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Artificial intelligence

China overhauls world's biggest surveillance network with advanced AI

Local police forces are modernising the country's ageing infrastructure with more powerful tracking systems

Eleanor Olcott in Beijing

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China is overhauling the world's largest surveillance network with advanced AI, giving the state more automated powers to track people, analyse behaviour and predict potential unrest in real time.

An FT analysis of more than a dozen procurement documents and interviews with people familiar with the contracts found that local governments across China were deploying new AI-powered surveillance systems as Beijing pushed police forces towards so-called predictive policing.

The upgrades mark China's most significant push in years to modernise a surveillance apparatus built a decade ago that authorities already use extensively to monitor the public, reduce street crime, suppress dissent and manage social stability.

While Beijing's surveillance state has long been touted as cutting-edge, its systems have become constrained by ageing hardware, fragmented software platforms and limited AI functions.

It is now investing in new generations of AI-enabled cameras and software that can interpret scenes, identify patterns of behaviour and retrieve footage using written prompts, sharply reducing the need for manual police review.

“China’s old surveillance system is reactive. It is not good at divining and understanding the intentions of people not under explicit surveillance,” said Minxin Pei, expert in Chinese governance and surveillance systems at Claremont McKenna College.



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China already operates one of the most comprehensive surveillance systems in the world © Reuters

Over the past two years, Chinese groups such as Hikvision and Huawei have released products embedded with computer vision and large language models. They run on more powerful semiconductors capable of processing data directly on devices, allowing footage to be analysed at the point of capture.

These systems are trained to predict and issue alerts for behaviours including erratic driving, crowd build-ups, unauthorised entry and suicidal behaviour, such as lingering by bridges.

Hikvision’s latest products enable operators to search footage using prompts such as “a woman wearing a red hat” and automatically retrieve relevant video, a development enabled by the integration of LLMs into devices.

“The police no longer have to manually review footage. They can feed the system a text prompt, and it finds the footage,” said one executive from Hikvision, China’s biggest video surveillance tech group. The previous system could not do text-based searches and only automatically retrieved footage if there was a corresponding image.

设备采购清单

序号	产品名称	品牌	规格型号	生产厂家	产地	单位	数量	单价 (元)	合计 (元)
1	视频图像信息应用平台【核心产品】	海康威视	Infovision SPCC	杭州海康威视数字技术股份有限公司	杭州	套	1	420000.00	420000.00
2	平台管理服务器	海康威视	DS-VM22R-C/R 4C/U/Edge	杭州海康威视数字技术股份有限公司	杭州	套	1	139000.00	139000.00
3	数据库	人大金仓	KingbaseES V8	北京人大金仓信息技术股份有限公司	北京	套	2	55000.00	110000.00
4	中间件	东方通	TongWeb V7.0.4	北京东方通科技股份有限公司	北京	套	3	85000.00	255000.00
5	操作系统	银河麒麟	Kylin OS V10 Server	麒麟软件有限公司	天津	套	3	15000.00	45000.00
投标报价 (人民币大写): 玖拾陆万玖仟元整 (¥ 969000.00 元)									
备注: 1、表内报价内容以元为单位。									

The Shaanxi Justice Department issued a tender to build a computing platform to collate and analyse data collected from cameras around the province. Hikvision is named on the purchase list as the provider of the software platform and servers.

Hikvision said its “products and solutions are designed to record the objective, real world. Powered by AI technology, these offerings serve a practical purpose: enhancing operational efficiency by digitalising routine tasks that previously relied heavily on manual human review.”

Industry insiders said initial deployments were concentrated in densely populated city areas, including zones around military facilities and government buildings.

One procurement document from Yaodu town in Sichuan province allocates Rmb900,000 (\$132,455) for the deployment of 175 high-definition cameras equipped with an “intelligent video analysis system” capable of detecting abnormal behaviour and triggering alerts.

Another tender issued by the Datong police force has a long list of Hikvision technology, including AI cameras trained to identify a person’s features such as gender, posture and clothing. Hikvision distributors, rather than the company, bid to secure these contracts.

A Datong police tender from 2025 includes 28 traffic cameras that support deep learning algorithms to analyse multiple scenes on the device.

第四章 采购需求

公共安全视频监控设备承载着治安管理与防范、维护治安稳定的重要功能，是保护人民人身安全、保障人民财产安全的重要基础设施，目前设备情况如下：云州区平安城市监控系统；平安城市视频监控共计171路，雪亮工程视频监控系统：车卡共计126路，人脸共计243路，村级监控2623路，由于前期建设的视频监控设备已经年久老化、丢失、损坏失修等因素，使其应用平台设备在线率不足30%，为了保障本单位管辖区域的治安稳定与安全防范，现需要对以上监控设备进行维修，以及保障设备正常运行，降低故障发生率、提升安全性等，需采购公共安全视频监控维保所需设备及运维服务。

一、项目概述

- 1、项目名称：大同市公安局云州分局“平安城市监控系统”“雪亮工程”等视频系统维护服务采购项目
- 2、采购内容：前端视频设备、配套设施、安装调试及运维服务
- 3、合同履行期：一年（包含：货物采购+安装调试+质保+运维）
- 4、质保期：一年
- 5、供货地点：大同市公安局云州分局
- 6、建设目标：系统稳定、图像清晰、联网率95%、运维及时、满足公安实战应用
- 7、付款方式：本合同签订完成后5个工作日内支付设备采购金额的50%，全部设备运抵指定地点并经甲方最终验收合格后5个工作日内支付设备采购金额的45%，剩余5%作为质量保证金，于设备最终验收合格满一年且无重大质量问题后支付，运维服务金额按季度支付。

