

---

# PONTIS

## EMC PRODUCTS

by



# Introduction

---

Pontis EMC has been providing Audio and Video solutions for Electromagnetic applications, (N)EMP, IEMI, HIRF and EMC, in Commercial, Military and Government projects, since 1996. Our Audio and Video systems, designed and manufactured in Germany, are installed in sites around the world.

## Brief History

- 1994 PONTIS Messtechnik is founded  
Controller for EMC Antenna mast and Turntable (Partner of ----HD-)  
Development service
- 1995 Developed the world's first portable MP3-Player
- 1996 First EMC CCTV systems introduced
- 1999 PONTIS Electronic founded: Consumer products under own brand
- 2005 Audivo is founded: Internet radio and audio streaming
- 2006 EMC and Audio business is merged

# Pontis EMC

---

## **At Pontis EMC we value**

- Our Customers
- Quality and long-term reliability of our products
- Our commitment to sustainability and to acting in an environmentally friendly way
- Integrity and to pursue innovation
- Our worldwide sales and support partners

## **Certifications**

- MIL STD 188-125 (E1 & E2)
- RTCA DO 160 G & Q
- ISO 11452
- CISPR 25

## **Solutions**

Our Engineering team and business professionals, analyse, research, design and implement solution in many areas:

- Government buildings and Embassies world wide
- Military and Police buildings
- Financial and Other Major Institutions
- HVDC Transmission systems
- R&D Product development
- EMC R&D, Certification and Testing

# Why do we need Pontis EMC Products

---

- ✓ To monitor the EUT (both visual and acoustic)
- ✓ To survey the function of turntable and mast
- ✓ To make sure the doors are closed -> safety
- ✓ To make sure nobody is inside -> safety
- ✓ To ensure correct test set up
- ✓ To document the test set up with Photographs
- ✓ To record important parts of the EMC testing
- ✓ No unwanted interference during testing
- ✓ No failure of Test Equipment at high field strength
- ✓ No background noise, created by Test Equipment

# Why do we need Pontis EMC Products

---

- ✓ Video and control signals are transmitted via fibre optic cables - so no radiation and no interference
- ✓ FO cables can pass through shielded walls ,by patches (FSMA on both sides) or by waveguides
- ✓ In the control room the signals are converted back to the original format
- ✓ All local connections (e.g. power supply) are shielded and filtered
- ✓ This design also applies to the Audio Systems and Fibre Optic Converters

