AEO in Smart Customs: Leveraging Techology for Risk Mgmt and Trade Facilitation

An Indian Experience

R. Ananth
Director (Customs),
Central Board of Indirect Taxes and Customs, India

Overview of Indian AEO programme

- Voluntary trade facilitation programme of Indian Customs, with the aim to enhance international supply chain security and facilitate movement of legitimate goods.
- Varies across - AEO Tier I, II, and III for importers/ exporters based on the benefits extended.
- Has a separate tier - AEO LO for all other supply chain participants
- Augmentation of the AEO and MRA programme is part of National Trade Facilitation Action Plan (NTFAP)

Category	Numbers (as on 01.04.2024)
AEO T1	3607
AEO T2	1073
AEO T3	139
AEO LO	843
Total	5662

Benefits associated with AEO T1/ T2/ T3 Programme

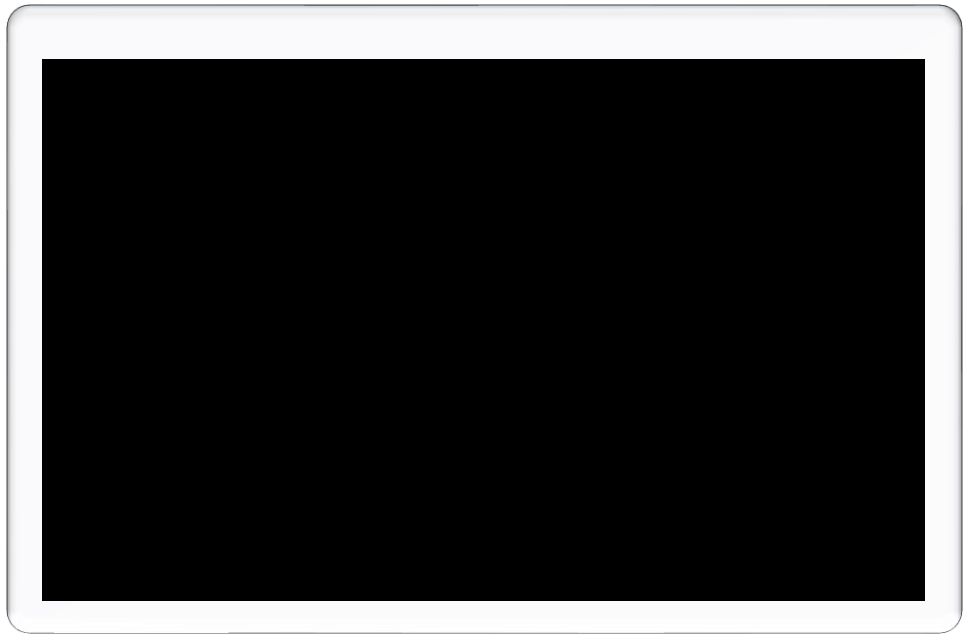
Benefits	Tier - TI	Tier - T2	Tier - T3
High facilitation	Y	Y	Y
Direct Port Delivery/Direct Port Entry	Y	Y	Y
BG 50% (25% in case of MSME)	Y	25%/ 10%	No Bank Guarantee
Expedited investigation-dispute resolution	Y	Y	Y
On request 24 x 7 at all sea-ports and airports	Y	Y	Y
OSPCA once in 2 years	Y	3 years	OSPCA on request
E mail on arrival/departure	Y	Y	Y
Deferred duty payment	N	Y	Y
MRA benefits in other countries	N	Y	Y
Waiver of seal verification	N	Y	Y
Refund/ Rebate and Faster drawback	N	45 days	30 days

Benefits of AEO LO Programme

AEO LO programme
Granted to categories of economic operators other than importers and exporters, namely Logistics Providers, Custodians or Terminal Operators, Customs Brokers and Warehouse Operators.

