ICSS CUSTOMER SEMINAR 2012



FORGING AHEAD; ICSS WITH YOU

IP Intercom New Developments and Applications



SIMON YANG

ZENITEL

REGIONAL MANAGER

IP CCTV with Video Analytics



LEONG HIN CHONG
ICSS
DIRECTOR

Access Control with Biometric and Vein Readers and Physical Security Devices



DESMOND LIM

ICSS

SALES MANAGER

Fire Alarm System Products, Applications and References

FELIX SCHRIMPF
ROBERT BOSCH
HEAD, REGIONAL BUSINESS UNIT, FIRE

Projects Utilizing Latest Technologies



LIM POH HENG

ICSS

SENIOR PROJECT MANAGER

Electro-Voice Professional Sound Systems



GORDON LEE
ROBERT BOSCH
SALES MANAGER

Organizational Developments



S M SINGH

ICSS

CEO

QUESTIONS



ANSWERS

LUCKY DRAW !




zenitel
Zenitel Group 2012
STENTOFON
Speaker : Simon Yang
whencommunicationiscritical

CONTENT

- Zenitel Group
- Products
- Critical Solutions
- Reference projects
- New Turbine stations
- Live demo!

Group Facts

- Headquarters in Norway at Horten and Oslo
- Zenitel represented in 15 countries in 2012
- Total turnover of approximately € 70 M
- A listed company (Euronext)

- Belgium
- Brazil
- Caribbean
- China
- Croatia
- Denmark
- Finland
- France
- Germany
- Italy
- Norway
- Singapore
- Sweden
- United Kingdom
- USA
- India



Historical Milestones

1901 — First activities started by Marconi in 1901 under the name CTSF

1945 — Founding STENTOFON & VINGTOR

1997 — Acquiring Ring-Master and Ericsson Marine

2000 — Acquiring Philips M100

2001 — Establishing Zenitel

2006 — STENTOFON goes IP

2009 — Divestment of BENELUX Wireless act.

2010 — Head office in Norway

zenitel


"Zenitel have chosen to operate at the cross road of two worlds"
Communication
on one hand…
Security and Safety
on the other.

Mission & Vision

To be the leading provider of high quality audio solutions for critical and secured communication.

zenitel

CORE VALUES



Pride	We are proud of who we are and what we do
Accountability	We follow through on our commitments
Results	We want to create value for our Customers, Suppliers, Employees and Shareholders
Team work	We work as one team
Innovation	Our company culture fosters creativity, continuous improvement and innovation

World Wide distribution partners

- our biggest assets



- **Loyal and long term relationships**
- **High technical competence level**
- **Trained and dedicated customer support**

Quality Assurance

Quality Standards

- ISO 9001-2009
- ATEX directive 94/9EC



Environmental Standards

- RoHS / EU-Directive
- WEEE Directive / Waste Electrical and Electronic Equipment Directive
- Clean Design/Green Passport IMO Resolution A.962(23)



Type approvals

- China Classification Society (China)
- DNV (Norway)
- Lloyd's (UK)
- Bureau Veritas (France)
- Germanischer Lloyd (Germany)
- RMRS (Russia)
- ABS (USA)
- RINA (Italy)



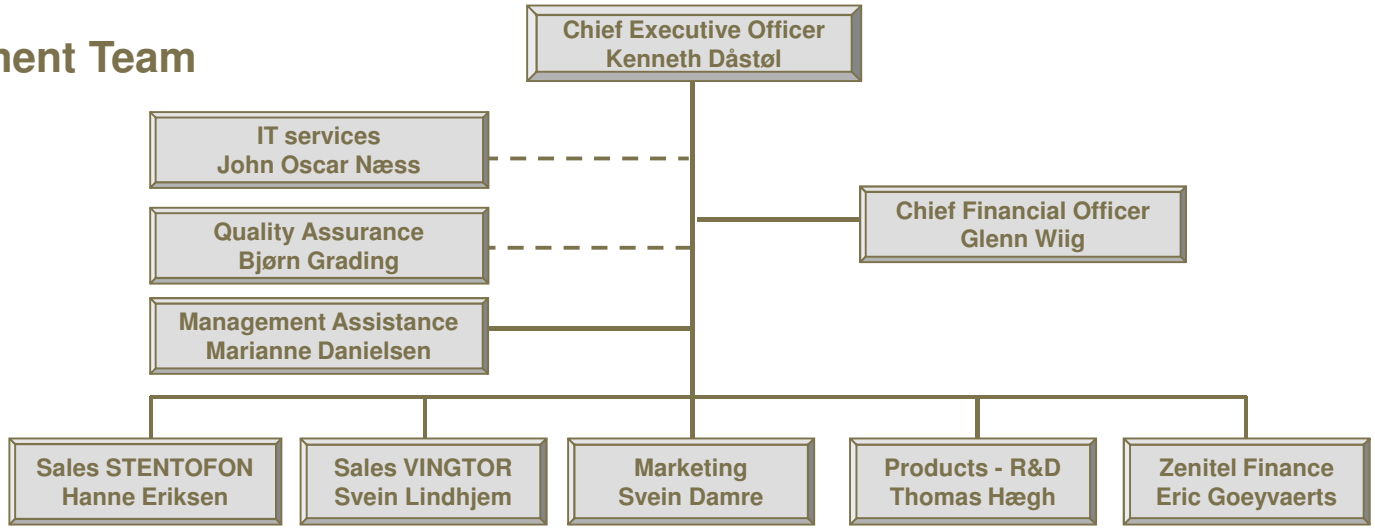
Accredited by companies

- Accredited by a numerous companies and is listed in several supplier databases

Achilles
Statoil
Shell Oil
Danish Defense
Copenhagen Airport
Etc.

Management Team

SENIOR





MARKETS



HEALTHCARE



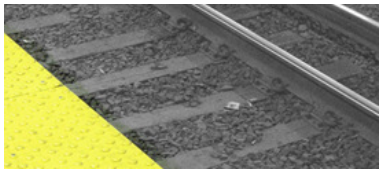
PRISONS &
CUSTODIAL



AIRPORTS



INDUSTRY



INFRASTRUCTURE
&
TRANSPORTATION



BUILDING &
SITE SECURITY



EDUCATION



PARKING

What's CCoIP® ?

(Critical Communications over IP)

CCoIP® =
VoIP + Security + Services/ Applications

VoIP = Just voice communication over IP networks.

Alphacom XE series

- The heart of the system
- Networking & Integration
- High capacity
- IP, Traditional or Hybrid systems



zenitel

zenitel → **Company**

STENTOFON ZENITEL GROUP → **Brand**

AlphaCom-XE → **Product**

STENTOFON Stations

- **Stations designed for specific markets**
  - Hospitals, Prison Cells, Industry, Oil&Gas
- **Stations designed to improve efficiency**
  - Not just to support the staff
- **High quality to meet demanding situations**
  - Work in the most extreme temperatures, roughest environments
- **Profound understand of the concept critical communication**
  - Always work and never fail



Heavy Duty Industrial Applications

- Chemical plant communication
- Combined PA/GA systems
- Dust proof operation
- Rugged operation
- High sound pressure





EX proof ATEX Station

- Oil platform
- Refineries
- Nuclear Power Plant
- Hazardous environments

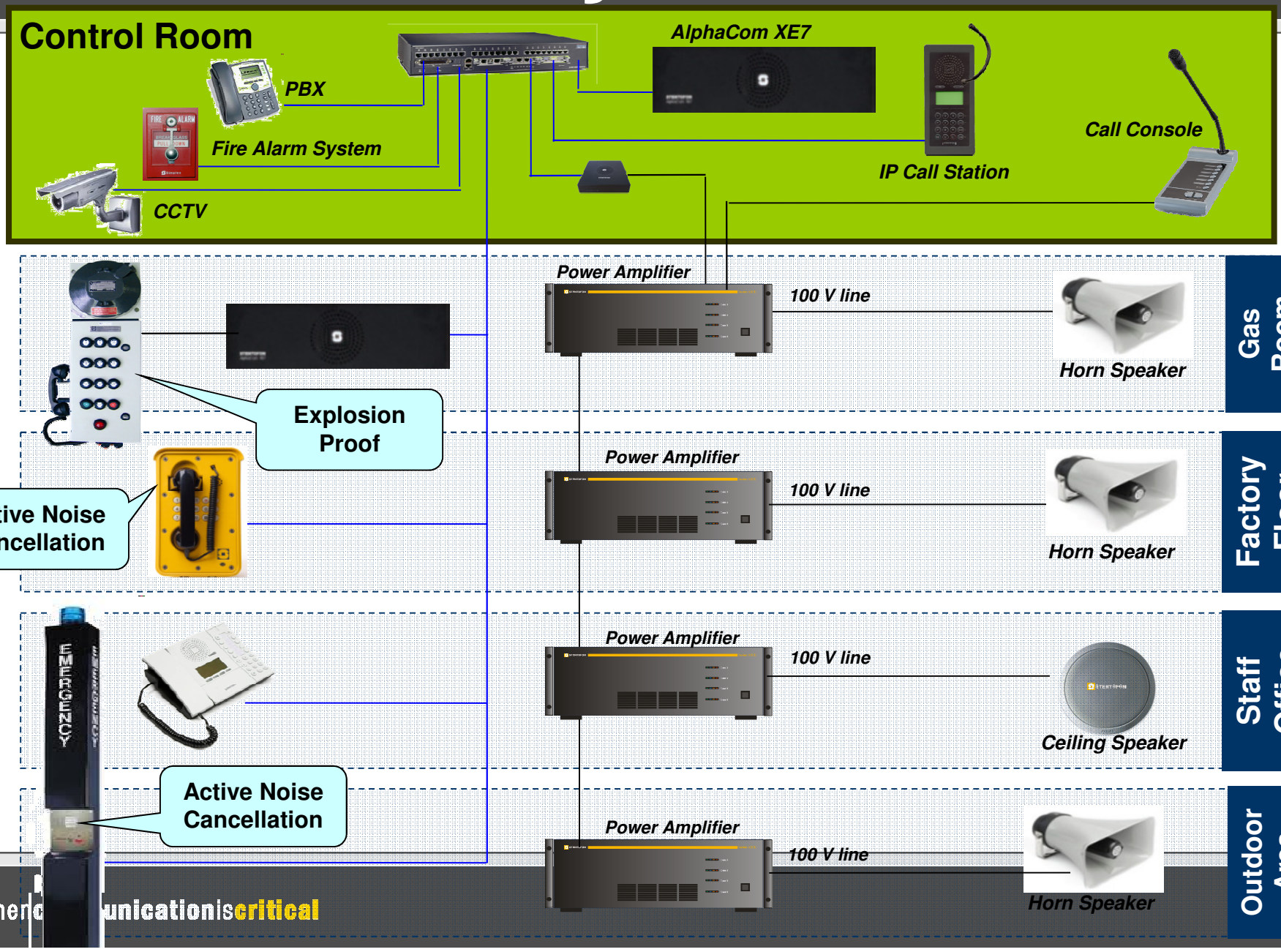


SPECIFICATIONS

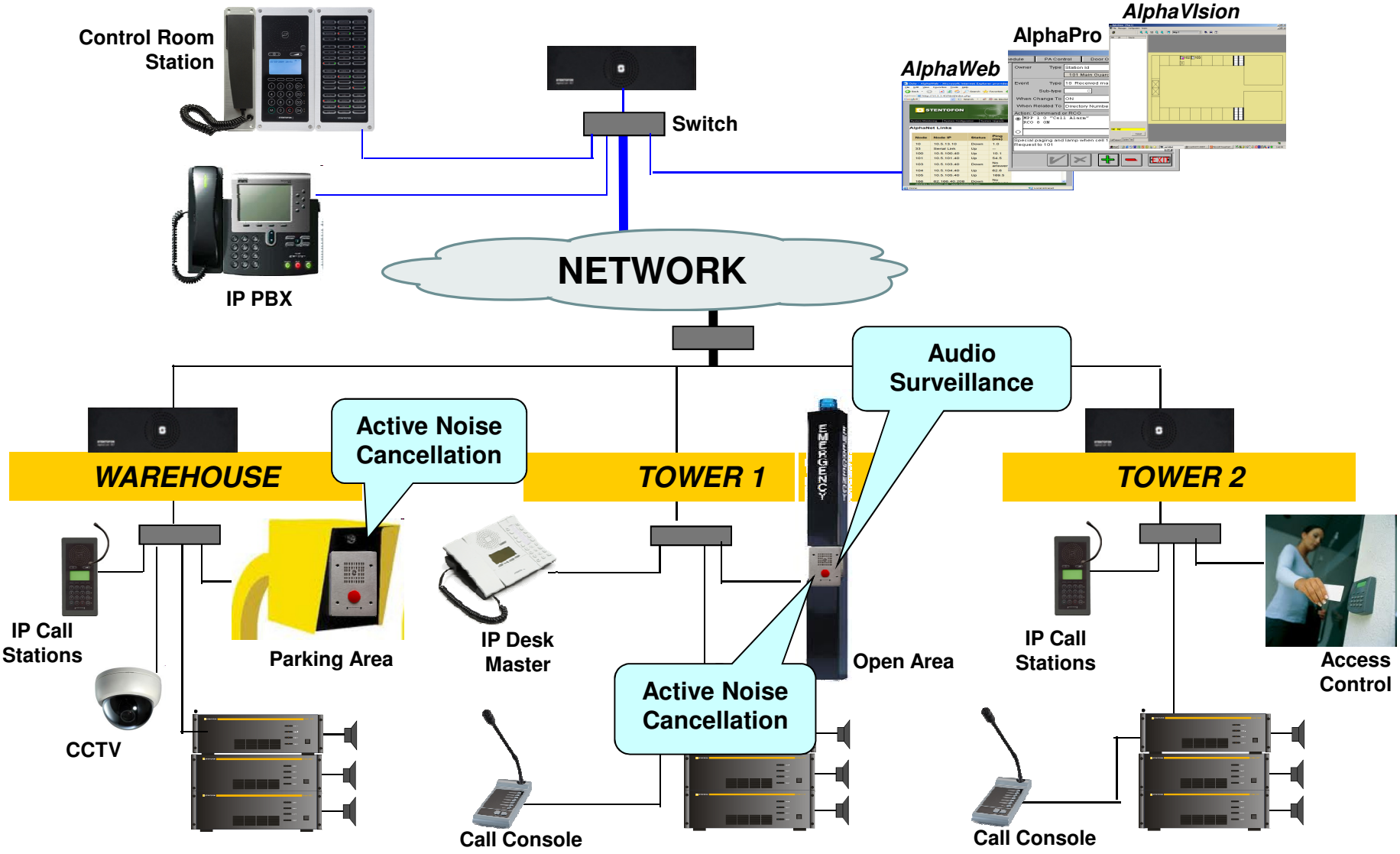
- Heavy Duty ATEX Station
- Rugged Weatherproof cabinet of lacquered steel
- Handset for soft speaking conversation
- External Loudspeaker
- Relay Output of optional signal device
- EX II 2G EEx ed(ib) IIC T6
- 3 buttons: M – DAK – C

Industry Solution

zenitel

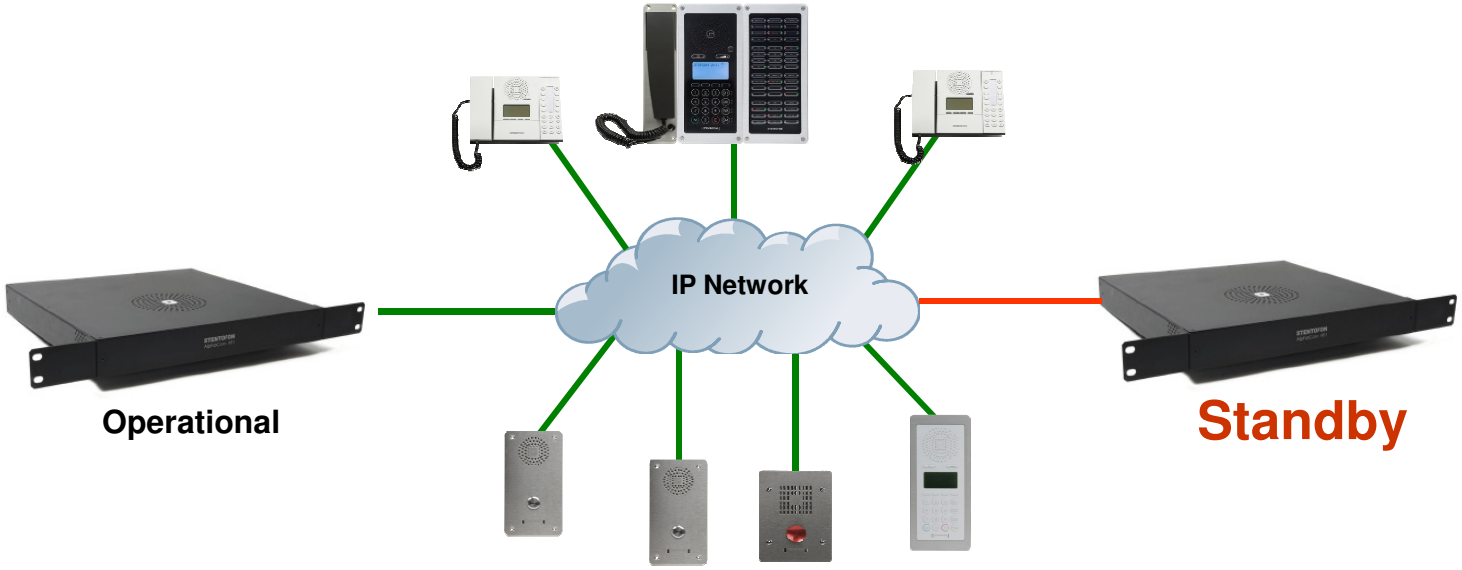


Building Solution



STENTOFON Redundancy

- **1+1 redundancy solution (one XE server in standby)**
- **Use AlphaCom redundant IP interface**
  - Monitor status (keep alive)
  - Synchronization of configuration
  - If failure, standby takes over operational IP address with configuration of failed server
- **Redundant server can be in another physically protected area**



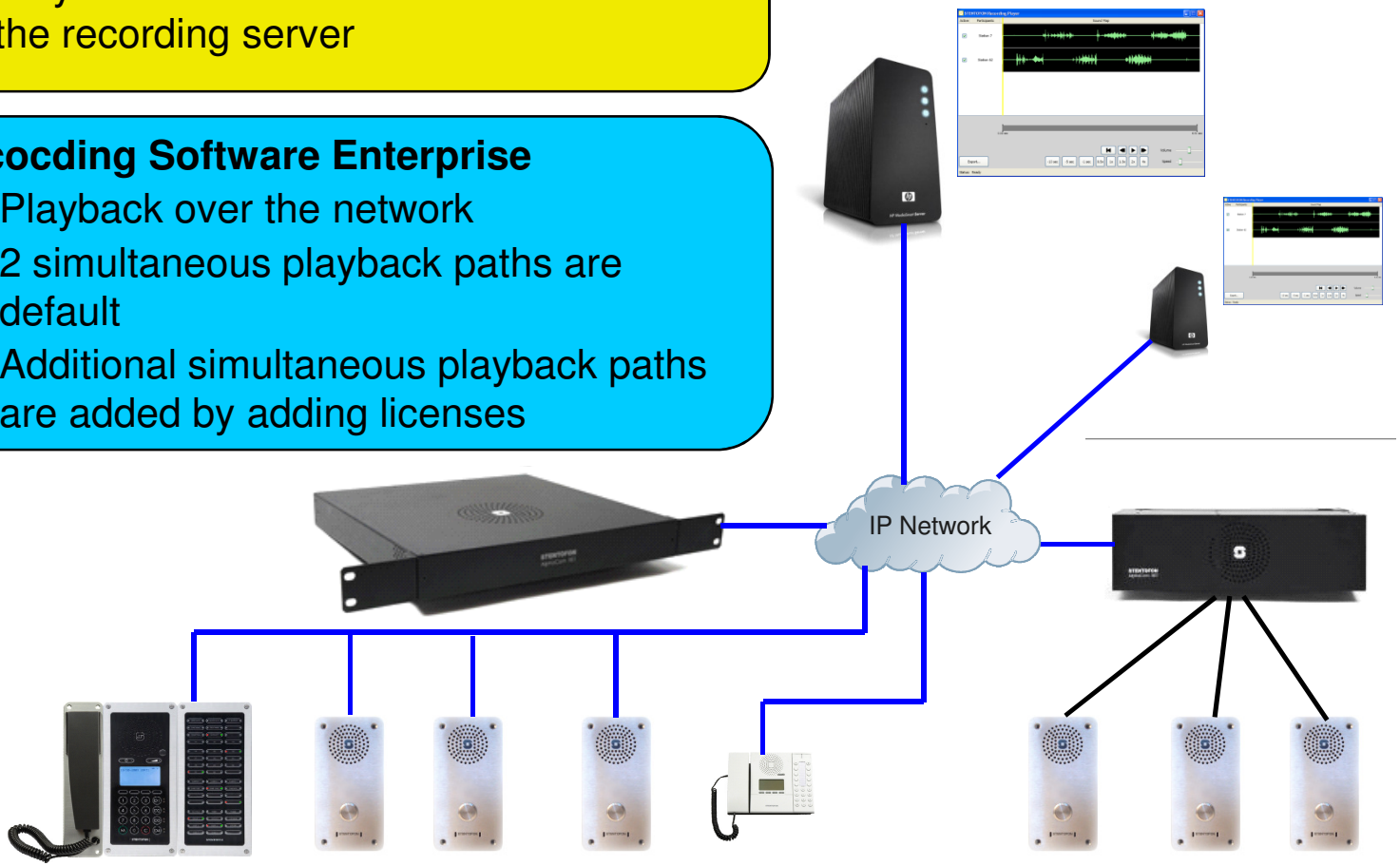
STENTOFON Recording

Recording Software Lite and Standard

- Playback from archive in the same PC as the recording server

Recocding Software Enterprise

- Playback over the network
- 2 simultaneous playback paths are default
- Additional simultaneous playback paths are added by adding licenses



Audio Features

- **Sound detection (VAD)**
  - Light control (silent alarm)
  - Combination with CCTV
  - Scream Alarm (prison, car park)
  - Professional baby call (children's hospital)
  - Guard help – automated cancel

- **Active Noise Cancellation**
  - Level 0-7
  - From 0 to 36,3 dB noise reduction



STENTOFON Analytics

- **Audio data is rich and untapped!**
- **STENTOFON analytics provides a new dimension to intelligent surveillance**
- **What can audio do?**
  - **Detect crimes & events by analysing audio.**
  - **Detects off-camera and around corners.**
  - **Detects irrespective of lighting conditions.**



Sound Packs

Glass Break



- 10m from source
- Characterises a range of glass window types being broken. Laminated, plate, wired and tampered glass.

Aggression



- 10m from source
- Characterises aggressive speech and shouting.

Car Alarms



- 50m from source
- Characterises the most common EU and US car alarms.
- Poorly lit car park

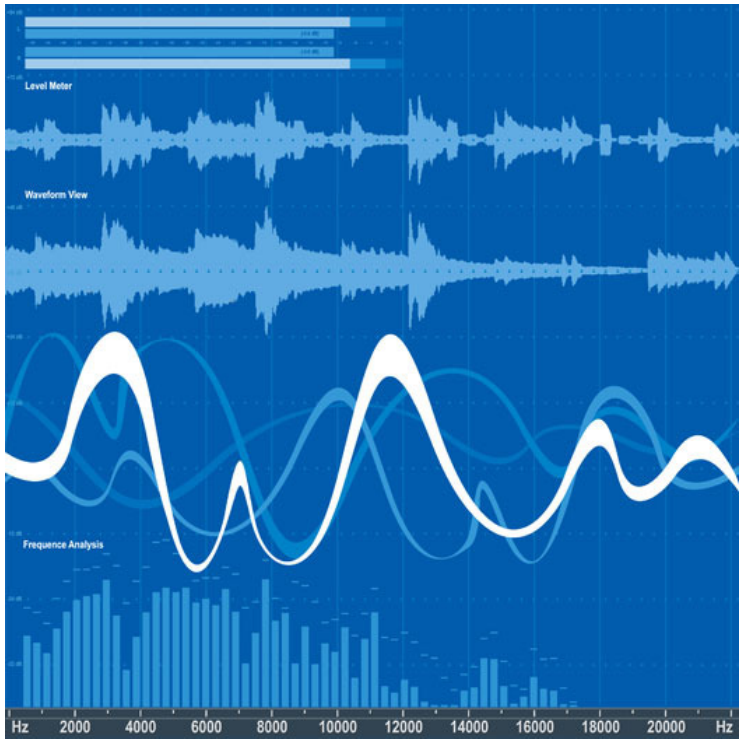
Gunshots



- Upto 200m from source
- Detects a range of gun types. Hand gun, shot guns, riffles, automatic riffles.

Retail & Commercial office, Gov offices, Hospital, City Center, University, MRT, Prison, Car Showroom, Banks, Night Operation Kiosk & etc

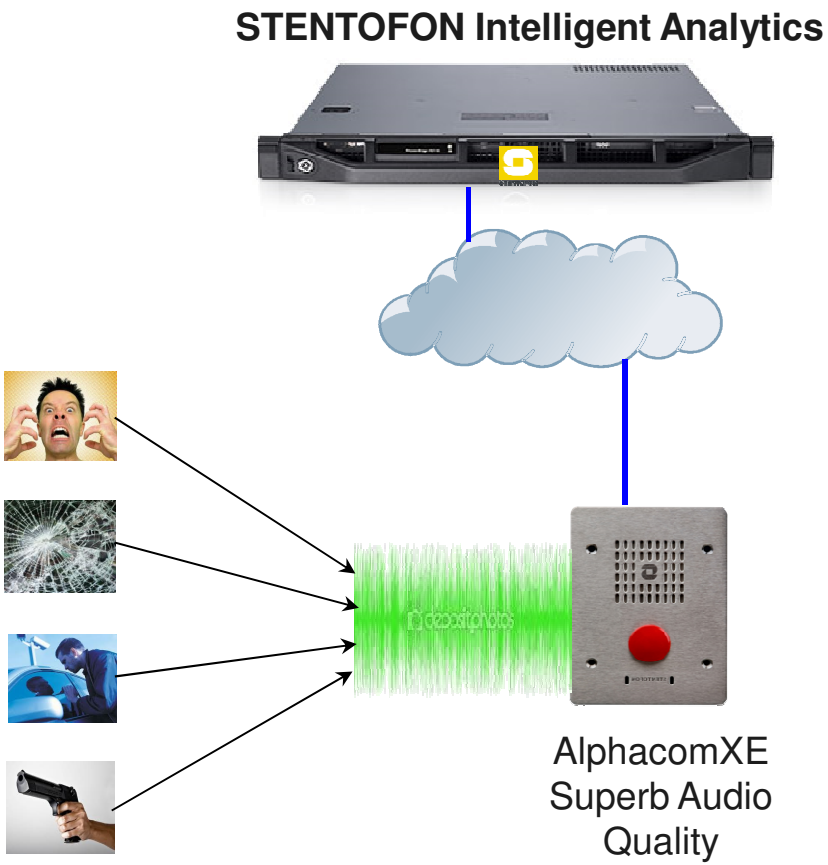
System Overview



- **CoreLogger™** – Compares a sound stream in real-time to one or more particular Sound Packs™

- **Sound Pack™** – Holds a concise robust summary of the time & frequency characteristics of a particular class of sound

How it Work



ACTIONS

- Turn camera on
- Trigger audio deterrence mssg
- Control room talkback
- Trigger recording
- Turn light on
- Trigger PA

STENTOFON Integration

Security ⟷ Communication ⟷ IT

Access Control - CCTV - Fire – Lifts - BMS - Network Infrastructure

SDK

API - .NET

Recording

Audio Analytic

Redundancy

Integration



HD Voice - PA – Enh. Audio Messaging

CRMV - Call Handler - SIP Server

Integration

Firewall

VPN

Power Over Eth.

Monitoring

Authentification

PA - IPBX - SIP - IP - PULSE - Radio



Some 3rd party integration partners


BOSCH

PELCO by Schneider Electric

Schneider Electric

DVTEL

Honeywell

SIEMENS

AVIGILON THE BEST EVIDENCE™

LENEL A UTC Fire & Security Company

PROXIMEX

AMAG TECHNOLOGY

Johnson Controls

OPEN OPTIONS, Inc. access technology

NISCAYAH

advancis SOFTWARE & SERVICES

Cortech Developments

CISCO

What To Remember

	FEATURES	STENTOFON
1	Modular Architectures	Yes
2	Integration Capability	Yes (Very Flexible)
3	Specialized Stations	Yes (Complete)
4	Compliance to all Standards	Yes
5	HiFi Sound Quality (upto 18Khz)	Yes
6	Active Noise Cancelling	Yes (good sound quality)
7	One Touch Hands Free (DAK)	Yes (good sound quality)
8	Easy programming with PC	Yes
9	Backward compatibility	Yes
10	Full IP Intercom	Yes
11	Very high reliability	Yes
12	CCoIP capability	Yes

Some Of Our Happy Customers



JSW STEEL, INDIA



SHANGHAI INT'L AIRPORT



TAYLORS UNIVERSITY, KL



BOKARO POWER, INDIA



PHARMA PLANT, S'PORE



MT. ELIZABETH HOSP, S'PORE



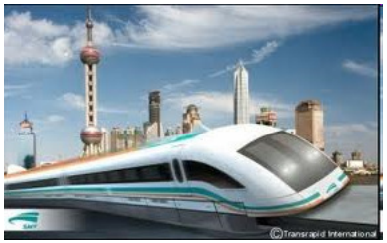
KLCC, MALAYSIA



SUNTEC CITY, S'PORE



TAIPEI METRO



SHANGHAI MAGLEV, CHINA



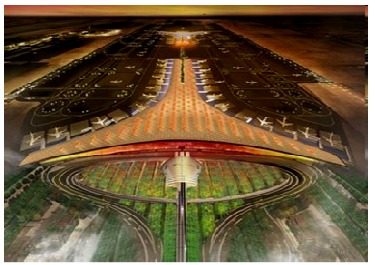
KOREA INT'L AIRPORT



S'PORE MGMT UNIVERSITY



NATIONAL UNIVERSITY S'PORE

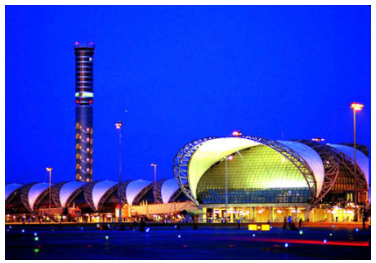


BEIJING INT'L AIRPORT



SHENZHEN INT'L AIRPORT

Some Of Our Happy Customers



BANGKOK INT'L AIRPORT



HARRIS NUCLEAR, USA



CHANGI PRISON, S'PORE



BANGKOK HIGHWAY



SAMSUNG SEMICON, KOREA



QINSHAN NUCLEAR, CHINA



ESPLANADE, S'PORE

BRUNEI ARMED FORCES



PRINCE OF WALES HOSP



FUJIAN POWER PLANT, CHINA



CHANGI INT'L AIRPORT

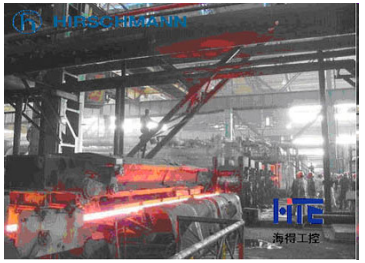
S'PORE ARMED FORCE



DUNG QUAT BIO FUEL, VIETNAM



IFC SEOUL



HUNAN STEEL, CHINA

Worldwide Customer

- A selection of customers using Zenitel equipment
  - Capitol Hill
  - Microsoft
  - Dubai International Airport
  - Federal Reserve Banks
  - Prison Madrid VII
  - Metro de Santiago
  - The University Hospital Of Münster
  - Washington University
  - Shell - Ormen Lange Refinery
  - Bane Denmark
  - All types and size of vessels

Building Security



Infrastructures



Offshore installations



Airports



Hospitals



Universities



Prisons



Vessels



zenitel




STENTOFON
turbine
Dare we call it an intercom?
whencommunicationiscritical

turbine

STENTOFON



when communication is critical

turbine

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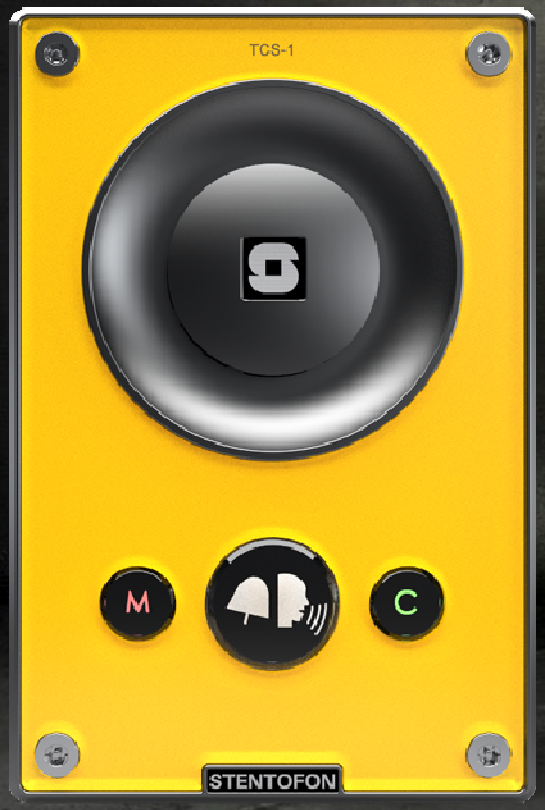