# EMC Chamber Typical Set Up

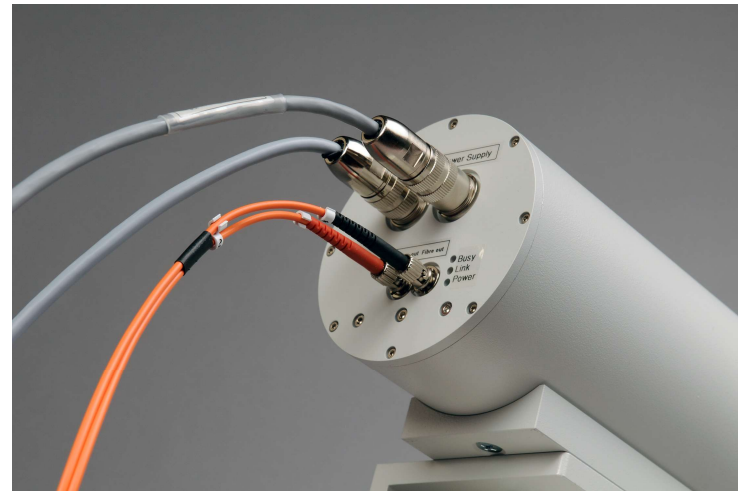
## EMC/CE Test: Example

EMC hardened camera systems for EMC test facilities



# CAM8 analogue

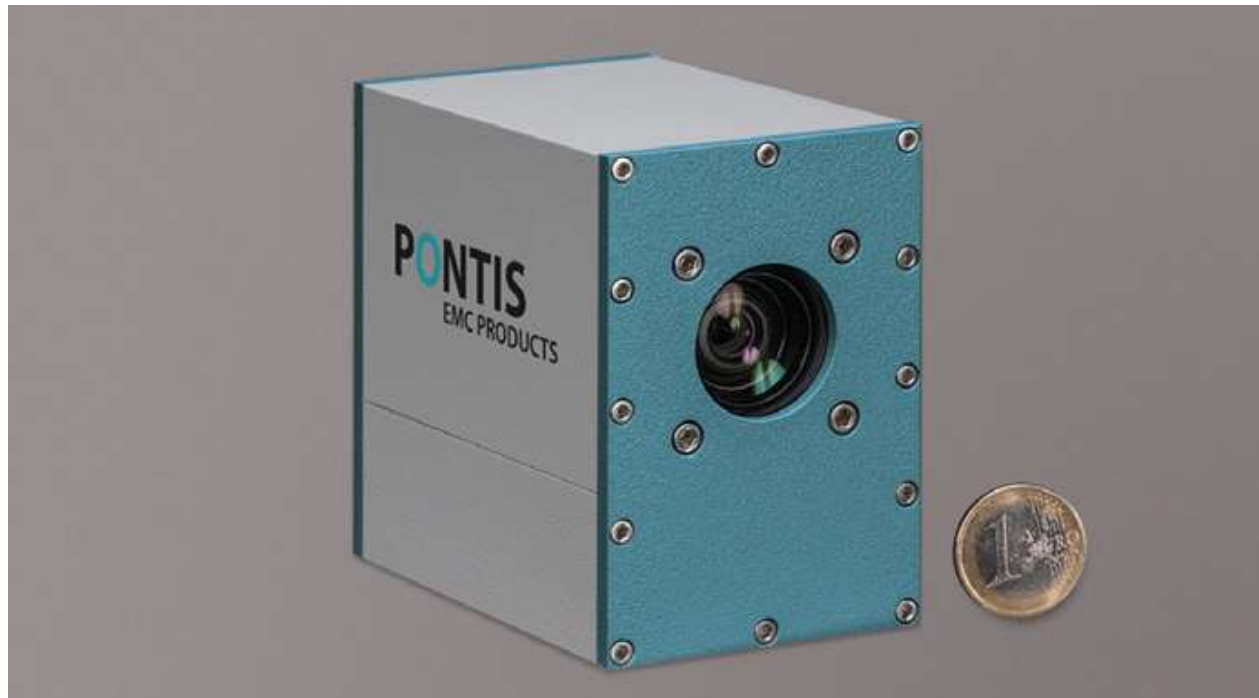
- Reliable, field proven analogue camera
- 36 times zoom
- High immunity (HIRF)
- Low emission
- In operation for many years all over the world



- The shielded housing contains the camera and converters.
- Fibre optic cables transfer the video
- Shielded power and control cables (pan&tilt) connect at the rear

# CAM5

- Small size analogue camera
  - Local control of PTZ, can be used w/o controller
  - Cost effective
  - Automotive applications (in car)
- The shielded housing contains the camera and converters.
- Fibre optic cables transfer the video
- Shielded power and control cables are connected at the rear



# HDCAM high resolution

- High resolution
- HD-SDI interface
- No compression
- No delay
- Compact size
- The shielded housing contains the camera and converters.
- Fibre optic cables transfer the video
- Shielded power and control cables are connected at the rear



# EMC Fibre Optic Converters

---

## EMC Hardened fiber Optic Converters

The demand for many different types of media to enter into the EMC test facilities increases.

But most of these devices cannot be filtered in the normal way, due to band width and data rates. If you use RF filter, the media source could be compromised and distorted.

The best solution is to convert the media and the transfer via fibre optic cables and the change back once inside the test chamber. Fibre optics is the most effective way to transfer data in to and out of an R.F. Shielded Enclosure System while maintaining the highest level of R.F. Shielding Effectiveness

### **NOTE:**

It is also important to verify that these converters can work within a high field environment and that they do not create any back ground EMI noise. All our converters are independently tested and test reports are available.

