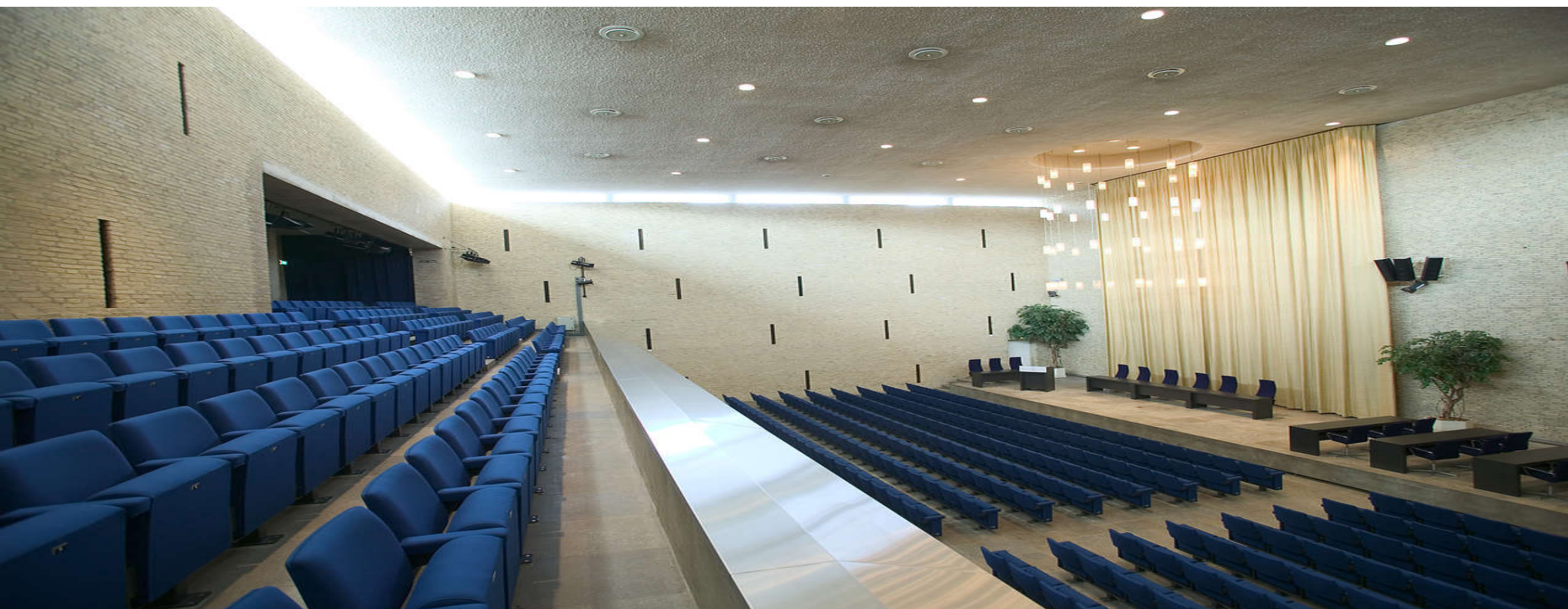




University Campuses Solution from Bosch Security Systems



University Campuses Solution from Bosch Security Systems

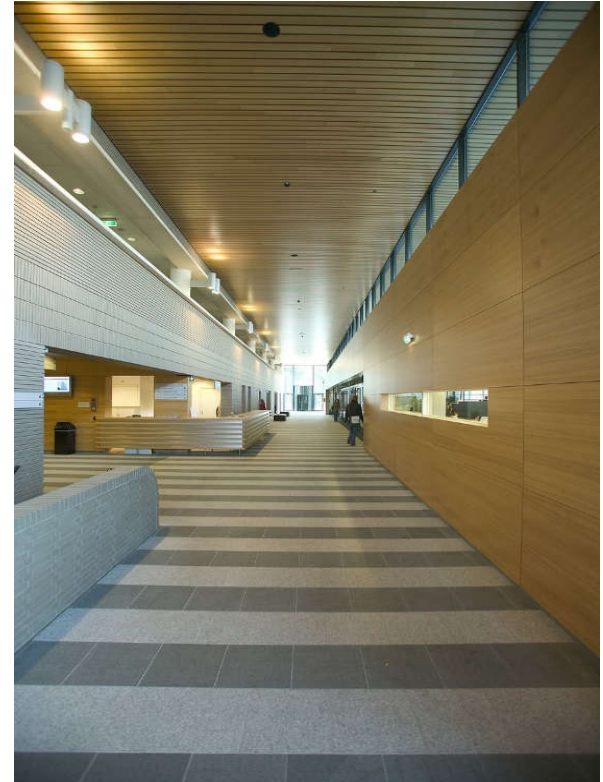
Content

University business

Solution

References

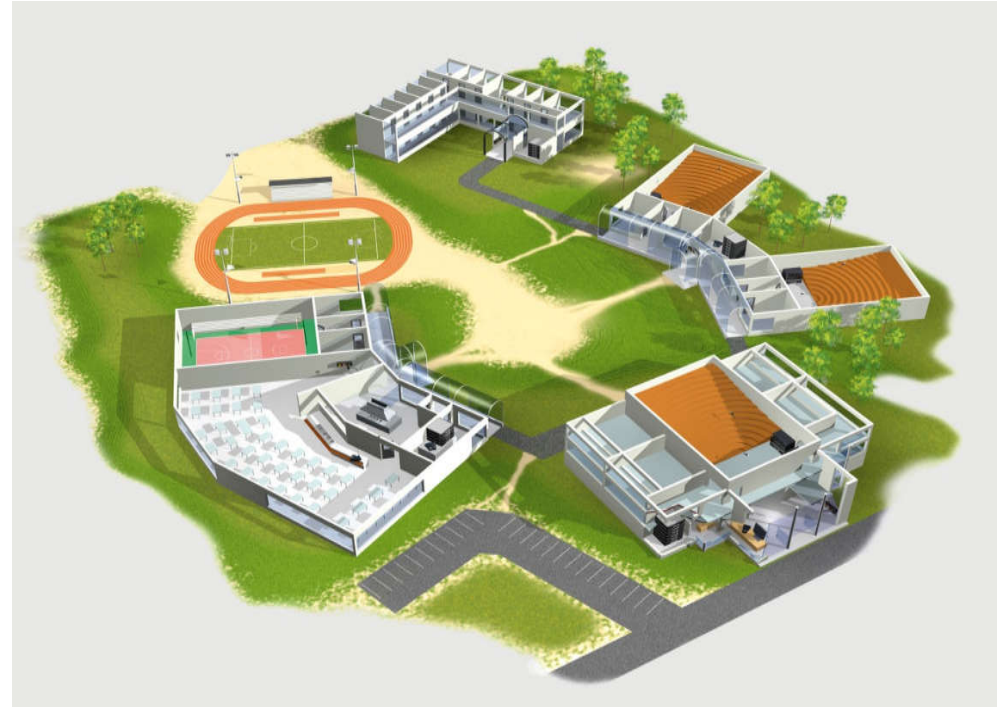
Summary



University Campuses Solution from Bosch Security Systems

Key characteristics of an university campus

- ▶ With hundreds of buildings, thousands of students and staff, campuses are analogue to small cities, with all of the challenges towards safety and security that entails.



University's primary duty is the education of its students within a safe and secure environment

University Campuses Solution from Bosch Security Systems

University campus

Major premises which need to be secured



Student dorms



Labs, auditoriums, halls



Sport facilities

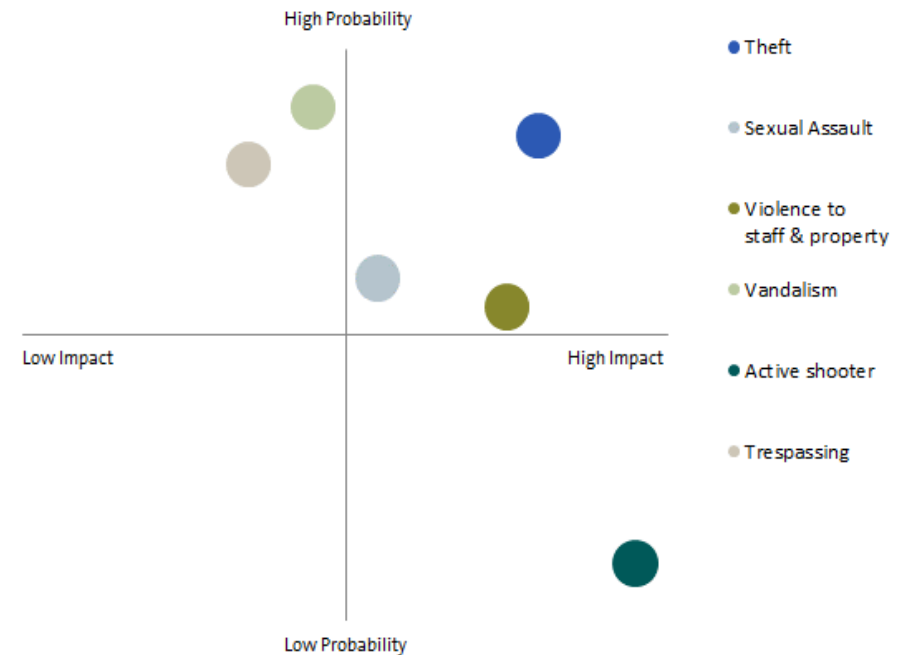


Campus perimeter

University Campuses Solution from Bosch Security Systems

Key risk analysis

- The key physical security (and related) risks in the education market are:
 - Theft
 - Sexual Assault
 - Violence to Staff & Property
 - Vandalism
 - Active Shooter
 - Trespassing
- The impact of these risks and their probability is shown on the diagram