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TCIS-1

1008114010
TCAS-1

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TCIS-2

1008114020
TCAS-2

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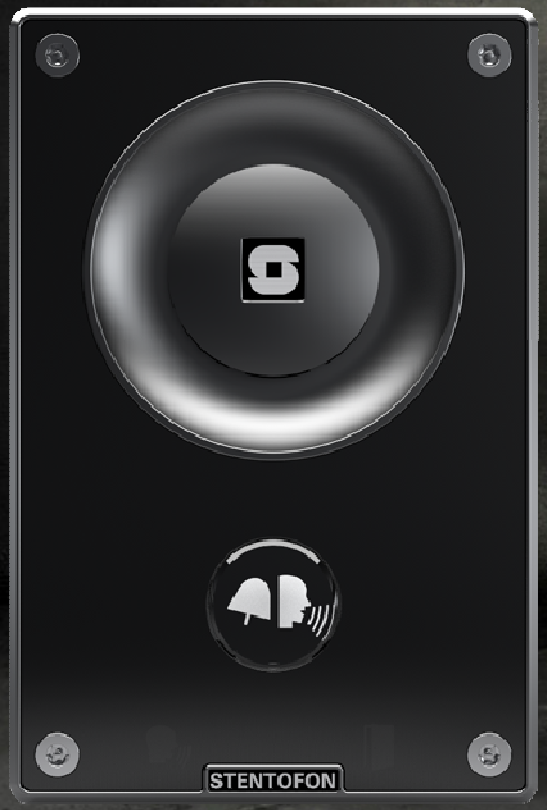

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TCIS-3

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TCAS-3

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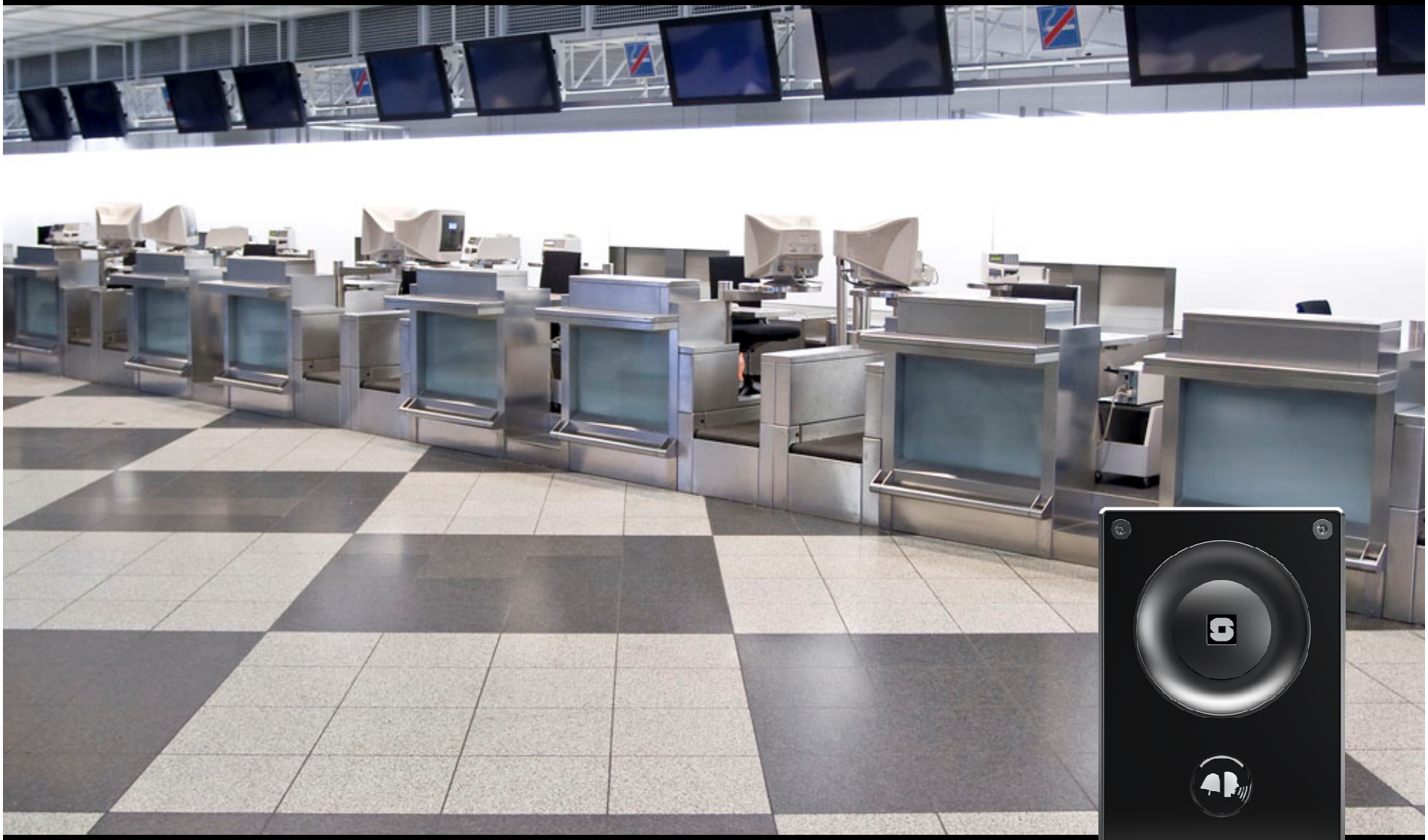

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Do you want your intercom to look like this?



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TCIS-4

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TCIS-5

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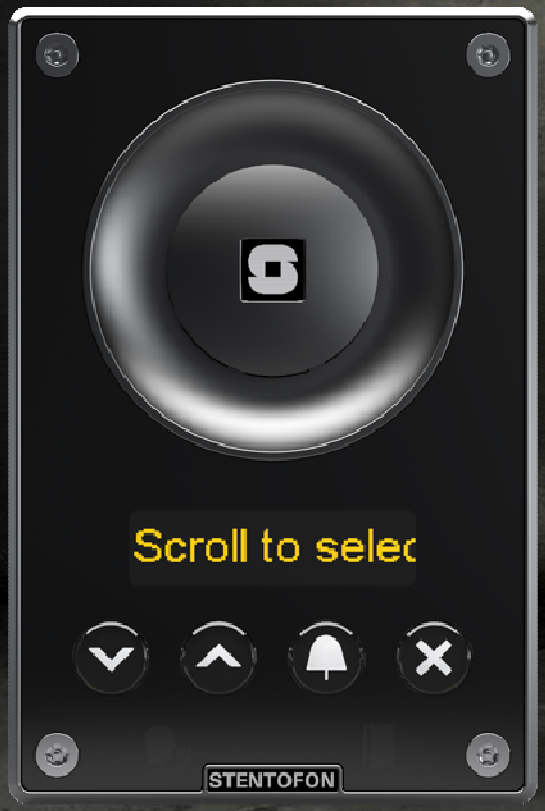

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STENTOFON

AlphaCom



IP + Analog



Pulse



IP



SIP



IP



turbine

STENTOFON

Key Features:

- Variety
- Crystal Clear Audio
- Extreme Robustness
- Modern Design

turbine

STENTOFON



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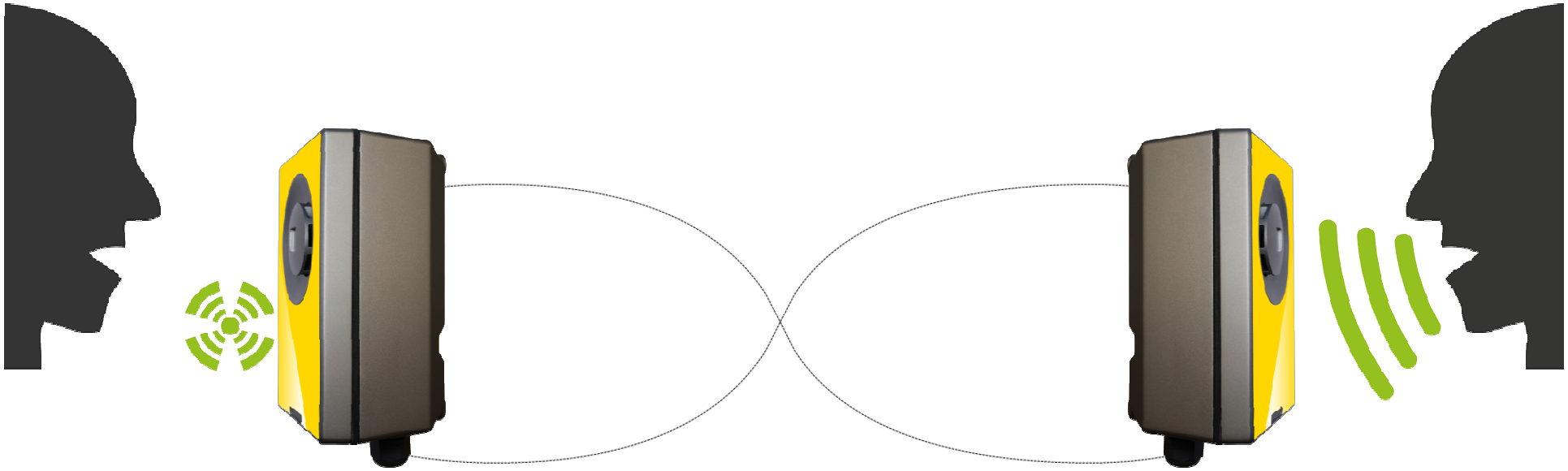
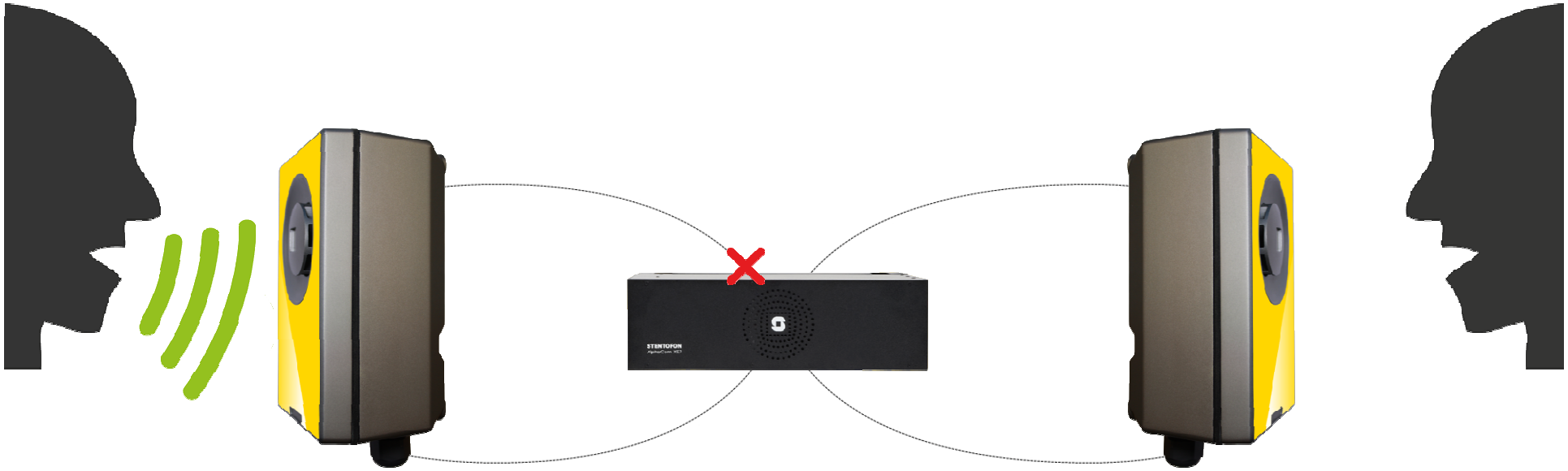
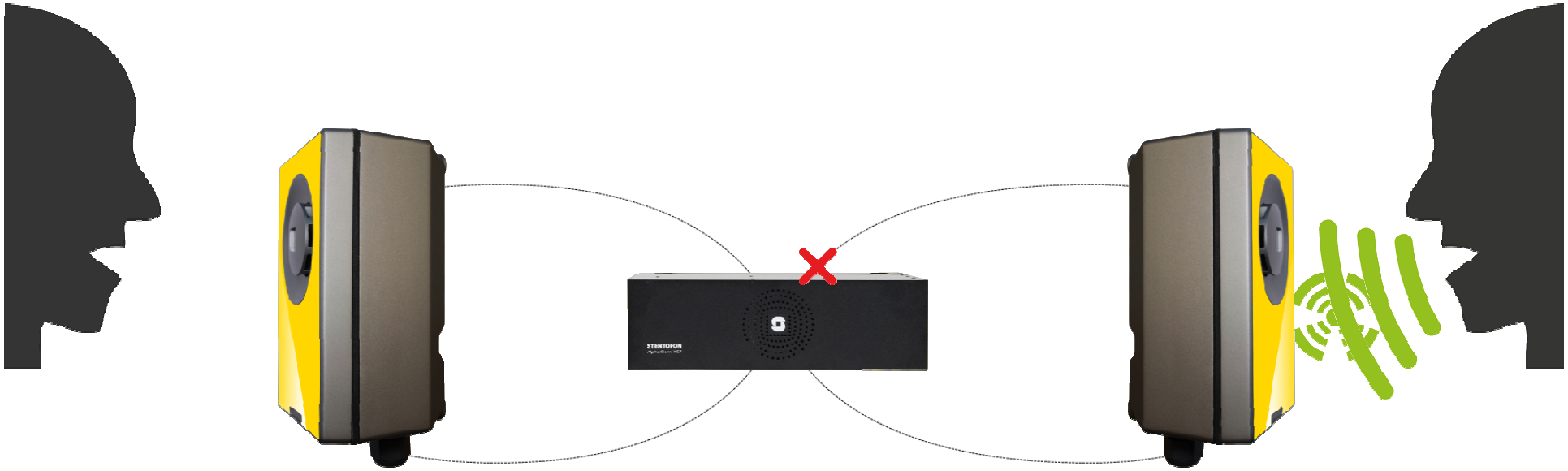
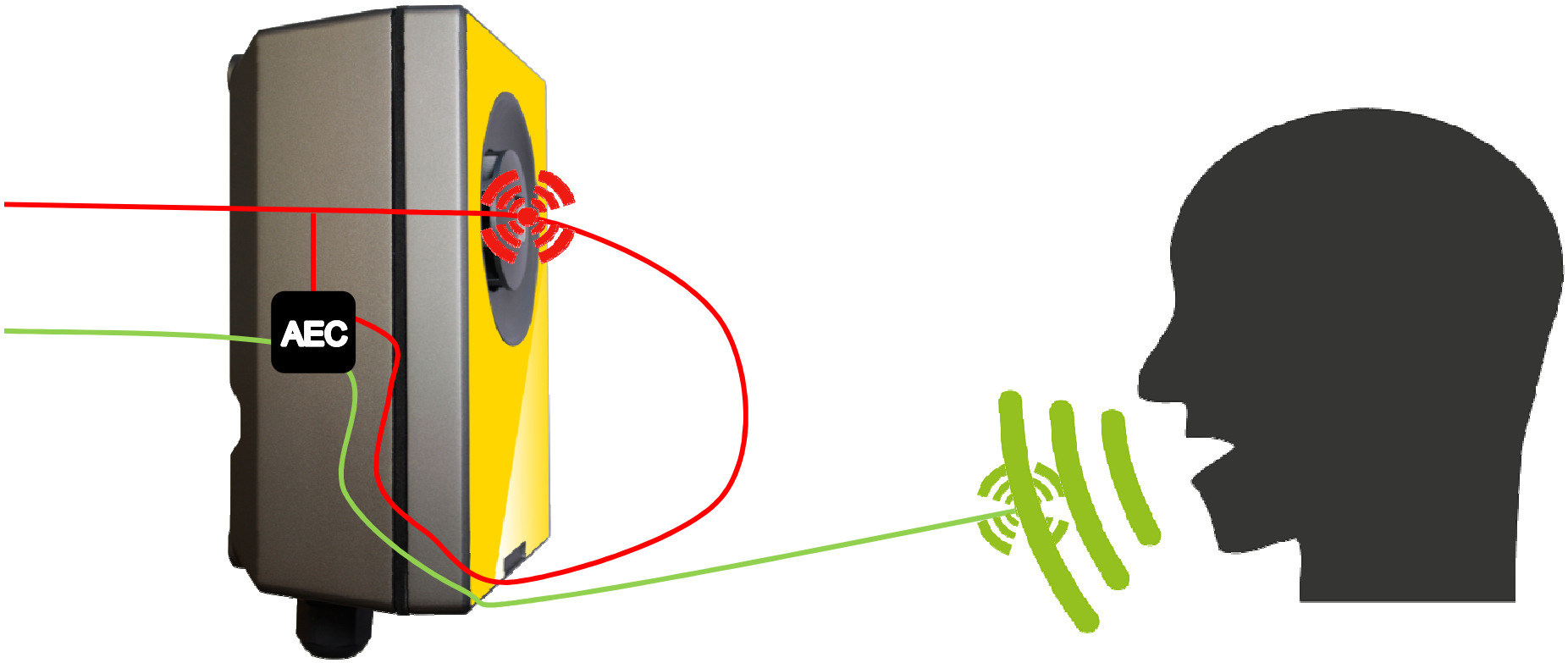


when communication is critical



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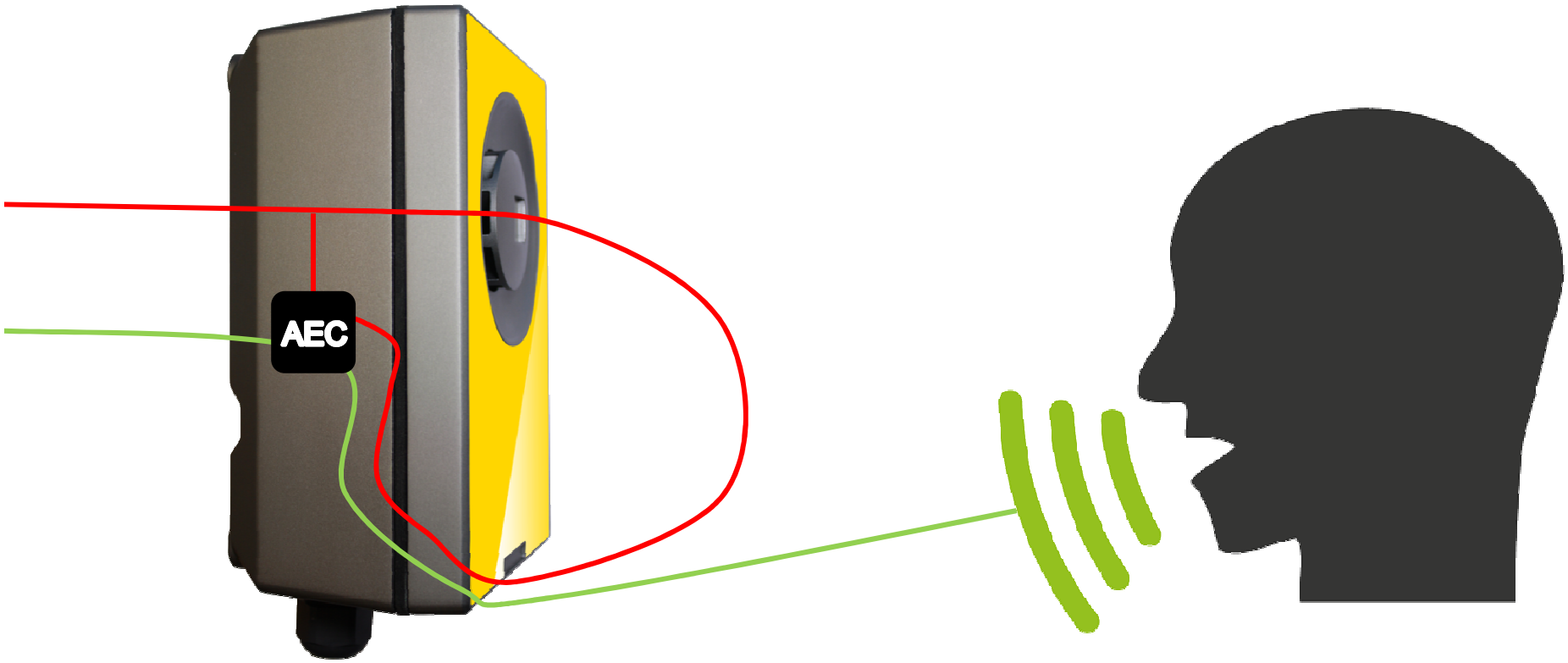
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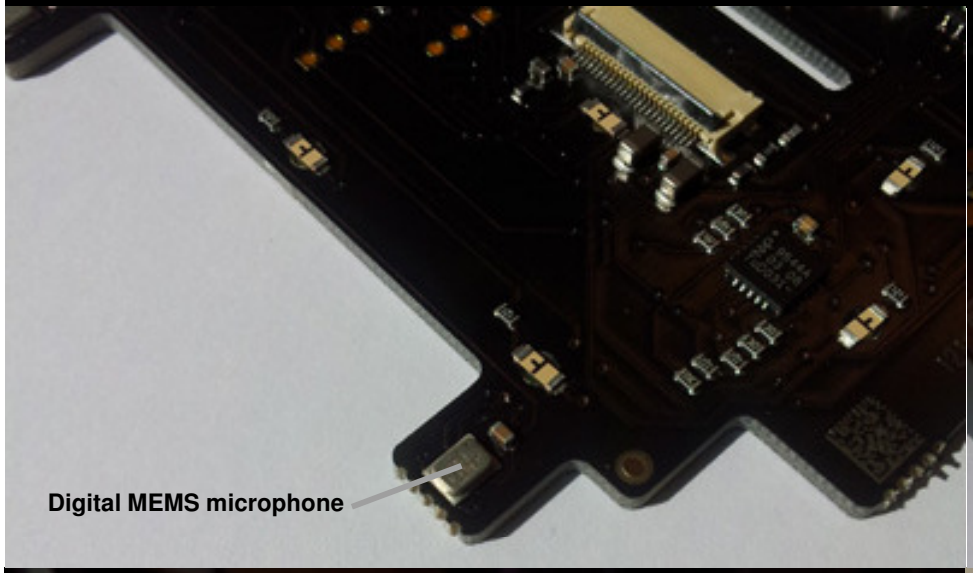
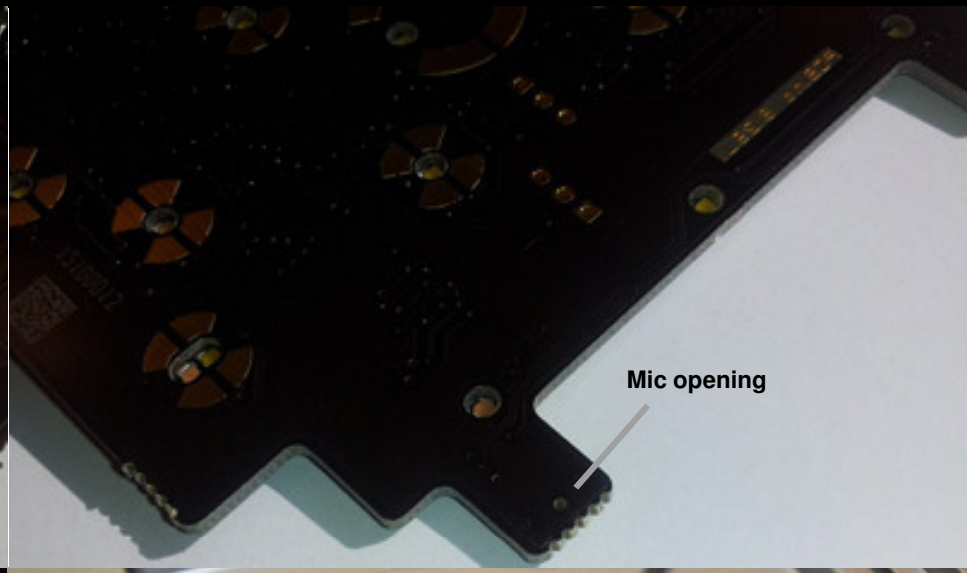
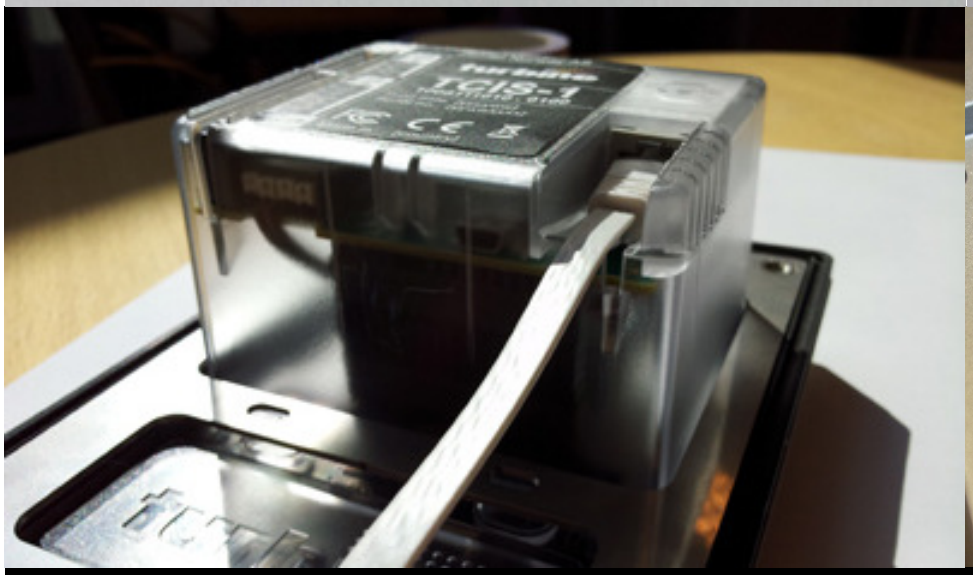


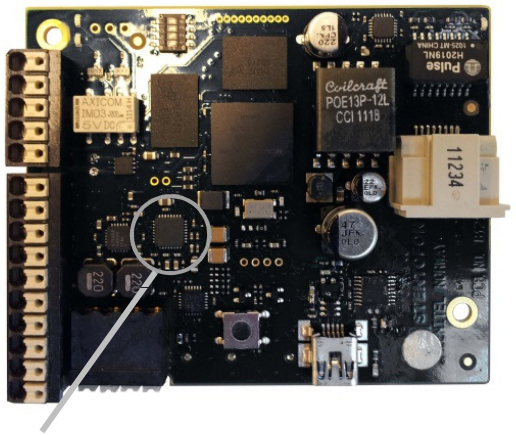






whencommunicationiscritical

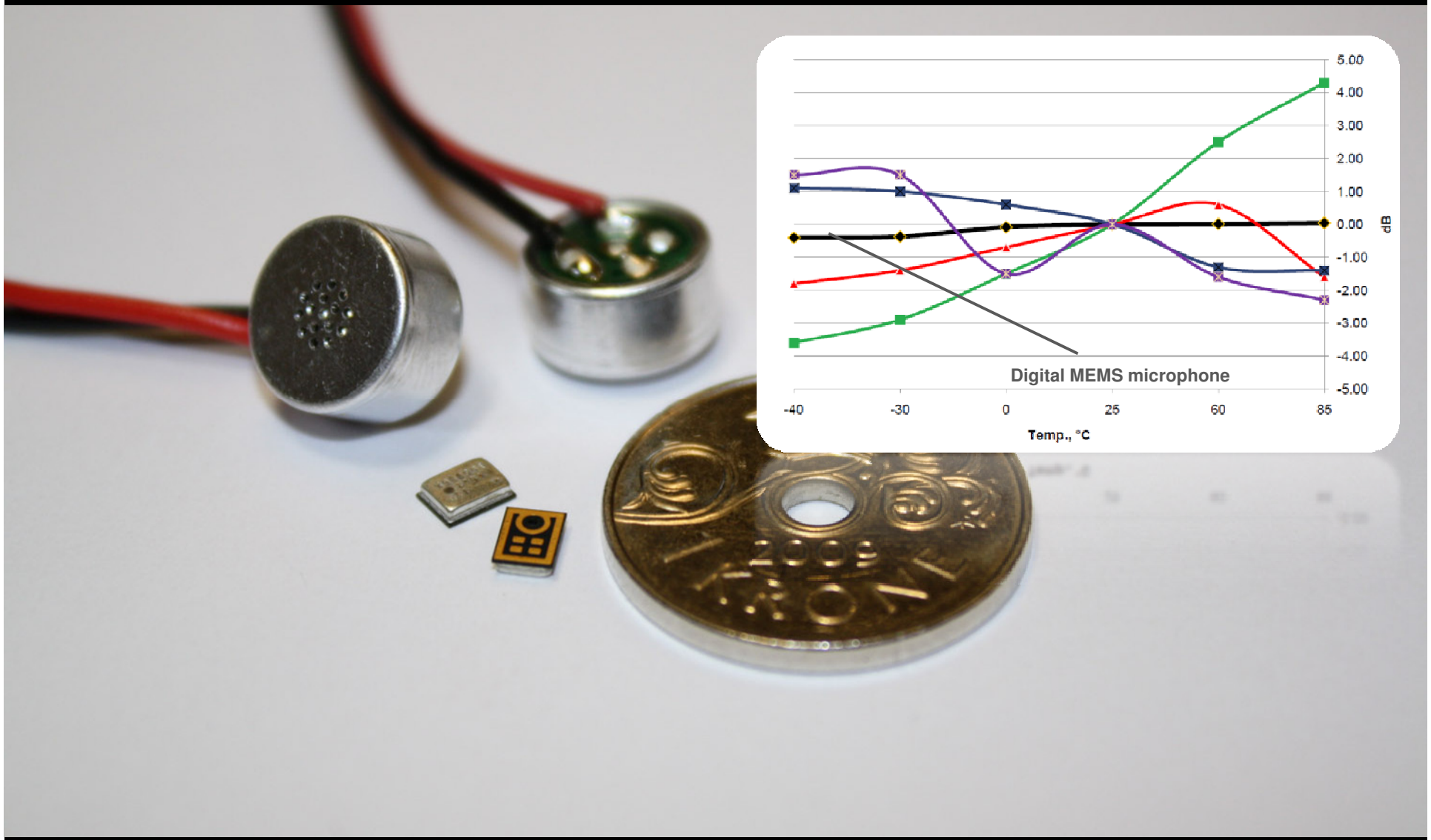
Distortion



10W, Class D Amplifier

turbine

STENTOFON



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when communication is critical

turbine

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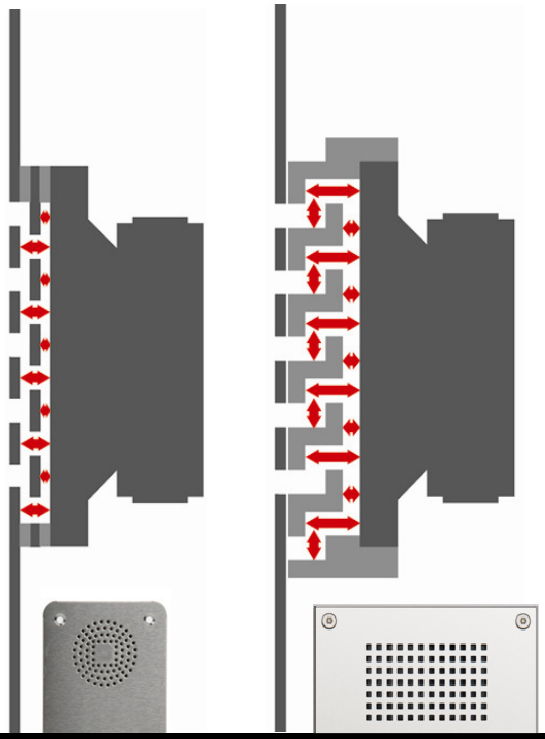
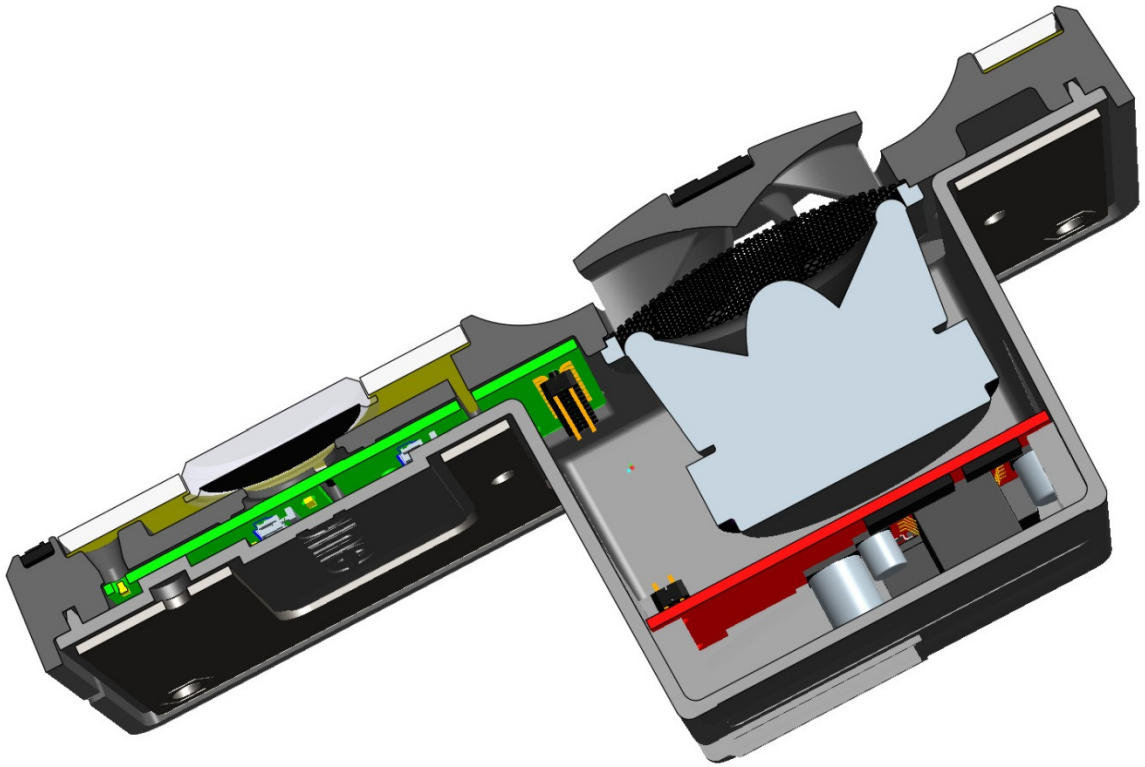
when communication is critical