# EMC Fibre Optic Converters

## EMC hardened FO Converters

Ethernet-LAN

USB 2.0 / CAN / LIN /

Video FBAS / HDMI / RS232 / ....

Digital and analogue signals Transmission lines



# EMC Audio

---

## EMC Hardened Audio Systems

Besides the visual surveillance by cameras it is often required to be able to communicate with the engineers and or listen to the device under test .

We offer various solutions for audio communication and surveillance.

The audio intercom can easily be combined with the CCTV systems or provided as a stand alone system.

For complex testing environments we also offer custom design solutions and also modifications and upgrades.

### **NOTE:**

It is also important to verify that the Audio Systems can work within a high field environment and that they do not create any back ground EMI noise. All our Audio systems are independently tested and test reports are available.

# EMC Audio

## Audio Systems

- ASAT
- Uni directional
- Bi directional
- Multi systems designs

## Features

- Compatible with CCTV systems
- RF Immunity, 200v/m to 18GHz
- EMC compliant to CISPR 25
- Digital audio transmission
- Up to 6 channel system controllers
- Automatic gain control



# Controllers

---

- **Analogue controllers (CON4x, CON6x)**
  - From single up 4 resp. 6 cameras per controller
  - Local control of zoom, focus, pan/tilt
  - Analogue video output
  - Option for LAN and Software control
- **Various options**
  - Integrated Audio Intercom
  - IP support (network video server)
  - ICT Manual Iris control
- **HD controllers (HD-SDI and IP)**
  - High definition digital video (1080p)
  - Local control of zoom, focus, pan/tilt
  - DVI output
  - PC control and view
  - PECOS software
  - Web interface accessible via browser from any PC in the network

# Controllers for HD

---

- **HD Controllers additional features**

- Audio – integrated audio system operation
- LAN – for connection to local network
- DVR – digital video recorder, 2TB storage
- ICT - manual iris control (aka aperture control, F-Stop)  
there will be a button in front panel of controller.
- WDR - Wide Dynamic Display - this works to increase the light for dark situations and to decrease when the light is too bright. There will be a button on panel.
- LX - Long exposure - low light exposure, reduces the number of frames per second (down to 6pics/fr), not used for EUT in motion. Button on front panel.
- IS - Image Stabilizer - to reduce effect of vibrations or if wall mounted bracket moves
- The inclusion of a LAN port, allows you to control the system via a PC, along with our software, PECOS

# PECOS Software

---

## **Pontis EMC Control Software**

- Multiple high definition video feeds.
- Monitoring can be performed directly on the console or via the browser on any in the network.
- Supports 'on demand' and triggered recordings of notable events.
- Audio can be recorded and stored alongside video.
- Auto Event Detection, include lead-in and lead-out periods to ensure that important details are not missed, even if they occurred just prior to recording being started.
- Events can be re-viewed historically or exported to other storage for safe keeping.
- Automatic 'housekeeping' ensures that the system never runs out of space.
- One-click snapshots can be taken of the current scene
- PTZ support allows control of cameras via the web interface as well as the controller hardware.
- Includes control of advanced features such as iris and WDR functions ONVIF supported
- User definable overlay text on one or more camera feeds allows important details to be preserved alongside the footage.

# PONTIS EMC advantages

---

## **Very low emission**

- CISPR 22 – 20dB

## **Very high susceptibility**

- HIRF: up to 2000 V/m (pulsed mode)

## **Very high resolution**

- HDCAMs with HDSDI transmission
- full resolution of 1080p (better than VGA)
- No IP CAM, no delay, no compression

## **Very good connectivity with LAN interface**

- Integrated video recorder, snapshots
- Custom Event detection
- Driver for EMC test software (e.g. EMC32, Toyo et.al.)

