

Technology and Innovative Tools for Traceability at both Commercial and Small Scale Levels

14th July 2026



GLOBAL DIALOGUE
on Seafood Traceability



Presentation Agenda

- GDST tools and tests
- First mile solution – AP2HI, Indonesia
- Larger scale ER/EM technology – Integrated Monitoring
- End to end product traceability – Trustwell FoodLogic
- Farm, fishery into processing data collection – ShoreKart
- End to end product traceability – Trace Register Origin
- End to end traceability Blue Swimming Crab – Thai Union - Wholechain
- Data integration – Starfish
- Data analysis and traceability due diligence – Seafood Souq

Automated Tests and Analytical Tools

Capability Test

A test to check if a traceability software meets the GDST interoperability standard. Passing this test should be a basic requirement when choosing a new system. You can find software that has passed the test on the GDST [website](#)

Diagnostic Tool — to determine the real-life problems of capable solutions which includes timeouts, coding issues and data entry problems

Completeness Tool

Once a company is using a system that has passed the Capability Test, they can use the [Completeness Tool](#) to check how complete their seafood supply chain data is. This check looks at specific products over a set time period and compares the company's data—and the data from its supply chain partners—against the GDST Key Data Elements (KDEs).

Traceability Driver — assists with schema mapping that reduces development time needed to pass the capability test

Quantum Leap Tool — Identifies CTEs in documents and puts the identified KDEs from PDF, excel, email and other digital documents into CSV file for ingestion

GDST Assessment Results

Company	Test Partner
Date	1/15/2025
Query Date Range	1/1/2021 - 1/1/2023
Facility GLN	urn:gdst:example.org:location:loc:importer:123u

EPCs	urn:gdst:example.org:product:lot:class:processor:2u.v1-0122-2022
Completeness	99.37%
Top 5 Failures	Certificate Complete, Event ID Complete, Event Time Complete, Event Location Complete, Event Location Master

Analyzed Products

Num. of Products: 1

99.37% Completeness

Can of Tuna

GTIN	urn:gdst:example.org:product:class:processor:2u
EPC	urn:gdst:example.org:product:lot:class:processor:2u.v1-0122-2022



Digitally Signed Results
Please scan the QR code



AP2HI

Asosiasi Perikanan Pole & Line
dan Handline Indonesia
Indonesian Pole & Line and Handline Fisheries Association



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Indonesia's Journey Towards Interoperable Seafood Traceability

Scaling the GDST Standard for Small-Scale Tuna Fisheries



KEY MESSAGE

01

More than 50 tuna fishing companies represented by AP2HI



02

Thousands of small-scale fishers participating in export supply chains



03

Traceability is essential for sustainability, market access, and regulatory compliance



04

AP2HI works with government, technology partners, processors, exporters, and international buyers to implement the GDST Standard



Traceability is no longer optional—it is the foundation of trusted seafood trade.

The Challenge

Multiple stakeholders collect similar information

Paper-based records remain common in small-scale fisheries

Different systems cannot communicate

Duplicate reporting increases costs

Buyers increasingly require verified digital traceability



WHY GDST ?



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**A common digital
language**



**Interoperability between
systems**



**Standardized Electronic
Key Data Elements
(eKDEs)**



**Scalable implementation
without replacing existing
platforms**



The challenge is not the lack of data—it is the lack of interoperability

INDONESIA'S COLLABORATIVE APPROACH



AP2HI acts as a bridge between





GOVERNMENT ENGAGEMENT

Support implementation of STELINA

Align industry data with national regulations

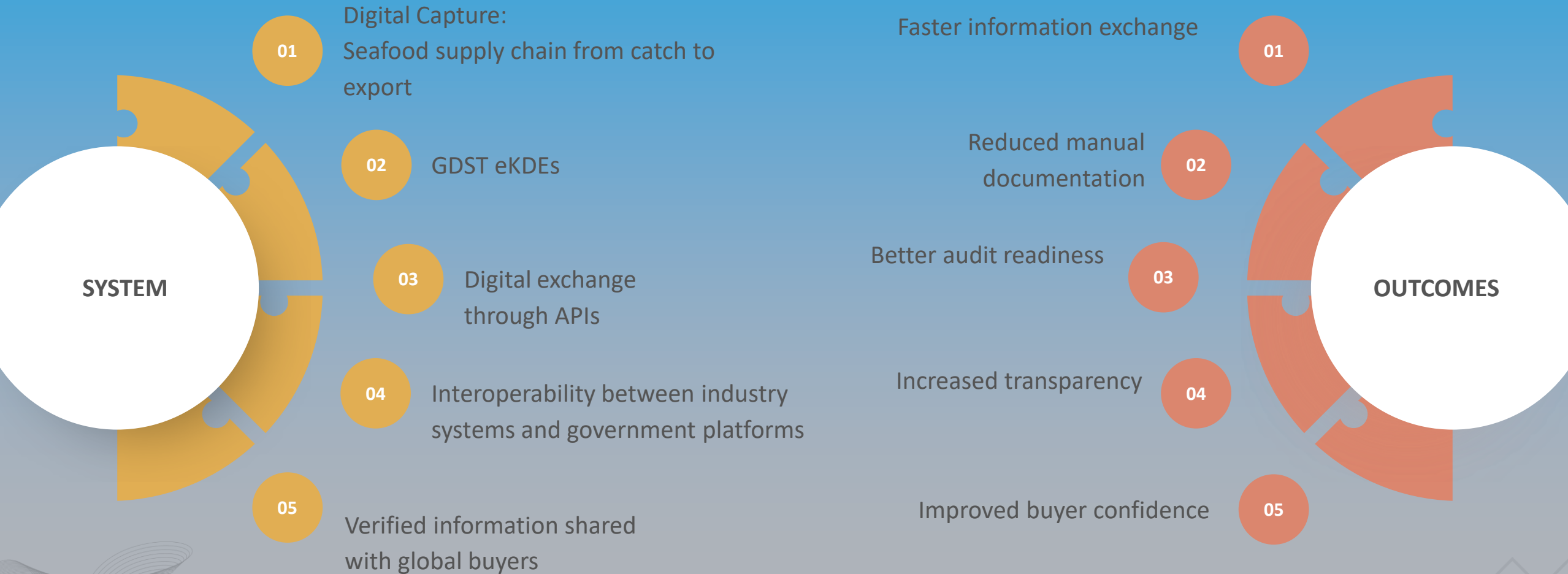
Promote interoperability using GDST

Reduce duplicate reporting

Improve transparency across the supply chain

Technology alone cannot transform traceability. Collaboration can

How It Works



Lessons Learned & The Way Forward

LESSONS

- ✓ Standards matter more than software
- ✓ Government engagement accelerates adoption
- ✓ Industry leadership builds trust
- ✓ Small-scale fisheries can successfully implement global standards
- ✓ Interoperability benefits everyone

