



# iCheckgate<sup>®</sup>

SMART ENFORCEMENT SYSTEM

[www.icheckgate.ai](http://www.icheckgate.ai)



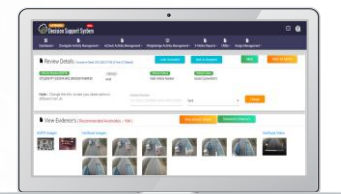
RFID Based  
Smart TAG



m-CHECK  
MOBILE APP



DSS Dashboard



By

**margsoft**  
TECHNOLOGIES  
[www.margsoft.com](http://www.margsoft.com)

# INDIA's First 24\*7 AI Based Smart Enforcement System to Curb Illegal Mineral Transportation with No Human Intervention

**66+ Lacs**

Mineral Carrying Vehicle  
Inspected

**1.6+ Lacs**

e-Notices  
Generated

**₹ 659+ Cr**

Penalty Amount  
Generated

**₹ 440+ Cr**

Penalty Recovered  
Amount

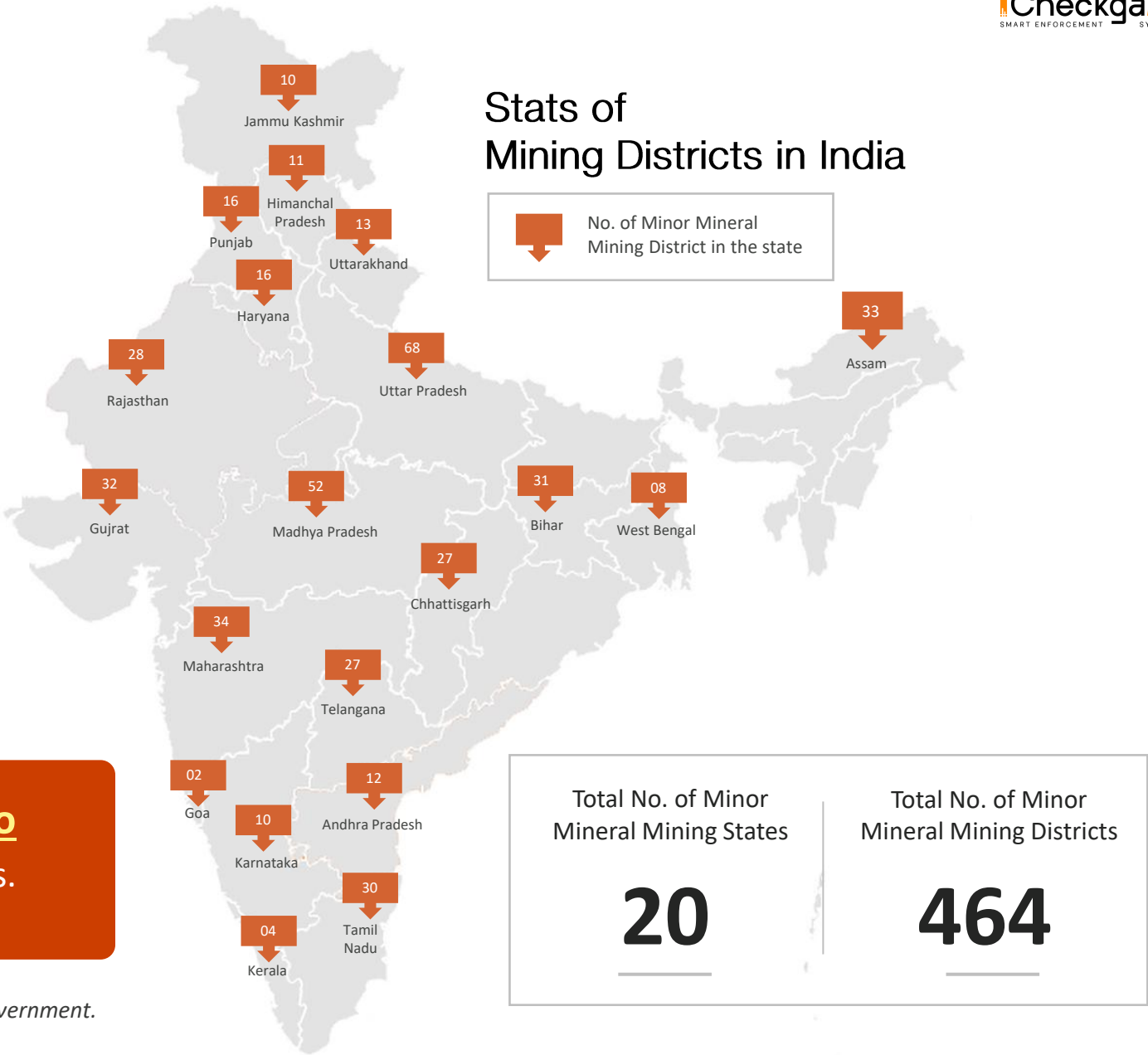
Achievements in 3 Years

# Minor Mineral Mining across India

The sand mining business across **20** states of India generates an annual revenue of **\$126 billion, equivalent to ₹1.50 lakh crore**. This sector grapples with a significant issue of royalty pilferage, estimated at an average of about **30% per annum (₹ 50,000 Crore)**.

iCHECKGATE emerged as a innovative solution **to curb the illegal transportation** of minerals.

Source: The data has been taken from the District Survey Report of State Government.