S. No.	Type of Entity	Benefits extended
1	Logistics service providers	(a) Waiver of bank Guarantee in case of trans-shipment of goods (b) Facility of Execution of running bond (c) Exemption from permission on case-to-case basis in case of transit of goods.
2	Custodians or Terminal Operators	(a) Waiver of bank Guarantee under Handling of cargo in Customs Area Regulations 2009 (b) Extension of approval for custodians under regulation 10 (2) of the 'Handling of cargo in Customs Area Regulation 2009' for period of 10 years
3	Custom Brokers	(a) Waiver of Bank Guarantee to be furnished (b) Extended validity (till validity of AEO status) of licenses granted. System Manager to incorporate date of validity of AEO from time to time in the System Directory (c) Waiver from fee for renewal of license
4	Warehouse Operators	(a) Faster approval for new warehouses within 7 days of submission of complete documents (b) Waiver of antecedent verification envisaged for grant of license for warehouse (c) Waiver of solvency certificate requirement (d) Waiver of security for obtaining extension in warehousing period

Risk Management 2.0 : KEY DATA SCIENCE MODELS



Exporter Spurt Model

Identify Risky exporters claiming undue export incentives

Network Analysis Model for automated detection of Risk supply chain networks

Model using Network analytics metrics for Risk scoring supply chain

Mirror analysis of mapping of domestic supply chain data with International supply chain

Model to identify HSN Mismatch across supply chains

Input Output HSN Correlation model

Model to find the correlated inputs HSN through Network Analytics

Valuation Trend Analysis ML Model

Valuation Trend and Outlier analysis using Isolation Forest algorithm

360° Risk Profiling and Post Seizure Analysis Tool

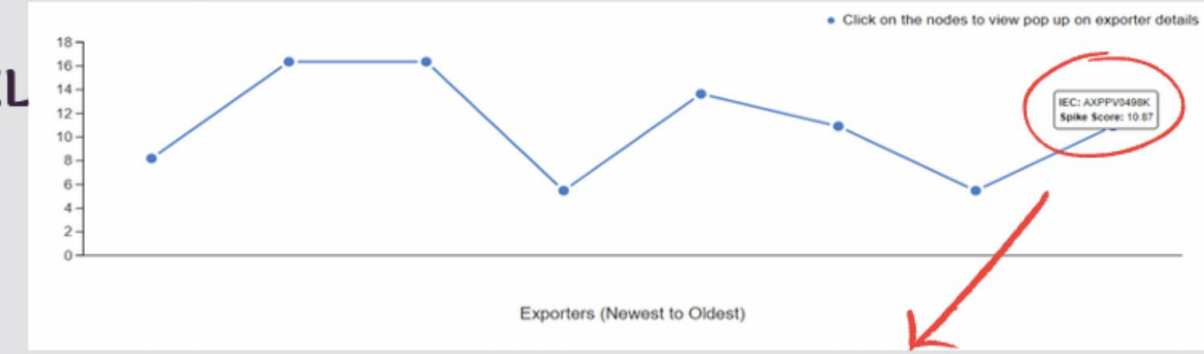
Dashboard to profile a consignment in 360 °