VS

LOOKING FORWARD

- Expanding GDST implementation across Indonesia ✓
- Supporting ASEAN collaboration ✓
- Strengthening interoperability with government systems ✓
- Enabling inclusive digital transformation for small-scale fisheries ✓

Thank You



AP2HI

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dan Handline Indonesia
Indonesian Pole & Line and Handline Fisheries Association



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www.indonesiantuna.com

Indonesia



Integrated
Monitoring

Wireless REM Driven GDST First Mile Traceability 2026.06

First-Mile Data Flow

Rolling review while the trip is underway



Web-based Review Platform: Monitor



1



Onboard cameras, sensors & AI

2



Starlink / cellular rolling upload

3



Remote review while the trip is active

4



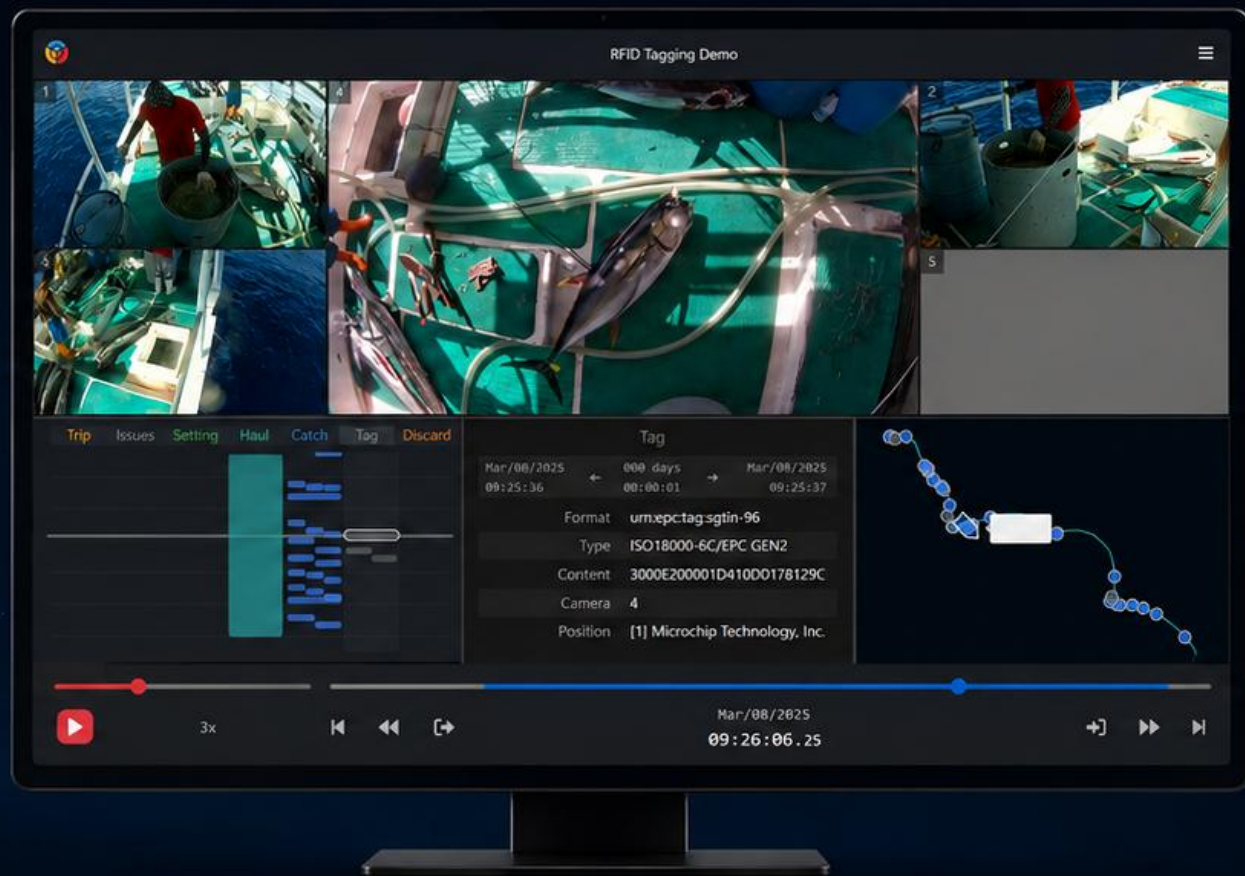
Critical compliance events flagged in near real time



Reviewed first-mile data is ready by offload.