turbine

STENTOFON



turbine

EXTREME ROBUSTNESS

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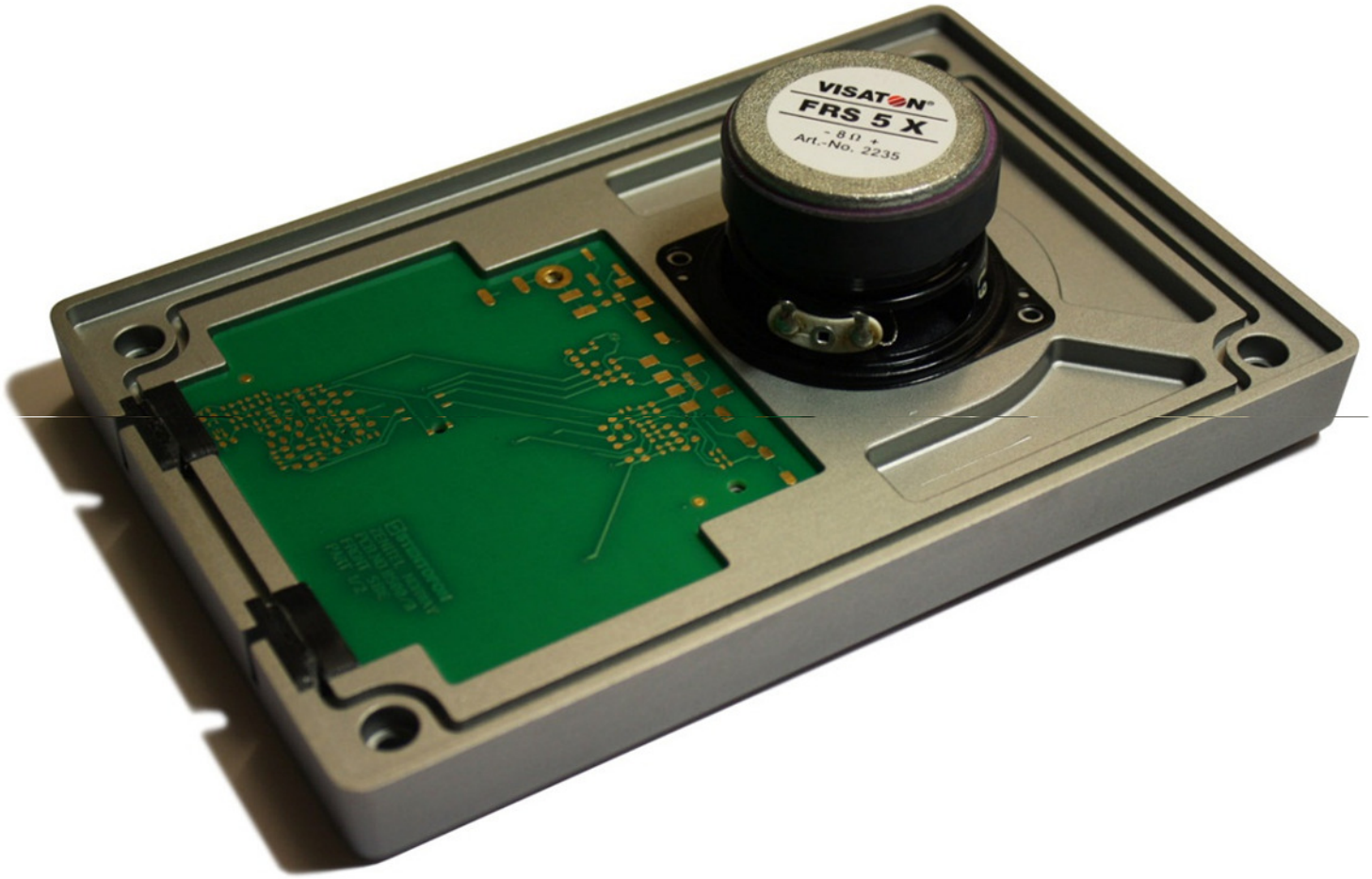
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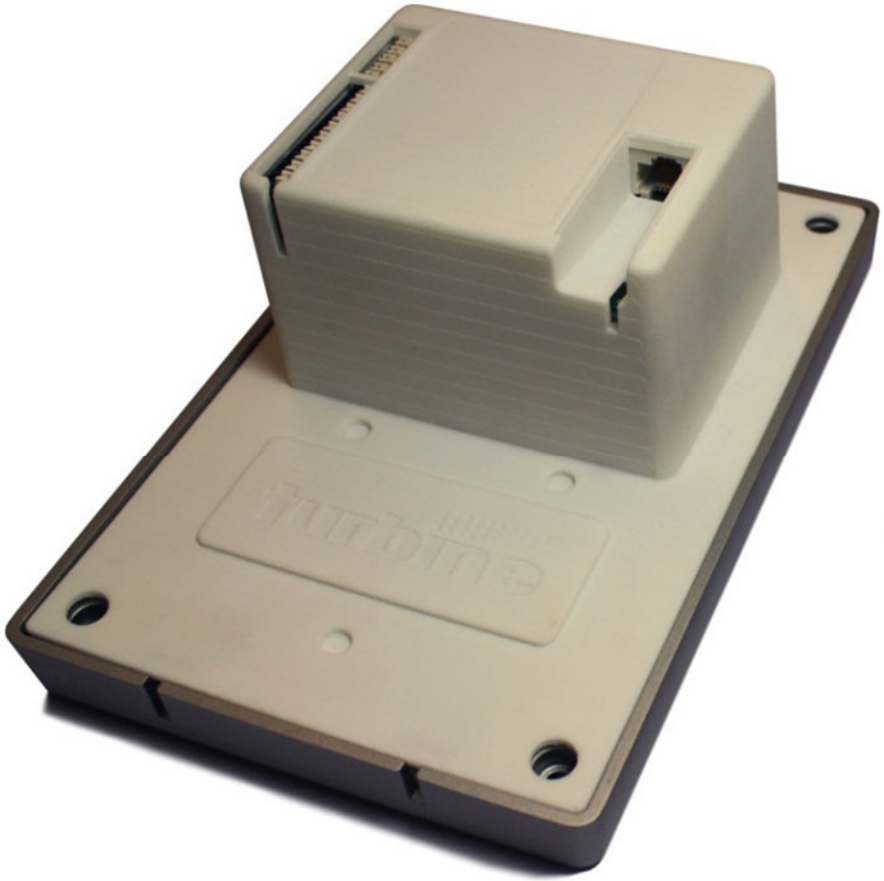
- 8 Ω +
Art.-No. 2235

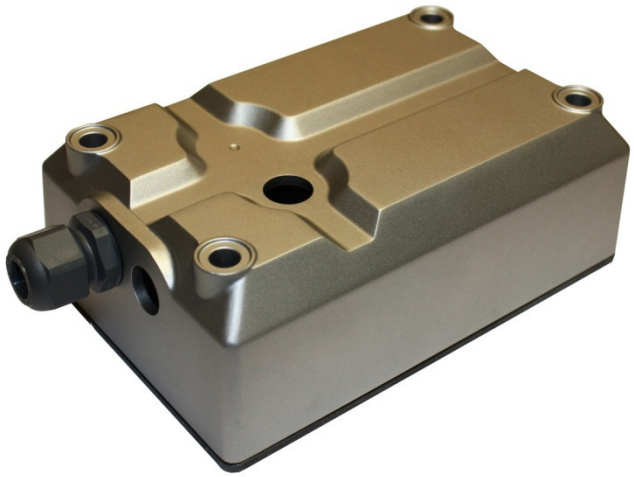




turbine

STENTOFON







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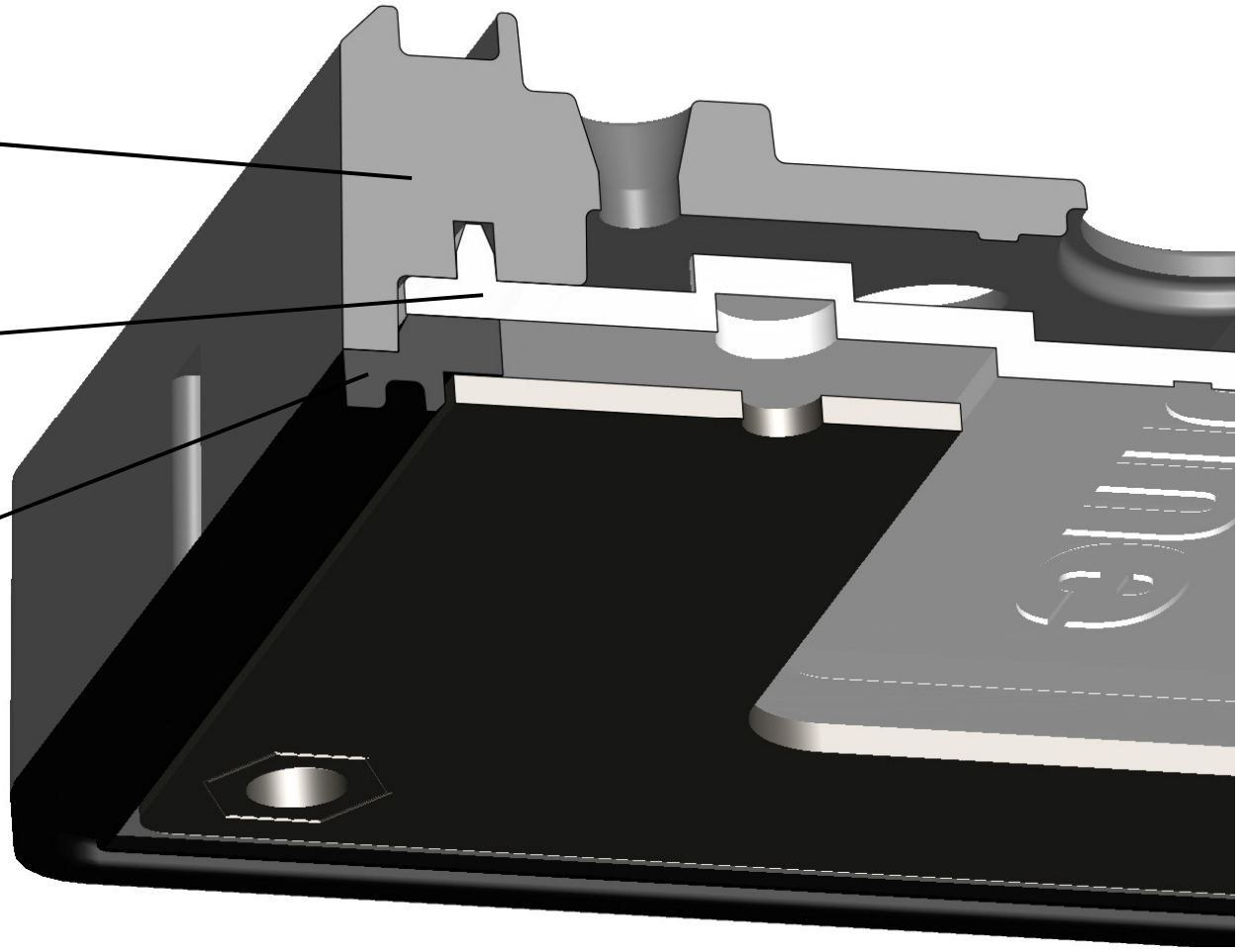
ALUMINUM FRAME

ELECTRONICS COVER

RUBBER GASKET



turbine

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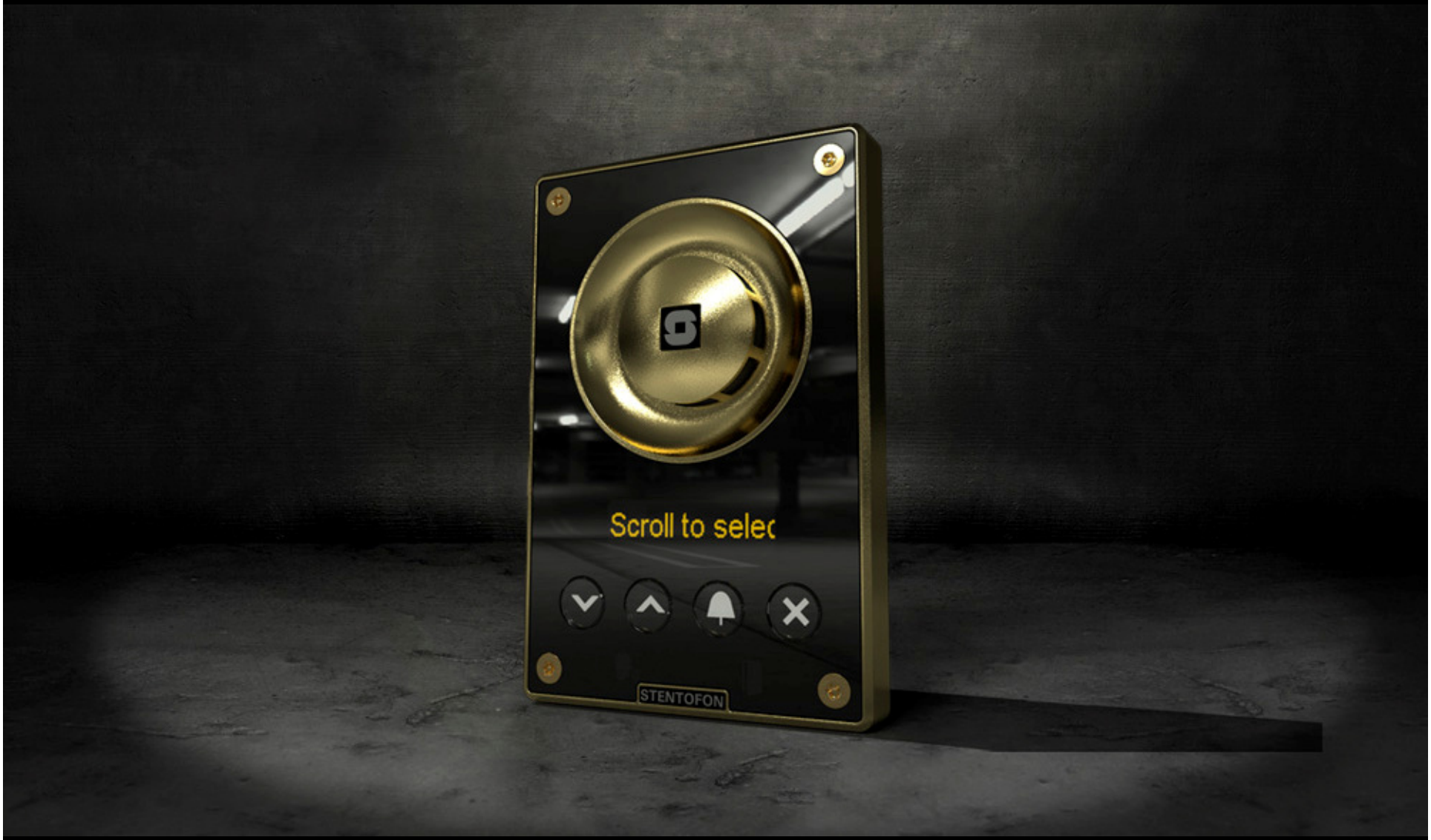

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turbine

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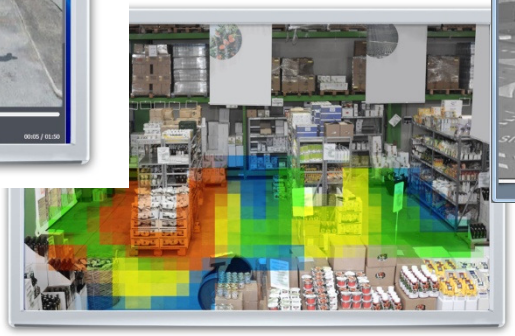
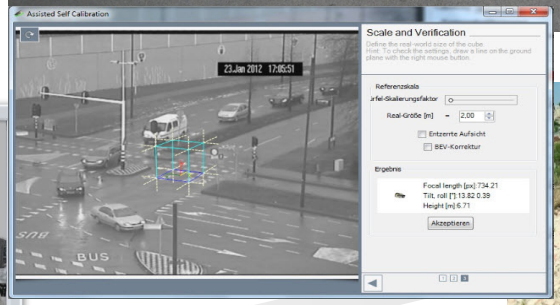
CUSTOMER SEMINAR 9 Oct 2012
Forging Ahead; ICSS with YOU !

IP CCTV with Video Analytics











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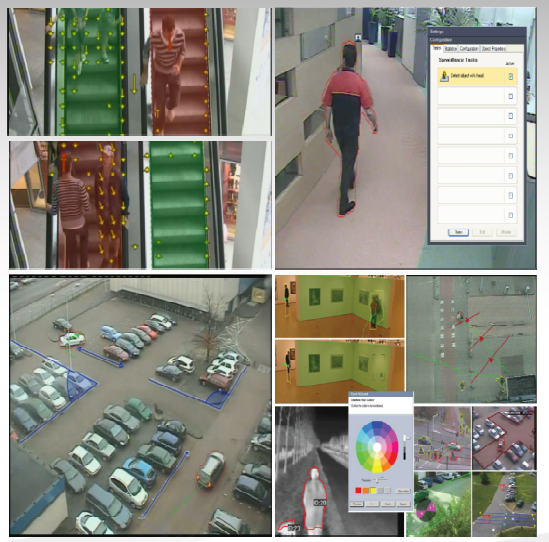
Agenda

- What is “IVA”
  - Intelligent Video Analytic?
- Why IVA?
- What can IVA do for you?
  - System & Operational Benefits
  - Applications
- IVA Architecture “Edge”, “Central” or…?
- Facial Recognition
- Live Demo
- Panorama 360 Deg BIG EYES



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Intelligent Video Analytic: definition

Video Content Analysis (VCA), also known as Intelligent Video Analytics (IVA) is the name given to the automatic analysis of CCTV images to create useful information about the content



Moving From Viewing to Detecting

IVA: Intelligence Video Analytics

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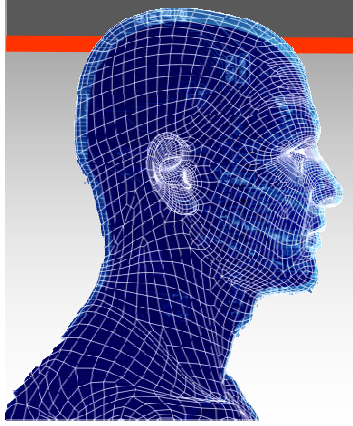
Why use IVA?



Studies show that CCTV systems, including DVR's are limited without added intelligence

Just watching 2 monitors:
After **10 minutes**, the operator misses ***45%*** of the action.
After **22 minutes**, the operator misses ***95%*** of the action.

*This data is for a relatively **empty** scene. How can an operator keep track of all the action in a **busy** scene?*

Hence the need for **intelligence** to effectively detect, especially in crowded and complex environments

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Why use IVA?

- With IVA, each surveillance camera in the system becomes an active member of your team, automatically:
  - Identifying events during continuous real-time image analysis
  - Alerting the operator by sending an alarm when it detects a critical event – turning your cameras into a virtual security team



Human operators do what they can do best: **make decisions**

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Reasons for Analytics

- ✓ Improve security
- Get better coverage by applications programmed.
- Alerting security to incidents
- Enhanced the monitoring efficiency

- ✓ Personnel optimization
- Achieve better coverage from guard force
- Make investigations more cost-effective and efficient

- ✓ Infrastructure optimization (Upgrading)
- Using Existing cameras
- Additional cameras / infrastructure justified if other business areas could achieve value and share costs

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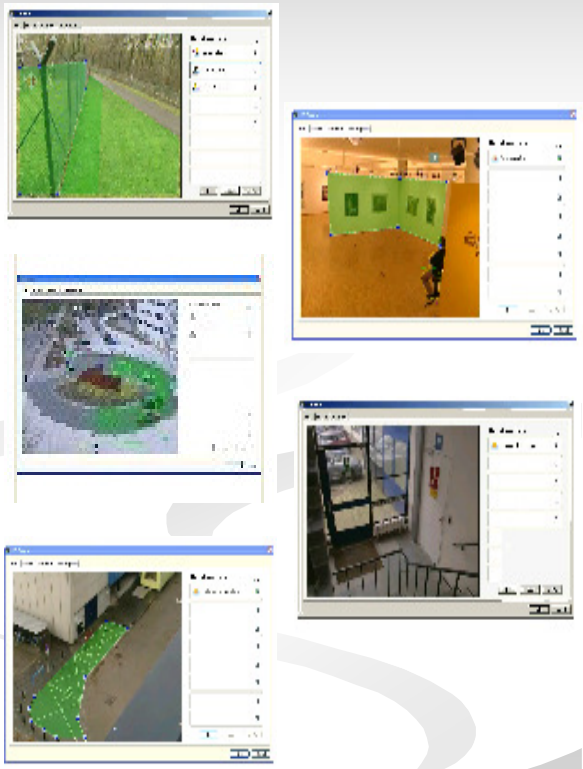
What can IVA do for you? – Increase your Security performance

- IVA transforms cameras in detection systems, capable of recognizing /detecting specific objects or events automatically:
  - Perimeter protection
    - Detect approach and possible breaching of perimeters
  - Securing public places
    - Detect people loitering in sensitive areas
  - Enforce Health & Safety regulations
    - Detect blocked emergency exits / Detect cars parked in no park zones
  - Museum collection protection
    - Immediately identify removal of an object
  - People counting
    - Monitor the number of people entering/leaving a room
  - Check crowd movement in busy areas
    - E.g. an alert when people go the wrong way on an escalator



IVA turns a camera into a detection sensor

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What can IVA do for you? – Increase your operational performance

- Once detected, an event is turned into an information for the operator, allowing him to become aware and understand a situation:
  - **Overlay the object on the screen**
    - The object, its trajectory (origin – direction) are clearly visible for the operator
  - **Automatically display the relevant cameras**
    - The involved cameras as well as the surrounding videos are presented to the operator
  - **Guide the operator on the best workflow**
    - The user interface will also inform in text/graphical form of the next best action
  - **Raise alarm level to the appropriate level**
    - Depending on the potential severity of the event, different operators may be involved and received an alarm such as sending an E-Mail or broadcast a message...







IVA improves your security team efficiency!

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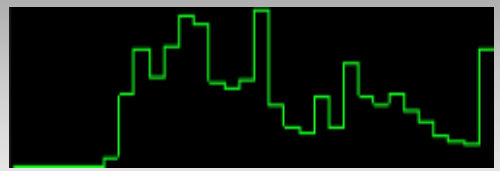
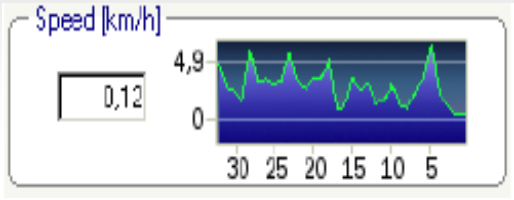
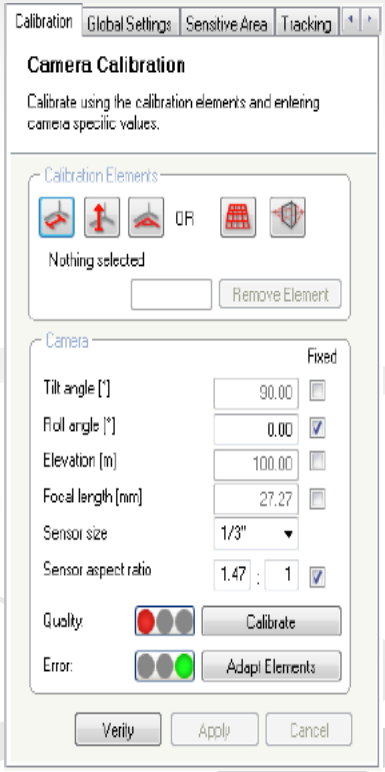
Performance from calibration

- **IVA can recognize and filter:**
  - Size
  - Speed
  - Colour
  - Aspect ratio
  - Surface

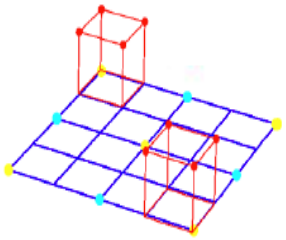


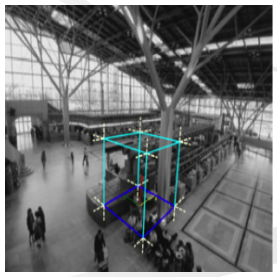




- **Comprehensive and easy calibration tool allow this:**
  - Calibration elements
  - Calibration plans
  - Auto-calibration







Calibration gives filtering references to the camera

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What can IVA do for you? – Features/Applications overview

Feature list	Applications
Detect objects entering, leaving, or just being within an area (detector field)	Intrusion detection, perimeter protection 
Detect **loitering** in an area related to radius and time	Protect parked cars and ATM machines 
Detect idle objects within a configurable time span	Recognized potentially left objects/luggage 
Detect **removed** objects within a configurable time span	Protect stored assets from being stolen 
Detect trajectories/routes of objects, passing in the scene, displayed with tracking lines	Control paths used by cars in access roads or parking 
Detect multiple **line crossing** from single line up to three lines combined in a logical row	Single out people walking to unauthorized ways 
Count objects crossing a virtual line or entering a certain area (Counter)	Count how many cars enter a parking 
Count people from a bird's eye view (BEV people counter)	Count how many people enter room and raise an alarm when overcrowded 
Detect condition **change** properties such as size, speed, direction, and aspect ratio change within a specified time span (for example something falling down)	Detect suspicious behaviour such as people string running or laying down 
Detect flow of a constant moving object	Recognize when a large amount of person are going in the same direction 
Detect object that moves against a flow of objects	Detect a person using an escalator in the wrong direction (boarding gate) 
Detect a certain crowd level in a predefined field Combine tasks logically using Alarm Task Script Manager	Warn the operator when too many people are gathering (send more hostesses) 
Temper detection (camera moved, too bright, too dark, out of focus)	Avoid tempering of the camera 

VCA in RETAIL Applications

Marketing	✓People counting or crowd management ✓Comprehensive reporting (e.g. indication of highly dense areas etc) ✓Average waiting time to provide consumer traffic for better resource planning
Operations	✓Abandoned objects (shopping carts) or lost and found in a crowded area ✓License Plate recognition for unauthorized vehicles ✓Detection of Parking Violation in high traffic areas ✓Surveillance system healthcheck for any camera malfunction
Safety	✓Minimize public liability - Detect Running / skateboarding / Slip & Fall ✓Overcrowding and congestion detection – adhere to fire and safety regulations ✓Detection of water spills
Security	✓Interface with cash register for theft prevention ✓Theft Detection in busy or crowded environments ✓Trespassing - Wrong way or Unauthorized entry ✓Intrusion detection after hours ✓Graffiti and Vandalism detection ✓Man-down detection ✓Tailgating at the gate / turnstile

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Why IVA at the edge?
Increase in system resilience & cost

3

- IVA “at the edge” right inside the cameras. Pros vs. server based VCA:
  - Detection happens live right at the camera
    - Picture quality and speed kept at maximum
  - No video streaming required for analysis
    - Reduce the bandwidth requirements,
  - Stand alone operations, no central equipment required
    - Works beyond network quality or availability
  - Scales to the needs without impacting the infrastructure
    - No additional servers, racks or IT room required when more cameras should be operated
  - No software/OS/anti virus regular updates
    - Save maintenance time and cost







IVA improves your security team efficiency!

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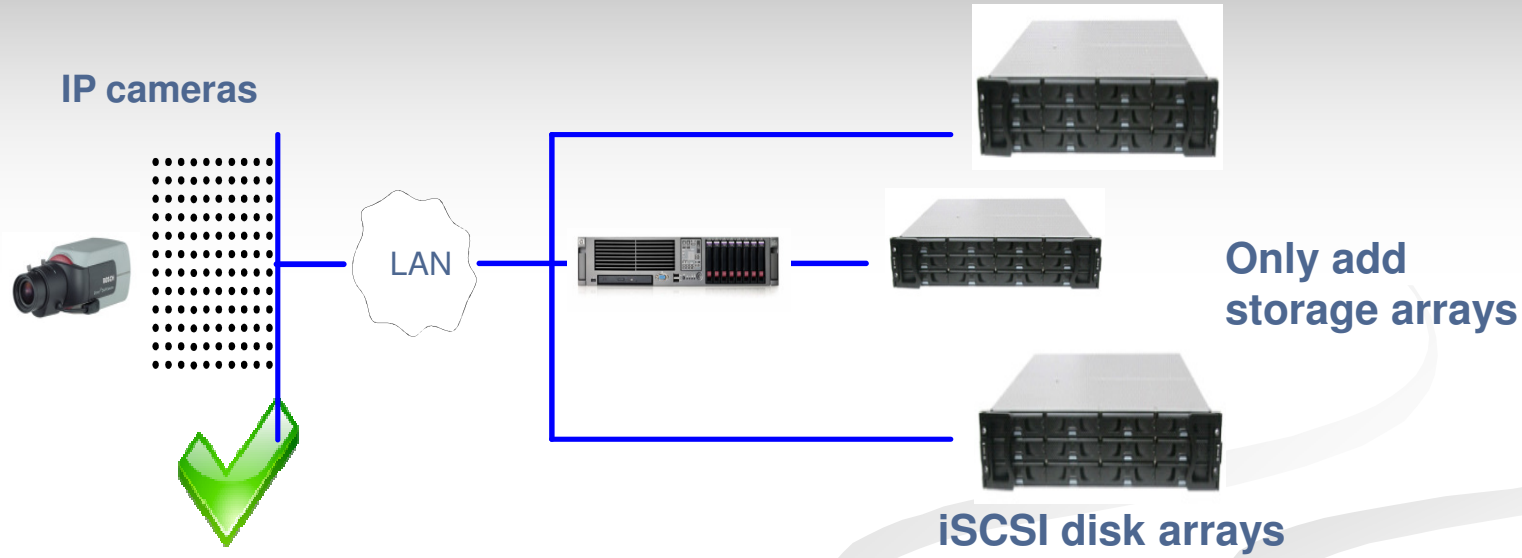
Why IVA at the edge?
The edge based architecture



VCA can be deployed on every camera
No impact on the network
No impact on the infrastructure

Save with Bosch VRM/IVA @ the edge !

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Why IVA at the edge? Decrease the system cost

- IVA "at the edge" right inside the cameras. It shows major benefits vs. server based VCA:
  - No servers required centrally
    - Save purchasing and maintenance cost
  - No additional power required
    - Save energy costs and cooling costs
  - No additional space required
    - Save space/racks in the IT rooms
  - No software/OS/anti virus regular updates
    - Save maintenance time and cost



IVA at the edge is cost effective and green!

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IVA At The Edge summary

- On the Edge IVA turns a conventional CCTV system in an advanced detection and alarming system:
  - IVA at the edge is simply part of the cameras!
    - No additional cost of infrastructure or system items
  - Gives you all feature at once
    - No choice required: just configure every camera the way you need for live and forensic
  - Turns your cameras into detectors
    - The events and information can be shared with any compatible VMS
  - Turns the archives into a data base
    - Event can be simply and quickly searched for with Forensic search
  - Beyond security applications
    - Increase the site safety (escape doors monitoring) and improve operations or marketing (counting)







IVA improves your security team efficiency!

