

# VIDEO EXTRA



Ingolstadt sets new standards for video security solutions in public spaces.

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Photos: Fotolia, Der Westen - Peter Sieben, Dallmeier



Essen Police Chief Frank Richter presents revolutionary new surveillance system.

Page 8



New video observation system foils bank robbery

Page 8

# Camera manufacturer recommends fewer cameras

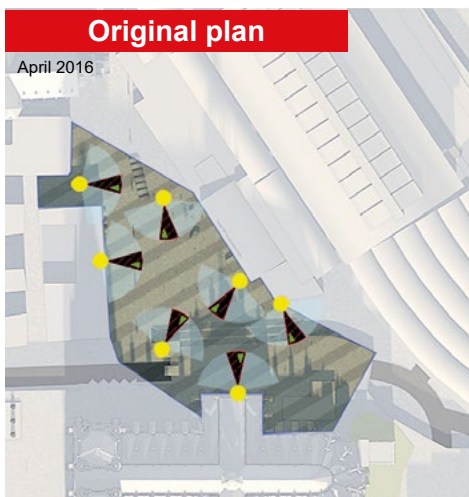


## Fewer cameras, yet greater security!

Photo: Dallmeier - Cologne Cathedral Square

As feelings of uncertainty are on the rise among the populace, demands to expand video surveillance installations and increase the number of cameras in public spaces are growing louder, and are being voiced by representatives of all political affiliations. But would more cameras or higher resolution cameras really offer more security? Regensburg-based manufacturer Dallmeier, one of the world's leading providers of network-based video security systems, says no.

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Original plan

April 2016



Actual completion

December 2016

Dallmeier Infographic

## Project in Cologne:

### Video observation compliant with DIN-EN 62676-4



Area of 8,800 m<sup>2</sup> with minimum coverage in accordance with DIN specification (Recognise/Identify) of 200 pixels per meter over the entire area. At least the specified pixel number (keyword: Effective resolution!) must be guaranteed for all points of the observed area.

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## “Emnid und Forsa” surveys confirm:

### 83% of Germans and 80% of the residents of Berlin want more video surveillance

According to surveys, a substantial majority of the German population has declared itself in favour of expanding video surveillance in public spaces. More about the public opinion in Germany on page 8.

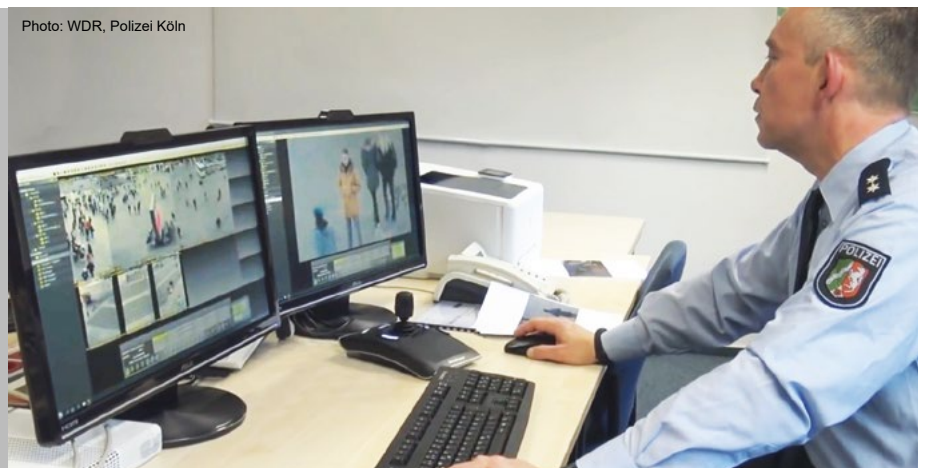


Photo: WDR, Polizei Köln



# Camera manufacturer makes case for fewer cameras!

## Active video observation instead of passive surveillance

Until now, it seemed that the only logical way to guarantee full coverage of large open spaces with visibility challenges was to set up large systems consisting of as many cameras as possible.

In most cases such an approach is prohibitively expensive. At the same time, it was often simply not technically possible to create satisfactory solutions. "This was why in the past at least 30-40% of such projects were not even attempted", says Dieter Dallmeier, founder and CEO of the German video manufacturer Dallmeier – a leading name in the industry worldwide for over 30 years now. With its innovative Panomera® multifocal sensor technology, the company has made a veritable quantum leap forward in the development of modern video security equipment. Instead of simply assuming that a large number of installed surveillance cameras would somehow bring about a significant reduction in criminality, the forces of law and order now have the chance to switch from ineffective, passive surveillance to active video observation.

