Brief on Dahua Technologies: Role in Genocide, Operations in Canada

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Executive Summary

Dahua Technologies is the world's second-largest surveillance technology company, with operations in more than 180 countries including Canada. Inside China, the firm is a linchpin supplier to public security organs, designing, manufacturing, implementing, and directly operating mass-surveillance systems across the country.

Dahua has nearly $1 billion USD of known contracts in Xinjiang, which consists largely of mass surveillance projects, but also 'convenience' police stations, installation of wifi sniffers, and a large manufacturing plant. Dahua has also built 'Uyghur face detection' in various iterations, a widely-condemned technology allowing surveillance cameras to recognize Uyghurs on the basis of facial features alone. In one example, Dahua provides "real-time Uyghur warnings" as part of its smart city management software "Heart of City", which triggers an alert to the police if a Uyghur is detected (see Figure 2).

Dahua's presence in Canada is substantial, including several offices and key executives. Importantly, its wholly-owned subsidiary Lorex is based in Canada. The subsidiary relabels Dahua equipment imported from China, and sells it under the Lorex brand across North America. Lorex often represents itself as a Canadian company, and claims its products are made in Canada, which is patently false.

1. Dahua Xinjiang Activities

The evidence is clear that Dahua has a direct role in perpetrating atrocities in Xinjiang. It is widely-known that surveillance technology is critically important in the PRC's campaign of repression against Uyghurs and other minorities. These highly advanced systems are used to constantly track millions in Xinjiang, categorize and analyze their behavior, and even to tag individuals for detention or other police intervention. Dahua is among the largest suppliers of hardware and software for these systems, and in some cases is contracted to directly operate them.

Dahua's Xinjiang activities include:

- A $686 M USD contract in Yarkant County, Xinjiang, to build and operate a mass surveillance network and multiple 'convenience police stations' for a period of 9 years.[1] Construction of thousands of new police stations has been a signature move by Xinjiang's top official Chen Quanguo; Reuters has reported these can be found at "almost every corner" of major cities.[2] This project is notable for its massive size, an $807 USD expense for each of the 850,000 residents of Yarkant County, and it is the largest known contract for surveillance technology in history.
- Dahua, with local firm Leon Technology, was awarded a surveillance project for Xinjiang's Qiemo County worth $61 M. It included "a system that captures the features of wireless MAC addresses," technology also known as 'WiFi sniffers'. WiFi sniffers combined with surveillance cameras are used to track Xinjiang residents in IJOP.[3]
- Dahua built a large-scale research and manufacturing facility in Xinjiang, the "Dahua Security Science and Technology Information Industry Park," to "support and meet the demand for various security technologies that are required for ensuring stability in Xinjiang."[4] The Globe and Mail raised ethical concerns about a similar Huawei facility.[5]

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[1] https://ipvm.com/reports/dahua-xinjiang

[2] Wen, P. (2017, March 30). *Reuters*. "Terror threats transform China's Uighur heartland into security state." https://www.reuters.com/article/us-china-xinjiang-security-insight/terror-threats- transform-chinas-uighur-heartland-into-security-state-idUSKBN1713AS

[3] Rollet, C. (2018, June 13). *Foreign Policy* "In China's Far West, Companies Cash in on Surveillance Program That Targets Muslims." https://foreignpolicy.com/2018/06/13/in-chinas-far-west-companies-cash-in-on-surveillance-program-that-targets-muslims/

[4] https://ipvm.com/reports/dahua-xinjiang

[5] Vanderkilppe, N. (2018, May 14). *The Globe and Mail.* "Huawei's partnership with China on surveillance technology raises concerns for foreign users." https://www.theglobeandmail.com/world/article-huaweis-partnership-with-china-on-surveillance-raises-concerns-for/

2. Overview: Uyghur Face Detection

This section briefly explains Uyghur face detection technology as applied by PRC authorities in order to contextualize Section 3.