## **Custom Solutions**

## **Very precise digital Audio transmission**

- Low noise, independent from cable length
- Sound level can be calibrated

## Customer Specific Developments (Examples)

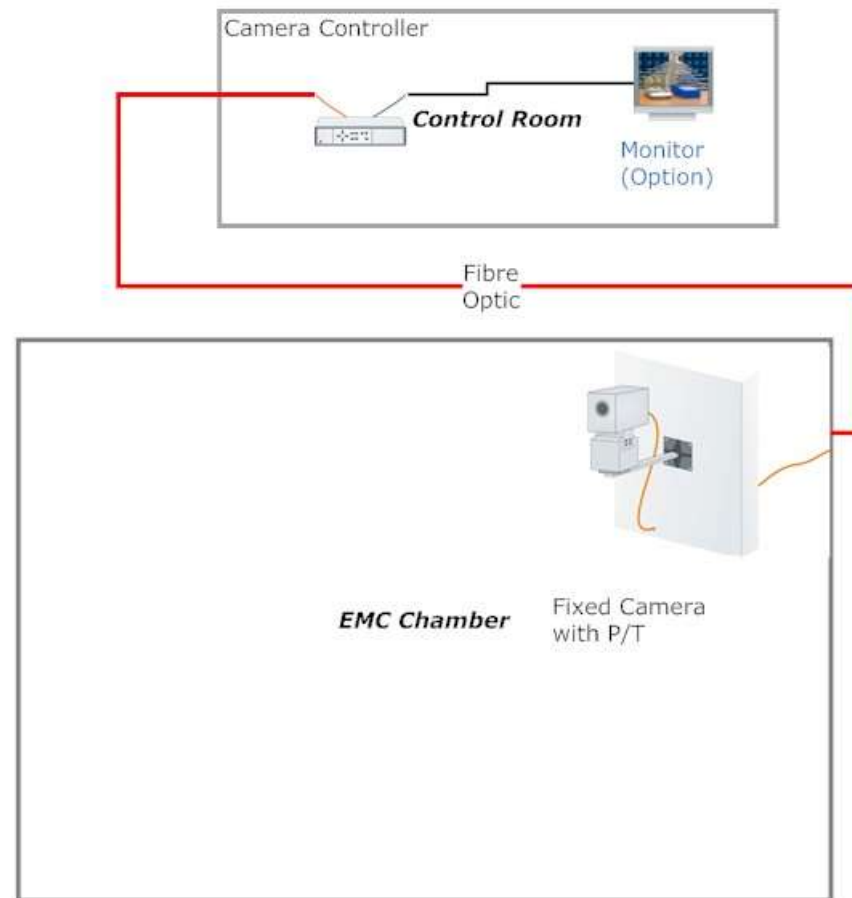


Multi point intercom  
with headsets

