

UNDERSTANDING  
*hdTV*

17th/18th  
NOVEMBER

2005

Venue:

THE DIGITAL TEST BED  
NATIONAL  
FILM  
THEATRE  
LONDON SOUTH BANK

A N N O U N C E M E N T

HIGH DEFINITION & DIGITAL CINEMA LTD

Presents

UNDERSTANDING  
*hdTV*  
TECHNOLOGY

Course  
Leaders

JOHN WATKINSON

UK International consultant in audio, video and data recording

PETER WILSON

International Consultant in High Definition Television and Digital Cinema

About  
this  
course

This highly practical course has been developed for  
TV Industry Professionals facing the challenge of a migration to HDTV.  
The cost of the two day course is £850 + VAT

Is it  
for you?

The course is designed to suit a broad spectrum of both  
theoretical and practical issues, whether you are a technician or  
engineering manager, there will be something for you.

What you  
will learn

- You will understand the origins of HDTV and why certain decisions were made when defining the key parameters.
- You will understand the difference between SDTV and HDTV and what issues are critical to reliable performance.
- You will be given primers in the human visual system and moving image portrayal.
- You will learn about colourimetry and its implications.
- You will be given primers in HD VTR, Switcher and Camera Systems.
- You will be given practical information on how to build an HD system that works with information on new diagnostic systems and metrics for reliable system operation.

FULL TWO DAY PROGRAMME →

UNDERSTANDING

hdTV

# P R O G R A M M E

17th/18th  
NOVEMBER

2005

Venue:

THE DIGITAL TEST BED

NATIONAL  
FILM  
THEATRE

LONDON SOUTH BANK



## Day One

### Introduction

#### What's your definition of high definition?

#### Is definition all there is to it? Of course not!

- The things that matter.
- Realism v Escapism.

### The Human Visual System

- The structure of the eye.
- The retina.
- Rods and cones and how they differ.
- Why the eye is not a camera.
- Saccadic motion.
- The pretzel effect.
- Eye tracking and motion perception.
- Persistence of vision.
- Fusion.

### Moving Image Portrayal

- Image sampling, spatial and temporal.
- Aperture effect.
- Oversampling and resizing.
- Scanning techniques.
- Motion portrayal and dynamic resolution.
- The optic flow axis.
- Comparison of film, interlaced scanning and progressive scanning.
- Choice of frame rate.
- Where present frame rates came from.
- What frame rates should we use?

### Colorimetry

- How we see colour.
- Colour constancy.
- Metamerism and the use of primaries.
- CIE colour space.
- Colour temperature.
- Colour space for transmission & display.
- Digital colour space.
- Valid and invalid colours.

### Compression for HDTV

- MPEG-2 vs H-264(AVC).
- Spatial and temporal coding.
- Transforms, motion compensation, bi-coding, prediction.
- Blocking and concealment.
- Transporting compressed HDTV.
- Packets and PIDs. Timebase recovery and PCR.
- Multiplexing, statistical multiplexing.
- Stuffing.

## Day Two

### Cameras

- Types of HD camera: prism vs stripe & mask systems.
- Sensor size vs depth of focus.
- Enhanced processing; Gamma, white knee etc.
- Set up files
- The importance of the correct shutter speed.
- Cameras connections: copper, fibre.
- HDV, "Will it make amateurs of us all"

### Equipment

- Interface standards
- P & PSF
- The 1.5 Gbps HD Serial interface
- Data integrity and CRCs
- Connectors & Cables
- Analog design issues
- Switchers
- Graphics and CG
- Editing
- SD/HD compatibility and interoperability
- Displays, CRT, PLASMA, LCD

### HD recorders

#### HD recorder block diagram.

- Compression, segmentation, multiplexing, error correction, channel coding, timebase correction.
- Practical HD formats: HD-Cam, HD-Cam SR, HD-D5, D6, HD-DV100, HDV.

All programme content subject to change without notice

### CONTACT



Request E-mail or Hard Copy

**hddc**

HIGH DEFINITION & DIGITAL CINEMA LTD

Tel: + 44 (0) 2392 370513

Fax: + 44 (0) 2392 790158

E-mail: [info@hddc.co.uk](mailto:info@hddc.co.uk)

[www.hddc.co.uk](http://www.hddc.co.uk)