Uyghur face detection is a system trained to determine if a person in an image or video is Uyghur on the basis of their facial features alone. This technology is one of several advanced surveillance analytics empowering surveillance cameras and other devices to automate, to an extent, the otherwise manual tasks of the PRC's public security organs: collecting data on citizens' whereabouts, activities, associations, characteristics, and so on. These systems are critical to the CPC as they vastly reduce the resources necessary to repressing Xinjiang's millions of minority individuals, which might otherwise be impossible to achieve at such scale.

In April, 2019, a *New York Times* investigation found that PRC authorities are "using a vast, secret system of advanced facial recognition technology to track and control the Uyghurs…[it] looks exclusively for Uyghurs based on their appearance and keeps records of their comings and goings for search and review," and it is "potentially ushering in a new era of automated racism."[6]

Although the two are often discussed together, demographic classification systems such as Uyghur face detection and facial recognition systems are, in fact, distinct technologies with different development processes. In other words, to build ethnicity detection is not a mere extension of the technical work required to build a face recognition system, but a separate process and a significant investment. To build Uyghur face detection requires manually-curated datasets containing thousands of Uyghur faces, and creating such datasets involves thousands of hours of labor.

3. Dahua Uyghur Face Detection

Dahua's own company documents show it developed Uyghur face detection for police applications.

In 2020, a Dahua software development kit (SDK) downloaded from Dahua's own website showed Uyghur detection functionality is integrated into their products. (Figure 1)

In 2021, it was revealed that Dahua built Uyghur face detection into Heart of City, a 'smart city'/'smart policing' software which draws data from mass surveillance systems, and is used in public security operation centers across China. Dahua describes Heart of City as "tapping

6 Mozur, P. (2019, April 14). *New York Times.* "One Month, 500,000 Face Scans: How China Is Using A.I. to Profile a Minority." https://www.nytimes.com/2019/04/14/technology/china-surveillance-artificial- intelligence-racial-profiling.html

Figure 1 - Dahua SDK Includes Uyghur Detection

```
//民族
public static class EM_NATION_TYPE extends MyStructure
{
    public static final int EM_NATION_TYPE_UNKNOWN = 0;        // 未知
    public static final int EM_NATION_TYPE_UYGUR = 1;          // 维族(新疆)
    public static final int EM_NATION_TYPE_OTHER = 2;          // 其他
    public static final int EM_NATION_TYPE_UNIDENTIFIED = 3;   // 设备未识别
}
```

the potential of big data resources to build a new AI-driven 'Smart Policing' model, driving front- line teams to operate accurately, efficiently and intelligently." In technical documents for Heart of City, Dahua describes this system as providing police with "real-time Uyghur warnings," a term mentioned 14 times. This means if a Dahua surveillance camera sees what it believes is a Uyghur, Heart of City will automatically alert the police.[7] [8] (Figure 2)

Figure 2 - Dahua HOC "Real Time Uyghur Warnings"

[7] Bhuiyan, J. (2021, February 9). *Los Angeles Times*. "Major camera company can sort people by race, alert police when it spots Uighurs." https://www.latimes.com/business/technology/story/2021-02-09/dahua-facial-recognition-china-surveillance-uighur

[8] IPVM Team. (2021, February 9). *Dahua Provides "Uyghur Warnings" To China Police*. https://ipvm.com/reports/dahua-uyghur-warning

Another Dahua document regarding Heart of City also said the software supports "real time Uyghur warnings." It details various subcategories of individuals that can be tracked, including "Uyghurs with hidden terrorist inclinations." We do not know the assessment criteria for identifying "hidden terrorist inclinations", but reports have stated that mundane characteristics such as having a full beard, owning knives, or going to mosques can put an individual in this category.

4. Dahua Uyghur Face Detection

Dahua has significant ties to Canada, which serves as important corporate hub for the company. It has offices in Toronto, Vancouver, and Montreal,[9] and Dahua executives based in Canada include Wayne Hurd[10], VP of North America Sales. Dahua products are so commonly-sold in Canada that you can find them within minutes by walking around any major city, and observing the brands of surveillance cameras, or by searching for them on Shodan (Figures 2 & 3).