Universities are open to various different groups which is a great challenge towards the security systems

Source: IMS research: Vertical Insights – Video Surveillance & Security in Education – 2013 Edition

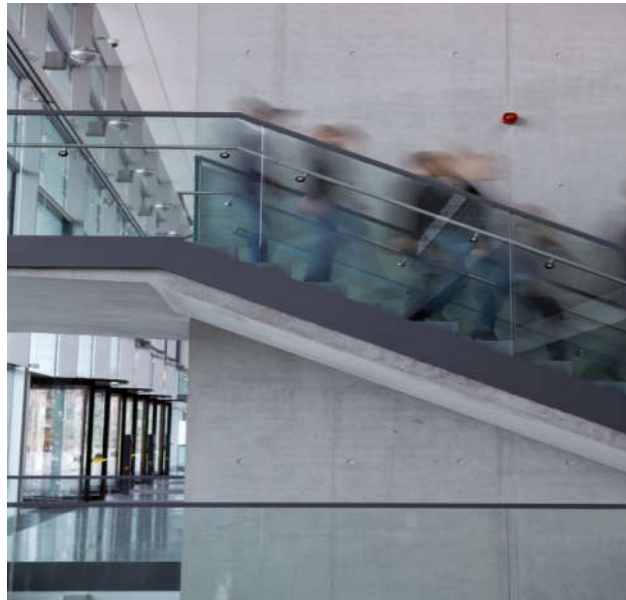
University Campuses Solution from Bosch Security Systems

University campus

Key factors influencing the choice of security systems



Budget restrictions



Importance of the systems



Unexperienced end users

Source: IMS research: Vertical Insights – Video Surveillance & Security in Education – 2013 Edition

University Campuses Solution from Bosch Security Systems

University campus

Requirements towards security from the end-user's perspective



Student safety



Flexibility and scalability



Reliability



User friendliness

Source: IMS research: Vertical Insights – Video Surveillance & Security in Education – 2013 Edition

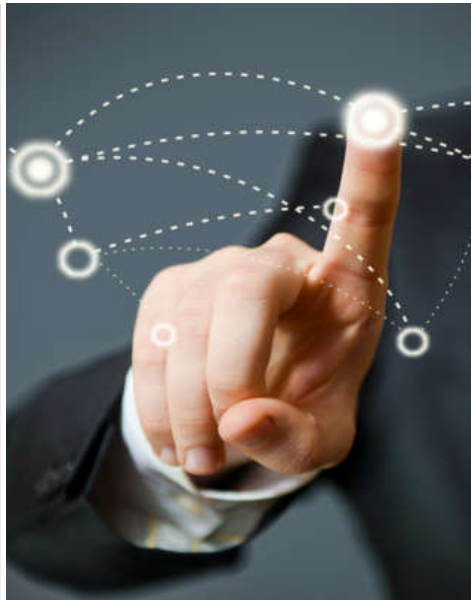
University Campuses Solution from Bosch Security Systems

University campus

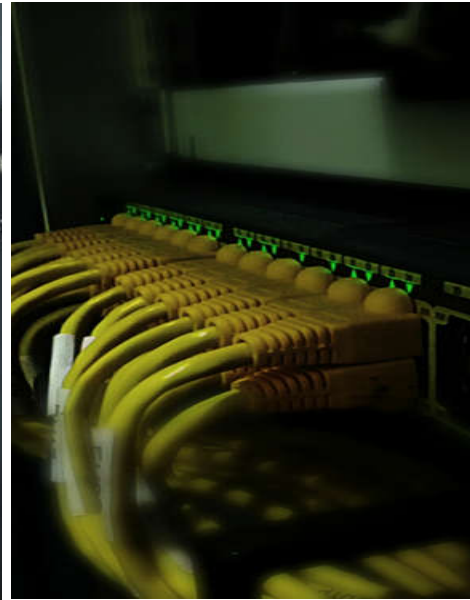
Most important security technology trends within the educational sector



Physical access control



Integration



IP based equipment



Open Standards

Source: IMS research: Vertical Insights – Video Surveillance & Security in Education – 2013 Edition

University Campuses Solution from Bosch Security Systems

University Campus Needs:

1. *Create a safe academic environment*
2. *Be innovative, be flexible*
3. *Efficient, reliable, easy to use*
4. *Support teaching and learning process*
5. *Improve student's experience*

University Campuses Solution from Bosch Security Systems

University Campus Needs:

1. *Create a safe academic environment*
2. *Be innovative, be flexible*
3. *Efficient, reliable, easy to use*
4. *Support teaching and learning process*
5. *Improve student's experience*

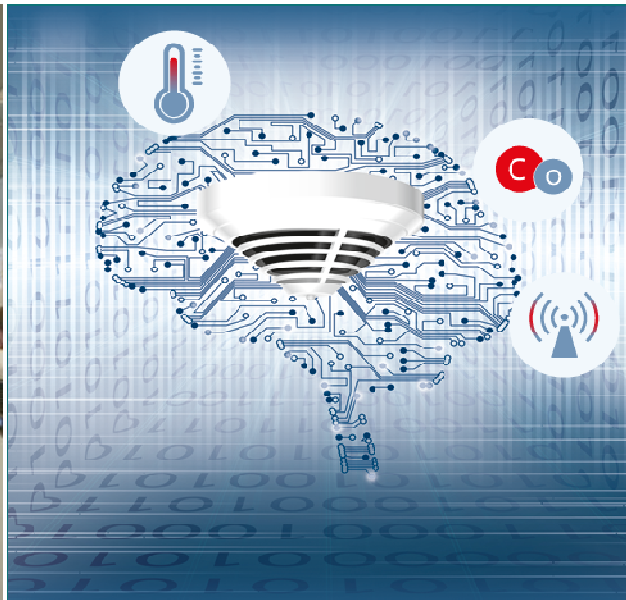
University Campuses Solution from Bosch Security Systems