Monitor Platform

One platform for review, QA and interoperable outputs



Synchronized video, map & event lanes



Rolling QA and reviewer decisions



AI-assisted detections and structured data capture



API-ready outputs for partners and standards



GDST-ready



RFMO-ready



Audit-ready



API integrations



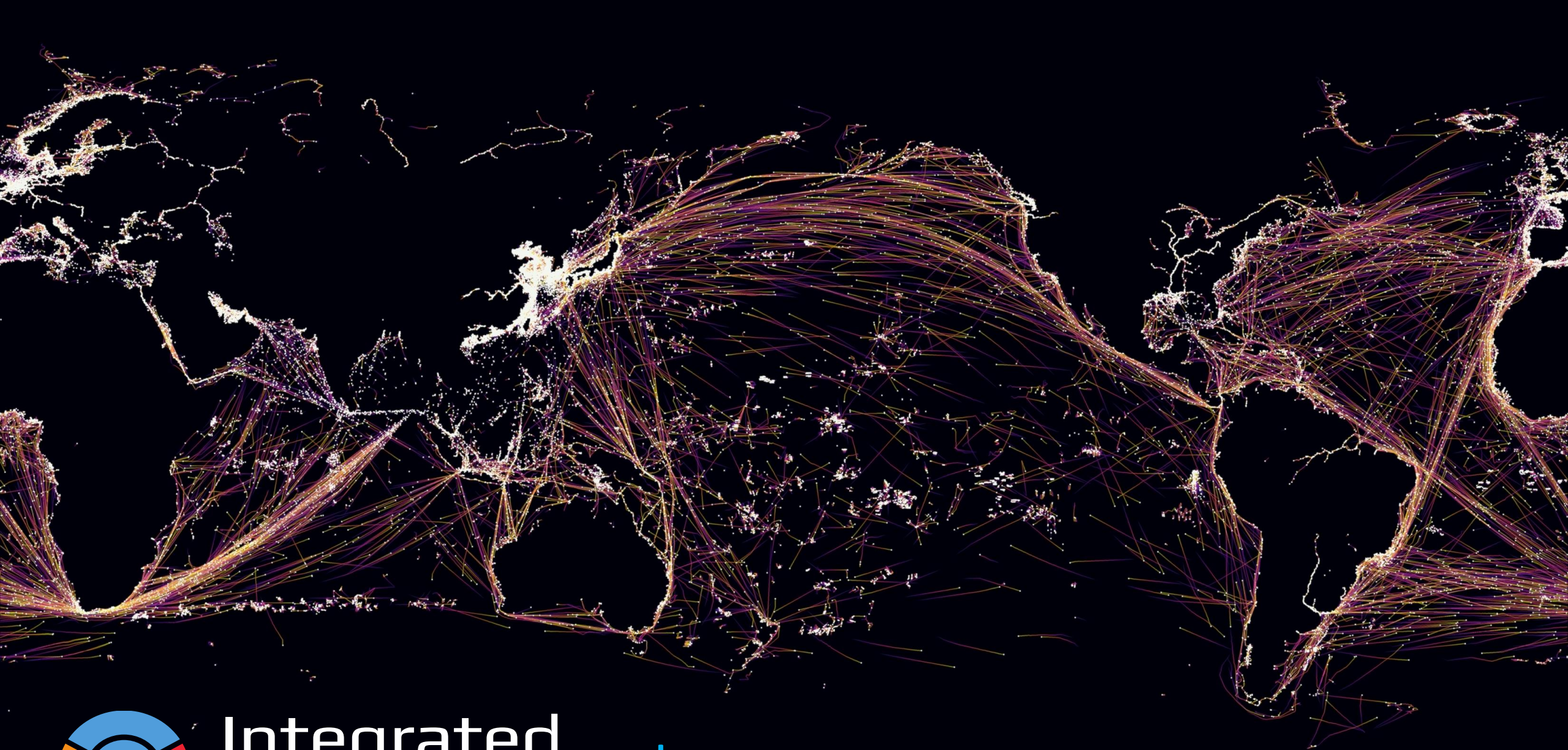
One platform turns observations into trusted first-mile data.

From Review to Offload

Processor-ready traceability when the vessel lands



Traceability data reaches the first receiver in time to matter.



Integrated
Monitoring

<https://www.integratedmonitoring.net/>

What FoodLogiQ Traceability does

Digital seafood traceability with trusted, shareable GDST-ready data.



End-to-end visibility

Track product from harvest to destination.