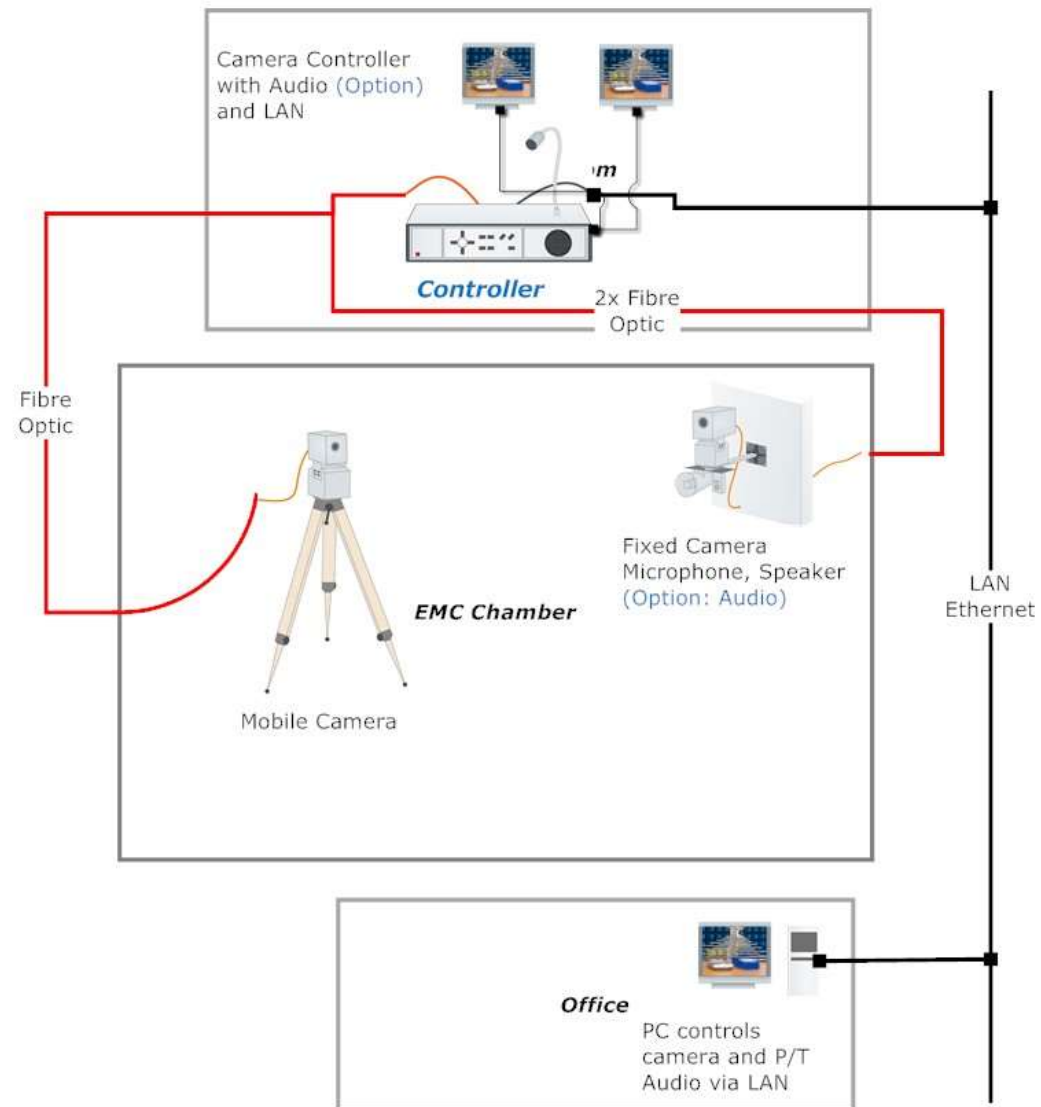
Shielded beamer



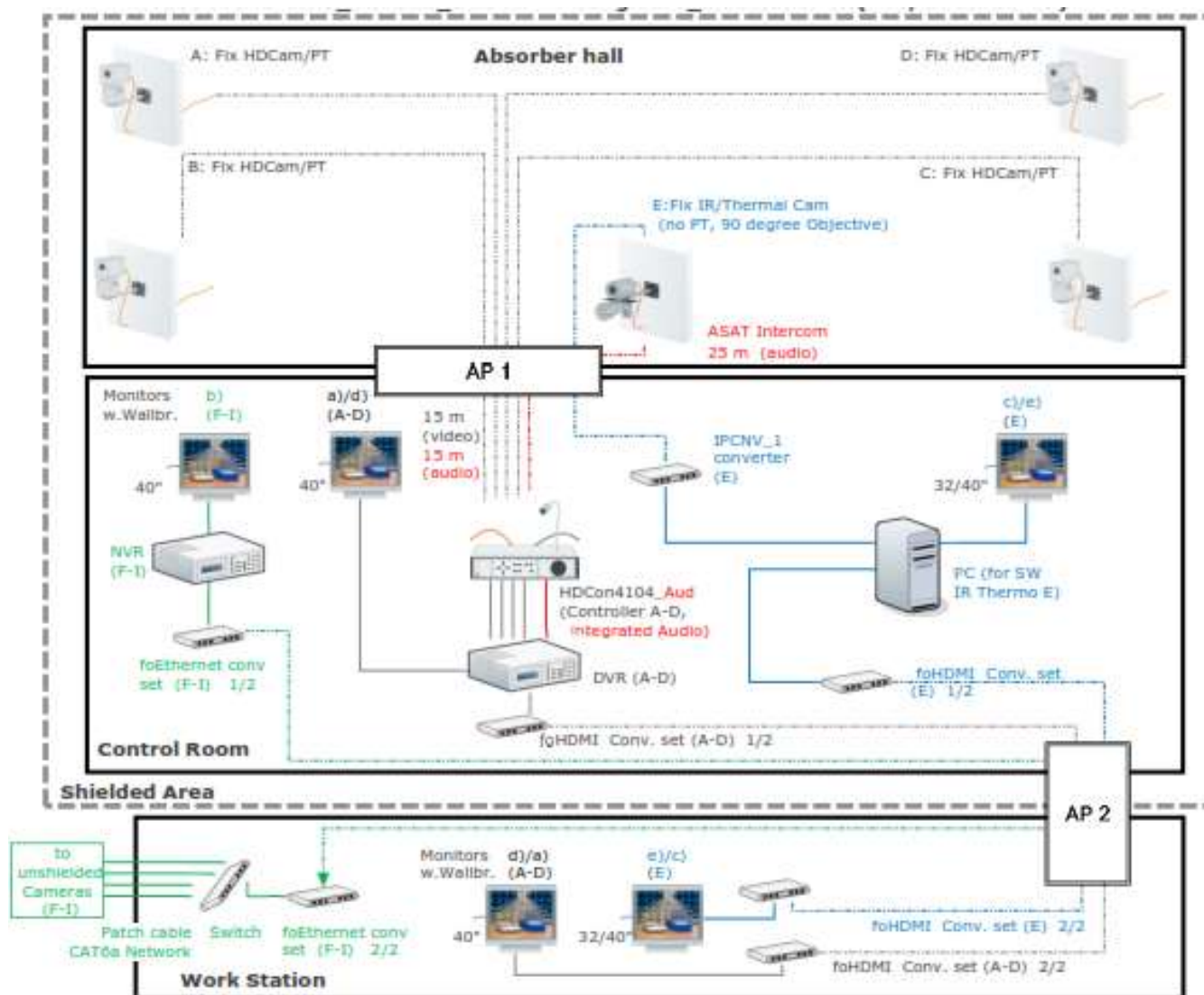
# Typical Setup (small chamber)



