Citilog's AID System Enhancing Bridge Operations

In the dynamic realm of Intelligent Transportation Systems (ITS), each environment presents its unique challenges. This use case presents how Citilog's Automatic Incident Detection (AID) system has significantly elevated the daily operations for bridge operators, fostering heightened safety and operational efficiency.

Unique Challenges Faced by Bridge Operators:

Bridge operators contend with distinctive challenges that include false alarms, suicide attempts, and illegal activities. The intricate structural elements of bridges, such as shadows from cables or suspensions, often contribute to false alarms, creating complexities in monitoring efforts.

One operator aptly describes this challenge: «*Monitoring a bridge on a sunny day can be overwhelming; a single ray of sunlight triggers alarms across all cameras, requiring rapid differentiation between true and false alarms.*»

Pedestrian-related challenges add another layer of stress. Some bridges are known for suicide attempts or attract thrill-seeking individuals. Addressing this, an operator emphasizes the pressure of deciphering intentions swiftly: «*After detecting a person, you have to assess their intentions promptly. Is it a casual walker or a jogger? Does assistance need to be offered? Every detail and piece of information count in these critical moments.*»

While not unique to the world of ITS, the prompt and accurate detection of stopped vehicles is essential for effective bridge monitoring. An operator points out, «Vehicles aren't supposed to halt on bridges; whether it's a breakdown or someone dropping off a base jumper, swift resolution is crucial during rush hour to avoid traffic disruptions.»
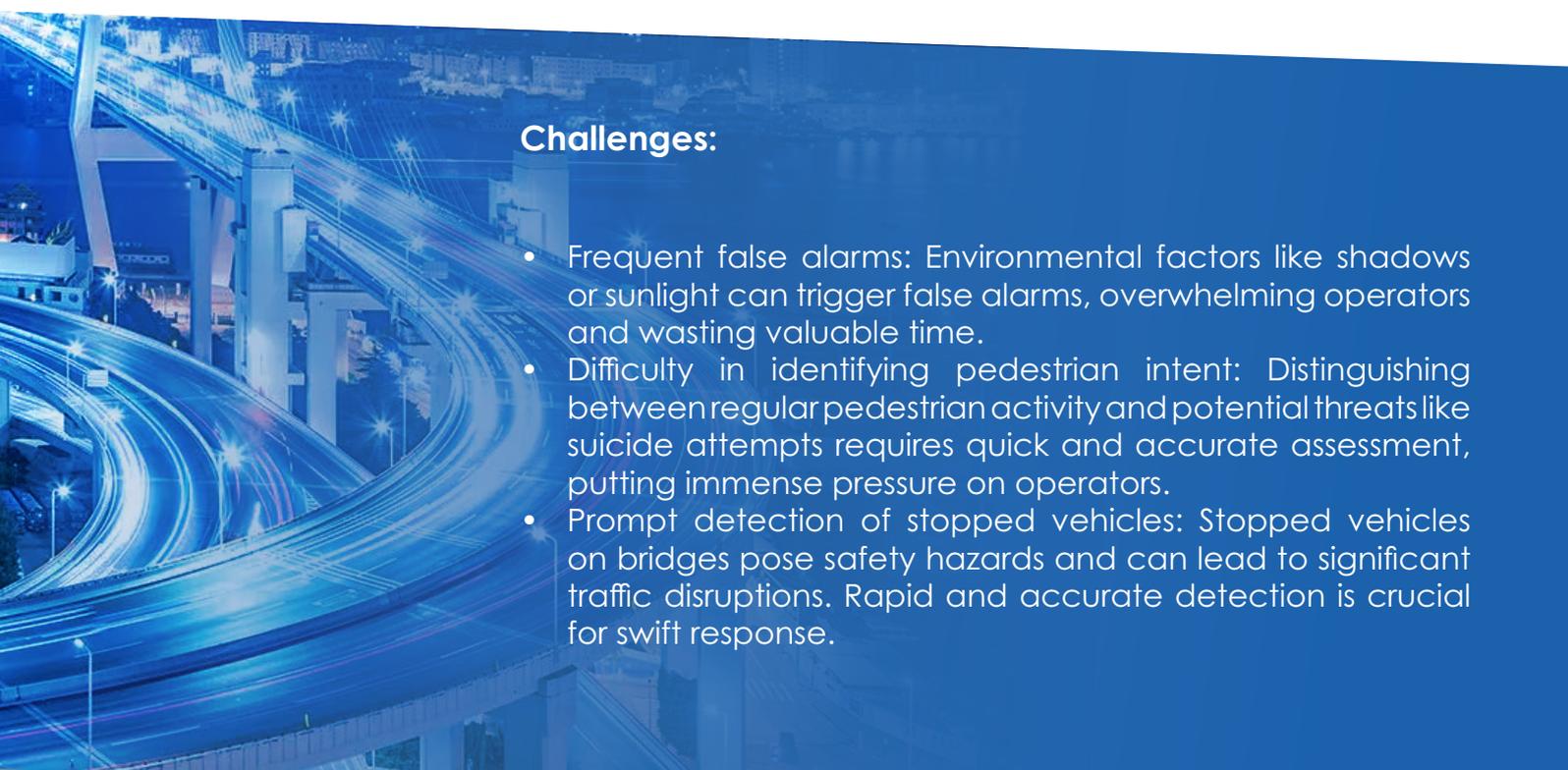
Challenges:

- Frequent false alarms: Environmental factors like shadows or sunlight can trigger false alarms, overwhelming operators and wasting valuable time.
- Difficulty in identifying pedestrian intent: Distinguishing between regular pedestrian activity and potential threats like suicide attempts requires quick and accurate assessment, putting immense pressure on operators.
- Prompt detection of stopped vehicles: Stopped vehicles on bridges pose safety hazards and can lead to significant traffic disruptions. Rapid and accurate detection is crucial for swift response.

Citilog AID System Solutions:

The Citilog AID system is purposefully designed to meet these challenges head-on and support bridge operators in their daily tasks effectively:

1. Advanced Detection Capabilities: The system excels in swiftly detecting stopped vehicles and pedestrians. Its ability to visualize pedestrian trajectories aids in distinguishing between routine activities and potential incidents, such as suicide attempts, providing valuable insights for informed decision-making.

2. Reduced False Alarms: Utilizing CT-ADL technology, Citilog effectively minimizes false alarms caused by environmental factors. Automatic discarding of false alarms enables operators to focus on critical events, minimizing unnecessary distractions and allows operators to focus their attention on genuine incidents, improving response efficiency and reducing stress.

3. Visual Analysis Advantage: Unlike systems relying solely on thermal or radar technology, Citilog's visual camera-based approach allows operators to analyze events in detail, offering a clearer context and facilitating informed decision-making.

4. Pedestrian Tracking: The system goes beyond simple detection, actively tracking pedestrian movement and providing valuable information about their behavior and intentions. This additional information can be critical in identifying potential safety hazards.

Conclusion:

The Citilog AID system has been successfully implemented in diverse bridge environments, demonstrating its effectiveness in addressing the unique challenges faced by bridge operators. By leveraging advanced technology, the system enhances bridge safety, improves operational efficiency, and empowers bridge operators to perform their critical duties more effectively.