Create a safe academic environment

Fire safety first



No two fires are exactly alike



AVENAR detector 4000

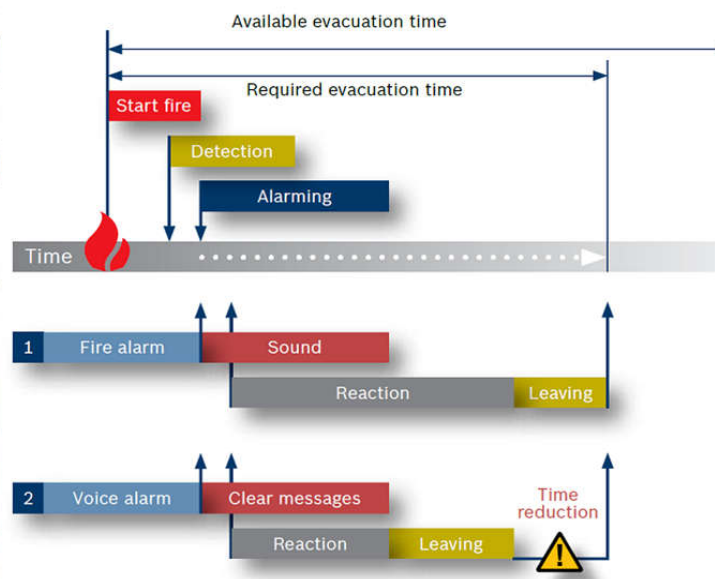


Minimizes life threat

University Campuses Solution from Bosch Security Systems

Create a safe academic environment

Clear messages for smooth evacuation



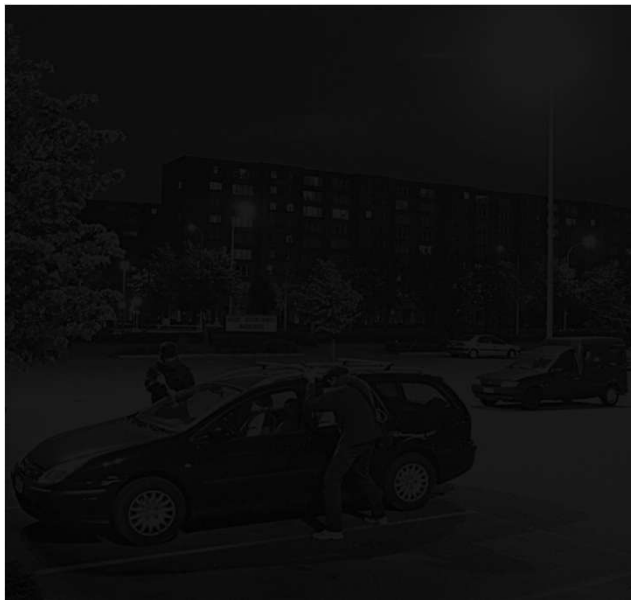
Voice messages for smoother evacuation procedures

Large loudspeakers portfolio

University Campuses Solution from Bosch Security Systems

Create a safe academic environment

Provide proof in case of crime even at night or under low-light conditions



Quality images 24/7



Excellent color image even with a minimum of ambient light

University Campuses Solution from Bosch Security Systems

Create a safe academic environment

Grant access to the right person



Access Easy Controller

Activity | Card | Configuration | System | Report

Activity | Transactions

All | Alarm | Valid & Alarm | Restore & Alarm | Time Attendance | APS | Video Verification

Video Verification - Main Entrance 14 Apr 2009 14:59:48

Video Verification - Main Entrance

Name: Maria Robinson
Card No: 11841
Department: Purchase Department

Pending List - [2 Item(s)]

Name	Location	Time
Maria Robinson	Main Entrance	14:59:48
Sachin	Main Entrance	14:59:52

Online Swipe | Surveillance | Camera Monitoring

Choose Location: [All Doors]

Online Swipe

Name	Card No	Dept	Location	Date	Event
Del-Rio Maria	11842	Accounts Department	Door 2	01 Apr 2009 11:37:00	Access Granted
Peter	11856	Purchase Department	Door 1	01 Apr 2009 11:36:56	Access Granted
Micheal	41118	Purchase Department	Door 1	01 Apr 2009 11:25:11	Access Granted

Robert Bosch GmbH reserves all rights even in the event of industrial property rights. We reserve all rights of disposal such as copying and passing on to third parties.

Prevent unauthorized access

Increased security level for students, staff and visitors

University Campuses Solution from Bosch Security Systems

Create a safe academic environment

Integrated solution for gunshot detection with IP cameras



The active shooter problem

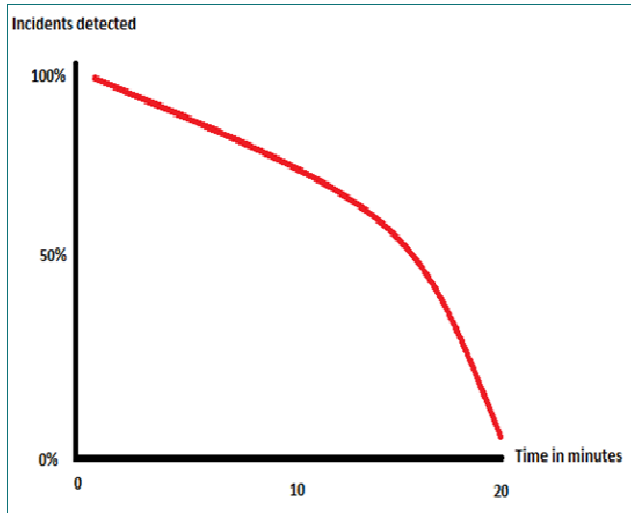


Early gunshot detection

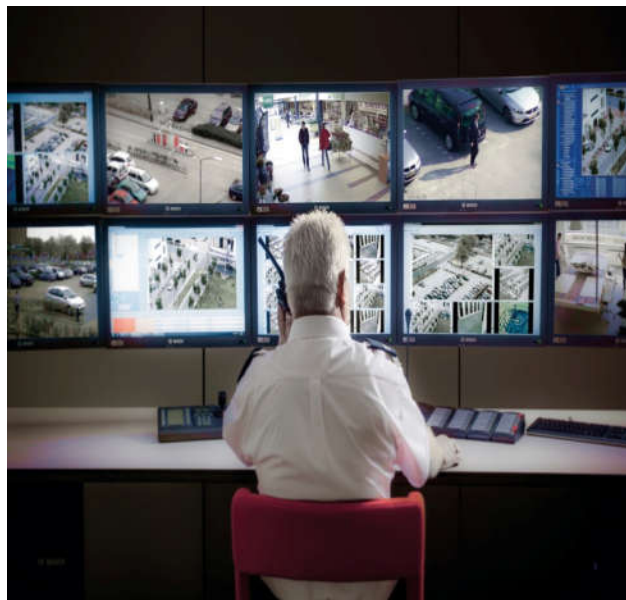
University Campuses Solution from Bosch Security Systems

Create a safe academic environment

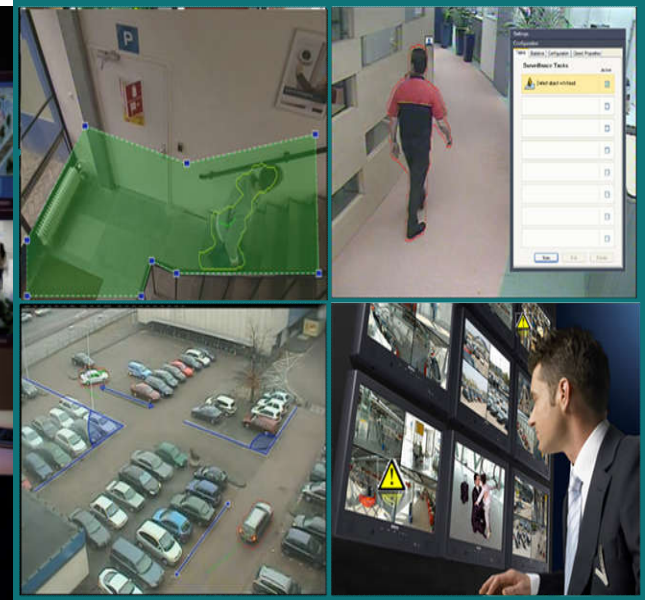
Focused security monitoring



Loss of concentration up to 90%



Optimize the security guards



Integrated building security

University Campuses Solution from Bosch Security Systems

University Campus Needs:

1. Create a safe academic environment ✓
2. Be innovative, be flexible

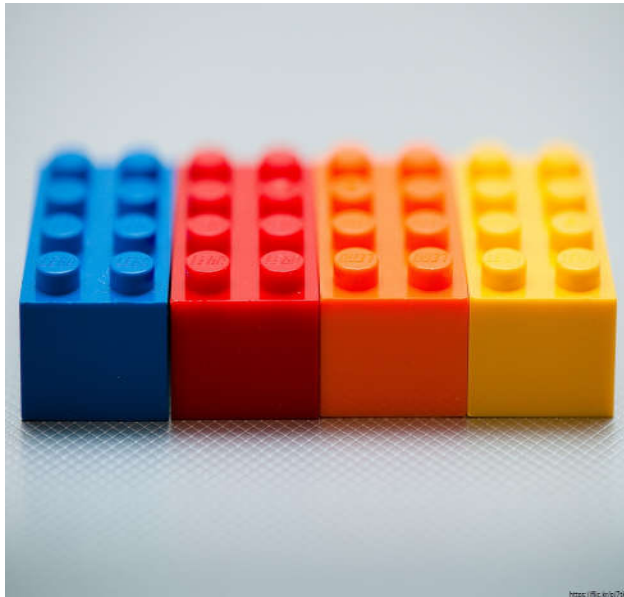
University Campuses Solution from Bosch Security Systems

