Dallmeier

PANOMERA®

W SERIES

THIRD GENERATION
MULTIFOCAL SENSOR TECHNOLOGY

MADE IN GERMANY

See more.

REVOLUTION IN VIDEO TECHNOLOGY

PANOMERA® PUSHES BACK THE LIMITS OF THE POSSIBLE

Revolutionary prospects: The Panomera® W 360°

For some time now, video technology has been at a standstill on a technological “plateau”: only minor improvements can be made to the PTZ camera system, the same is true for the single-sensor megapixel camera concept: the fundamental drawbacks – limited spatial coverage, “either-or” choice between detail and overview, no definable resolution density – cannot be overcome. Because of these shortcomings, Dallmeier invented the revolutionary Panomera® multifocal sensor system as early as 2011, adopting a revolutionary new approach in its thinking. Now, the Panomera® 360° represents the next, radical break with the known and offers customers entirely new added values, previously unattainable with video technology.

Panomera® effect meets 360°

During the further development of the Panomera® into a 360° camera system, the lenses of the multifocal sensor approach were arranged radially. The Panomera® W 360° captures a complete 360° panorama. The entire 360° room is displayed as a coherent, straightened out view. In this view, any sub-views can be opened in high resolution density and zoomed into them. The systems thus allow a completely new type of control over spatial relationships with maximum overview and personnel relief.

REVOLUTION IN VIDEO TECHNOLOGY

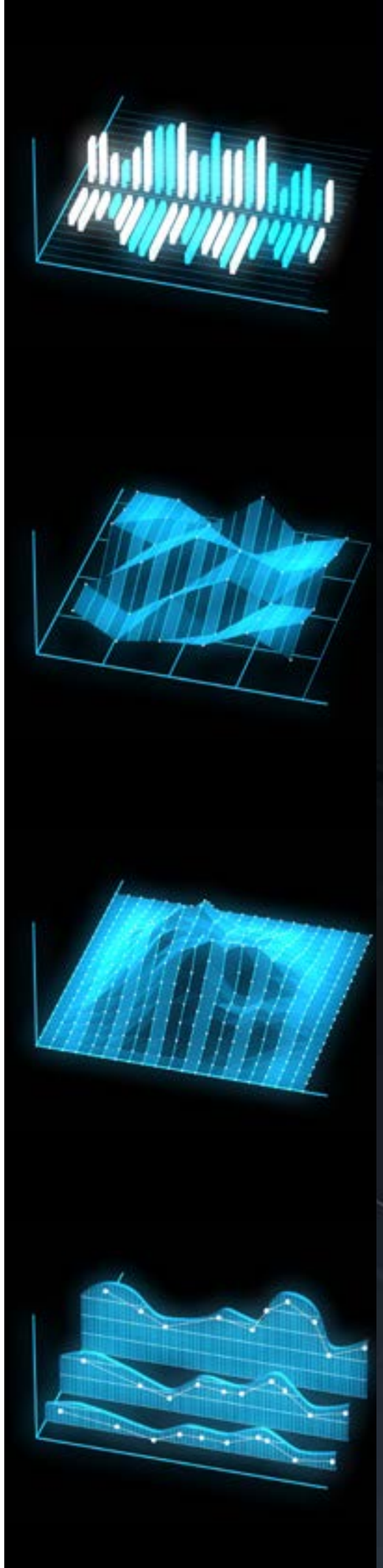
FROM CAMERA TO „OPTICAL DATA SENSOR“

Focus is on the user

During development of the Panomera® W 360°, the focus was on the user – from the operator, who can follow overall contexts and details with considerably fewer views, to the installer, who always can put the systems into operation in a fraction of the time with the extremely flexible MOUNTERA® concept, and even to the commercial decision maker, who can achieve his or her business and security objectives much more effectively at much lower total cost.

Camera or high-tech sensor for smart data

The Panomera® W 360° is designed for two operational areas: on the one hand, the camera is an exceptionally high-performance security solution which offers significantly better observation quality with greater operating convenience for lower total costs. On the other hand, the precisely definable minimum resolution density of the Panomera® W 360° enables it to function as an extremely powerful data sensor for a wide range of Industry 4.0 applications.



USER-ORIENTED PRODUCT DESIGN

HIGH-TECH AND ARCHITECTURE

Form and function

Technology components are allowed to look good. Technology must blend seamlessly into modern architectural contexts – such as airport terminals, railway stations or baggage reclaim areas – in terms of both appearance and function.

Small number of mounting points

The Panomera® W 360° concept addresses this requirement in a unique way: Only very few mounting points are needed to cover wide areas and long distances. The number of camera installation locations is reduced to a minimum.

USER-ORIENTED PRODUCTION DESIGN

COMPREHENSIVELY THOUGHT OUT

QUICK-LOCK FAST CONNECTION

The idea: Unpack and connect with a just a few manual adjustments; the solution: ***MOUNTERA***®, the patented mounting and docking system with integral integrated handle which enables easy, secure and fast assembly.

PROTECTION FROM HOSE AND SALT WATER

Protection rating IP66 enables operation even in adverse conditions such as hose water or salt water.

COOLING AND DESIGN

The specially configured cooling ribs ensure optimum cooling and blend elegantly into any environment.

CONCEALED CABLING

For crash-proof attachment, the cables are only routed through the inside. The bolting is invisible from the outside.

HEATABLE BUBBLE

An optimised heating and thermal management system prevents damage from condensation.