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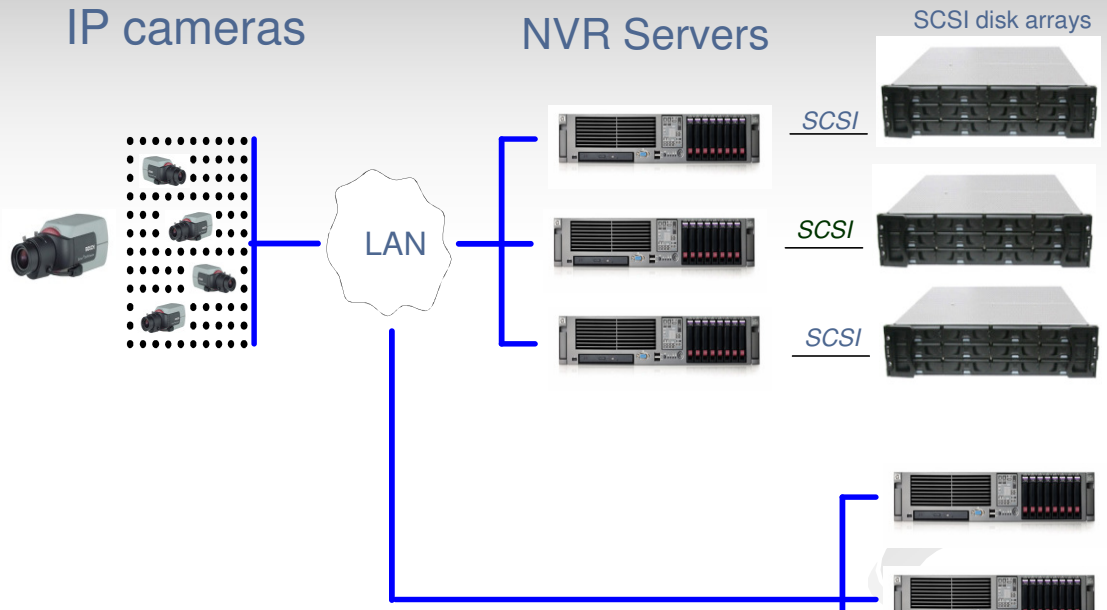
The server based architecture



More powerful servers
More energy for powering
More energy for cooling
Expensive SW applications

Additional bandwidth
Additional servers
Additional Rack space
More energy for cooling
Expensive SW applications
Additional OS/anti virus
Additional maintenance

1. *High processing power needed; limit typically to 16 cameras*
2. *Needed for high processing applications such as facial recognition.*

Video Content Analysis

NVR architecture are power consumption and HW heavy

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Agent Video Intelligence

Distributed
Video Analytics Solutions

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Vi-System – Optimized Offering



Solution Components:

- ✓ Edge device embedded with Vi-Agent software component
- ✓ Vi-Server running with user defined rules
- ✓ Third party video management system (VMS) integrated with Vi-System to receive events in real-time

From video stream to alert:

- ✓ Vi-Agent executes algorithms on the edge device and sends the results (feature stream) to Vi-Server
- ✓ Vi-Server processes the results from multiple Vi-Agents
- ✓ Once an event occurs (in line with user defined rules), it is detected by Vi-Server, which generates an alert
- ✓ The alert is sent to the integrated third party application

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Vi–System – Flexible Offering



Solution Components:

- ✓ Vi-Agent Proxy (VAP) can run on a separate PC or on the same machine as Vi-Server
- ✓ Vi-Server running with user defined rules
- ✓ Third party video management system (VMS) integrated with Vi-System to receive events in real-time

From video stream to alert:

- ✓ Vi-Agent Proxy (VAP) pulls the video stream from the VMS
- ✓ VAP converts the video stream to a feature stream and sends the results to Vi-Server
- ✓ Vi-Server processes the results from multiple VAPs
- ✓ Once an event occurs (in line with user defined rules), it is detected by Vi-Server, which generates an alert
- ✓ The alert is sent to the integrated third party application

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Video Analytics Architectures

	Agent Vi's IPoIP™ (distributed) architecture	Server based architecture	Edge based architecture
Detection performance	High	Medium – High	Low – High
	Algorithms have access to raw video before compression, the architecture provides significant processing resources to enable high end image processing algorithms.	Limited by quality of the available compressed video or by limited processing resources, or both.	Limited processing available in embedded environment. In some cases, a specific algorithm has been isolated and optimized to achieve high performance.
Feature set	High	Medium – High	Low
	• Comprehensive range of analytics rules • No limit on no. and type of rules running on a camera • Support for fixed and PTZ cameras • Ability to create inter camera detection scenarios	• Some offer a variety of rules • No. of rules on a camera is usually limited • Most products do not offer PTZ support • No inter camera detection scenarios	• Usually a small variety of rule types • No. of rules on a camera is typically limited to 1-2 • Some products offer PTZ support • No inter camera detection scenarios
Scalability	High	Low	High
	A server with a quad core processor can support up to 200 cameras running any combination of analytics rules Server capacity can easily be increased to thousands by adding additional processors or server machines	A server is required for each 4 to 16 cameras.	A server is usually required only for management and setup operations and can support a large number of edge devices.
Bandwidth usage	Low	High	Low
	Each edge device uses an average bandwidth of 25 kilobytes / second when performing analytics.	When the server processes compressed video, typical network usage is 500 kilobytes /second and higher	Data is usually transmitted only when an event is detected.
Upgrade path	"Future Proof"	Reasonable	Problematic
	Since most new features are developed on the server side, there is little need to upgrade edge device firmware when a new product version is released. Future increases in required processing resources are easily handled by adding an additional server.	Software upgrades are relatively easy because of the Server based platform. Problems occur when a new feature requires additional processing resources and an existing server supporting 8 cameras can suddenly only support 6.	Each newly developed feature or bug fix requires firmware updates on the edge device. In large installations this can become an issue. Newer algorithms requiring more processing resources may not be compatible with deployed edge devices and may require hardware replacement.

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Vi-Search Offline – What is it?

Vi-Search Offline cuts investigation times dramatically by automatically indexing and analyzing data from pre-recorded, imported video clips from multiple sources and producing search results

Highlights

✓ **Dramatically reduces the time** required for locating relevant video footage during an **investigation**

✓**Automatically** analyzes **video files exported from any video recording system** including DVRs, NVRs and VMSs

✓Rapidly **analyzes the video files at an average rate of x10 and up to x30**, depending on the stored video format

✓Enables the **user to search for relevant footage** by target type (person, vehicle, static object), behavior, color and more (after the video is analyzed)

✓Offers the same **extensive set of search parameters and display options** as Vi-Search

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Vi-Search Offline – How does it work?

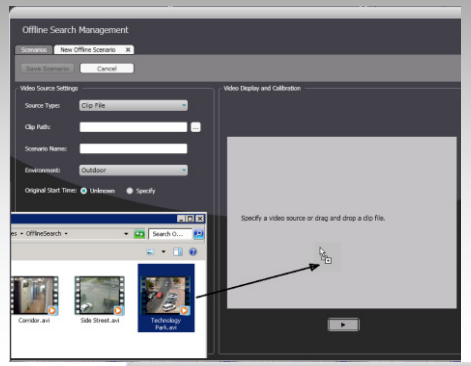
Export video from the recorder to a supported format (ASF, AVI, MPEG, MPG, WMV, etc.)

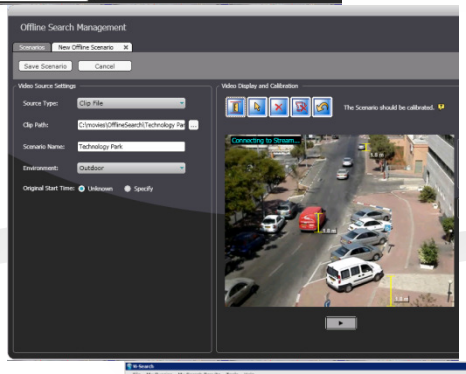
Import the clip into Vi-Search Offline

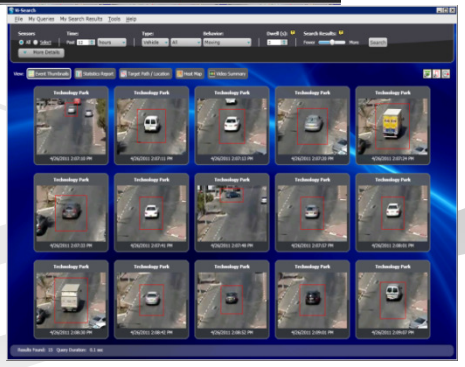
Calibrate the clip

Index the clip

Search and analyze results







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Identification

IQ-FR Facial recognition in



- **World's <u>FIRST</u> Facial Recognition in a crowd – different from others that are done in a controlled environment e.g. access control.**

Recognition

Recognition	Limited	Average	Smart	Genius
Face Recognition				
Many to Many[1]				✓
Many to One[1]			✓	
One to Many (Access/Passport Control)[2]		✓		
One to One (Access/Passport Control)[2]	✓			
License Plate Recognition				
Automatic Comparison with multiple databases				✓
Multilingual (120+ countries)			✓	
High Speed (up to 180 kph)		✓		
Video Based Automatic Triggering		✓		
Integrated with Car Park Applications		✓		
Real Time Recognition	✓			

[1] Low Resolution requires 22 pixels, Uncontrolled Environment, Integrated with iQ-Hawk

[2] Higher Resolution requires minimum 40 pixels, Controlled Environment

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Application

- IQ- Face Recognition
  - Automatically detect person's face against a noisy background
  - Image process by a central recognition engine
  - Ability to cope with CCTV resolution and natural light change
- Variety of applications
  - Best practice as a analytical system to determine location of the person
  - Check for multiple access facility

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Application(Continued)

- IQ –FR comes in several flavors. In its simplest form it can provide a Face Detection system to know that a face is in the scene and to record it.

- At the next level it can be use to verify faces for access control and other similar applications.

- The most comprehensive version in the suite of Face Recognition products has the ability to see people in a crowded and uncontrolled environment and to find matches for them in a data base.

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Operational Function

- Enrollment
- Detection
- Recognition

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Operational Function(Cont.)

Enrollment – Building up the database

- The system can manually enroll faces from a still image
- The system can automatically enroll all faces from a video clip. In this case the system will capture the time stamp of the image capture and the identity of the camera used.
- The system can be used to enroll multiple faces for a single person taken from different angles.
- The System can be used to import existing face database from another gallery, in an acceptable format(to be released)

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Operational Function(Cont.)

Detection-

- The first step in a recognition system is to actually detect that there are humans in the scene and to find and capture the images of their faces for further processing by the Face Recognition engine.

- The system can detect and capture faces in a crowd as long as both eyes of the individual are visible.

Operational Function(Cont.)

Recognition

- The system can match a captured face of one person against a big gallery of faces. (one to many)
- The system can match multiple persons faces against one image to determine if there is a match.
- The system can verify if a person whose face has been captured is the same person whose image is held in the gallery (eg on an access card)

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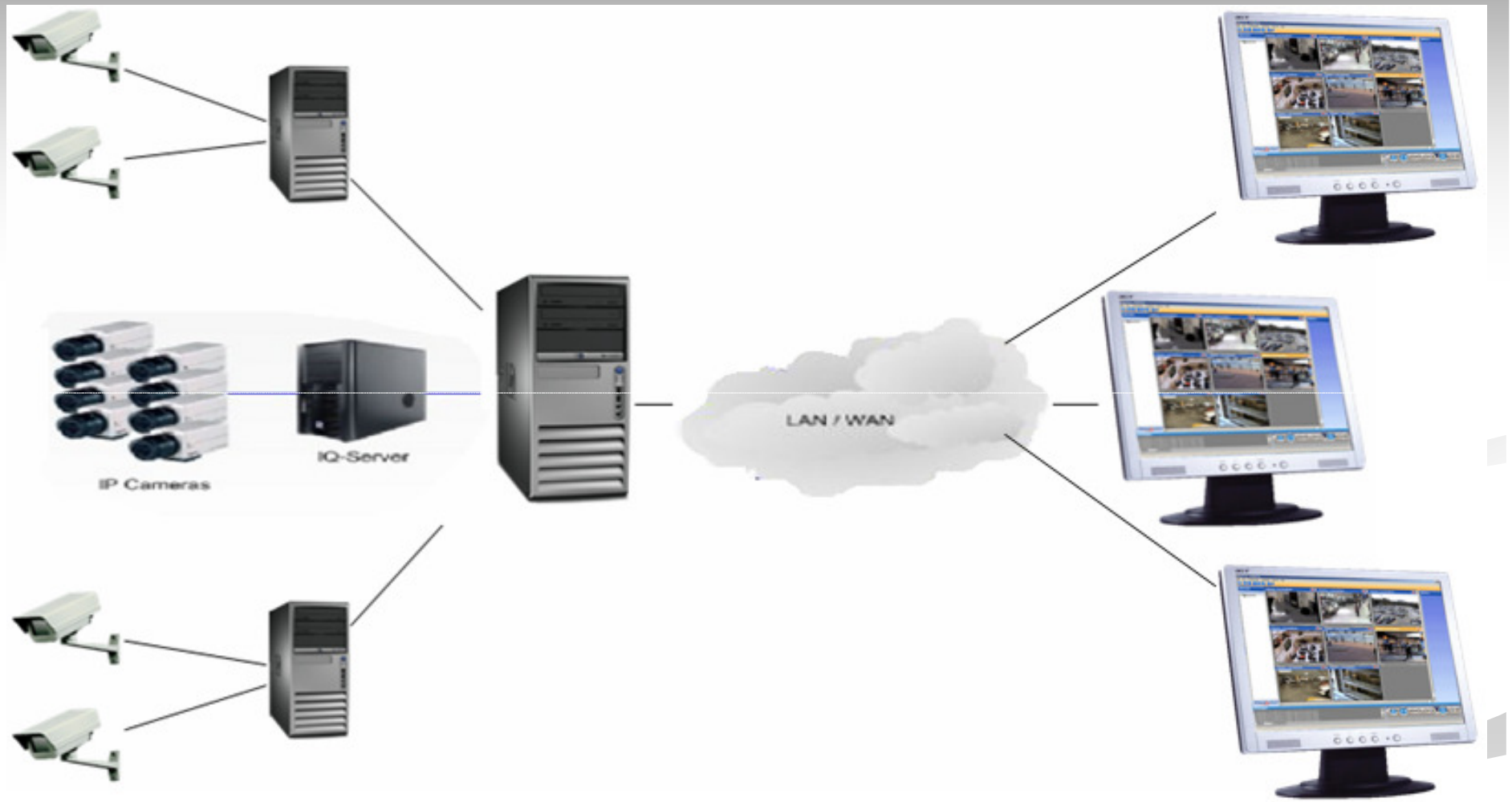
Architecture – Central Server



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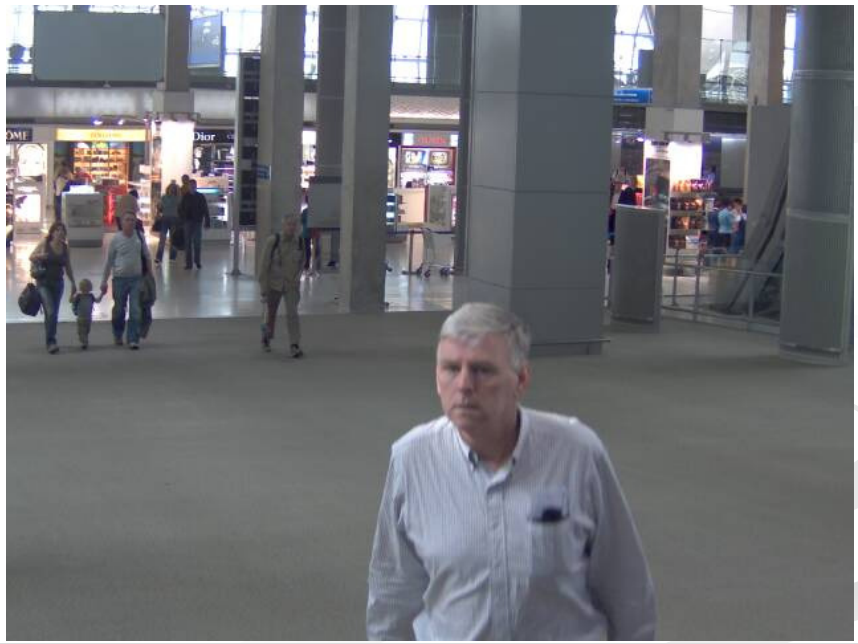
Camera Placement

- The minimal requirement for eye distance should be more than 22 pixels.
- 4 CIF resolution can recognize faces up to 3-4 meters distance and 1 MP can recognize faces upto 5 Meters
- Please refer to Camera placement Guide for the correct placement.



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General Rules

- Detection and recognition capabilities
  - Minimal eye distance at least 22 pixels
  - Engine to tolerate 20 degree pitch and roll
- Camera to be placed higher than eye level
  - The face model is designed for normal cctv placement
- Positive recognition
  - Enrol with video and recognise with video

Constraints

- The result of the recognition is largely depend on the camera placement and the quality of the image taken.
- The result presented is largely depend on the quality of the images in database.

Video

Live Demo

Visio Panorama 360 Deg HD Camera













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Multi-Mode for Different Application

Panorama (360°/180°) big eyes



Visio KCM-3911



6 * VGA output many eyes



Panorama MD smart eyes

Pop-out 720p MD





Scaled 1280*352 panorama

Panorama ePTZ moving eyes



Panorama

4M/1080p/720p/VGA

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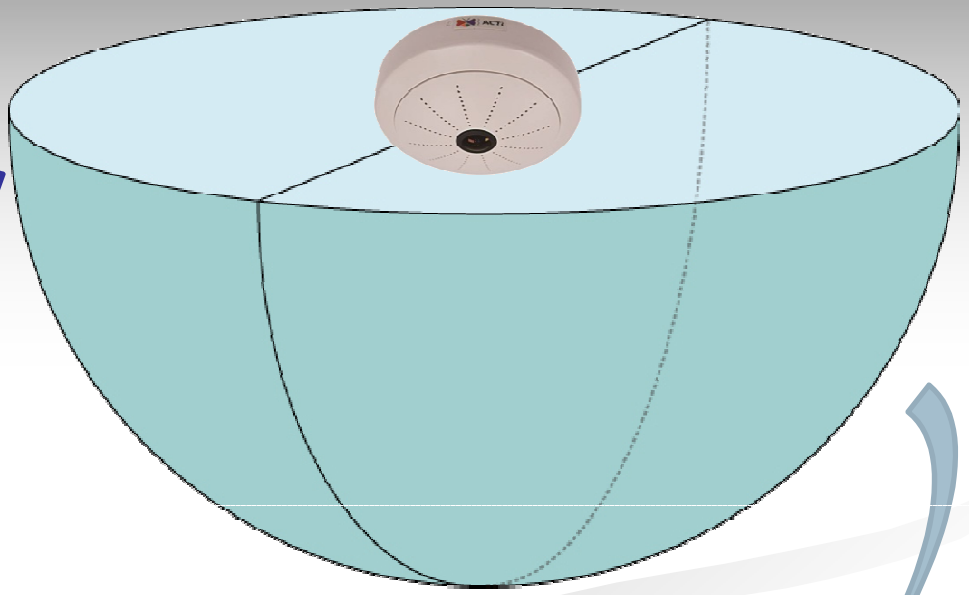
Big Eye – Panorama 360°

Ceiling Mount -
Panorama 360°





Back 180
View

Front 180°
View

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Big Eye – Panorama 180˚

1080p / 720p Resolution



55m x 15m
Office

Wall Mount - Panorama 180˚



Wall mounted installation Height: 2m

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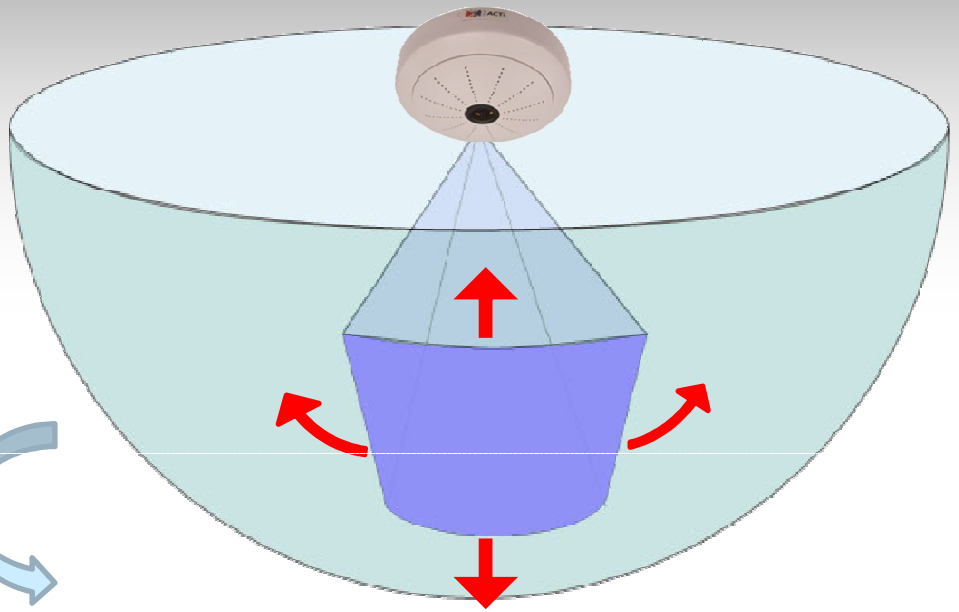
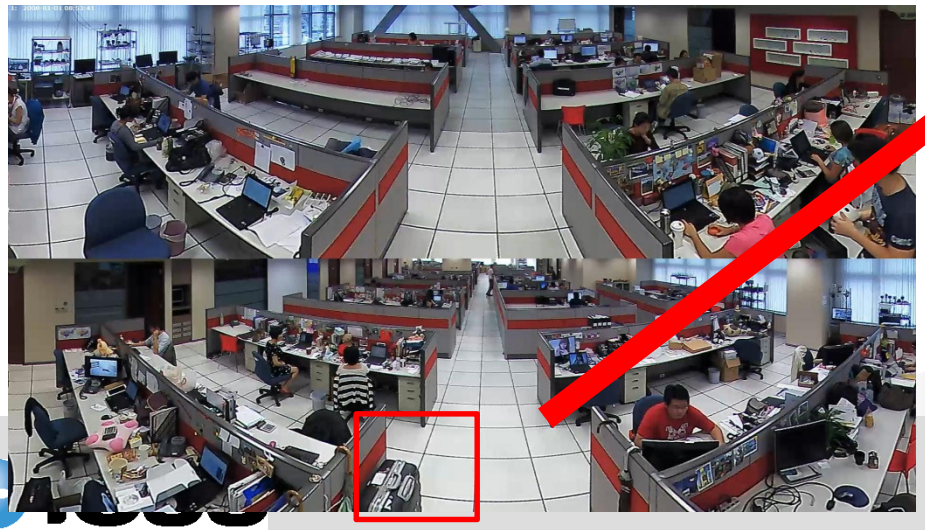
Move Eye - ePTZ



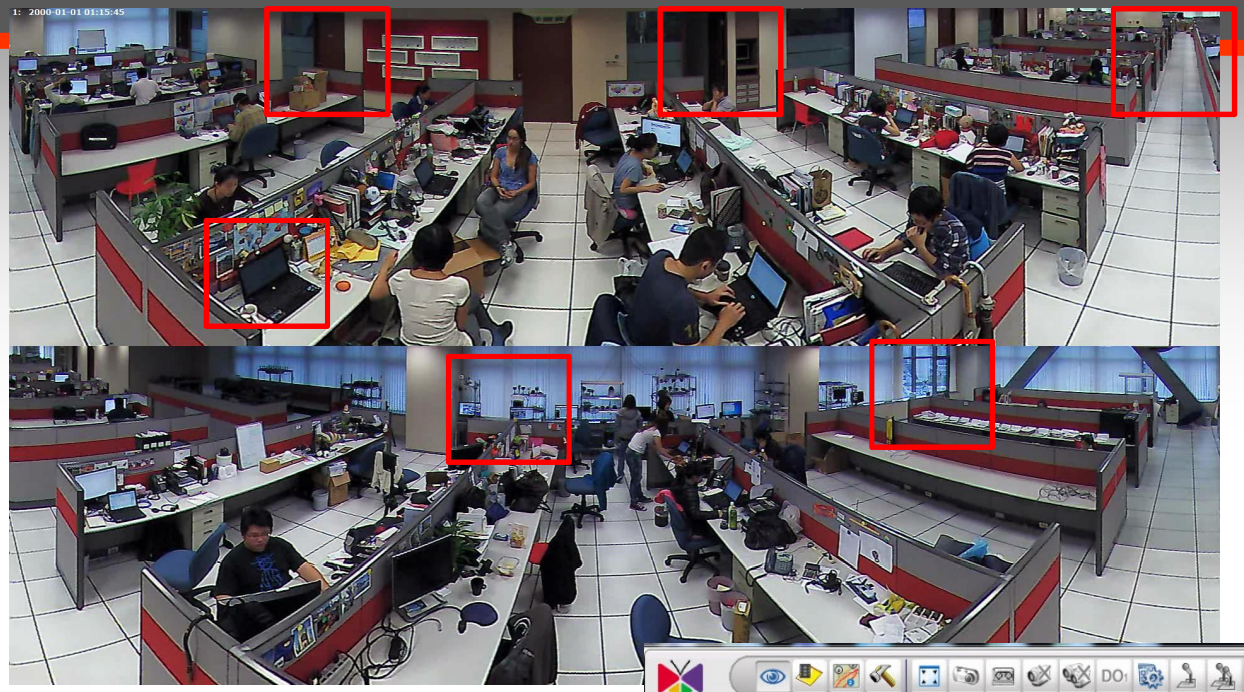
4M / 1080p / 720p/ VGA Resolution



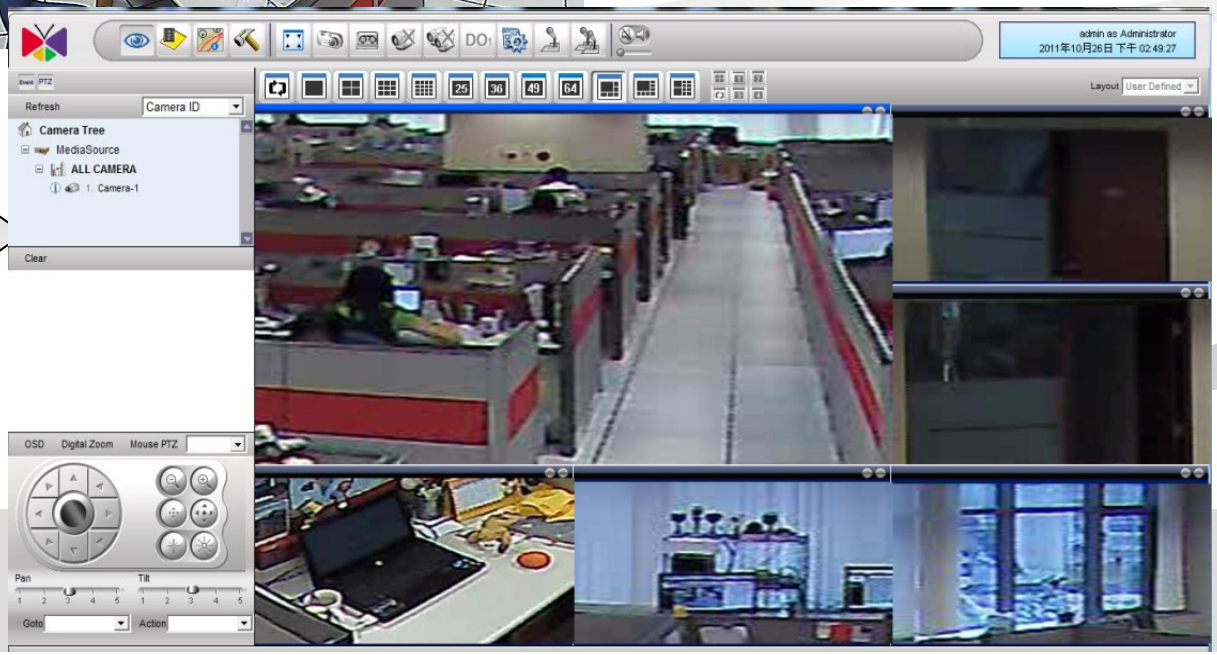


Enlarge or move the image within the hemisphere view.

Many Eyes - 6x VGA



Focus Monitor:
Allow you to focus on six scenes in parallel.



