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Container tracking and data analytics solutions for Indian logistics sector toward its global competitiveness and decarbonization

Yasunori Mochizuki
NEC Corporation

Logistics Data Bank (LDB)

LDB's Contribution to LPI:

India's Logistics Performance Index (LPI) ranking improved from 54th position in 2014 to <mark>38th in 2023</mark> as evaluated by World Bank
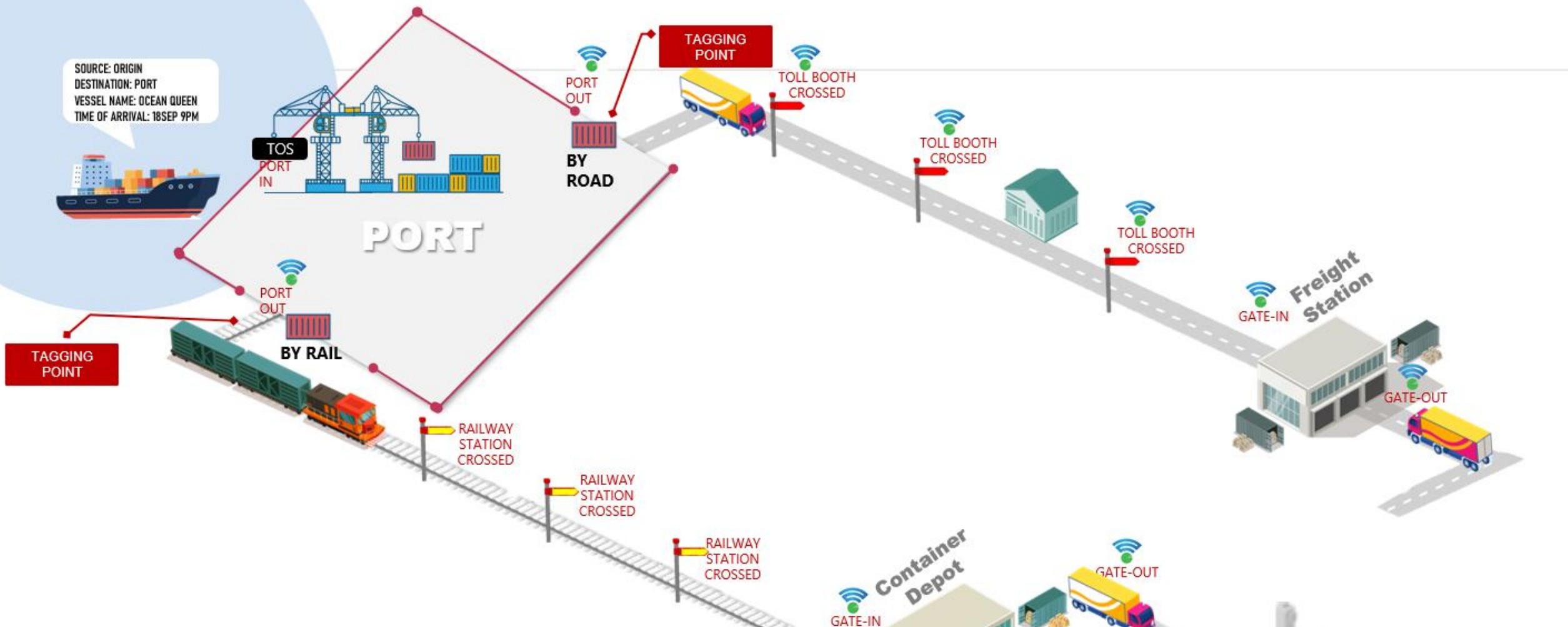
World Bank Report states:

*"Since 2015, the Government of India has invested in trade-related soft and hard infrastructure connecting port gateways on both coasts to the economic poles in the hinterland. Technology has been a critical component of this effort, with implementation of a supply chain visibility platform, which contributed to remarkable reductions of delays. **NICDC Logistics Data Services Limited (NLDSL)** applies radio frequency identification tags to containers and offers consignees end-to-end tracking of their supply chain."*

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Logistics Data Bank (LDB):

1 Nation-wide **single window platform for tracking** of **EXIM Containers**

2 **Use of RFID technology** with coverage across Ports, Container Depots, Freight Stations, Toll Booths, Railway Stations, Yards, International Borders and Industrial Zones