Provide flexibility

Flexible security and safety systems



Flexibility for future changes



Modular system design



Tailored to the project needs

University Campuses Solution from Bosch Security Systems

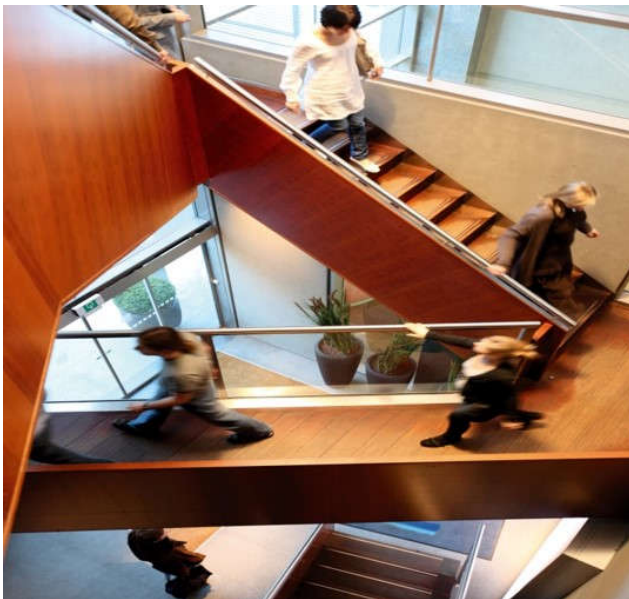
University Campus Needs:

1. Create a safe academic environment ✓
2. Be innovative, be flexible ✓
3. Efficient, reliable, easy to use

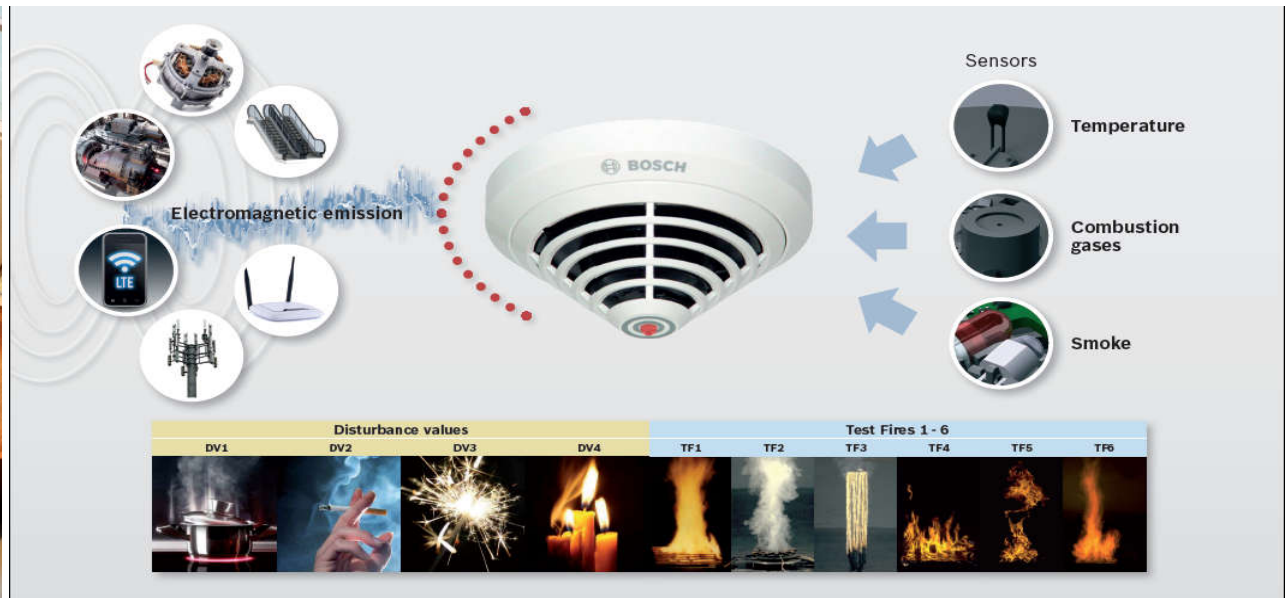
University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Prevent costly false fire alarms coming from unknown disturbances



False fire alarms



AVENAR detectors for outstanding resistance on disturbances

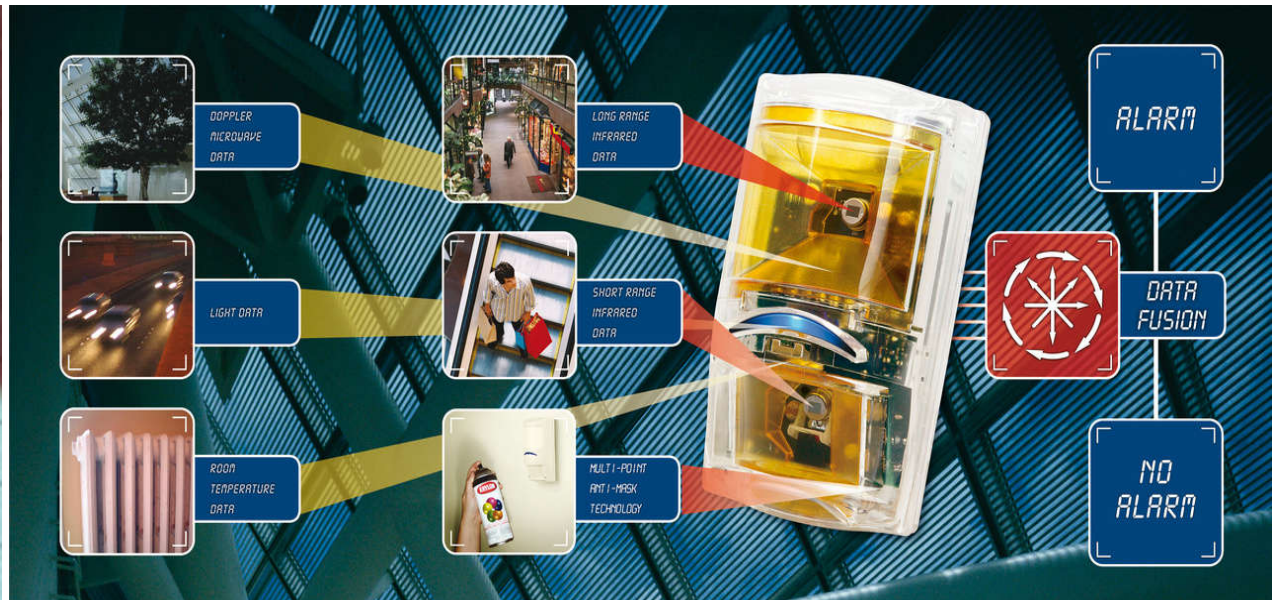
University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Catch intruders on time



Catch intruders



Best in class ratio between catch performance and falls alarms

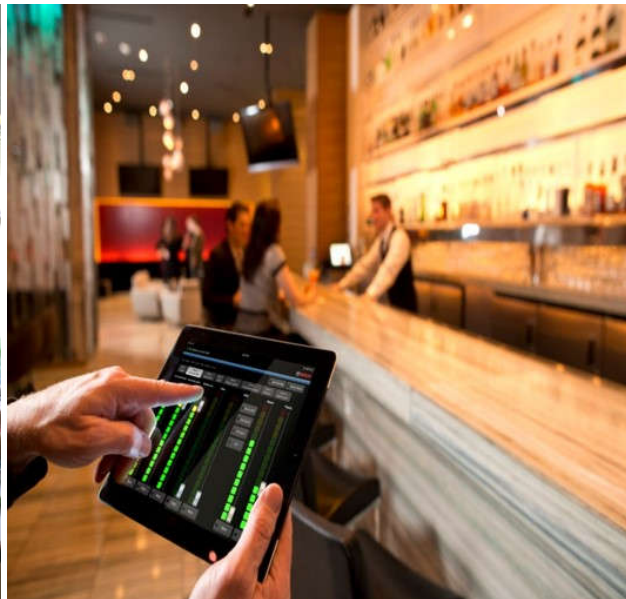
University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Get the most from your EVAC system