Former police officer Thomas Schweer, now a professional sociologist, has studied the question of video surveillance. His conclusion: "Compared with video surveillance, which merely enabled us to determine that the crime rate is generally not falling, video observation offers a good way to maintain order at a location. Because the police

can respond very quickly when a criminal act is seen to be in progress."

This new, ground breaking shift in the approach to crime prevention is made possible by the extraordinary technical capabilities of the Panomera® technology and its supporting



Photo: youtube.de

system components –also developed by Dallmeier. In locations where previously wide-area surveillance did exist, in cities, and particularly inner-city areas, all too often the investigating authorities were forced to work with a patchwork of different camera systems and viewing points with no coherent overall

picture. Thanks to the unsurpassed interoperability and guaranteed recording quality of the Dallmeier solutions, they are now presented with a consistent, clear image which can be evaluated immediately and presented as evidence in court.

Potentially dangerous situations are detected before they even become incidents in a police statistics report. Fast response forces are alerted rapidly and guided to the site of interest. And if a criminal offense is committed "under the noses" of the police, Panomera® supplies conclusive information which can be used as evidence in a court of law and as the basis for criminal

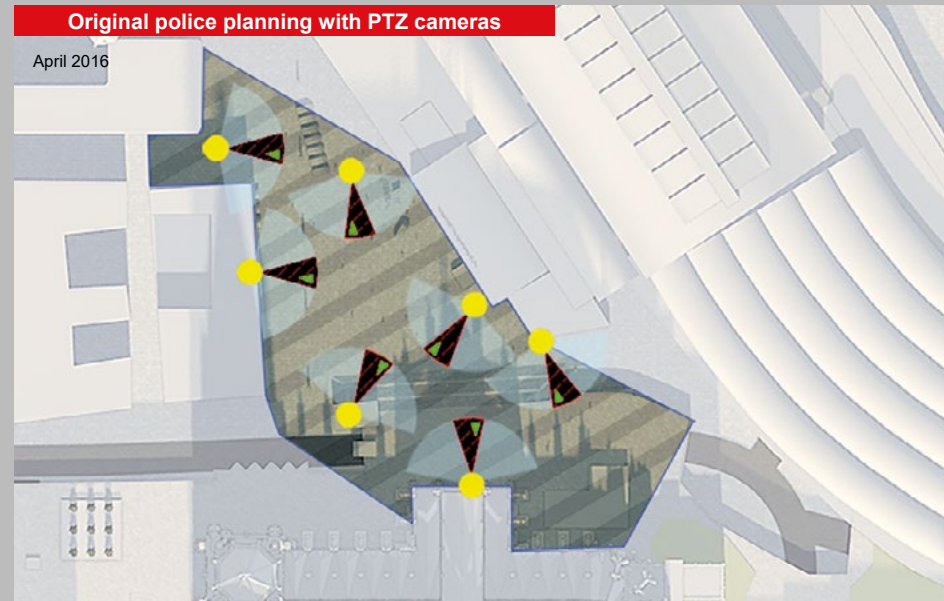
investigations. The various articles in this information brochure will explain in understandable language what video observation actually involves, how it can be implemented most effectively, and how the information collected can be used to obtain a cohesive data set.

Video: Kölner Express (Note: German audio)



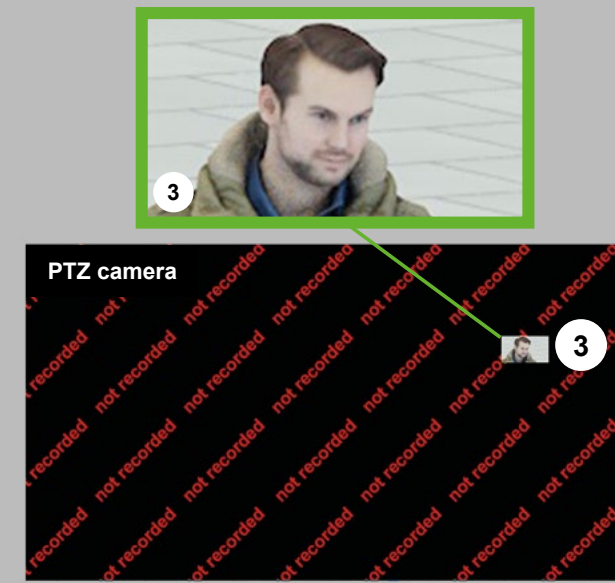
Photo: WDR, Carsten Rust

### Conventional planning "More is more"



- Camera location
- Camera Swivel range
- Camera aperture angle (area not recording)
- Camera zoom (area recording)