# Challenges (In Mining Sector)



**Illegal Transportation & Mining**



**Royalty Pilferage**



**Forgery of Transit Passes**



**Adhocism in Enforcement**



**Red Tapism**



# Solution



**Scientific System** has been developed to curb illegal transportation.



**Zero** Human Intervention



**24\*7 Vigil** on Mineral Transportation



**Real Time** Alerts & Notification with digital evidence



**e-Notices** Issuance on a single click



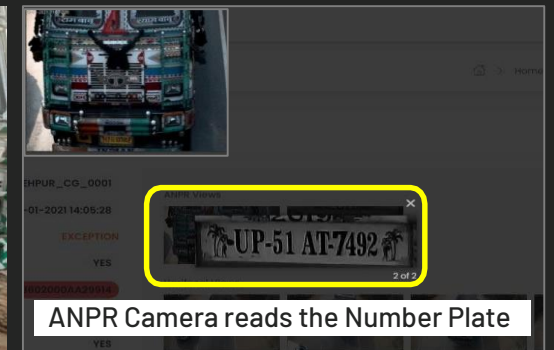
**Revenue** Increases Multifold Times



# How it Works



- ✓ Vehicle Type Identification
- ✓ ANPR Reads the Vehicle Number Plate
- ✓ MINETag Read by RFID Reader
- ✓ Mineral Identification by AI based Model
- ✓ Verification of Valid Transit Passes
- ✓ Identification of Offences via DSS™ with mCHECK™
- ✓ Issuance of e-Notices
- ✓ Online Payment Facility







MARGSOFT has developed iCHECKGATE, an AI-based Innovative Pioneering Solution to Curb Illegal Transportation of Minerals after **3 years of Extensive Research & Development** and created a success story by Establishing **56+ CheckGates** across Uttar Pradesh.



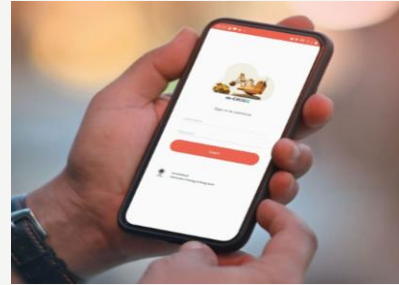
IT  
Infrastructure



iBox<sup>™</sup>  
Core Processing Unit



mDSS<sup>™</sup>  
Decision Support System



mCheck<sup>™</sup>  
Mobile App



MINETag<sup>™</sup>  
An RFID Tag



RFID Hand Held  
Reader



iCheckgate- Prakash Bhamori (Mahoba) U.P.



iCheckgate- Shahjahanpur (Saharanpur) U.P.