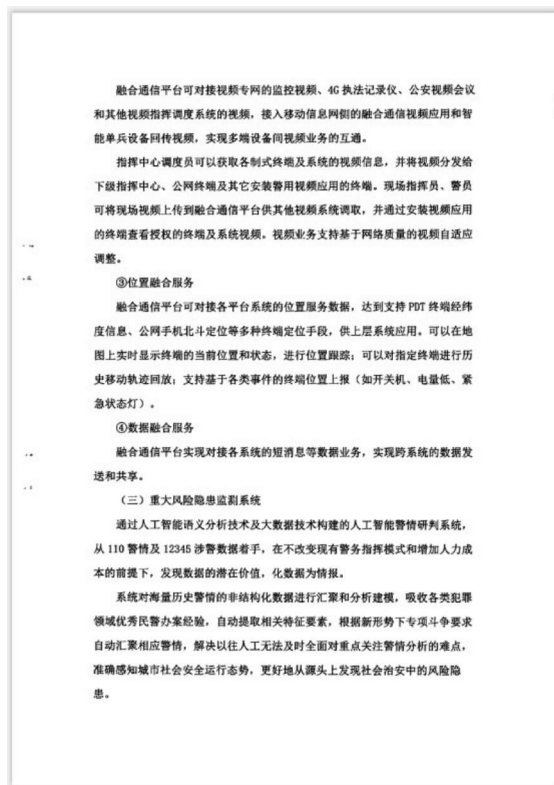
二、货物采购需求

云州区公安视频监控维保设备采购清单

序号	设备名称	规格参数	单位	数量
1	卡口抓拍单元	整体组成：防尘、防水面板，内置LED补光灯，摄像机，单元防护罩，电源适配器（AC220转DC12）内置摄像头采用2/3英寸高帧率全局曝光CMOS传感器，分辨率可达2460×2048，帧率高达25帧，具有清晰度高、照度低、帧率高、色彩还原度好等特点。视频采用H.265、H.264或MPEG编码，低延时，低码率，压缩比高，处理灵活。支持视频触发等多种触发模式并实现全结构化；支持深度学习算法，支持多目标融合场景应用，实时推	台	28

The upgrade has also spawned a new supply chain for specialised AI chips embedded in the devices, which power the multimodal models.

Hikvision's supplier was Shanghai Fullhan Microelectronics, said one person with direct knowledge of the matter. The supplier has experienced rapid growth tied to the upgrade cycle, according to financial disclosures.



The police bureau in Yancheng, a city in Jiangsu, is recruiting for an Rmb7mn project to build a platform that analyses multiple data streams, including social media posts and camera footage. The stated goal is to build a monitoring system that uses “semantic analysis and big data” to identify “potential risks and security trends”.

The chips convert raw image data into digital information that can then be processed directly on the device. As the processing power of these chips has improved, more workloads are handled at the point of capture rather than being sent back to centralised data centres.

Experts say this makes the systems more responsive, cutting down the time to alert authorities to suspicious activity.

While China's surveillance giants are winning contracts to participate in the upgrading, the tenders indicate that spending is more modest than when the initial infrastructure was installed a decade ago.

Analysts estimated Chinese authorities spent Rmb300bn on the first generation of surveillance hardware and installation that was rolled out in the mid-2010s.

Of the 12 tenders reviewed by the FT, budgets ranged from just under Rmb1mn to about Rmb10mn per district, suggesting authorities were layering new AI functions on to existing infrastructure rather than rebuilding systems from scratch.

Another person familiar with Hikvision’s business said they expected the amount invested by governments to increase rapidly. “This is a new trend. But the government has made it very clear to the companies that they need to deploy more AI into the cameras,” they said.

They added that the current generation of cameras, largely installed during the mid-2010s, was in need of upgrading following years of weather damage, particularly from China’s humid and hot summers.

A Hikvision salesperson, who declined to be named, said some local authorities were reluctant to replace all existing cameras because newer AI-enabled models could cost up to three times more than older equipment.



A Yaodu government tender budgets Rmb900,000 for 175 HD cameras with an intelligent analysis system that is capable of analysing scenes such as abnormal crowding.

In recent years, some local government customers facing budgetary constraints have delayed or failed to make their payments for existing contracts. In 2024, Hikvision announced it was pulling out of five contracts in Xinjiang, which one person with direct knowledge of the matter said was triggered by payment issues.

Instead, some authorities are choosing to retain existing cameras while replacing intermediary servers — the systems that collect data from camera networks before transmitting it to central data centres — with “AI PCs”, which can process video for AI workloads locally. By doing more work on the local servers and cameras, customers can also cut their cloud computing bills.

Much of the upgrading is invisible to the public, especially if authorities are only replacing the intermediary servers. But industry executives noted that for police forces that had already rolled this out, notably in Hangzhou where Hikvision is located, the impact had been immediate. “It saves a lot of time,” they said.

Data visualisation by Chesca Taylor, Emma Lewis and Caroline Nevitt

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