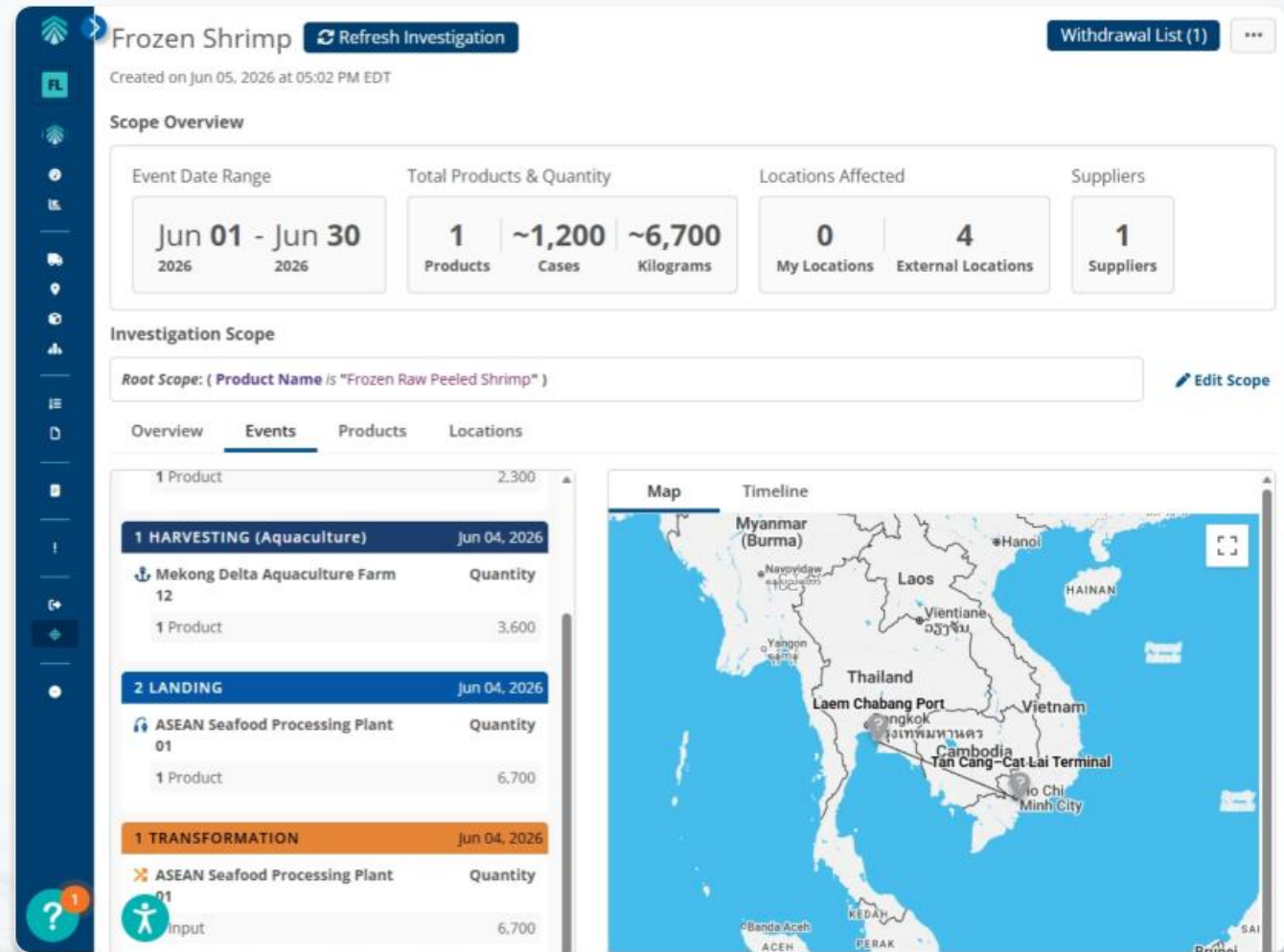
GDST-ready data sharing

Standardized records across partners.



Faster, more targeted action

Trace back quickly & hold only affected lots.



Seafood Pilot Participant
2020-2021



GDST-capable
Certified 2025

Tech-assisted Traceability

Standardized data maps seafood from harvest to destination.





Who
Suppliers & organizations



What
Products & quantities



Where
Facilities & locations



When
Dates & times



Lot
Unique identifiers

1 Product2,300

1 HARVESTING (Aquaculture)Jun 04, 2026	
Mekong Delta Aquaculture Farm	Quantity
12	
1 Product	3,600

2 LANDINGJun 04, 2026

2 LANDINGJun 04, 2026	
ASEAN Seafood Processing Plant	Quantity
01	
1 Product	6,700

1 TRANSFORMATIONJun 04, 2026

1 TRANSFORMATIONJun 04, 2026	
ASEAN Seafood Processing Plant	Quantity
01	
1 Input	6,700
1 Output	4,700

MapTimeline

Event

Shipping/Receiving Summary

Event Date RangeJun 5, 2026 - Jun 6, 2026

Jun 05 2026FROM

ASEAN Seafood Processing Plant 01

04 Nguyen Cong Tru Street, Ward 8, Ca Mau, 59 VN

Jun 06 2026TO

Tan Cang-Cat Lai Terminal

1295B Nguyen Thi Dinh Street, Cat Lai Ward, District 2 Ho Chi Minh City, 65 VN

Frozen Raw Peeled Shrimp

GTIN 09506000123455 / Lot Code FG-SHR-2026-002

View 2 Events

Product Shipped1,200 Cases

Product Received1,188 Cases

FoodLogiQ Traceability connects supplier, product, and location data in one searchable platform.

Benefits & Outcomes

Digital traceability delivers business value across the seafood supply chain.

Before

Broad product holds

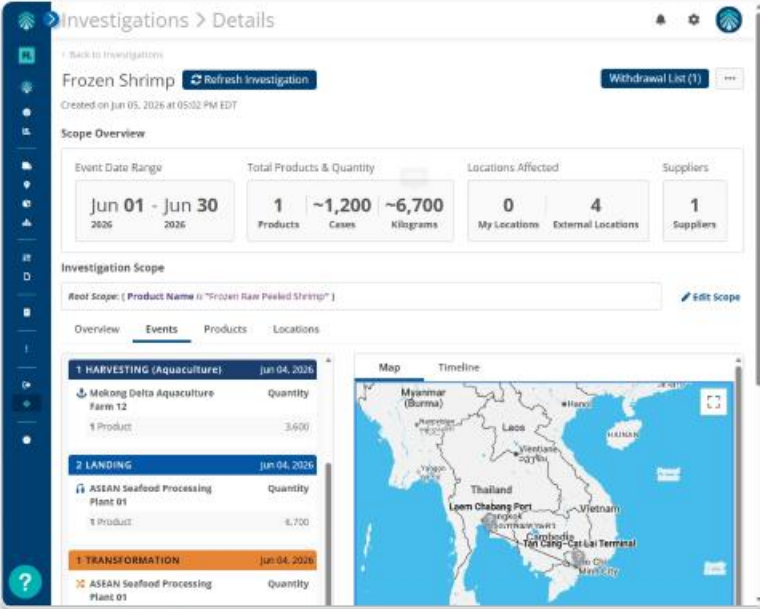
More waste. More risk to your business.



With Traceability

Targeted action on affected lots

Less waste. More savings.



Maintain consumer trust

Respond quickly and confidently.



Comply with regulations

Share standardized, GDST-ready data.



Reduce waste by up to 50%

Hold only affected lots, limit the scope of recalls.



Save time during investigations

Find the right records up to 50% faster.