Different environments



Solution for sound and EVAC



Maximize your investment

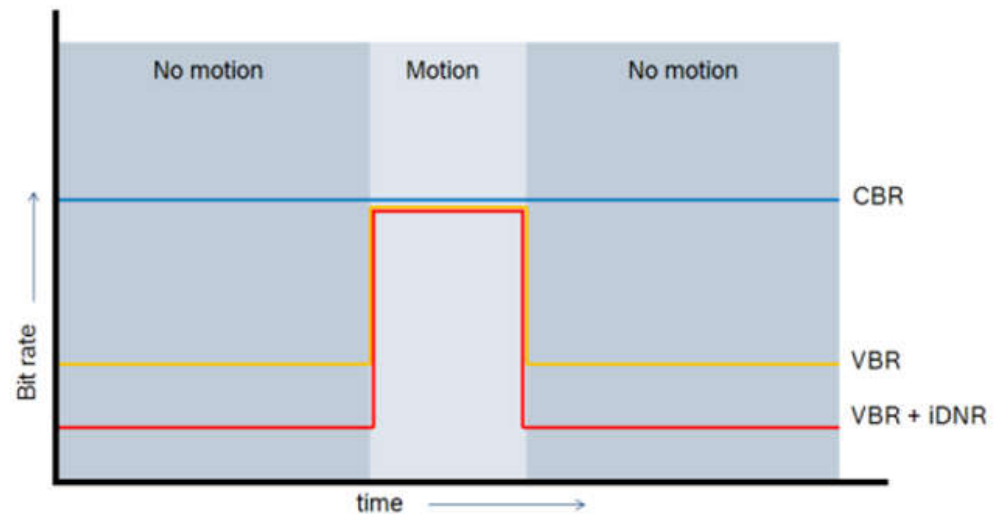
University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Cost-effective IP video



High infrastructure cost



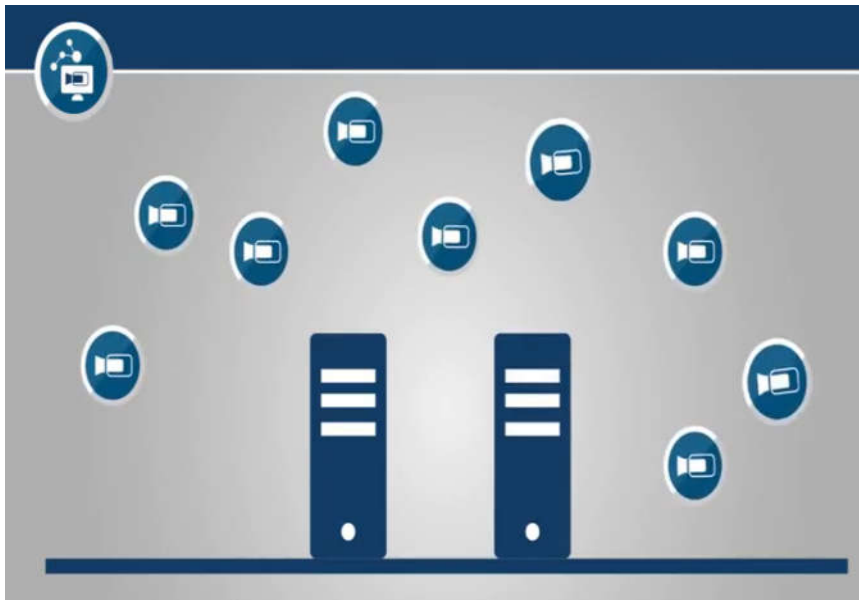
Graph demonstrating the relative bandwidth conservation of various noise reduction methods.

iDNR allows a storage requirement reduction of up to 50%

University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Cost-effective video management



High number of cameras



One management server for every 2000 cameras

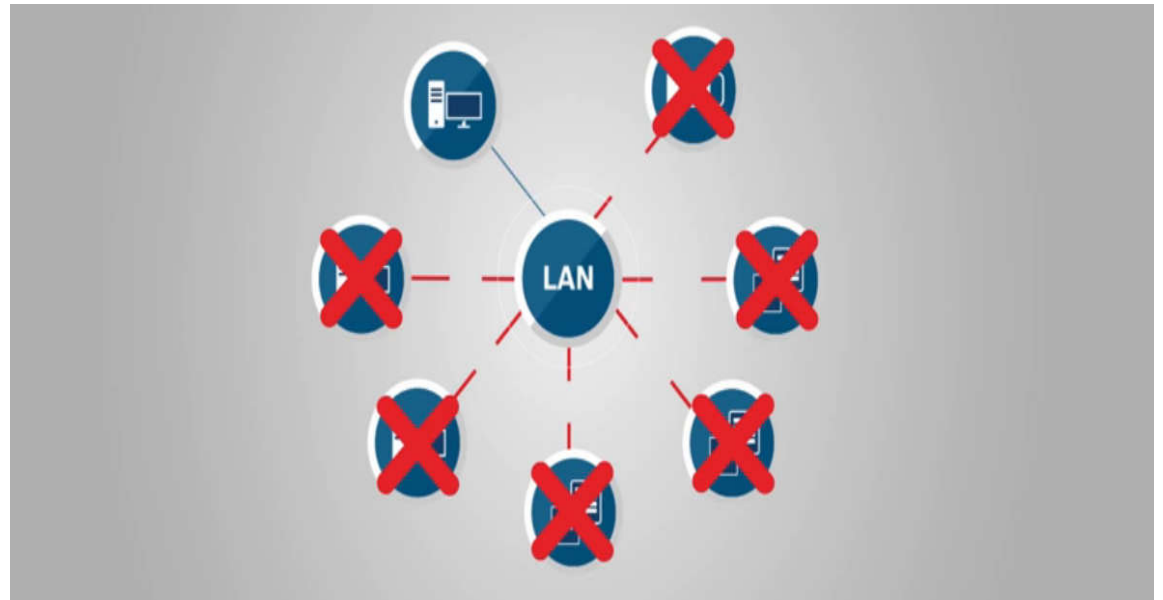
University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Reliable video surveillance



Provide records in case of accidents



Maximum resilience: live and playback, no matter what

University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Remote monitoring



Optimize personnel



Instant access to HD video

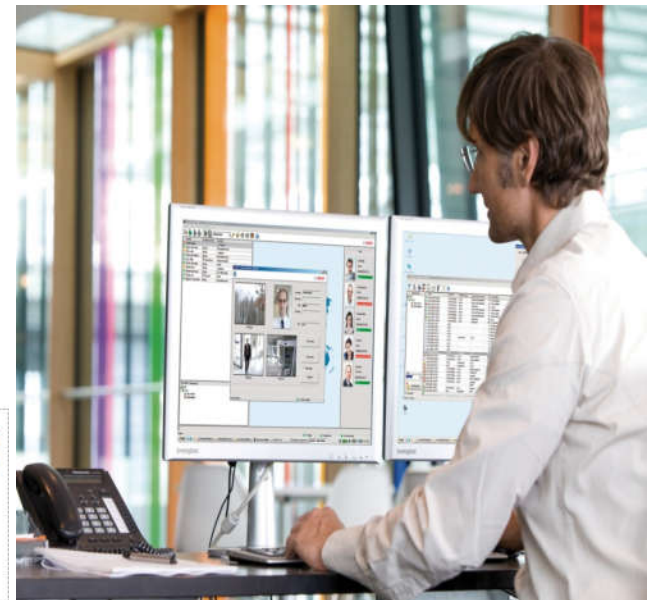
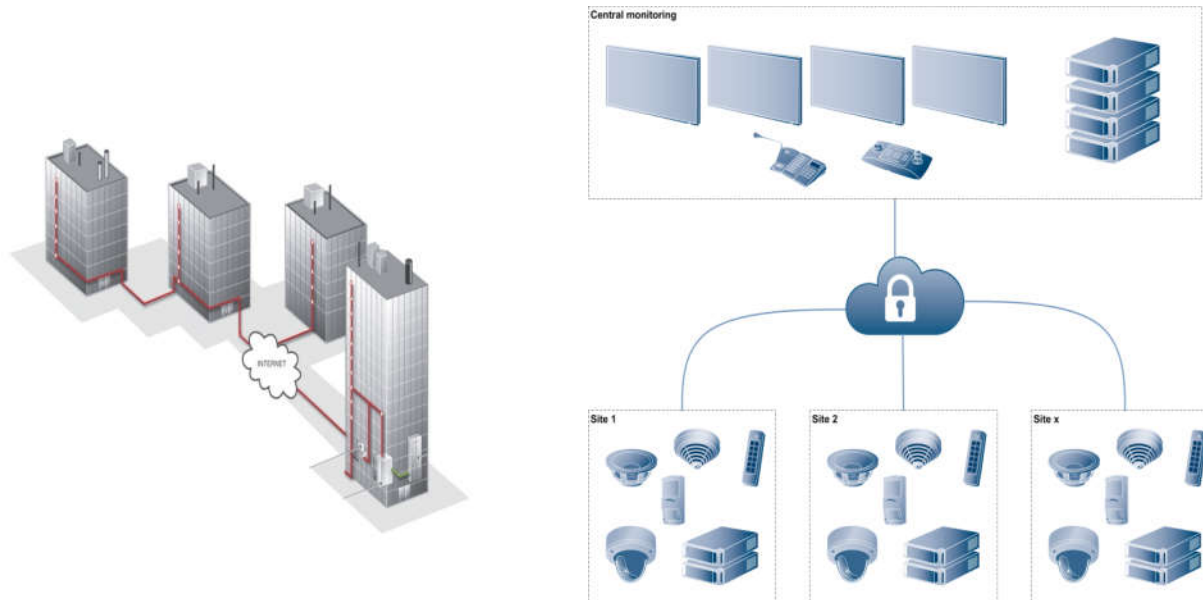