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Visio KCM-3911 special features overview

No blind spot	No mechanical issue, longer life	Many eyes save money
Wide coverage	Eye movement is fast	replaces six D1 cameras
Panorama View 180/360 degree	**ePTZ**	**Multiple Streams**



4MP in 5MP sensor	**SDR**	**2D + 3D-DNR**
Super resolution	Advanced WDR, dynamic detail and bandwidth saving	Low noise at frame (2D) & motion (3D)
Use the best part of sensor	Spec-in project Spec-out competitors	See clear = Understandable video

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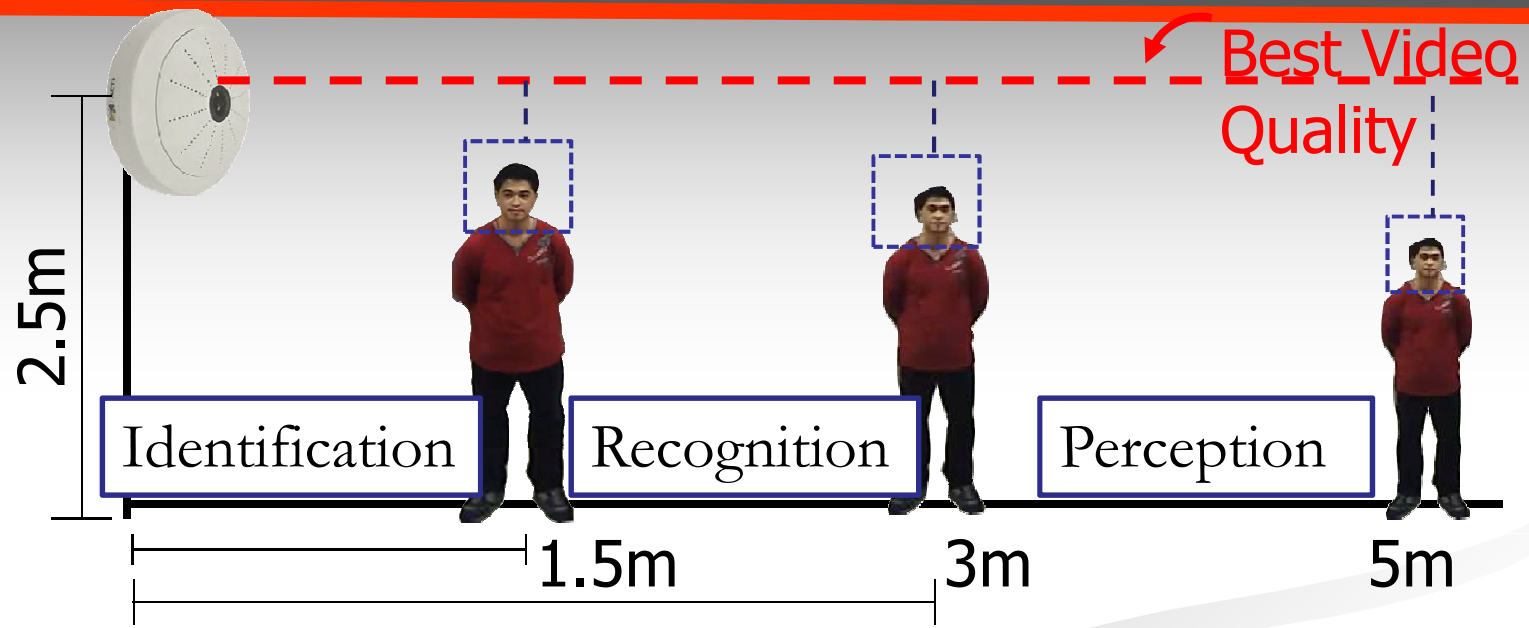
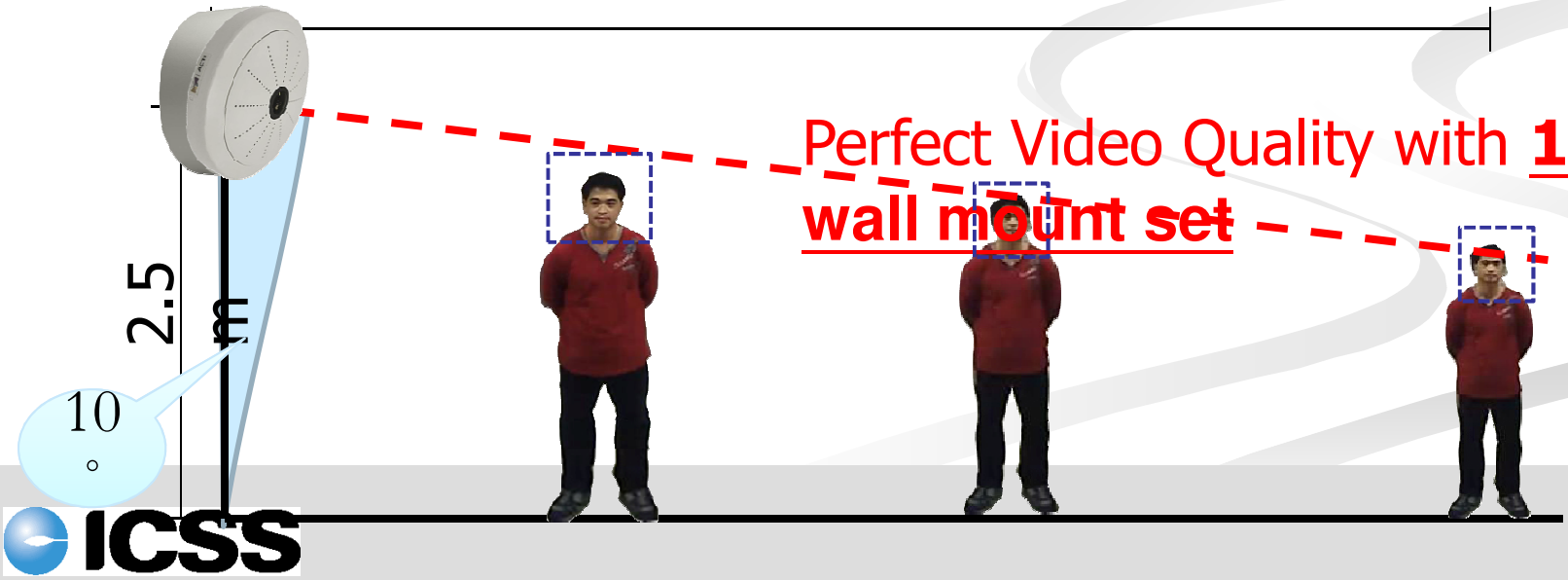
Install the Appropriate Position (Wall Mount)





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Questions and Answers

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Thank You



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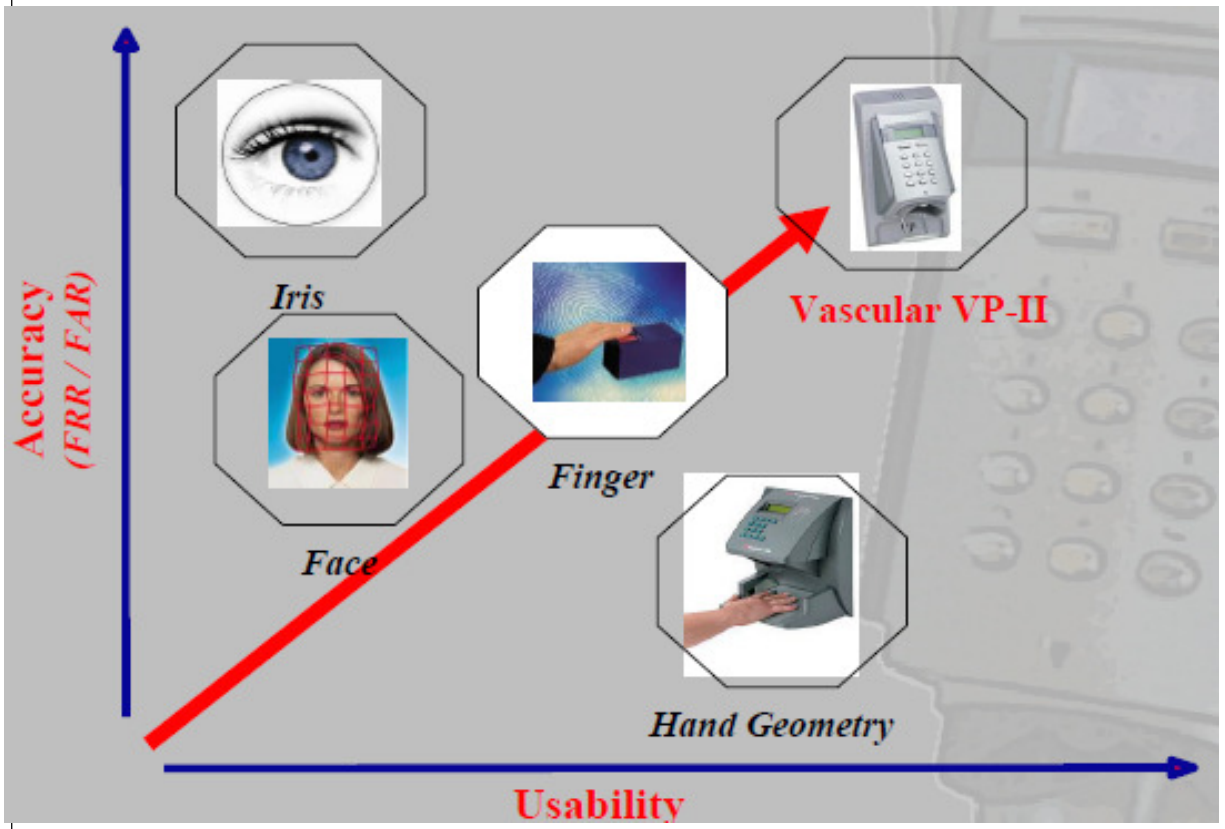
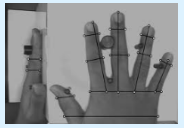
Access Control with Biometric Readers and Physical Security Devices

Biometric Comparison



Technology	Advantages/Disadvantages
Vascular 	O None-contacting Sensor O High Usability & Accuracy
Fingerprint 	O Small size applications X Low Usability X Difficulty in use with a physical damages like scars.
Hand Shape 	O High Usability X Low Accuracy (High FAR) X Hygienic problem by physical contact
IRIS 	O High Accuracy X Difficulty in use with small eyes like oriental users. X User inconvenient by eye positioning (intrusive)

Vascular Pattern Technology Advantage

- Unique and Cannot be easily reproduced like Fingerprint and Facial
- User Perception:
  - Fingerprint scans considered invasion of privacy
  - Iris Scans are frightening for many
- Adaptable Technology:
  - High Performance even with conditions, scars, dirt and contamination
- Performance:
  - Low False Acceptance Rate: FAR – 0.0001%
  - Low False Rejection Rate: FRR – 0.1%
- Small Network Traffic Load (280 bytes)

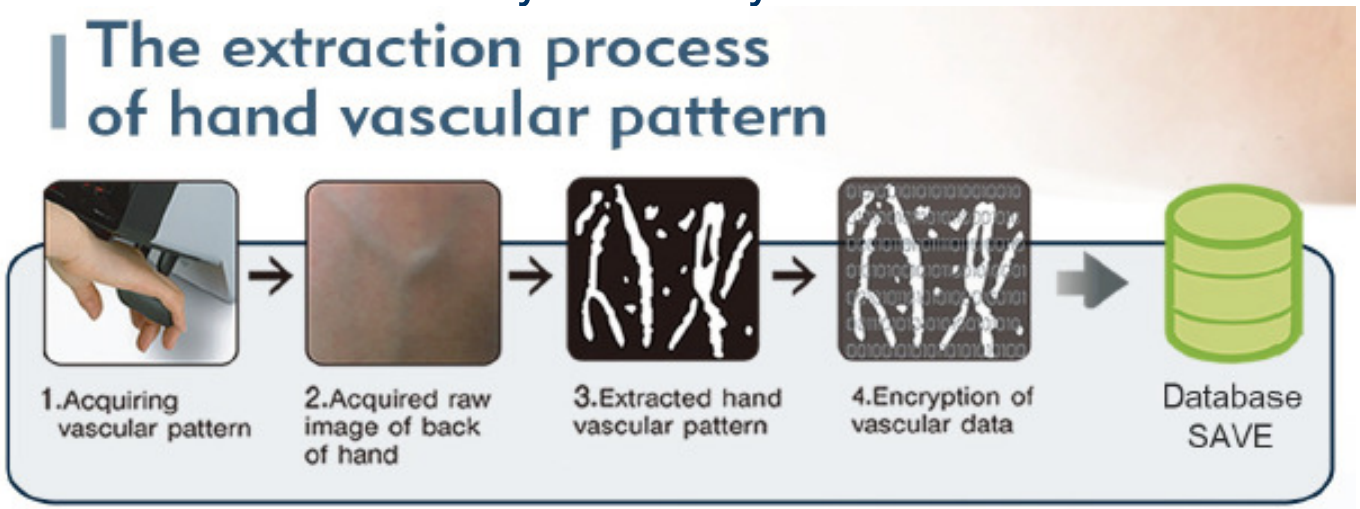


A Brief Spec. of Standard Product

Method: Uses the vascular data on the blood vessels dispersed in the hypoderm using Infrared light

Robustness: Not affected by scars or contamination of hands.

User Privacy Protected: Hand vascular data can only be enrolled and verified voluntarily, cannot be seem by naked eye nor





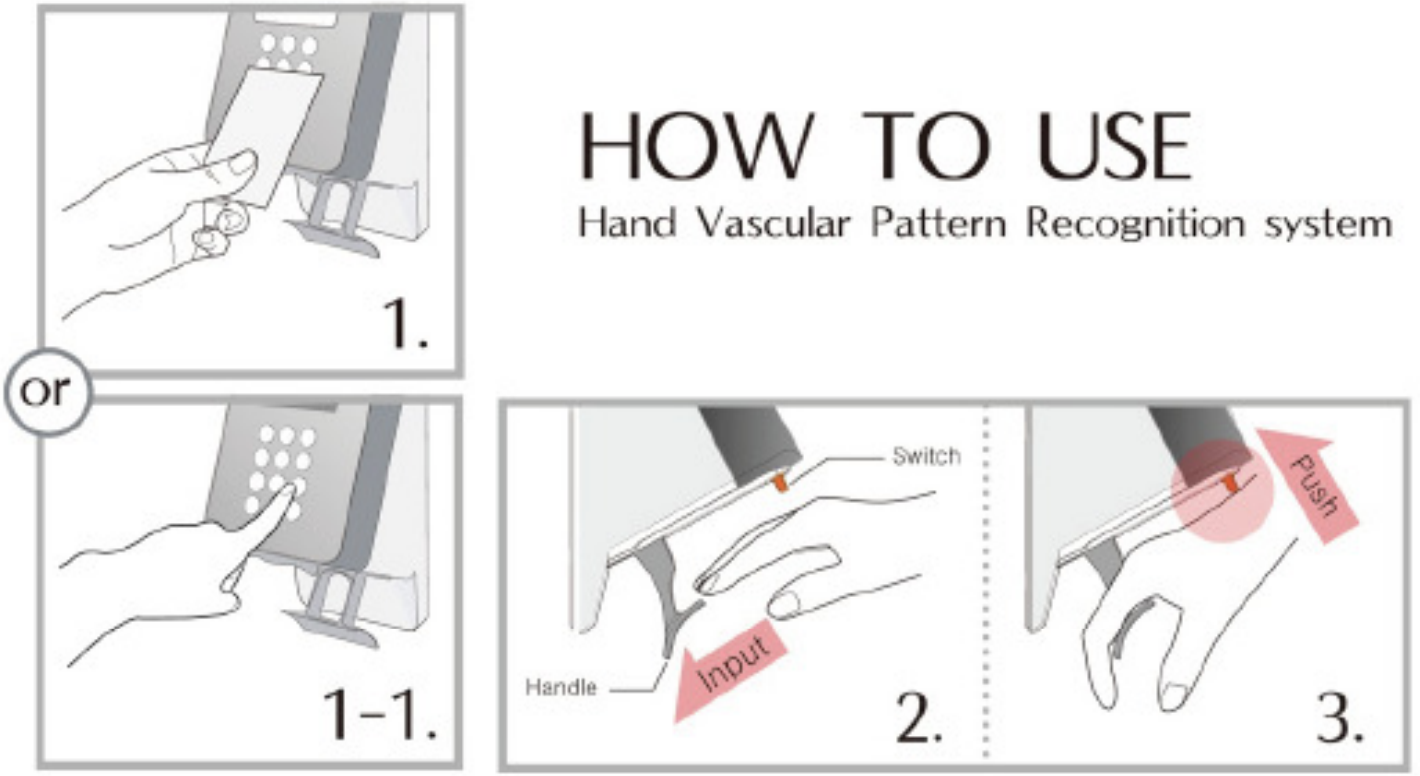
- **Hand Vascular Pattern Recognition**
  - Verification Part: Back of human hands
  - Verification method: Infrared optical sensor system
  - Verification Speed: 0.4sec/person
  - Accuracy: FAR : 0.0001% FRR: 0.01%

Hardware Overview

- Dual CPUs (400MHz DSP, 180Mhz ARM Processor)
- 65K Color 2.8” TFT LCD / 16 Keys / IR Sensor / Speaker
- TCP/IP Ethernet, Wiegand In/Out, Serial ports, Digital I/O, USB 2.0
- 512MByte NAND Flash Memory (Up to 50,000 users / 500,000 logs)
- Built-in card reader module & antenna (125Khz Prox. card / 13.5Mhz Smart card)

HOW TO USE

Hand Vascular Pattern Recognition system



1.Insert middle finger between the metal guides.

2.Slide hand forward until the webbing between your fingers touches the guides.

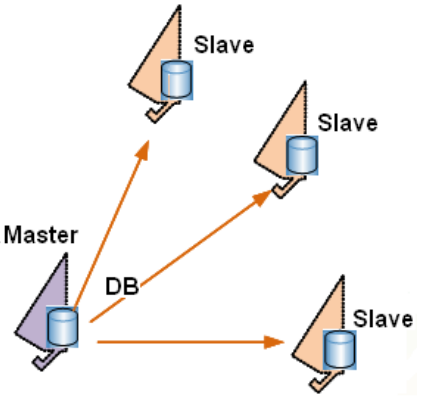
3.Lift back of hand to contact rubber hood and activate the small switch at the front.

| Networking

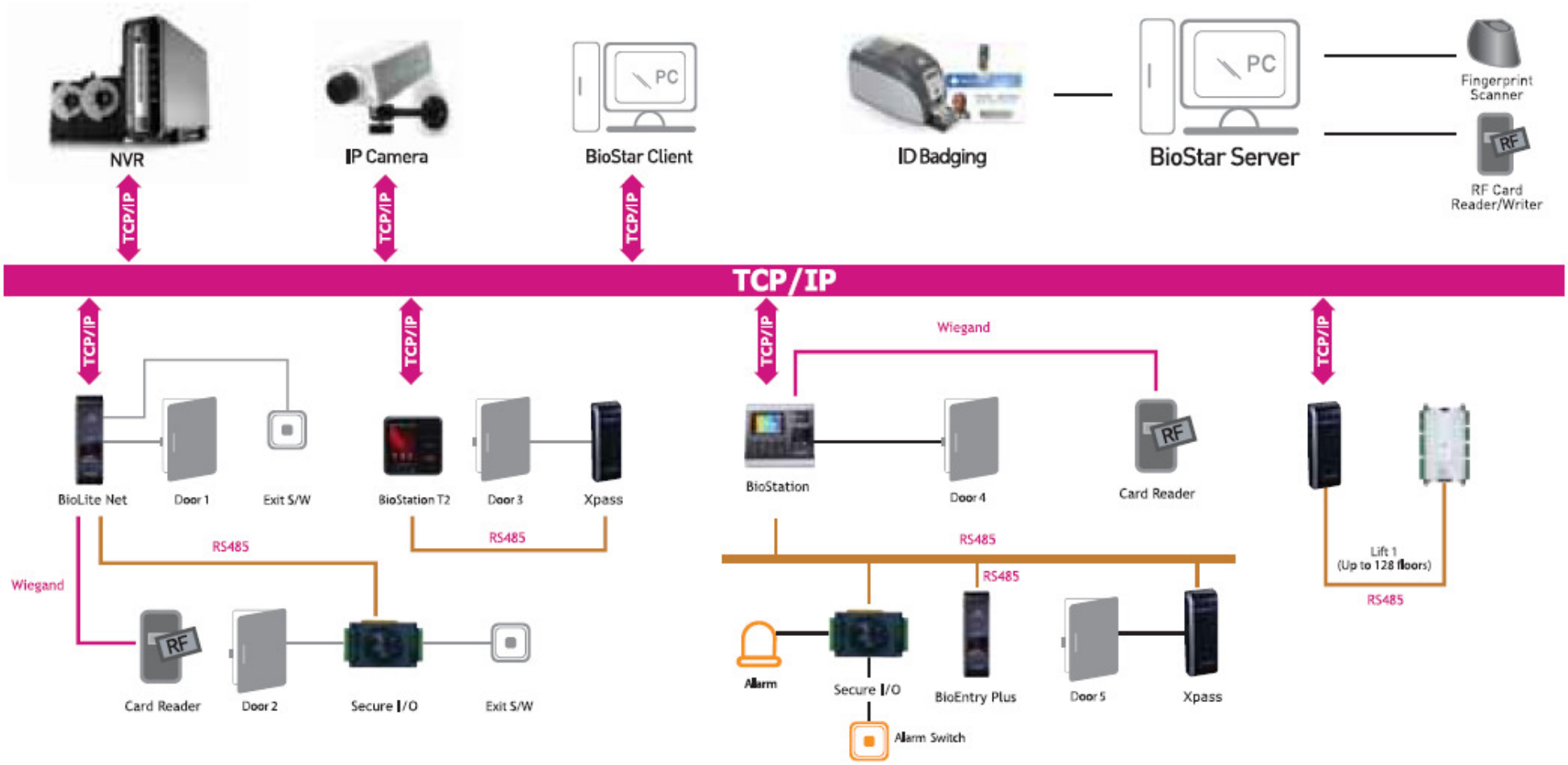
- **TCP/IP network (10/100 Mbps Ethernet)**
  - DHCP or Static IP supported
  - Each VP-II X stores all user information (timezone, access area, etc) in internal memory along with vascular data – **Can fully function when no network connections**.
- **NetControl-X (Server Application Software)**
  - Provides access control and time & attendance functions
  - **VP-II X can run with or without NetControl-X**



- **Database Management**
  - Master/Slave operation – **All user data is automatically distributed** by the Master VP-II X to all Slaves in the network
  - Database backup and recovery function by network or a USB memory



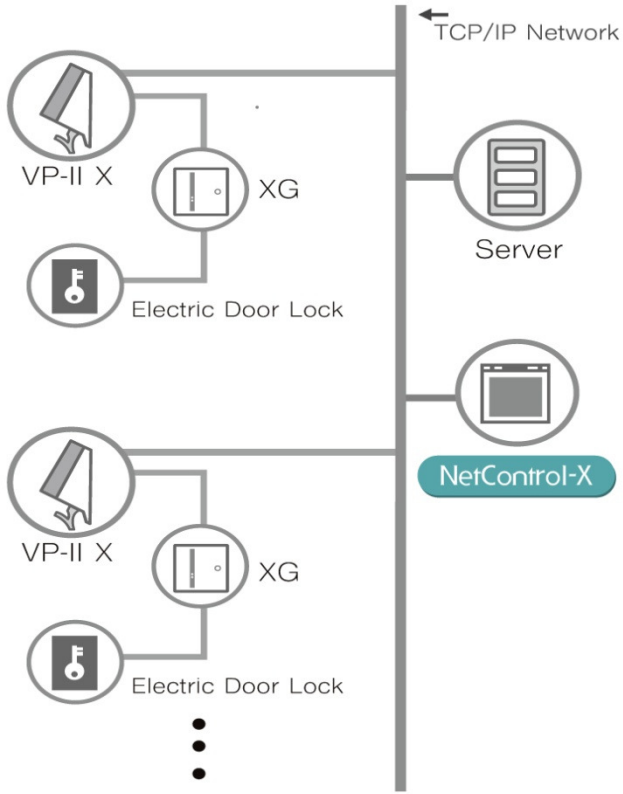
Typical System Configuration



| Access control functions | Time & Attendance

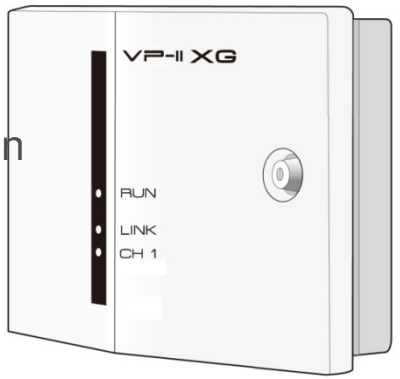
❑ Timezone and Access area control

- Up to 200 timezone/holiday tables
- Timezone and/or Access area control per users and/or units



❑ Electric door lock controller (VP-II XG)

- A separate controller (VP-II XG) to be installed at a secure place (inside the door)
- Serial communication between X and XG (Optional use of RS485)
  - Relay output, Door status monitoring, Remote open, Exit button
  - Automatic door release when a fire-alarm detected (Optional by a digital input port)



Any Questions?




THIS IS NOT
THE END

Physical Security



TERRORISTS DRIVE CAR INTO MICROSOFT BUILDING IN GREECE – TORCH IT.





27 June 2012 , THE MICROSOFT OFFICE BUILDING IN ATHENS, Greece, was the target of a terrorist attack early Wednesday morning. Around 4:35 am local time a small van carrying three armed men and a quantity of gas-filled cans crashed through the front door of the 4-story office building and stopped just inside the lobby.

9 June 2012

Driver deliberately crashed car with gas container into NW D.C. building, Lanier says



Charles Dharapak/AP - Members of the FBI Terrorism Task Force and police are on the scene after a sports utility vehicle crashed into an office building in downtown Washington.

26 Sept 2012

Twin Explosions Target Syrian Military Building

Print Email Comment (7)



This photo released by the Syrian official news agency SANA, shows smoke rising from Syria's army command headquarters in Damascus, Syria, Sept. 26, 2012

http://www.voanews.com/content/twin-blast-hit-syrian-capital/1515043.html



Scene from the Movies?

Huge car bomb blast kills at least two in 'terrorist' attack on Oslo government office









Solutions?

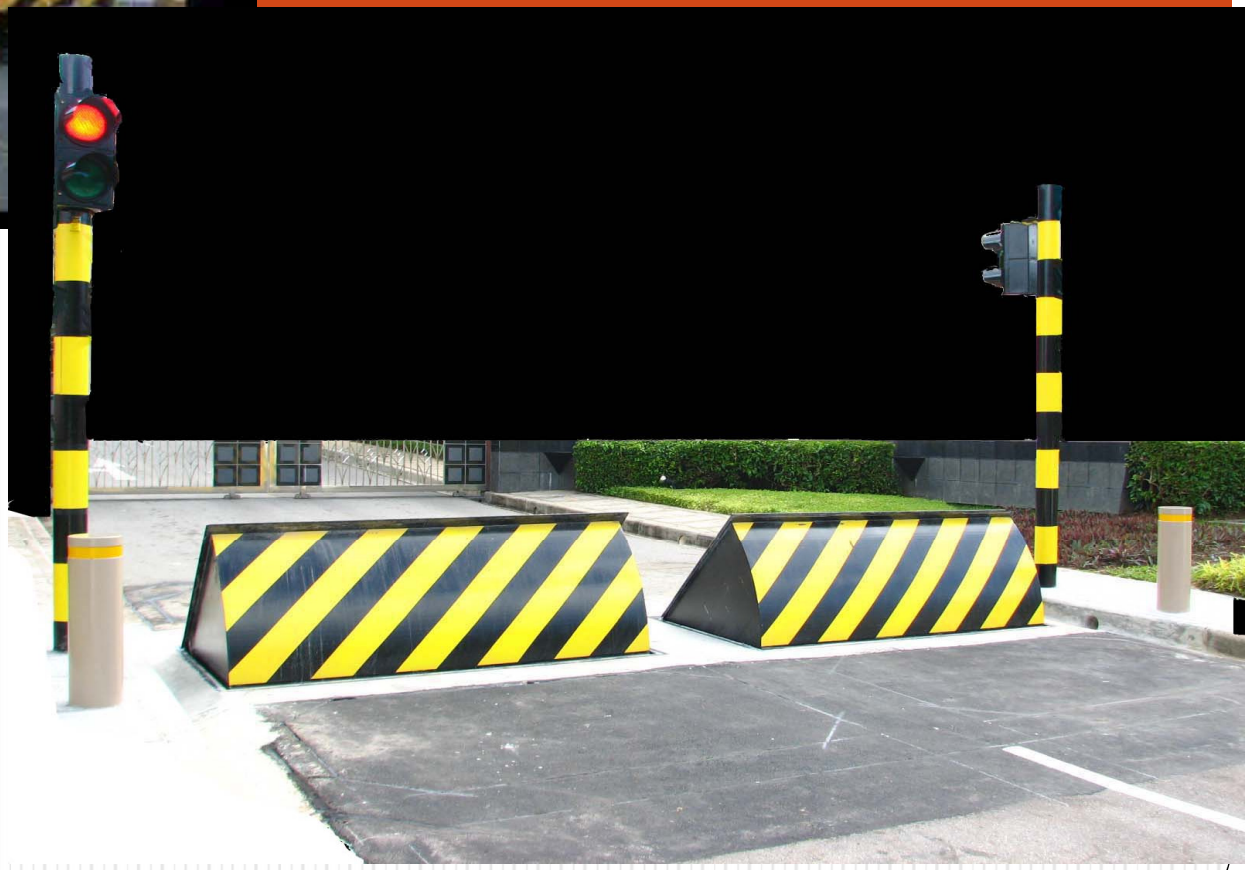


Solutions?



Road Blockers





- **K12 Impact**
- **Impact Absorption 7610kg at 80kph**
- **Raised Height: 800mm**
- **Hydraulic Power Unit**
- **Manual or/and Auto Activation**

Bollards





- **K12 Impact**
- **Impact Absorption 7610kg at 80kph**
- **Raised Height: 800mm**
- **Hydraulic / Static**
- **Manual or/and Auto Activation**







- **Bollards**
- **Gates**
- **Beam Barriers**

What is K Rating?

Department of State (DOS) Crash Test Certification:
(The test specifies perpendicular barrier impact by a 15,000 lb. (6810 kg.) vehicle.)

Certification Class	Speed in Kph
K12	80
K8	65
K4	48

Video Clips

Bollards http://www.youtube.com/watch?v=LbkGSsEmfIg

Crash Barrier http://www.youtube.com/watch?v=KYwfPzdhV4c&feature=relmfu

Road Blocker http://www.youtube.com/watch?v=NJeSFRWLU_s&feature=plcp

Any Questions?

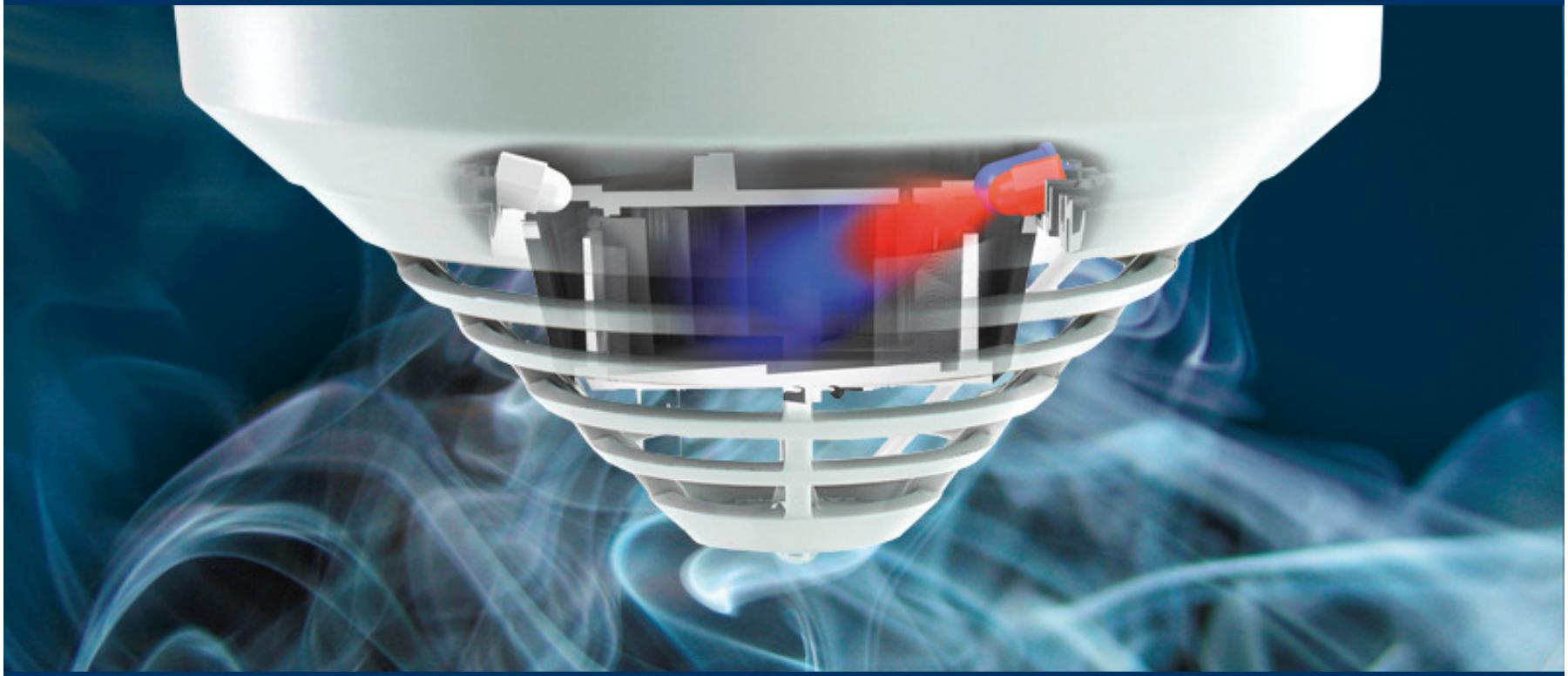



That's all Folks!