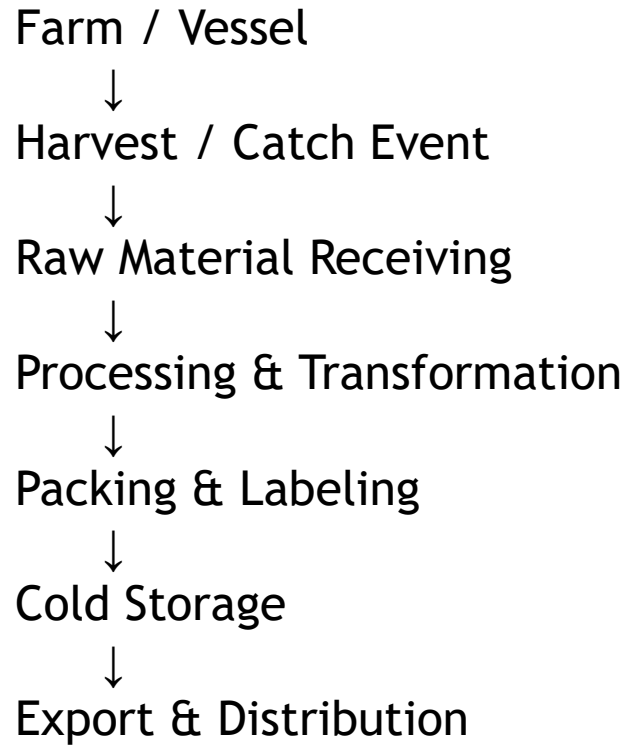
ShoreKart

Building the Digital infrastructure for the
global seafood supply chain

What ShoreKart Does

ShoreKart is a GDST-aligned seafood traceability and supply chain management platform that digitizes seafood operations across farms, fishing vessels, processors, exporters, and buyers. The platform enables end-to-end visibility, inventory management, production tracking, lot traceability, and chain-of-custody documentation throughout the seafood supply chain.

How It Works



Each lot is digitally tracked through processing, inventory movements, transformations, and shipments, creating a complete and verifiable product history. The platform supports QR-code-enabled traceability and interoperable data exchange aligned with GDST standards.

1 Harvest Event Capture



- Home
- Manage Staff
- Master Data
- Harvest**
- Shipping
- Receiving
- Transformation
- Packing
- Cold Storage
- Marketplace
- Ship To Buyer
- Reports

Log out

Harvests Details

Supplier / Vessel *
(SK51) John (Ocencraft Fishing vessel)

Search

Product *
TUNA



Description:
Skipjack tuna is the smallest and most common form of tuna, mostly found in the Pacific Ocean. The fish are caught in a large net on the ocean and brought to a port.

Variation *
Whole

Size *
3Kg Up

Quantity *
6000

KG

Harvest Date & Time *
10-06-2026 2:39 PM

Lot# *
202661014399

Harvest Location *
Vizag port-Srini-Visakhapatnam-530001
Address: Harbour, Visakhapatnam, 530001, India

Product Images/Videos *

Choose Files

 no files selected

Back

Add

Lot Code
carries
forward

2 Receiving & Lot Traceability



- Home
- Manage Staff
- Master Data
- Harvest
- Shipping
- Receiving**
- Transformation
- Packing
- Cold Storage
- Marketplace
- Ship To Buyer
- Reports

Log out

Receiving Details

Name: TUNA
Phase: Receiving
Status: Received
Variation: Whole
Size: 3Kg Up
Quantity: 6000 KG
Received Quantity: 6000 KG
Lot Code: 202661014399
Vehicle No: PB11AB1234
Uniformity (%): 1.10
Deviation: Nil
Price (₹): 200.00
No. of Workers: 10

Produced On: 2026-06-10 14:39:00
Farmer ID: 51
Farmer: John
Farm / Vessel: Ocencraft Fishing vessel
Location: Vizag port, Srini, Visakhapatnam, 530001
RM Unloading Start Time: 12:42:00
RM Unloading End Time: 14:42:00
RM Unloading Time: 2h 0m 0s
RM Unloading Rate (kg/hr): 3,000.00
Productivity (kg/worker/hr): 300.00



Print View

Product Image


Additional Images




Every lot is digitally tracked from harvest or catch to market, ensuring transparency, accountability and compliance with GDST standards.

Benefits & Outcomes

For Industry:

End-to-end seafood traceability
Faster product recalls and investigations

For Buyers & Exporters

Access to verified chain-of-custody information
Increased transparency and trust

For Consumers

Ability to trace seafood back to its source

For Governments & Industry Bodies

Enhanced traceability and data integrity
Support for interoperability and digital seafood initiatives

Thank You

Venkat.

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Website: www.shorekart.com

Overview of GDST-Aligned Traceability with ORIGIN

trace register



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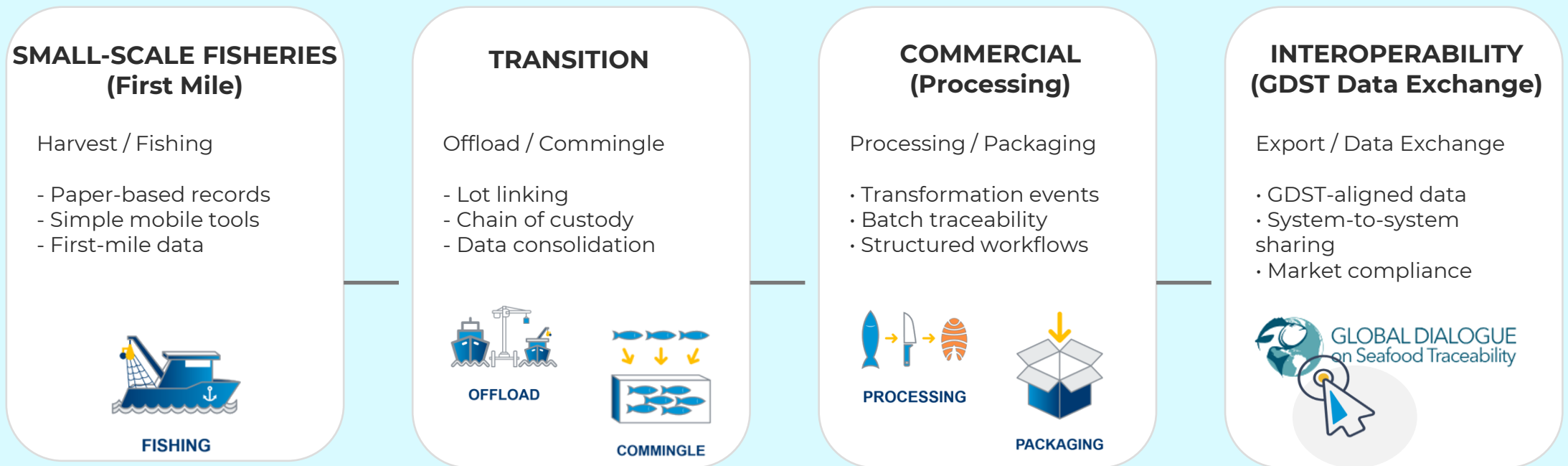
Overview of GDST-Aligned Traceability with ORIGIN

- GDST-aligned digital traceability across global seafood supply chains
- Supports both small-scale fishers and commercial operators
- Enables clients to capture supply chain data from harvest through export
- Enables clients to share data with trading partners through interoperable, GDST-aligned exchange
- Enables consistent, GDST-aligned traceability across connected supply chains



How GDST-Aligned ORIGIN Connects Small-Scale and Commercial Supply Chains

Small-Scale Fisheries → Supply Chain Integration → Commercial Operations → GDST Interoperability



GDST enables interoperable traceability across both small-scale and commercial seafood supply chains.