## Artificial Intelligence

Natural Language Processing & Graphical Neural Network to develop an algorithm to identify vehicle number & mineral carried in vehicles



## IoT Edge Computing

To process the collected data



## API Integration

With VAHAN MoRTH & Inter State Transit Pass (ISTP) and other Electronic Transit Pass (for Contractor & Stockist)



# Technology





# iCheckgate® Success Stories

56<sup>+</sup>

Active iCheckGates

25<sup>+</sup>

In-Process iCheckGates

659<sup>+</sup> Cr

Penalty Amount Generated

440<sup>+</sup> Cr

Penalty Amount Recovered

1.6+ Lacs

eNotices Issued

1.95<sup>+</sup> Lacs

MINETag Installed

66<sup>+</sup> Lacs

Mineral Carrying Vehicles Inspected

# Established 56+ iCheckgate® @ district level in Uttar Pradesh



CG-1 Lalauli (Fatehpur)



CG-2 Bahua (Fatehpur)



CG-3 Udi (Etawah)



CG-4 Niwada (Baghpat)



CG-5 Kalpi (Jalaun)



CG-6 Prakash Bahmori Road (Mahoba)



CG-7 Pahra Badaura Road (Mahoba)



CG-8 Girwa Chowk (Banda)



CG-49 Bharauli-Bridge (Ballia)



CG-55 Jajmau (Unnao)



CG-9 Shahjahanpur (Saharanpur)



CG-10 Biharigarh (Saharanpur)



CG-11 Myourpur (Sonbhadra)



CG-12 Sinduriya (Sonbhadra)



CG-13 Chichara (Mahoba)



CG-14 Sunceha (Mahoba)



CG-15 Gursarai (Jhansi)



CG-16 Poonch (Jhansi)



CG-50 Bahadur-P.S (Kushinagar)



CG-17 Kuthond (Jalaun)



CG-18 Mehrauli (Lalitpur)



CG-19 Nadan Wara (Lalitpur)



CG-20 Saiyan (Agra)



CG-21 Sarendhi (Agra)



CG-22 Shivrampur Police Chowki (Chitrakoot)



CG-23 Kairana (Shamli)



CG-24 Tilharpur (Kaushambi)



CG-51 Salikpur-P.S (Kushinagar)



CG-25 Lehdari Bridge (Kaushambi)



CG-26 Deoband (Saharanpur)



CG-27 Bidauli (Shamli)



CG-28 Sukrit (Sonbhadra)



CG-29 Lodhi (Sonbhadra)



CG-30 Najibabad (Bijnor)



CG-31 Bhaguwala (Bijnor)



CG-32 Maswasi (Rampur)



CG-52 Bhootpuri (Bijnor)



CG-33 Dadhiyal (Rampur)



CG-34 Yamuna Bridge (Hamirpur)



CG-35 Nepa Police Chowki (Moradabad)



CG-36 Rajapur (Chitrakoot)



CG-37 Mataundh (Banda)



CG-38 Naraini (Banda)



CG-39 Naini (Prayagraj)



CG-40 Thakurdwara (Moradabad)



CG-53 Bharatpur (Mathura)



CG-41 Naubatpur (Chandauli)



CG-42 Jajampatti (Mathura)



CG-43 Narayanpur (Mirzapur)



CG-44 Mataundh (Banda)



CG-45 Bharatpur (Mathura)



CG-46 Thakurdwara (Moradabad)



CG-47 Lalitpur-BETWA BRIDGE (Lalitpur)



CG-48 BANPUR (Lalitpur)



CG-54 LB Shastri (Mirzapur)



# Impact



- A standardized scientific Uniform System established by eliminating the monopoly of Mining Syndicates
- Other Government Departments as Transport Department, Goods and Services Tax (GST), Forest Department, Excise Department & District Administration inspired to adopt the same system
- Substantial multifold increase in revenue.
- Adopted as one of the best practices in the mining sector