1. BEHAVIOURAL RISK IDENTIFICATION MODEL

Early warning of Risky Trade behavior dynamics

Case of Export Spurting of risky entities

EXPORT SPURT MODEL WITH SPIKE SCORE



EACH NODE DEPICTS EXPORTER DETAILS

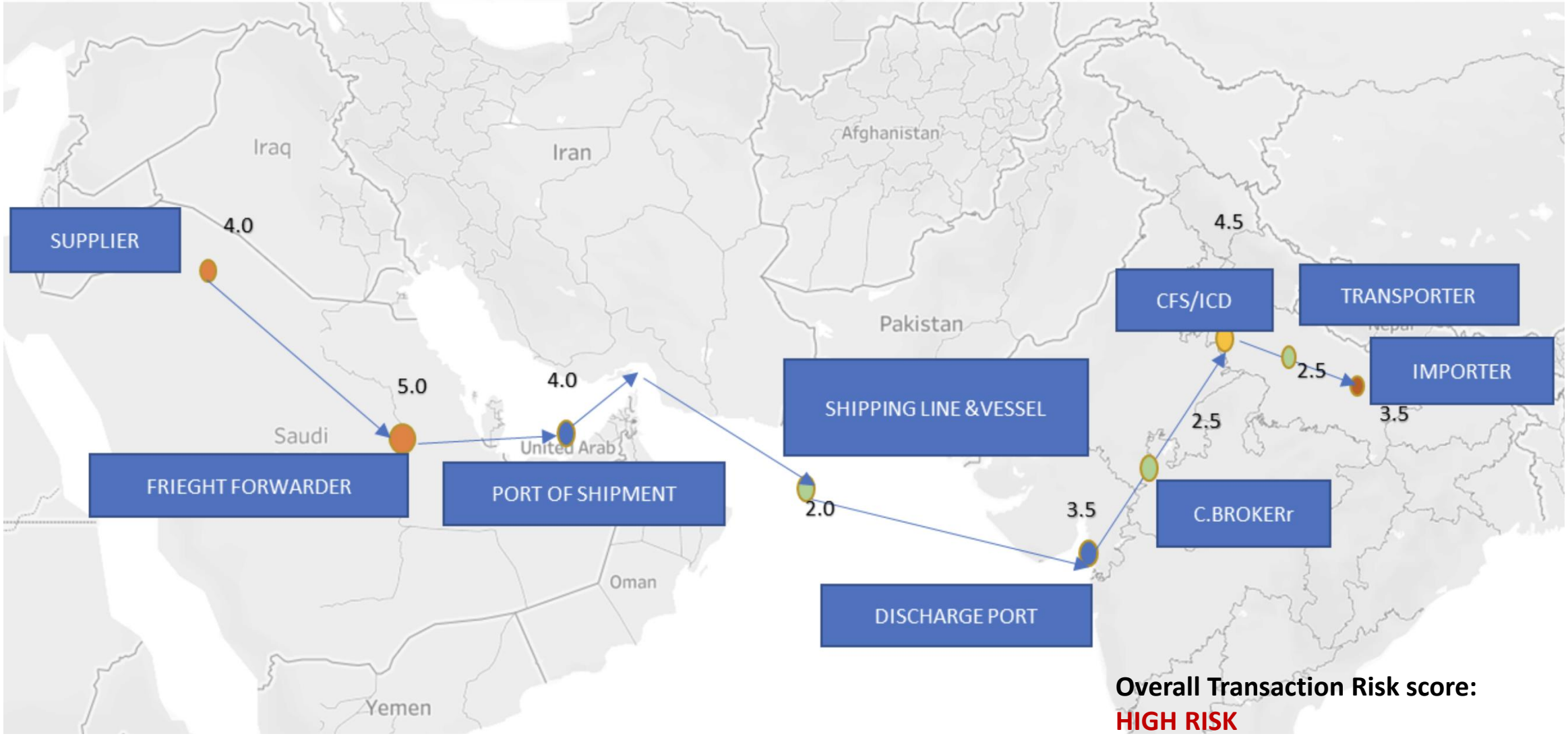
(Shortlisting of Risky Entities)

IEC:	AXPPV0498K
IEC Name:	DG INTERNATIONAL
IEC Registration Date:	2022-03-17
GSTIN No:	09AXPPV0498K1ZF
GSTIN Registration Date:	2022-03-02
Spike Score:	10.87
Total Bills Filed:	4.00
RODTEP involved:	0.00
ROSTCL involved:	0.00
FOB Value:	2,90,68,290.72
Declared Drawback Amount:	7,84,843.00
Total IGST Amt:	34,88,194.89
GST Compliance %*:	75
GST liablity and ITC setoff:	100.00
Accumulated ITC Refund Claimed*:	0.00
Accumulated ITC Refund Provisional Sanctioned*:	0.00
Eway bill assessible value(outward)*:	0.00

Reason identified : Undervalued multiple exports for money laundering and monetary incentives