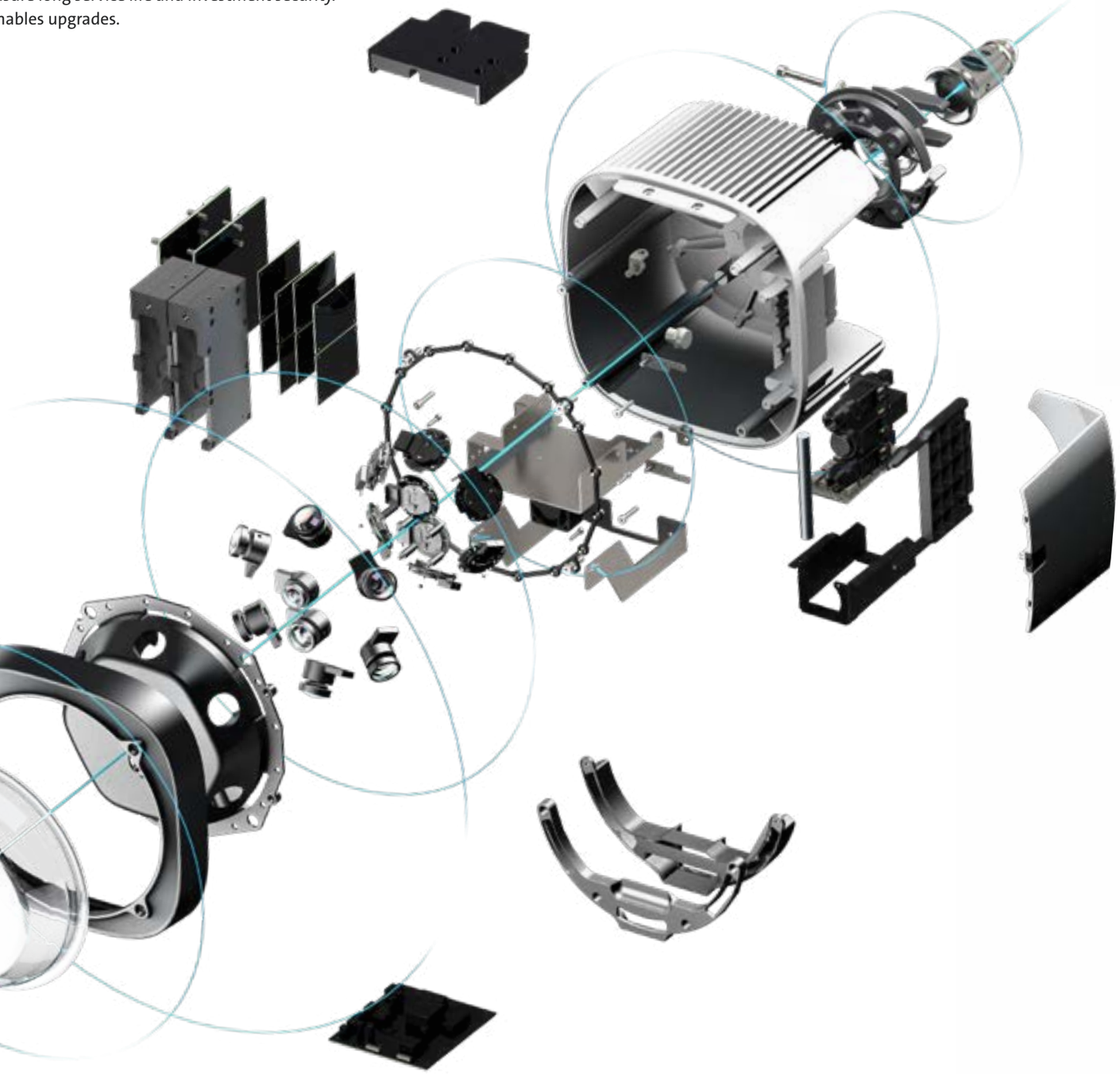
HIGH-QUALITY MATERIALS

Only high-quality materials are used in the manufacture of the Panomera W 360°, for example solid aluminium for the housing and high-grade silicone for seals.

DESIGNED AND ENGINEERED FOR

MANY YEARS TO COME

High-quality components ensure long service life and investment security.
The modular construction enables upgrades.

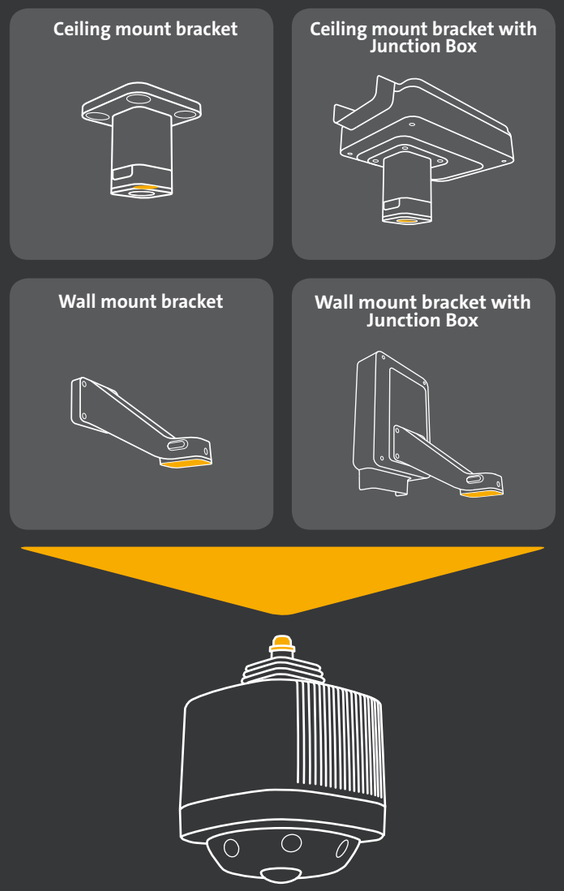


USER-ORIENTED PRODUCT DESIGN

SAVING COSTS STARTS WITH UNPACKING

The provision of technical components at the construction site represents a significant cost factor. The cleverly designed MOUNTERA® mounting system helps to make installation much easier.

MOUNTERA®



Quick-lock system

- Coordinated components enable simple, uncomplicated installation at any mounting site.
- Rotation of cameras at various locations, e.g., for urban surveillance

Modular system

- MOUNTERA® ceiling / wall mount bracket with internal cable layout
- MOUNTERA® wall mount bracket
- MOUNTERA® camera housing
- MOUNTERA® Junction Box for cables and connectors
- Optional “SRS Edge Storage” for remote recording and cybersecurity
- Box PSU (with 48 V DC power supply unit, 100 W, IP66 protection rating; access-secured, hose water protected and salt water-resistant)

See more...

Smart packaging

- Single-use strap for quick system removal
- Foam transport protection also functions as bubble wrap for setting down and carrying the camera

QUALITY

MADE IN GERMANY
MADE BY DALLMEIER

Your “Single Source of Trust“ – for a good night‘s sleep.

Dallmeier is the only manufacturer of video security technology to develop and produce a majority of components in Germany - from cameras, image storage and transmission to intelligent video analysis and individually adapted management systems.

35 years of technological leadership – “made in Germany“

Quality

- Components “Made in Germany“ with the highest quality standards
- ISO-certified software solutions
- High vertical integration in research, development and production

Data Protection and Cybersecurity

- Mature functions for data protection (e.g. EU-GDPR) and data security
- “Privacy & Security by Design“
- External, independent penetration and security tests

Customer proximity

- Individual solution adaptation with local contact persons
- Integrated portfolio of camera technology, recording and software
- Fast and direct connection to the manufacturer

Transparency

- Source code transparency for code inspection, etc.
- Political and economic independence
- Do the manufacturer check: Visit us at our headquarters in Regensburg!

MADE IN GERMANY

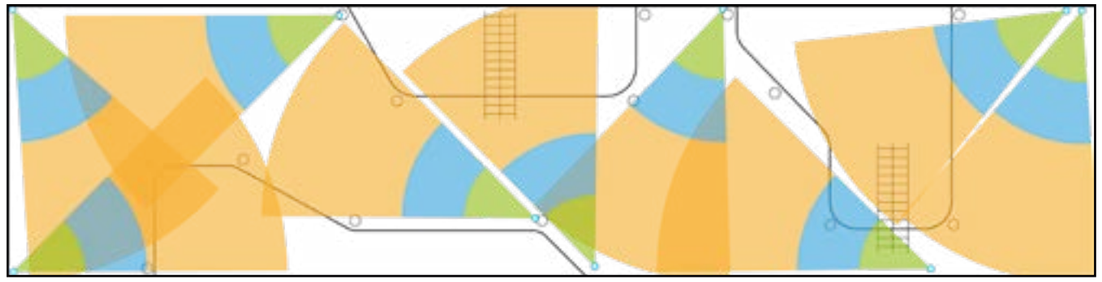
See more...

MULTIFOCAL SENSOR TECHNOLOGY IN 360°

A FUNDAMENTALLY NEW APPROACH FOR A COMPLETE OVERVIEW

Disadvantages of conventional solutions

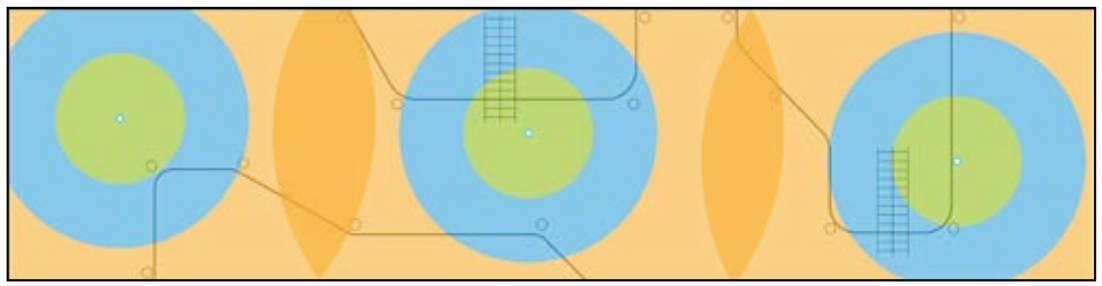
A complete overview in high resolution with the option to zoom in on multiple details simultaneously is not possible with conventional systems. If the user needs an overview of the full sequence of events, it is only possible at the expense of the resolution or manageability. Additionally, in the recording it is not possible to zoom into certain detail scenes after the fact, which severely reduces the value of these systems for forensic purposes.