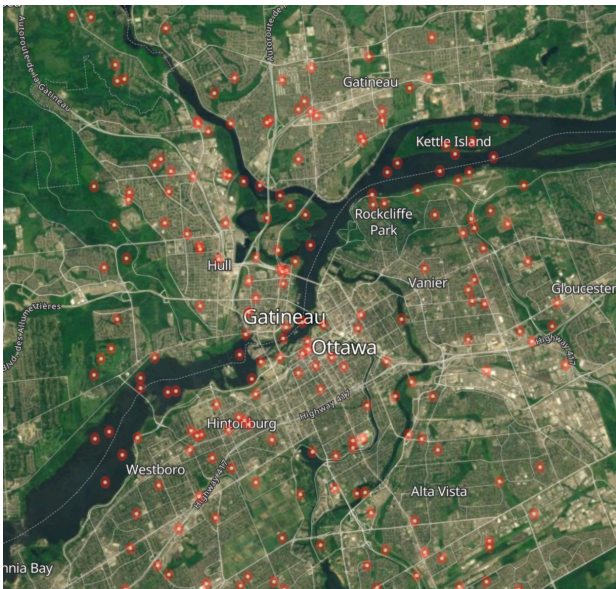Figure 2 - Dahua Devices in Ottawa-Gatineau Area (source: Shodan)

Figure 3 - Dahua Devices in GTA (source: Shodan)

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[9] https://us.dahuasecurity.com/?page_id=57860

[10] https://www.linkedin.com/in/wayne-hurd-sales-executive/?originalSubdomain=ca

Dahua's wholly-owned subsidiary Lorex[11] is headquartered in Canada.[12] Lorex does not manufacture its own products, mostly selling relabelled Dahua products carrying the Lorex brand. These products go on to be distributed across North America, and carried at stores including Costco, Staples, Best Buy, Lowes, Home Depot, and others, as well as by numerous commercial distributors. Lorex does not provide any disclosure of the true manufacturer of its products; in fact, it regularly describes itself as a Canadian company, and Lorex products have been falsely listed as "made in Canada." Lorex's head offices are in Markham, ON.[13]

It is difficult to reliably estimate Dahua and Lorex's sales numbers in Canada, but they undoubtedly generate significant revenue and profit. Many of their customers will be government agencies (which is true of surveillance sales in all markets), but we cannot say what proportion or who these customers are without public records requests.

5. Company Background, Ties to CPC, Sanctions

Dahua's corporate name is "Zhejiang Dahua Technology Co., Ltd.", and is based in Hangzhou, China. It is the world's second largest manufacturer of surveillance technologies, with more than 18,000 employees, and operations in 180 countries. Unlike many Chinese technology companies, Dahua is not a state-owned entity. Its controlling shareholders are founder and Chairman, Fu Liquan, and his wife Chen Ailing.

Dahua does have strong ties to the Chinese government. State-owned enterprises hold 13.3% of Dahua shares. Dahua's Chairman Fu Liquan is also the company's party secretary, and he has emphasized that employees should "always follow the party," that "political work" is the company's "top priority," and praises the CPC and Xi Jinping.[14]

Dahua has been sanctioned for human rights abuses in Xinjiang. In 2018, Congress banned Dahua purchases by the Federal government.[15] In 2019, Dahua was sanctioned by the US Department of Commerce.[16] Dahua was also banned by Taiwan's government[17], and the

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[11] https://ipvm.com/reports/dahua-lorex

[12] https://www.lorex.com/pages/frequently-asked-questions

[13] ibid.

[14] https://ipvm.com/reports/dahua-party

[15] https://ipvm.com/reports/ndaa-guide

[16] https://ipvm.com/reports/sanction-hikua

[17] https://ipvm.com/reports/taiwan-gov-prc

United Kingdom's Parliamentary Foreign Affairs Committee has recommended its be banned in the UK.[18]

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[18] https://ipvm.com/reports/uk-ban-rec