3 Electronic data exchange through integrations with **Ports, Terminals and Railways**

4 Provides analytical insights for finding **best and worst performing** Ports, Container Depots and Freight Stations

5 Contributes to **Logistics Performance Index** (**LPI**) and **Ease of Doing Business (EoDB)**

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LDB Operational Flow:

SOURCE: ORIGIN
DESTINATION: PORT
VESSEL NAME: OCEAN QUEEN
TIME OF ARRIVAL: 18SEP 9PM

TOS
PORT IN

PORT

PORT OUT

TAGGING POINT

BY ROAD

TOLL BOOTH CROSSED

TOLL BOOTH CROSSED

TOLL BOOTH CROSSED

GATE-IN

Freight Station

GATE-OUT

PORT OUT

TAGGING POINT

BY RAIL

RAILWAY STATION CROSSED

RAILWAY STATION CROSSED

RAILWAY STATION CROSSED

Container Depot

GATE-IN

GATE-OUT

GATE-IN

INDUSTRY

RFID TAG

1. Tag scanned using Handheld device

2. Tag No. mapped with Container No.

3. Tag placed on container wall

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LDB Timeline:
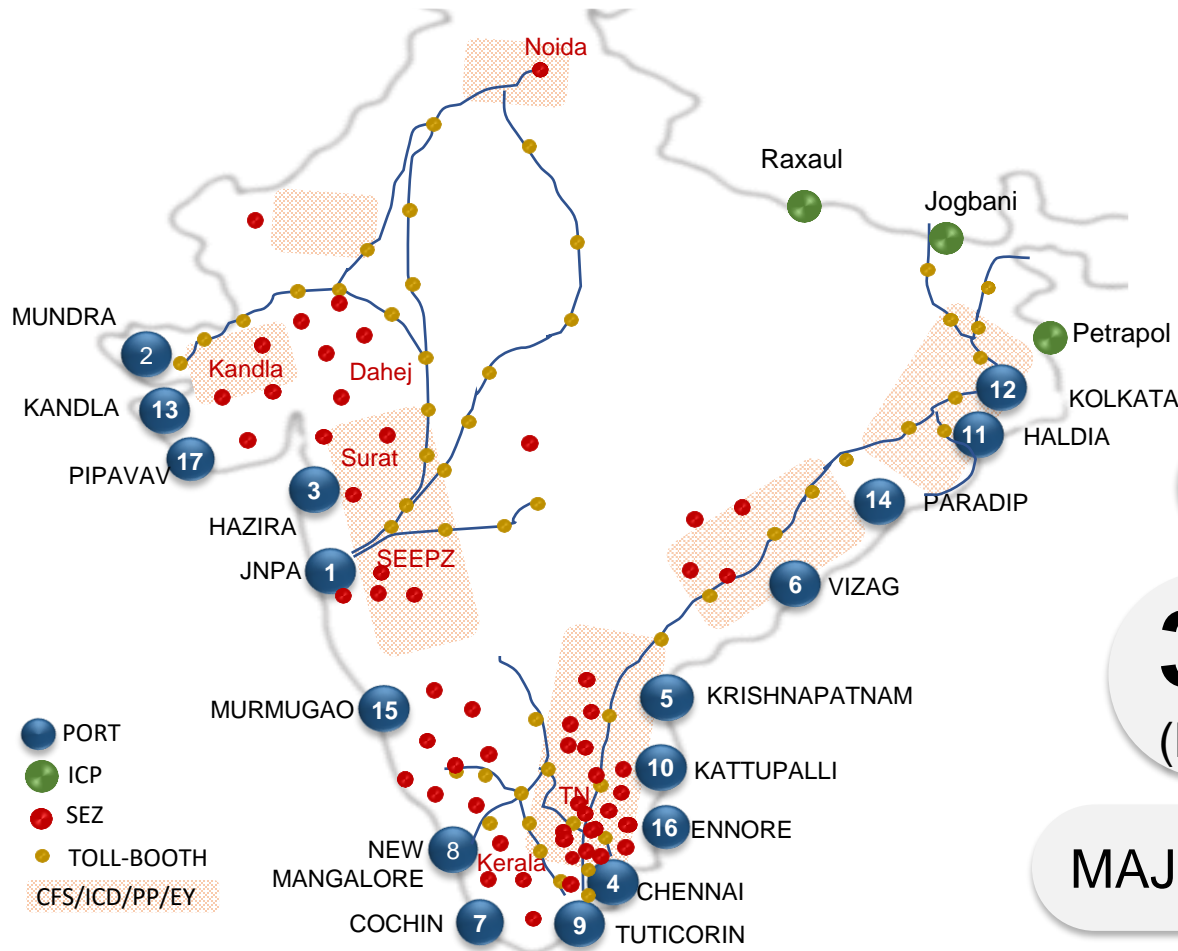
Dec 2015: SPV (NLDS) incorporated