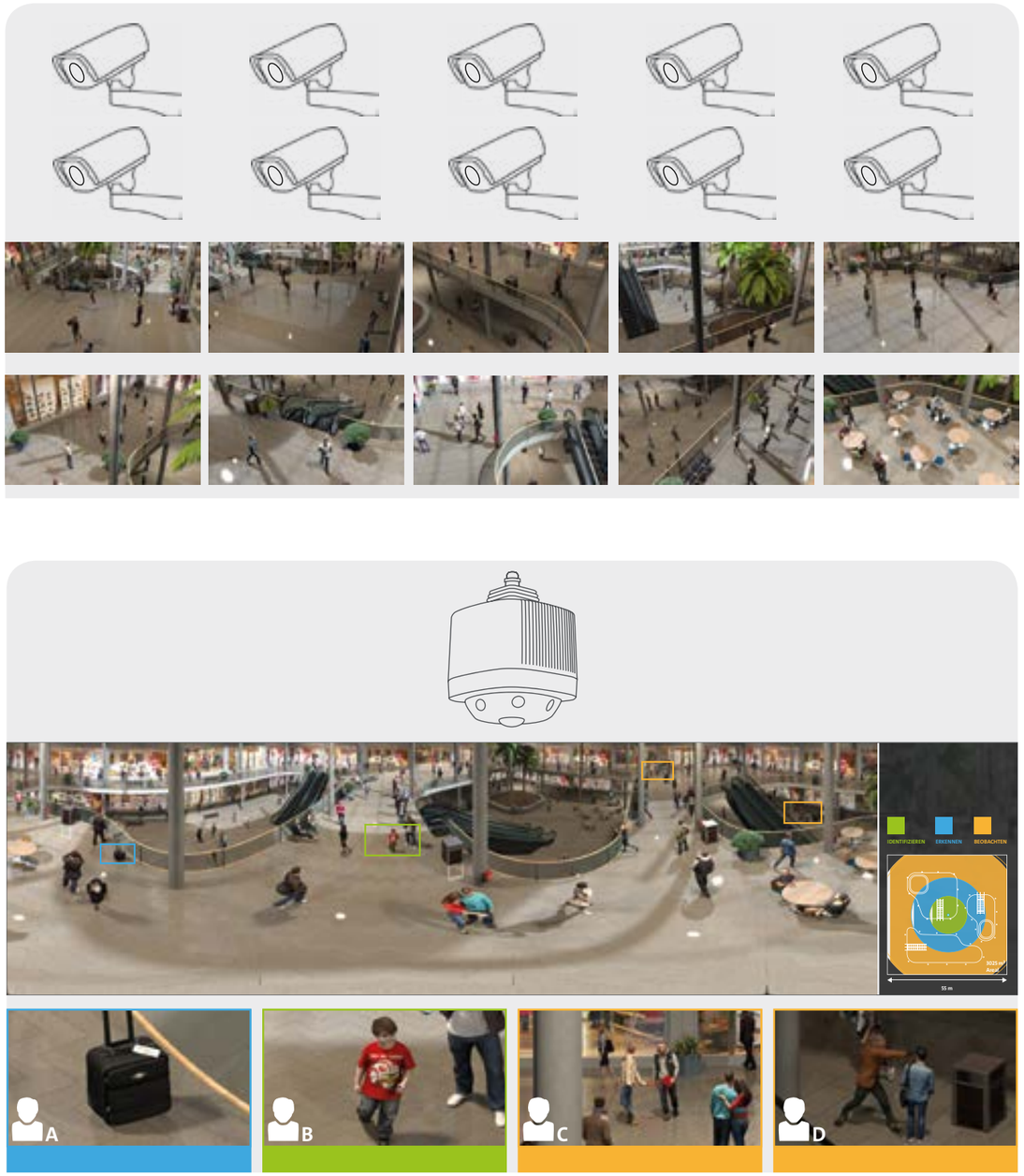


Advantages of the Panomera® W 360°

Thanks to sophisticated software, the Panomera® enables a complete 360° panoramic view of the area, “laid out” onto a flat surface.

If you want to take a closer look at one or more detail scenes in high resolution, you can open any number of detail zooms with one mouse click. In contrast to all other systems, any number of detail zooms are also possible in the recording and thus allow for an exact research and capturing of evidence “post mortem”.





ACHIEVE YOUR OBJECTIVES

DEFINED VIDEO SECURITY THROUGH DEFINED RESOLUTION

Different application scenarios require different resolutions on the recorded area. The decisive factor here is which are the defined critera – including pixel density (px/m) – to achieve certain security goals in a given scenario:

- Is it sufficient to capture and observe activities and people?
- Should it be possible to recognise known individuals?
- Or should it be possible to identify even unknown individuals in a manner that can be used as evidence in court?

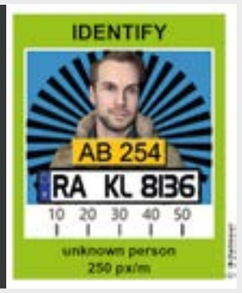
Unlike all of the other camera technologies available, the Panomera® technology unfailingly guarantees the minimum value in each case. Without interruption, over the entire expanse of the coverage area.

The DIN EN 62676-4 standard defines the pixel densities which are essential for each application. In order to be able to recognise known persons or offenders, 125 pixel/m are needed, identifying unknown persons requires 250 pixel/m.

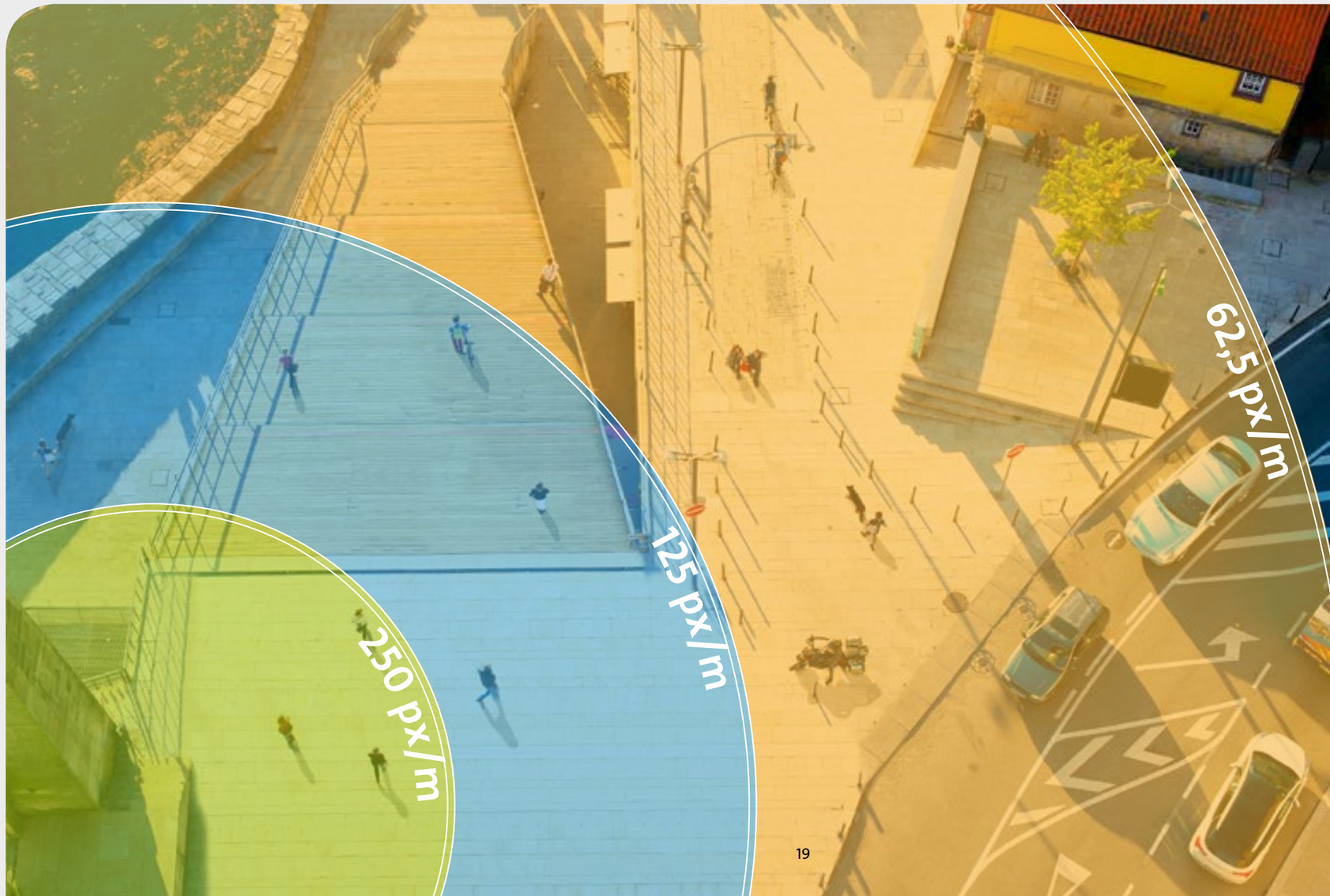
Observe
62.5 px/m within 3778 m²
(interpret and observe events)