# Key Outcomes



- ✓ District & Check Gate wise VEHICLE MOVEMENT
- ✓ Transportation with INVALID VEHICLE NO.
- ✓ Transportation with EXPIRED eTP
- ✓ Transportation WITHOUT VALID eTP
- ✓ Transportation With BOGUS eTP
- ✓ RESTRICTION ON ISSUING TRANSIT PASS to vehicles having PENDING NOTICES OR without MINETag
- ✓ Mineral transportation by UN-RECOGNIZED vehicle
- ✓ VEHICLE NO. MISMATCHED (against ANPR vs. MINETag)
- ✓ Registered vehicle WITHOUT MINETag vehicle or with NON-FUNCTIONAL MINETag
- ✓ Vehicle having eTP but BYPASSED all CHECKGATES
- ✓ Doubtful mineral OVERLOADING (Sand, Gitti etc.)
- ✓ Multiple round on SAME Transit Pass
- ✓ Suspicious mineral transportation areas with BLURRED number plates





iCHECKGATE

# Government Guidelines

In accordance with the **"Enforcement & Monitoring Guidelines for Sand Mining – 2020"** issued by the Ministry of Environment, Forest and Climate Change (MoEFCC) in January 2020, it is explicitly stated the followings:

*"Mining operation also involves transportation of mineral from the mining area to end-user and its necessary that movement of the mineral needs to be monitored".*

*"The State Government already have power under section 23c of MMDR, Act 1957 to make rules for preventing illegal mining, transportation and storage of minerals".*

*Refer to Page no. 12 with sl. 4.0 (Vii)*

# Government Guidelines

*“The route of the vehicle from source to destination shall be tracked through the system using checkpoints, Radio-frequency identification (RFID) tags, and Global Positioning System (GPS) tracking”.*

*Please refer to Page no. 43 with sl. 7.1 (Vii)*

*“To make transportation monitoring effective and useful, all the sand carrying vehicles (tractors/ trucks) should be registered with the department and GPS equipment should be installed in all the sand carrying vehicles. Weighbridges with CCTV should be installed at all the stockyards, active reaches to ascertain the exact quantity of sand being transported in the vehicle. Check posts with CCTV cameras should be established near all major consumption centers to check if all the transporting vehicles are carrying a valid transport permit. The transport permit generated should contain the security features mentioned under section 5.11 so that one permit cannot be re-used by generating photocopies of the permit”.*

*Refer to Page no. 39 Para 1.2.13.2 (Transportation Monitoring)*





# Benefits to Government & Citizen



-  Transparent & Unbiased Inspection
-  Cost Effective & Sustainable Solution
-  24/7 Surveillance has instilled fear among Mining Syndicates
-  Depletion in Illegal mining activities
-  Instances of mineral overloading have declined
-  Reduced manpower
-  Diminished disputes and dishonest practices among stakeholders
-  Lessened monopoly of Mining Syndicates in the mineral market
-  Equal opportunities for both small and large businesses
-  Accessibility of minerals to consumers at more affordable price





# iCheckgate In Media

**रेत खनन में चल रहे बिना नंबर के ट्रक, चार पकड़े**

Published By: AJIT KUMAR PANDEY June 23, 2024

**छपराऊली :** क्षेत्र में चल रहे रेत खनन में बिना नंबर प्लेट के चल रहे ट्रकों पर छपराऊली पुलिस ने विचित्रा कहना शुरू कर दिया। कुछ ही मिनट में चार ट्रकों पर चल रहे रेत खनन में प्रतिदिन लगभग टाईली की संख्या में बिना नंबर प्लेट के ट्रकों को पकड़ा जा रहा है। जिसका संसार छपराऊली पुलिस ने अभियान चलाकर चल रहे रेत के ट्रकों को रोक कर दिया।

भारत अपनी सुरक्षा विधि सिंगोली ने बताया कि रेत खनन में चल रहे चार ट्रकों को रोक कर रेत को ले जाते प्लेट ही नहीं है अगर है भी तो उसमें नंबर के चार केटुकाई कर दिखाए जा रहे हैं। उन्होंने बताया कि बिना नंबर प्लेट के ट्रक अगर कोई सुरक्षा कार के भंग करते हैं तो इनकी पहचान करना मुश्किल हो जाती है।

**To Curb Illegal practices in Chaprauli, Baghat in Uttar Pradesh, The one & only Smart Enforcement solution is iCheckgate will be act as an Unmanned Integrated Surveillance System can create the standardized legal regime.**

News of the hour - iCheckgate™ VOLUME 1 / ESTD. 2023

EDITION: IN LUCKNOW 33°C

**Sand mafia attacks scribe**

TNN / Jun 13, 2024, 05:19 IST

Vadodara: A journalist and cameraman of the digital platform of a Gujarati daily were mercilessly beaten up by persons allegedly involved in illegal sand mining in the Mahi River.