July 2016 — Launched at **JNPA** – handling 35% of total containers
(JNPA: Jawaharlal Nehru Port Authority)

April 2017 — Launched at private ports – covering 65% of containers

November 2020 — Go-Live with **100% coverage**

April 2024 — **70 Mn+** containers tracked

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LDB's Coverage:

17 PORTS (28 TERMINALS)

129 TOLL BOOTHS

430 FS/CD/EY/PP

66 SPECIAL ECONOMIC ZONES

3 INTERNATIONAL BORDER CHECK POSTS
(NEPAL & BANGLADESH)

MAJOR CARGO RAIL ROUTES

FS: Freight Station, CD: Container Depot,
EY: Empty Yard, PP: Parking Plaza

Legend:
- PORT
- ICP
- SEZ
- TOLL-BOOTH
- CFS/ICD/PP/EY

Map labels:
Noida, Raxaul, Jogbani, Petrapol, MUNDRA, Kandla, Dahej, KANDLA, PIPAVAV, Surat, HAZIRA, JNPA, SEEPZ, KOLKATA, HALDIA, PARADIP, VIZAG, MURMUGAO, KRISHNAPATNAM, KATTUPALLI, NEW MANGALORE, Kerala, ENNORE, COCHIN, CHENNAI, TUTICORIN, TN

| **EDI** WITH RAILWAYS, PORTS & TERMINALS | **3200+** RFID Readers | **3 Mn +** Monthly Website Hits | **4.5 Mn +** Monthly Containers Search | **70 Mn +** Containers Tracked |

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LDB Analytics:

Input Stakeholders

Container Information Data Collection

- Port Terminal Operators
- Freight Stations / Container Depots
- Toll Booths
- Railways
- Port