Recognize
125 px/m within 929 m²
(recognize known person(s) or object)

Identify
250 px/m within 232 m²
(identify unknown person(s) or object)



DIN EN 62676-4



ACHIEVE YOUR OBJECTIVES

ACCURATE ANALYSIS THROUGH GUARANTEED DATA QUALITY

“Garbage In, Garbage Out” – reliable data quality for AI and analysis

The minimum resolution for a functioning analysis is 62.5 px/m (e.g. to distinguish between an animal / a person / a vehicle). Other values may be defined depending on the level of accuracy required.

Neural networks for classifying objects or events or a good facial recognition software program can only perform as well as the video image which is supplied via the camera.

Given this basic premise, it is particularly important to be able to define minimum image qualities in all areas of the video image, to plan camera angles correctly, and to consider many other detailed aspects.

And the person behind the system must also be included in the overall approach. Only with a well-orchestrated interplay between all factors is it possible to guarantee that the analysis objectives will be achieved.

CAPTURE

- Object recognition and classification
- People counting
- Face recognition
- Preselection of events

EVALUATE

- Statistical evaluations
- Forensic evaluations
- Simple evaluation of data from complex relationships

SUPPORT

- Digital assistance systems
- Reduction of false alarms
- AI-based pre-qualification of data of all kinds

See more...

Up to eight times more coverage with the same number of personnel

The use of the Panomera® W 360° systems enables substantially larger expanses to be covered by the same number of personnel – depending on the scenario up to 8 times more than traditional solutions.

Control of even the most complex situations

With the simultaneous zoom functionality and the overview of the whole sequence of events, even complex situations can be managed simply. The use of multiple systems and the “Next Best Cam“ function simplifies operators’ tasks even in very large spatial contexts.

Support for humans by intelligent assistance systems

The Panomera® W 360° supports operators with many functions such as automatic person tracking across multiple cameras or AI-based analysis for pre-selection and classification of events.

Video and data management

The Panomera® W 360° can be fully integrated in the Dallmeier HEMISPHERE video and data management platform. The HEMISPHERE SeMSy® VMS system provides an extremely user-friendly interface for this and can be combined with many data management modules.

High-resolution 360° display of the entire sequence of events

The Panomera® W 360° enables a complete, 360° all-round view in previously unknown resolution quality and in one contiguous image. For this, the images from 7 detail sensors and one overview sensor are joined together by sophisticated software to form one overall image. Operators can zoom in on any number of areas at the same time, while the high-resolution representation of the overall activity is retained at all times.

Fewer cameras, fewer screens, higher operator efficiency

The number of cameras – as well as the number of screens that have to be watched – is reduced substantially. This makes the operators' work much simpler.

Much only comes to light in the backup

With Panomera®, any number of high-resolution zooms can be created in all detail areas of the overall activity in the backup as well – this is a very important function when dealing with complex locations and contexts for example, or for successful forensic analysis, which is not possible with other solutions available on the market.

Definable pixel density and retrofittability for analysis and AI

Video technology is increasingly assuming the role of "all-round sensor" for all kinds of analysis and AI applications. But today's systems lack certain aspects essential for this, such as the ability to plan minimum resolution density accurately – a critical criterion for successful further processing of the data. Just as important is a hardware platform which can still be upgraded even several years later to satisfy new requirements.

Exact planning of image quality

The image quality is defined exactly by the "Resolyzer" process in the 3D planning process. With this innovative approach, the precise image quality for each square metre of the area to be captured can be defined exactly in advance. This in turn guarantees that security and analysis objectives will be met.

MULTIFOCAL SENSOR TECHNOLOGY IN 360°

SOLUTIONS FOR TODAY'S CHALLENGES IN VIDEO TECHNOLOGY

see more...

GUARANTEED ACHIEVEMENT OF OBJECTIVES THROUGH 3D-ENGINEERING

SUCCESS STARTS WITH SMART PLANNING

At Dallmeier, efficiency and cost optimisation already begin in the planning stages: With the aid of a highly developed 3D-engineering approach, the resolution density required for the intended application is calculated precisely in advance for each camera location.

The exact definition of the resolution over the entire coverage area is fixed in the planning stage through the “Resolyzer“ planning process.

1

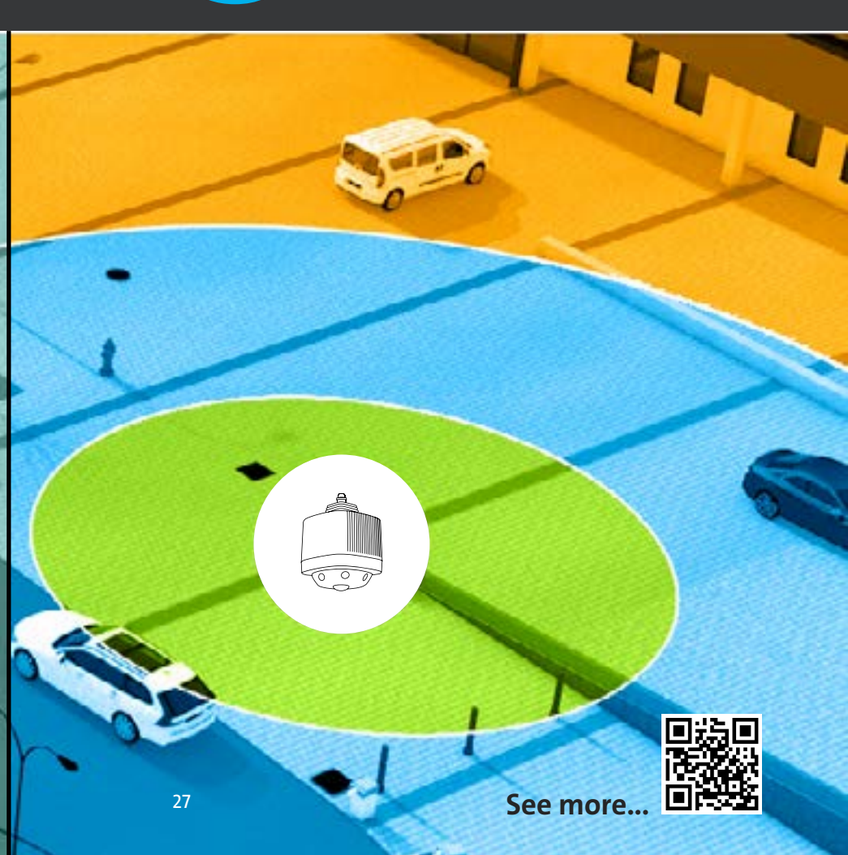
- Creation of a 3D virtual model of the entire customer environment
- CAD or other planning documents serve as a basis

2

- Analysis of prevailing conditions (lighting conditions, architecture, shadows etc.)
- Flexible adaptation of cameras and locations to the circumstances

3

- Planning of required pixel density over the entire coverage area
- Realistic simulation - “visualization“ of the expected image quality in the “Digital Twin“