THANK
YOU


THANK
YOU

Customer Seminar - Forging Ahead; ICSS with you



Bosch Fire Alarm Systems

Felix Schrimpf, Head of Regional Business Unit Fire

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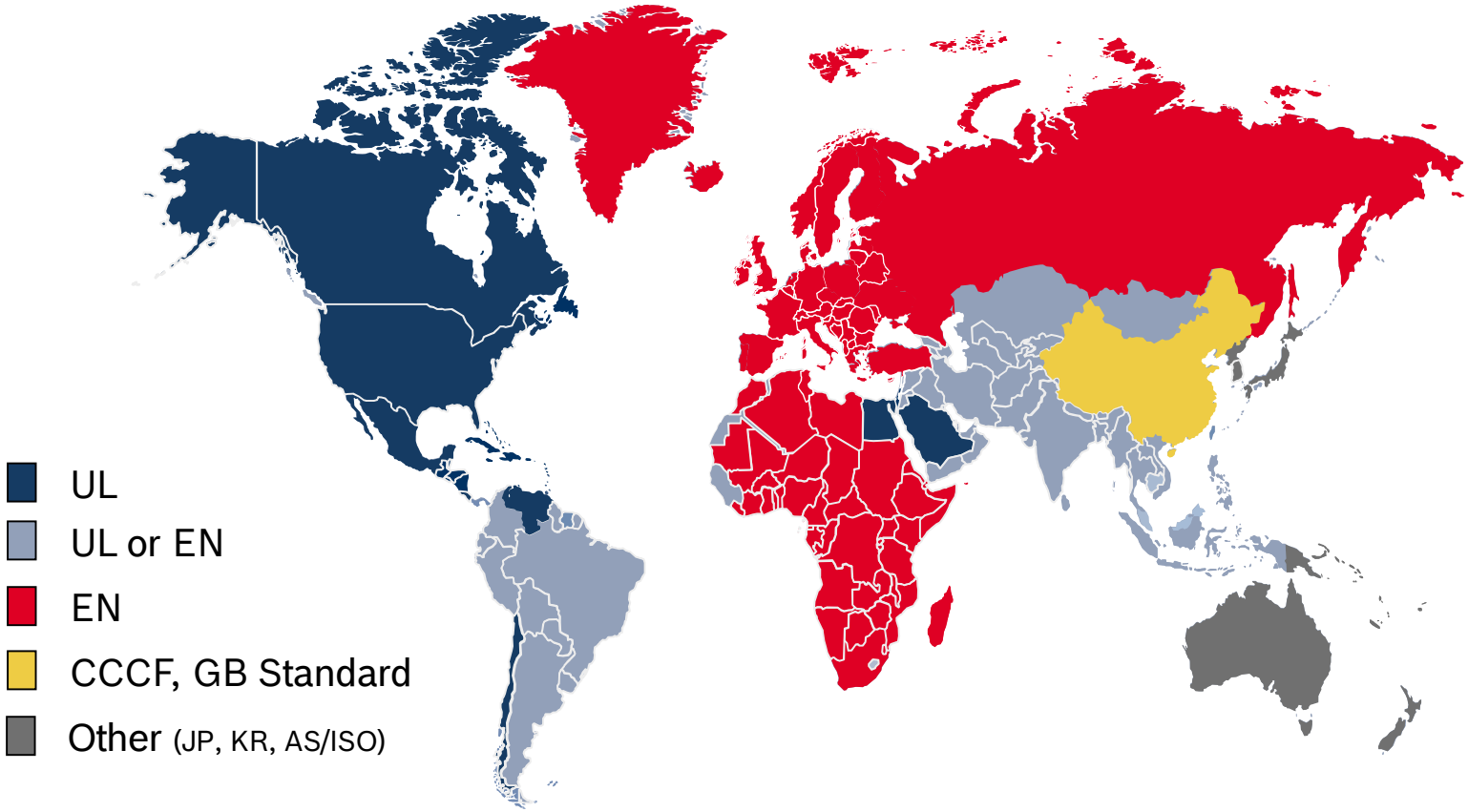
Global Fire Standards



Fire and Safety is driven by National Standards

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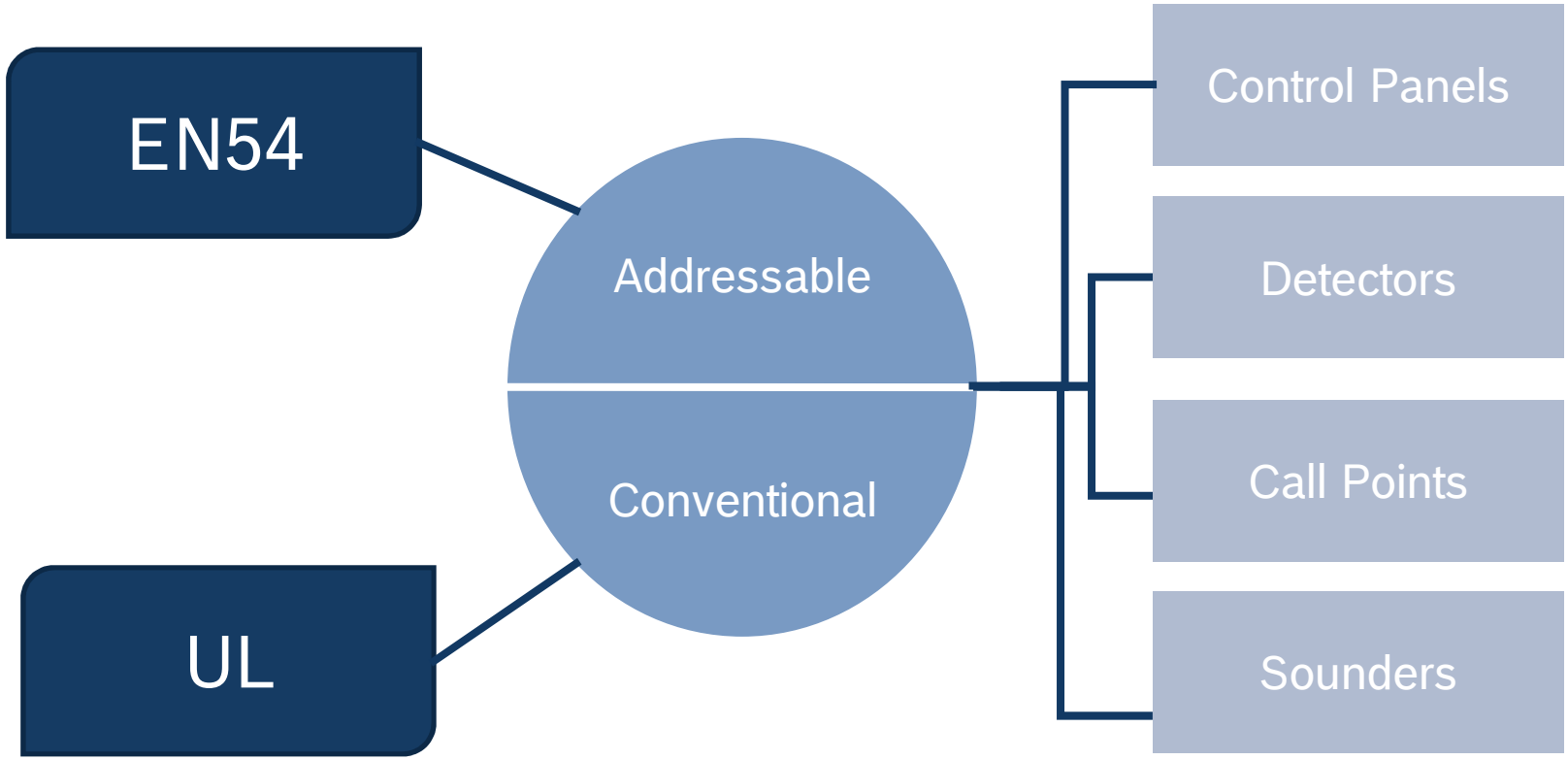
Bosch Fire Alarm Products and Systems



Complete Offer for EN and UL systems

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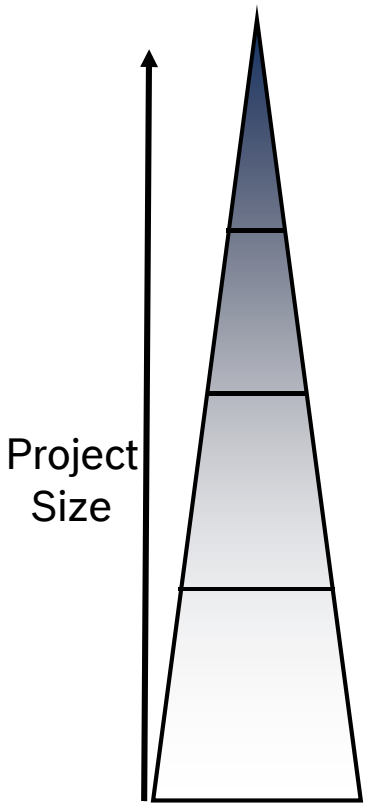
Portfolio Overview



Examples	System Size	Fire System
Large applications Airports, military apps, Buildings > 32 story	>2000 detectors	FPA-5000 Networked and BMS
Mid - Large sized applications Hotels, 7-32 story building	512 – 2000 detectors	FPA-5000 and FPA-1000-UL networking
Mid-Size applications Low rise office, college, Apartments, manufacturing	127 – 4096 detectors	FPA-500- FPA-1000-UL
Small applications Church, schools, areas of assembly	<254 detectors	FPA-1000 FPA-1200
Extra Small applications Retail, office, restaurants, pubs, discos	<254 conventional detectors	FPD-7024 and FPC-500 Conventional Panel

Covering all market segments from small to large systems

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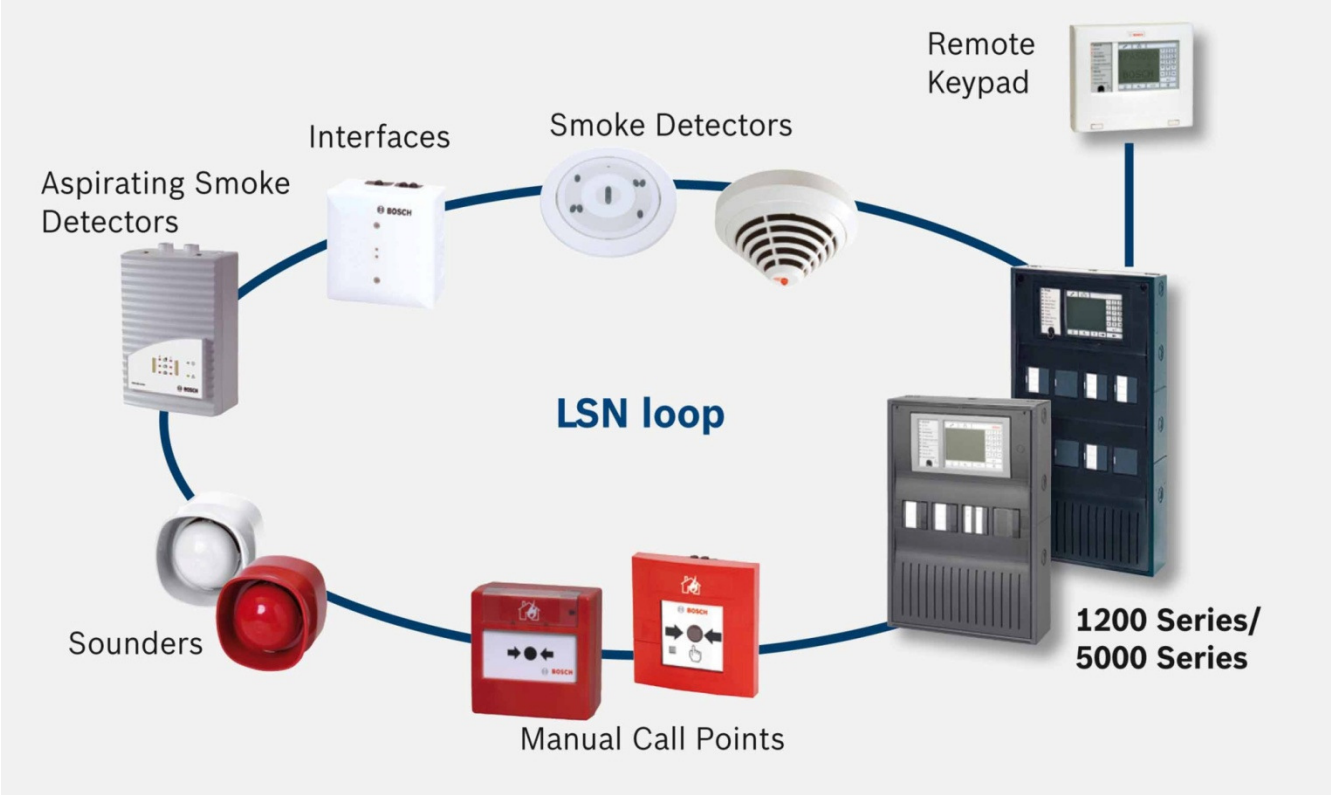
Example of an EN54 fire alarm system



Local Security Network LSN ensures high system reliability

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FPA-1200 and FPA-5000 Analogue Addressable Systems



- Modular system, flexible configuration for easy expansion and scalability
- Different loop topologies supported, Flexible wiring tailored to individual building
- Robust, advance technology with built in redundancy at different levels
- Integration to EVAC, Video Surveillance and BIS Security Management

Flexibility allows to tailor the investment to the current needs and at the same time makes it future proof

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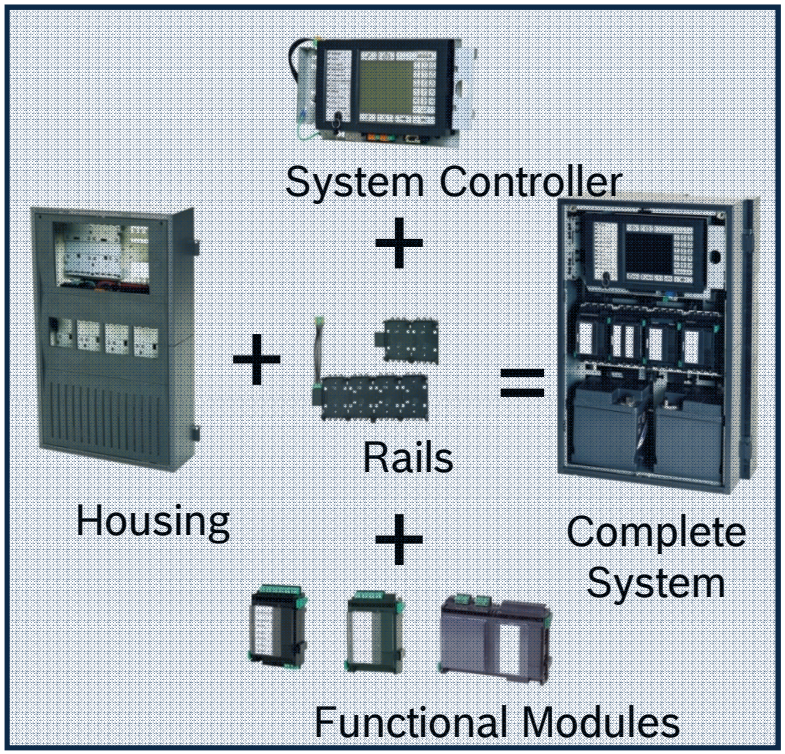
Modular design





Modular concept allows tailoring to current and future customer needs
Hot Swapping of modules increases system availability an reduce maintenance effort

Flexibility and Reliability by design

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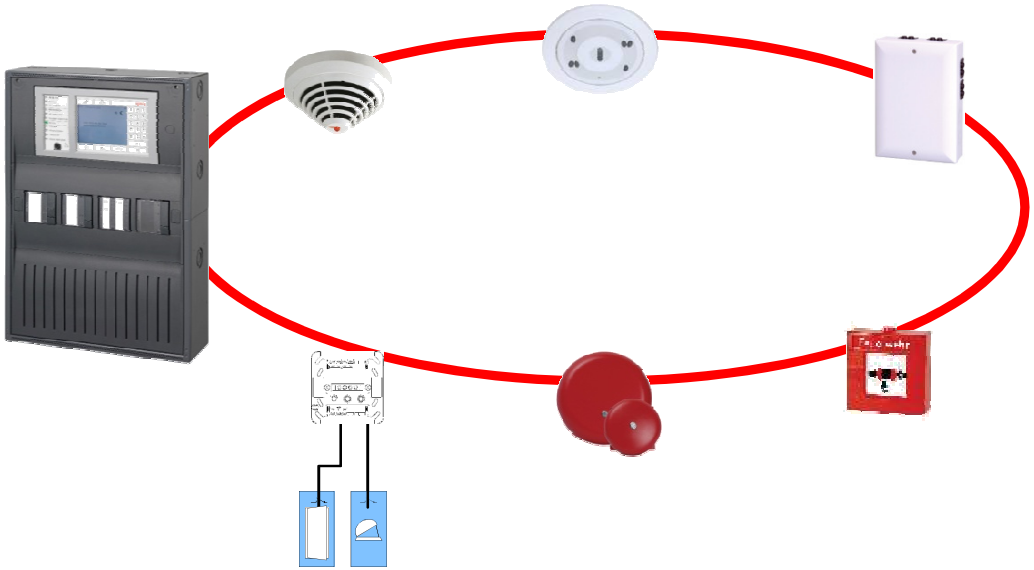
Local Security Network LSN

- Robust, high system integrity
- Fault tolerant against breaks and shorts on the loop thanks to built in isolators
- EN 54 approved, VdS certified, PSB certified
- Allows installation according to NFPA 72
- Class A & Class X wiring



Redundant loop technology

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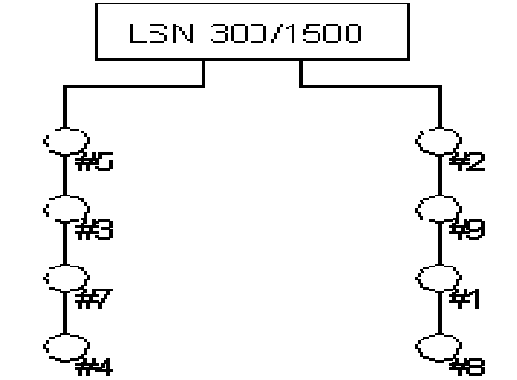
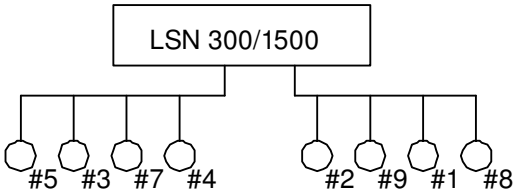
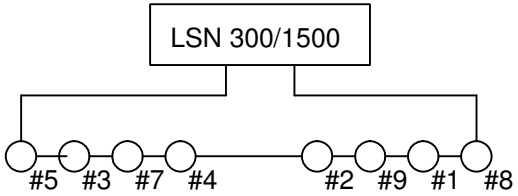
Supported Loop topology



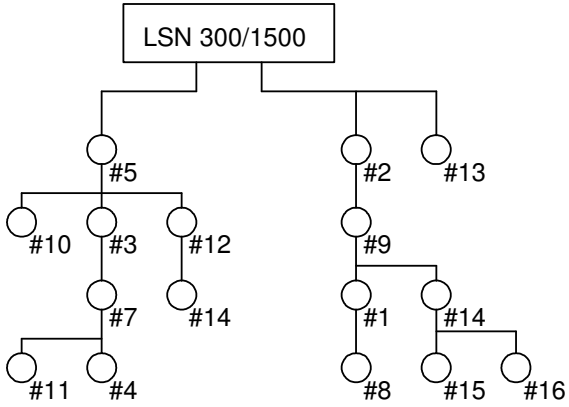
Daisy Chain*



T-Tap



Loop (Class A)*



Mixed

Simple wiring, Possibility to re-use existing cables

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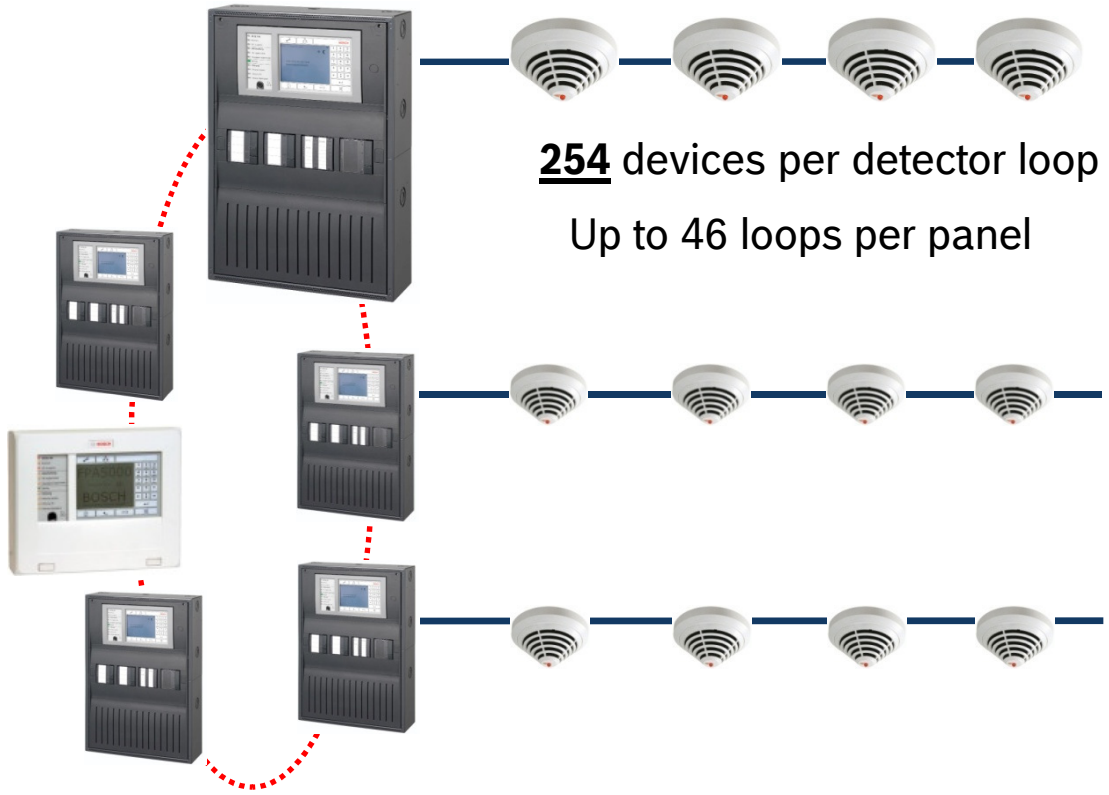
Extensive networking options

Up 4,096 devices per panel

Network up to 32 panels or keypads

UP TO 32,512 DEVICES!



254 devices per detector loop

Up to 46 loops per panel

Tested for systems with up to 35,512 devices

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BOSCH

High level interfaces



Easy integration with Voice-EVAC and Building Management Systems

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Bosch 420 and 520 series detectors

- Flow-optimized casing:
  - Optimum smoke entry performance
  - Repels dirt
- 360° view of the alarm LED.
  Detector base does not need to be aligned during installation
- Drift compensation in the optical and combustion gas sensor
  component for long-term stability
- Contamination detection (trouble message to panel)
- Intelligent Signal Processing (ISP) Algorithm



Fast, reliable, safe, highest performance and reliability

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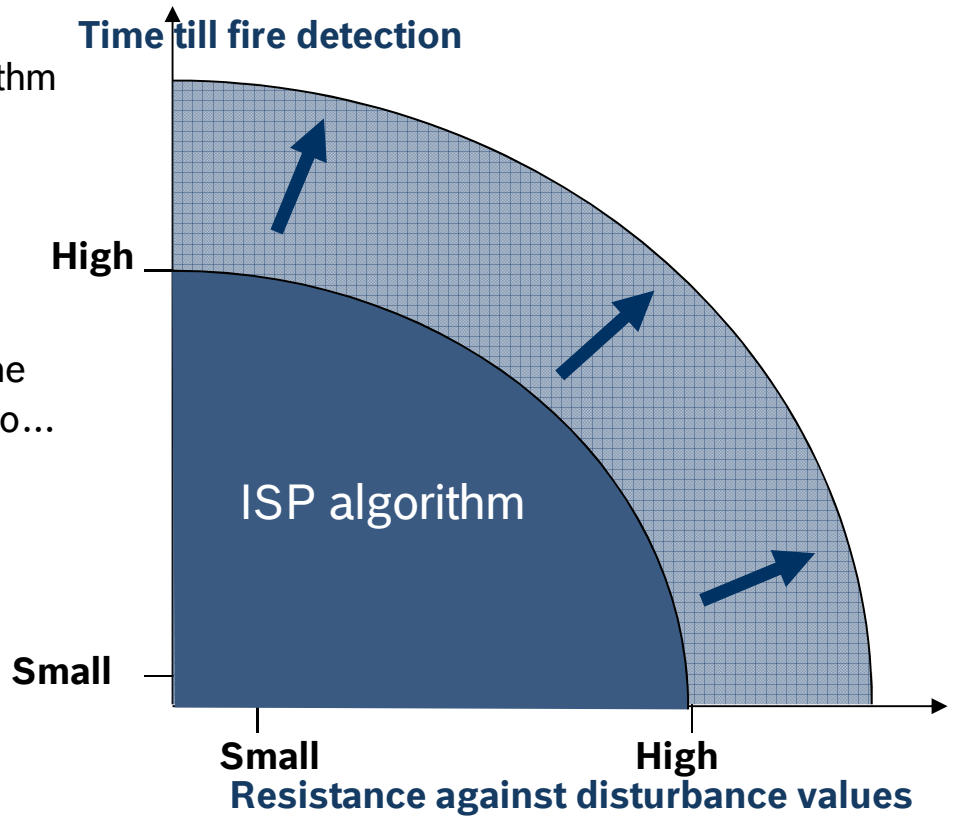
Dual-Ray + Intelligent Signal Processing (ISP)

What is ISP?

- ISP = Intelligent Signal Processing = Algorithm
- The algorithm is based on rules, derived on the experience of a huge number of smoke patterns!
- Intelligent adaption to application type.
- Especially with the Dual Ray Technology, the ISP in combination with multi sensing leads to…
  - ➔ **A even better time till detection of a fire.**
  - ➔ **A very much better identification of disturbance values.**
  - ➔ **And the detection of also very small smoke particles.**



Improved detection performance without compromise on false alarms

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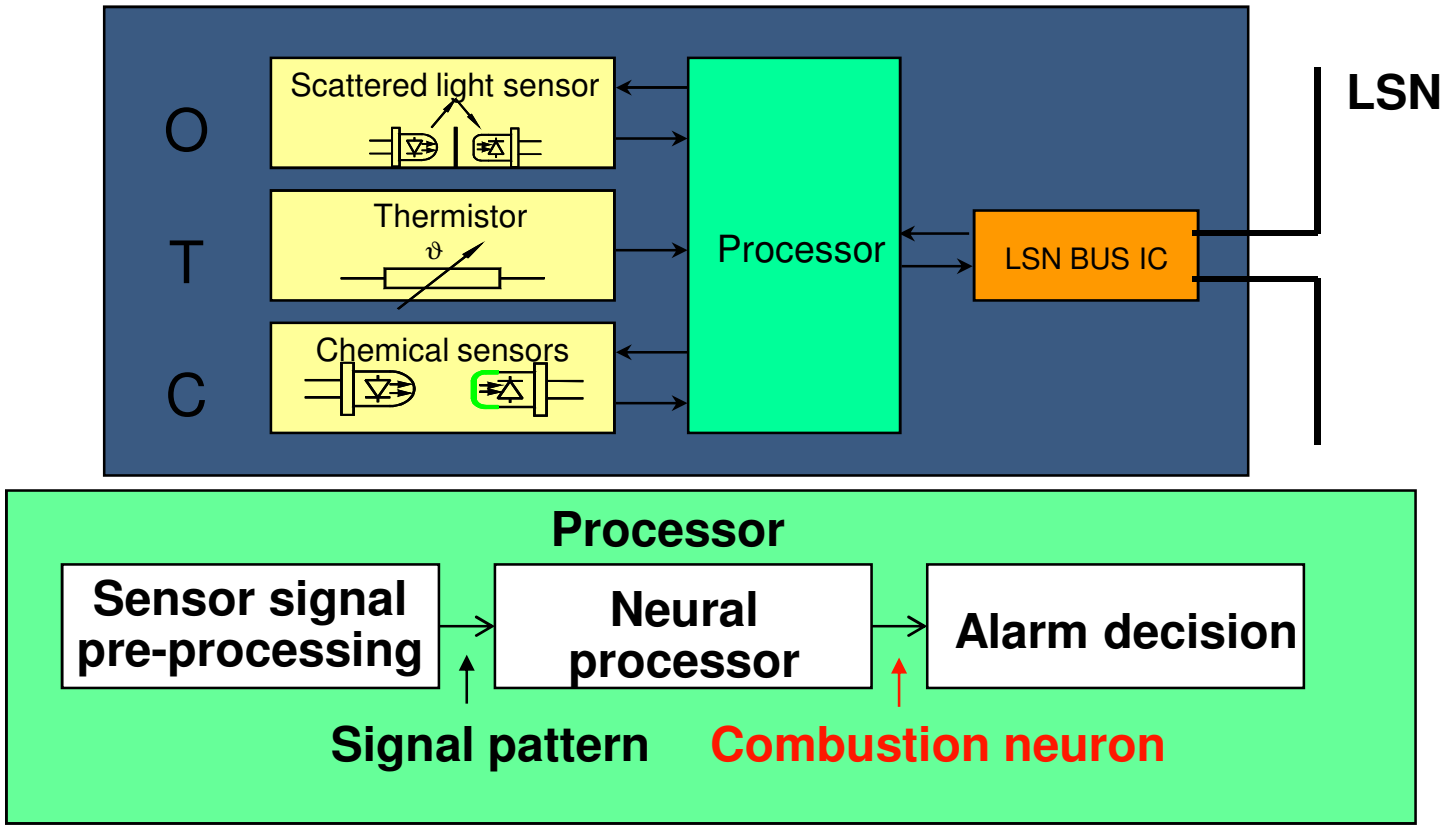
Intelligent Signal Processing ISP



High integration for highest reliability

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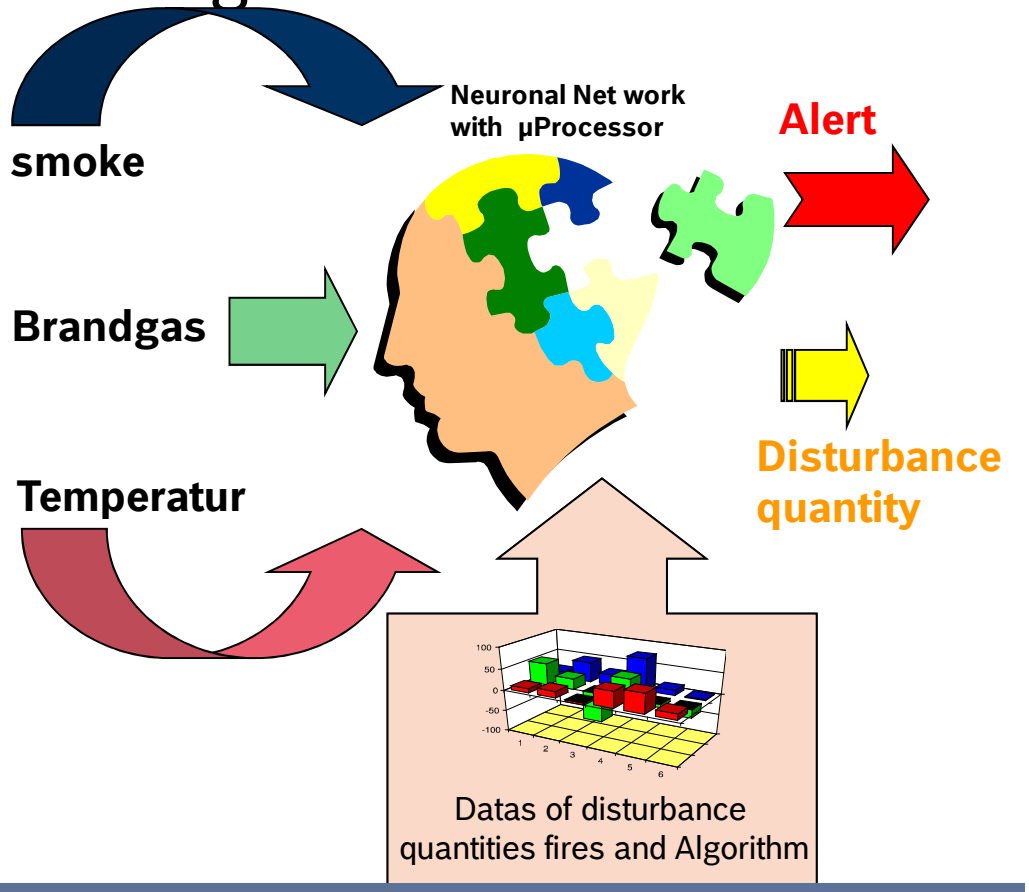
Intelligent Signal Processing ISP







Sensor signals with signal power and rate of rise



Signals from all five sensors are compared with pattern from >5000 test fires

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BOSCH

Reliable detection every environment



Automatic Fire Detector 420 Series

1 FAH-T 420
Heat Detector

2 FAP-O 420
Optical Smoke Detector

3 FAP-OT 420
Multisensor Detector
Optical, Thermal

4 FAP-OTC 420
Multisensor Detector
Optical, Thermal, Chemical

Detectors with Dual Ray Technology

5 FAP-DO 420
Dual-Optical Smoke Detector

6 FAP-DOT 420
Multisensor Detector
Dual-Optical, Thermal

7 FAP-DOTC 420
Multisensor Detector
Dual-Optical, Thermal, Chemical

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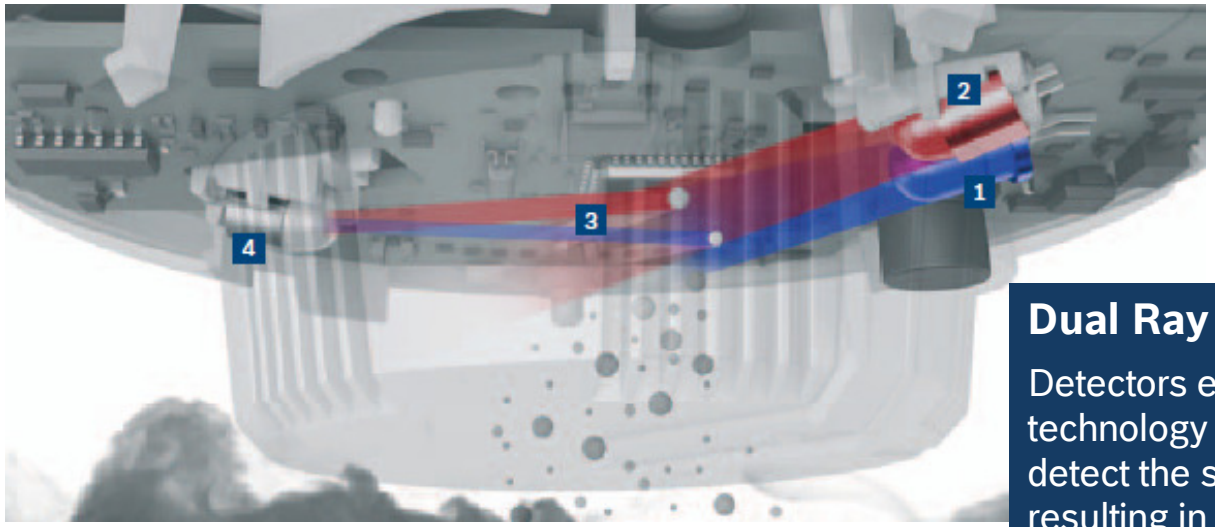
Dual Ray Technology



Dual Ray Technology

Detectors equipped with Dual Ray technology are precise enough to detect the smallest smoke particles, resulting in fewer false alarms

1	**Blue LED**
2	**Infrared LED**
3	**Scattered light**
4	**Photo diode**

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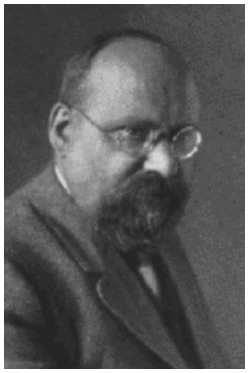
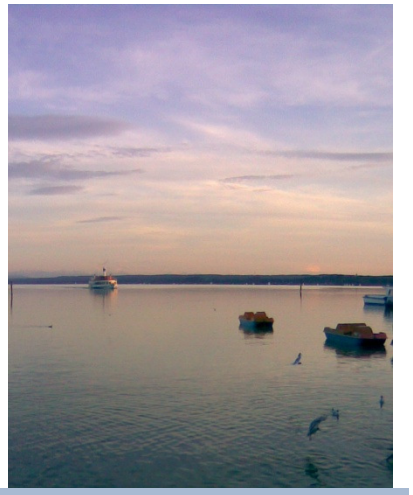
The Mie principle

- The application of an infrared and a blue LED is based on the **Mie-principle:** It derives the characteristics (e.g. size) of particles from their light scattering characteristics.
- In 1908 Gustav Mie, German physicist explained the scattering of light by particles larger than the wavelength of that light
- Mie scattering is responsible for the white light in mist and fog and the white glare around street lamps
- Mie scattering is strongly dependent on particle size - the larger the particles, the stronger the intensity of scattered light in the direction of the incident light





The change of sky color at sunset (red nearest the sun, blue furthest away) is caused by Rayleigh scattering by atmospheric gas particles which are much smaller than the wavelengths of visible light. The grey/white color of the clouds is caused by Mie scattering by water droplets which are of a comparable size to the wavelengths of visible light.