- SFTP / API
- RFID
- API

LDB

Analytics Services
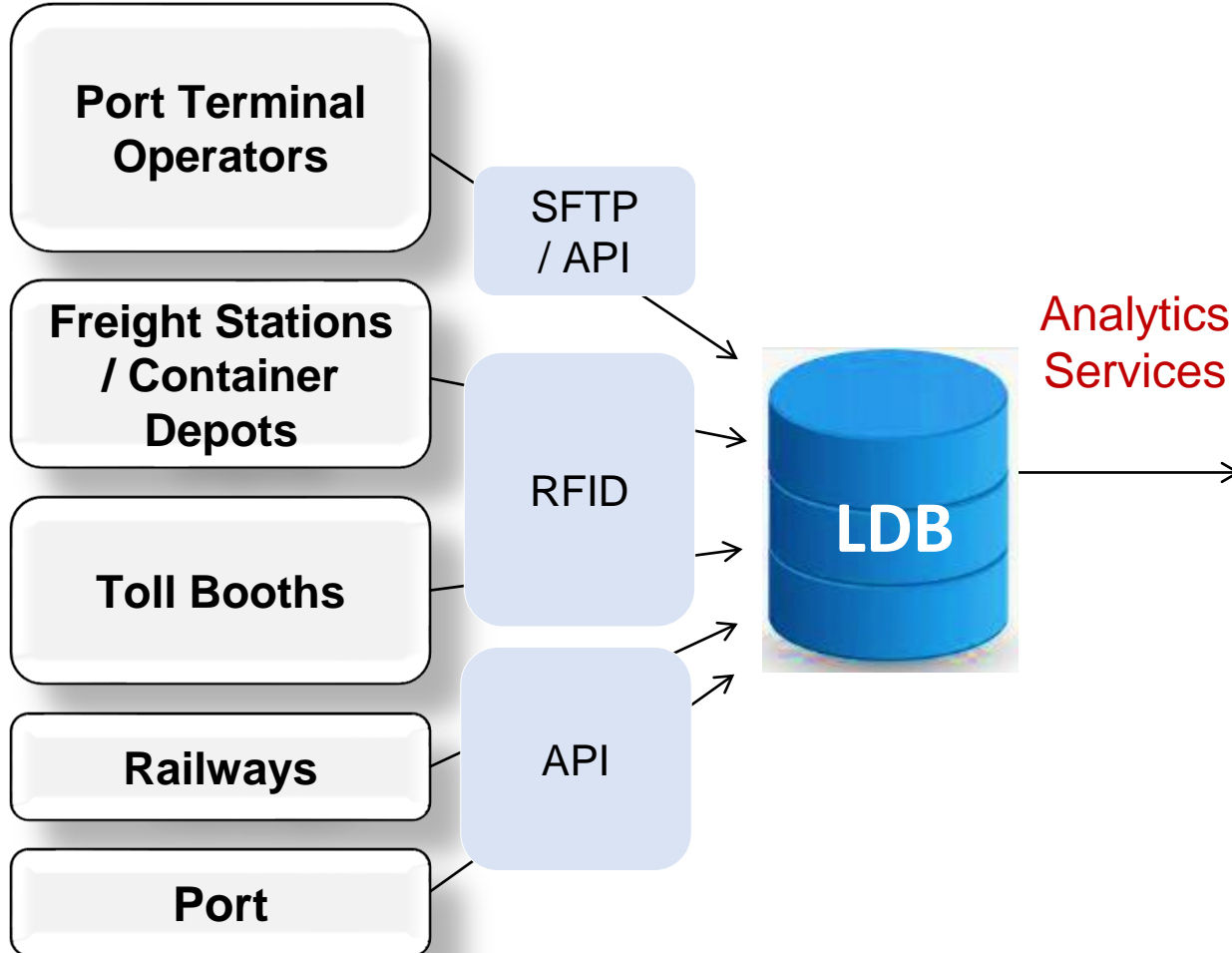
Analytics

- Dwell Time
- Congestion Analysis
- Speed Analysis
- Performance Benchmarking
- Transit Time Analysis
- Heat Map Analysis

Output

- **Reports for concerned Ministries** (MONTHLY/ QUATERLY/ ANNUALLY)
- **Prescriptive Analytics for individual Port Terminals** (MONTHLY/ QUATERLY/ ANNUALLY)
- **100+ Reports**
- **Live dashboards, Reports for public circulation**

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LDB Value Addition:

Before LDB		With LDB
Importers/Exporters dependent on multiple stakeholders for info on their containers	➤	Single window platform with access to all
Systems were silos, without real-time information exchange	➤	Integrated with systems of stakeholders
No database available for decision making	➤	Rich data set of ports, yards, highways and railways accumulating since 2016
No performance benchmarking for encouraging competition & transparency	➤	Technology driven analytics with performance comparison

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LDB Driving Decarbonization:

1 Efficient tracking through LDB has minimized delays and reduced idling time, leading to lower fuel consumption

2 Enabled businesses to optimize the utilization of transportation resources, reducing inefficiencies and promoting sustainability

3 Facilitated route optimization to minimize distance travelled and conserving fuel

4 Helped ports in reducing congestion, leading to lower carbon emissions

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LDB Analytics: Actual performance improvements

JNPA

Operation commenced at largest Indian port
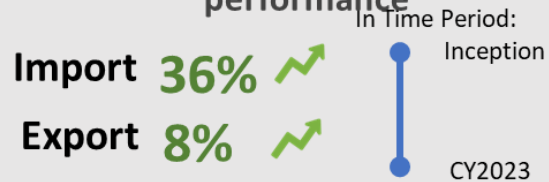
Improvement in Container handling performance

In Time Period: Inception — CY2023

Import 36%
Export 8%

Congestion Reduced around Port region

In Time Period: 2018 — CY2023

Import Bound 16%
Export Bound 15%
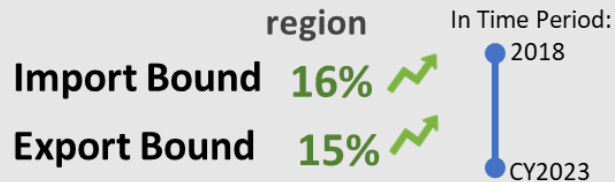
Benefits Observed since