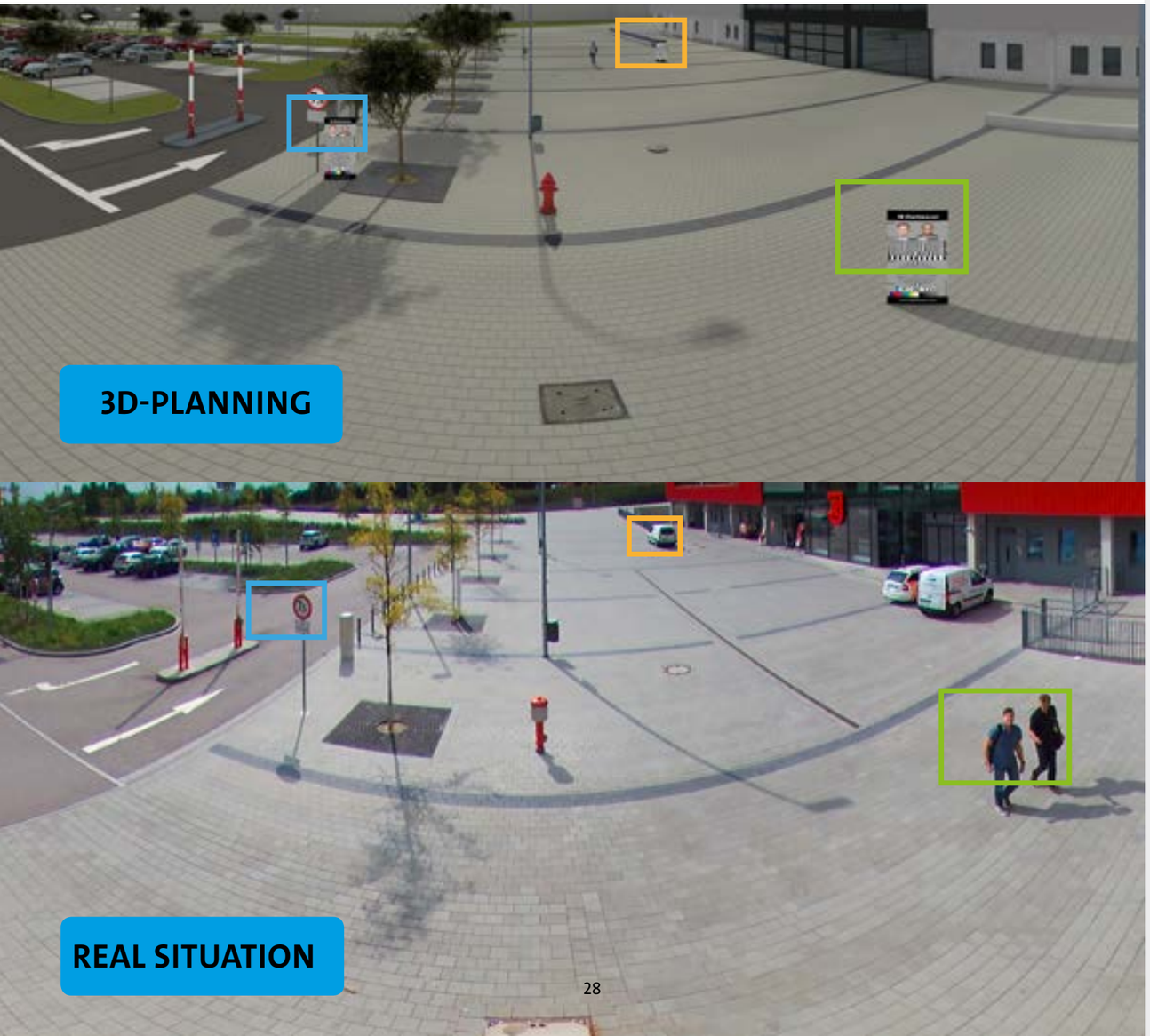
See more...

GUARANTEED ACHIEVEMENT OF OBJECTIVES THROUGH 3D-ENGINEERING

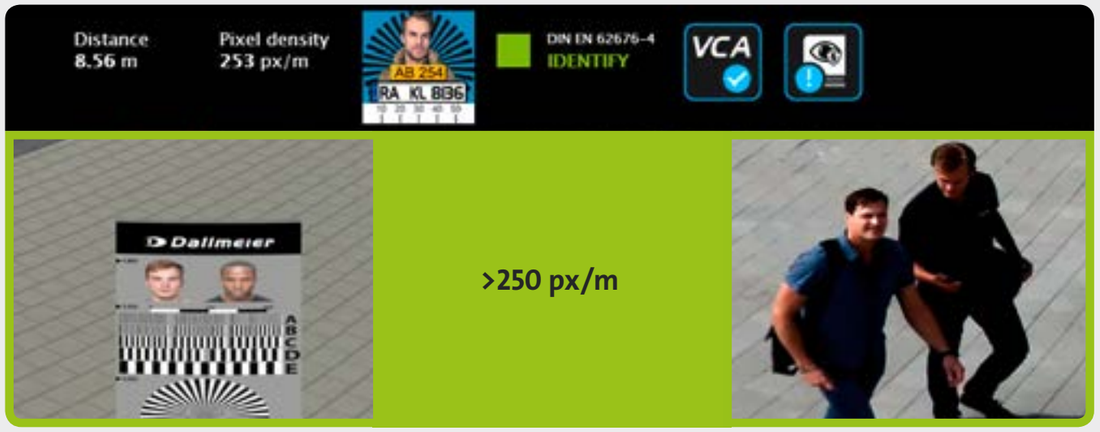
WHAT WE PLAN IS WHAT YOU GET

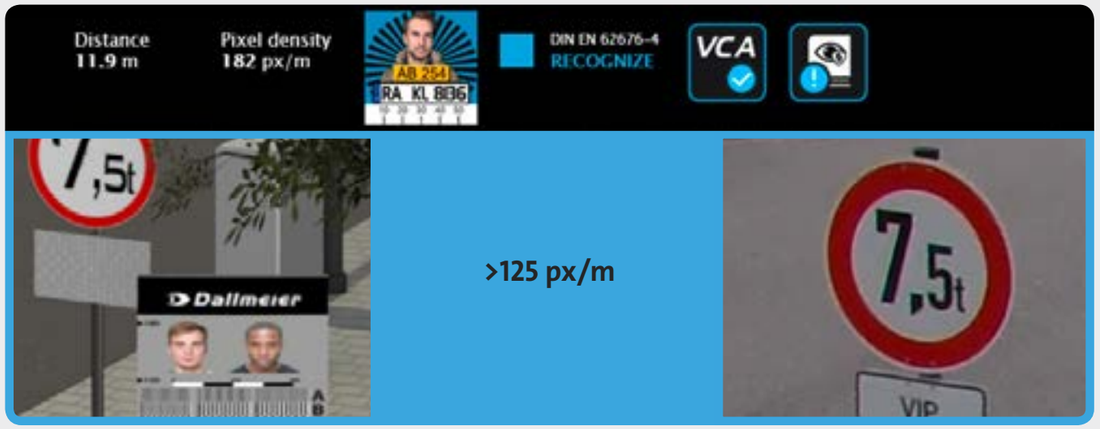
Changes and modifications can be made quickly and simply “on the fly” until the planned customer environment exactly matches the requirements.

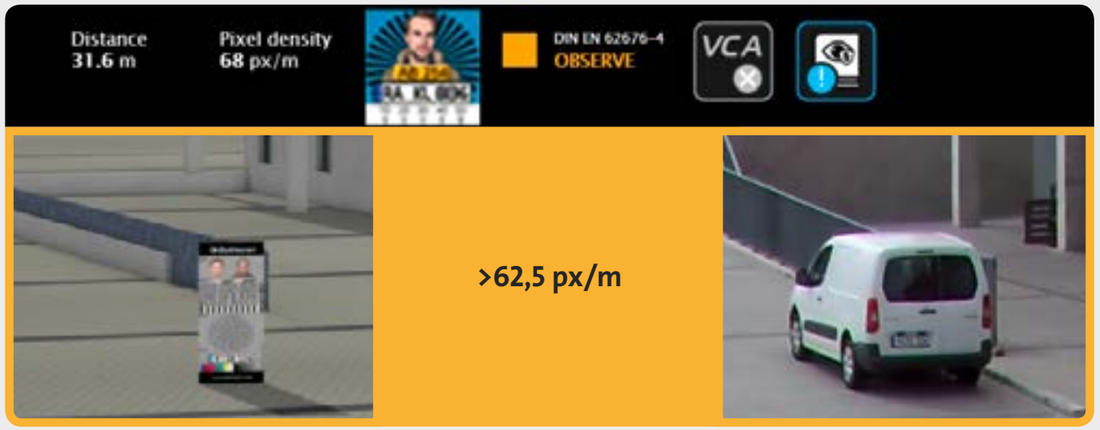
On the basis of CAD plans or other sources, Dallmeier‘s 3D experts create a „digital twin“ of the customer environment – whether it is a football arena, a city centre, airport areas or industrial production facilities.