2. ENTITY PROFILING ALONG SUPPLY CHAIN

Risk grading and segmentation of Supply chain entities



Overall Transaction Risk score:
HIGH RISK

2.NETWORK ANALYTICS AMONG BUSINESS ENTITES

Shell/Risky entities identification in supply chain

Identification of risky relationships and interactions among entities in

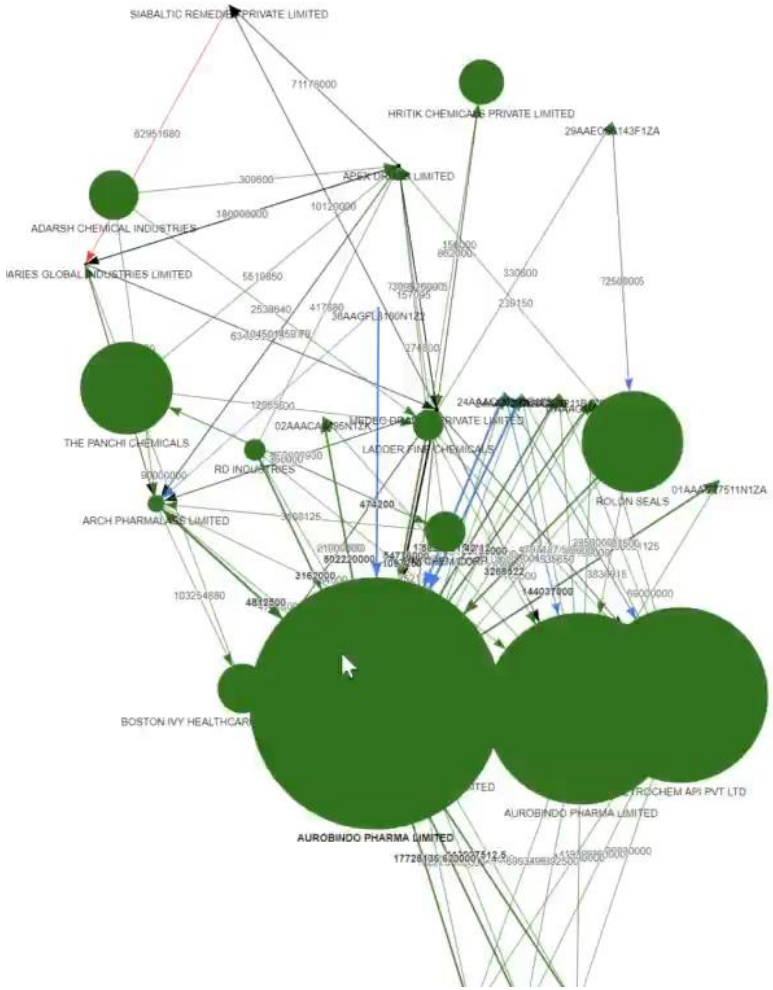
(i) Customs declaration

(ii) e- Commerce shipments

(iii) Supply chain and

(iv) Passenger manifests

3. Domestic E-way Bill Network analytics –Risky Supply chain identification



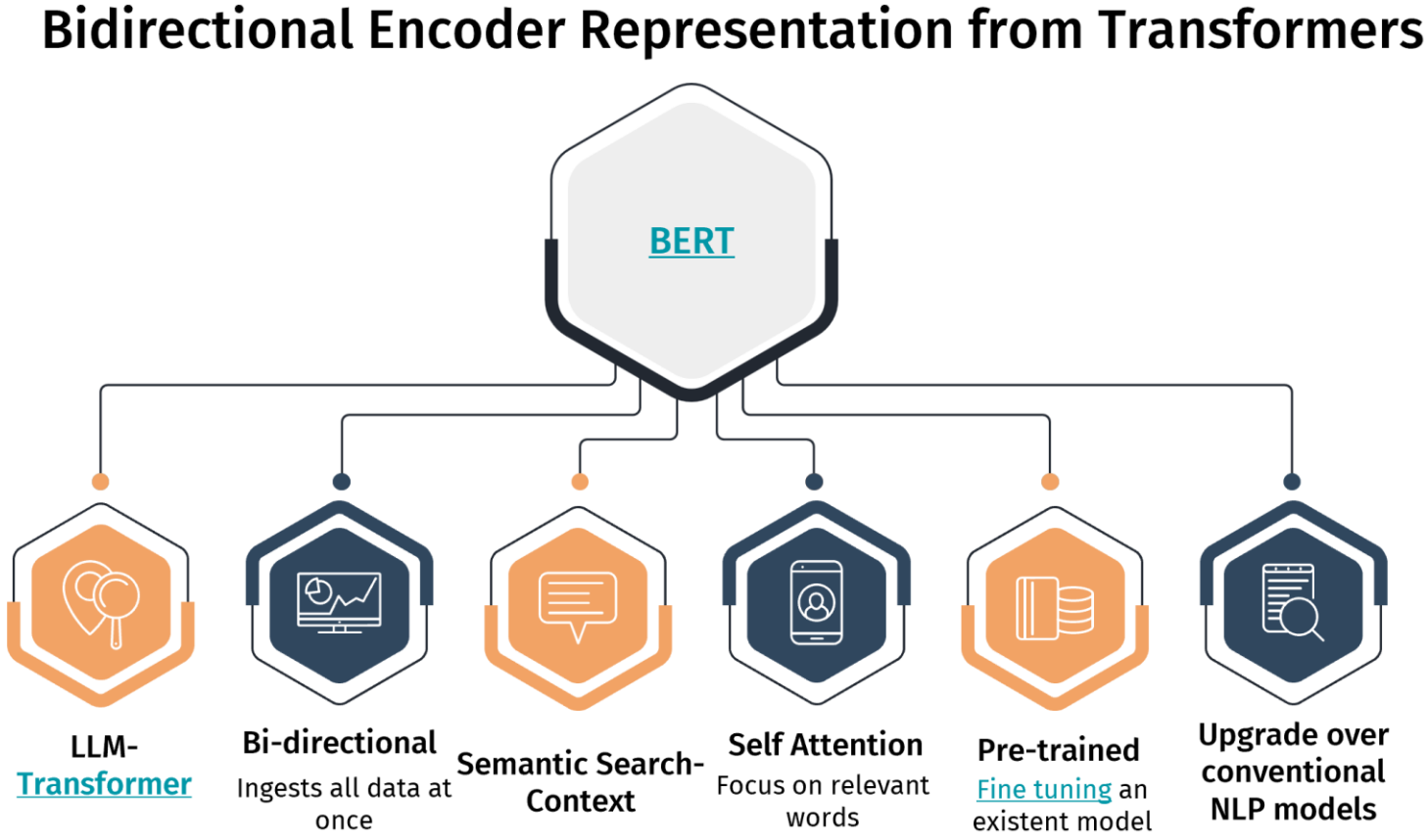
4. USE OF LARGE LANGUAGE MODELS AND GENERATIVE AI

(I) AI assisted Realtime Misclassification identification engine

ADVAIT-BERT – AI based misclassification identification engine of Indian customs based on latest AI technology – Large language model BERT.

Finetuned to identify potential misdeclaration on real-time customs declarations

Used in real-time data analytics and risk discovery of unknown risks by NCTC -Risk management organisation



AUTOMATED ML INSTRUCTIONS OF RMS

Automated Identification of Risks of

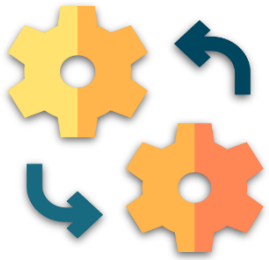
(i) Valuation

(ii) Misclassification

(iii)Wrong availment of BCD,IGST,CVD Notification

(iv) FTA and COO certificate

Developed and Integrated Machine Learning based Solution in NCTC system



Automated generation and sending of ML based Instructions to Assessment Officer

Systemic monitoring of action taken by Assessment officer on the ML based instructions and reinforcement based learning