- PTZ planning**
- Numerous installation points
  - Difficult installation
  - High infrastructure and maintenance costs (e.g. masts)
  - Obtrusive appearance



# Project in Cologne: Active video observation instead of passive surveillance - DIN-EN 62676-4 compliance

The events of New Year's Eve 2015 in Cologne are seared into the memories of the entire population of the city. The assignment for the Dallmeier company was quite simple: Prevent crime on the Cathedral Square and provide assistance with investigations. To this end, the company delivered a video security concept that even surpassed standard quality criteria. The police and city authorities have been using high-resolution cameras for a long time now. They produce high resolution overview images from security cameras. But the crucial question for investigators is whether suspects whose faces are recognizable in a general picture can still be identified, or at least categorized as known to the police when relevant sections of an image are magnified.

This means that the pixel density, i.e. number of pixels per meter, is high enough. This is where the "Panomera® effect" comes into its own. With a combination of overview and simultaneously unrivalled resolution, it delivers previously impossible image quality. One policewoman with the Essen police force, summed up her impression of the system's performance capability: "We can now zoom in on specific points in Rheinischer Platz. And you can even read the signposts, that is very impressive."

The DIN EN 62676-4 standard defines the pixel densities that are necessary for a given application.

In order to recognize known individuals or offenders, you need 125 pixel/m. Unlike all other available camera technologies, the Panomera® technology guarantees this minimum value. Everywhere, over the entire area of the expanse to be monitored. This means: Even more distant objects are displayed with the same resolution as objects in the image foreground. And that makes police work much more effective, research work much easier and intervention in emergencies is faster and extremely well targeted.

**A note about the DIN standard:**  
The security industry has agreed on a new, single global standard for planning and jointly defining the objectives of video systems. The old, familiar standard DIN EN 50132-7 is herewith replaced by the new standard DIN EN 62676-4. The new standard has been in force since July 2016. The old standard will remain valid for a transitional period until April 13, 2018, after which time it will become invalid.

**RECOGNIZE**

Known person  
125 px/m

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**IDENTIFY**

Unknown person  
250 px/m

## Improvement in video surveillance §

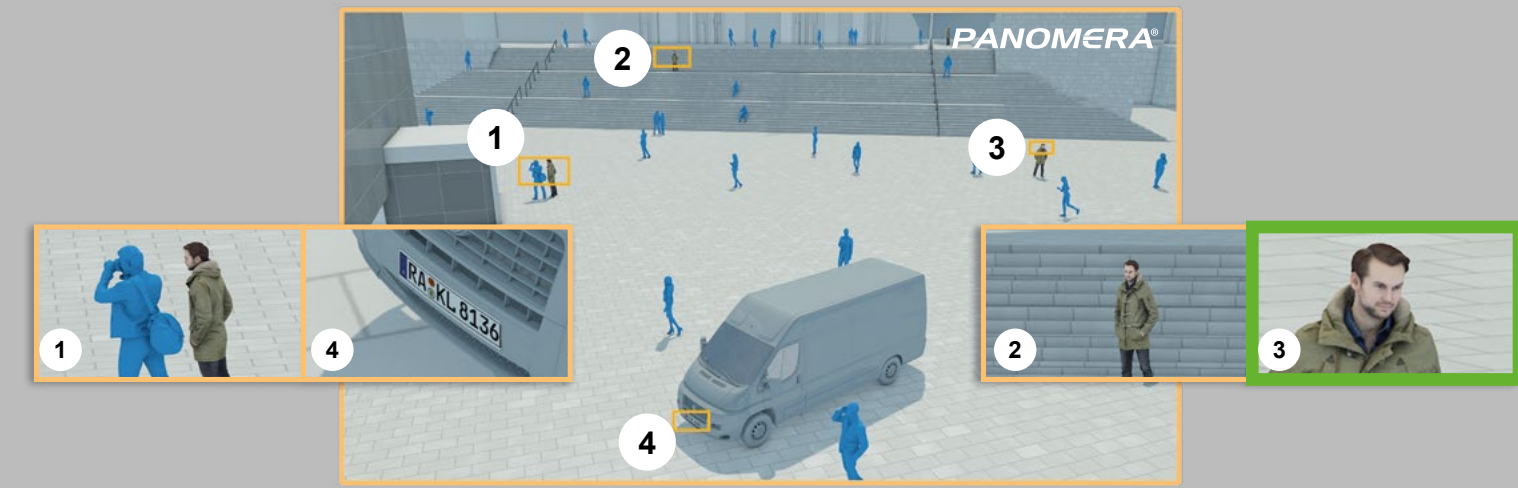
The draft of a "Video surveillance improvement act" introduced by the German Federal Government in December 2016 provides for changes in the Federal Data Protection Act "with the purpose of explicitly enshrining in the law the notion that the protection of the life, health or freedom of individuals in public transport facilities and vehicles of the rail, waterborne or bus systems and large-area facilities open to the public such as sports and recreation areas, shopping centres and car parks are paramount considerations in all projects involving the installation of video surveillance equipment".