Benefits of GDST-Based Digitization with ORIGIN

For Small-Scale Fisheries

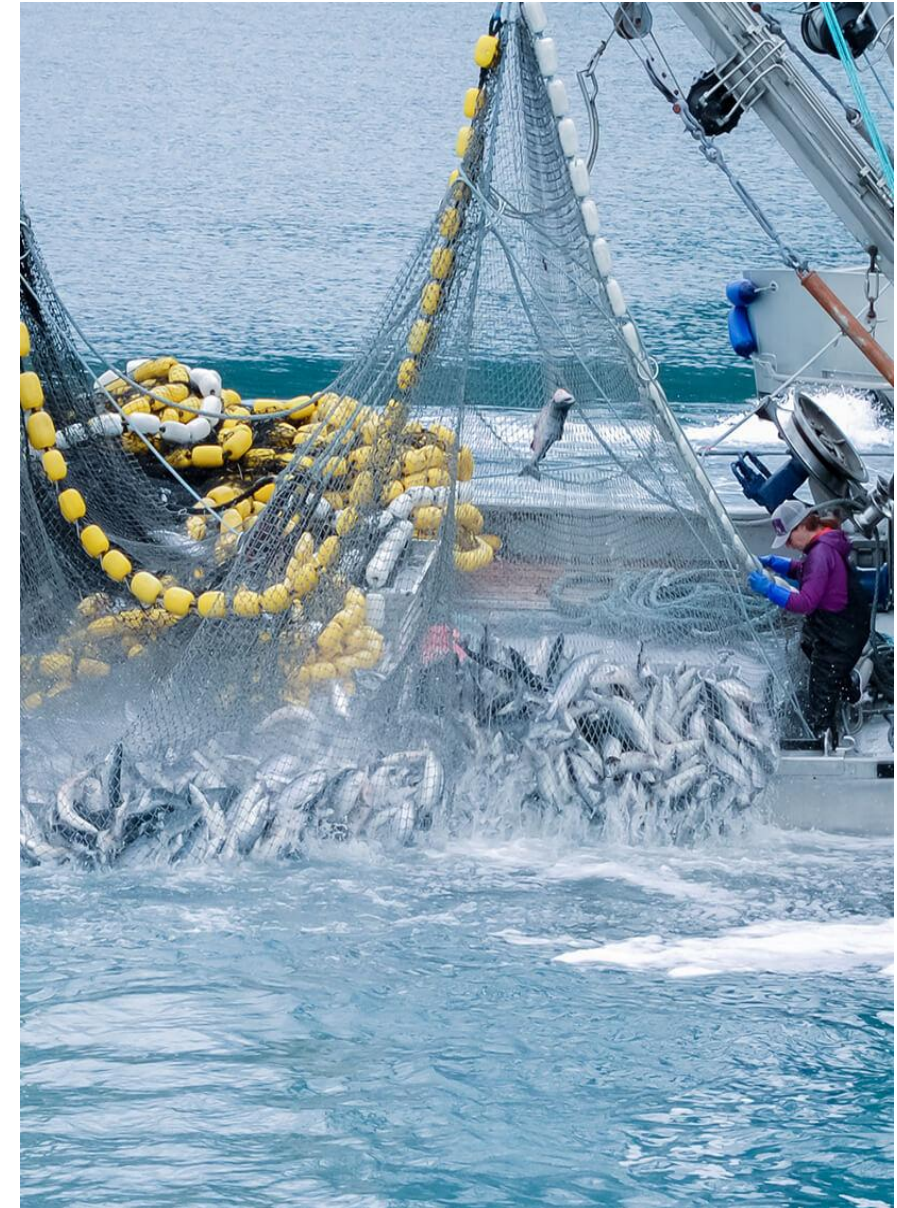
- Enables fishers to capture and share their own traceability data more easily
- Reduces barriers to participation in regulated markets
- Supports inclusion in export and regulated supply chains

For Commercial Processors & Exporters

- Improves traceability consistency
- Supports buyer and market requirements
- Reduces manual re-entry — clients manage data once and share across partners

Across the Full Supply Chain

- Strengthens end-to-end supply chain visibility
- Enables companies to exchange interoperable data using GDST standards
- Supports more efficient verification and reporting



Note: Applied in Indonesian tuna supply chains involving small-scale fishers and export processors

The Global "Demand Pull" Connecting ASEAN Catch to the US Shelf



Meeting Downstream Brand Mandates and Looming Import Regulations

The Brand Directive

Market leaders like **Chicken of the Sea**, the North American arm of Thai Union, are rolling out fully traceable, QR-code enabled packaging across retail and foodservice.

Standardized, GDST-compliant digital records are now integrated directly into procurement criteria to guarantee brand trust and ocean-to-plate transparency.



Key Insight: Physical seafood without standard digital data is now considered an incomplete shipment by modern global buyers. Digitization is no longer voluntary; it is a baseline commercial requirement.

The Regulatory Floor

US FDA FSMA 204 mandates electronic tracking of high-risk foods, including wild-caught tuna and crab, requiring end-to-end data history down to the point of origin by **January 2026**.

Standardized electronic event logging (CTEs and KDEs) acts as a digital passport, eliminating manual border checks, customs holds, or container rejection.