NATIONAL CUSTOMS TARGETTING CENTER

MACHINE LEARNING IN NII AUTONOMOUS RISK DETECTION

Autonomous Risk detection

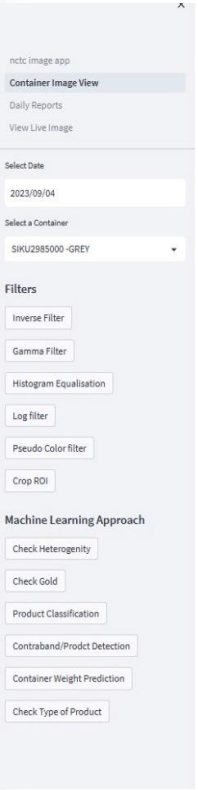
Harnessing the power of Machine learning , Computer vision and Image analytics on Country specific contrabands/ products

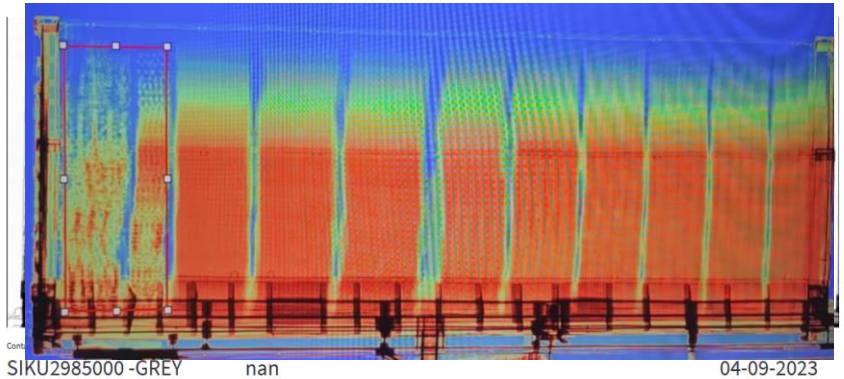
NCTC Comprehensive Image analytics solution

Encompassing Object Detection using Cutting edge algos like YOLO , Product Identification and classification ML Algorithms with promising results

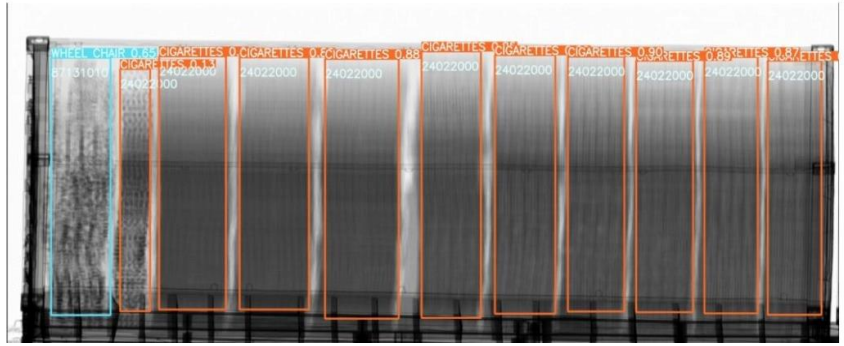
Centralised and Vendor agnostic approach

Vendor agnostic , Customized and inhouse solution by NCTC using open-source technology





Officer marking



NCTC AI identification precisely as Cigarattes

Pre-arrival processing

Enhanced facilitation levels

Promotion of Authorised Economic Operator (AEO) scheme

Increased utilization of Direct Port Delivery (DPD) scheme

Trade Facilitation : Path to Promptness

- Voluntary Compliance
- Use of Technology for Precise Targeting and Faciliation
- Smart Enforcement through NII Technologies

Thank You

AUTHORIZED ECONOMIC OPERATOR PROGRAMME
Making our country a manufacturing hub
Merger of existing ACP & AEO schemes with new matrix of benefits
Delivery of goods from Wharf to Warehouse
Clear First, Pay Later (Deferred Payment of Duty)
Direct Port Entry of export goods from Factory to Ports
Minimal Intervention for Compliant Trade
Benefits also to Small and Medium Scale Enterprises
Reduced Examination & Priority Treatment
Fast tracking of Refunds/ Drawback & Adjudications
Reduction/Waiver of Bank Guarantees
24x7 Clearances
Integrity of Global Supply Chain