📈 Improvement

APSEZ, Mundra

Operation commenced at 2nd largest Indian port

Improvement in Container handling performance

In Time Period: Inception — CY2023

Import 3%

Congestion Reduced around Port region

In Time Period: 2018 — CY2023

Import Bound 38%
Export Bound 51%

Port to ICD movement 23%

Benefits Observed since

📈 Improvement

Other Ports

LDB expanded across Indian Ports

Improvement in Container handling for import cycle

| Ennore | 22% | Kochi | 36% |
| Haldia | 28% | Krishnapatnam | 59% |
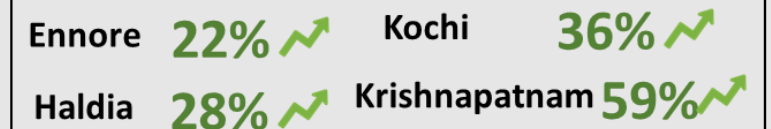
Improvement in Container handling for Export cycle

| Krishnapatnam | 21% | Kattupali | 36% |

Congestion Reduced around Kochi Port region

Import Bound 61%   **Export Bound** 35%

Benefits Observed since

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LDB 2.0: Unified Logistics Interface Platform (ULIP)

Expanding Cargo visibility beyond Containers…..

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Unified Logistics Interface Platform (ULIP):

Launched by Hon'ble Prime Minister of India under the purview of **National Logistics Policy (NLP)**

Digital gateway for enabling industry players to access logistics related datasets from various Govt. system through **API based integration**

All modes of logistics (sea, air, road, rail, waterways) are covered under ULIP, irrespective of type of cargo

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How ULIP Works?

RAILWAYS | SHIPPING | AVIATION | ROADWAYS | CUSTOMS | FINANCE | COMMERCE | LDB

REQUEST ↑ ↓ RESPONSE

ULIP
Virtual Gateway

REQUEST ↑ ↓ RESPONSE

DATA USERS

GOVT. AGENCIES	START-UPS	WAREHOUSING
MANUFACTURING	PORTS	CHAs
ENTERPRISES	TRANSPORTERS	3PL/4PL

DATA APPLICATION

AUTHENTICATION	PROCESS OPTIMIZATION
TRACK/TRACE	DOC. DIGITIZATION
AUTOMATION	DISCOVERY SERVICES

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ULIP Integration Status

NEC

1800+ FIELDS

118 APIs

37 SYSTEMS

10 MINISTRIES

881 COMPANIES REGISTERED

614 USECASES RECEIVED

170 NDAs SIGNED

ULIP — UNIFIED LOGISTICS INTERFACE PLATFORM

84 APPLICATIONS DEVELOPED

310 Mn.+ API HITS

Logistics Service Providers

CloudStrats, Shiprocket, FREIGHTWALLA, INSTAVANS, Total Group Since 1963, AGGRANDIZE, SemiCab, TENDER TRUCK, INDICOLD, CHETAK, FEC, MASTERS INDIA, WheelsEye

Industry Giants

BOSCH, Jeena Estd 1900, aitwia, TATA STEEL, adani Ports and Logistics, JSL JINDAL STAINLESS, DHL, TCI LEADERS IN LOGISTICS, Reliance Industries Limited, policybazaar.com Compare. Buy. Save., SAFEXPRESS THE COMPLETE LOGISTICS SOLUTIONS, MapmyIndia, CJ Darcl Logistics, UltraTech CEMENT, YES BANK, NEC, CMA CGM, CARS24, JOHNSON Not just tiles, Lifestyles., EY

Start-ups

MYTRUX, enmovil, TruckHall Keep Moving, CARGOEXCHANGE FUTURE OF LOGISTICS, FRETRON, CARGO SHAKTI, FRETRON, EIKONA TECH, AXESTRACK Right Information,Great Decisions, Intugine, truxport., zipaworld, freightfox, Lynkit Orchestrating Efficiency, onoa, trezix, PORTLINKS INC, LOGIBOOK, AGRAGA, LEGALKART Your trusted legal advisor, SDEX, FR8, SuperProcure Transportation Management Simplified

Government

Food Corp. India
Coal India
MoPSW (Ports)

Madhya Pradesh
Uttar Pradesh
Gujarat

Assam
Chhattisgarh
Jharkhand

Andhra Pradesh
Odisha
Telangana

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