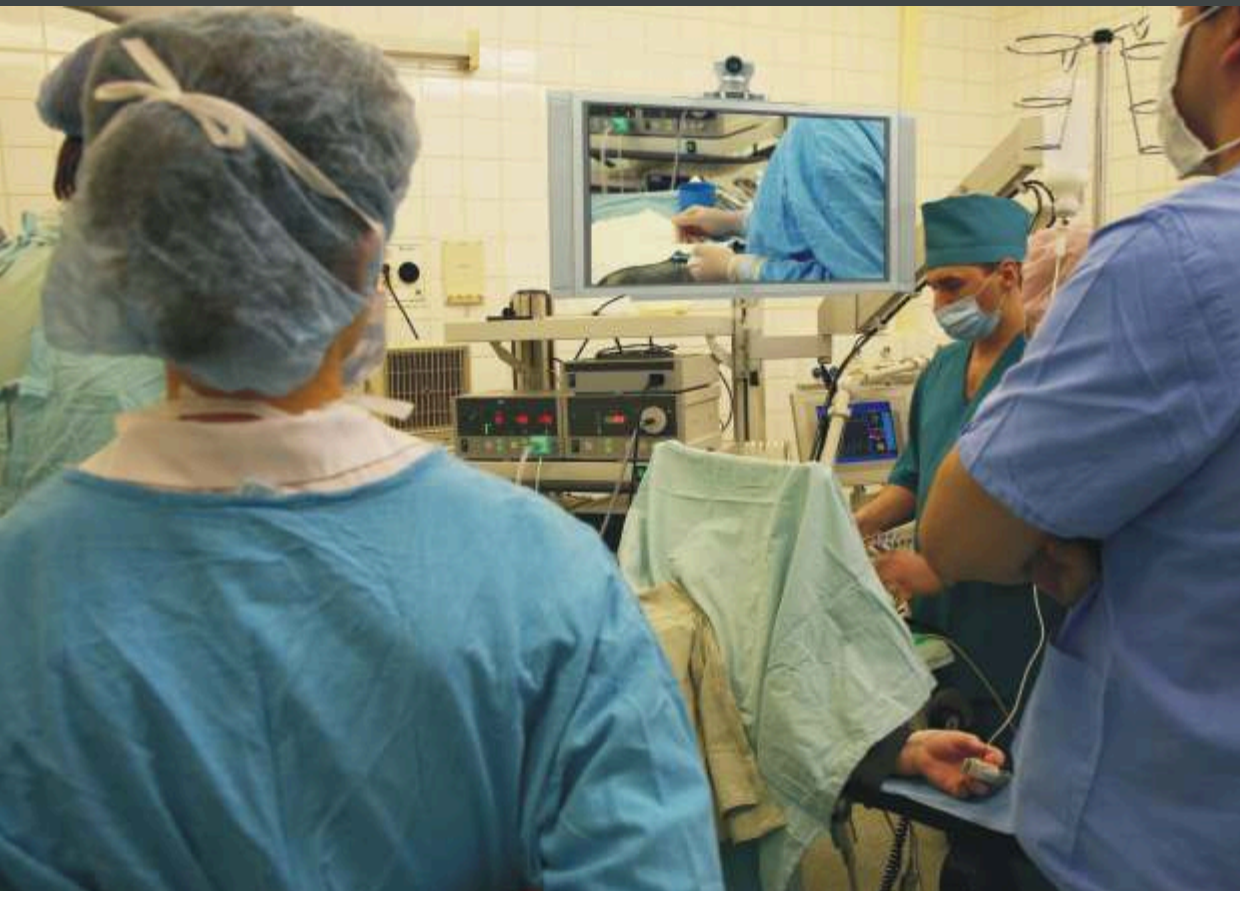
The most advanced applications of HD video communication can be seen in the Healthcare industry:

- Collaborative diagnostic tools provide remote medical services without any loss to the quality or level of care.
- Superior video quality means that clinical images such as X-rays can be examined in detail.
- Healthcare professionals can continue to stay abreast of even the most recent developments through distance training and remote participation at conferences and conventions.
- Specialists can assist from remote during surgery thanks to detailed images provided by HD resolution.

EDUCATION

- High Definition is an innovative solution for the education and training sectors, where better picture quality and crisper images facilitate a higher level of concentration and active participation. Life-like voice quality means that teacher-student or student-student discussions are carried out as though the participants were really in the same room.

