

WHITEPAPER



Digitization of Police  
Control Room for  
Enhanced Operations  
during Critical Situations

by  
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Winter



**Police Politie**

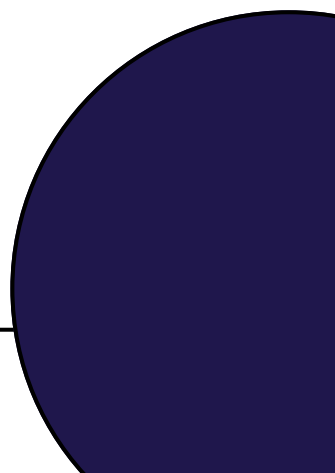
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# THE CONTENT



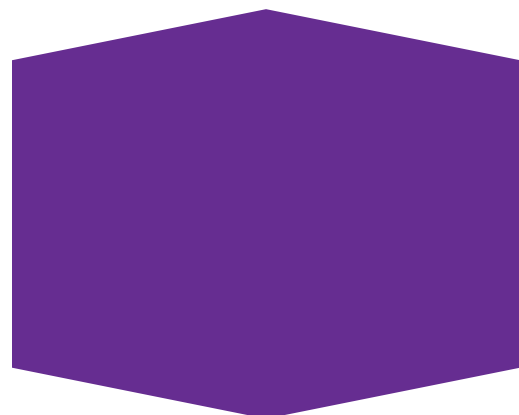
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The digitization of police operations has become essential in managing complex situations efficiently. This white paper explores the transformation of a traditional police control room into a digitized, mixed reality (MR) environment. The use case focuses on the evacuation of a mental hospital, where the command and control processes are enhanced through MR technology and real-time data integration. The solution leverages cutting-edge technology to provide an immersive experience for police officers, allowing them to manage operations more effectively. Key aspects such as adherence to police protocols, the integration of Bing Maps for real-time traffic and geographic data, and the use of virtual screens to monitor ongoing operations are discussed in detail. This paper is based on the context provided during the Smart Policing Hackathon conducted on December 9-11, 2020, organized by the VAS Institute, Ernest & Young, and the Antwerp Police.



# STATEMENT

Police operations during critical situations like hospital evacuations require precise coordination and the ability to process large volumes of information quickly. The current control room setup, which relies on physical screens and manual data entry, can be cumbersome and prone to errors. The following challenges have been identified:

- **Information Overload:** The operations commander must sift through multiple sources of information, including video feeds, reports, and communication logs, which are spread across various screens and systems.
- **Inefficient Decision-Making:** The lack of integration between data sources can slow down decision-making processes, potentially leading to delayed responses.
- **Limited Situational Awareness:** The current setup does not provide a comprehensive view of the area, making it difficult to assess the situation in real-time.

These challenges highlight the need for a unified, digitized command and control solution that can integrate all necessary information and provide a real-time, interactive overview of ongoing operations, especially during sensitive and high-risk situations such as the evacuation of a mental hospital.

# PROPOSED SOLUTIONS

## **MIXED REALITY ENVIRONMENT: 01**

The operations commander and other key personnel wear MR headsets to access a fully immersive environment where they can interact with virtual screens. These screens display real-time video feeds, traffic information, and a dynamic map of the area.

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## **INTEGRATION WITH BING MAPS 02**

Bing Maps is integrated into the mixed reality environment, providing real-time data on traffic conditions and the movement of police vehicles. This allows the operations commander to make informed decisions based on the current state of the area around the mental hospital.

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## **INTERACTIVE MENU SYSTEM 03**

A virtual menu allows users to quickly access SOPs, incident reports, and other critical documents. This system ensures that all necessary information is available at the user's fingertips without the need to switch between different systems.

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## **REAL-TIME DATA AGGREGATION 04**

The system aggregates data from multiple sources, including video feeds, GPS data from police vehicles, and communication logs. This data is presented in a user-friendly dashboard that highlights key metrics such as threat levels and response times.