Interoperability at Scale: The Thai Union & Wholechain Blueprint

Automated, end-to-end tracking from first-mile vessels and crab traps to global export.



First Mile Harvest

Industrial tuna vessels at sea and small-scale fishers in the Gulf of Thailand log blue swimming crab catches via simple, low-bandwidth mobile tools.



Wholechain + GDST Capability

Wholechain automates data from landings to processing to distribution into interoperable data aligned with the GDST.



Enterprise Processing

Thai Union facilities scan and link batch lots to original harvest metrics, preserving data integrity across MSC certifications and Fishery Improvement Projects (FIPs).



Downstream Distribution

Finished products arrive at Chicken of the Sea Frozen Foods in North America with QR-code trace links mapping back to the exact vessel, FIP, or harvest area.

This model proves traceability can scale to global, industrial volume **without leaving artisanal ASEAN communities behind.**



The Commercial "Carrot": Shared Value Across the Supply Chain

Traceability is not a compliance tax, it is a business advantage delivering tangible financial and operational returns at every level of the supply chain.

Small-Scale Producers

Market Readiness & Financial Inclusion

Smallholders logging blue swimming crab data build a verifiable, credit-worthy transaction history, enabling access to formal working capital, trade credit, and fair margins while escaping exploitative local lending cycles.

Regional Processors & Exporters

Frictionless Trade & Brand Trust

Clean, standardized GDST electronic packets act as a fast-track pass through US and EU customs. Eliminates manual audit preparation and completely neutralizes the threat of costly FDA FSMA 204 border rejections.

ASEAN Governments

Regional Competitiveness & Resource Health

Immutable digital logs deter IUU fishing by making it impossible to blend illegal catch into legitimate supply lines. Positions ASEAN as the global leader in responsible, transparent seafood trade.

- ❑ By building a standardized digital pipeline, traceability doesn't just protect ocean health, it builds stronger, more competitive, and highly resilient coastal businesses across the ASEAN region.



The global connectivity layer for seafood traceability.

GDST Capable · v1.2

Built from IBM Food Trust · IBM Global OEM partner

*Prepared for the GDST presentation to ASEAN Member States
— July 2026*

Starfish · info@starfish-network.com · www.starfish-network.com

HOW SEAFOOD COMPANIES USE STARFISH

You don't need perfect data to start — Starfish helps every seafood company capture and prove GDST traceability.

1

Start with what you already have

Connect your current systems — ERP, spreadsheets, even paper or a phone. No rip-and-replace, wherever you sit in the chain.

2

Starfish shows you what's missing

It maps the GDST requirements to your role, flags the gaps in your data, and gives you simple ways to capture what you don't track yet.

3

Share verified, standard proof

Once the right data is in, buyers, retailers and customs get exactly the records they require — instantly.

The result: less paperwork, fewer rejected loads, and access to markets that require traceability.

HOW IT WORKS

Ingest from any system. Standardize. Share.

Starfish maps whatever data a supply-chain actor already produces into the GDST Standard, then shares it interoperably — one connection instead of dozens of custom integrations.



What digitization on the GDST Standard delivers



Interoperability without rip-and-replace

Actors keep their existing systems; one neutral connection replaces dozens of custom integrations — cutting cost and duplicate data entry.



Inclusion for small-scale fisheries

Low-barrier, mobile-friendly capture lets artisanal and small-scale fishers join GDST-standard traceability and reach export and premium markets.



Verifiable provenance, fewer IUU products

Standardized data elements make it far harder for illegal, unreported, mislabeled or fraudulent seafood to enter the chain.



One dataset, many compliance needs

A single GDST-standard record satisfies multiple buyer and regulatory requirements (e.g. U.S. FDA, EU CATCH), reducing duplicated effort for exporters.



Decision-grade data for industry & policy

Aggregated, standardized data powers analytics on risk, sustainability / ESG and supply-chain performance for businesses and governments alike.



TRUSTED. TRACED. TRADED.



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Technology **Fast 50**
DME
Deloitte.

Future
100
من المستقبل

/WHO WE ARE

Seafood Souq is building technology for a better **Blue Economy** by offering end-to-end digital solutions for the seafood sector, enabling regulatory compliance for transparent and efficient supply chains.

We're redefining how seafood is sourced, safeguarded and served- putting traceability at the heart of every bite, from bait to plate.

We're building trust and sustainability in the seafood industry through traceability technology

42,400,000+ kg

Seafood Traced to date

35+ HORECA Partners

Dashboard & Audit clients using SFS Audit



60+ Seafood Suppliers

Onboarded and active globally



/TRACEABILITY IMPACT DASHBOARD



Our audit acts as an **independent verifier between buyers and suppliers**—tracking, verifying, and scoring every seafood product, delivery by delivery.

Using GDST-aligned documentation, it flags gaps, validates certifications, and captures key sustainability indicators like origin, catch method, and conservation status.

All data feeds into the Impact Dashboard, where teams can:

- View traceability scores and non-compliance flags
- Track certification status and document completeness
- Measure sourcing impact across suppliers and products



/ YOUR JOURNEY WITH **SFS AUDIT**

Phase 1 Pre-tender Screening

Recommended starting point

Screen all suppliers

Verify documentation

Score traceability risk

Only compliant advance

Phase 2 Supplier onboarding

Handled fully by SFS via custom supplier dashboard

Multi-language support

Training materials

Dedicated support

Phase 3 Live data collection

Dashboard access granted

Real-time audit flags

Cert. tracking live

Delivery-by-delivery data

Phase 4 Quarterly reporting

Roadmap review session

Progress vs. targets

ESG-ready report

Next quarter priorities

Continuous partnership — SFS manages supplier relations and compliance throughout

/SAMPLE FINDINGS

Results from SFS audit conducted across 55 products from 6 unique suppliers over a 6-week period.

40%
Unverified

Have no verifiable proof
of origin

16%
Mislabeled

Discrepancies between
the claimed and actual
origins of products

Product	Recorded Source	Audited Source
Scallops	Japan	China
Sea Bass	France (Wild)	Spain (Farmed)
Crab meat	Indonesia	Unverified

The audit identified several instances of product mislabeling where the stated origin did not correspond with the actual source

/KEY DATA ELEMENTS COLLECTED

Trace percentages per product are calculated in line with the Global Dialogue on Seafood Traceability standard.