The capability of Panomera®-technology, in compliance with the DIN EN 62676-4 standard, to reproduce even more distant objects in expansive surveillance area with the same resolution as objects in the foreground represents a significant contribution to the practical implementation of the intention of this draft law.

### Dallmeier concept "Less is more"



- PANOMERA®**
- Only two installation points
  - Uncomplicated system layout
  - Low infrastructure and maintenance costs because of fewer installation points
  - Unobtrusive
  - Patented technology





# Security solution in Cologne: Advantages

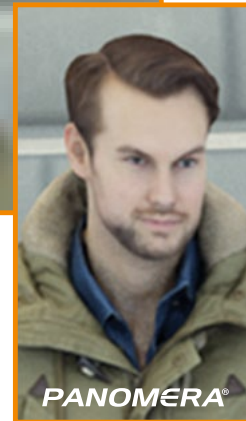
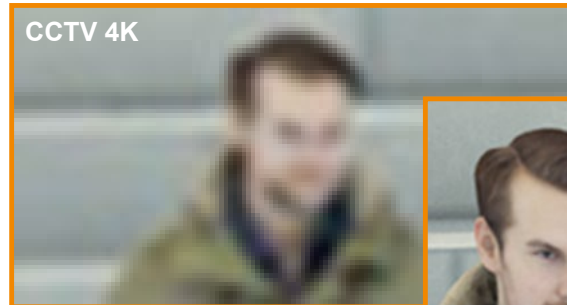
High quality images, comprehensive coverage admissible as evidence in court. The assignment in Cologne was unequivocal and set stringent requirements. Our info graphic explains how the Dallmeier met this challenge. With a carefully designed layout of a networked multifocal sensor systems, the demands applicable to both security technology and data protection rights were dealt with successfully,

# of the Dallmeier Panomera® solution!

surpassing the expectations of the City. With Panomera® technology, it becomes possible to realise video security solutions for public spaces that are unrivalled with regard to economy, quality, and data protection.

## Megapixel cameras vs. PANOMERA®

- Zoom to long distances
  - Image becomes pixelated
- Sample image: Distance about 70 m



© Dallmeier

## PANOMERA® effect

Highest possible resolution at all distances!  
This issue can only be overcome with a three-dimensional resolution applied to the entire area = The unique, patented Panomera® effect!



Photo: Der Westen, Peter Sieben

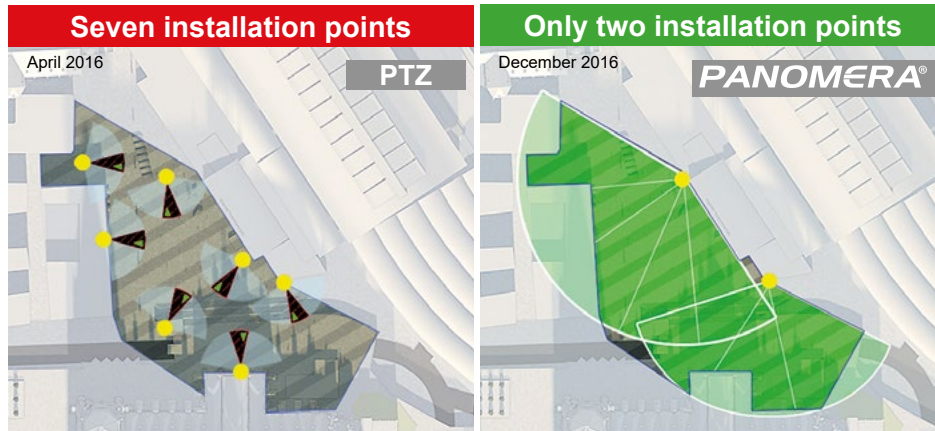
A policewoman with the Essen police force, which also uses the Panomera® technology, summed up her impression of the system's performance capability:  
"We can now zoom in on specific points in Rheinischer Platz. And you can even read the signposts, that is very impressive."