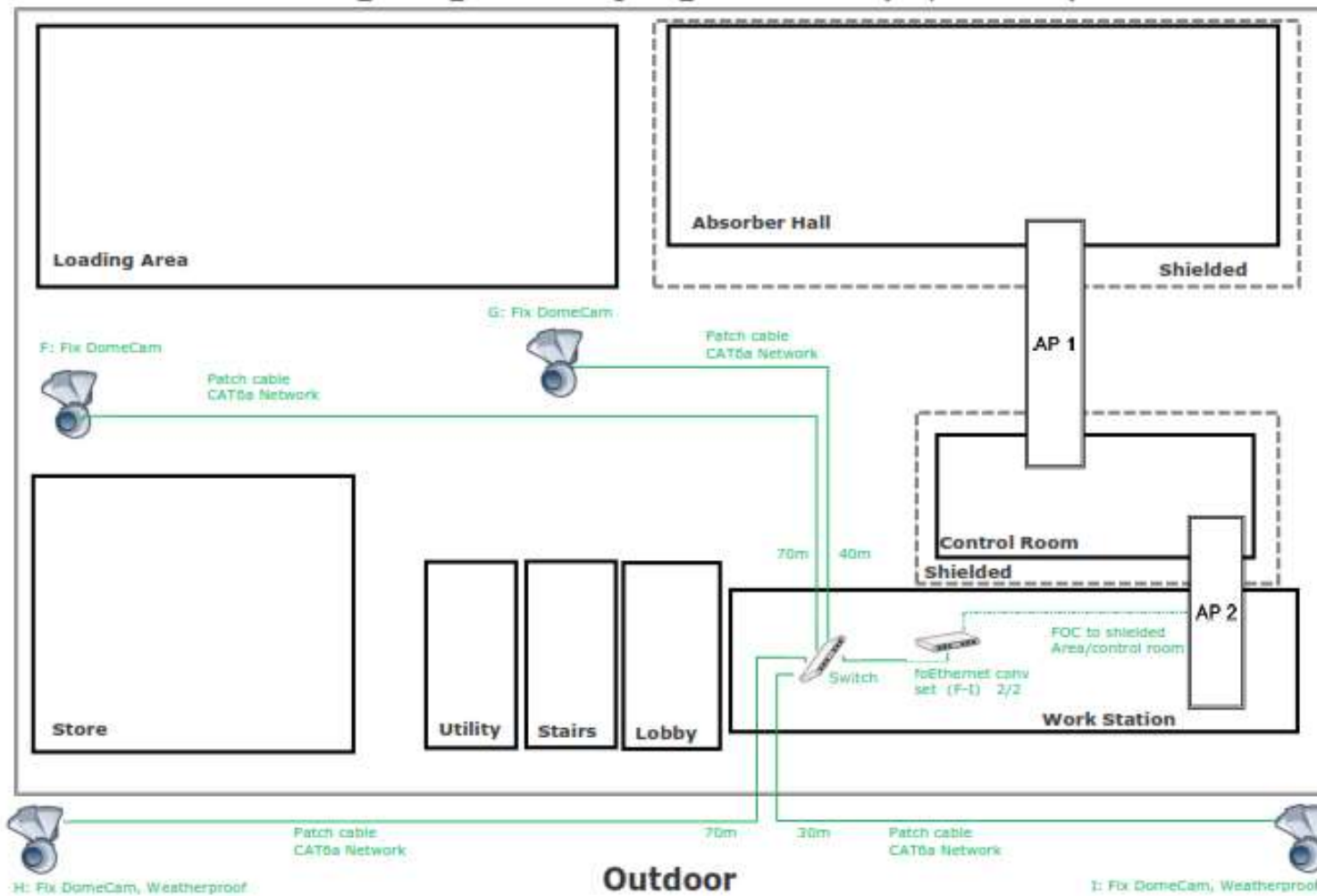
# Typical Setup (large chamber)



# Total System Solutions - Internal (1/2)



## Total System Solutions - External (2/2)



# CUSTOMERS

---

## Customers



# PONTIS - EMC Team

---

## Sales and Administration

- Erich Böhm, CEO
  - Alka Wan: Sales EU
  - Kevin Shao, Nanjing: Sales APAC
  - David Metcalf: business development
  - Samira Kloiber: Finance

## Manufacturing and Development

- Gunther Leipert: Management
  - Wolfgang Gräßl: Development EMC products
  - Miljan Pakovic: Development EMC products
  - Markus Pirzer: Technical support and service

# PONTIS EMC

---

- PONTIS EMC products are used World Wide
- German engineering and German quality
- We offer the broadest range of EMC hardened audio and video devices.
- Due to our strong engineering team we can offer custom solutions for all kinds of requirements.
- More than 50 sales partners world wide offer support for our products.
- Local office with engineering and sales support in Nanjing, China.
- Local technical support in North America (HV Tech)
- 20 Years of experience in the development of EMC related and EMC hardened electronic equipment

## Contact

---

### **Audio GmbH**

Irrenloher Damm 30  
D-92521 Schwarzenfeld  
Germany

Tel.: +49 9435 5419-0

Fax.: +49 9435 5419-19

Email : sales@pontis-emc.com

david.metcalf@pontis-emc.com

[www.pontis-emc.com](http://www.pontis-emc.com)

[www.audio.com](http://www.audio.com)