Dynamic transcoding

University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Centralized security management



Campus security management

Holistic security shield

Integrated building security

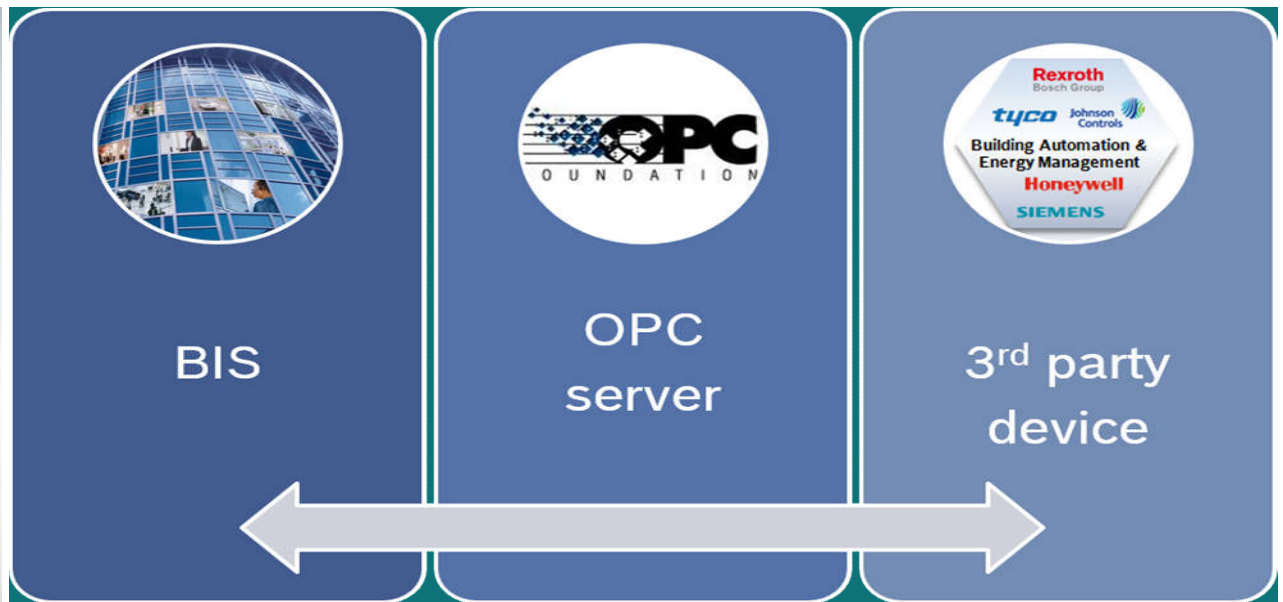
University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

Increase university efficiency by going beyond security



Optimize operations and costs



Integration to university HR and BMS system

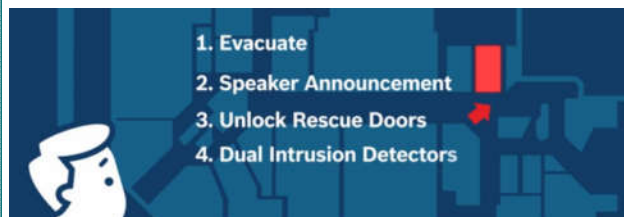
University Campuses Solution from Bosch Security Systems

Efficient, reliable, easy to use

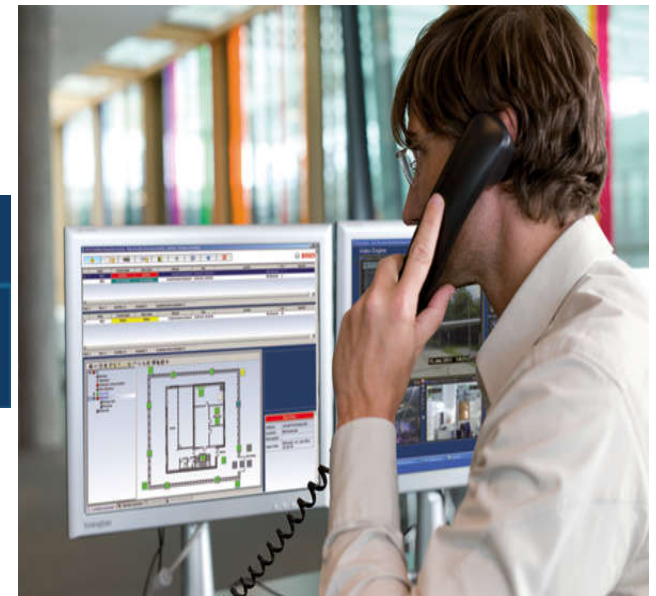
Ease of operation



Reaction in case of emergency



Step-by-step procedures



User friendly interface

University Campuses Solution from Bosch Security Systems

University Campus Needs:

1. Create a safe academic environment ✓
2. Be innovative, be flexible ✓
3. Efficient, reliable, easy to use ✓
4. Support teaching and learning process

University Campuses Solution from Bosch Security Systems

Support teaching and learning process

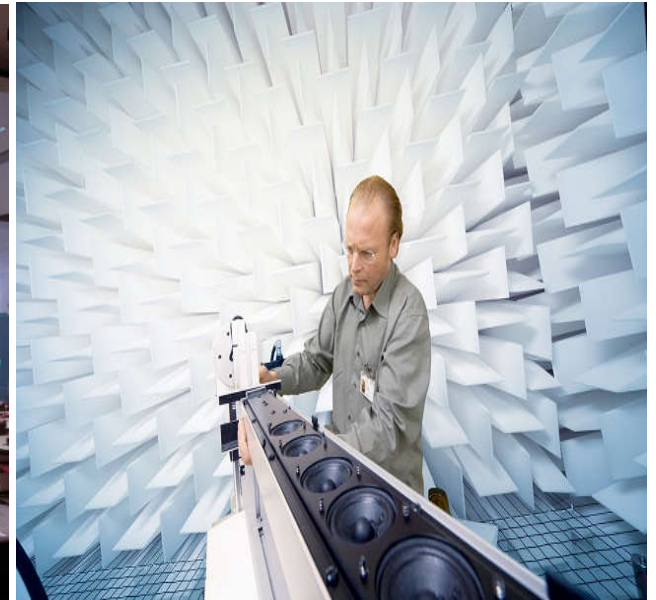
Enable optimal understanding



Poor acoustical conditions



Create acoustical environment



Acoustical excellence by Bosch

University Campuses Solution from Bosch Security Systems

Support teaching and learning process

Create a productive learning environment



Ensure productive learning



Flexible configurations



Powerful - yet easy to use

University Campuses Solution from Bosch Security Systems

Support teaching and learning process

Multi-language support during lectures



Optimal learning environment



Keeping students engaged



On any language

University Campuses Solution from Bosch Security Systems

University Campus Needs:

1. Create a safe academic environment ✓
2. Be innovative, be flexible ✓
3. Efficient, reliable, easy to use ✓
4. Support teaching and learning process ✓
5. Improve student's experience