Video ▶  
(Note: German audio)

## PANOMERA® Low installation and maintenance costs

With Panomera®, an area that would normally require a large number of HD cameras, can be surveyed from a single location. The smaller number of camera installation sites helps to reduce both the infrastructure requirements (masts, cables, power, etc.) and the costs of maintenance and upkeep.



Infografik: Dallmeier

## PANOMERA® Real-time up to 30 fps

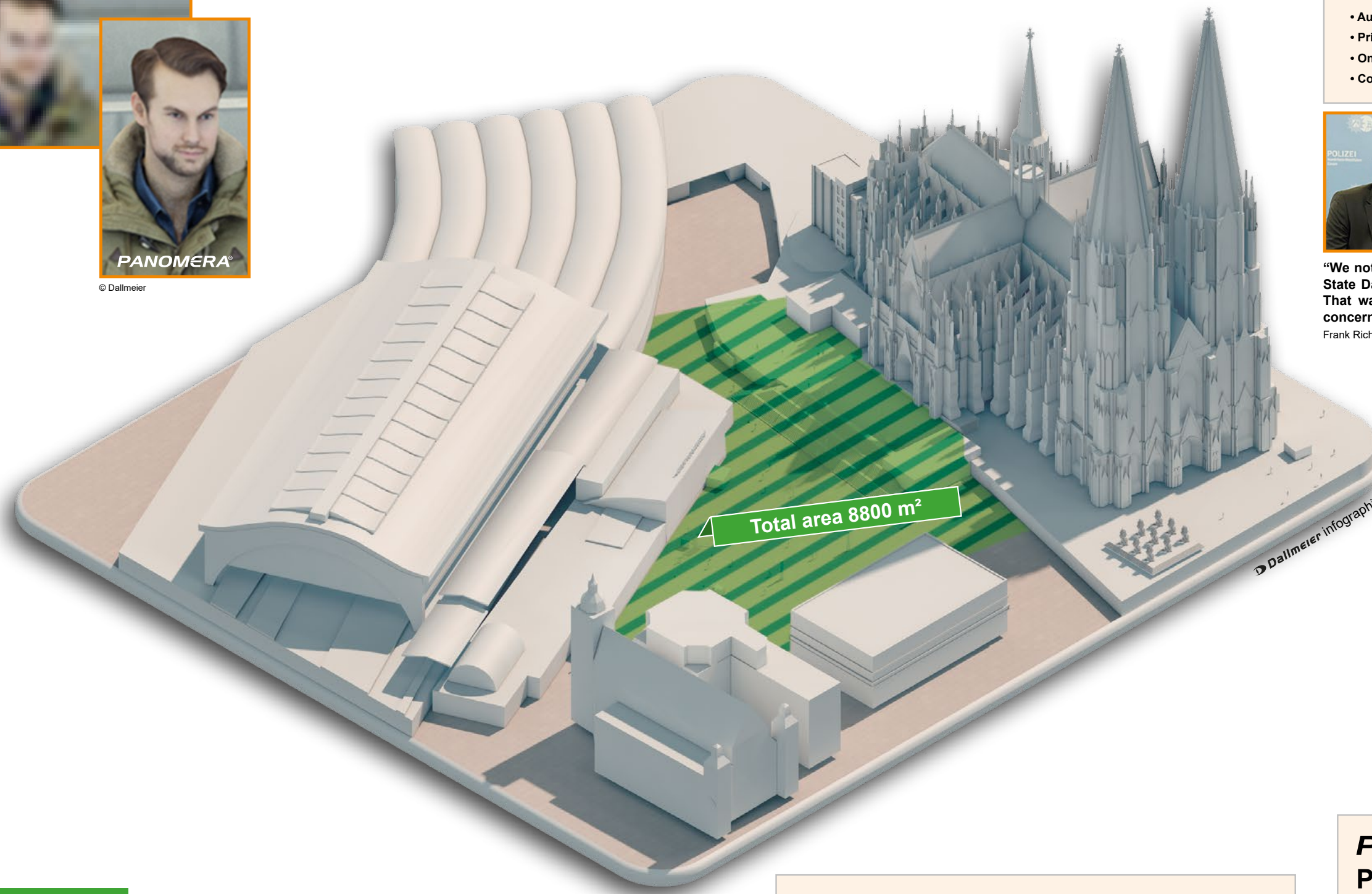
Panomera® delivers image material in real time and at high frame rates of up to 30 fps.



Lokalzeit

"Images in real time are essential for active video observation, because the police can then respond very quickly if a criminal act is in progress there" says Thomas Schweer.