The result is an extremely precise representation of the real-world environment, which allows very precise planning. The exact simulation takes into account all influencing variables, such as changing lighting conditions, distances, object movements, weather influences, topological conditions, shading and other parameters necessary for the individual solution.







LESS INFRASTRUCTURE, MORE OVERVIEW

MAXIMUM OVERVIEW FOR MINIMUM EFFORT

By combining innovative planning with the remarkable system characteristics of the Panomera® W 360°, requirements and specifications are met exactly. Even very large context in indoor and outdoor areas can be covered without interruption and with minimum effort.

And the savings effect is doubled: On the one hand the amount of infrastructure needed is reduced, fewer cameras and fewer cables, masts and supply lines are needed.

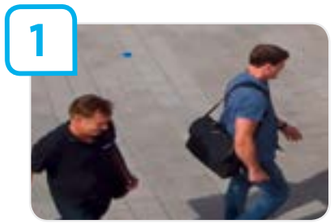
On the other hand, the combination of overview and detail enables the same number of operators to capture significantly larger expanses.

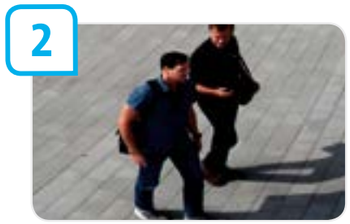
OBJECT TRACKING AND “NEXT BEST CAM”

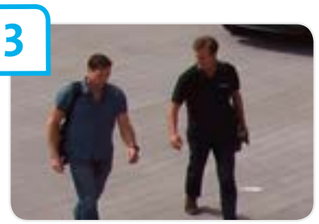
TRACKING OBJECTS AND CHANGING THE PERSPECTIVE

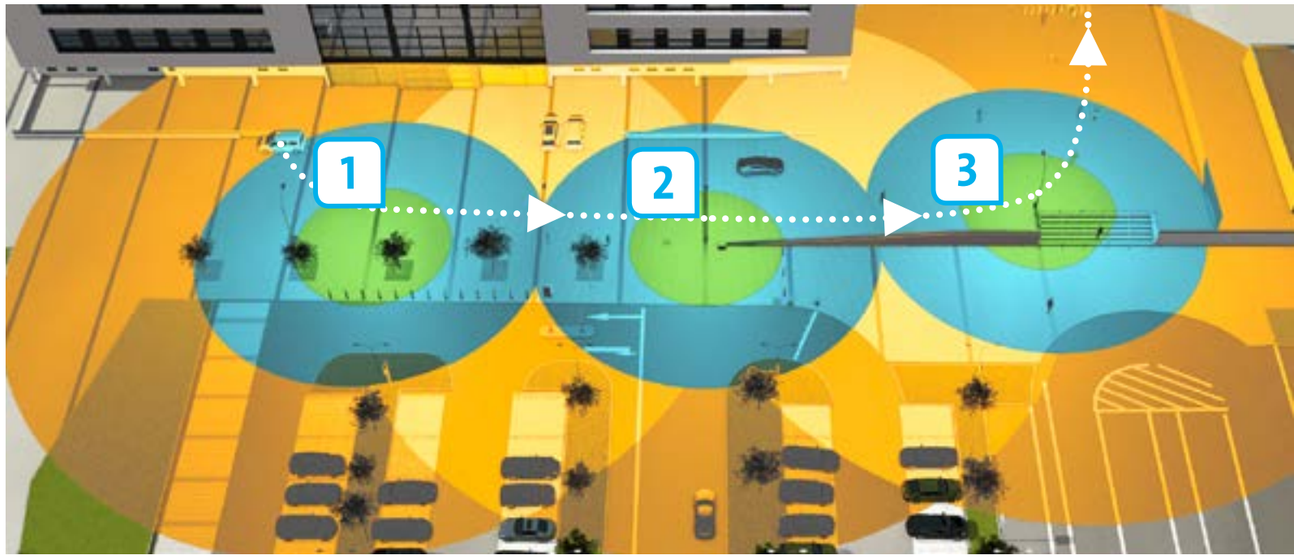
Always the best image

One key objective for the implementation of the Panomera W 360° is maximum manageability. This is not limited to the overall image. Instead, it provides operators with the capability to track objects from one camera to another, and in so doing automatically switch to the area of optimum resolution.



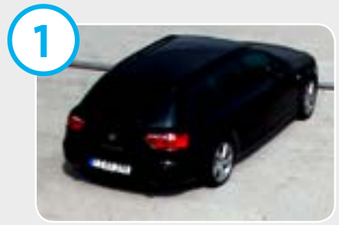


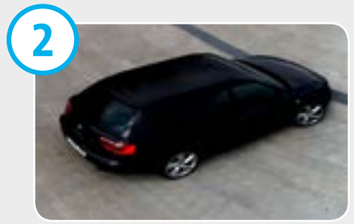


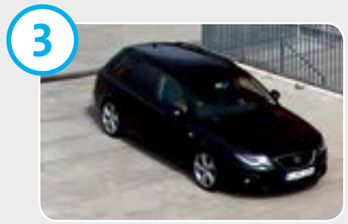


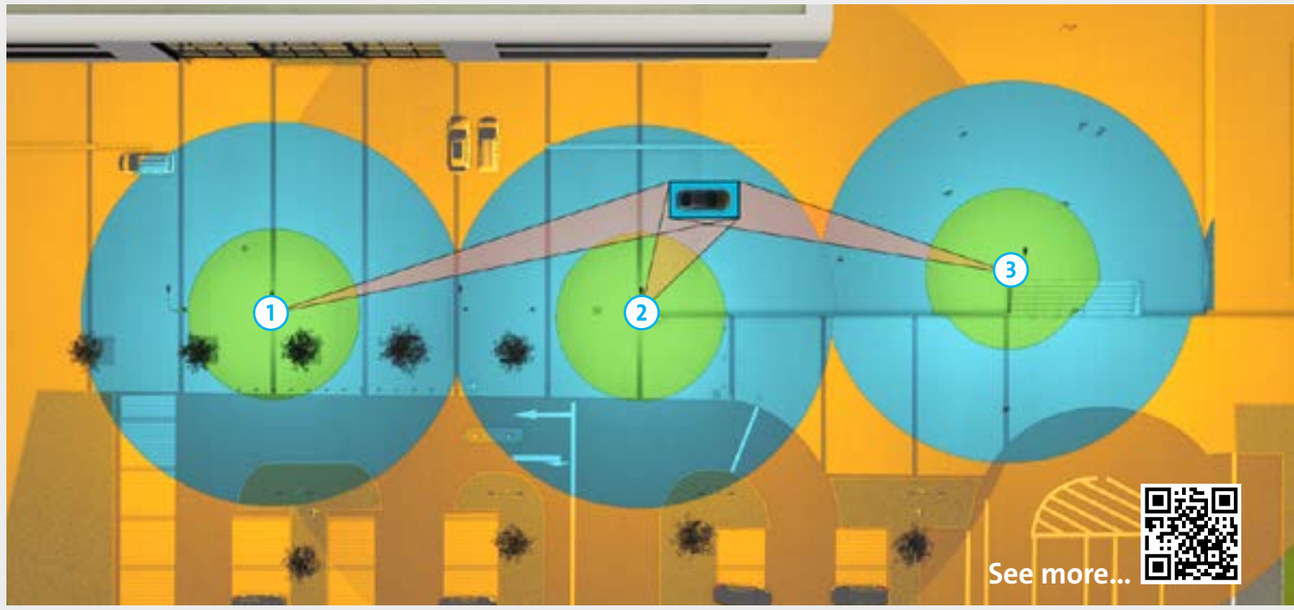
Always the right perspective

Another advantage of the Panomera® W 360° systems and their management software is the ability to select a perspective quickly. The intuitive user interface allows rapid changes of perspective among multiple Panomera® W 360° systems as well as other Dallmeier cameras. As a result, even complex situations can be resolved quickly and easily, both live and in the recording.