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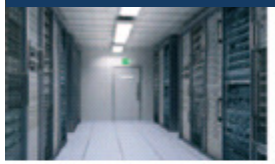
BOSCH

A solution for every challenge



7) Server room FAP-DOTC 420

Monitor a variety of precise conditions, to protect sensitive equipment and prevent data loss



6) Technical room FAP-OTC 420

Quick detection to reduce equipment downtime



5) Underground parking FAP-DOT 420

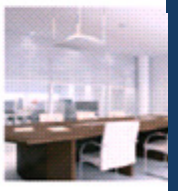
Dual-Ray technology monitors a variety of environmental conditions





1) Offices FAP-O 420

A cost-advantage, reliable way to detect smoldering fires early



2) Conference room FAP-OT 420

For identifying fast-subsiding or smoldering fires



3) Kitchen FAH-T 420

Detect temperature fluctuations in a place with an open fire



4) Bar/Lobby FAP-DO 420

Dual-optical sensor for reliable detection in environments with disturbance values

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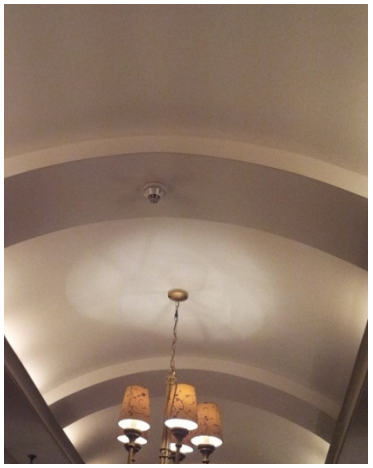
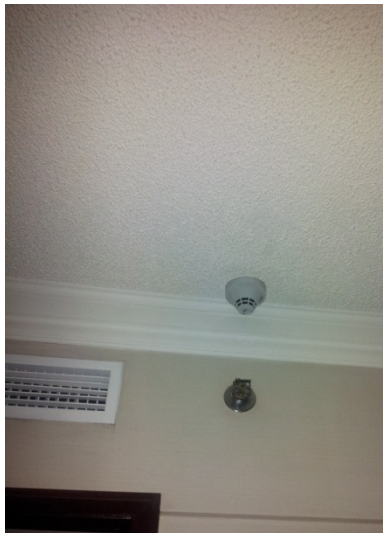
A solution for esthetic challenges









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BOSCH

Award winning technology

Visible



“Invisible”



Don’t spoil a luxurious design with a cheap looking detector

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BOSCH

No compromise about detection performance

2 Models:

- FAP-O 520 Optical Smoke
- FAP-OC 520 Optical Smoke And Carbon Monoxide

Trim Rings

With colored trim rings the detector fits into any color setting.
Use prepared trim rings or color yourself





Adapts to all kind of ceilings thanks to different color rings

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The Centre for Fine Arts (BOZAR) in Brussels, Belgium



Testimonial from Barbara van der Wee,
Master of Science in Conservation:

"The 500 Series from Bosch is the perfect solution for buildings with a high architectural standard like the BOZAR. It would have been a pity to mar its beauty with common detectors."

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BOSCH



Esthetical and easy to clean



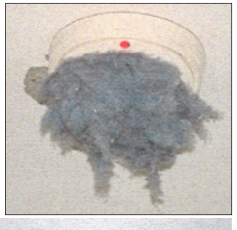
Advantages in dusty or dirty environmental conditions!

- Production halls, distribution centres, etc.

Advantages in clean environmental conditions!

- Clean room, hospital, operating theatre, pharmaceutical factory, etc.

Cleaning of the standard smoke detectors requires additional effort and costs!



500 series provide big advantages under special circumstances:

1. The smooth surface contaminates slowly
2. If it contaminated, it is very easy to clean



500 series are a perfect solution for dirty environment and clean rooms

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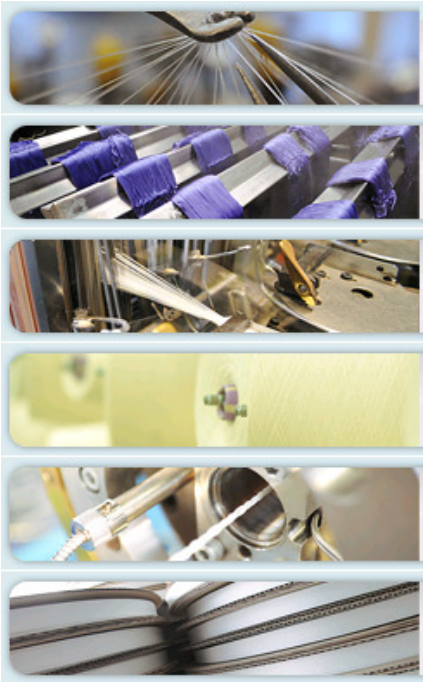
Example: Barthels-Feldhoff Textile Manufacturing

End User

- ✓ Leading narrow textiles producer
- ✓ Braiding, dyeing, milling and ribbon weaving on site
- ✓ Supplier of insoles and shoestrings



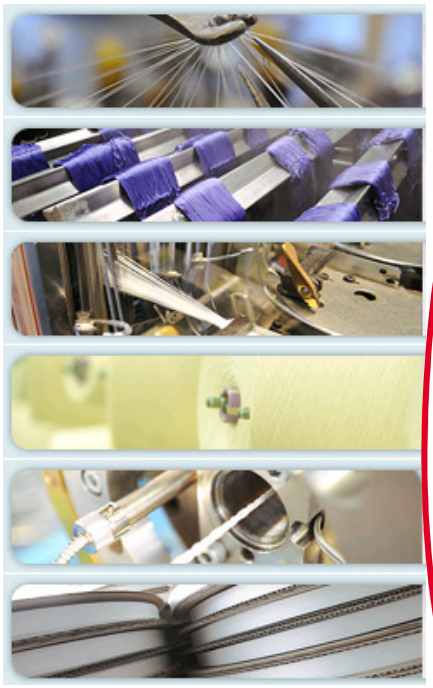
Special Challenges

- ✓ All machine shops and offices must be monitored, but:
  - ✓ Small material and dust particles get everywhere
  - ✓ Fast pollution of conventional fire detectors cause high maintenance costs (detector exchange) and interrupted fire protection

BOSCH



Example: Barthels-Feldhoff Textile Manufacturing



Installed Fire Alarm System

Universal Fire Panel 2000 Series	3
Invisible Fire Detectors 500 Series	~ 300

Interface to

- ✓ Existing smoke and heat exhausting units
- ✓ Air conditioning and ventilation systems
- ✓ Operating equipment control systems

What the customer especially appreciates?

- ✓ No more false alarm
- ✓ No inconveniences or interruptions in the production process due to detector cleaning

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Application example Delphia Yachts

End User

- ✓ One of the biggest yacht shipyards in Poland producing sailing yachts and motorboats
- ✓ Shipyard consists of three manufacturing halls, a warehouse connected which offices and one gatehouse



Special Challenges

- ✓ Safeguard complete production process of the luxury yachts and motorboats
- ✓ High amount of dirt and dust developed during the production
- ✓ In some manufacturing halls a gel coated dust evolves
- ✓ High flammable materials with different fire hazard used for production
- ✓ No interruption during the fire alarm system installation allowed



Application example Delphia Yachts



Installed Fire Alarm System

FPA 5000 Fire Panels	1
Invisible Fire Detectors 500 Series	>200

Other peripherals like

Fire Detectors 420 Series

What Delphia Yachts especially appreciates?

- ✓ No more false alarm
- ✓ Very easy and cost saving cleaning of detectors
- ✓ No inconveniences or interruptions in the production process during the installation

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End User

AsiaWorld-Expo adjoins Hong Kong International Airport built on a man-made island 25 kilometres from the city. With more than 70,000 square meters of rentable exhibition, conference and entertainment space, the new center is Hong Kong' s largest event facility.

AsiaWorld-Expo is the only exhibition and events center fully integrated with one of the world's busiest international airports and well supported by an in-venue mass transit railway station. In addition to the airport, opened in June 1998, and Asia-World-Expo, the artificial island includes hotels, a metro railway system, ferry terminals, a 9-hole golf course, a retail and entertainment centre, and office complexes.



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Special Challenges

- ✓ The project shall be completed within six months from equipment delivery to commissioning
- ✓ Complex evacuation procedures in 12 fire zones of the building and integration with the voice evacuation system (ensure maximum safety of its guests)
- ✓ Integration with the smoke extraction system for exhibition halls of ceiling height up to 25m





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Installed Fire Alarm System

UEZ2000B Fire Alarm Panel	12
Loops	48
Smoke/heat detectors and manual call point	1850
Beam smoke detector	90
LED indicators (BAT 100 LSN)	1700
Interface modules input/output point	2600
Fire resistant cable, shielded & twined, km	60





Interface to:

Bosch Building Integration System

EVAC: Praesideo

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Example: Shangri-La's Villingili Resort and Spa Maldives

Owner

Hong Kong-based Shangri-La Hotels and Resorts is Asia Pacific's leading luxury hotel group and regarded as one of the world's finest hotel ownership and management companies.

The Shangri-La story began in 1971 with its first deluxe hotel in Singapore. Today, there are 72 hotels and resorts throughout Asia Pacific, North America, the Middle East, and Europe, representing a rooms inventory of over 30,000. In addition, new hotels are under development in Canada, mainland China, India, Philippines, Qatar, Turkey and United Kingdom.



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Special Challenges

- ✓ Distance of most detection loops is 2500~2850m
- ✓ Distance of the network between panels is up to 900m
- ✓ Most of the loop and network cables shall be laid underground
- ✓ Weather - hot and humid, up to 40°C and 99%RH
- ✓ Risk of false alarm, e.g. kitchen and restaurant areas



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Installed Fire Alarm System

- ✓ Fire detection shall be provided for the whole resort area
- ✓ Installation comply to BS5839-1:2002 and the code of local fire bureau
- ✓ 4 nos. FPA-5000 fire panels and 3 nos. FMR-5000-13 repeater panels in network
- ✓ 1 workstation of fire monitoring system
- ✓ 18 detection loops
- ✓ 900 addressable smoke, heat & multisensor detectors
- ✓ 850 interface modules

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Demonstration Movies

- NFPA Test Burn (3:45)
- FPA-5000 (3:25)
- 420-series detectors (4:57)
- DO-detector cigarette test (2:01)
- DO-detector open wood fire TF1(2:05)
- DO-detector steam test (1:57)
- 520-series (2:03)



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PROJECTS UTILIZING LATEST TECHNOLOGIES

LIM POH HENG

SENIOR PROJECT MANAGER, ICSS

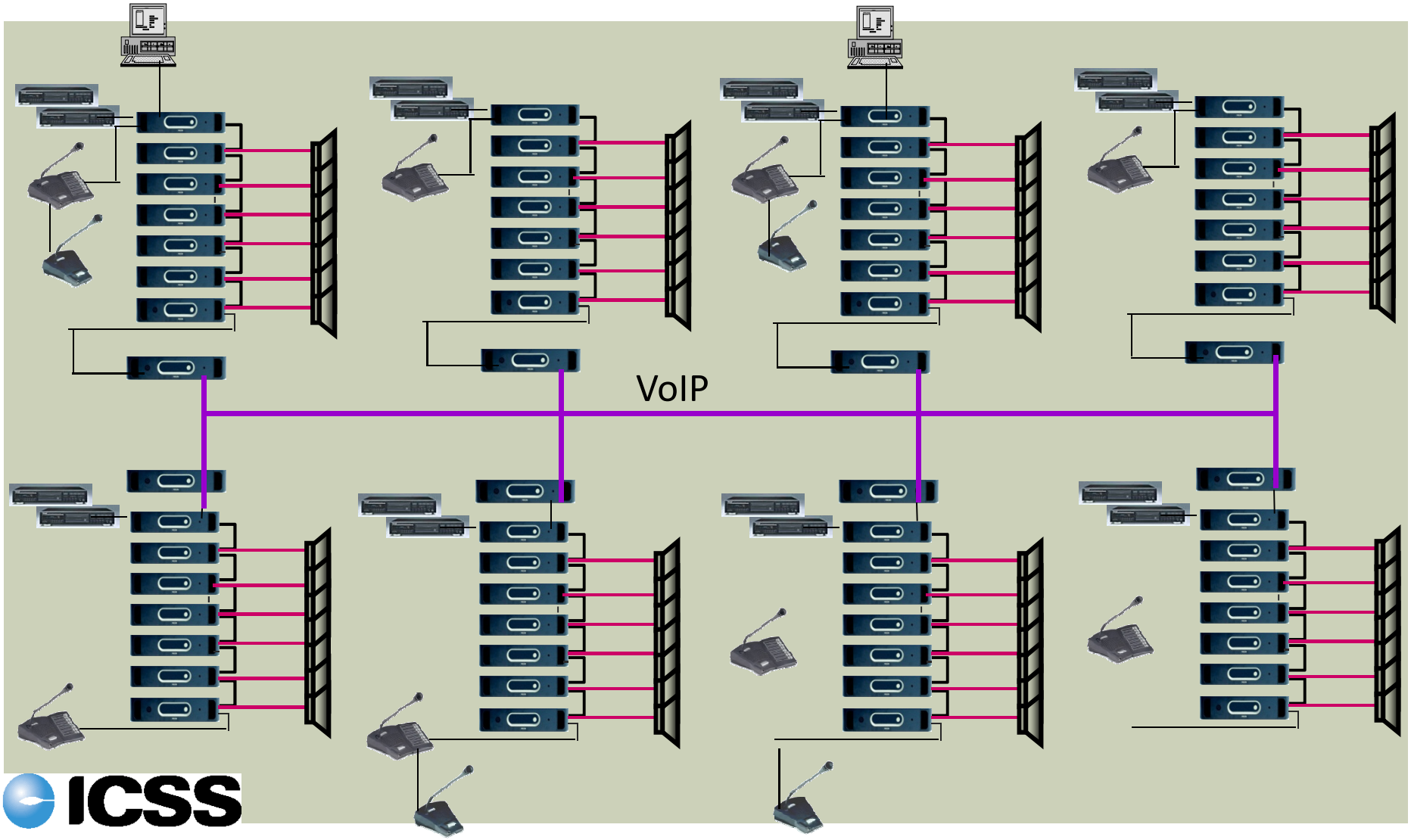
INTELLIGENT IP BASED PUBLIC ADDRESS SYSTEM FOR INTEGRATED MULTIFUNCTIONAL FACILITY

INTEGRATED MULTIFUNCTIONAL FACILITY



ICSS

DISTRIBUTED 1-WAY EMERGENCY VOICE COMMUNICATION SYSTEM -



SYSTEM'S FEATURES

- Digital PA System – PA Controllers & Amplifiers
- High audio quality-DSP technology
- User friendly configuration via PC
- Communication via LAN Network



ICSS

BENEFITS

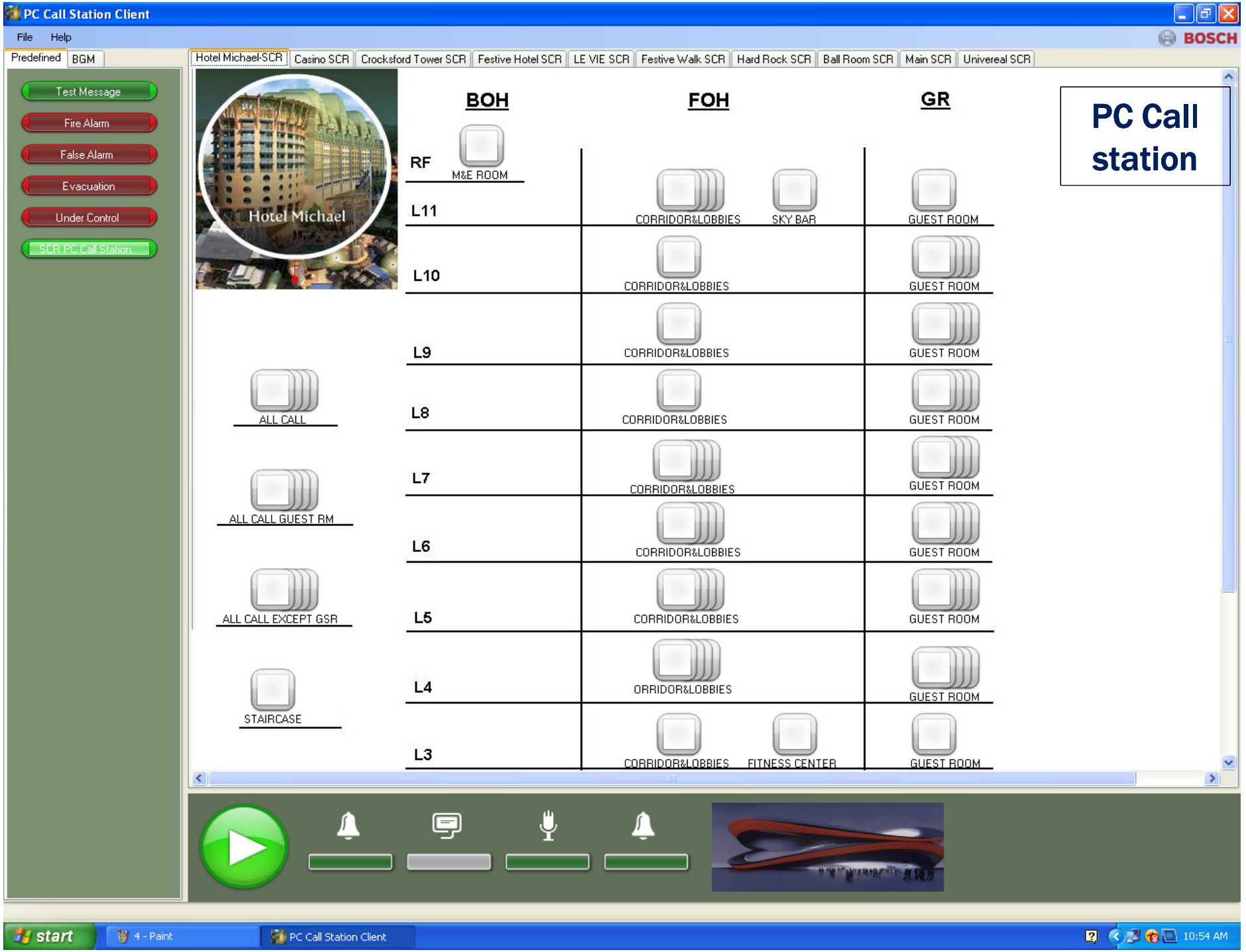
- Distributed Control- PA Controller & Amplifiers are located nearer to the loudspeakers-saves copper cables
- Speakers' sound quality better as signal frequency losses & voltage drop are reduced, due to shorter length cables.
- Local PA Controller & Amplifiers operates on its own even if any other PA Controller in the network is faulty.
- At FCC room, multiple (70 nos.) fire alarm signals are linked to the main PA Controller; PA Controller distributes to the respective PA Controllers & Speakers.

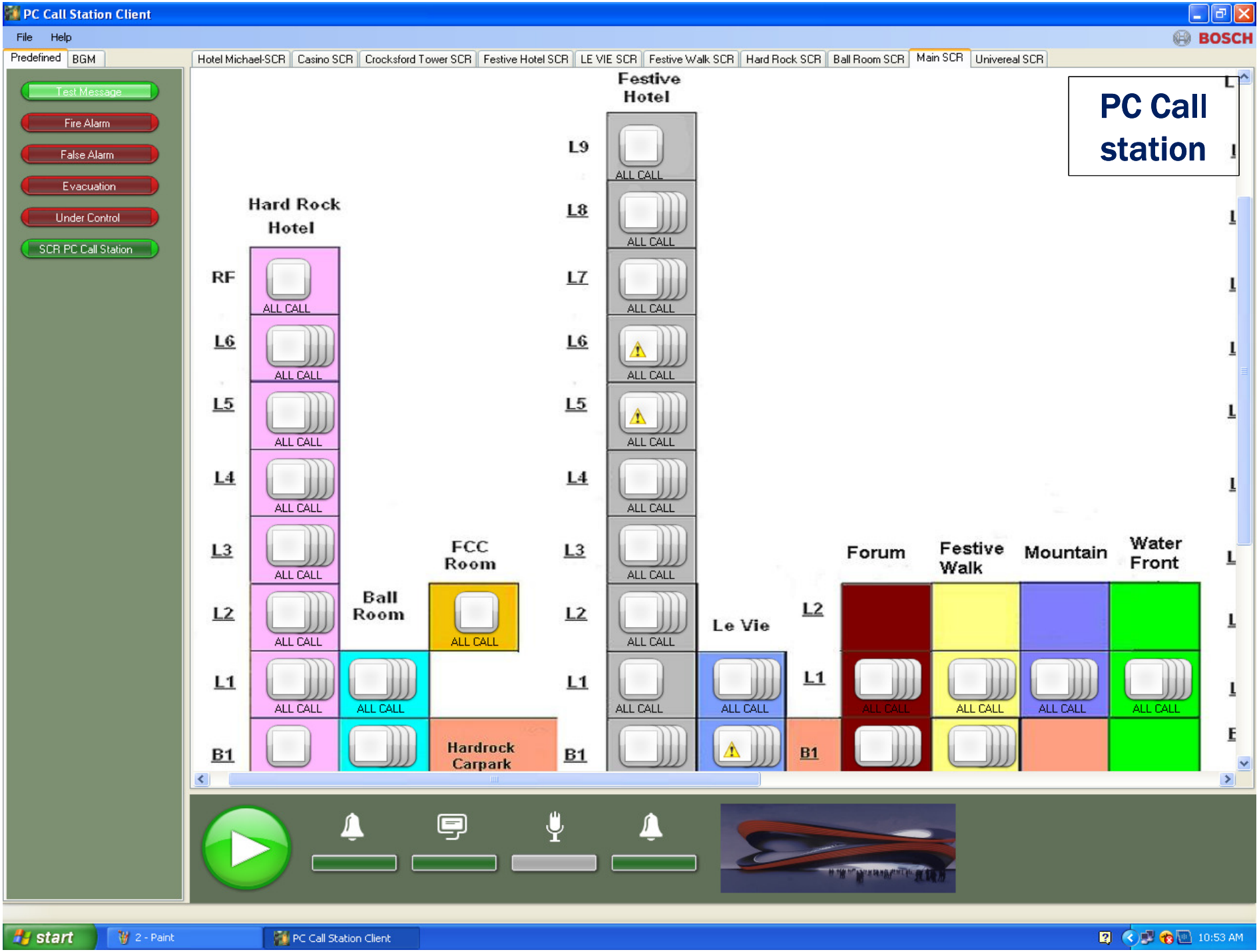
ICSS

BENEFITS

- Class D power amplifiers are used - total audio power is delivered with over 90% efficiency.
- Considerable savings in the consumption of electricity and reduced heat generation.
- Each PA Controller can route up to 28 simultaneous audio channels, free from cross-talk.
- System can be expanded/ modified anytime without adding/ modifying cable runs.

ICSS


PC Call Station Client
File
Help
BOSCH
Predefined
BGM
Test Message
Fire Alarm
False Alarm
Evacuation
Under Control
SCR PC Call Station
Hotel Michael-SCR
Casino SCR
Crocksford Tower SCR
Festive Hotel SCR
LE VIE SCR
Festive Walk SCR
Hard Rock SCR
Ball Room SCR
Main SCR
Univereal SCR
Hotel Michael
BOH
FOH
GR
PC Call station
RF
M&E ROOM
L11
CORRIDOR&LOBBIES
SKY BAR
GUEST ROOM
L10
CORRIDOR&LOBBIES
GUEST ROOM
L9
CORRIDOR&LOBBIES
GUEST ROOM
L8
CORRIDOR&LOBBIES
GUEST ROOM
L7
CORRIDOR&LOBBIES
GUEST ROOM
L6
CORRIDOR&LOBBIES
GUEST ROOM
L5
CORRIDOR&LOBBIES
GUEST ROOM
L4
ORRIDOR&LOBBIES
GUEST ROOM
L3
CORRIDOR&LOBBIES
FITNESS CENTER
GUEST ROOM
ALL CALL
ALL CALL GUEST RM
ALL CALL EXCEPT GSR
STAIRCASE
start
4 - Paint
PC Call Station Client
10:54 AM


PC Call Station Client
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Casino SCR
Crocksford Tower SCR
Festive Hotel SCR
LE VIE SCR
Festive Walk SCR
Hard Rock SCR
Ball Room SCR
Main SCR
Univereal SCR
PC Call station
Festive Hotel
Hard Rock Hotel
FCC Room
Ball Room
Le Vie
Forum
Festive Walk
Mountain
Water Front
Hardrock Carpark
RF
L9
L8
L7
L6
L5
L4
L3
L2
L1
B1
ALL CALL
start
2 - Paint
PC Call Station Client
10:53 AM

BENEFITS

- More music channels, announcement microphones, speakers, etc can be easily added when required
- A PC Call-station is configured to manage multiple background music sources - centralized Control of music sources.
- Special Rooms are installed with Audio Source selector panels.
- User selects the audio source of its own choice; User controls the volume of the audio signal using same keypad
- Same system cabling is used



ICSS

IP BASED CCTV SYSTEM

IP BASED CCTV SYSTEM
CORE SYSTEM COMPONENTS

High Definition- IP Cameras

Analog Cameras with IP Encoders

Redundant Network and Servers Design

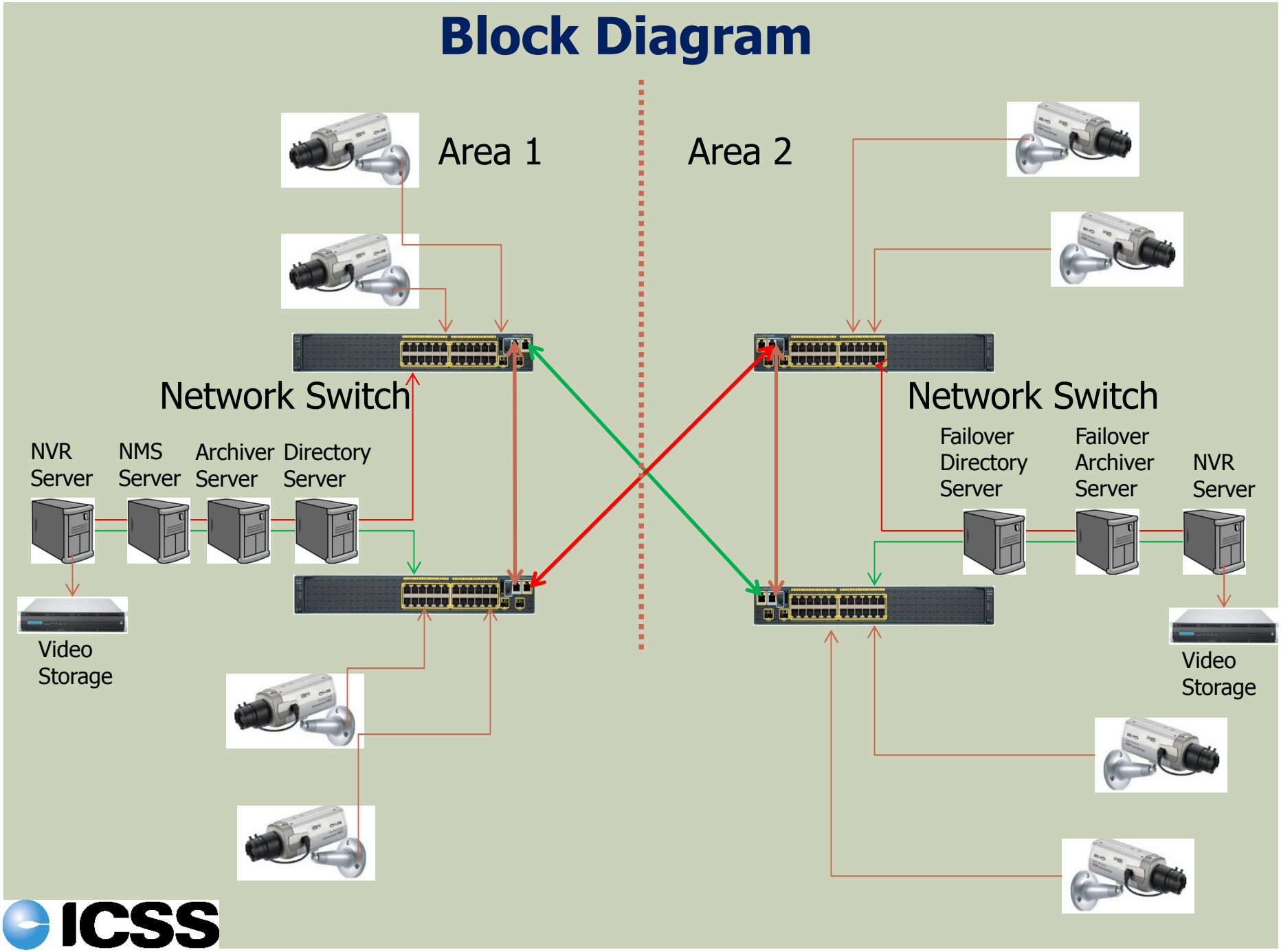
Video Content Analysis

Video Management System

Video Recording Storage and redundancy

ICSS

Block Diagram



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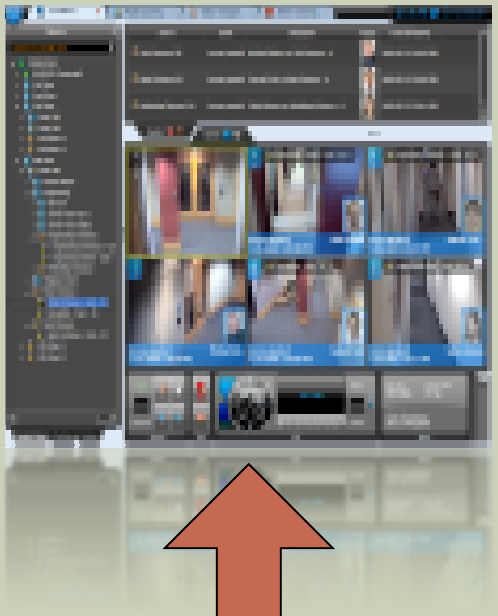
NETWORK INFRASTRUCTURE CCTV SYSTEM