Thomas Schweer - Sociologist, Essen Police  
Photo: WDR, Lokal RUHR



## PANOMERA® Data protection

- Automatic pixelation of moving objects in the software
- Privacy zones
- Only temporary data cache storage
- Counterchecking principle



Photo: Der Westen, Peter Sieben

"We not only alerted our Data Protection Officer here, but also the Federal State Data Protection Commissioner. Everything we are doing is in order. That was a very, very important consideration in order to avoid raising concerns among the residents".

Frank Richter - Essen Chief of Police



© Dallmeier

more on page 8

## PANOMERA® Object tracking at great distances

Only a Panomera® system is capable of monitoring a vast expanse from a single installation location and in extraordinary detail. In this way it is possible to track the movements of objects such as people or cars, over long distances with no recording gaps or camera changes.

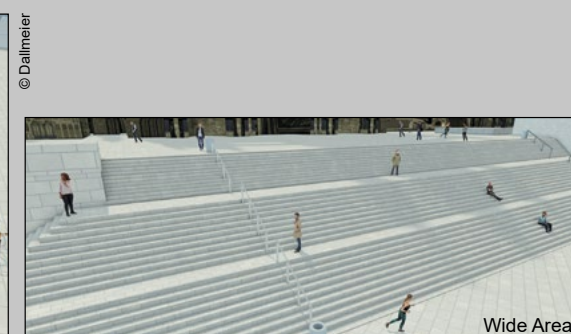


"The quality is very good. Even at distances of 150 to 200 meters, individuals can still be identified easily, including at night"

Lars Lindemann - Spokesman for the Essen Police Department  
Photo: polizei.nrw.de

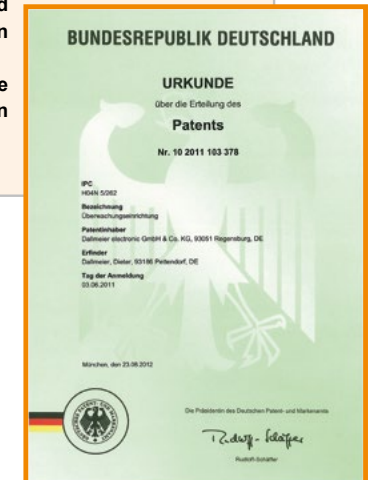
## PANOMERA® Scalable resolution

Various Panomera® models are available depending on the project requirements: whether for large flat areas or mainly wide areas, areas including long distances or for smaller surveillance zones with particular requirements. The quality that must be delivered at a certain specifically distance can be defined.



## PANOMERA® Patented security solution

"A quantum leap in video security equipment!"  
The multifocal sensor technology is a revolutionary, patented technology which was developed specifically for full coverage protection of large areas.  
In terms of cost and quality, it is the superior solution for video observation of large public spaces!





# Ingolstadt – United for more safety

## Partnership between police, public transport companies and FC Ingolstadt 04 football club

The local public transport operator (INVG) in the Upper Bavarian town of Ingolstadt, the town's football club FC Ingolstadt 04 and the Regional Police Department for Upper Bavaria North (Oberbayern Nord) have pooled their resources to take advantage of the security benefits of a video assistance system installed by Dallmeier and its IT

subsidiary IPPI. In close cooperation with the town council and data protection managers, a video solution that satisfied data privacy law was developed and implemented - using the internationally acclaimed Panomera® technology - to ensure that the tasks and associated requirements of all participating users can be performed satisfactorily.

not limit the effectiveness of the system as a whole: the police, INVG and the football club exchange practical experiences regularly, and if crimes are committed in the areas under surveillance, all parties concerned take part in the analysis of the recorded material. Integrated total solution, coordinated cooperation – Ingolstadt demonstrates how different interest groups can work together in harmony

in service of the overriding interests of public safety and data security.



Photo: INVG Ingolstädter Verkehrsgesellschaft

For example, the public transport operator only has access to low resolution overview images from the camera systems which have been installed in locations across the local public transportation network, such as the main bus station. The user rights of stadium security are likewise restricted, and operators there only have access to cameras located in and around the Audi Sportpark stadium. On the other hand, to help them carry out their duties the police are authorised to access all cameras and can observe in detail at maximum resolution, and have the option to store individual recording sequences. The backup function is used to back up incidents so that they can be investigated thoroughly with additional image material, admissible as evidence, if investigations are pursued.

At the same time, the different user rights do



Photo: Fotolia, Stadtplatz Ingolstadt

# Ruhr Metropolis Essen



Photo: www.essen.de, Polizei

"We want all residents of Essen, men and women, to feel safer". Essen City Mayor Thomas Kufen (43, CDU - the leading German conservative political party).