FROM PLANNING TO IMPLEMENTATION

CAMCARD & CALIBRATION

THE PANOMERA® CAMCARD GUARANTEES HASSLE-FREE INSTALLATION

After the planning phase, the Panomera® W 360° cameras are configured according to the now defined requirements. The local coordinates of each installation point as well as the exact alignment and adjustment of the image sensors or camera lenses are recorded in a CamCard for each Panomera® W 360°. The CamCard contains all important information for mounting and commissioning, such as height, mounting points, IP addresses, serial number, etc.

AUTOMATIC CALIBRATION

The lens / sensor concept of the Panomera® W 360° is based on precisely measured and pre-focused lenses that are optimally matched to the extremeley high-resolution image sensors. The individual lens sensor units are automatically calibrated over the network using the Panomera® AutoCalibration software. Focusing and calibration at the mounting location is not necessary. After the connection with only one click the image signal is immediately available.

RESOLYZER

The time required for mounting the systems correctly at the construction site represents a substantial cost factor. The Dallmeier CamCard provides essential assistance. Even more time is saved with the MOUNTERA® mounting system.

FLEXIBLE FOR MANY SCENARIOS

THE IT-FRIENDLY CAMERA SYSTEM

Implementing solutions like a product

With the Panomera® W series, the wish of many security and IT managers to be able to procure and implement even relatively complex solutions as easily as a single product becomes reality. This is made possible by the considerably smaller number of systems, the high level of integration with the software and the semi-automated planning process. The video-technical capture, e.g. of a larger outdoor area with defined security goals, can thus be implemented in a much shorter time and with less know-how than with conventional approaches.

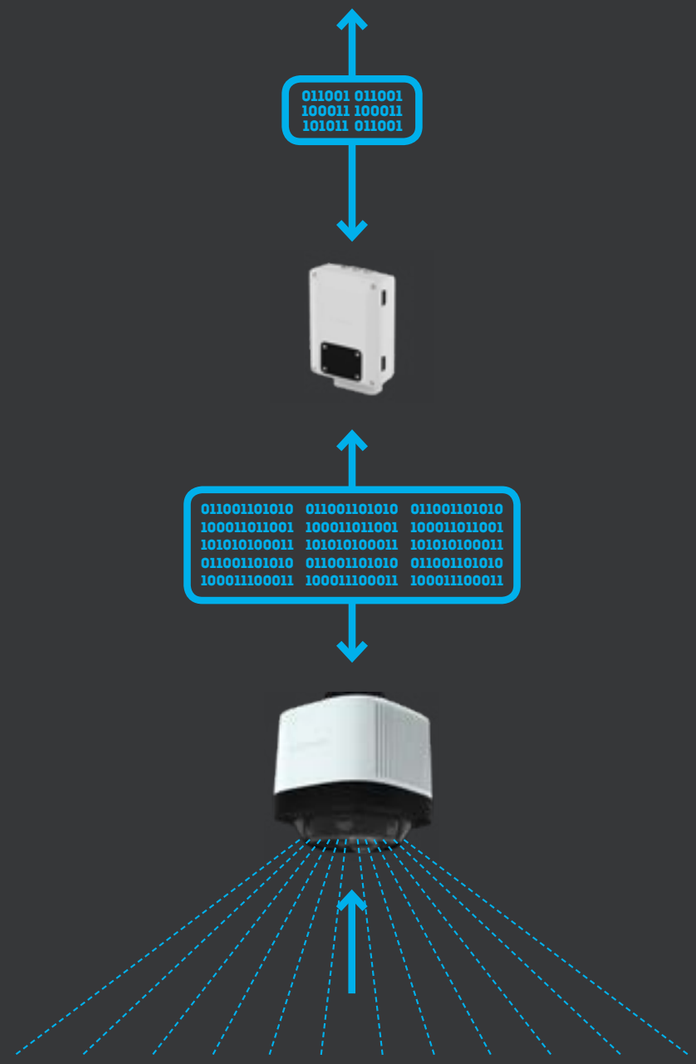
“SRS Edge” – no data conflicts in bandwidth-limited environments

The “SRS-Edge“ memory module close to the camera functions as peripheral memory for high-resolution (Hi-Res) image data in best quality. Data can be stored locally and periodically deleted according to data protection requirements.

If required, effective image compression techniques provide a low-res stream. For a 60 megapixel camera resolution, only a bandwidth of less than 10 MBit/s is required. High-resolution video sequences are then retrieved from the memory in the junction box only when required. This allows users to bypass complex QoS prioritization. The SRS module also contains the “ViProxy“ data protection function, which separates the video network from the corporate network.

Advantages:

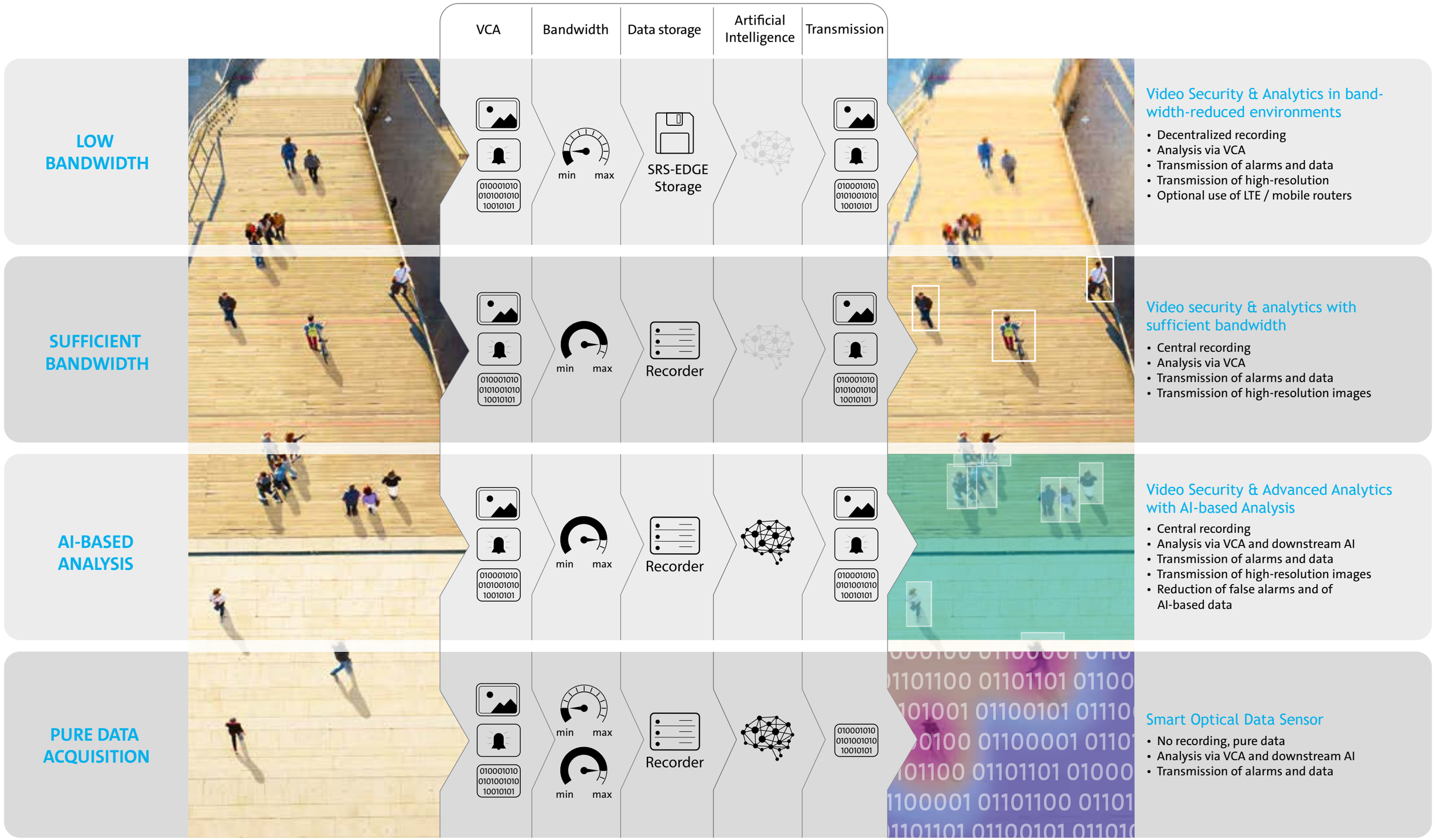
- Simplest implementation of projects
- General streamlining of the transfer volume
- Even narrowband infrastructure can be used without performance losses
- High-resolution material is only used when it is actually needed
- Highest data efficiency by eliminating data competition and QoS prioritization
- Precise adaptation to data protection regulations
- Comprehensive cybersecurity precautions and techniques