During supplier onboarding, we collect, audit and verify documentation from suppliers based on the KDE's (Key Data Elements) below which are deemed to be equivalent to 100% traceability.

Wild-caught

- Item / SKU / UPC / GTIN
- Weight / Quantity
- Vessel Name
- Vessel Registration
- Unique Vessel Identification
- Vessel Flag
- Vessel Trip Dates
- Date(s) of Capture
- Gear Type
- Fishing Authorization
- Availability of Catch Coordinates
- Satellite Vessel Tracking Authority
- Catch Area (FAO Area)
- Species Product Form
- Transshipment Location Dates of Transshipment
- Transshipment Vessel Name
- Transshipment Vessel Unique Vessel Identification
- Landing Location
- Dates of Landing
- Expiry / Production date
- Production Method
- Product Origin
- Harvest Certification
- Fishery Improvement Project
- Transshipment Vessel Flag
- Transshipment Vessel Registration
- Landing Authorization
- Public Vessel Registry Hyperlink
- Transshipment Authorization

Aquaculture

- Item / SKU / UPC / GTIN
- Weight / Quantity
- Species
- Feed Manufacturer (Organization)
- Location name
- Location ID
- Location Country
- Location Geo- Coordinates
- Harvest date per tank
- Source of broodstock
- Certification
- Certification Chain of Custody
- Source of protein Farm Site Name
- Date of Harvest Farming method
- Product Form Production date
- Product Origin Aggregator Name
- Aggregator ID/License
- Existence of Human Welfare Policies
- Human Welfare Policy Standards

MARKET PERFORMANCE BENCHMARKS

We analyse each product across the market to show:

- **Top-performing trace score** (best supplier benchmark)
- **Lowest trace score** (risk benchmark)

This dual view gives both **clients** visibility on market performance and **suppliers** a clear path to improve.



TRUSTED. TRACED. TRADED.

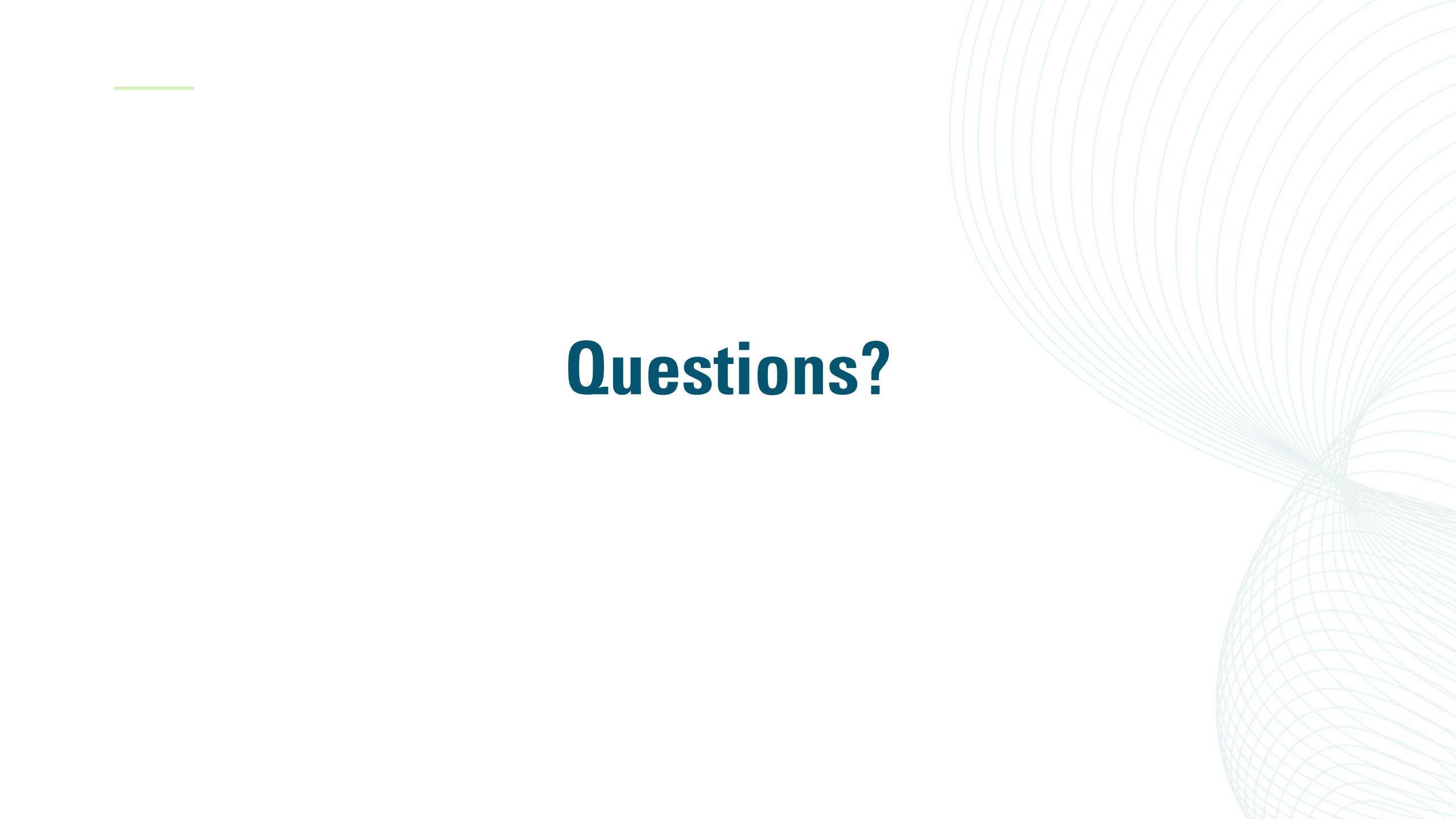


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Technology **Fast 50**
DME
Deloitte.

Future
100
من المستقبل



Questions?

Thank you

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