VMS Monitoring Station



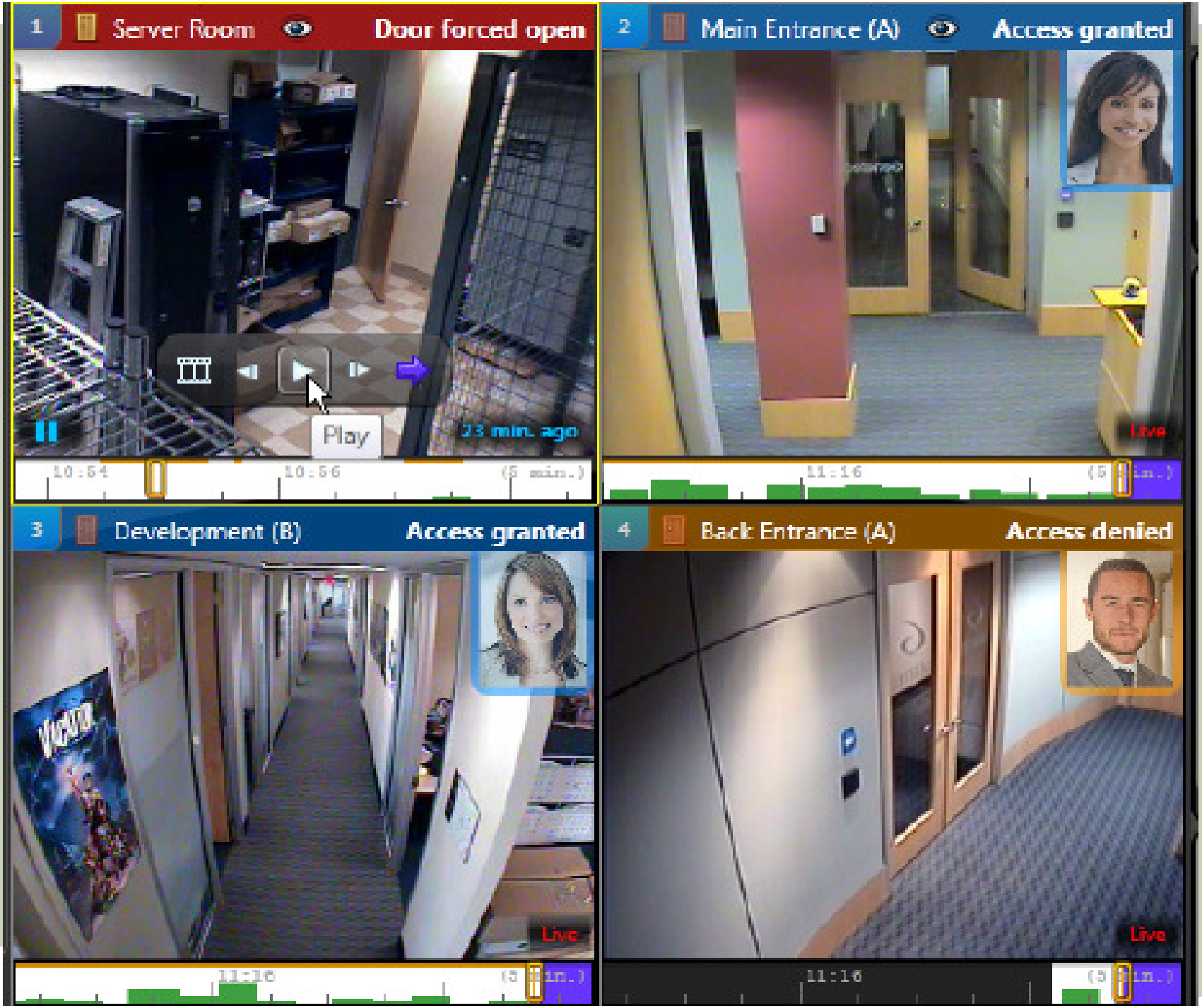
System Description and Operation Flows – Video Content Analytics Integration with VMS – Security Control Centre

VCA Server



VMS Servers – Directory Server, Archiver Server

ICSS


1
Server Room
Door forced open
Play
23 min. ago
10:54
10:56
(5 min.)
2
Main Entrance (A)
Access granted
Live
11:16
3
Development (B)
Access granted
Live
11:16
4
Back Entrance (A)
Access denied
Live
11:16

SYSTEM'S FEATURES

A. Redundant Network Design with capacity to handle Bandwidth of up to 1Gb.

B. Video Content Analysis
- Vehicle Directional Detection for safety issue & violation detection
- Vehicle Parking Detection- Illegal Parking

C. Video Management System using VMS Software

D. System faults monitoring using NMS workstation. SMS mobile alerts for equipment/part failure.

E. Network Management and alarm monitoring using Inter-mapper Software.

F. Redundant Video recording. If at area 1; the recording fails, automatic recording will start at area 2.

G. Multicasting capability to view the same video at multiple locations at the same time.

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BENEFITS

- Enhanced value of Security System
- High Picture Resolution and quality by HD cameras
- Video Content Analysis and forensic search
- Redundant Servers set-up and network connectivity
- Network bandwidth and device monitoring using Inter-mapper software
- User-Friendly Surveillance Monitoring

ICSS

WIRELESS AUDIO SYSTEM FOR FITNESS CENTRES

WIRELESS AUDIO SYSTEM FOR GYM & FITNESS CENTRE

- **Typical Fitness Centre Scenario:**

- TVs provided in the exercise area
- Each TV set shows different TV channels
- TV sets are usually muted to reduce noise disturbance
- Gym users are unable to enjoy TV programs fully





ICSS

SOLUTION: DIGITAL WIRELESS SYSTEM

- Listening via individual earphones to prevent disturbance
- Wireless (Digital infra-red, 2-8 Mhz) , free movement
- Clear digital Hifi audio quality
- 16 Channels (up to 32 Ch) for selection
- TV or any other audio channels selection



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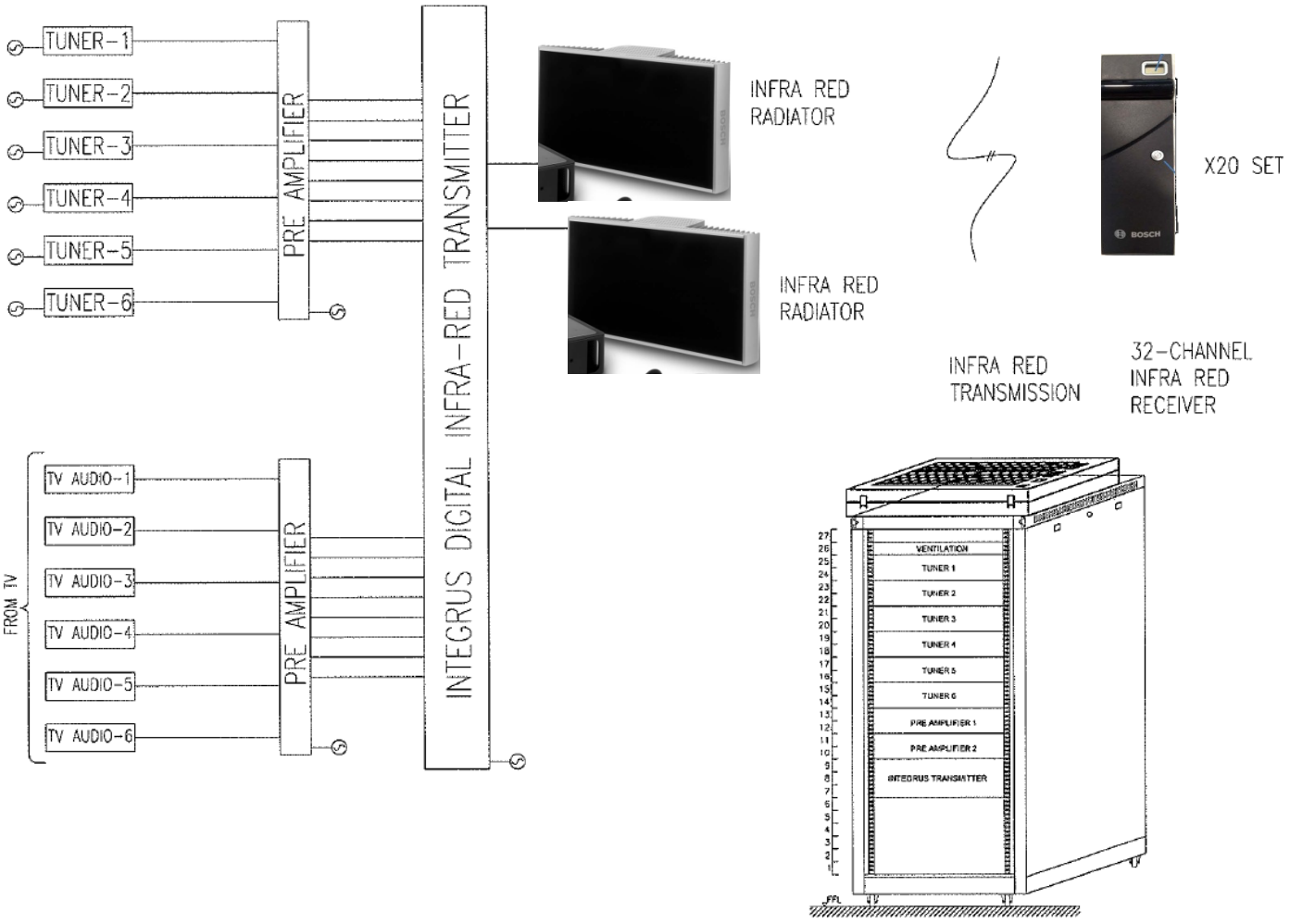
SYSTEM OVERVIEW



Questions ???

Thank You

ICSS

ELECTRO-VOICE – PROFESSIONAL SOUND



PORTABLE LOUDSPEAKER SYSTEM



INSTALLED LOUDSPEAKER SYSTEM



COMMERCIAL LOUDSPEAKER



POWER AMPLIFIER & PROCESSORS



WIRED & WIRELESS MICROPHONES



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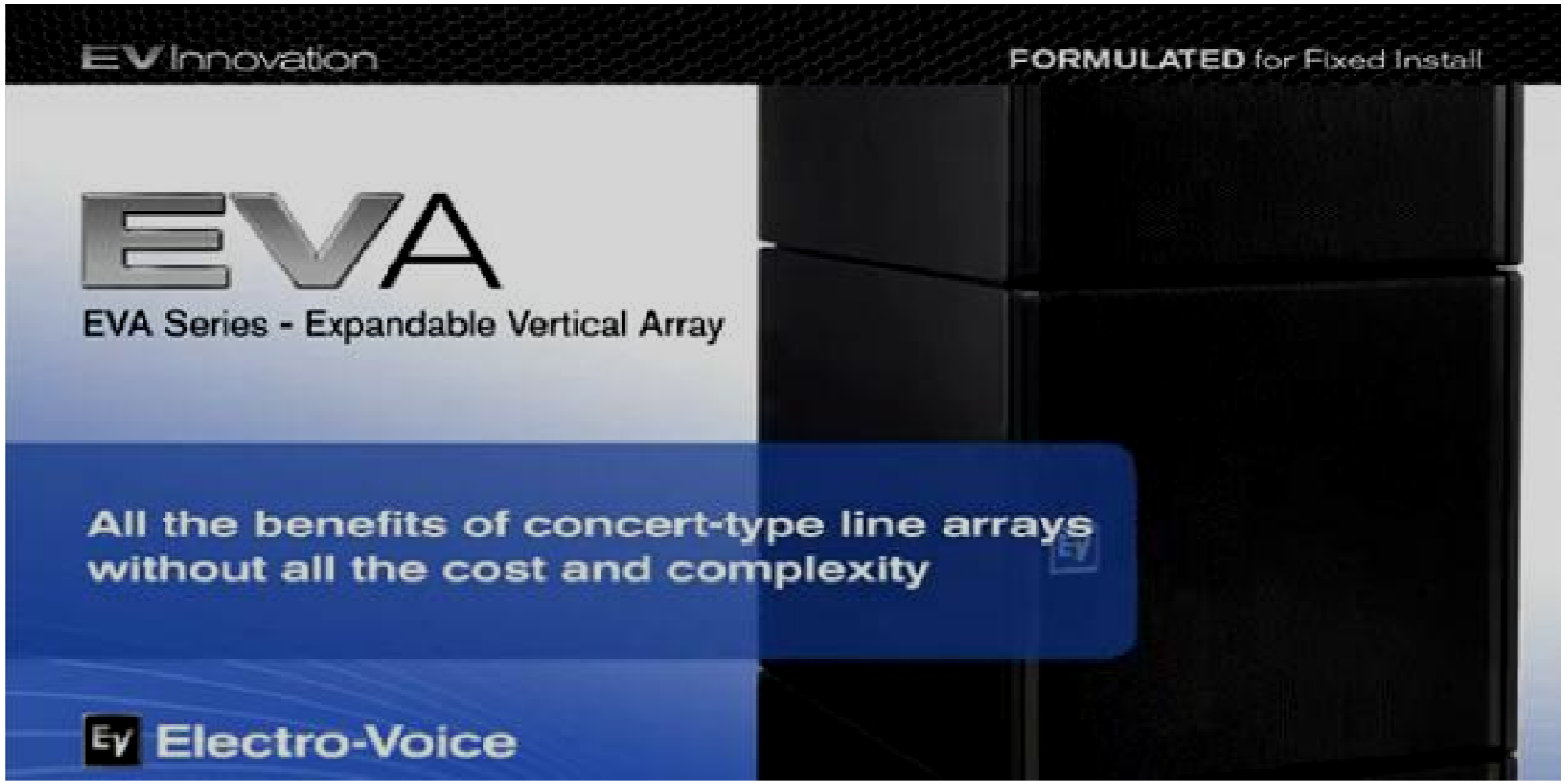

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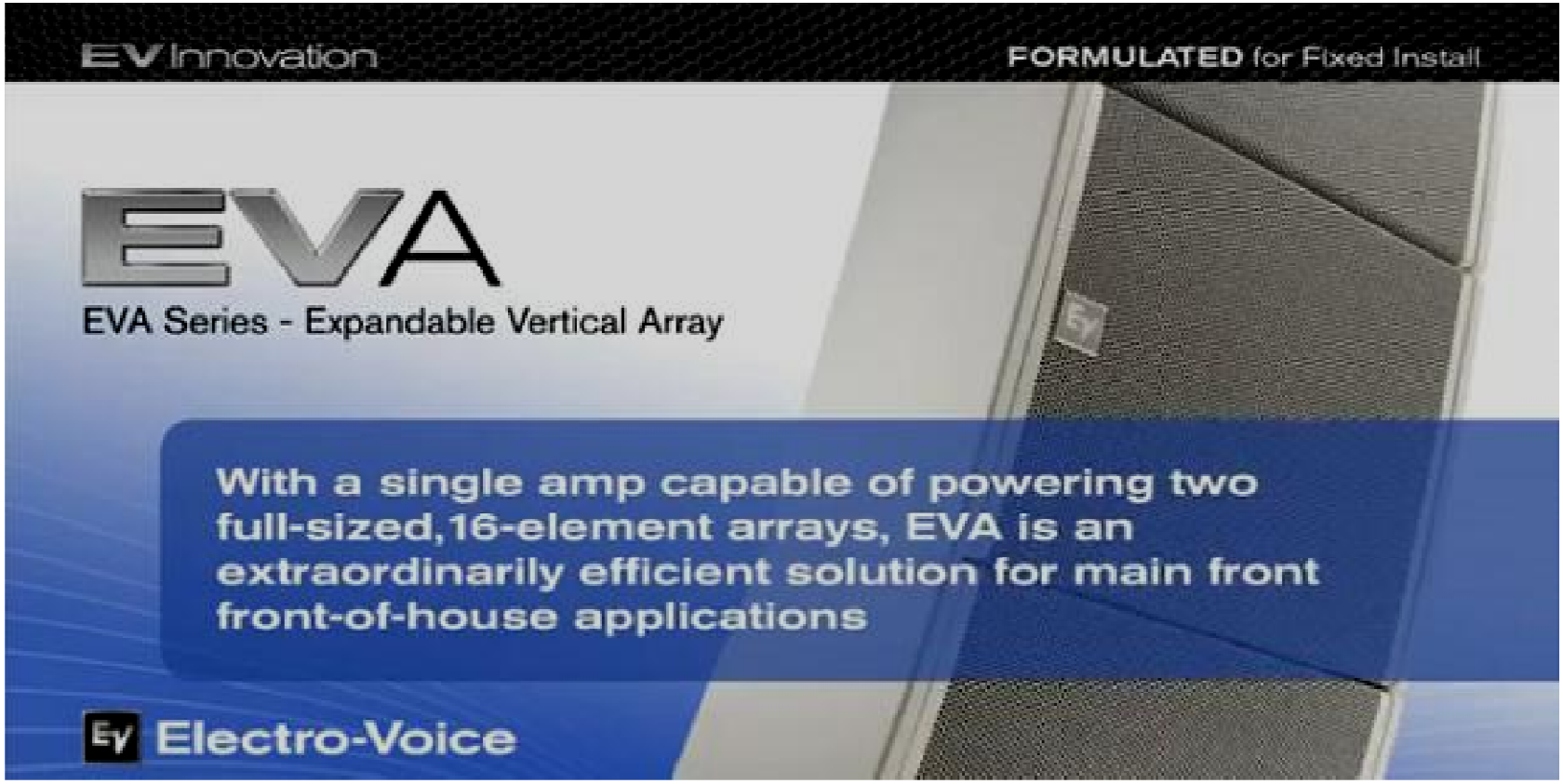

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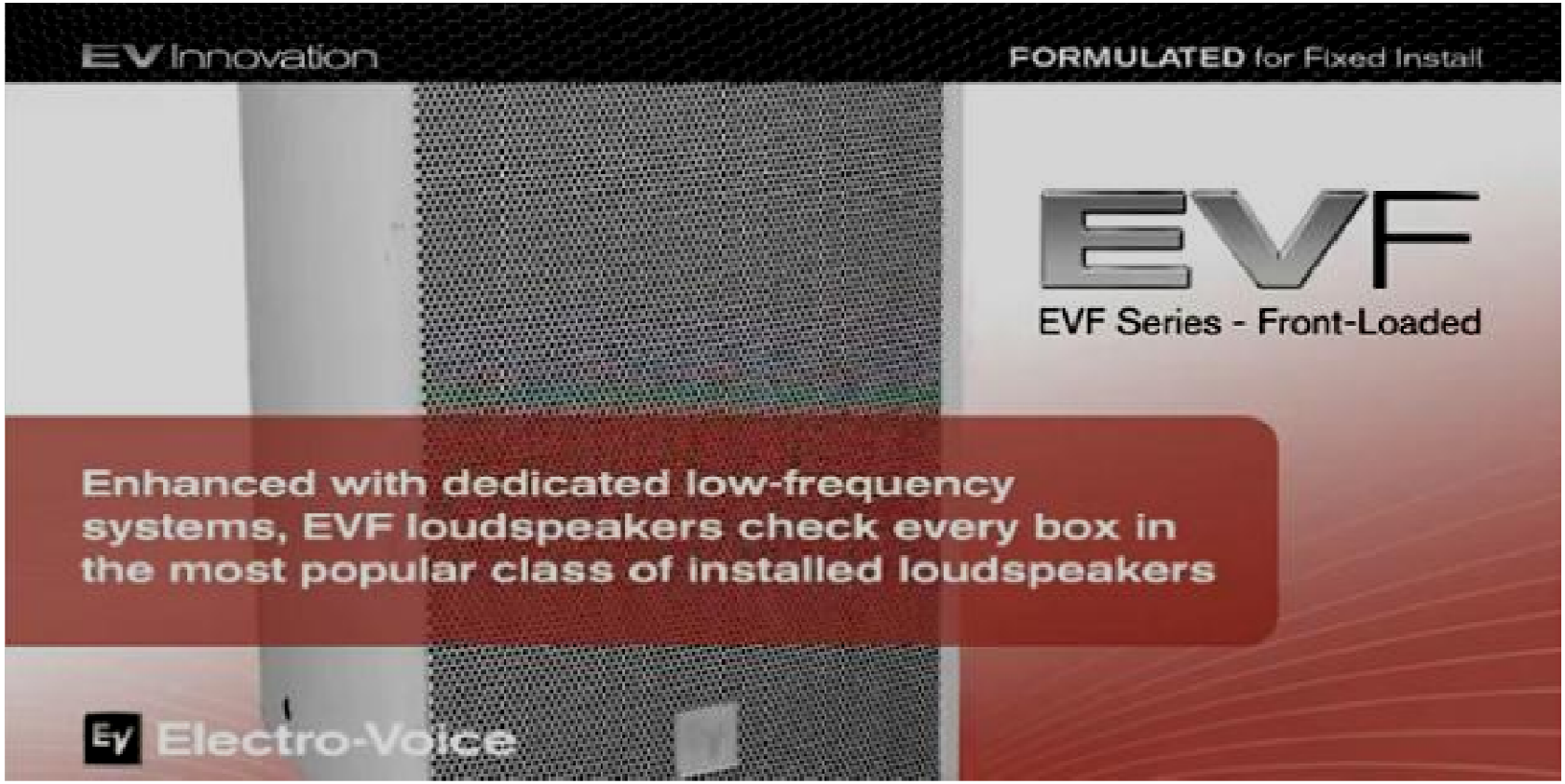

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EV Innovation

FORMULATED for Fixed Install

Key Features

- New DVX & SMX series woofers – engineered to the highest standards by EV, using state-of-the-art technology
- New DH7N & ND2B compression drivers – breakthrough HF performance
- Simple, adaptable, contractor-friendly input panels accept a range of connector, transformer, and attenuation accessories



Electro-Voice

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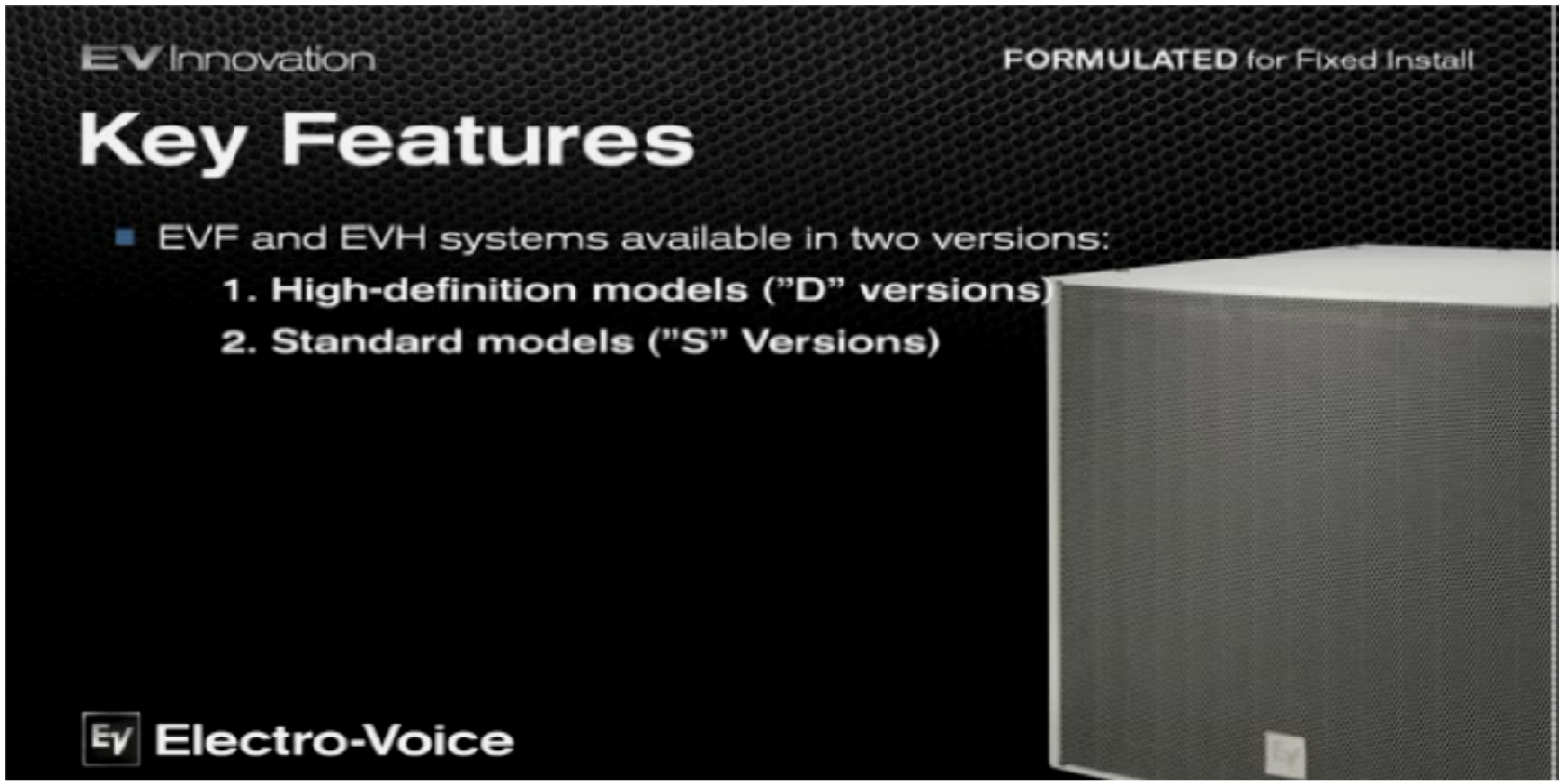

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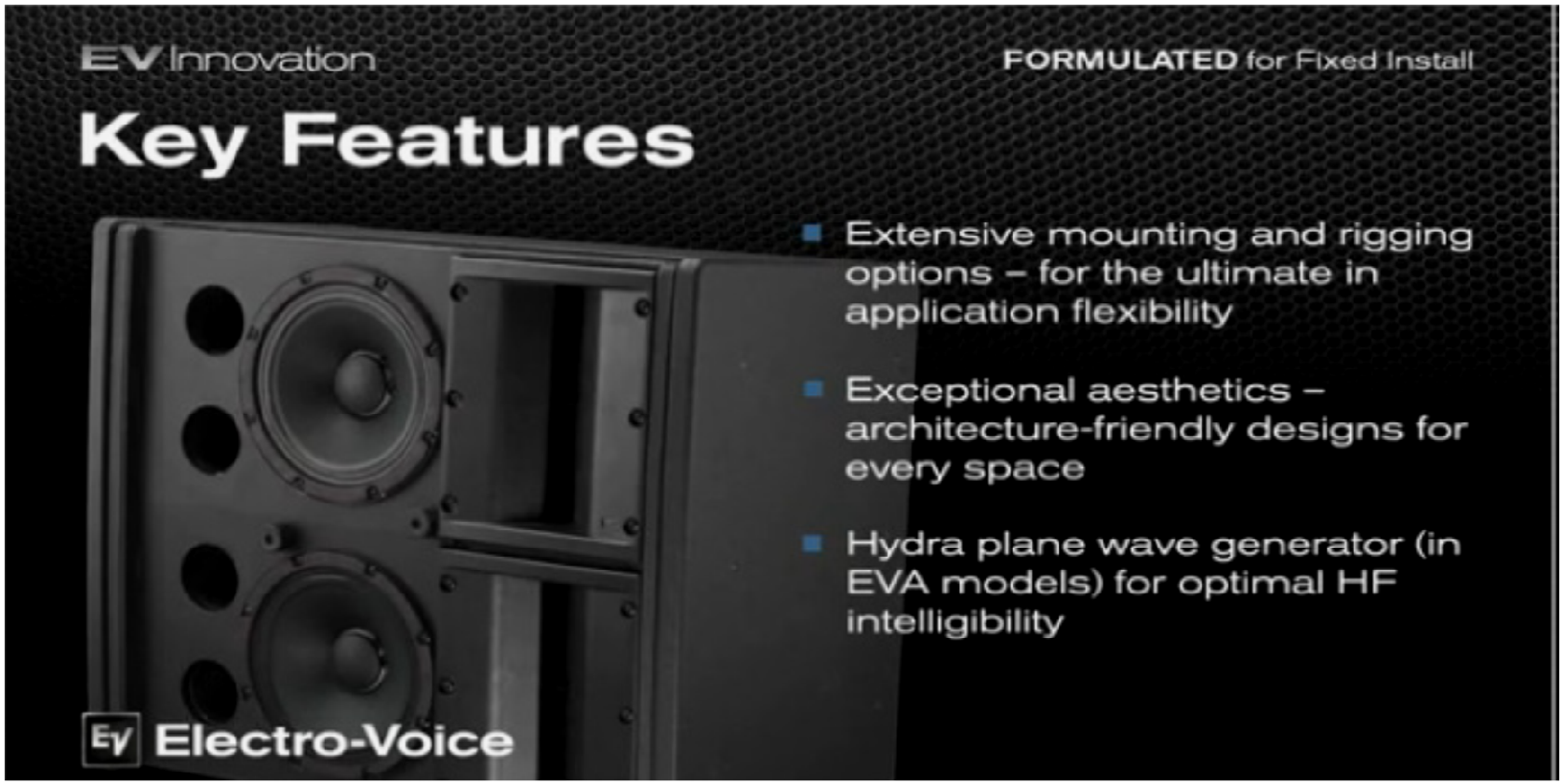

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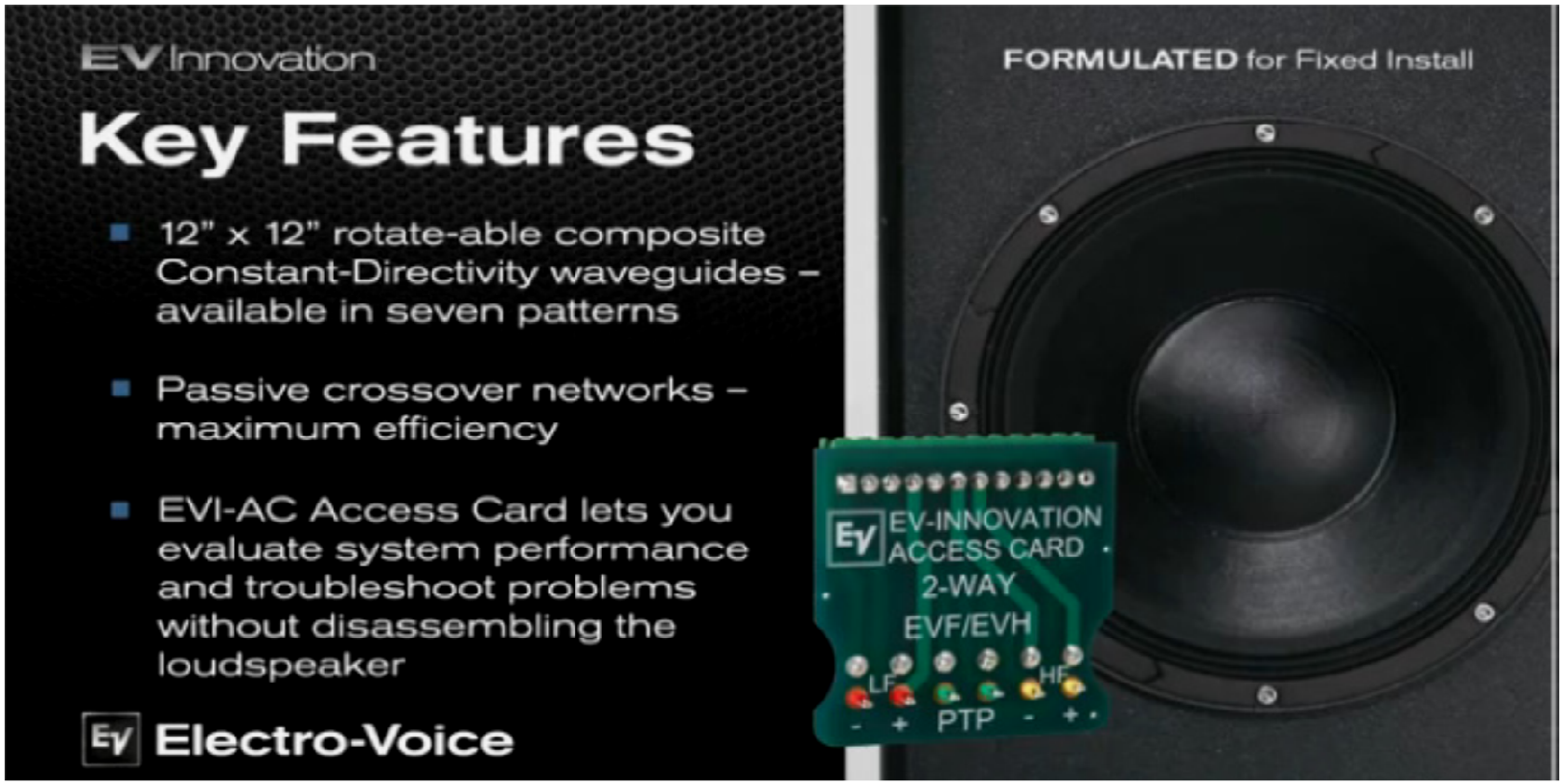
ELECTRO-VOICE – PROFESSIONAL SOUND



Security Systems

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ELECTRO-VOICE – PROFESSIONAL SOUND



8-inch Two-Way Powered Full-Range

- Lightweight **800-W** Class-D amplifier : **126-dB Max SPL**
- Rotatable 90 x 50 horn
- Selectable hig-pass filter for use with subwoofer
- Line and microphone inputs
- Integral monitor angle and built-in pole mount
- 8.6 kg , with handle for easy carrying

12-inch Powered Subwoofer

- Lightweight **700-W** Class-D amplifier : **126-dB Max SPL**
- Dual XLR stereo inputs and outputs
- DSP with low-end boost and polarity control
- Pole mount for full-range systems
- 20.8kg , with handle for easy carrying

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ELECTRO-VOICE – PROFESSIONAL SOUND

PASSIVE

Loudspeakers

12

15





18

2X15

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ELECTRO-VOICE – PROFESSIONAL SOUND

POWERED

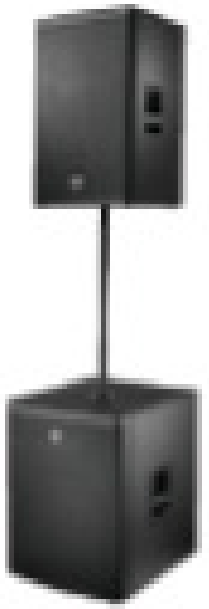
Loudspeakers

12

15

18





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SOUND APPRECIATION

LISTENING DEMO

EVF-1122S



- ND2B 2" (51 mm) diaphragm, 1.4" (36 mm)-exit pure titanium compression driver
- SMX2121 12" (305 mm) LF transducer with fully symmetric drive
- Advanced fourth-order crossover network with HF protection
- 98 dB sensitivity, 131 dB maximum SPL
- System rating: 500 W continuous, (2000 W peak)
- Active rating: LF 400 W / HF 40 W continuous (1600 W / 160 W peak)

QRx 118S



- Subwoofer
- Direct radiating vented design
- High Sensitivity
- Solid bass down to 30 Hz (-10 dB)

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