Smart Data, not Big Data

With the recording power situated inside the camera, a growing number of recording and analytics can be devoted to the camera itself, and consequently executed in decentralised manner on the network periphery (e.g., preselection of incidents by Video Content Analysis and Basis AI). The data generated thereby is not video material, it represents the results of analysis and is transmitted to the server over the network as needed.

see more...


VCA
Bandwidth
Data storage
Artificial Intelligence
Transmission
LOW BANDWIDTH
min
max
SRS-EDGE Storage
010001010 0101001010 10010101
SUFFICIENT BANDWIDTH
Recorder
AI-BASED ANALYSIS
PURE DATA ACQUISITION
Video Security & Analytics in band-width-reduced environments
• Decentralized recording
• Analysis via VCA
• Transmission of alarms and data
• Transmission of high-resolution
• Optional use of LTE / mobile routers
Video security & analytics with sufficient bandwidth
• Central recording
• Analysis via VCA
• Transmission of alarms and data
• Transmission of high-resolution images
Video Security & Advanced Analytics with AI-based Analysis
• Central recording
• Analysis via VCA and downstream AI
• Transmission of alarms and data
• Transmission of high-resolution images
• Reduction of false alarms and of AI-based data
Smart Optical Data Sensor
• No recording, pure data
• Analysis via VCA and downstream AI
• Transmission of alarms and data

MULTIFOCAL SENSOR TECHNOLOGY IN 360°

CONCEPT COMPARISON 360° SYSTEMS

	Several single-sensor cameras	Multisensor camera	Multisensor camera + PTZ	Multifocal sensor system Panomera® W 360°	Multifocal sensor system Panomera® W 360° with Dallmeier VMS system
PRESENTATION OVERVIEW					
Stitching – a complete overview on one picture	–	●	●	○*	●
Smart stitching in high resolution	–	–	–	○*	●
Definable resolution density over the entire area	–	–	–	●	●
Permanent recording of the entire area in high resolution	●	–	–	●	●
Number of operators per 360° overview	min. 2	1	1	1*	1
Number of 360° situations / operator	0.5	6-8	6-8	6-8*	6-8
DISPLAY DETAILS					
Any number of simultaneous and high-resolution zooms over the entire area	●	–	–	●	●
Possibility to zoom in and out of the recording as desired	●	–	–	●	●
Multiple operators can zoom in and out at the same time	●	–	–	●	●
ANALYSIS AND AI					
AI-ready due to exactly definable minimum resolution density	–	–	–	●	●
AI-ready through edge computing-ready hardware	–	–	–	●	●
VCA with AI support over larger spatial areas	–	depending on SOC	depending on SOC	●	●
Identification range (≥ 250 px/m)	n/a	n/a	n/a	up to 8.6 m (232 qm)	up to 8.6 m (232 qm)
Recognition range (≥ 125 px/m)	n/a	n/a	n/a	up to 17 m (929 qm)	up to 17 m (929 qm)
Detection range (≥ 62 px/m)	n/a	n/a	n/a	up to 34 m (3.778 qm)	up to 34 m (3.778 qm)
OPTIMISATION FOR USE AND IT					
Edge storage up to 2 TB (bandwidth minimization, serverless recording)	–	–	–	●	●
Flexible mounting system (use of systems and changing locations)	–	–	–	●	●

* if VMS software is able to stitch eight ONVIF streams

THE PANOMERA® CONCEPT FROM A COMMERCIAL POINT OF VIEW

TOTAL COST OF OWNERSHIP

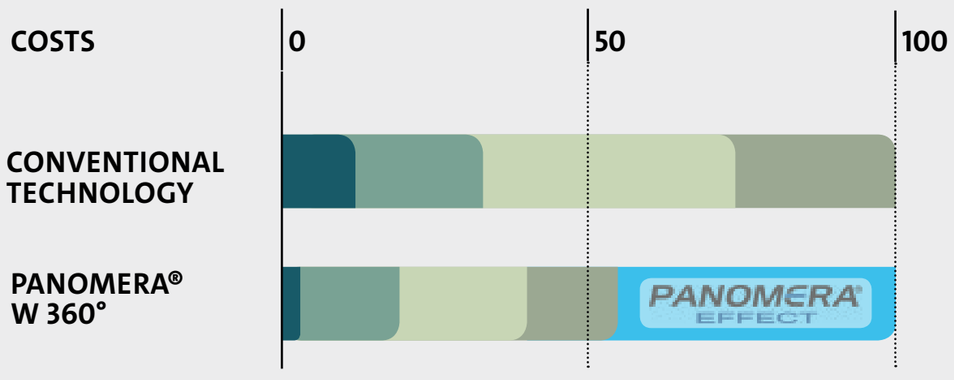
The high quality of the components, the use of the latest processor technology as well as the “platform concept“ of the hardware and software contained in the components make it possible to use them – for their intended purpose – far beyond the usual 3-5 years of operation.

But even with a classic five-year perspective, the Panomera® multifocal sensor technology already opens up high savings potentials across the entire process chain.

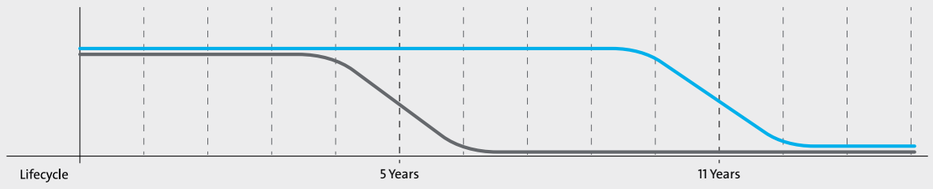
Planning and commissioning	Acquisition costs	Operating costs	Unproductivity costs*
Virtual 3D project planning and the MOUNTERA® concept significantly reduce the time required for installation and commissioning.	The Panomera® effect reduces the number of cameras and infrastructure requirements. This effect more than compensates for the higher costs per individual system.	Fewer cameras, lower infrastructure and personnel requirements reduce operating costs.	The use of Panomera® increases productivity many times over. This reduces indirect costs.*

*Indirect costs are costs caused by complexity in the operation of systems. According to “Information Management“, Krcmar, 2005, these are between 23% and 46%.

TOTAL COSTS OVER 5 YEARS



High manufacturing quality + platform strategy = maximum service life



Dallmeier systems can be used far beyond the usual depreciation periods:

- Highest performance through latest System on Chip (SoC) generation
- Platform-based software and hardware concept
- Highest security standards and regular updates
- Highest material and component quality “Made in Germany”

See more...

Dallmeier

Dedicated to quality. Driven by passion.

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MADE IN GERMANY

See more.