The victims were admitted to the hospital in wake of the incident. The incident took place on Wednesday morning when the cameraman Pradeep Chaubey and reporter Jigen Vora had gone to Kotna on the banks of Mahi after receiving information about illegal sand mining there.

**As there is no standardised legal regime in Vadodara, Establishment of an iCheckgate Unmanned Integrated Surveillance System can create the same thus mafia & ambush incident will be Cut Off.**

To know more visit [www.ichckgate.ai](http://www.ichckgate.ai) Call for Demo +91-6390201414

**Sonbhadra News : बिना माइनटैग के परिवहन करने वाले वाहनों के विरुद्ध जाँच कर की जाये कार्यवाही - DM**

JanpadNewsLive 2 days ago 360 1 minute read

**सोनभद्र :** जिलाधिकारी चंद्र विजय सिंह ने आज टोल प्लाजा रोड़ी के पास ट्रकों पर किये गये लोडिंग का अवलोकन किया। निरीक्षण के दौरान निरीक्षणकर्ता ने दो ट्रकों पर किये गये गिट्टी की लोडिंग की मात्रा व प्रकर का अवलोकन रूप से किया। इस दौरान ट्रकों पर लोड किये गये गिट्टी की मात्रा व प्रकर कैच पाये गये। इस दौरान जिलाधिकारी ने टोल प्लाजा के पास और लोडिंग व अंधे परीक्षण की जाँच हेतु बनायी गयी टीम द्वारा की जा रही कार्यवाही का प्रत्यक्ष आचार पर निरीक्षण भी किया।

**निरीक्षण के दौरान जिलाधिकारी चंद्र विजय सिंह ने एअरटीओ व खनन विभाग अधिकारियों को निर्देशित करते हुए कहा कि : ट्रकों की जाँच के दौरान यह भी सुनिश्चित किया जाये की माइनटैग लगे हुये वाहनों के द्वारा ही परिवहन किया जाये बिना माइनटैग लगे वाहनों के विरुद्ध सख्त अभियान चलाकर कार्यवाही की जाये। उन्होंने कहा कि अंधे परिवहन व और लोडिंग की जाँच के समय कोपला लगे वाहनों की भी जाँच की जाये।**

News of the hour - iCheckgate™ VOLUME 1 / ESTD. 2024

EDITION: IN LUCKNOW 33°C

**Bihar Sand Mining: एकरन में नीतीश सरकार, नदियों से बंद किया बालू का खनन; अधिकारियों को दिए ये आई**

Published: Wed, 19 Jun 2024 06:05 PM (IST) Updated: Wed, 19 Jun 2024 06:05 PM (IST)

**राज्य ब्यूरो, पटना।** Bihar Sand Mining नीतीश सरकार ने नदियों से बालू खनन पर रोक लगा दी है। आदेश के मुताबिक नदियों से खनन पर रोक 15 जून की मध्य रात्रि से लेकर 15 अक्टूबर 2024 तक प्रभावी रहेगी। इस दौरान किसी भी नदियों से खनन नहीं किया जा सकेगा। रोक के दौरान अवैध खनन न हो इसके लिए सभी जिलों के डीएन एसएमपी और एसपी को एक पत्र भी भेजा गया है।

आदेश के मुताबिक, नदियों से खनन पर रोक 15 जून की मध्य रात्रि से लेकर 15 अक्टूबर 2024 तक प्रभावी रहेगी। इस दौरान किसी भी नदियों से खनन नहीं किया जा सकेगा।