HD makes the difference: where
the ability to see every tiny detail counts.



VEGA X7

HD INNOVATION A PLUS IN THE GLOBAL MARKET

With its HD solution Vega X7, Aethra is not only providing the market with an excellent High Definition product, but is also offering users the first stepping stone to an affordable telepresence solution. The success of the solution lies in understanding how businesses must improve collaboration while reducing costs, and without an initial layout of hundreds of thousands. Creating a system tailored to the needs of customers means making great things happen now in a realistic, accessible and affordable way.

Specifically designed and projected for High Definition, the Vega X7 is the first and the only system to support HD video and both 14-kHz (ITU and ISO) wideband audio codecs adopted in videoconferencing.

HD 720p (1280x720 progressive) + Connecting up to a total of 9 locations + The only system in its class to provide long reach video output (HD-SDI IFC) + High number of HD digital inputs and outputs + One of the most competitive connectivity rates on the market (4 Mbps over IP, up to 768 over ISDN BRIs and support for ISDN PRI and leased lines) + No fans for a noiseless system + Outstanding processing power with low power dissipation

HD VIDEO COMMUNICATION GLOSSARY

720P

The number 720 stands for 720 lines of vertical display resolution, while the letter p stands for progressive scan or non-interlaced. 720p assumes a widescreen aspect ratio of 16:9, and a horizontal resolution of 1280 pixels for a total of about 0.92 million pixels.

BANDWIDTH

A range of frequencies used to transmit information such as picture and sound.

BITRATE

Measured as "bits per second," and used to express the rate at which data is transmitted or processed. The higher the bit rate, the more data that is processed and, typically, the higher the picture resolution.

COMPRESSION

A method of electronically reducing the number of bits required to store or transmit data within a specified time or space.

DVI (Digital Visual Interface)

A multi-pin computer-style connection intended to carry high-resolution video signals from video source components such as flat panel LCD computer displays and digital projectors.

FIELD

In interlaced-scan video, each complete frame is split into 2 sequential fields, each of which contains half the scanning lines of the frame. One field contains the odd scanning lines, and the other field the even lines.

FRAME RATE

The rate at which frames are displayed. The frame rate for movies on film is 24 frames per second (24 fps). In regular NTSC video, the frame rate is 30 fps.

HDMI™

High-Definition Multimedia Interface, similar to DVI (but using much smaller connectors), the multi-pin HDMI interface transfers uncompressed digital video with HDCP copy protection and multichannel audio. Using an adapter, HDMI is backward-compatible with most current DVI connections.

HDTV

High definition television, it has a screen ratio of 16:9, approximatly twice the vertical and horizontal picture resolution. High-definition television (HDTV) resolution is 1080 or 720 lines.

PIXEL

A pixel is a single point in a graphic image.

INTERLACED SCAN

In a television display, interlaced scan refers to the process of re-assembling a picture from a series of video signals. The frame/picture is made up of two fields: the first field has 262.5 odd lines (1,3,5…) and the second field has 262.5 even lines (2,4,6…).

MPEG-4/H.264

H.264, MPEG-4 Part 10 or AVC (Advanced Video Coding), is a digital video codec standard that is noted for achieving very high data compression. It was written by the ITU-T (International Telecommunication Union) together with the ISO/IEC Moving Picture Experts Group (MPEG) as the product of a collective partnership effort known as the Joint Video Team (JVT).

PROGRESSIVE SCAN

Progressive or non-interlaced scanning is any method for displaying, storing or transmitting moving images in which the lines of each frame are drawn in sequence. This is in contrast to the interlacing used in traditional television systems. Advantages: simpler video processing equipment; higher resolution and fewer artifacts in video with motion compared to interlaced video of the same line rate.

RESOLUTION

A measurement of the finest (smallest) detail that is visible, or can be resolved, in a video image. The sharpness of a video image, signal or display, generally described either in terms of "lines of resolution," or pixels. The resolution you see depends on two factors: the resolution of your display and the resolution of the video signal.

WIDESCREEN / 16:9

When used to describe a TV, widescreen generally refers to an aspect ratio of 16:9, which is the optimum ratio for viewing anamorphic DVDs and HDTV broadcasts.

AETHRA DESIGN AND VIDEO COMMUNICATION

VEGA X7

HD video communication

VEGA X5

VEGA X3

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