The camera housings installed all around the Rheinischer Platz are equipped with up to eight lenses. "They do the work of as many as 30 individual cameras. This technology makes it possible to cover large areas", explains Criminal Investigation Councillor Christian Draeger.

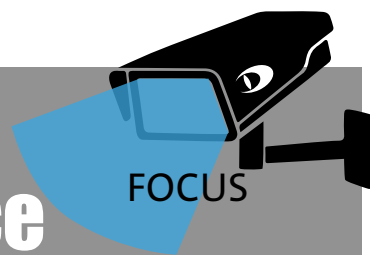


"In the first three days, we made five arrests", recounts police spokesman Lars Lindemann



## A safe city for everyone!

# Expansion of video intelligence



## More safety for the townspeople!

One month after the terror attack at the Berlin Christmas market in the shadow of the Berlin memorial church, the popular Sunday newspaper "Bild am Sonntag" reports that an alliance has been formed to promote more video surveillance.



Senate Justice Department member Thomas Heilmann

"We all see great potential for intelligence on crime, victims protection and prevention if we now expand video intelligence sensibly."

# Dallmeier VIDEO® security solutions for "public spaces"

Dallmeier is one of the foremost providers of network-based video security equipment in the world.

In a range of public safety projects – for example in France, England, Spain and a number of Asian countries – and with custom-designed video solutions for targeted observation of important traffic nodes in conurbations such as London and New York, Dallmeier has gained valuable experience and expanded its professional skills. Dallmeier has developed individual solution concepts for cities and municipal districts all over the world. In all projects, Dallmeier experts ensure that the planned video systems are designed to satisfy the project requirements in the most economical way, they are compliant with data privacy regulations, and can be adapted to reflect changes at any time. All over the world, customers who use Dallmeier systems have the capability to evaluate incidents after the fact, based on images clear enough to be admissible as evidence, and also to prevent incidents before they happen with active video observation. The innovative technologies from Dallmeier ensure that public areas remain safe environments for everyone.

Millenium Square - Bristol UK



City surveillance Monaco



Looe Town UK



City surveillance Salamanca



City surveillance Wharfedale UK

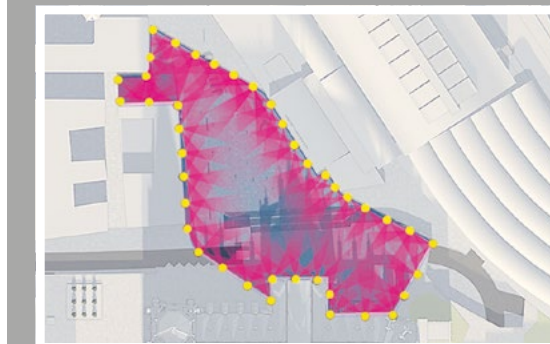


# Total Cost of Ownership "Single Sensor" versus "Panomera®"

## The key conclusions from the Cologne project:

Single sensor cameras (static, single cameras, comparable coverage)

PANOMERA®



1 The total solution with Panomera® in the Cologne project fulfils the technical requirements stipulated by the customer in every detail, in compliance with DIN EN 62676-4. Specifically, the Panomera® guarantees an effective resolution density (pixel density) which does not fall below a given value at any point anywhere in the entire coverage area of 8800 m².

2 The figure shows clearly: The total solution with Panomera® is the most cost-efficient total solution on the market, particularly for full coverage protection of large areas.

3 Panomera® and Video Management 4.0 from Dallmeier have effectively solved the four problems of video surveillance equipment

- a) Problem of resolution
- b) PTZ problem
- c) Problem of bandwidth
- d) Problem of prohibitive expense

technical Panomera® effect

commercial-financial Panomera® effect

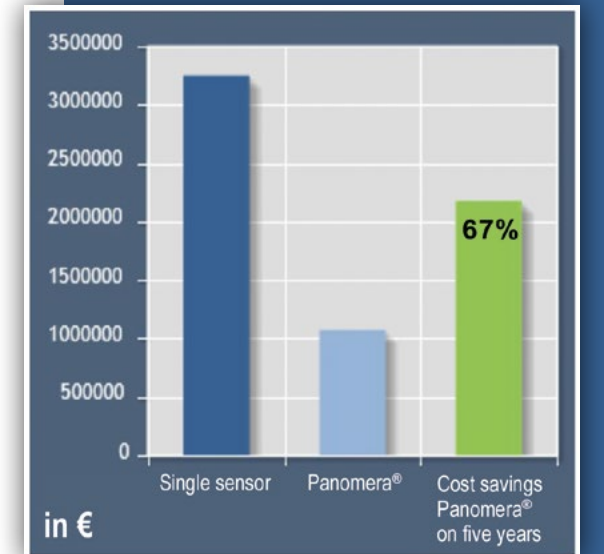
and hence solved the problems of our end customers!