**अधिकारियों को दिए गए अहम निर्देश**

निदेशक खान एवं भू-तत्व ने सरकार की खनन पर रोक के दौरान अवैध खनन न हो इसके लिए सभी जिलों के डीएन, जिसमें नदियों से खनन पर रोक के आदेश का हवाला देकर कहा गया है कि मानसून अवधि में नदियों से खनन बंद रहेगा।

**बालू माफिया पर रहेगी नजर**

आशंका है कि इन दौरान बालू माफिया सक्रिय हो सकते हैं और अवैध खनन के प्रयास करेंगे। प्रशासनिक पदाधिकारियों से आग्रह किया गया है कि वे बंदोबस्त बालू खाटों की नियमित निगरानी सुनिश्चित कराए,

**Use technology to check illegal mining: CM Yogi**

TIMES NEWS NETWORK

**Lucknow:** Chief Minister Yogi Adityanath has appreciated the works of the mining department and said the departments of geology and mining have done commendable work in the recent years. He said efforts are being made to stop illegal mining and its transportation by using maximum technology. He asked officials to get mineral mapping of main rivers of Bundelkhand and Purvanchal done by a technical body within six months and include new mining areas in district survey report, said government spokesperson.

News of the hour - iCheckgate™ VOLUME 1 / ESTD. 2024

EDITION: IN LUCKNOW 33°C

**Bihar ASI hit by tractor ferrying illegally mined sand, badly hurt**

TNN / Updated: Jun 17, 2024, 04:04 IST

**NAWADA**

An assistant sub-inspector (ASI) suffered grave injuries after being hit by a tractor ferrying illegally mined sand in Bihar's Nawada on Sunday, reports SB Sinha. The attack on ASI Sanjit Kumar came exactly a week after a constable was crushed to death by a tractor of the sand mafia in the state's Aurangabad district.

In Nawada, Kumar tried to stop the vehicle in Laund village but the driver knocked him down and fled. The vehicle was playing despite a prohibition on sand mining in the area from June 15 to Oct 15. According to SHO Ranjit Ram, Kumar had gone to the area after a tip-off about sand-laden vehicles. "The ASI spotted the tractor and tried to stop it but the driver deliberately ran the vehicle over him," the SHO said. The ASI was rushed to a hospital in nearby Pawapuri.

Sand mining is a significant issue in Bihar, with several attacks on cops by the mafia. The practice is rampant in many parts, harming environment and denying the govt revenues.







# iCheckgate® Awards & Recognition



## PLATINUM AWARD in Digital India Award- 2022

New Delhi

For Digital Initiatives for  
Ease of Doing Business



## GOLD AWARD in National Award for e- Governance 2022

Katra, Jammu

For Excellence in  
Government Process Re-  
engineering for Digital  
Transformation



## CSI SIG GOVERNANCE AWARD 2021

Prayagraj

For Implementation of  
MINEMITRA (End to End  
Mineral Management  
System)



## TECHNICAL SABHA EXCELLENCE AWARDS- 2023

Jaipur

Under the category  
"Artificial Intelligence"



## ET-DIGITECH AWARD-2023

Goa

For Innovative Use of  
Technology in  
e-Governance for Digital  
Transformation



## SKOCH AWARD – 2021

New Delhi

For MINE MITRA



## OFFICE

17 / 1A, Madan Mohan Malviya Marg,  
Lucknow-226001, UP, India

## GET IN TOUCH

[vivekgupta@margsoft.com](mailto:vivekgupta@margsoft.com)  
**+91-9415408619 | 9005607773**

ISO 27001:2013 & ISO 9001:2015 | 23 Yrs. + IT Experience | Awarded e-Governance -2012 | Awarded Platinum Award Digital India-2022 | Awarded National Gold Award e-Governance-2022 | CSI SGI e-Governance Award-2021 | SKOCH Award | Globally Acclaimed



Scan the QR code to  
explore the website on India's First AI-based Smart  
Enforcement System, iCheckgate- To Curb illegal  
Mineral Transportation with No Human  
Intervention