University Campuses Solution from Bosch Security Systems

Improve student's experience

Unobtrusive security systems



Convey feeling of security



Appearances do matter



red dot award 2014
winner



product
design award

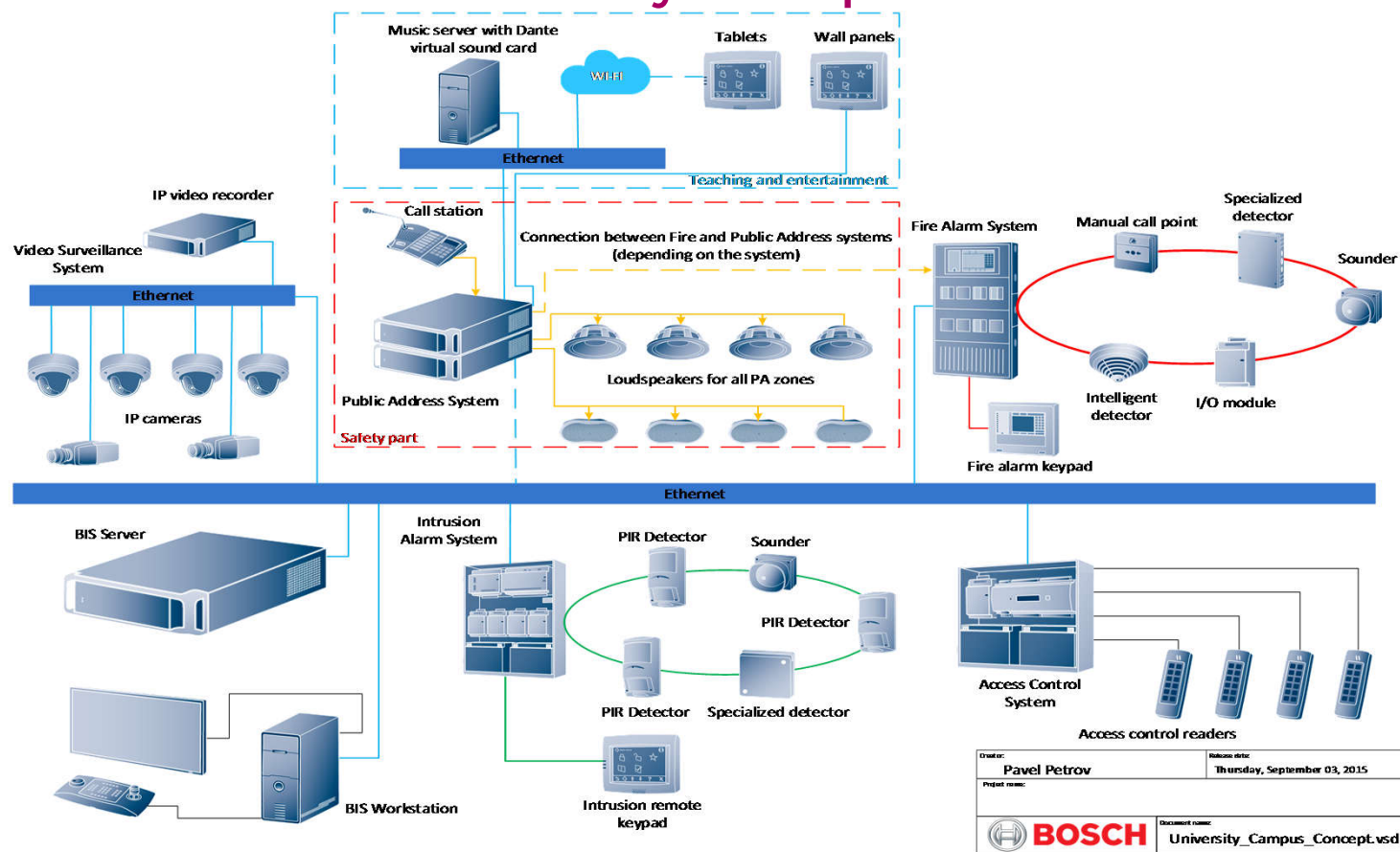
2014



Proven aesthetic acceptability

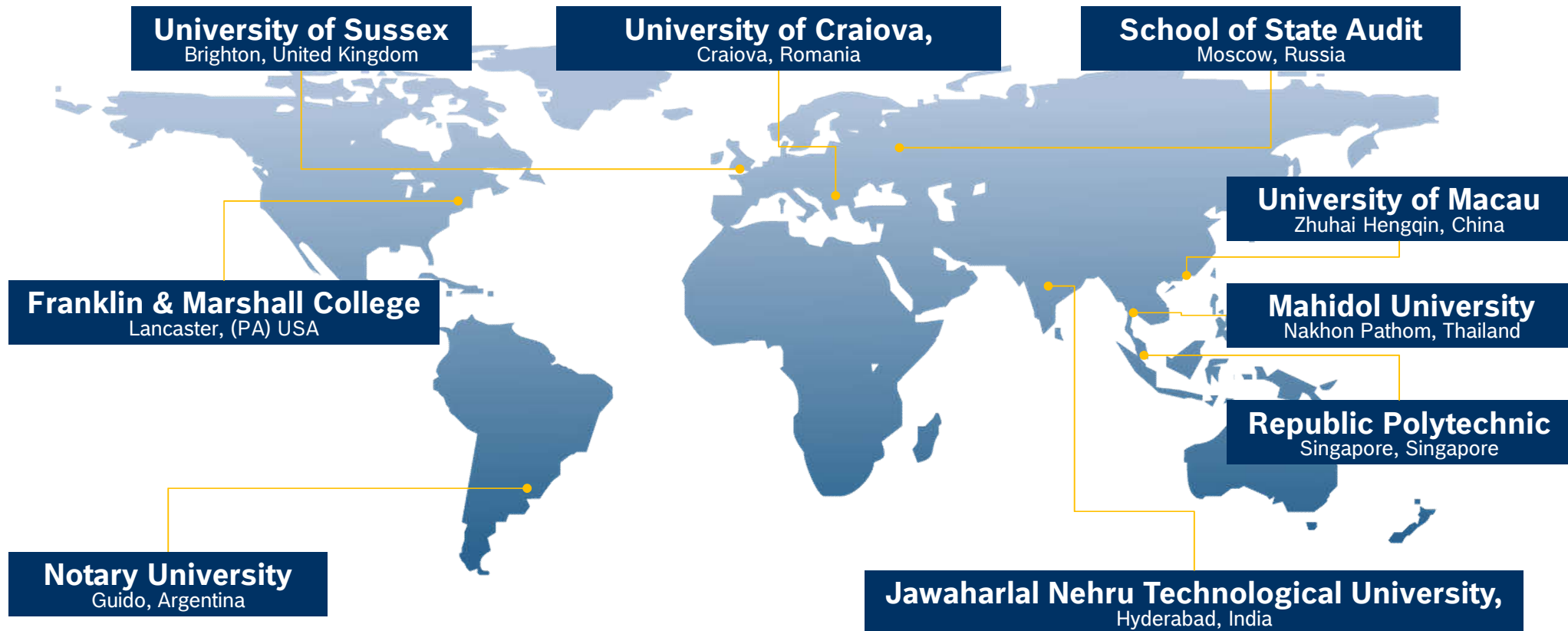
University Campuses Solution from Bosch Security Systems

Concept solution for University Campuses



University Campuses Solution from Bosch Security Systems

Further selected projects around the globe



University Campuses Solution from Bosch Security Systems

Republic Polytechnic, Singapore, Singapore

University campus

- In January 2006 Republic Polytechnic (RP) opened its doors of its 20 hectare 'fenceless campus' in Woodlands. The campus caters for up to 13,000 students as well as members of the community.
- Access control, CCTV and Intrusion alarm needed to be integrated into one easy to operate system.

Solution

- Bosch was the preferred partner of choice because of its capabilities in providing integrated security solutions, overall consisting in this case of:
 - 500 Bosch Dinion and AutoDome CCTV cameras, IP encoders, etc.
 - Card Access System using approximately 900 card readers
 - Intrusion Monitoring System and Intercom System



“By using the integrated solution from Bosch, we are benefiting from an effective and easy-to-manage security system.”

University Campuses Solution from Bosch Security Systems

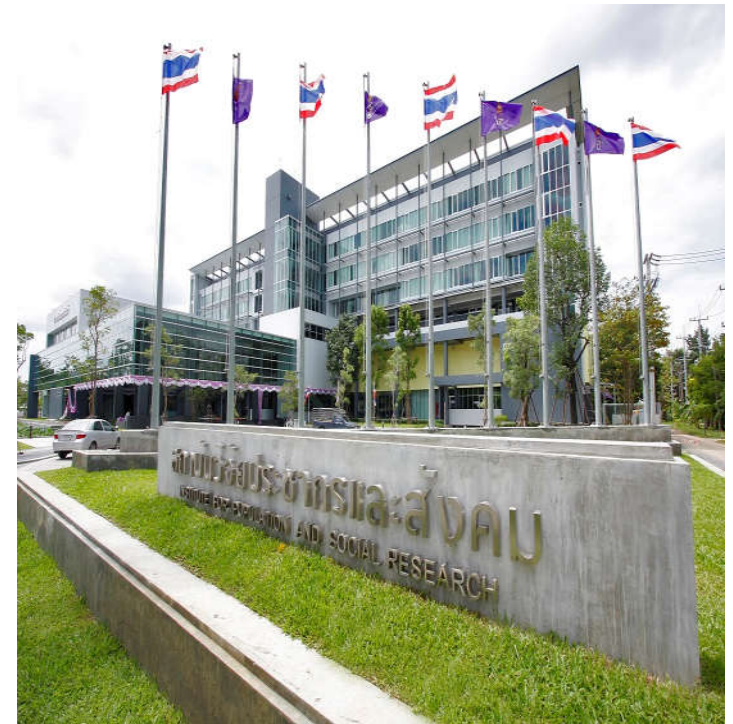
Mahidol University – Nakhon Pathom, Thailand

University campus

- The academic infrastructure includes 17 Faculties, 6 Colleges, 7 research Institutes, and 9 Centers that offer a wide range of courses including medicine, nursing, pharmacy, dentistry, engineering, applied sciences, humanities and arts, etc.
- The main challenge was to install a total security solution consisting of a professional communication system and a comprehensive security system

Solution

- Bosch Communications Systems – Pro Sound, Electro-Voice products were installed in the auditorium and seminar rooms.
- To monitor the ongoing activities of the university and ensure safety of all students and staff, Bosch Video System was installed. Video cameras were placed in classrooms, the library entrance and the meeting hall. To operate all the cameras, the Bosch Video Management System was used.