### "Total Cost of Ownership" (TCO) definition

Total Cost of Ownership (TCO) is an accounting procedure that is designed to help consumers and businesses estimate all of the costs associated with an investment (such as software and hardware in IT or in CCTV). The idea is to obtain an accounting that includes not only the procurement costs, but all aspects of the subsequent use (e.g., costs of handling, repair and maintenance) of the components in question. In this way, known cost drivers and even hidden costs may possibly be identified before an investment decision is made.

Source: wikipedia.de

## Total costs over a time horizon of 5 years



Single-Sensor		PANOMERA®
478,048	Procurement costs	220,314
1,912,500	+ cumulative ongoing operating and administrative costs – time horizon 5 years	681,500
2,390,548	= Total DIRECT COSTS time horizon 5 years	901,814
860,625	+ Total INDIRECT COSTS time horizon 5 years	170,375
3,251,173	= Total costs (TCO) time horizon 5 years	1,072,189
	i.e. with the Panomera solution over a 5 year time horizon, theoretical savings in total costs (TCO) amounting to (in EUR):	2,178,984
	<b>Cost savings with Panomera in %:</b>	<b>67%</b>





# Data protection above all

## Essen police force cooperated closely with the data protection authorities

At the press conference, Essen' Police Chief Frank Richter stated: "We not only involved our Data Protection Officer here, but also the Federal State Data Protection Commissioner. Everything we are doing is in order. That was a very, very important consideration in order to avoid raising concerns among the residents".



Police Chief Frank Richter

The protection of personal data is governed by extremely stringent laws in Germany. The police are entirely and deeply aware of their responsibilities when dealing with video data, and they know that with the Dallmeier group of companies they can rely on the assistance

of an equally conscientious and professional partner.

The manufacturer has put in place a range of technical measures which will ensure that the data recorded with video cameras satisfies the strict requirements and regulations by which date privacy is protected. For example, certain zones in the image can be hidden entirely by the camera capture mechanism, or faces and car number plates can be rendered unrecognisable by pixelation.

Storage of the data is also subject to a time limit: "The data is stored for 14 days, and typically deleted at the end of this time. Unless we have identified it as useful for evidentiary purposes, and it is admitted into the proceedings", said Police Chief Frank Richter.



Photo: Der Westen, Peter Sieben

# New cameras foil bank robbery

## Leading edge technology scores success while still in test mode

Just a few hours after installation work was completed and while tests were still being run on the system, response forces successfully prevented an imminent bank robbery thanks to the new cameras. The Panomera® systems delivered video material which is admissible as evidence in court in support of pending prosecution.

"The northern part of Essen's inner city is a hotbed of criminal activity. (...) Residents do not feel safe there, so this is why we have set up the video observation in the 'Rheinischer Platz' in this district". Christian Draeger, director of the Video project for Essen police force stated the position bluntly. Besides the successfully foiled bank robbery by video observation, it has already been possible to prevent several drug trafficking offences in the space of a few days at this unsavory location at the entrance to the underground railway

station. Rheinischer Platz will be transformed from a place of fear to a place of safety



Christian Draeger – Director, Essen Video Project



## Unmistakeable public opinion!

**83%** of Germans and **80%** of Berlin residents want more video observation



Photo: Fotolia, Berlin

According to an Emnid survey commissioned by the "Bild am Sonntag" Sunday newspaper, 83% of Germans are in favour of expanding video observation in public places.

And a Forsa survey commissioned by the Berlin-based newspaper revealed: 80% of the residents of the capital would welcome increased use of video security systems. Accordingly, a majority of the population would solidly support the plans presented by political leaders in this regard. The Secretary General of the conservative CDU party in the City of Berlin, Stefan Evers (37), responded to the clear message of the survey result. "They confirm our position in every aspect".

However, the solution cannot be to simply install more cameras, or cameras with ever higher resolution, which are purportedly better. The aim must be to design effective video systems with the highest level of efficiency, so that the smallest number of cameras possible provides continuous, full coverage resolution and consequently the best possible surveillance performance.

With the Panomera® technology, this is effectively, sustainably and financially feasible.

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