## ADHERENCE TO POLICE PROTOCOLS

# Police Politie

### Standard Operating Procedures (SOPs)

The system includes a comprehensive library of SOPs related to various scenarios, including the evacuation of mental hospitals. These SOPs are accessible through the virtual menu, allowing users to quickly review procedures and ensure that all actions are compliant with established protocols.

### Data Security and Privacy

Given the sensitive nature of police operations, data security is a top priority. The system uses end-to-end encryption to protect all communication and data transmission. Additionally, access to the mixed reality environment is restricted to authorized personnel, ensuring that sensitive information is not compromised.

### Legal Considerations

The system complies with all relevant laws and regulations concerning data protection and privacy. This includes adherence to the General Data Protection Regulation (GDPR) for handling personal data, as well as specific legal requirements related to police operations.

# USE CASE: EVACUATION OF A MENTAL HOSPITAL

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## THE PITCH TO VLAIO: CHALLENGES, COACHING, AND FEEDBACK

### Scenario Overview

In this scenario, the police are tasked with evacuating a mental hospital due to a potential threat. The operations commander uses the mixed reality situation room to manage the evacuation process. The MR environment provides a comprehensive view of the hospital and its surroundings, including live video feeds from security cameras and a map showing the location of police units and other assets.

### Step-by-Step Execution

- **Initial Assessment:** The operations commander accesses the mixed reality environment and reviews the initial threat assessment. The map shows the location of the hospital, nearby police units, and traffic conditions.
- **Resource Allocation:** The commander uses the virtual menu to allocate resources, such as dispatching additional police units to the hospital and setting up roadblocks to control traffic.
- **Evacuation Coordination:** The commander monitors the evacuation process in real-time using live video feeds and updates from police units. The system provides alerts if any issues arise, such as traffic congestion or unexpected resistance from patients.
- **Post-Evacuation Review:** After the evacuation is complete, the commander reviews the entire operation using the data logged by the system. This includes analyzing response times, the effectiveness of resource allocation, and any areas for improvement.

### Benefits of the Digitized Control Room

#### Enhanced Situational Awareness

The mixed reality situation room provides a comprehensive view of the area, allowing the operations commander to make informed decisions quickly. The integration of Bing Maps and real-time data ensures that all relevant information is available at a glance.

#### Improved Efficiency

By consolidating all data into a single environment, the system reduces the time required to access and process information. This leads to faster decision-making and more effective resource allocation during critical operations.

#### Better Communication

The mixed reality environment facilitates seamless communication between different teams. All data is shared in real-time, ensuring that everyone involved in the operation is on the same page.

### Challenges and Limitations

#### Technical Challenges

Implementing a fully immersive mixed reality environment requires significant technical expertise and resources. The system must be able to handle large volumes of data in real-time, which can be challenging in terms of both hardware and software.

#### User Training

Police officers and other personnel will need training to use the new system effectively. This includes both technical training on how to use the MR equipment and procedural training on how to incorporate the new system into their daily operations.

#### Data Security Concerns

While the system includes robust security measures, there is always a risk of cyberattacks or data breaches. Continuous monitoring and updates are required to ensure that the system remains secure.

The digitization of police control rooms represents a significant step forward in managing complex operations. By integrating real-time data, advanced visualization tools, and immersive mixed reality technology, police forces can enhance their situational awareness and improve the efficiency of their operations. The use case of evacuating a mental hospital demonstrates the potential of this technology to transform police work, making it more responsive, coordinated, and effective.



# Conclusion.





Focused on resolving new problems, he has a strong data science and data engineering skillset and a large knowledge pool about diverse subjects. He is also a data enthusiast and knows about the whole process from collection to end consumption.

*Nathan De Winter*



Senior Project Manager focused on delivering platforms for Artificial and Business Intelligence with a track record on helping companies become data driven. Experienced in building cloud solutions both in Azure and AWS. With 16 years in data and 27 years in IT, he is ready to understand all aspects of the solution and communicate complex issues to stakeholders.

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