



## **Introduction**

Public safety depends on accurate assessments of cognitive function in high-risk scenarios, such as roadside stops, workplace investigations, and operations involving heavy machinery. IntoxiSense by MKPro is an advanced cognitive assessment tool designed to support enforcement officers and decision-makers by providing real-time insights into an individual's cognitive state.

Through scientifically validated methodologies and multi-domain evaluations, IntoxiSense enhances objectivity in impairment assessments, ensuring legally defensible classifications that contribute to safer roads, workplaces, and public environments. This white paper explores the significance, legal implications, and practical applications of IntoxiSense in cognitive function evaluation.

## **The Need for Objective Cognitive Impairment Assessments**

Traditional methods for assessing impairment often rely heavily on subjective observations, leading to potential inconsistencies in legal proceedings. Cognitive impairment can result from various factors, including alcohol, prescription medication, neurological conditions, fatigue, and emotional distress.

IntoxiSense addresses these challenges by employing a scientifically backed framework, ensuring decisions are based on objective data rather than subjective judgement alone.

## **Classification Framework**

IntoxiSense categorises cognitive function into four distinct classifications, each supported by clear evidence and legal standing:

### **1. Not Cognitively Impaired**

*Performance falls within expected cognitive function thresholds, with no significant deviations from standard benchmarks.*

- Evidence: Standardised cognitive tests, behavioural observations, neuropsychological assessments confirm intact cognitive abilities.
- Legal Standing: Supports prosecution claims that the individual was fully aware of their actions and capable of making decisions.

### **2. Likely Not Cognitively Impaired**

*Minor inconsistencies are present, but overall cognitive function remains intact.*

- Evidence: Slight variations in cognitive response patterns with minimal impact on judgement or reaction time.

- Legal Standing: Indicates intoxication had little effect but does not strongly support an impairment defence.



### 3. Likely Cognitively Impaired

*Mild cognitive deficits suggest intoxication, or an underlying condition has affected decision-making and response capabilities.*

- Evidence: Borderline test results, reports of slowed processing speed, impaired attention, or reduced executive function.
- Legal Standing: May support a defence argument that impairment affected vehicle or equipment operation, though additional evidence is required.

### 4. Cognitively Impaired

*Clear evidence of cognitive dysfunction significantly affecting awareness, judgement, and reaction times.*

- Evidence: Strong deficits in cognitive testing, medical records confirming impairment, expert testimony supporting cognitive dysfunction.
- Legal Standing: Could support diminished responsibility arguments, though self-induced intoxication is generally not accepted as a defence unless linked to a pre-existing condition.

## Scenarios Demonstrating IntoxiSense in Action

Real-world applications of **IntoxiSense** illustrate its effectiveness in various impairment assessments:

- **Prescription Drug-Induced Impairment:** A lorry driver taking sedatives for anxiety exhibits excessive drowsiness, slowed responses, and momentary lapses in concentration. IntoxiSense confirms impairment, supporting legal proceedings.
- **Medical Condition-Induced Impairment:** A diabetic driver experiencing hypoglycaemia struggles with basic instructions. IntoxiSense identifies cognitive dysfunction, allowing medical intervention.
- **Substance Abuse-Induced Impairment:** A nightclub attendee detained for erratic behaviour shows severe cognitive impairment from excessive stimulant use mixed with alcohol. IntoxiSense aids law enforcement in assessment.
- **Fatigue-Induced Impairment:** A construction worker operating heavy machinery after consecutive shifts exhibits reduced awareness and slowed reaction time. IntoxiSense validates impairment concerns, ensuring workplace safety.
- **Emotional Distress-Induced Impairment:** A driver in a road rage incident displays erratic behaviour and poor impulse control. IntoxiSense helps determine whether emotional distress impacted cognitive function.

## Legal and Procedural Considerations

IntoxiSense adheres to National Safety and Quality Health Service (NSQHS) Standards, ensuring all assessments follow validated methodologies for legal defensibility.



- **Prosecution Burden:** Must prove beyond reasonable doubt that an individual was intoxicated and cognitively impaired while driving or operating equipment.
- **Defence Burden:** Must demonstrate, on the balance of probabilities, that cognitive impairment significantly affected the individual's ability to control their actions.
- **Standard of Evidence:** Cognitive impairment assessments should be backed by robust data, behavioural analysis, and expert testimony.

## Advantages of IntoxiSense by MKPro

- Real-time, Scientifically Validated Cognitive Assessments
- Objective Data to Support Legal Proceedings
- Reliable Classification Framework for Impairment Evaluation
- Enhanced Public Safety and Workplace Risk Management
- Legal Defensibility in Criminal and Occupational Cases

## Conclusion

IntoxiSense by MKPro revolutionises cognitive impairment assessments by providing enforcement officers and decision-makers with an evidence-based, structured approach to evaluating impairment. With real-time insights, validated methodologies, and strong legal defensibility, IntoxiSense enhances public safety while ensuring accountability in situations requiring cognitive function validation.

## Look out for:

- Specifications for IntoxiSense by MKPro
- Standard of Evidence: Use of IntoxiSense by MKPro in Roadside and Onsite Cognitive Assessments
- Scenarios: A Collection of Examples
- Case Studies

For further enquiries or implementation strategies, contact **MKPro** today.

## Michael Akindeju

PhD, CEng, CChem, RPEQ, PgD (Banking & Fin), FICHEM, FRACI, SMAChE, MAusIMM

+61 449 205 856

info@mkproengineering.com.au

<https://mkproengineering.com.au>

**Affiliation:** Adj. Assoc. Professor  
Health Innovation and Transformation Centre (HITC), and  
Future Regions Research Centre (FRRC)  
Institute of Innovation, Science and Sustainability  
Federation University, Australia