“We are very satisfied with the seamless integrated system provided by Bosch Security Systems.”

University Campuses Solution from Bosch Security Systems

Jawaharlal Nehru Technological University, Hyderabad, India

University

- The university has been providing quality education for over 4 decades and is considered a premier institution with various academic and research-oriented courses
- Having built a large sized auditorium with over 1000 seats, the end-user wanted a high-end audio system that would perfectly compliment the multipurpose application the auditorium is designed for

Solution

- After a few rounds of comparison between various brands, the end-user decided on Electro-Voice due to its superior performance, great affordability and prior good experience with the brand.
- 10 EVA-2082S Line Array cabinets; five on each edge of the stage, plus Tour X dual 18 inch subwoofers were installed to deliver impeccable sound coverage evenly across the auditorium.



The end user was pleased by the fact that the equipment was setup in a plug-and-play fashion, making it so easy to use

University Campuses Solution from Bosch Security Systems

New Campus of University of Macau, Zhuhai Hengqin, China

University

- Provide the new Campus of University of Macau with integrated solutions
- Ensure the school security and needs of school activities

Solution

- 20 public address systems with 3,000 loudspeakers
- Hundreds of cameras managed by the Bosch Video Management System 4.0 (BVMS)
- DCN conference systems, pro-sound system



The Bosch solution fulfilled the demands of the university daily life and activities

University Campuses Solution from Bosch Security Systems

School of State Audit MSU, Moscow, Russia

University

- Modernization of the educational process from the preparation to carrying out it
- Adaptation of modern and high quality equipment
- Integration of synchronic translation systems

Solution

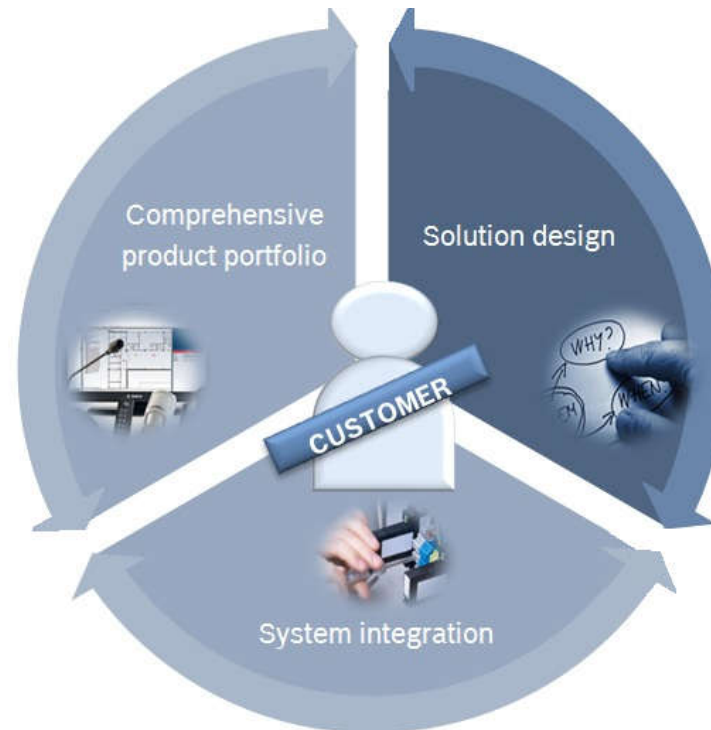
- Installed of conference system Bosch DCN Next Generation and SVP SCREEN software developed by CJSC "SVP"
- The modern system permits to display an information during the conferences, to induct HD cameras automatically to speaker, his graphical display, combined with a creeping line
- The system gives an opportunity to make a synchronic translation

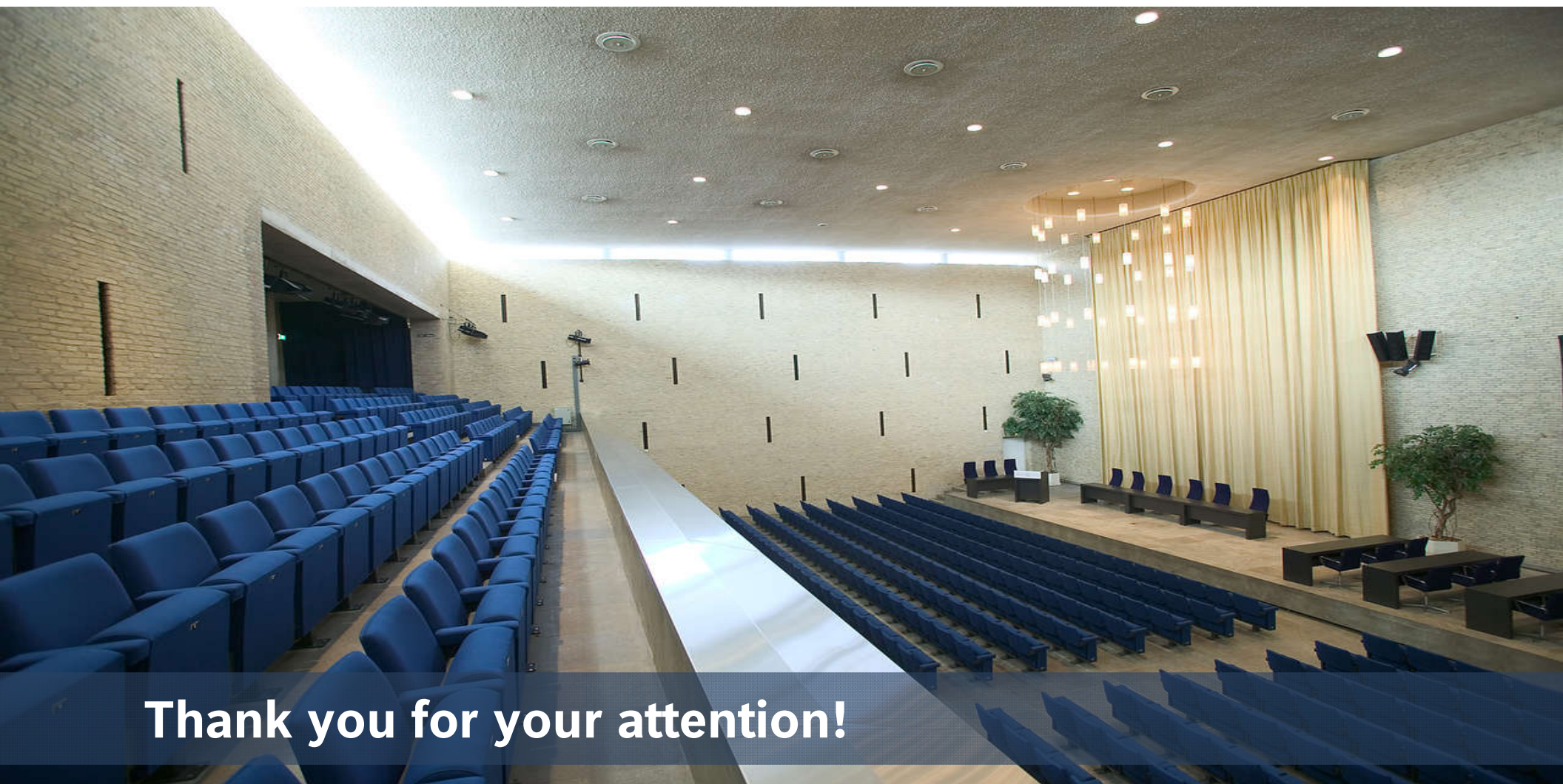


Main factor to win was the ability to integrate with third-party software which fulfilled the customer's needs

University Campuses Solution from Bosch Security Systems

Summary





Thank you for your attention!